

Some Empirical Aspects of Economic Growth and Diversification in India's Emerging Economy

Prof. Pranab Kumar Chattopadhyay

A.K. Dasgupta Centre for Planning and Development
(A Centre Sponsored by the Planning Commission, Govt. of India)
Visva-Bharati, Santiniketan, West Bengal



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*Dedicated to
the Memory of
Prof. Amiya Kumar Dasgupta*

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Contents

<i>Acknowledgement</i>	v
<i>List of Contributors</i>	xi
<i>Introduction</i>	xv
1. Achilles' heel or Chained Elephant: Technology, Growth and Efficiency in Indian Agriculture since the Inception of Green Revolution	1
Atanu Sengupta and Chandan Kumar Maity	
2. Social Work Practice with Street Children- An Insight	23
Debotosh Sinha and Swati Chakraborty	
3. Education and Women in A Backward Region of West Bengal	37
Kaberi Pal	
4. Topic of Study: Deaths not Meant to be: An Evaluation of infant and Maternal Death Audit System in Haryana	49
Nabhojit Dey	
5. Prevention and Rehabilitation of Disability in Children through RCH	71
Gargee Basu	
6. Integrated Water Resources Management (Iwrm): A Rural Livelihood Perspective	83
Pulak Kumar Patra	
7. The Spell of Information Technology on the Minds of Developing Children	93
Sisir Gurung	
8. Social Exclusion: Health Concerns over Tribal Women and Children in Attappady, Kerala	99
Ajay Pathalil and Thresy Vallikappen	

9. Disease and Disaster in Lepcha Traditional Knowledge: A Case Study	111
Aritra Samajdar	
10. Agricultural Status and Trend: A Village Level Study	125
Krishna Gopal Ghosh and Priyanka Das	
11. Women and Child Development: A Crying Need of the Hour	143
Amit Banerjee	
12. Dissemination of Farm Technologies for Poor Farmers: A Paradigm Shift	149
Sarthak Chowdhury and Prabuddha Ray	
13. Girl Child : Early Marriage Issue and Media	155
Aditi Bhowmick	
14. Women and Computer Science: Gender Disparity (A Case Study)	165
Praveen Mukhia Titimus	
15. Land reforms in North Bengal: A Case study of Siliguri Sub Division	175
Udai Kumar Shaw	
16. Rural Development Programme of Govt. of India and their effectiveness: An assessment	187
Neelmani Jaysawal	
17. Rural Tourism Development Programme of Ministry of Tourism, Govt of India and their Effectiveness –An Assesment:A Case Study on Pochampally Rural Tourism	201
G. Mahender Reddy and YSR Nithm	
18. A Critical Evaluation of IEC Strategy of MGNREGA, Developed by Ministry of Rural Development of Govt. of India	213
Arita Samajdar	
19. Status of women:power empower welfare and development in India	229
Sashi Sekhar Biswal	
20. From women empowerment to Entrepreneurship Development Through SHG's Finding ,Observation and Analysis by Focus Group Discussions	245
Bikas Majhi	
21. Community Development Society—the Platform for Empowerment of Urban Poor Women: A Study in Selected Municipal Areas of West Bengal	271
Kuntak Ghosh	
22. Deplorable Health Conditions In Rural India : A Thematic Review	283
SudeshnaSaha	

23. Health Care System in India –Issues and Intricacies	295
Alluri V.N.Varma, K.A.S.P.RamaRaju and J.S.P.Rao	
24. Land Reform in Darjeeling Hills and its Consequences	303
Durga K. Sahu	
25. Maternity Matters’ in Colonial Malabar: the Politicalization and Medicalization of Obstetrics	311
K. Mamatha	
26. Endangered Gender:Discrimination by Default Decision	325
K.C.Sahoo, Kalyani Sahoo and Sashi Shekher	
27. Field level Constraints as Experienced by the Vegetable Growers Regarding the Proper Use of Pesticides in Vegetable Cultivation	313
Prabuddha Ray and Sarthak Chowdhary	
28. Prevalence of Substance Abuse Among Street Teens of Purulia District, West Bengal	345
Somnath Mukherjee and Pranab Kumar Chattopadhyay	
29. Farm Women’s Access to Farm Information: A study In Bolpur Sub-Division of Birbhum District	351
Sarthak Chowdhury and Suparna Bose	
30. An Ecological Analysis of Eco-Tourism in Sikkim: A Case Study of Kechopalri lake	359
Hasibul Rahaman	
31. Promoting Grasspea (<i>Lathyrus sativus</i> L.) Cultivation in Rice-Fallows of West Bengal	367
M. K. Bhowmick, B. Duary and P. K. Biswas	
32. Rural Health Scenario of the Districts of West Bengal Theme	375
Kaustuva Banerjee	
33. Technological Change, Land Holding Structure and Crop Diversification of the Farmers: A Study of West Bengal Agriculture	387
Tushar Das	
Index	407

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Introduction

Since 1950s to 1980s India practiced public sector dominated centralized planning approach and formulated her economic policies accordingly. All activities- adapted to the currents of over all economic philosophy of the nation and all policies towards development were formed in a closed economy framework. This practice continued more or less, until the early 1990s. During this period i.e. from 1950s to early 1980s, though the rate of growth was low and 3.5 percent per annum yet the country experienced a continuous acceleration in economic growth in comparison to almost stagnant economy of a very long period before independence. Indian policy makers made an attempt to reconcile the inherited pre-capitalist, and western capitalist institutions with the socialist aspirations in a democratic framework. To achieve this aim of growth with equity India remained a closed and heavily regulated economy. Yet vision of the 'Socialist pattern of Society' remained unrealized and according to one estimate nearly thirty seven percent Indians are poor even today. For this inward looking policies India faced major problems both in the internal and mostly in the external sector and was compelled to initiate major systemic changes since 1991. There was a major shift in the development strategy towards greater engagement with the world economy, removal of restriction on the operation of the markets and encouragement to private economic activities. The importance of planning has been relegated to the background. The failures of planning are for not giving proper attention to the realities of the rural India. This book is the outcome of the works based o field study of rural India by young researchers and the information must help the policy makers in a significant way.

The author Atanu Sengupta and Chandan Kumar Maity in their paper 'Achilles' heel or Chained Elephant: Technology, Growth and Efficiency in Indian Agriculture' studied on the firms that generally assumed to optimise certain objective functions like profit, cost, revenue, sales or other such relevant economic variables. A firm is adjudged to be efficient if the optimality conditions are satisfied. The present

study analyse the farm efficiency of Indian Agriculture using Data Envelopment approach. The study is based on district level input output data on Indian agriculture. The result clearly depicts that North-Western region is the more efficient zone than other three region in India during the last fifty years. The same conclusion is also drawn in case of both CRS and VRS technology. However the average efficiency scores are greater for VRS technology than CRS technology. On the contrary the Central region is the less efficient zone compared to other. A decomposition of analysis suggests that, most of the good performance of factors productivity is attributable to technical efficiency change rather than to technical change.

The paper 'Social work practice with street children- An insight' highlighted on the most vulnerable group of children in physical, psychological and organizational terms is surely the 'Street Children' who live, work, sleep and sometimes dies uncared and unprotected. Debotosh Sinha and Swati Chakraborty concluded that most of these children are destitute or abandoned, who spend their time mostly on the streets and also sleep on the streets and in public places. Majority of the children on the streets are working children who are thoroughly exploited and oppressed. These children are not even counted or considered part of any statistics. Therefore, they are not of any concern to any legislation or subjects of any policies or there are any programmes or benefits for them. Under the given canopy, the author would like to throw light on the concept of street children and discuss the varied dimensions of social work practice and how it could contribute to deal with the problem of street children

Kaberi Pal in her article "Education and Women in a Backward Regions of West Bengal" highlighted that education is the most important factor which initiates the process of social, economic and cultural development. It is regarded as the basic permanent need of individual. This paper is an attempt to analyze the level of education and women's education in the district Purulia. Purulia is one of the most backward district of West Bengal in respect of mainly two parameters namely—lack of enough employment and extremely low level of female literacy. The block level scenario of education explores the presence of intra-district disparity at a considerable magnitude. The block level study reveals the fact that the district is highly neglected in the development of education, specially female education. The average values of all indicators indicate the fact that all the blocks and thus the whole district suffered from inadequate level of education and educational facilities.

Nabhajit Dey in his paper "Deaths not meant to be: An Evaluation of infant and maternal death audit system in Haryana" concluded that most maternal and infant deaths had occurred in socially and economically marginalized sections of the population. Awareness about JSY and RSBY was very low in study area households. Majority of maternal deaths had occurred post-delivery and were mostly due to PPH, anemia and heart disease. Most women had sought treatment and had died

due to lack of adequate post-delivery care. Regarding infant deaths, majority of neonatal deaths were due to lack of adequate neonatal intensive care either due to lack of such facilities in hospitals or deliveries taking place at home. Post neonatal deaths were mostly at home and mainly due to late referrals. In all cases, households had to undergo financial hardships to access healthcare and pay out of pocket. On comparison of primary and secondary data, glaring lack of information was found in all maternal and infant death review forms.

The paper “Prevention and Rehabilitation of Disability in Children through RCH” of Gargee Basu investigates the problem of disability existing since ancient period. Some people and organizations are continuously working for the development of the physically or psychologically challenged persons. But people are still not much aware of the issue. There are certain measures that must be followed to prevent disability in children and adults. Social workers took initiative to educate the community people about the preventive, promotive and curative measures that may help to avoid disability among children during pre-natal and post-natal period.

Pulak Kumar Patra in his article “Integrated Water Resources Management (IWRM): A Rural Livelihood Perspective” discussed how Integrated Water Resources Management (IWRM) is now the dominant paradigm for water management in India. The integration of socio-economic and hydrological considerations under the auspice of IWRM represents a welcome policy shift. However, the ground reality tells a different story about the success of IWRM. This paper examines our current understanding and practices of IWRM from the perspective of livelihoods. The studies shows that the current policy and practice of IWRM often focus on cost recovery, reallocation of water to ‘higher value’ uses, and environmental conservation. The issues of poverty reduction, livelihood improvements, economic growth and empowerment of poor people are not properly dealt with. This paper argues for a holistic and people-centred approach for IWRM. IWRM should put improving livelihoods of people at its centre. Through the effective democratic development and management of water and other natural resource, we can achieve reduction of poverty, better livelihoods, balanced economic growth and conservation of vital ecosystems.

Sisir Gurung explained impact of technology in his paper ‘The Spell of Information Technology on the Minds of Developing Children’. The world has never seen a brighter dawn than the present time embraced by the wings of Information technology. Information technology has occupied the minds of human beings ever since time became measureable and thoughts changed into physical existence. Information Technology has become man’s best companion in the digital age as without technology men are handicapped. Information technology was thought to be a blessing in the human civilization, opening newer doors of innovations for a better and easier life, but nobody had ever anticipated that this same blessing can be a curse that would plague the minds of the same beings. Children of this modern age have very quickly slipped into the abyss of this darker side of

information Technology, and the sad part is that they are unaware of their own degradation. Animated graphics and lustrous pixel of the digital word has lured the minds of children into a suffocating life. They have now virtually become living lazy zombies as they remain glued to their gadgets within their enclosed doors of mind. Children have lost the fun of playing interactive games with the peers of neighborhood which not only rejuvenated their physical energy of the body but also taught them how to socialize.

Ajay Pathalil and Thresy Vallikappen in their paper “Social Exclusion: Health Concerns over Tribal Women and Children in Attappady, Kerala” argued that condition of tribal women and children needs special attention especially at a time when the high rates of infant deaths, malnutrition of women and children and stories of abortions in the tribal settlement of Attapady, Kerala come into light. The paper attempted to establish that tribal population found to be anemic or malnourished. In the tribal areas outsiders entry resulted in drastic changes in social, economic and cultural lives of the tribals.

Aritra Samajdar in his paper ‘Disease and Disaster in Lepcha Traditional Knowledge: A Case Study’ narrated on various aspects of Lepcha Traditional Knowledge system, like knowledge on medicine and disaster management. In this paper we will discuss Lepcha philosophy about disease causation, their philosophy of healing, some practical use of ethnomedicine and some folk stories on disaster and human responses to disasters (both natural and caused by human agent). Attempts are made to explore the relation between knowledge of a community and the world wherein they are living. It is very interesting to show that in Lepcha worldview disasters in both individual and social life coming through negation of social conducts, misbehavior, and disrespect to tradition and mistrust of heritage. In Lepcha world individual action is the sole cause for imbalances in both human and social health. This may somehow help in the current debates on development intervention and public policy. This paper is based on field work done in MenchuKiun village of Sakyong Gram Panchayat of Darjeeling district of West Bengal.

The paper ‘Agricultural Status and Trend: A Village Level Study’ by Krishna Gopal Ghosh, Priyanka Das and Swades Pal attempted to review agricultural status, trend, ecological health of the land, farmers perception on agriculture, agricultural vulnerability etc. Questionnaire survey, soil test in laboratory etc. have done to collect primary data along with relevant secondary data from different relevant sources. It is observed that ecological environment specifically original productive capacity of the land is getting degraded over time and now productivity is mere the function of external implementation of fertilizers. Peasants are reluctant in their profession due to disproportional growth of agricultural input and output. Agricultural inequality, paddy centric crop pattern withstand against agricultural development..

Amit Banerjee in his paper “Women and Child Development: A Crying need of the Hour” tried to depict the situation of women and child in present day. The aim of every democratic society is recognition of human rights and establishment of social justice. Indeed, in every society and at workplace women are victims of discrimination, in law and reality. The principal factors responsible for this situation are family, society, State and varied inequalities towards women at workplace. The causes and consequences of discrimination against women vary from country to country. It cannot be denied that the end of social discrimination, race discrimination, colonialism, neo-colonialism aggression, foreign domination, hegemony and interference in the internal affairs of the States are essential to ensure equal rights of men and women. It is worth mentioning that in case of family welfare and social development the role of women has not been properly recognized. The social significance of motherhood, of women’s role in reproduction, equal importance of parents in matters relating to family and child-rearing has to be recognized. Besides, there is a need to change traditional role of men and women in family and society to ensure the equal rights of men and women.

Sarthak Chowdhury and Prabuddha Ray in their paper ‘Dissemination of Farm Technologies for Poor Farmers: A Paradigm’ highlighted about resource-poor farmers gained very little from the processes of development and technology transfer of the Green Revolution. Many analysts of the Green Revolution have pointed out that the new technologies were not scale-neutral. Not only were technologies inappropriate for poor farmers, but peasants were excluded from access to credit ,information, technical support and other services that would have helped them use and adapt these new inputs. To be of benefit to the rural poor, agricultural research and development and dissemination should operate on the basis of a “bottom-up” approach, using and building upon the resources already available: local people, their knowledge and their autochthonous natural resources. It must also seriously take into consideration, through participatory approaches, the needs, aspirations and circumstances of small holders. This approach makes use of a methodology in which rural people participate in setting research and extension agendas. This can be achieved using approaches such as farmer-to-farmer training, farmer-led research, “land-to-lab extension”, and multi-directional technology dissemination instead of one-way technology transfer from lab to land. The ability of rural communities to innovate and to respond to new challenges will then be enhanced and will continue beyond the time period of projects

Aditi Bhowmick in the paper ‘Girl Child : Early Marriage Issue and Media’ investigated about broader issue of girl child marriage which is a menace to society. A latest appraisal of the Govt. of India alerts that out of 113 cases under the prohibition of Child Marriage Act, 2006, West Bengal stands first with 25 cases on child marriage. Other states like Maharashtra, Andhra Pradesh, Gujarat and Karnataka follow West Bengal, although we do not have any data about Bihar and

Uttar Pradesh on that appraisal. Early marriage for girls means curtail of their freedom of enjoying childhood, part of their life, their education, their enjoyment and above all their proper development. Issues like girl-child marriage does not sprout out overnight, rather it is an ancient practice. Girls are forced to do marriage at early stage and it seems common that they suffer from physical and psychological trauma. Early marriage curtails their freedom of enjoying childhood days, receiving compulsory education, grooming for civic and cultural awareness. In maximum cases, economically poor and culturally backward family follow such practices. Economically poor families consider the girls burden and quickens to get them married. Media being 'global village' must cater information about it with truthful, accurate and objective manner. Print, electronic and folk media collectively may take the challenge up. The paper tries an attempt to focus on how media play its role of making aware the public against girl-child marriage.

Women and Computer Science: Gender Disparity (*A Case Study*) by Praveen Mukhia Titimus highlighted gender disparity in the field of computer science and application which is one of the emerging and sought after discipline for exponential job growth over the next several years. There's a glaring lack of women entering the field. Stereotyping women as being more close to nature and men close to culture could be one of the main reasons for growing gender disparity in the field of Computer Science and Technology. Technology could be a powerful tool for women empowerment, but women are lagging behind in this field nationwide. If woman like Augusta Ada, (1842), the first computer programmer could be the pioneer of today's gigantic software companies, why not the 21st century women? The paper attempted to discuss growing gender disparity in computer field in the hills of Darjeeling District with a case study of 70 BCA respondents from St. Joseph's college, Darjeeling.

Udai Kumar Shaw investigated about land reforms in the paper 'Land Reforms in North Bengal: A Case Study of Siliguri Sub-Division'. Land reforms are visualized as an instrument of social justice as they seek to do away with exploitative relationships characterized by sharp class division between rich land owning classes and impoverished peasants with no security of tenure. It is a step against the concentration of land holdings in the hands of a few absentee/non-cultivating owners, through imposition of ceilings on the size of holdings, which can be owned by a family. Although land reforms are popularly understood to mean redistribution of land, their scope is much wider. Land reforms alter the power structure, both economic and political, since land has always been a source of wealth, income, status and a reflection of the interlocking class and caste structure of Indian society. It empowers the actual tillers of the soil, and enables them to seek development benefits from the state. Thus, they are also a means of increasing agricultural production through land development, as the interest of peasants in investing in the land they own grows significantly.

Neelmani Jaysawal in his paper 'Rural Development Programme of Govt. of India and their effectiveness: An assessment, India' attempted to assess effectiveness of programme for rural sector. It has started various schemes and programmes either centrally sponsored or funded by state government for enlivening both agricultural and non-agricultural subsectors. These programmes work in multi-dimensional ways from assets creation to livelihood generation.

This paper seeks to review the effectiveness of some of those programmes like Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and National Rural Livelihoods Mission (NRLM).

G. Mahender Reddy in his paper 'Rural Tourism Development Programme of Ministry of Tourism Government of India and their Effectiveness- An Assessment- A Case Study on Pochampally Rural Tourism' examined rural tourism in present economic condition throughout the world and is being recognized as an important instrument of growth for the rural economy. Planners are using rural tourism, which also includes eco tourism and farm tourism to increase economic opportunities for the rural people. In India where 70 per cent of the population live in rural areas and are dependent solely on agriculture, newer opportunities need to be created and Rural tourism is certainly on top of the charts of fulfilling this dream. Studies on the subject have concluded that there is evidence that in Europe rural tourism has made important contributions to rural incomes both at the level of the individual farmer and more widely in the local community. While not necessarily substituting for agricultural income, it has delivered supplementary income and inter-sectoral linkages. Rural Tourism is one of the few activities which can provide a solution to these problems. Besides, there are other factors which are shifting the trend towards rural tourism like increasing levels of awareness, growing interest in heritage and culture and improved accessibility, and environmental consciousness. In the developed countries, this has resulted in a new style of tourism of visiting village settings to experience and live a relaxed and healthy lifestyle. This concept has taken the shape of a formal kind of Rural Tourism. Ministry of Tourism and the United Nations Development Programme (UNDP) in India have been involved in an initiative on Rural Tourism. Bhoodan Pochampally is located in Nalgonda District, of southern state, Andhra and, is popularly known as Silk City of India. It is one of the famous Rural Tourism project in India. This paper explored the status of the implementation and also assesses the effectiveness on study area.

A critical evaluation of IEC strategy of MGNREGA, developed by Ministry of Rural Development of Govt. of India by Aritra Chakraborti. The Ministry of Rural Development has developed an integrated Information Education and Communication (IEC) Strategy exclusively for Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The strategy aims to create awareness among rural people and other stake holders with special focus on MGNREGA

workers about various aspects of MGNREGA. The strategy also aims at facilitating dissemination of right based provisions of the Act to ensure that the workers know their right to demand wage employment and exercise their right by applying for such employment as per their need. Beyond raising awareness, interventions at interpersonal level have been provided to ensure that individuals convert their awareness into action. For this, Social and Behaviour Change Communication (SBCC) activities would be taken up by the states, at the grass root level. The IEC strategy for MGNREGA details the strategies on how the Ministry of Rural Development of Govt. of India, the States, the districts, the blocks, gram panchayats and the grass root level functionaries should implement the IEC activities and BCC activities in their areas. IEC activities of MGNREGA are now being converged with the IEC activities of other Ministries, departments and organizations those have a good impact on grass root level. The Act prescribed the MGNREG programme which is the largest wage employment programme in the world. It is also the only wage employment programme which is derived from legislation. It is expected that this strategy proves fruitful in creating awareness among rural masses.

Sashi Sekhar Biswal in the paper "Status of Women: Power, Empower, Welfare and Development in India" attempted to explore status of women from ancient period to contemporary period. The study cited various examples to strengthen views and cited present laws related to women welfare, protection and development.

Bikash Majhi in his article 'From Women Empowerment to Entrepreneurship Development Through SHGS: Findings, Observation and Analysis By Focus Group Discussions' presented entrepreneurship among women. It is the need of the time to encourage women to take up independent income generating trades so that significant workforce of our country utilized. The author highlighted threats and weakness, impacts and pattern of need assessment of Groups on Entrepreneurship Development.

Kuntak Ghosh in his paper "Community Development Society—the platform for empowerment of urban poor women: a study in selected municipal areas of West Bengal" examined various programmes for the urban poor. The study tried to describe actual conditions of CDS movement and its impact on women empowerment in urban areas. It was found that only 40% of the 13 CDS have not been able to get any project support. The study identifies gaps and areas of improvement to make the programme effective for the community.

'Deplorable Health Conditions In Rural India: A Thematic Review' by Sudeshna Saha investigates why Healthcare which is the right of every individual failed to reach to 60% of population in India, due to but lack of quality infrastructure, dearth of qualified medical functionaries, and non- access to basic medicines and medical facilities. Considering the picture of grim facts there is a dire need for new practices and procedures to ensure that quality and timely healthcare reaches

the deprived corners of the Indian villages. Though a lot of policies and programs are being run by the Government but the success and effectiveness of these programs is questionable due to gaps in the implementation. In rural India, where the number of Primary health care centers (PHCs) is limited, 8% of the centers do not have doctors or medical staff, 39% do not have lab technicians and 18% PHCs do not even have a pharmacist. India also accounts for the largest number of maternity deaths. A majority of these are in rural areas where maternal health care is poor. Even in private sector, health care is often confined to family planning and antenatal care and do not extend to more critical services like labor and delivery, where proper medical care can save life in the case of complications. Due to non accessibility to public health care and low quality of health care services, a majority of people in India turn to the local private health sector as their first choice of care. The key challenges in the healthcare sector are low quality of care, poor accountability, lack of awareness, and limited access to facilities. Various organizations are coming together for improvements in health care and technology plays a crucial role to facilitate this. Information and communication technology provides hosts of solutions for successful implementation of these changes.

Alluri V.N.Varma, K.A.S.P. Rama Raju and J.S.P.Rao in their paper 'Health Care System in India- Issues and Intricacies' 'examines the problems and prospects of health care services in India. India as a nation has been growing economically at a rapid pace particularly after the advent of New Economic Policy of 1991. However, this rapid economic development has not been accompanied by social development particularly health sector development. Health sector has been accorded very low priority in terms of allocation of resources. Public expenditure on health is less than 1 per cent of GDP in India. It has further witnessed decline during the post economic liberalization period. The meager resource allocation to health sector has adversely affected both access and quality of health services. The unequal access to health services is reported across strata, gender and location (i.e. urban and rural areas). With a view to improve access and quality of health services, government should enhance public spending on health sector.

'Land Reform in Darjeelling Hills and its Consequences' 'by Durga K. Sahu examined the 'land reforms' which involves wide range of issues and perspectives. The land reforms were most significant step by the independent government of India to do away with the colonial legacy of under-development. In the present context Durga tried to understand the impact of land reforms in the state of West Bengal. Two major land reform acts were passed in West Bengal in the 1950s. The first, the Estate Acquisition Act of 1953 (EAA) aimed to eliminate the interests of intermediaries (*zamindars* and *jotedars*) on all land except that which they themselves (using hired agricultural labourers). Of this "self-cultivated" land, called *khasland*, the intermediaries were allowed to retain 25 acres of agricultural land and 20 acres of non-agricultural and homestead land. Also under the EAA, fixed-rent tenants who had been cultivating the remainder of the intermediaries' land

were to be brought into a direct relationship with the state as the intermediaries lost their interest in this land. Abolition of intermediaries under the EAA was generally successful. There are loopholes and poor implementation in the EAA. While intermediaries lost their prior right to collect revenue they were able to retain control over large tracks of land. Two years later the state parliament enacted the second land reform law, the Land Reforms Act of 1955. The parliament intended the LRA to cure the inadequacies of the EAA by limiting landholder's ability to transfer land (to avoid circumventing the landholding ceiling) and by providing greater protections for *bargadars*. In 1972 the Congress government brought significant legislative changes in relation to sharecropping system and also amended the WBLR Act of 1955. In 1975, West Bengal adopted the West Bengal Acquisition of Homestead Land for Agricultural Laborers, Artisans and Fishermen Act. The Act aimed to enhance the position of landless agricultural laborers by severing the power that landowners could exercise over labourers through control of their home plots. Under the Left Front regime, tenancy reform assumed the character of an organized movement by the bargadars (share tenants). The programme of Operation Barga was launched for the swift recording of the names of the Bargadars in order to secure their legal rights against rent-enhancement and eviction by the landowners. This was also accompanied by several other measures such as providing the bargadars the facility of institutional finance.

Mamatha K. in the paper "Maternity matters' in colonial MALABAR: The Politicalization and medicalization of obstetrics" studied that in Malabar, a marked decline in younger population was taken very seriously by the government in the later part of nineteenth century. Government statisticians and health experts tried to occupy the new 'empty' space, gathered information on birth-control methods and usage, on abortion, on infant and maternal mortality rates, on venereal diseases and techniques of new space of confinement. British colonialism had made marked changes in the position of Malabar women from traditional to modern way of life and tried to generate a 'modern' cream of the crop class. In the nineteenth-century Malabar, an institutional and administrative infrastructure necessary for the spread of western medicine was gradually setup by the colonial state. Hospitals and dispensaries, opened in British Malabar formed the nucleus from which western medicine sought to establish superiority over indigenous forms of medicine. The study aims to investigate how far and in what ways the gradual politicalization and medicalization of western medicine in colonial Malabar affected childbirth and women's health care.

K.C.Sahoo, Kalyani Sahoo and Sashi Shekher in their paper "Endangered Gender: Discrimination By Default Decision" presented increasing discrimination and marginalization of girls and women. The study presented dipping Child sex ratio which is one of the concerns to be addressed.

Prabuddha Ray and Sarthak Chowdhury in their study "Field level Constraints as

experienced by the Vegetable Growers regarding the Proper Use of Pesticides in Vegetable Cultivation” highlighted on the proper use of pesticides as a scientific paradigm which is now of global significance. Its basic concern is with designing and implementing pest management practices that meet the goals of farmers, consumers and governments in reducing pest losses while, at the same time, safeguarding against the longer term risk of environmental pollution, hazards to human health, and reduced agricultural sustainability. Several past studies identified different categories of constraints that stand in the proper use of the pesticides in the vegetable cultivation. So, it is quite natural that the analysis of field level constraints is an important factor for the proper use of pesticides. The nature and extent of constraints as perceived by the respondents were thoroughly assessed in this Paper. In this Study, two Summer Vegetables i.e. Pointed Gourd and Brinjal and two Winter Vegetables i.e. Cabbage and Cauliflower were selected on the basis of the total production of the separate vegetables. The present study revealed that among various categories of constraints, knowledge and information constraints had highest rank position, followed by administrative and managerial constraints in the second rank position and technological and communication constraints in the third rank position respectively in the selected Four Vegetables i.e. Pointed Gourd, Brinjal, Cabbage and Cauliflower cultivation. This Paper pointed strategies to overcome the knowledge and information constraints regarding the proper use of the Pesticides in vegetable cultivation, the extension agencies should try to make the vegetable farmers aware about the possible diverse aspects of abuse of the pesticides. The present Research Findings also suggested that to mitigate the administrative and managerial constraints regarding the proper use of the Pesticides in vegetable cultivation, both the Central and State Governments and the Pesticide Law enforcing agencies like Police, Excise, Consumer, and Consumer Affairs Department should and must come down heavily on the unscrupulous sales agents and dealers of the pesticide companies. Better regulation of the pesticide sales and reduction of the number of the pesticide formulations legally sold should be given priority. Regarding the technological and communication constraints, the findings suggested that The manufacturing companies of the pesticides should compose the written materials kept in the containers of the pesticides (A) in a more lucid language ; (B) easy and smooth translation of the materials in the local languages is a must; (C) avoidance of technical terms as much as possible is a necessary; (D) the description must be clear, brief and scientifically proven; (E) the letters should be bold and readable with normal naked eyes; (F) the diagrams and pictures should be comprehensible by the vegetable growers; (G) the pictures of the pests should be clear enough to be used by the vegetable growers in the real field and (H) the colours used in the written material must be attractive to the vegetable farmers. In this regard, the pictogram systems needed to be improved further if they were to have a more complete effect on improving the effectiveness of warnings about the chemical pesticides.

Somnath Mukherjee in his paper 'Prevalence of Substance Abuse among Street Teens of Purulia District, West Bengal' examined substance abuse among street teens of railway platforms, bus stand, and municipality at Purulia district in West Bengal. The substance abuse has become a serious public health concern and threat to young generation. On a relative ground these youths are often at great risk of substance use and related morbidities than the adolescents of general population. In this concern the present study has taken studied on 204 street teens in the age group between thirteen to nineteen years of age in the railway platforms of Purulia Junction, Adra Junction, district's main bus stand, and municipality of Purulia district. The study reveals that these street teens are greatly addicted to tobacco products and alcohol. Presently they also sniff glue like dendrite which is easily available in the market with very low price. More than two-fifth of the youths under observation have found to suffer from chewing and smoking tobacco products. No means of treatment available to these adolescents particularly who are living in the railway platforms. This study also prescribes the requirement of more holistic approach covering preventive, corrective, health care support and provision of trained care provides for prevention and control of products use among these vulnerable street teens of one of the most backward districts of India.

Sarthak Chowdhury and Suparna Bose in the paper 'Farm Women's Access to Farm Information: A study In Bolpur Sub- Division of Birbhum District' made an empirical study which revealed that there exist information gaps among the farm women with respect to kharif paddy cultivation. The study also indicated that 81.92 percent of variation in access to farm information sources was explained by the five variables put together which were education, farm income, transportation and communication items, size of holding and social participation.

"An ecological analysis of eco-tourism in Sikkim: A case study of Kechopalri lake" by Hasibul Rahaman investigated about Tourism which is vibrant source of revenue and generating the employment. As it can undoubtedly be said that a good number of people are also maintained their livelihood through tourism which is observed all over India like-Rajasthan, Himachal Pradesh, Jammu and Kashmir and also seven sisters of north eastern India like and Sikkim is most important of these. The State is naturally gifted having all sorts of destinations and circuits required for the tourists and some of impressive varieties of our tourism products are like, Nature and trekking Tourism, Eco-tourism and wildlife Tourism, Village/Rural and Home stay Tourism and Adventure Tourism. In this paper thrust has been given on the nature of eco tourism from sociological perspective.

'Promoting Grasspea (*Lathyrus sativus* L.) Cultivation in Rice-Fallows of West Bengal' by M.K. Bhowmick, B. Duary and P.K. Biswas examined a deficit state [West Bengal] in the production of pulses, oilseeds and wheat. There is major rice area coverage during *kharif (aman)* season when higher soil moisture generally prevails at the time of harvesting *aman* rice in lowlands. Such lowland rice-fallows

can favourably be exploited for successful cultivation of *rabi* pulses through relay cropping (known as *utera* or *paira*). This was earlier very popular to the resource-poor farmers for growing grasspea (*Lathyrus sativus* L.) amongst *rabi* pulses in the state. But unfortunately they tended to have a shift from relay cropping of grasspea to that of other alternative crops like lentil, linseed, mustard, chickpea, fieldpea, etc. for the high content of neurotoxin (β -ODAP) in grasspea seeds. With the evolvment of low β -ODAP varieties / genotypes, grasspea cultivation can again be promoted for its hardiness and nutritional value, besides having the ability to improve soil health. Use of high-yielding varieties along with improved package of practices including low-cost technologies like seed priming, biofertilizer usage, timely sowing, foliar nutrition etc. can easily enhance its productivity. Even poor farmers can earn more profit by reaping a good crop in considerable areas that remain fallow after the harvest of *aman* rice.

Kaustuva Banerjee in her article 'Rural Health Scenario of the districts of West Bengal' studied rural health status. The health status of a population is usually measured in terms of indicators of mortality and morbidity. A meeting of representatives of 189 countries took place at the Millennium Summit in September 2000, committing their nations to a new global partnership to reduce extreme poverty and setting out a series of time-bound targets, with a deadline of 2015 that have become known as Millennium Development Goal (MDG). There are 8 goals under MDGs, where goal 4 states about reduction of child mortality. According to 2011 Census, 68.1% of the total population of West Bengal resides in the rural areas. The rural areas (88752sqkms) extend over eighteen districts of West Bengal leaving only Kolkata. The rural population density of West Bengal is 743.53population per square kilometers. The paper studied the district wise variation of Infant Mortality Rate and Child Mortality Rate- the 4th Goal of MDG. To achieve the set target, the present health infrastructure is needed to be studied. The health care infrastructure in rural areas has been developed as a three tier system-Sub-Centres (SC), Primary Health Centres (PHC) and Community Health Centres (CHC). The Community Health Centres includes Rural Hospitals (RH) and Block Primary Health Centres (BPHC). District wise the number of SCs, PHCs and CHCs has been seen and how far they are away from the population norm has also been calculated. There is a huge variation in the population served per bed between the rural and urban areas. This fact depicts that number of persons contesting for one bed is much higher in the rural areas than in the urban areas. Thus the chance of getting a bed during emergency is much lower in the rural area which might even be a cause for death. The District wise variation of the availability of beds in the rural and urban area has also been studied. The main objective of the study to understand health facilities and challenges in the rural districts of West Bengal. West Bengal is one of the most fiscally challenged states of all the Indian states. Public Health Expenditure under the state of West Bengal is so low that there has been hunger and starvation leading to death. It is a challenge for the state of West

Bengal in India to meet the Millennium Development Goal by 2015. According to NRHM, West Bengal has a very well developed Panchayati Raj Institution (PRI) network at all levels down to village. It has been decided that all health programmes should be monitored by the community in order to develop ownership amongst the community members. Then and only then can health be truly of the people and for the people.

Tushar Das in his paper 'Technological Change, Land Holding Structure and Crop Diversification of the Farmers: A Study of West Bengal Agriculture' attempted to study the structure of existing farm size from ownership as well as operational viewpoint and the changing cropping pattern in agriculture in the context of the adoption of modern technology. The data used in the study are based on the survey of 200 farmers conducted in the year, 2013 from two blocks of West Bengal - Contai-II of East Midnapur and Jhalda-II of Purulia district which respectively represent agriculturally advanced and traditional blocks. Though the blocks are selected purposively, the farmers are selected by adopting stratified random sampling design. The selected farmers in each block are classified into seven size categories. Besides, studying the existing structure of farm size and measuring the inequality therein by Gini Concentration Ratio(GCR), we have also estimated Cropping Intensity(CI) , Degree of Cash Crop (DCC) cultivation and Herphindal Index (HI) of crop diversification for the study blocks in order to get an idea of changing cropping pattern. The results of the field study have been compared between the blocks and among the size categories as well. It was observed significant domination of marginal and small farmers in the land holding structure of the study blocks. Interestingly, it is found that the average size of land holding of marginal and small farmers are low and highly fragmented leading to intensification of cropping where paddy with its various traditional and improved varieties are the major crops covering. Besides, the failure to facilitate the marginal , small and medium farmers in gaining much control over additional land basically indicated the absence of well developed land lease market. The existing structure of land holding and the cropping pattern may not be suitable to enjoy the scale economics in agricultural operation under modern technology. Institutional breakthrough seems essential for consolidation of land holding and the formation of cooperative production structure.

1

Achilles' heel or Chained Elephant: Technology, Growth and Efficiency in Indian Agriculture since the Inception of Green Revolution

Atanu Sengupta and Chandan Kumar Maity

Agriculture is customarily castigated as the Achilles' heel of Indian economy. It is however rarely recognised that this sector has a lot of potential yet to be tapped just as a chained elephant. This sector has gone through ups and down ever since the country awakened the twilight of independence. There was a relative neglect in the sector as the documents of first two five year plan clearly demonstrate (Subhramaniun Swamy,2010). According to Swamy(2010), the early plan models of Mahalanobis treated this sector almost as given. However, the increasing food crisis in the early sixties led to the adoption of New Agricultural Policy (NEP) – popularly known as Green Revolution. This was just the beginning of a long torturous path. Essentially NEP consists of an intensive application of the modern technology of production. It involved with use of better HYV seeds, application of insecticides, pesticides, chemical fertilizer and other such non organic chemical materials together with the proper doses of irrigation. In reality however all the conditions could not be met in balance. The imbalances are reflected in both the over utilization and under utilisation of several inputs.

Prof. Vaidyanathan (1994)has noted a few stylized facts in the agricultural performance in the past independence era. Firstly, there has been a steady growth

of aggregate output at the national level, though the growth of food grains has been slightly faster than that of the non foodgrains. Secondly in most cases the rise in production was motivated mostly as yield rise. Area expansion is almost non-existent. At a more disaggregate level, the growth performance have been lumpy with wild inter regional variation. There is also year to year fluctuation.

Various events marred its way providing both positive and negative impetus. Among them, the first significant break was the spreading of the Green Revolution belt in the early seventies. This was followed by the onset of soft liberalisation in the early eighties. However, the liberalisation policies since the nineties assume to have the most important effect on this sector (Vaidyanathan, 1994). More recently the global crises during the last year of the first decade of the new century have some influence at the performance of Indian agriculture.

There have been a lot of studies regarding the performance of Indian agriculture. Most of them claimed that the changes of the sector have been mainly in terms of the spread of technology and productivity. However crucial areas such as poverty redressal or structural changes have not been sufficient. Agriculture in this country still depends on the regularity of monsoons.

The present study uses DEA methodology to study inter-zonal variations in farm productivity in India. Our discussions are divided into five sections. Section 2 gives brief reviews of the existing studies on agricultural growth and development in India. Section 3 provides a brief discussion regarding the DEA methodology used for estimating this productivity index. Section 4 presents data sources and methodology of the present study. Section 5 provides empirical results based on zone wise data of India. Section 6 provides some concluding remark.

Review of Existing literature

Agricultural sector is the mainstay of the Indian economy, contributing about 15 per cent of national Gross Domestic Product (GDP) and more importantly, about half of India's population is wholly or significantly dependent on agriculture and allied activities for their livelihood (GOI, 2011). Indian agriculture is marked by the presence of considerable degree of unevenness in the pattern of growth among various regions. Various studies have indicated this and tried to identify the possible factors behind this phenomenon (Vaidyanathan 1980; Rudra 1982; Swant and Achuthan 1995).

Most of the authors argued that the uneven economic differences in agricultural development in India come to arise due to the uneven resource endowment with considerable region-wise variations in rural investment, infrastructural development as well as technological innovations. The existing empirical literature in India mainly focused on studying the secular time trend of the growth rate for different regions in India/for India as a whole (Bhalla and Alagh, 1979; Bhalla and Singh, 1997, Bhalla and Singh, 2001). Various authors also give different quantitative

assessment of the contribution of various factors of growth of crop output at the state or regional level (Singh,1981; Cauvery, 1991; Ranande, 1980). Most of the researchers have used standard curve fitting techniques to study the performance of agriculture (Chattopadhyay *et al.*, 1993; Sen and Sengupta, 1995; Saha and Swaminathan, 1994; Rawal and Swaminathan, 1998;Chattopadhyay and Das, 2000). The use of these techniques was criticized recently by some authors and applied some modern time series techniques developed in the last two decades to study the performance of an Economy (Mukhopadhyay and Sarkar 2001).

There are at least two basic deficiencies of the above studies. Firstly, most of these studies based on the data of a few crops or a single crop. However,India is a vast and diverse country with wide ranging irrigational techniques and cropping pattern. In order to make a comparative study across the length and depth of the country, we require data on the wide basket of crops that may be comprehensive and representable. The data given by Bhalla and Singh (2011) is quite adequate in this regard. They have covered 34 different crops valued at their market price to generate a quantitative measure of output. We used similar concession made with inputs also. Our analysis can make a comparison discussion regarding efficiency and productivity across the districts of India.

Another missing dimension in most of the studies of Indian Agriculture is the relation between productivity efficiency and technology. In the standard analysis productivity growth is often related to an improvement of technology and/or more doses of application of different types of inputs. Efficiency analysis opens a new door. It shows that the firms can use technology sub optimally. Consequently, output increase is possible even without a technological expansion and/or a scaling up of inputs. The issue thus becomes more complex and subtle. In this paper we have tried to unravel these issues in the context of Indian agriculture.

Theoretical Issues

Econometricians routinely used DEA to assess efficiency and productivity of agricultural units. The Malmquist productivity indices are constructed for measuring productivity that incorporates efficiency dimension. In this paper, we first consider the logical basis of Malmquist indices and appropriability of its use in our analysis.

DEA is a linear programming for delineate a non parametric piece-wise linear envelope to a set of observed output and input data. The mathematical programming approach of DEA makes no room for “noise” and so does not “nearly envelop” a data set as the way most econometric models do. It is now possible to define Farrell’s input saving efficiency measure based on frontier technology as¹

¹similarly one can define output-saving measure (see Färe, Lovel and Grasskopf,1994)

$$E_i = \min_{\alpha_i} \{ \alpha_i : F_i(y, \alpha_i, x) \leq 0 \} \quad (1)$$

The linear programming approach to measure efficiency from the envelop is to

$$\max_{E_i, \lambda} E_i \quad (2)$$

Subject to

$$y_i \leq Y \lambda$$

$$X \lambda \leq E_i x_i$$

Where X is a $n \times I$ input matrix with columns x_i , Y is a $m \times I$ output matrix with columns y_i , λ is a $I \times 1$ intensity vector and I is the number of firms in a particular set of observations. Problem (4) has been solved for I time to get each producer's efficiency score which is being evaluated under different sets of observations as envelope².

Regarding frontier technology, the most common restrictions are strong disposability of inputs and outputs and convexity of the set of feasible input-output combinations. One can assume three types of return to scale viz., (i) Constant return to scale (CRS) (ii) non increasing return to scale (NIRS) and (iii) variable returns to scale (VRS). These returns to scale assumptions impose certain restrictions on the intensity vector λ in equation (2). Under the CRS assumption, is unrestricted. NIRS is incorporated within a DEA structure by adding to the constraint where is a vector of ones. Similarly, VRS might be specified by adding to 6.4 the constraint. In this study, we have taken the technologies which follow VRS and CRS and made some comparison between the two.

The above measure of efficiency is restricted to a single set of observations. For a cross country or region-wise comparison, efficiency measure of a production unit in country j should be based on frontier technology of country i (which is called the reference technology). Then the efficiency of a unit in j th country/region given the reference of i th country may be written as

²Following this analysis, we get efficiency score for each of the individual firms. For example, since there are about 47 farms belonging to Eastern zone, we will have about 47 different efficiency scores. We have taken the mean of these scores to be the average efficiency scores or the efficiency score of the average farm belonging to this zone.

$$E_{ij} = \min_{\alpha_{ij}} \left\{ \alpha_{ij} : F_i(y_{ij}, \alpha_{ij}, x_{ij}) \leq 0 \right\} \quad (3)$$

Now to obtain the efficiency scores a Linear Programming Problem has to be solved for each production unit with respect to the reference set.

Performances of different productive units or processes across different regions (or time periods) are usually measured by productivity indices. The standard practice in the literature has been to use the Malmquist productivity index which measures the relative changes in efficiency between two time periods or two regions with an exogenously given technology as a reference point; that is, the technological efficiency of these processes are compared through their shortfall from the efficiency of the reference technology. Neogi, Mukharjee and Sengupta (1997) argued that such indices satisfy certain well-defined properties that one may impose on an arbitrary productivity index.

For $a^i = (x^i, y^i) \in D_i$ and $a^q = (x^q, y^q) \in D_q$ where $D_i \cup D_q \subseteq D$, we postulate the following properties for any arbitrary index of productivity M that measures productivity changes across the observations (x^i, y^i) and (x^q, y^q) :

Homogeneity (HM): $\forall \lambda > 0, M_r(a^i, a^q) = M_r(\lambda a^i, \lambda a^q)$, with F_r also similarly scaled by the factor λ .

Monotonicity (MO): $\forall x \in \mathcal{R}_+^m$ and $y, y' \in \mathcal{F}$ with $y \geq y'$; $M_r((x, y); (x, y')) < 1$ and

$\forall x, x' \in \mathcal{R}_+^m$ such that $x' \geq x$ and $y \in F(x')$; $M_r((x', y); (x, y)) < 1$

(We assume that the production function is monotonically increasing in each argument, that is, higher input can not lower output)

Invertibility (IN): $M_r(a^i, a^q) \times M_r(a^q, a^i) = 1$

Transitivity (T): $M_r(a^i, a^q) \times M_r(a^q, a^s) = M_r(a^i, a^s)$

where $\underline{a}^s = (x^s, y^s) \in D_s$ such that $(D_s \cup D_l \cup D_q) \subseteq D$.

The first property (HM) ensures scale independence of the productivity measure. MO, on the other hand, requires that if more output could be produced while keeping the input level constant or if we can produce the same output with less input, it implies increased productivity. T requires that indirect comparison between the observations \underline{a}^l and \underline{a}^s must be identical to the direct comparison between them. The issue of transitivity has received some special attention (Coelli *et. al.*, 1998). the problem appears to be more important in the context of cross sectional analysis though it is of some interest in the case of time series analysis also.

We may now turn to the concept of Malmquist productivity index using DEA approach¹. Following Malmquist's suggestion, caves *et. al.*, (1982) proposed two measures of productivity with reference to the frontiers F_l and F_q as

$$\text{follows: } M_l^c(\underline{a}^l, \underline{a}^q) = \frac{d(\underline{a}^l; F_l)}{d(\underline{a}^q; F_l)} \quad (4)$$

$$M_q^c(\underline{a}^l, \underline{a}^q) = \frac{d(\underline{a}^l; F_q)}{d(\underline{a}^q; F_q)} \quad (5)$$

Where $d(\dots)$ is any arbitrary distance function. Here the problem with M_c is that it is not unique.

Färe *et. al.* (1994) provided a combined Malmquist measure for the periods l and q . Their measure is:

$$\begin{aligned} M^F(\underline{a}^l, \underline{a}^q) &= \sqrt{M_l^c \times M_q^c} \\ &= \sqrt{\frac{d(\underline{a}^l; F_l)}{d(\underline{a}^q; F_l)} \times \frac{d(\underline{a}^l; F_q)}{d(\underline{a}^q; F_q)}} \quad (6) \end{aligned}$$

³Actually there are different types of Malmquist index. Here we used the input based index. An input based index utilizes the concept input saving efficiency. In a similar fashion, one can use output based index. There are also other such indices.

This measure is not in the ratio form. Hence, it does not satisfy both IN and T. In fact, the measure satisfies IN but not T (Sengupta,2002). This is an obvious disadvantage of this measure.

Now productivity indices may change due to two main reasons (Kalirajan and Shand 1994). Productivity indices may change if there is a change in relative efficiencies of firms belonging to two different sets of observations. Firms belonging to different observation sets might, improve their performances by moving from an interior point to a point on the frontier. As a result, their efficiency parameters are altered which cause a change in the Malquist productivity index M_t . This is the "catching up" effect. Productivity also changes if the frontier functions themselves shift without any change in the relative efficiencies. This is the pure technology shift. The Malmquist index can be decomposed into two parts showing the catching up effect $M^C(l, q)$ and the pure technology shift $M^T(l, q)$. We can rewrite (6) as

$$\begin{aligned} M^F(\underline{\alpha}^l, \underline{\alpha}^q) &= \sqrt{\frac{d(\underline{\alpha}^l; F_l)}{d(\underline{\alpha}^q; F_l)} \times \frac{d(\underline{\alpha}^l; F_q)}{d(\underline{\alpha}^q; F_q)}} \\ &= \frac{d(\underline{\alpha}^l; F_l)}{d(\underline{\alpha}^q; F_q)} \left\{ \sqrt{\frac{d(\underline{\alpha}^l; F_q)}{d(\underline{\alpha}^q; F_l)} \times \frac{d(\underline{\alpha}^q; F_q)}{d(\underline{\alpha}^l; F_l)}} \right\} \quad (7) \end{aligned}$$

According to the decomposition:

$$M^C(l, q) = \frac{d(\underline{\alpha}^q, F_q)}{d(\underline{\alpha}^l, F_l)} \text{ and } M^T(l, q) = \sqrt{\frac{d(\underline{\alpha}^l; F_l)}{d(\underline{\alpha}^q; F_l)} \times \frac{d(\underline{\alpha}^l; F_q)}{d(\underline{\alpha}^q; F_q)}}$$

Therefore equation (7) clearly indicates that

$$M(l, q) = M^C(l, q) \times M^T(l, q)$$

Change in Total Factor Productivity = Efficiency Change × Catching up effect.

Coelli, Rao and Battese(1998) provided a refinement of a scale efficiency measure. The standard scale efficiency measure does not indicate whether the firm is operating in a area of increasing or decreasing returns to scale. This is achieved by running the DEA problems with the non increasing returns to scale (NIRS) imposition. The nature of the scale efficiency for a particular firm can be ascertained

by comparing the NIRS and Variable Returns to Scale(VRS) scores of that firm. If the NIRS and VRS efficiency scores are equal, the firm is running under Decreasing Returns to Scale (DRS). If they are unequal we have Increasing Returns to Scale (IRS)

The implication of IRS and DRS are incomplete contrast to one another. IRS means there is further scope of increasing the scale. The firm has not yet attain its optimum size. Contrarily, DRS means the firm has outgrown in optimum size. A scale reduction is imminent.

4. Methodology

This paper attains to unravel the dynamics of efficiency and productivity in the Indian agriculture over the year 1962-65 to 2005-08. After calculating the district wise efficiency using both CRS and VRS method we then constructed the concentration curves of efficiency across the regions. Also we took resort to Window technique that helps to short out the dynamics of efficiency across regions. Finally we have tried to follow the decomposition of total productivity changes into technical change and efficiency change.

For empirical estimation, we have used district wise data on Area, Output, irrigation, fertiliser consumption, tractors, tube-wells and Agricultural workers. Which were published by G.S Bhalla and Gurmail Singh on their book Economic Liberalisation and Indian Agriculture – A District Level Study (2011). Their study takes triennium averages of input and output of crops. The first triennium of 1962-65 represents the picture prevailing before the introduction of the green revolution technology. The second triennium 1970-73 represents the period that attempts to capture the initial impact of new technology in Punjab, Haryana and western UP. The third triennium, 1980-1983, represents further extension of new technology to rice and its spread from the north western region to the southern region. The triennium of 1990-93 captures the results of maturing of green revolution with preliminary effect of the newly announced economic reforms policy. The last triennium 2005-08 captures the impact of economic reforms and related changes in policy and practice on Indian agriculture.

In terms of the regional coverage the study covers 281 combined districts in 17 major states of India. The states covered are AP, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, MP, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, UP and West Bengal. The newly created states of Chhattisgarh, Jharkhand and Uttarakhand have not been included as separated states since data for these states and their respective districts are not available prior to 1990-93. Again Bhalla and Singh did not covered remaining small states and union territories because of non- availability of data. In terms of crops it covers 35 crops at the district level. To trace out any regional pattern in agricultural performance, the districts were further grouped into the following four broad regions;

North Western Region:Haryana, Jammu and Kashmir, Punjab and Uttra Pradesh

Eastern Region:Assam, Bihar, Orissa and West Bengal.

Central Region:Gujarat, Madhya Pradesh, Rajasthan and Maharashtra,

Southern Region:Karnataka, Andhra Pradesh, Kerala and Tamil Nadu,

Empirical Analytics of Indian Agriculture

Armed with the analytical tool, discuss in the previous section we now consider the empirical implication of this analysis. The analysis is considered at three different stages. In the first stage we estimate the zone wise efficiency. For comparison of such efficiency across zone, we considered the temporal dynamics of efficiency in second stage. For this we first consider the concentration curve and next we dealt with decomposition analysis. The problem of this comparison is that there is no basis of temporal comparison. For each period we have different frontier function. To make it more meaningful we consider in third stage the window analysis developed by Charles *et.al.*,(1985). The mean DEA score under window analysis for different regions are then calculated.

Zone wise efficiency for separate time periods

For our analysis of zone wise efficiency we have used both Constant Returns to Scale (CRS) and Variable Returns to Scale (VRS) assumptions. Table 1 shows the average efficiency scores of each zone for the period under study.

Caressing through data the result encapsulated in table 1 reveals a number of stabilised facts. Among the zones, in general the North – Western zone has the highest efficiency both in CRS and VRS as well as in scale. Almost all the literature on post independence agrarian India consult to the North –Western districts of Punjab (and latter Hariyana) and to some extent western UP are the epicentre of Green Revolution.The dominance of efficiency in this zone means that the utilisation pattern is best. The dominance of this zone has slightly improved over the decades. For example under CRS, in 1962-65 the ratio between this zone and the least efficient zones was 1.16. This increases to 1.65 in 2005-08.

Turning to the central zone, it is found to be the least efficient zone under most of the headings. The Central zone faces a number of hurdles towards expansion of agriculture that might have been responsible for the dismantle picture.This zone contains many districts that are rainfed and characterised by great instability (Bhalla and Shingh, 2011). According to the calculation, Bhalla and Singh (2011) found that a large number of districts in this region have registered a very low growth rate especially in the states of Gujarat, MP and Rajasthan.Most of the areas are either semi-arid or tropical wet or dry. The area of this region is covered by variety of agro-climatic condition. Such as Plateaus and Hills region of Madhya Pradesh and Gujarat are covered by subtropical climate with medium rainfall and low cropping intensity. The coastal region of Gujarat and Maharashtra are

Table 1: Zone –wise efficiency of firms for CRS and VRS technologies

Zone	1962-65					
	Crste	Vrste	Scale	% of district with IRS	% of district with DRS	Maximum peer count district
Northwestern	0.63819	0.73002	0.87235	33.77	44.12	Hissar-Haryana
Central	0.54684	0.65045	0.84118	37.66	51.95	
Southern	0.56731	0.66413	0.85708	20.78	55.56	
Eastern	0.58354	0.68501	0.85252	3.90	76.47	
			1970-73			
Northwestern	0.72972	0.88823	0.81816	1.30	82.35	Ludhiana- Punjab
Central	0.42741	0.57707	0.75713	79.22	15.58	
Southern	0.46644	0.57511	0.82111	36.36	40.74	
Eastern	0.58717	0.63873	0.92941	20.78	26.47	
			1980-83			
Northwestern	0.66440	0.77701	0.84672	44.16	53.25	Firojpur-Punjab
Central	0.42239	0.51330	0.82684	9.26	48.15	
Southern	0.51941	0.64133	0.80785	29.41	64.71	
Eastern	0.52235	0.63679	0.82394	63.24	29.41	
			1990-93			
Northwestern	0.61438	0.90829	0.67253	27.94	29.41	Hissar-Haryana
Central	0.29222	0.44373	0.69553	23.21	48.21	
Southern	0.48963	0.62269	0.79533	70.37	20.37	
Eastern	0.47512	0.61068	0.78512	59.57	17.02	
			2005-08			
Northwestern	0.79450	0.93000	0.85349	36.76	32.35	Bijnor-Up
Central	0.48142	0.65749	0.75195	55.36	24.11	
Southern	0.65378	0.74483	0.88207	24.07	17.02	
Eastern	0.61315	0.73121	0.85032	42.32	43.48	

CRSTE = Technical efficiency from CRS DEA, VRSTE=Technical Efficiency from VRS DEA, SCALE=Scale Efficiency

characterised by low rainfall. Dry region of Rajasthan with Hot Sandy Desert and erotic rainfall also belongs to this region. However improvement of efficiency level for the districts in this region is accompanied by expansion of new technology as well as increasing investment in infrastructure. According to Bhalla and Singh (2011) recent experience of Gujarat in achieving rapid growth through the adoption of BT. Cotton Technology on a large scale corroborates the scope of growth through technological development in this region.

The eastern zone shows a mix picture. During the first two decades this zone comes second only to the North –Western zone in terms of efficiency both in terms of CRS and VRS. The picture however begins to change from 1980-83 when the southern zone gives a stiff competition to this zone. Most of the districts of this zone are covered by rich alluvial soil of the Indo-Gangetic and Brahmaputra river valley. This is well suited for agricultural activities. However there is a threat of flood and drought ever hanging over this zone. The zone shows a significant rise of the percentage of district with IRS since 1962-65. The presence of scattered small plots is a major constraint for further expansion of productivity and efficiency in the region. It needs to inject modern technology for improving the efficiency of lagging districts in this region. For the realisation of modern technology it also requires huge investment in flood control and increased investment in surface and underground irrigation.

The southern zone also shows a mix picture. During the last two decades this zone performed better compared to eastern zone and come to the second position in terms of efficiency under CRS as well as VRS. This contain large semi arid tracks of Karnataka, western Tamilnadu and western Andhra Pradesh. The nature and magnitude of results from zone wise efficiency for this region confirmed that it also a highly productive region. The use of agricultural inputs like tractors, tube wells, and irrigation increases the efficiency scores during the last two decades.

Another interesting thing noted in Table-1 is that the maximum of peer district are from Punjab and Haryana. Hisser district from Haryana and Ludhiana and Ferozpur from Punjab appears as maximum peer count districts during first four decades. However Bijanor district from UP which also in North-Western region appears as maximum peer count district during 2005-2008. This again proves an efficient resource management of modern input in that region. According to Bhalla and Singh's (2011) argument higher input use efficiency in this region is primarily factors such as higher technical efficiency of farmers, more suitable agro-climatic conditions, higher irrigation intensity, low market risk due to effective implementation of the minimum support price for paddy, wheat, cotton and sugarcane crops.

Temporal Dynamics of Efficiency

Concentration Curve Analysis

In the previous subsection we have attained no temporal comparison. To this we turn now. For the purpose we construct concentration curve for various zones. A concentration curve is a plot of cumulative output share against the cumulative number of firms with firms ranked from the largest to smallest. In efficiency analysis the ranking of firms is made according to their level of efficiency (Chakraborty, 1995). The concentration curve $CN(z, l)$ of any output vector $z \in X^n$ is obtained by plotting $\sum_{q=0}^l z_q^0 / n\rho(z)$ against l , where $l = 0, 1, \dots, n$. Chakraborty (1995) established following properties of a Concentration Curve.

- a) Concentration curve is a closed graph. It follows from the assumption $CN(z, 0) = 0$
- b) The curve is concave also in nature.
- c) Given two output vectors $z, y \in D^n$, we say that the concentration curve of z dominates that of y , if the former lies nowhere below and at the same places (at least above the latter).

The first two properties can be demonstrated using arguments similar to that employed for providing that a Lorenz curve is increasing and convex.⁴

In our analysis we construct concentration curve for each zone covering the period under study under CRS (Diagram 1 to 5) and VRS (diagram 6 to 10) technology. In the diagrams of concentration curve we measure the efficiency score on one axis and the cumulative share of output in another axis. Each diagram represents the proportion of the share of production explained by firm of different efficiency level at different period of time.

The concentration curve analysis corroborates the results derived before hand. North-western zone is again dominates over all the zones. By Chakraborty's (1995) arguments it implies a greater concentration of efficient districts in this zone. These results are true for both CRS and VRS technology and all the time periods under consideration. The dominance of this region is then cleared. Generally the central zone remains the most dominated zone for all this time points and technology. This zone is really a bad shape in respect of production efficiency and technology used. The deplorable condition of this zone is a serious concern for the policy makers.

⁴See Chakravarty S.R.,1995.

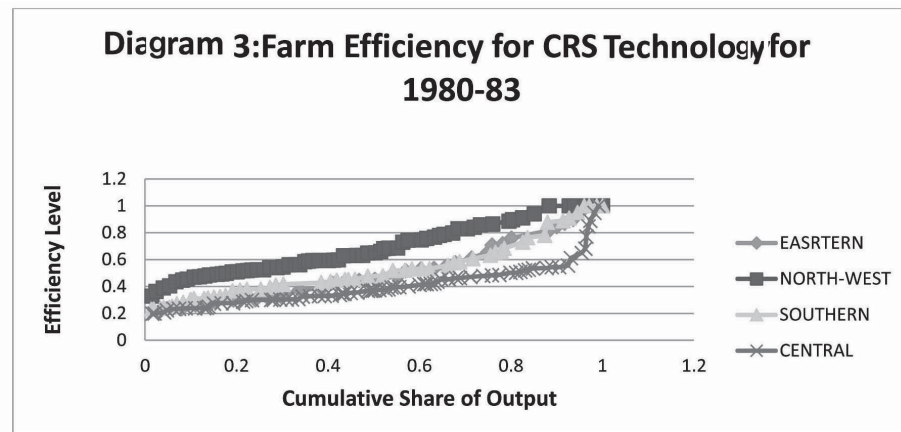
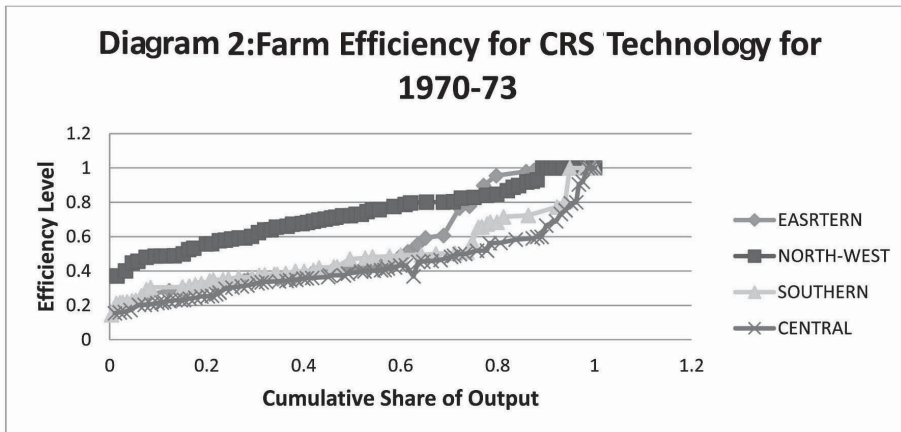
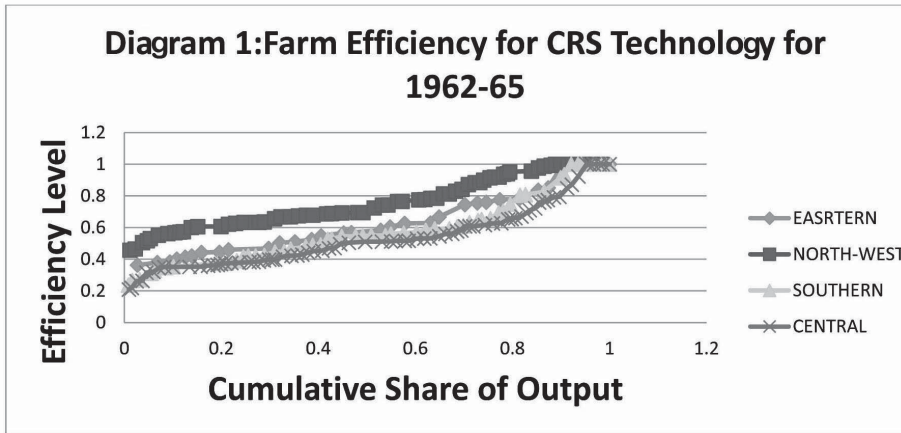


Diagram 4: Farm Efficiency for CRS Technology for 1990-93

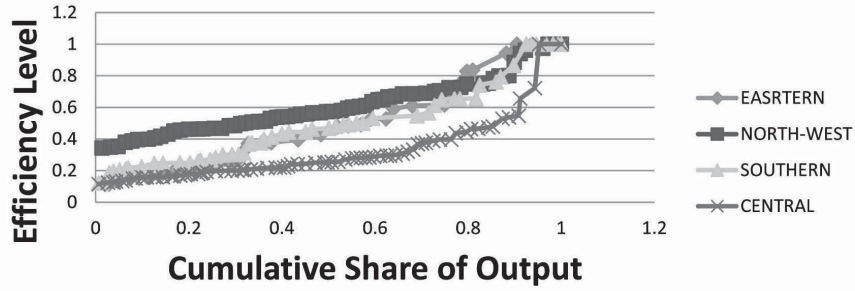


Diagram 5: Farm Efficiency for CRS Technology for 2005-08

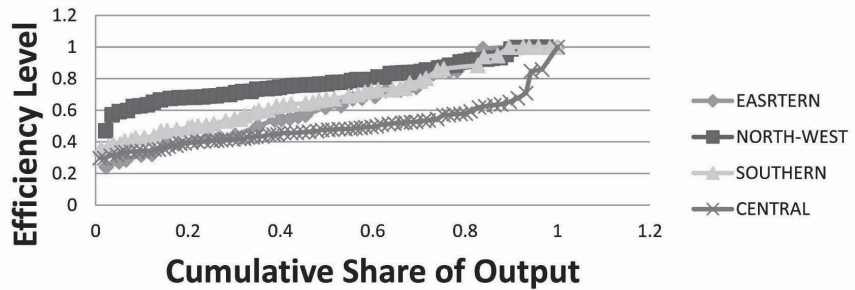
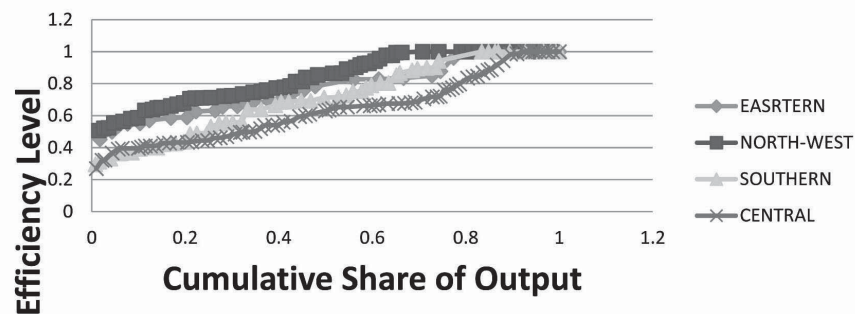
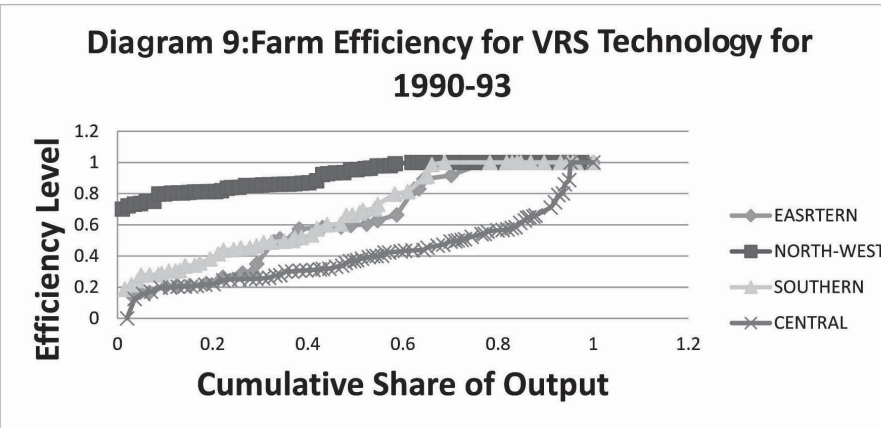
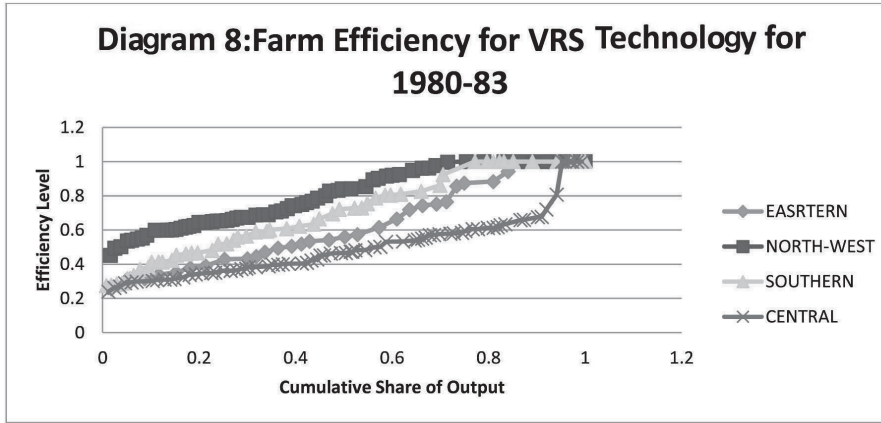
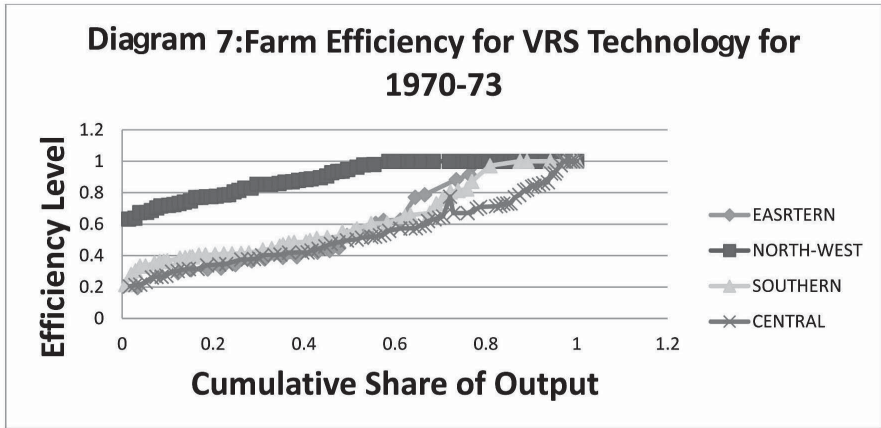
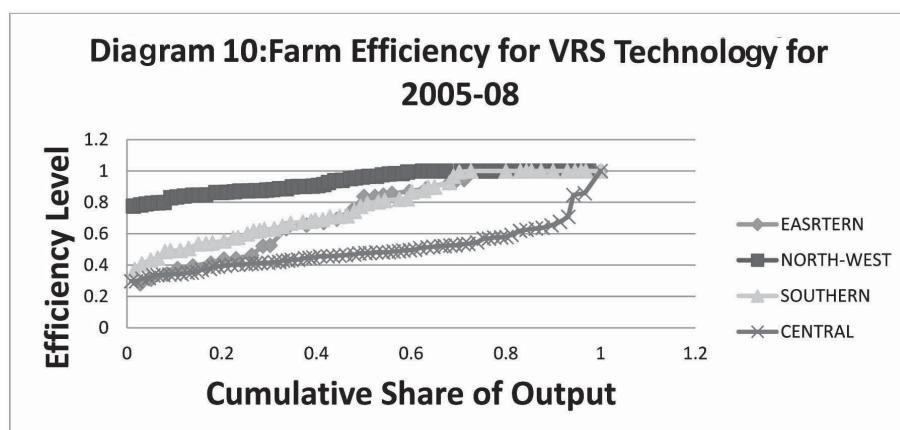


Diagram 6: Farm Efficiency for VRS Technology for 1962-65







Window Analysis

Another way of understanding the cross sectional variation over time is the window analysis. We consider the analysis of DEA efficiency for different cross sectional units over several time periods. Suppose we have data set of 'm' units, observed from n distinct time points separately. Alternatively, we can generate a Grand Frontier consisting of "m" observations. In both the procedures, panel data characteristic of the data is neglected. Charnes, Clark, Cooper, and Golany (1985) applied DEA in the case of panel data. According to them, if the length of the panel is large, it is possible to break it up into a series of shorter overlapping panels. Such shorter panels may be regarded as *windows*, and the width of the windows should be equal and to be arbitrarily chosen. The DEA can be carried out across these windows. Efficiency scores are obtained relative to these windows. Window analysis is the adoption of panel data, characteristic within the non parametric technique of DEA. It essentially uses a moving average analogue where a unit in each different period is treated as if it were a different unit.

Another formulation is provided by Burgess and Wilson (1993) (B-W Method). They have constructed a recursive technique of DEA frontier. For the above case, in their method we have m different frontier. The first frontier consists of period-I (i.e, 1963-65). The second frontier consists of period-II (i.e. 1970-73). The third frontier consists of Period -III (i.e.1980-83) and so on. Thus we have the efficiency values for the first period firms over m points, second period firms for m-1 point. Third period firms over m-2 points and so on. Efficiency of period -I is calculated against 1st frontier, period-II is calculated with respect to second frontier. The process continues up to m periods.

In this paper we have considered both Window DEA (WDEA) and B-W Method to evaluate efficiency. Our search is to say whether they give different conclusion.

Results in Table -2 depict zone wise average efficiency scores as per window

Table 2: Mean DEA Efficiency Scores from three years window analysis

	CRS	North Western			VRS		
	Win-1	Win-2	Win-3	Win-1	Win-2	Win-3	
1962-65	0.7288			0.7691			
1970-73	0.8846	0.8898		0.9076	0.9170		
1983-85	0.8446	0.8536	0.8696	0.8940	0.8997	0.9170	
1993-95		0.8059	0.7945		0.8654	0.8897	
2005-08			0.7854			0.8576	
			CENTRAL				
1962-65	0.6134			0.7199			
1970-73	0.6266	0.6283		0.7253	0.7151		
1983-85	0.6429	0.6455	0.6460	0.7064	0.7089	0.7097	
1993-95		0.5089	0.5091		0.6598	0.6487	
2005-08			0.5396			0.7042	
			SOUTHERN				
1962-65	0.8446			0.8973			
1970-73	0.7636	0.8056		0.8138	0.8424		
1983-85	0.8503	0.8509	0.8517	0.8887	0.8888	0.8886	
1993-95		0.8149	0.7641		0.8861	0.8714	
2005-08			0.8005			0.9183	
			EASTERN				
1962-65	0.8113			0.8605			
1970-73	0.7588	0.7716		0.7993	0.8066		
1983-85	0.9085	0.9079	0.9078	0.9245	0.9240	0.9240	
1993-95		0.8390	0.8265		0.8666	0.8566	
2005-08			0.8628			0.8757	

Table 3: Average DEA Efficiency Score according to B-W Method

Zone	P-I relative to P-I	P-II Relative to P-I,II	P-III Relative to P-I,II,III	P-IV relative to P-I,II,III,IV	P-VRelative to P-I,II,III,IV,V
EASTERN	0.8138	0.8373	0.9085	0.8356	0.8043
NORT WEST	0.8422	0.8558	0.8446	0.8141	0.8110
SOUTHERN	0.8275	0.8380	0.8503	0.8321	0.8276
CENTRAL	0.7453	0.7351	0.6429	0.7502	0.7461
			VRS		
EASTERN	0.8535	0.8634	0.9245	0.8797	0.8564
NORT WEST	0.8669	0.8829	0.8940	0.8354	0.8311
SOUTHERN	0.8576	0.8541	0.8887	0.8621	0.8531
CENTRAL	0.7653	0.7963	0.7064	0.7757	0.7531

analysis. For Northern region the average efficiency scores increases initially but decreases latter on. For central region it rises during first three decades but fall there after. Both for Southern and Eastern region the picture is more or less same. The average efficiency for these two regions shows a mix picture with intermittent rise in the 80's and 2005-08.

Now we come to the B-W Analysis. The results are given in Table 3.

This analysis tallies well with the WDEA analysis picture. The dynamic movement of efficiency in the North – Western Zone shows initial improvement then decline for both under CRS and VRS. Similar picture is shown for the Central region. For Southern and Eastern region it increases and decreases across the time point. However there is one difference. In the WDEA, the east and south region shows improvement in the post reforms period. For B-W method there is a decline.

Decomposition Analysis

Turning to the Malmquist total factor productivity index table 3 includes average value of measures of change in total factor productivity index and its components (efficiency change and Technical change). The agricultural sector can increase the level of total factor productivity either by improving technical efficiency and /or by improving technological level (shift in the production frontier). The components measures of total factor productivity, efficiency change and Technical change shows that efficiency has been the main contributor to the success of total factor productivity.

Table 4: Zone Wise Average Total Factor Productivity Change

ZONE	Technical Efficiency Change	Technological change	TFP Change
North-Western	0.981961	0.898597	0.884584
Central	1.033278	0.977778	1.010574
Southern	0.980412	0.869235	0.850794
Eastern	1.013265	1.000838	1.016456

The decomposition analysis as given in Table 4 gives a picture of a dissected India. For two zones North-Western and Southern the change in Total Factor Productivity Growth (TFPG) and its components are below unity in average. About 37.78 % of the districts in these zones share this feature. For Central and Eastern zone, most of the districts have the TFP change parameter is above unity. However only for Eastern zone, both the parameters of TFP change are above unity. For Central Zone, only the Technical Efficiency Change is above unity. Thus strictly speaking, only eastern zone indicates positive changes in both the aspects of TFP changes.

This divergence get support from the analysis of Bhalla and Singh (2011) themselves. According to Bhalla and Singh (2011) North Western and Southern

zone have high base level both in technical and productivity opportunity. For example southern zone is well known for the tank based irrigation system from the ancient time. The North-Western zone also reveals impetus to grow at a very early point. Consequently both the zones have registered impressive performer since the early sixties. Hence their rate of growth is comparatively lower.

Now we come to the eastern zone. This zone is a comparatively late comer to the elite class of agrarian growth districts. This is especially true for West Bengal where development started from 1980-83 onwards. This is reflected in their high TFP changes. Such a change can come through two ways- a movement to the frontier and a shift of the frontier. The former denotes change in efficiency while the latter denotes the spurt of technical change. In the eastern zone we find both efficiency changes as well as improvement in the existing mode of production. This is a very positive indicator.

Now we come to the Central zone. For this zone the TFP change is dominated by the efficiency change and not the technical change. The history of Indian agriculture in the post independent era had yet failed to find significant break through for semi arid tracts of central India. In fact, except for Eastern zone there is indication of technical changes in no other zone in India. This indicates the call of second green revolution by Government of India. Without a major technical shift Indian agriculture will remain a Chained Elephant. It will continue to be a Achilles Heel in the Indian growth experience.

Conclusion

In this article, Data Envelopment Analysis is applied to measure the structural efficiency of firms for four agro climatic zones in India. There are wide variations in cultivating practice and in the yield rate of production of these zones. The results suggest that North Western region is the dominating zone in respect of farm efficiency under CRS as well as VRS technology. The average efficiency score for this region is greater than all other region under CRS and VRS technology. It is also observed that the average efficiency score is higher under VRS technology than CRS technology. On the contrary, the Central region is less efficient region than all other regions. The position of eastern region and southern region are also good during the last fifty years of Indian agricultural.

The relative performance of the agricultural sector was gauged using DEA. Mathematical programming methods were used to measure Malmquist indexes of total factor productivity. It was found that, during that period, the total factor productivity experienced a positive evolution in the sampled countries. A decomposition of these measures suggests that, most of the good performance of factors productivity is attributable to technical efficiency change rather than to technical change. This suggests that, in the achievement of high levels of agricultural production, the principal difficulty appears in raising technology, that is, a shift in the production frontier.

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2

Social Work Practice with Street Children- An Insight

Debotosh Sinha and Swati Chakraborty

Prelude

The practice of social work has gone through major changes because of various factors like demographic and political changes, social and policy level transformations, and the then, again, the recent economic crisis in the world. Hence, in order to be “up to speed” as a professional, various social work theories and approaches have been evolved to deal with seasonal cycles of social as well as individual problems. This article will deal with the evolution of social work, its definitions, broad objectives and various approaches of social work practice. The author would also like to see at what level various social work theories are applicable to understand the different contributory factors of child abuse and its effect on the children living on the streets with their families.

Evolution of Social Work approaches and its practices

The concept of social work practice originated out of the early efforts of churches and philanthropic groups to relieve the effects of poverty through bringing the comforts of religion to the poor, orphans, sick and the aged. Orphanages and homes for the elderly were typical results of these activities. The word “charity” best describes the early activities, which were aimed at the piecemeal criterion in determining aid to families was worthiness, while the emphasis in later social work was on restoring individuals to normal life both for their own sake and for the sake of the country.

The first attempts to solve the problem of poverty in a modern scientific way was made by P.G.F. Le Play, who in the 1850s made a detailed study of the budgets of hundreds of French workers' families. Forty years later Charles Booth investigated wages and prices, working conditions, housing and health, standard of living, and leisure activities among the poor of London and revealed to extreme poverty of a third of the population. Booth's social survey became a method of determining the extent of social adjustment, and through surveys in other cities in Europe and the United States, a vast number of facts were accumulated, and methods were developed that provided the basis for modern social research and orientation towards the social work profession.

In summary the main features of social work as pointed out by (Desai, A., 1987) are;

- It is a helping activity.
- It is a social activity established for the benefit of community and not for profit motives.
- It is a liaison activity through which the disadvantaged individuals or groups may tap community resources.

So far as India is concerned Social Work has not yet acquired a professional status and is considered an activity to help economically dependent persons. Social work is a dynamic activity undertaken by public or private efforts in the implementation of social policy, with a view to raise the standard of living and to bring about social, economic, political and cultural well-being of the individual, family and the group within a society irrespective of stages of social development (G.R. Madan, 1994). B.G. Kher (2007) remarked that the aim of social work, as generally understood, is to remove social injustice, to relieve distress, to prevent suffering and to assist the weaker members of society to rehabilitate themselves and their families and in short, fight the five giant evils of ;

- physical want
- disease
- ignorance
- squalor
- idleness

Objectives and philosophy of social work

In the words of Parsloe (2004) the main objectives of social work are:

- to help people to make such use of their own capacities and of environmental will result in personal satisfactions and social adjustment, and

- to help in the modification of the environment so that people will have fewer personal and social problems.

Generally social work is concerned with social relationships, with individuals and groups as interrelated with social milieu, more particularly with the external and internal stresses which may arise in their interrelationship, and which result in social disfunctioning. All are concerned with removal of blocks to growth, release of potentialities, full use of inner resources, development of capacities to manage one's own (the individual, group or community) life, ability to function as an integrated unit.

Friedlander (1967) further describes that the aim of social work is not only to help individual, the family and the group of persons in their social relationship, but it is also concerns with the improvement of general social conditions by raising health and economic condition, advocating better housing and working conditions, and constructive social regulations.

Brown (1982) describes the definition of social work in a much broader sense and not strictly in its professional context. He describes that social work is concerned with psychological problems of client, arise out of cause or effect of poverty, illness, and crime, or appear independently. It seeks to enrich the standard of living of economically less favoured individuals through providing the essential amenities of life including better housing, enlarged and improved health, education and leisure time opportunities. He further describes that the concerns for welfare of the individuals or the groups leads to various levels of participation, leadership which ultimately leads to attain social reforms. These reforms may facilitate in achieving enlightened treatment of criminal, improvements in wages or working conditions, protective labour legislations for women, children, and extension of economic and political rights of minority groups. It also helps in designing a federally supported and supervised system of public assistants.

In spite of the above discussion in relation to aims and objectives of social work, nevertheless, it needs to be mentioned here that the aim of social work are sometime ill defined or at least difficult to articulate. If the task is general is one of interaction with people needing material resources or requiring psychological help, because of emotional and relationship problems, it needs to be seen in relation to the social context of practice. Social work practice is aimed at changing the mismatch between individuals and social institutions. Unfortunately one of the least developed areas in social work is the analysis of this mismatch. However, social work practice often involves attempts to change relationships between individuals and social institutions (Srivastav, 2003).

The ethical and philosophical assumptions on social work as summed by (Peter, R., 1981) are as follows:

1. To recognize the worth of the individual human being, regardless of the

circumstances, status, race, religion, politics, or behaviour, and to foster the growth of human dignity and self-respect.

2. To respect individual, group and community differences, at the same time as seeking to harmonize them with the common welfare.
3. To encourage self-help as a means to growth in self confidence and in ability to assume responsibility.
4. To promote opportunities for satisfying living in particular circumstances of individuals, groups or communities.
5. To accept a professional responsibility to work for the implementation of social policies consistent with social work knowledge and philosophy about human desires and needs , with the aim of affording to every individual , the opportunity to make the best use of his environment and his own potentialities.
6. To safeguard the confidential nature of professional relationship.
7. To use this relationship to help client (individuals, groups and communities) to become more free and self-reliant rather than to try manipulate them to fit a preconceived pattern.
8. To make responsible use of the professional relationship for the purpose of promoting as objectively as possible the greatest good for the individual and the best interest of the society (Madan, 1994).

Changing concept of social work

It has been a very important to recognize that social work has to have a multifunctional relationship with the global political situations, social policies, globalization, economic recessions and the demographic changes. A Hungarian practitioner before World War II, Rezso Hilscher, the leading professional figure of the "Hungarian settlement Movement" wrote in his well known paraphrase: "Social work personalizes the impersonal social policy:" through the work of social workers. This conceptual and practical cooperation between the two professions (social work and social policy) made it possible that the golden age of social work was in the heights of the welfare state period of social policy (1950-1980) internationally. Due to the special political structural changes in many countries, social work is slowly reinventing its scope of work with the social and political transition. These changes mainly mean withdrawal of the state from either social work provisions, or/and financing social service provisions. There has been a major change in the trend of social work because of an additional factor like political changes in the international scenario and the then, again, the recent economic crisis and demographic changes in the world gave a further impetus to the problem.

Therefore, social work is understood as referring to a complex heterogeneous field. Yet the ramifications of these aspects of social work for theory building have been interpreted in number of ways and thus this field is constantly developing. Hence, in order to be “up to speed”, as a professional, one has to keep up with ‘fashion’ and the seasonal cycle of concepts determining current discourse. Broadly, the theories of social work can be categorized under three broad classical approaches.

(a) One school of thought focuses on individuals and believes that the main causes of the individual’s problems are within the individuals. Therefore social work programmes are oriented towards individuals in order to solve their problems; (b) another school of thought believes in radical / critical approach. It believes that the structure and culture of the society have influence upon the individual and vice-versa. Thus, programmes should be oriented towards changing the structure and empowering the people to solve their problems; (c) the third approach is focused on the integration of both the approaches (integrated approach).

Approaches focusing on individuals

These approaches focus on individuals, interaction between and among individuals, and relationship between individuals and society. The person-in-environment perspective has been a central theme of this approach and it is conglomeration of several theories such as psychodynamic, analytic, behavioural and cognitive. This broad conception of the profession has led to an equally broad knowledge base. Meyer (1982) has noted that what the social worker is supposed to do should dictate the boundaries of the profession’s knowledge base. She points out, however, that social work activities can be defined so broadly that “ there are hardly any boundaries to knowledge that social workers need to get through the working day”(Meyer, 1982). Goldstein also (1980) defined the lack of precise knowledge boundaries as a concern when she stated “it becomes necessary for each practitioner to be expert in understanding individuals, their environment, the society, and the transactions among people and environments”.

The concern of clinical social work is “the assessment of interaction between the individual’s biological, psychological and social experience which provides a guide for clinical intervention” (Cohen, 1980).

Developmental theory offers a means of understanding the client’s behaviour within the broader context of the life span and within the complex of biopsychosocial events. The aim of developmental theory is to account for both stability and change that is characteristics of human behaviour across the life cycle. Before 1940, most social scientists believed that development did not occur after people became physically mature. Today, it is generally accepted that development, particularly in the cognitive and affective spheres, occurs across the life cycle (Kastenbaum, 1979; Newman and Newman, 1987).

Life-span development draws from a collection of theories, and because of this complexity of the subject matter, involves many disciplines. It has been observed that the life-span development theory addressed all aspects of human development within an environmental context. This approach to human development considers the individual's genetic endowment, physiology, psychology, family, home, community, culture, education, religion, ethnicity/race, gender, sexual orientation, and economic status (Roger, 1982). Developmental theory falls within the scope of the person-in-the-situation construct and constitutes a critical body of information for social workers. It contributes to social work practice by providing the broad parameters for understanding the growth, development, and behavioural changes of clients, from conception to death. It offers a biopsychosocial approach to assessment, which allows a social worker to view the client's functioning both longitudinally over time and cross sectionally in the light of stage-specific factors.

Radical approach

Radical/ Critical social work is the application of social work from a critical theory perspective. Radical social work seeks to address social injustices, as opposed to focusing on individual people's problems. Critical theories explain social problems as arising from various forms of oppression. This theory is like all social work theories, in that it is made up of a polyglot of theories from across the humanities and sciences, borrowing from many different schools of thought, including marxism, social democracy and anarchism.

Social workers have an ethical commitment to working to overcome inequality and oppression. For radical social workers this implies working towards the transformation of capitalist society towards building social arrangements which are more compatible with these commitments. There are three schools of radical thought corresponding to three versions of socialist analysis; social democracy, revolutionary Marxism and evolutionary Marxism. However they work in institutional contexts which paradoxically implicate them in maintaining capitalist functions. Social work theories have three possible aims.. These are:

- **The progressive position.** Social work is seen as a catalyst for social change. Social workers work with the oppressed and marginalised and so are in a good position to harness class resistance to capitalism and transform society into a more social democracy or socialist state.
- **The reproductive position.** Social work is seen as an indispensable tool of the capitalist social order. Its function is to produce and maintain the capitalist state machine and to ensure working class subordination. Social workers are the 'soft cops' of the capitalist state machine.
- **The contradictory position.** Social work can undermine capitalism and class society. While it acts as an instrument of class control it can simultaneously create the conditions for the overthrow of capitalist social relations.

The radical social work approach is a distinct and consciously articulated approach within social work theory. The theories came to prominence from 1960s. It criticizes the other approaches which are individual centric. The believers of radical approach criticize the selective psychological explanations of social problems, as it makes the problem a private matter instead of transforming them into public issue.

Several factors have contributed to the emergence of more radical forms of social work practice. The re-emergence of economic crisis just after Second World War led to the emergence of growing global movement. Along with that, the introduction of neo-liberal onslaught, structural adjustment programmes imposed by International Monetary Fund, privatization of public sectors, introduction of new legislations and findings of several research studies attributed to the emergence of radical approach in social work.

This approach re-orientes the social work towards the true origin of the problem. At an ideological level, the growing popularity of sociology as an academic discipline exposed the social workers to new radical ideas about the family, mental illness, impact of structural factors on individual behaviour. Thus, the socialist critiques most clearly attributed in radical social work theories. Since its beginning, social workers have mirrored wider ideological conflicts and debates regarding the roots of social problems and how to address them best. The radical theories and methods focused on power relationship and social change by and for individuals, groups and community and within social agencies are applied to these approaches. The structural theories expanded this approach beyond mere economic factors to include all overlapping and mutually reinforcing dimensions of injustice. The theory claims that capitalist macro societal structure shapes the cultural codes, social position, life, action, space and relationship of individuals both within and between families, groups, organizations and society. To an enormous degree, they also determine the life chances of members of social categories (have and have-nots), gender, race, disability, sexual orientation, religious beliefs etc (Mike, 1975).

The critical consciousness rising, democratic community work or community organizations were the oldest theoretical conceived strategy practiced in radical social work. It involves the process of organizing community to identify needs, built platforms to meet goals through mobilizing the required material, symbolic and personal resources. by undertaking this process, social work transforms the private troubles into public issues in a democratic process. Empowerment, organizational advocacy are also the core concepts of radical social work that enables individuals, groups or communities to use sources of power to achieve satisfaction of human needs that they are entitled too.

Through this approach, social work focus on changing the structure of social agencies by means of introducing issues pertaining to the concepts of human rights, social justice and anti-discrimination in the international code of professional ethics, policies, methods, diagnostic or assessment criteria and documentation of social welfare organizations (Palgrave, 2002).

Major themes that radical social work seeks to address are:

- Poverty, unemployment and social exclusion.
- Racism and other forms of discrimination.
- Inadequacies in housing, health care and education.
- Crime and social unrest (although the critical approach would be more focused on the structural causes than the behaviour itself).
- Abuse and exploitation.

In addition to the above themes, the **followings** are also very important to deliberate on:

1. social work that is informed by a class analysis.
2. support social work that strives to reduce poverty and inequality of income and wealth.
3. assert that social work aims to improve people's lives not only by helping individuals and families but also by striving for structural change.
4. challenge the culture of managerialism and develop radical social work theories which give social workers confidence in tackling social problems.
5. promote radical ideas by providing a forum for sharing experiences, discussing current events, clarifying views and developing awareness of social issues.
6. support radicals in front-line social work who struggle to maintain a radical perspective

While critical social work has a strong commitment to structural change, it does not discount the role of **free will**. Critical analysis in social work looks at competing forces such as the capitalist economic system, the welfare state or human free will as all affecting individual choices. Therefore, according to critical theory the aim of social work is to emancipate people from oppression and allow individual liberty to prevail.

A dialectical approach to social work avoids the simplistic linear cause-effect notion of historical materialism and the naïve romanticism associated with the notion of totally free human will. Dialectical analysis helps to illuminate the complex interplay between people and the world around them and to indicate the role of social work within society .

Integrated approach

Jne Adams is one of the pioneers of another classical theory that integrates both the approaches mentioned above. He developed a normative version of integral

approach that promote freedom, participation as well as social justice and care in all social system including social, economic, educational, political sphere and within social welfare system. Thus, social work intervention must therefore be directed towards fighting together with citizen, political parties, and other organizations for enactment of new laws, regulations to ensure social security especially for the protection of children, women in abusive, exploitative condition. Another aspect of the approach involves changing social rules or ideologies that allows exploitations at work place, family and within legislations.

The combined approach to individual and social change governs the approach of new era. Therefore, the intermediate positions but the consensual international definition of Social Work is as follows.

The social work profession promotes social change, problem solving in human relationships, and the empowerment and liberation of people to enhance well being. Utilizing theories of human behaviour and social systems, social work intervenes at the point where people interact with the environment. Principles of human rights and social justice are fundamental to social work.

Street Children

The most vulnerable group of children in physical, psychological and organizational terms is surely the 'Street Children' who live, work, sleep and sometimes dies uncared and unprotected. Most of these children are destitute or abandoned, who spend their time mostly on the streets and also sleep on the streets and in public places.

Majority of the children on the streets are working children who are thoroughly exploited and oppressed. These children are not even counted or considered part of any statistics. Therefore, they are not of any concern to any legislation or subjects of any policies or there are any programmes or benefits for them.

Life of street children violates all the survival, protection and development rights of their child. Environmental degradation, migration and displacement of families have led to exodus to cities and expansion of slums and pavement dwellings. Child care and development are seriously hampered in these families. Women in the single-parent families and female headed households are worst affected as they have the main responsibility for the children but they are neither trained nor experienced. The children most often spend their time on the street. Large number of street children suffers destitution, neglect, abuse and exploitation. They are subjected to harassment and eviction by the municipal authorities because of their unauthorized occupation of city roads and vacant places.

There are three categories of street children:

- Working children who have family contact on more or less regular contacts on regular basis. They return home at the end of the day.

- There are children who see and look at street as their home and seek a sense of belonging among companions. Family ties exist but are remote and home visits are rare.
- Abandoned children are those who have no family at all. They are on their own material and psychological survival.

They are alienated socially plus the psychological depression and deprivation acts as permanent blockade to their personality development. While it is obvious that food, clothing, shelter, education and recreation are almost nil.

The most noticeable psychological trait of the street child is a fierce assertion of his independence. Having run away from all that was secure, the urge is irresistible to keep going. Their perception of the police is one of the fear and distrust and this further exposes them to exploitation. Group survival is the norm and in-group feelings are as positive as the out-group is negative. Hence except for the group of 'gang' member, others-outsiders-on the street are feared and distrusted.

Every child is born blissful and radiates love for everyone who becomes part of his life. India has 400 million children, which is more than any other country in the world. But, unfortunately, our society is unable to reciprocate uniform level of care and protection to each young citizen. As one of the signatory of UN Convention on the Rights of the Child, Government of India has vowed to ensure rights to all children without discrimination. Yet, we are far from realizing it. It is not uncommon to find children living in poverty being deprived of their basic rights to survival, protection, care and opportunity to develop, and participate in the affairs of mainstream society. Furthermore, the situation of children living on streets is worsened by immense poverty, dismal environmental conditions and lack of protection mechanism.

The need to work for children was well recognized by both national and international agencies before many decades. But all the efforts put together were unable to make a mark in the problem. With the introduction of global market policy, industrialization and added pressure of expanding population has seriously affected the village community. Thousands of families lost their household income and were pushed out of villages to the pavements in cities with hope to survive. People, both from rural and urban areas are forced to diversify their livelihood options.

Social work approaches in dealing with street Children

(a) Role of social worker at the micro level

- Community based services to assist children to deal with their " life stressors" and mal-adjustment-
- Facilitating children to identify perpetrators within their community-Social

workers can facilitate children to capture their participation about different types of abuses they experience within different settings and how they perceive different perpetrators. Social workers can facilitate children to coordinate with different allied system like GO, NGOs, and police station. Thus, they can use their skills of participatory tools to identify and manage the problems of children within community settings through an active coordination with supportive and legal systems.

- *Facilitating families to move from un-authorized to authorized areas-* The survival mechanisms of families and the children can be assessed using the broad conceptual framework of Social Darwinism. It is to analyze different underlying and largely irresistible forces acting within the communities of street families that drive them through an evolutionary process. This social evolution process creates natural conflicts within their own groups. Consequently, the “best adapted” families or individuals survive these conflicts and design their own psychosocial coping mechanism to make them fit within their environment. Globalization has helped raise the standard of living for many people world-wide; conversely, it has driven many deeper into poverty. The democratization of technology options is a primary characteristic of globalization which has created tension among the people who have limited skills and resources. Moreover, it has created unemployment and shrinkage of economic opportunities for the poor; living in the deprived and rural areas of India. These factors have further pushed these poor families from the socially and culturally homogenous community to a complicated and heterogeneous community with less social support. The families settled on streets suffer from illegitimate status, constant threat of eviction and lack all the basic social and legal support system. The “best adapted” families who could win the struggle move from unauthorized to authorized settlements and access basic amenities of life. The families who stays back on the streets suffer from internal as well as external conflicts resulted in psychosocial problems within the family and attribute to neglect and exploitations towards their own children. On the other hand children also adopt different coping mechanisms and survival tricks to adapt themselves within the complicated systems. Children became prone to adapt deviant survival mechanisms to make them fit within the environment, Social workers can play an active role in assessing positive factors of the evolutionary process and help other families to move from unauthorized areas to authorized slums through reinforcing the positive factors active within their community.
- *Identification and reinforcement of self-protection mechanism of street community-*Building on the idea of self-organizing and self-sustaining autopoietic system found preliminary in biology and cybernetics, the social worker can strive to capture the self-organizing and self-sustaining structures evolves within the street living families and among their children. Families

try to settle in clusters, develop their own social support systems and affiliate themselves with the powerful political party members to sustain themselves within the unauthorized areas of the cities. On the other hand children affiliate themselves with the powerful gangs which are also supported by political party members. The role of social worker should be to amplify the positive determinants of self-organizing structures to switch them in a desired direction.

- **Management of abused and traumatized children-** Social workers can use their empirically derived interventions to help child victims and their families to achieve their optimum level of psychological functioning including-psychological, emotional, behavioural, educational, developmental, and relational. Social workers can use different theoretical and practical approaches based on psychodynamic, analytical, behavioural and cognitive theories to restore the normal functioning of alienated children and his/her family.
- **Facilitate children to access legal support-** The social worker can also play an important role to facilitate children to access legal aid and other legal support systems. Social workers can use their professional skills to ensure children's active involvement during lodging complaints in police stations, investigations, trials, and adjudication to protect their best interest.

(b) Role of social worker at the macro level

- In terms of assessing the factors of child abuse, it is felt that social worker need to emphasize on a changed environment, focused on transaction of social environment. Thus, the social worker can use their professional ability to analyze the impact of international and national level social policies, social welfare legislations as well as implementation of the policies for the children of families living on the streets. In doing this, the social worker can assess policies and schemes of Government of India, Juvenile Justice Systems and can assess the interaction of children and their family with law and order machineries. Thus, the social worker can play an active role in designing need based policies to promote structural changes at macro level. Social workers can also play an important role in ensuring active partnership of street living families on "mutuality and reciprocity" in designing need based policies to address their felt needs.
- It is well recognized that families living on the streets have multiple needs. Thus, a combination of health, education, livelihood and protection schemes can be used for uplifting the quality of life for families living on the streets. In this sphere, a social worker can play an active role within the democratic as well as bureaucratic systems to facilitate integrated policy designing process for the families living on the streets through using specialized knowledge and skills of social work.

- The role of social worker can also be envisaged for the customization of education and legal systems to fulfill the capacity building and protection needs of the children of the street living families. Thus, the role of social workers can also be to work with the education system to design needs driven educational curriculum and system for the children with different needs and in difficult circumstances.
- Social workers should respect the voice of children through their active participation in their own situation. There is need for child friendly police system and process. They must be involved intensely with the juvenile justice system to customize the protection system for the children.
- Punishment of offenders involved in child abuse is also an area of concern. The present Juvenile Justice Act does not ensure the punishment of adult offenders. Thus, social worker can play an important role in designing effective coordination between Juvenile Justice System and Criminal Courts to ensure proper punishment of offenders. Social workers can also facilitate the Administration to design effective data base to record details paedophilic cases through an effective coordination between police and Juvenile Justice System so that these people can be retrained to directly work with children.
- Designing and institutionalizing child protection policies within different governmental and non-governmental system can be another important role of the social worker. They must play an active role in designing recruitment procedure for the staff who will be directly dealing with children, defining behavioural protocols for the staff and also designing the monitoring plan for the proper adherence to child protection policies.

The role of social workers has broadened over the last few decades throughout the world. Still in India, social work has not yet acquired a professional status. However, with the changing socio-economic situations, globalization and with the enhancement of activities of international charities in India, scope and fields of social work is also expanding. Simultaneously, the role of social workers is also broadening with the increasing demand for such services in the country. A number of social work institutes have come up in India over the last few decades to meet the demand of professional social workers. However the number of trained professionals is less than the demand. Therefore, people from different fields and expertise are also joining the sector and performing the expected role of the professional social worker. Understanding and practice of social work has been gone through a process of infusion. It is felt that all the professionals who are expected to perform the role of social workers should be educated with the philosophy and broad conceptual framework of social work to enrich the developmental sectors of the country. As the role of social work in the area of child protection is still an emerging issue, more social work theories and practices need to be devised to build the skills of social workers to ensure children's participation in the area of child protection.

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3

Education and Women in A Backward Region of West Bengal

Kaberi Pal

Education is the most important factor which initiates the process of social, economic and cultural development. It is regarded as the basic permanent need of individual. It is the single most important means for individuals to improve personal endowments, build capability levels, overcome constraints and in the process, enlarge their available set of opportunities and choices for a sustained improvement in well-being. Further, it is widely accepted that female literacy contributes heavily towards socio-economic development. There exists ample empirical evidence that educational discrimination against women hinders economic development in addition to reinforcing social inequality. It has been found that: (a) the rate of return on women's education is higher than that on men's in most developing countries; (b) increasing women's education not only increases their productivity on the farm and in the factory but also results in greater labour force participation, later marriage, lower fertility, and greatly improved child health and nutrition (c) improved child health and nutrition and more educated mothers lead to multiplier effects on the quality of a nation's human resources for many generations to come; and finally, (d) because women carry a disproportionate burden of the poverty and landlessness that permeates developing societies, any significant improvements in their role and status via education can have an important impact on breaking the vicious circle of poverty and inadequate schooling.¹

Several indicators such as literacy rate, enrolment and years in school reveal important pattern and trends in women's education. Interestingly, it may be seen

that each of the indicators leads us to the same conclusions that the level of women's education is low in the developing countries like ours. Literacy is the most important goals of education. At the all India level the male literacy rate was 56.38 percent in 1981 as against a female literacy rate of 29.76 percent. Thus the gender gap in literacy rate in 1981 was 26.62 percentage points. This gap declined in the subsequent decades and it was 21.61 percentage points in 2001 and 16.68 percentage points in 2011. The female literacy rate in West Bengal in the year 1981 was 36.07 percent while the male literacy rate was 59.93 percent revealing a gender gap of 23.86 percentage points; which declined steadily to 21.25 percentage points in 1991 and to 17.36 percentage points in 2001 and further to 11.5 percentage points in 2011. The female literacy in the district of Purulia in the year of 2001 was 36.50 percent while the male literacy rate was 73.72 percent revealing the gender gap 37.22 percentage points ; which declined to 27.56 percentage points in 2011.

It is well known that, illiteracy is also an important cause of women's poor quality of life. Education empowers the women to take independent decisions. But a large section of the women are illiterate in rural India. Department of education (Government of India, 1999) ² has found an obvious gender bias in the education sector: two-third of boys aged 11-14 years are enrolled in school compared with less than half of girls in that age group. The dropout rate for girls in secondary school is 72%.

This paper is an attempt to study the block level disparity in education and the status of women in the education in the district of Purulia. In the next section we discuss about the study area. Section III gives a brief literature on the issue at hand and also indicates the objective of the study. In section IV we discuss about the data source and methodology. Section V explores the educational facility and female literacy in the district of Purulia. Finally, in section VI, we make concluding observations.

Area of study

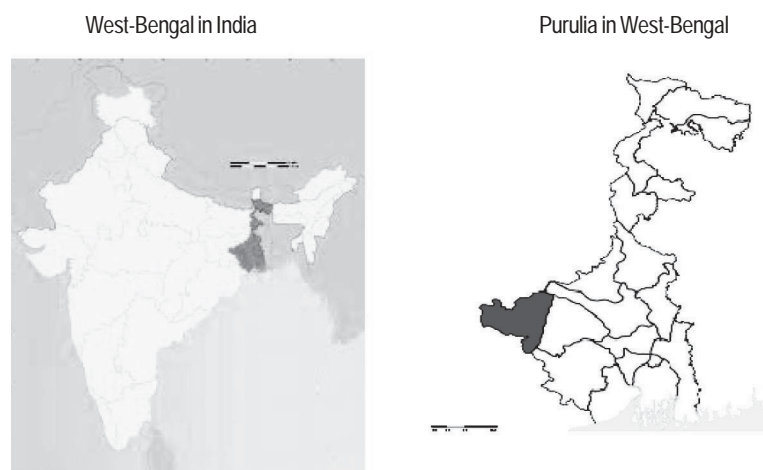
My study area Purulia is the western-most district of West Bengal. This district is between 22°42'35" and 23°42'0" north latitude and 85°49'25" and 86°54'37" east longitude. Midnapore, Bankura and Burdwan district of West Bengal and Dhanbad, Bokaro, Ranchi, West Singhbhum, East Singhbhum district of Jharkhand State bound this district. The district headquarter is situated at Purulia town having three administrative sub-divisions viz. Sadar East, Sadar West and Raghunathpur. There are 20 community development blocks, 3 Municipalities (Purulia, Raghunathpur and Jhalda), 8 non-municipal towns, 170 gram panchayets, 2683 Mouzas, 2468 inhabited villages and 1911 gram-sansads. Out of 2468 villages 994 villages are backward in respect of two parameters namely-lack of enough employment and extremely low level of female literacy. There are 171 tribal villages and 168 villages are hard to reach.

Map of Purulia



Location of Blocks





Brief survey of Literature and Objective of the study

There exist quite a few studies on education. Mishra (2012) analyzed the disparity in human development at a micro level i.e. a block level in the district of Purulia. In this study it is found that there exist intra-district disparities in education and blocks suffer from the inadequate educational facilities and as whole, the district is neglected in the development of education. This study indicates the fact that a high magnitude of disparity prevails within the district.

Bagchi and Guha (2005) analyzed two field of higher education. Namely, medicine and management. They suggest that there is a need to attract the attention of policy maker to these issues to reduced gender gaps at the enrolment level of higher and technical education. They also analyzed about the interlinked with reduction in gender bias, gender-based role stereotyping and wage discrimination at work.

Barua *et al.*, (2007) suggest that adolescent girls have considerable unmet needs in health, reproductive health, and nutrition. A survey in Rajasthan sought to ascertain the extent to which unmarried adolescent girls receive care and support from their parents. They suggest that a majority of them received a high or medium level of care. There was no clear pattern by socio-economic status. In a context there where gender discrimination is rife, some families, regardless of their economic circumstances, do seem to provide nutrition, health, and psychosocial care for their adolescent daughters.

Srivastava and Srivastava (2010) analyzed the trend and pattern of women's employment in rural India. The survey shows that while rural women's employment has grown over the decades, women are still largely self- employed or employed as casual labour in agriculture. They face various forms of discrimination, including job- typing that pushes them into low-paying jobs. Higher work participation per

se does not lead to better outcomes unless accompanied by higher education, and or assets. Education may not positively influence a women's participation in work, but for women who are in workforce, education is the most important determinant of better quality non- agricultural work. Women's autonomy, measured in terms of control over land, mobility and a willingness to join self-help groups, enables them to move into non-agricultural jobs.

Dreze & Sen (2002) have highlighted the prevailing gender inequality in India and underlined the importance of women's agency as a force for change. They have made the following five important observations: First, the persistence of extraordinarily high levels of gender inequality and female deprivation is one of India's most serious social failures. Second, the gender inequality has not declined automatically with the process of economic growth. Third, the gender inequality is not only a social failure in itself; it also contributes to other social failures. Fourth, the agency of women as a force for change is one of the most neglected aspects of the development literature. And social justice can be achieved only through the active agency of women. Finally, the agency of women is effective in promoting those goals, which women tend to value.

Objective

The main objective of the study is to investigate the disparities in education and the status of women's education in the district of Purulia.

Source of Data and Methodology

The data have been collected from the Census of India, District Statistical Handbook, published by Bureau of Applied Economics and Statistics, Govt. of West Bengal, West Bengal Human Development Report, published by Govt. of West Bengal and from different journals, magazine etc. In this study 20 blocks of Purulia have been taken as the study area with each block being considered as one unit. We take 7 indicators, viz. number of literate persons per 1000 population (X1), number of literate females per 1000 of rural females (X2), number of teachers per 1000 of enrolled students in primary schools (X3), number of teachers per 1000 of enrolled students in high schools (X4), number of primary schools per 10000 population (X5), number of secondary and H.S. schools per 10000 population (X6) and number of special and non-formal educational institute per 10000 population (X7) for identification of the level of development. Mean and standard deviation have been calculated for different indicators to show the status of education for different blocks and the blocks are categorized into two groups i.e. blocks above average value of indicators and blocks below average value of indicators. The method of classifying the development levels into three categories-medium, high and low invariably has been that of standard deviation and mean. The medium category includes all the blocks whose development level varies between 'mean and ± 0.5 standard deviation'. The high category includes all the

blocks whose development level above 'mean and + 0.5 standard deviation'. Similarly, low category includes all the blocks whose development level below 'mean and—0.5 standard deviation'.

V. Educational facilities in the district of Purulia

Table-1 shows the number of educational institutions by type in the district of Purulia. There are 2998 Primary Schools, 197 middle schools, 163 high schools, 171 higher secondary schools, 17 general colleges and one University. The district possesses one B.Ed. College (Purulia), one Polytechnic College (Purulia) and one Industrial Training Institute (Raghunathpur). In addition to that District also possesses 5 centers of Open universities (IGNOU, NSOU), one Junior Technical School (Jhalda), one GNM training Centre and 2 Primary Teachers Training Institute and one Homeopathic Medical College. In addition one Ekalabya Schools for SC/ST students are also functioning. The famous Sainik School and Purulia Ramkrishna Mission is also in this district.

Table-2 represents the percentage of literacy by sex in both rural and urban in 20 blocks of Purulia district. From the table it is clearly noted that Raghunathpur sub-division (male 75.60%, female 42.40% and total 59.50%) is comparatively better in education than Sadar East (male 75.40%, female, 39.80, total 58.00%) and Sadar West(male 70.20%, female 27.90% and total 49.60%) sub-division. Table indicates a very alarming figure for the female literacy in the block of Jhalda-II (18.40%) form Sadar West sub-division. On the other hand the block of kashipur represent comparatively better position in education (rural male78.50%, rural female 44.40%, urban male 88.80%, urban female 73.40% , total male 79.80%, total female 47.90% and total 64.20%) and it is followed by the block of Hura (rural male 76.40% , rural female41.20% ,total59.00%).In comparison between census 2001 and census 2011(P) ,it is noted that total male(from 73.72% to 78.85%) ,total female (from 36.50% to 51.29%)and total literacy(from 55.57% to 65.38%) increases. From the table it is clear that all blocks are suffered from low level of female literacy as well as whole district is suffered from low level of female literacy.

From table-3 it is noted that the highest level of educational facilities is observed in the block of Puncha (0.81) and it is followed by the blocks of Hura (0.77) and Manbazar-II (0.67). On the other hand the lowest level of educational facilities is observed in the block of Jhalda-II (0.15) and it is followed by the block of Arsha (0.16). Table-3 reveals the fact that the blocks along the boundary of the neighbouring state Jharkhand are more backward in the field of education except the block of Jhalda-I (0.46).On the other hand moderate status of educational facilities is found in the block of Purulia-I (0.48) , within which the district headquarter, Purulia town is situated. It is very striking that the block Purulia-1(0.48) with three degree colleges and a numbers of primary and secondary schools enjoyed moderate status of educational facilities. From the table it is

Table-1: Number of Educational Institutions by type in the District of Purulia

Number of General Educational Institutions by type in the district of Purulia					
Type of Institution	(Number)				
	Year				
	2006-07	2007-08	2008-09	2009-10	2010-11
1. GENERAL RECOGNIZED SCHOOLS	3324	3323	3338	3437	3529
(i) Recognized Primary Schools under the control of or of the type of	2981	2981	2995	2999	2998
(a) D.I.(Primary+Junior Basic)	2979	2979	2986	2985	2984
(b) Municipalities / Corporations / Local bodies etc.	-	-	-	5	5
(c) I.C.S.E./ C.B.S.E./ Anglo-Indian & Missionaries etc.	-	-	7	7	7
(d) Railway(ER / SER) / DVC etc.	2	2	2	2	2
(ii) Recognized Middle Schools under the control of or of the type of	69	67	23	112	197
(a) D.I.(Secondary)	66	66	21	110	196
(b) Junior Madrasahs	2	-	-	-	-
(c) I.C.S.E./ C.B.S.E./ Anglo-Indian & Missionaries etc.	1	1	2	2	1
(d) Railway(ER / SER) / DVC etc.	-	-	-	-	-
(iii) Recognized High Schools under the control of or of the type of	141	133	174	178	163
(a) D.I.(Secondary)	136	126	169	173	159
(b) High Madrasahs	4	6	4	4	3
(c) I.C.S.E./ C.B.S.E./ Anglo-Indian & Missionaries etc.	1	1	1	1	1
(d) Railway(ER / SER) / DVC etc.	-	-	-	-	-
(iv) Recognized Higher Secondary Schools under the control of or of the type of	133	142	146	148	171
(a) General Stream(Including independent H.S. School)	125	134	136	138	159
(b) Vocational Stream(Including independent H.S. School)	1	1	1	1	1
(c) I.C.S.E./ C.B.S.E./ Anglo-Indian & Missionaries etc.	5	5	5	5	6
(d) Railway(ER / SER) / DVC etc.	2	2	2	2	2
(e) Senior Madrasahs	-	-	2	2	3
2. GENERAL DEGREE COLLEGES	11	12	14	16	17
3. GENERAL UNIVERSITIES (excluding completely Technical Universities)	-	-	-	-	1
4. STUDY CENTRES OF OPEN UNIVERSITIES	3	3	5	5	5

Sources: District Statistical Handbook 2010&2011.

Number of Professional & Technical Educational Institutions by type in the district of Purulia					
Type of Institution	Year				
	2006-07	2007-08	2008-09	2009-10	2010-11
1. TECHNICAL SCHOOLS	9	9	9	9	9
(i) Engineering / Technical Schools	2	2	2	2	2
(a) Junior Technical Schools	-	-	-	-	-
(b) Junior Govt. Polytechnics	-	-	-	-	-
(c) Industrial Training Institutes (ITI)	1	1	1	1	1
(d) Industrial Training Centres (ITC)	..	1	1	1	1
(ii) All PTTI & Nursing Training Institutes	7	7	7	7	7
(a) Pre-primary & Primary Teachers' Training Institutes (PTTI)	6	6	6	6	6
(b) Certificate oriented Nursing Training Schools	1	1	1	1	1
(iii) All other Commercial & Vocational Institutions (Affiliated to W.B. State Council of Technical Education)	-	-	-	-	-
2. TECHNICAL COLLEGES	4	5	8	8	9
(i) Engineering/ Medical/ Technical Colleges	3	3	4	4	5
(a) Medical (Allopathic, Dental, Homeopathic, Ayurvedic) Colleges	2	2	2	2	2
(b) Engineering Colleges(Govt.+Private)	-	-	-	-	-
(c) Management Colleges(Govt.+Private)	-	-	1	1	1
(d) Polytechnics(Govt.+Private)	1	1	1	1	2
(e) Institute of Pharmacy / Ophthalmology	-	-	-	-	-
(f) Institute of Radiology / Pathology / Bio-Chemistry / Laboratory Technology / Radiography / Physiotherapy / Radiotherapy / ECG	-	-	-	-	-
(ii) Teachers' Training & Nursing Training Colleges	1	2	4	4	4
(a) Teachers' Training(B.Ed.+Phy.Ed.) Colleges	1	2	4	4	4
(b) Nursing Training Colleges(B.Sc.)	-	-	-	-	-
(iii) Other Colleges/ Institutions	-	-	-	-	-
(a) Law Colleges	-	-	-	-	-

(b) Music Colleges	-	-	-	-	-
(c) Nutrition & Home Science Colleges	-	-	-	-	-
(d) Art Colleges	-	-	-	-	-
(e) Autonomous Research Institutions of Special Importance	-	-	-	-	-
3. TECHNICAL UNIVERSITIES	-	-	-	-	-
Total	13	14	17	17	18

Sources: District Statistical Handbook 2010&2011.

Number of Special and Non-formal Educational Institutions by type in the district of Purulia					
Type of Institution	(Number)				
	Year				
	2006-07	2007-08	2008-09	2009-10	2010-11
1. Sishu Siksha Kendras	416	410	416	416	416
2. Madhyamik Siksha Kendras	121	133	139	139	139
3. Adult High Schools	-	-	-	-	-
4. Centres of Rabindra Mukta Vidyalaya	2	2	2	2	2
5. Recognized Sanskrit Tols	2	2	2	2	2
6. Ekalabya Schools	1	1	1	1	1
7. Educational Institutions for the Blind and other Physically & Mentally Handicapped	3	3	3	3	3
8. Non-formal Education Centres	201	150	150	39	43
9. Anganwadi (education) Centres under I.C.D.S.	2548	3879	4020	4427	4691
10. Social Welfare Homes under M.E.E. Deptt.	-	-	-	-	-
11. Reformatory or certified Institutions or Welfare Homes under Social Welfare Deptt. for the Juveniles or destitute children or the children of red-light areas	1	1	1	1	1
12. Jan Shikshan Sansthan	1	1	1	1	1
Total	3296	4582	4735	5031	5299

Sources: District Statistical Handbook 2010&2011

Table 2: Percentage of Literacy by sex in rural and urban areas in the district of Purulia, 2001

Sub-Division/ C.D.Block/ M	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Sadar (W) Sub-Division	69.50	26.10	48.30	82.90	57.90	71.00	70.20	27.90	49.60
Arsha	67.40	23.60	46.00	-	-	-	67.40	23.60	46.00
Baghmundi	67.60	25.10	46.90	-	-	-	67.60	25.10	46.90
Balarampur	65.40	25.10	45.80	80.50	52.10	66.90	68.30	30.20	49.80
Barabazar	72.00	30.20	51.20	85.80	65.60	76.30	72.70	32.00	52.60
Jaypur	71.30	26.90	50.10	-	-	-	71.30	26.90	50.10
Jhalda-I	73.70	33.20	53.80	-	-	-	73.70	33.20	53.80
Jhalda-II	68.00	18.40	43.80	-	-	-	68.00	18.40	43.80
Jhalda(M)	-	-	-	84.60	61.80	73.70	84.60	61.80	73.70
Sadar (E) Sub-Division	73.90	35.70	55.20	85.60	67.80	77.10	75.40	39.80	58.00
Bandowan	66.50	28.50	47.70	-	-	-	66.50	28.50	47.70
Hura	76.40	41.20	59.00	-	-	-	76.40	41.20	59.00
Manbazar-I	74.00	35.90	55.10	-	-	-	74.00	35.90	55.10
Manbazar-II	73.00	33.40	53.50	-	-	-	73.00	33.40	53.50
Puncha	75.30	39.10	57.30	-	-	-	75.30	39.10	57.30
Purulia-I	73.80	33.50	54.40	-	-	-	73.80	33.50	54.40
Purulia-II	75.50	35.70	56.20	-	-	-	75.50	35.70	56.20
Purulia(M)	-	-	-	85.60	67.80	77.10	85.60	67.80	77.10
Raghunathpur Sub-Division	74.10	39.00	57.00	85.30	64.80	75.50	75.60	42.40	59.50
Kashipur	78.50	44.40	61.80	88.80	73.40	81.40	79.80	47.90	64.20
Neturia	71.60	38.70	55.80	80.90	56.70	69.50	73.00	41.30	57.70
Para	74.70	35.20	55.60	95.80	81.60	89.30	76.40	38.50	58.10
Raghunathpur-I	71.10	38.60	55.30	83.70	62.80	73.70	73.60	43.30	58.90
Raghunathpur-II	71.50	35.70	54.00	82.50	50.90	67.80	72.20	36.50	54.80
Raghunathpur(M)	-	-	-	80.40	58.70	69.00	80.40	58.70	69.00
Santuri	72.00	40.00	56.50	-	-	-	72.00	40.00	56.50
District Total 2001	72.37	33.24	53.24	85.03	64.91	75.40	73.72	36.50	55.57
2011 (P)	77.96	48.93	63.75	84.68	67.21	76.24	78.85	51.29	65.38

N.B.: Literacy relates to population aged 7 years and above, Source: Census of India 2001&2011

clearly found that there is high level of disparities in educational facilities within the district.

Table 3: Value of different indicators showing the disparities in educational facilities.

Blocks	X1	X2	X3	X4	X5	X6	X7	Average
Arsha	0.12	0.20	0.22	0.09	0.00	0.23	0.29	0.16
Baghmundi	0.17	0.26	0.51	0.13	0.20	0.26	0.40	0.27
Balarampur	0.11	0.26	0.25	0.03	0.47	0.20	0.56	0.27
Barabazar	0.41	0.45	0.69	0.37	0.40	0.27	0.28	0.41
Joypur	0.35	0.33	0.22	0.00	0.17	0.32	0.00	0.20
Jhalda-I	0.56	0.57	0.49	0.47	0.03	0.40	0.68	0.46
Jhalda-II	0.00	0.00	0.06	0.06	0.22	0.00	0.71	0.15
Bandowan	0.22	0.39	1.00	0.66	0.93	0.43	0.41	0.58
Hura	0.84	0.88	0.86	1.00	0.58	0.68	0.53	0.77
Manbazar-I	0.63	0.67	0.91	0.40	0.72	0.08	0.37	0.54
Manbazar-II	0.54	0.58	0.99	0.81	1.00	0.51	0.29	0.67
Puncha	0.75	0.80	0.87	0.86	0.93	0.74	0.73	0.81
Purulia-I	0.59	0.58	0.00	0.56	0.77	0.05	0.81	0.48
Purulia-II	0.69	0.67	0.22	0.56	0.18	0.31	0.55	0.45
Kashipur	1.00	1.00	0.47	0.32	0.52	1.00	0.27	0.66
Neturia	0.67	0.78	0.38	0.64	0.69	0.46	0.58	0.60
Para	0.66	0.65	0.08	0.30	0.15	0.20	0.32	0.34
Raghunathpur-I	0.64	0.78	0.24	0.29	0.48	0.47	0.61	0.50
Raghunathpur-II	0.57	0.67	0.12	0.23	0.81	0.19	0.01	0.37
Santuri	0.71	0.83	0.57	0.59	0.72	0.63	0.51	0.65
Mean								0.47
S.D								0.28

VI. Concluding observations

In this study average value of 7 indicators (X1,X2 ,X3, X4, X5, X6.and X7) represent very striking feature of education in the district of Purulia.From the average value of indicators it is noted that the blocks along the boundary of the neighboring state Jharkhand are more backward in the field of education except the block of Jhalda-I (0.46). It is also noted that highest educational facility is observed in the block of Puncha (0.81) and it is followed by the blocks of Hura (0.77) and Manbazar-II (0.67). On the other hand lowest level of educational facility observed in the block of Jhalda-II (0.15) and it is followed by the block of Arsha (0.16) and this is very alarming picture. It is also very striking that the block Purulia-1(0.48) with three degree colleges and a numbers of primary and secondary schools enjoyed moderate status of educational facilities. This study reveals the fact that Raghunathpur sub-division (male 75.60%, female 42.40% and total 59.50%) is comparatively better in education than Sadar East (male 75.40%, female, 39.80, total 58.00%) and Sadar West(male 70.20%, female 27.90% and total 49.60%) sub-division. The study indicates very alarming figure for the female literacy in the block of Jhalda-II (18.40%) form Sadar West sub-

division. On the other hand it is noted that Kashipur and Hura are in comparatively better position in female literacy. From the whole study it is clear that there exist intra-district disparities in the field of education in district of Purulia.

Note:1. The issues relating to gender gap in women's education is nicely summarized in M. P. Todaro and S. C. Smith (2003). These four points highlighting importance of women's education has been drawn from p. 411 of Todaro and Smith(2003).

2. Adopted from Barua, *et.al.*, (2007).

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4

Deaths not Meant to be: An Evaluation of infant and Maternal Death Audit System in Haryana

Nabhojit Dey

Since the launching of the Safe Motherhood Initiative in 1987, there has been a worldwide effort to reduce maternal mortality and to identify its determinants. The declaration of Millennium Development Goals (MDGs) aiming at reducing by three quarters the maternal mortality ratio between 1990 and 2015 has also increased the demand for measuring maternal mortality at national and sub-national levels. (Betran) This was endorsed by as much as 189 countries. (Ronsmans) The positive relationship between infant and maternal mortality suggests that an increase in infant mortality is associated with an increase in maternal mortality. (Betran) The International Conference on Primary Health Care held in Alma Ata in 1978 (WHO, 1978) was the first global forum to consider how child mortality could be reduced by the systematic development of the primary health care system. According to WHO classification of 14 sub-regions, India falls within the South East Asian Region-D (SEAR-D) which is characterized as “high mortality” region. (Infant and Child Mortality in India-Level, Trends and Determinants, Unicef)

A maternal death as defined in the International Classification of Diseases, ICD-10 is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. On the other hand, as per the definition of Centre for Disease Control and Prevention the death of a baby before his or her first birthday is called

infant mortality. Infant deaths can be further classified into neonatal deaths, for deaths between 0-28 days and post-neonatal deaths, for deaths between 28-365 days.

Despite progress in recent decades, India has the largest number of maternal deaths of any country in the world¹. Most maternal deaths in India are concentrated in 7 states (Assam, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttarakhand, and Uttar Pradesh). Uttar Pradesh (UP) has the second highest maternal mortality ratio (MMR) among the 7 states, at 359 maternal deaths per 100,000 live births, compared with the national average of 212 maternal deaths per 100,000 live births². Each year in India, roughly 28 million women experience pregnancy and 26 million have a live birth. Of these, an estimated 67,000 maternal deaths and one million newborn deaths occur each year. In addition, millions more women and newborns suffer pregnancy and birth related ill-health. Thus, pregnancy-related mortality and morbidity continues to have a huge impact on the lives of Indian women and their newborns³.

The Government of India has placed special emphasis on improving maternal, newborn, and child health (MNCH) through policies and program guidelines⁴. One major policy initiative includes increasing institutionalization of deliveries facilitated through the Janani Suraksha Yojana (JSY) program—a national conditional cash transfer scheme started in 2005 that provides eligible women with cash incentives for giving births in an institution⁵. Recently, the government issued national guidelines for states to carry out maternal death reviews at both community and

¹World Health Organization (WHO), UNICEF, UNFPA, and The World Bank estimates. Trends in maternal mortality: 1990 to 2010. Department of Reproductive Health and Research WHO; 2012. [cited 2012 Nov 20].

²Office of Registrar General, India, Ministry of Home Affairs. Special bulletin on maternal mortality in India: 2007-2009, Sample Registration System [Internet]. New Delhi, India: Office of Registrar General, India; 2011 Jun. [cited 2012 Nov 16]. 4 p 1 Guidance note on rolling out maternal death reviews (Facility and Community based)

³Ministry of Health and Family Welfare, Government of India. National program implementation plan: RCH Phase II – program document [Internet]. New Delhi, India: Ministry of Health and Family Welfare; 2005. [cited 2012 Nov 16]. 432 p.

⁴Ministry of Health and Family Welfare, Government of India. Janani Suraksha Yojna: guidelines for implementation [Internet]. New Delhi, India: Ministry of Health and Family Welfare; 2005. [cited 2012 Nov 17]. 29 p. Available from: http://www.mohfw.nic.in/NRHM/RCH/guidelines/JSY_guidelines_09_06.pdf; Lim SS, Dandona L, Hoisington JA, James SL, Hogan MC, Gakidou E. India's Janani Suraksha Yojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. *Lancet*. 2010;375(9730):2009–23. CrossRef. Medline; Paul VK. India: conditional cash transfers for in-facility deliveries. *Lancet*. 2010;375(9730):1943–1944. CrossRef. Medline

⁵Department of Health and Family Welfare, Government of Punjab. Maternal death review: guidelines for rolling out [Internet]. Punjab, India: Department of Health and Family Welfare; 2010 Jul. [cited 2012 Nov 15]. 56 p.

facility levels⁶. The state NRHM PIP of Haryana states that maternal death audit is very important to understand the areas requiring re-strategizing and the gaps to be addressed in relation to Maternal Health. However, implementation on the ground has been extremely slow and challenging. Thus, expected results have not been achieved, and the country is still at a distance from achieving Millennium Development Goal 5 (MDG 5)—reducing India’s MMR to 109 by 2015. As far as guidelines for infant death review is concerned certain guidelines on the same too have been provided by the government through GO MS No.418, H&FW (R1) Dept. 31.12.2009. At present, Infant Mortality Rate is 44 per 1000 live births in the country as per Sample Registration System 2011 report of Registrar General of India. India’s Millennium Development Goal target is to have an IMR of 28 per 1,000 live births by 2015. However, even though the IMR is on a steady decline, the target is still too steep considering that in 2011, national IMR stood at 44. While urban India fared better with an IMR of 29 and is likely to reach the UN target, villages are pulling the national average back as rural India’s IMR stands at whopping 48.

The maternal death review (MDR) is a tool used in many countries to understand the underlying factors leading to maternal deaths, providing programs with information to improve services and reduce MMR⁷. Similarly, infant death audits were introduced in the period 2007-2009 in India to strengthen the reporting system and identify the factors that lead to the infant death and gaps in existing system. Further, in an effort to analyze the reasons for maternal deaths for appropriate local intervention, the Government of India introduced Maternal Death Review guidelines in 2010, based on the experience of implementing such reviews in Kerala, Tamil Nadu, and West Bengal.

The present study was an evaluation study of infant and maternal death review system which was conducted in four selected districts of Haryana to identify gaps in present system of review and to make recommendations to plug the same.

In the state of Haryana, as per Sample Registration System (SRS) data for the year 2011 the infant mortality rate is 44 deaths per 1000 live births which is equal to the national average. States of Chattisgarh, Meghalaya, Rajasthan, Assam, Orissa, Uttar Pradesh and Madhya Pradesh have an IMR more than that of Haryana rest all the states have a lower IMR than Haryana (refer to Chart 2). This makes Haryana as one of the top ten states with highest IMR in India. On the other hand, as per Sample Registration System, Registrar General of India 2009 data the maternal mortality rate of Haryana was 153 per 1,00,000 live births down from 186 per 1,00,000 live births in 2004-06. The NRHM progress report further states that

⁶Bradshaw D, Chopra M, Kerber K, Lawn JE, Bamford L, Moodley J, et al. Every death counts: use of mortality audit data for decision making to save the lives of mothers, babies, and children in South Africa. *Lancet*. 2008;371(9620):1294–304.

reduction in IMR is slow; 1 point per year between SRS 2003 and SRS 2008 i.e. 59 to 54. Further, recent results from DLHS-3 show low progress or decline in the outcome indicators: full immunisation in children 12-23 months (59.1% to 63.6%) and a decrease in coverage of DPT and OPV; initiation of breastfeeding within one hour of birth has remained static at 17.4% & and a sharp decline in exclusive breastfeeding for 6 months from 33% to 5.3% (DLHS 2-3) and a decline in ORS use in children with diarrhoea (32.3% to 31.7%). Further, the state project implementation plan (PIP) of NRHM for the year 2012-2013 recommends recording as well as monitoring of all infant and neo-natal deaths. Further, in case of infant death the State has a target of bringing down the same to 35 per 1000 in 2014. Further, as far as reduction in MMR is concerned as per the guidelines of NRHM PIP guidelines of 2012-13 the states which have an MMR greater than 100 should reduce their MMR by 60%. As per the PIP the programme management and community processes are a weak area in the State. In order to substantially bring down the infant and maternal mortality rates, it is vital to evaluate the existing process of infant and maternal death review taking place in the state. This might ensure identification of gaps in processes of audit and plugging of these gaps.

Objective of the Study

The overall objective of the study was to identify gaps in the present infant and maternal death audit in the state of Haryana and make recommendations to plug the same. The specific objectives of the study were:

1. To assess the present process of Infant and Maternal Death audit in Haryana;
2. To check the efficacy of existing data on maternal and infant deaths by checking of selected sample;
3. To identify gaps/problems in the audit process of Infant and Maternal Deaths and recommend corrective measures; and
4. To assess the current practice of use of related data in planning/review process at different level and recommend possible corrective actions.

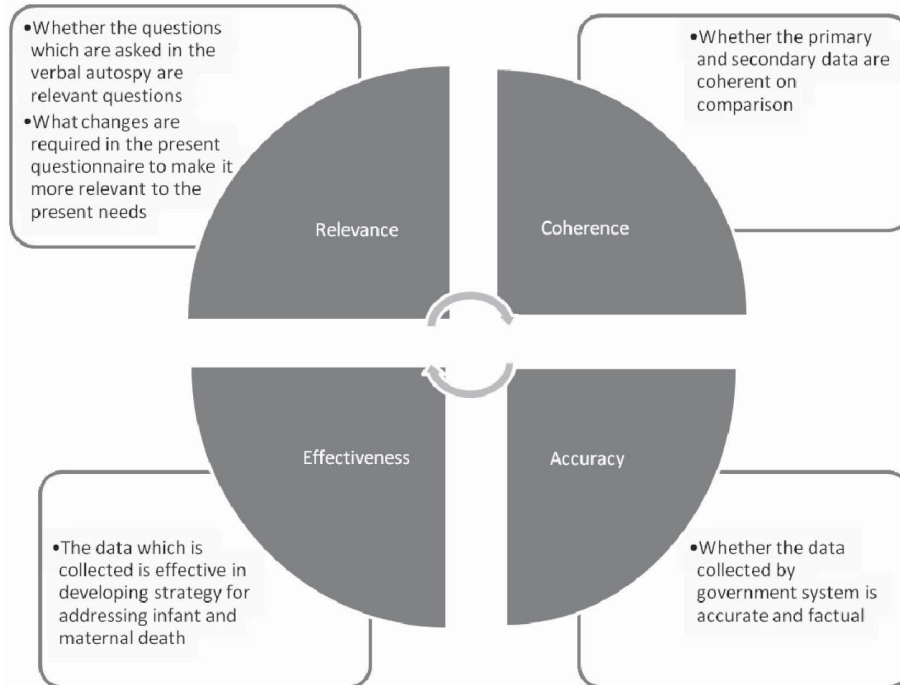
Sampling Plan

The sampling was purposive based on the reviewed cases of maternal and infant death in the year 2012-13 in Haryana.

Process of Evaluation



Evaluation Frame work



Districts	Maternal Deaths	Infant Deaths
Kurukshetra	8	18
Karnal	25	14
Hisar	18	50
Gurgaon	15	16
Total	66	98

Selection was based on maximum maternal deaths reviewed and 5% of reviewed infant deaths. A district from each of the regions with highest maternal and infant death reviews was selected. This ensured geographical representation. Due to limitations such as difficulty in locating the address of a particular death case or migration of families the number of samples in each of the districts slightly changed. The district-wise cases which were used for final analysis were:

Districts	Maternal Deaths	Infant Deaths
Kurukshetra	11	19
Karnal	24	15
Hisar	15	42
Gurgaon	11	16
Total	61	92

Approach and Methodology

Three day training was conducted for data enumerators. Based upon the timeline for data collection of one month 6 teams of 2 enumerators each were constituted. Three teams of 6 enumerators were led by a supervisor. Further, each team of data enumerators consisted of a medical professional and researcher. All the data enumerators were trained on the use of verbal autopsy formats. The training included discussion on each of the indicators on which data was to be collected. Further, mock interviews were conducted among the enumerators to give them a feel of the various situations under which they had to conduct verbal autopsies. On the second day of training the team ran through the verbal autopsy format with the enumerators and also explained them the entire process of verbal autopsy. The third day of training was dedicated to listing of the infant and maternal death cases and preparing field plans for reaching to the households. The verbal autopsy technique was used to reconstruct "the road to maternal death" and describe the dynamics of factors that impeded timely and efficient contact with the health system. Based upon the field plans the verbal autopsies had to be conducted at the household level. For preparation of field plans the maternal and infant death verbal autopsy formats and list respectively was used. The reviewed maternal death verbal autopsy formats for Gurgaon and Hisar were scanned and provided to the resource person whereas list of reviewed infant deaths for the afore mentioned

districts were provided to the resource person. In Karnal and Kurukshetra the teams received reviewed maternal and infant death formats directly from the district health administration. Further, apart from conducting verbal autopsies, observation of actual verbal autopsies conducted by health functionaries was undertaken to identify any gaps in the process of conducting verbal autopsy itself. In addition, interview with district health officials (Chief Surgeon, Dy.Chief Surgeon, Programme Managers – NRHM) was conducted which provided insights into the process of audit as well as their inputs to strengthen the process.

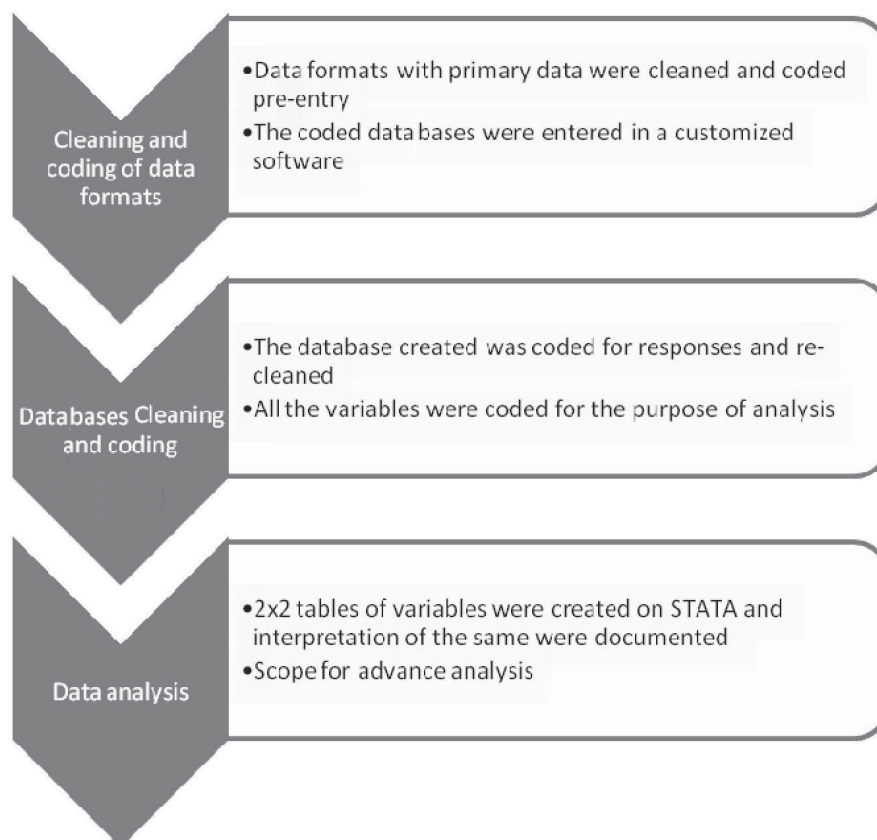
Main research questions

This assignment was a third party evaluation of the infant and maternal death audit process in the state. As such the main research questions in this assignment were to compare whether the reported cause of death to through government health functionaries were the exact cause of death. The various sub questions were:

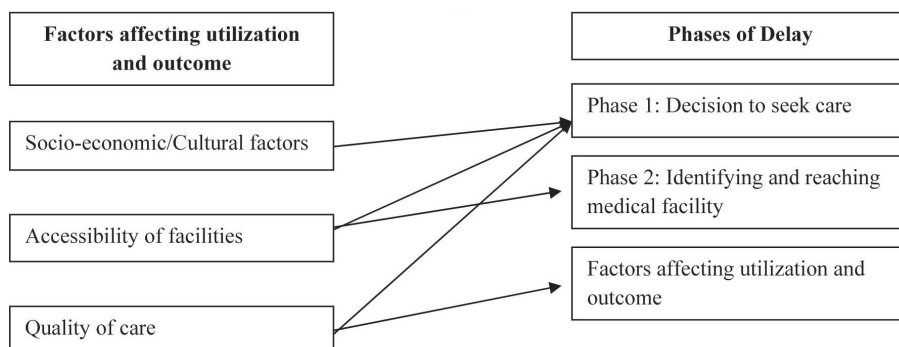
1. What is the exact cause of infant and/maternal death?
2. Are there variations in the reported data and the data collected through an independent third party?
3. Are there any gaps in the present verbal autopsy process carried out through government health functionaries and what are the ways in which these gaps, if any, can be plugged?
4. What are the present systems of data inputting and data analysis and if the same can be improved for better analysis and report generation?

Study Instruments

Research tool	Respondent	Explanation
Observation Checklist		The observation checklist was used to identify the present process of data collection undertaken by primary care givers or community level health functionaries through verbal autopsies. Few such observations were made to identify gaps in the verbal autopsy process.
Verbal Autopsy Format	Family Members	Enumerators independently carried out verbal autopsies through standardized formats including but not limited to the indicators on which data is already collected in the State (Confidentiality clause was included in the verbal autopsy format and verbal autopsies were undertaken only after getting respondent's consent)
Structured Questionnaire	Secondary and Tertiary health functionary	Separate data collection formats were prepared for health service providers at the secondary and the tertiary level to ascertain cause of infant and maternal death on case basis



The data interpretations were based on the three delays model.



Data Analysis

The following steps were undertaken for entry and analysis of data. At first all the formats were cleaned and coded and entered in the database. The data was entered through customized software. Post entry of the responses the variables in the database were coded and re-cleaned. The cleaned database was converted to STATA and SPSS database. Cross tabulations were run on these software to create district wise tables.

Study Findings

Maternal Death Review

The total sample which was used for the purpose of analysis was 61 maternal deaths. The district-wise percentage distribution of the sample is provided in the chart alongside. District Karnal contributed the maximum percentage of maternal deaths to the sample i.e., 39% to the total sample. Further, one fourth of all maternal deaths in the sample were contributed by district Hisar. Gurgaon and Kurukshetra both contributed 18% to the sample. When the age-wise distribution of maternal death cases was seen across districts, it was observed that in Gurgaon 55% maternal deaths occurred to women below the age of 18 years. Another district which had significantly high percentage of maternal deaths among women below the age of 18 years was Karnal. In this district 46% maternal deaths took place among women below the age of 18 years. Further, in Hisar 87% maternal deaths took place among women in the age of 19-25 years whereas in Kurukshetra 73% maternal death cases took place among women in 19-25 years age group. In Karnal more than half of the maternal deaths took place in this age group. Community wise distribution of maternal death cases shows that most of the deaths have taken place in families belonging to schedule castes or other backward castes. Overall, 44% maternal deaths took place in families from schedule castes. In Gurgaon and Karnal more than 40% maternal deaths took place in families from other backward castes and schedule castes. In Kurukshetra 67% maternal deaths took place in families from schedule castes. Distribution of maternal deaths on the basis of economic status showed that overall 45% maternal deaths occurred in families below poverty line (BPL). In Gurgaon all the maternal deaths took place in BPL families whereas in Hisar and Karnal 33% and 19% maternal deaths took place in BPL families. In Kurukshetra, none of the interviewed families had BPL cards. Overall 79% maternal deaths occurred among women who were housewives. However, in Gurgaon 36% deaths took place among women who were working as wage labour and 27% maternal deaths took place among women working as cultivator. In Hisar 13% maternal deaths took place among women who worked as agriculture labour. The distribution of maternal death cases based on educational attainment shows that most of the women were illiterate. Overall 37% women were illiterate whereas 24% women had only primary school level education. In Gurgaon more than half of the maternal deaths occurred to women

who were illiterate whereas in Kurukshetra 45% maternal deaths occurred within women who were illiterate. In 7% houses overall there was no electricity connection. In Gurgaon and Kurukshetra 9% maternal deaths occurred in houses with no electricity. Further, in Hisar 7% maternal deaths took place in households without an electricity connection. As per the findings of this study overall 26% households where maternal death took place did not have toilets. In Kurukshetra 36% households where maternal death occurred did not have toilets. Increasing access to water and sanitation are significantly associated with decrease in the negative health outcomes of interest, namely under-five child mortality, under-five child mortality due to diarrhoea, IMR, and MMR (2012, Cheng, An ecological quantification of the relationships between water, sanitation and infant, child, and maternal mortality). As per the findings of the present study 25% households did not have availability of safe drinking water. In Hisar and Karnal 29% households in which maternal death took place did not have availability of safe drinking water. Various studies have shown that there is a significant association between fuels use and maternal health. The present study shows that overall 46% households where maternal death took place did not use clean fuel. In Karnal more than half of the maternal deaths took place in households which did not use clean fuel. In Hisar and Kurukshetra 46% maternal deaths took place in households not using clean fuel. Overall 43% maternal deaths took place in households which were within 100 meters of an Anganwadi Center (AWC). In Gurgaon 63% maternal deaths took place in households within 100 meters of an AWC. In Kurukshetra more than half of the maternal deaths took place in households within 100 meters of an AWC. In Hisar 40% maternal deaths took place in households within 600 meters of an AWC. Overall only 11% households where maternal death had taken place reported presence of Village Health and Sanitation Committee (VHSC) in the village they lived. In Karnal only 10% such households reported presence of VHSC. In Hisar 15% households reported presence of VHCS whereas in Kurukshetra 20% households reported presence of VHSC. Overall 93% households where a maternal death had occurred had mobile phones. In Gurgaon, Kurukshetra and Hisar all the households where maternal death had taken place had mobile phone. However, in Karnal 17% households with maternal death did not have mobile phone. Overall 34% households where a maternal death had taken place did not have television with digital connection. In Karnal half of the households with maternal death did not have television with digital connection. In Gurgaon and Hisar 36% and 27% households respectively did not have television with digital connection. Overall 33% households with maternal death did not have a bank account. In Kurukshetra 36% households with a maternal death did not have a bank account. In Hisar and Karnal 33% household with maternal death did not have bank account. Out of food, clothes, shelter, education and health, health was the first priority in only 8% households. In Karnal 22% households reported health to be the first priority whereas 18% households in Gurgaon reported health as first priority. As per the findings of this study 64% households with maternal

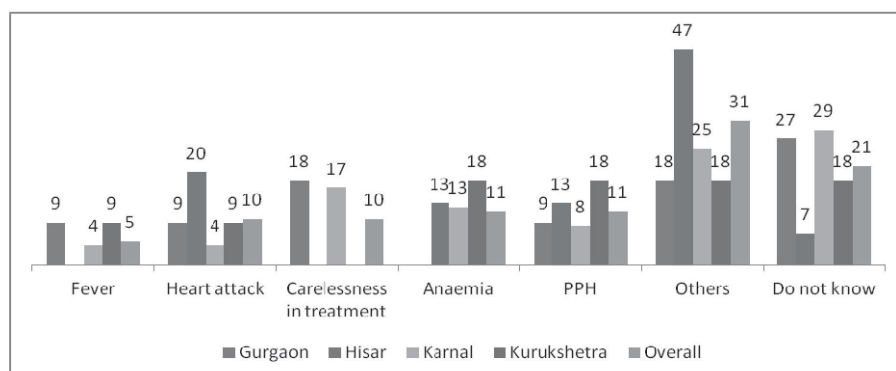


Chart 1: Percent distribution of maternal deaths vis-à-vis possible cause of death wise

death were not aware about Janani Suraksha Yojna (JSY). In Karnal this awareness was particularly low as 71% households with maternal death were not aware about JSY. In Hisar 67% households were not aware about JSY. In both Gurgaon and Kurukshetra more than half of the households were not aware of JSY. Overall 79% households where a maternal death had taken place were not aware about Rashtriya Swasthya Bima Yojna (RSBY). In Karnal and Kurukshetra this awareness was particularly low as more than 80% households were not aware about RSBY. In Gurgaon and Hisar more than 70% households were not aware about RSBY.

When we see the distribution of maternal death cases across the possible cause of death we see that the major possible causes of death were anaemia, heart attack,

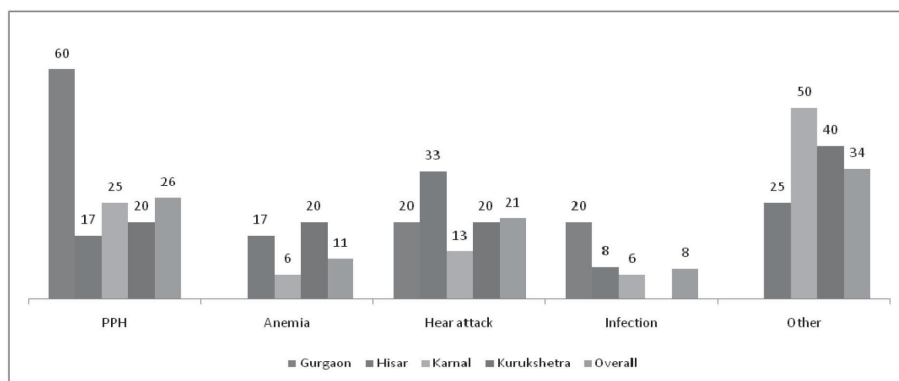


Chart 2: Reported cause wise distribution of maternal deaths

post-partum haemorrhage, fever and carelessness in treatment. There were other possible causes of death which included swine flu, infection due to eruption of uterus after 20 days of pregnancy, renal failure, ignorance by health service providers, improper operation and even suicide. Infact, 10% of all the maternal

death cases were attributed to carelessness of treatment. Cause of deaths in case of 21% maternal deaths was unknown. This raises serious concerns regarding the information provided by concerned health authorities to such families on causes of maternal deaths.

The data shows that 26% maternal deaths have occurred due to post partum haemorrhage and 34% due to other reasons such as high blood pressure, renal failure, difficulty in breathing, cancer, seizure disorder, hydropneumothorax, inversion of uterus, blood loss, low blood pressure, suicide, respiratory & kidney failure and CVT. More than half of the maternal deaths took place post-delivery. In Karnal 75% of the maternal deaths took place post-delivery whereas in Kurukshetra 55% maternal deaths took place post delivery. In Hisar 40% deaths took place during pregnancy. This indicates gap in level of awareness, availability of facilities as well as utilization of post natal care services. In most of the maternal death cases there was already a live birth. In 33% maternal death cases the present pregnancy had been preceded by 2 or more live births. In Karnal 43% maternal death cases were preceded by 2 or more live births. In Gurgaon 30% maternal death cases were preceded by 2 or more live births. 18% maternal death cases had previous history of still births. In Karnal 22% maternal death cases had previous history of still births whereas in Kurukshetra 20% maternal death cases had history of previous still births. Overall 13% maternal death cases had previous history of abortions. In Hisar 15% maternal death cases had previous history of abortions. In Karnal 14% maternal death cases had previous history of abortions. Overall in 43% maternal death cases complication/s during delivery was reported. In both Kurukshetra and Hisar in 7% maternal death cases complication/s during delivery was reported. Reporting of complication/s during delivery was highest in Karnal where in 20% maternal death cases complication/s was reported. In 20% cases of maternal deaths, mother complained of some or the other problem during pregnancy. In Kurukshetra in case of one out of four maternal deaths the mother reported to have some problem during ante natal period. All the maternal death cases had received atleast one ANC. Most of the ANC had taken place in a primary health care center (PHC) or a community health care centre (CHC). In Hisar 56% maternal death cases had received ANC in sub center. In Karnal 61% maternal death cases had received ANC in PHC/CHC. In Gurgaon the maternal death cases had received ANC in government hospital. Overall, in 38% maternal deaths cases ANCs took place in a PHC or a CHC. In case of 26% maternal death cases ANCs took place in government hospitals. In 84% of the maternal death cases the, ANCs took place in government health institutions. This indicates that the quality of ANCs in PHC and CHC and government hospitals need to be assessed as majority of the ANCs took place in government institutions. Referral during antenatal period was made in only 18% maternal death cases. In Kurukshetra 27% cases were referred during the ante natal period. In Hisar 20% maternal death cases were referred during the ante natal period whereas in Gurgaon in 18% maternal

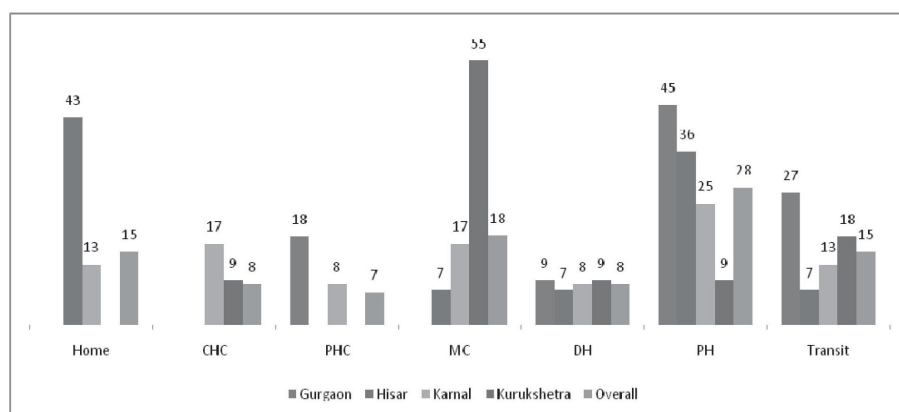


Fig 3: Place of death wise distribution of maternal deaths

death cases were referred during ante natal period. Lowest referrals were made in the district Karnal. Most of the cases of maternal deaths received ANC once, twice or thrice. In Hisar 13% maternal death cases had received more than 3 ANCs and in Karnal 65% maternal death cases had received more than 3 ANCs. Overall, 63% maternal death cases had received ANC once, twice or thrice and 33% maternal death cases had received ANC more than 3 times.

Distribution of maternal deaths on the basis of place of these deaths shows that around one fourth deaths had taken place in a private hospital. However, in Hisar 43% deaths had taken place at home. This data can be compared with the type of death data for Hisar which shows that most of the deaths were either during pregnancy or during delivery. This data can be further related with the DLHS-3 data for institutional delivery which provides that percentage of institutional deliveries in Hisar is around 48%. On the other hand, in Gurgaon most of the deaths are taking place in private hospitals. This can be related to the number of private hospitals and accessibility to these hospitals in Gurgaon. However, one out of four deaths are taking place in transit in Gurgaon. Further, in Kurukshetra more than half of the deaths are taking place in medical college. In 15% maternal death cases, there was a delay in treatment of complications aroused during delivery. In 36% cases in Gurgaon delay in treatment was reported whereas in Hisar in 20% maternal death cases delay in treatment was reported. In Kurukshetra, no cases of delay in treatment observed. Both mothers and their newborns are vulnerable during the postnatal period, especially during the first 24 hours following the birth week. Overall, in 30% post delivery maternal death cases PNCs did not take place. Further, in the same percentage of post delivery maternal death cases less than 3 PNCs took place. In Kurukshetra in 67% post delivery maternal death cases PNCs did not take place. PNCs are crucial for identification as well as prevention of post partum complications. Overall in 60% of post delivery maternal

deaths cases complications were reported. In Karnal in 88% post delivery maternal death cases complications were reported whereas in Kurukshetra in 67% post delivery maternal death cases complications were reported. In 45% post delivery maternal deaths cases post partum haemorrhage and sudden chest pain & collapse were cited as the main problems. Other problems included severe fever and foul smelling discharge, unconsciousness, bleeding from multiple sites, severe leg pain and swelling, abnormal behaviour and severe anaemia. In Gurgaon post delivery maternal deaths reported problem of sudden chest pain and collapse whereas in Kurukshetra 3 out of 4 post delivery maternal deaths reported post partum haemorrhage as a problem. In 80% of the post delivery maternal death cases treatment was sought. However, in Kurukshetra and Hisar in case of 33% and 43% post delivery maternal death cases treatment for problems was not sought. Overall in most of the cases in which treatment was sought, it was mainly provided by a Medical Officer or a Doctor. However, in Gurgaon in 80% of the cases treatment was provided by ANM. In Kurukshetra in half of the cases treatment was provided by any other service provider other than ANM, staff nurse or medical officer.

Infant Death Review

Neo natal Deaths

Hisar contributed 46% neo natal deaths to the sample whereas 21% of Neo natal deaths to the sample were contributed by Kurukshetra. Karnal contributed 18% of neo natal deaths to the total sample whereas Gurgaon contributed 14% neo natal deaths to the total sample of neo natal deaths. Most of the cases of neo natal deaths took place in families belonging to schedule castes. Overall 41% cases of neo natal mortality cases took place in SC families whereas 37% neonatal mortality cases took place in families belonging to other backward castes. In Karnal 69% neo natal death cases took place in SC families. No cases of neo natal deaths in ST community were found. Overall 48% families where neo natal deaths took place were below the poverty line. In Karnal 64% families. In Gurgaon 60% neo natal deaths took place in families below the poverty line. Overall in 79% neo natal death cases some sort of treatment was sought. In Hisar in 73% neo natal cases treatment was sought. In other districts in more than 70% early neo natal death cases some sort of treatment was sought. The sources of treatment included quack/informal service provider, traditional healer/religious leader, government district hospital, private allopathic doctor or doctors in alternate system of medicine. In 21% such cases overall treatment was not sought due to one or more reasons such as no hope of survival of the infant, transport facility was not available. Most of the families in which early neo natal deaths took place had knowledge about danger signs when a new born or infant should be taken to hospital. However, in Gurgaon and Kurukshetra around 13-14% families reported that they did not have knowledge of danger signs when a new born or infant

should be taken to hospital. Overall in 68% neo natal death cases the families had knowledge about government hospitals where new born could be admitted and treated. In Gurgaon this knowledge was significantly low as only 20% families

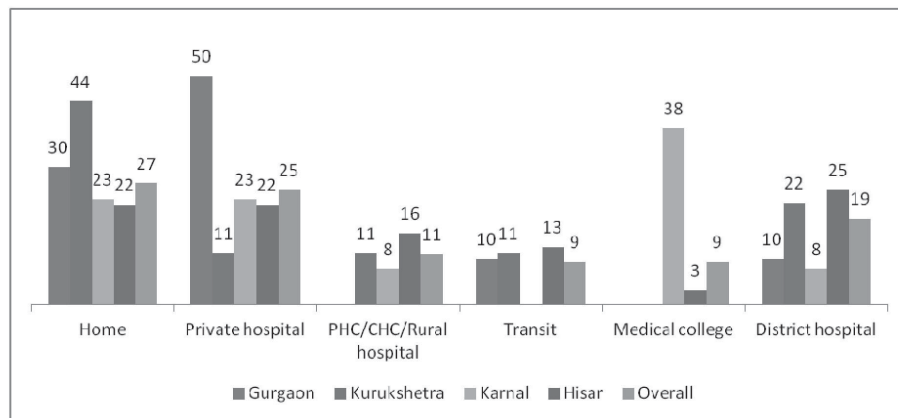


Fig 4: Percentage distribution of deaths vis-à-vis Place of death

had such knowledge. On the other hand in 94% neo natal deaths in Hisar the families had knowledge about government hospitals where a new born could be admitted and treated. In 46% neo natal death cases savings of the family were used for the treatment of the infant whereas in 41% death cases the family had to sell its assets. In 13% cases savings of the family was used as well as money was borrowed. In Karnal in 75% death cases savings were used for treatment. Overall 59% neo natal death cases took place among male children where as 41% neo natal death cases took place among female children. On the other hand, 60% of the neo natal death cases took place among girl children in Kurukshetra.

Most of the neo natal death cases took place at home. In Gurgaon half of the neo natal death cases took place in private hospital. In Hisar 44% deaths took place at home. Overall in 9% neo natal deaths families reported delay in treatment. In Gurgaon in 11% neo natal death cases, delay in getting treatment was reported. In 92% neo natal death cases the mother had received two doses of tetanus toxoid. In Kurukshetra in all the cases of neo natal death the mother had received two doses of tetanus toxoid. Most of the deliveries were attended by either Allopathic doctor or ANM. However, untrained TBAs attended deliveries in 11% neo natal death cases in Kurukshetra. This might be one of the reasons of high neo natal deaths at home. Overall in 51% neo natal death cases, the infant was never breast fed. In 69% neo natal death cases in Karnal the infant was never breast fed. In only 22% cases of neo natal death the infant was breastfed within one hour of birth. Overall in 19% neo natal death case the infant was taken to the health facility within 10

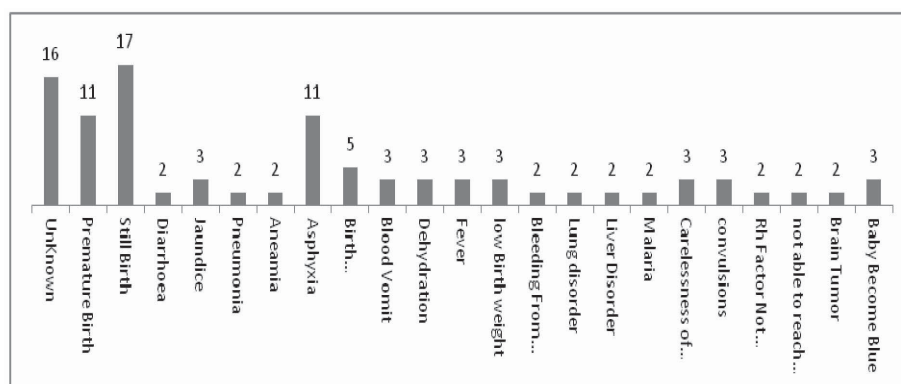


Fig 5: Cause of Neo natal deaths

minutes of the onset of the problem whereas in 26% neo natal death cases the infant was taken to the health facility either between 11-20 minutes or 21-30 minutes. In 22% neo natal death cases 1-2 hours of time was taken by the family members to reach the infant to the first health facility. In case of 25% neo natal deaths, one to two hours were spent from taking the infant from first health facility to various referrals and the one where the infant actually took its last breath. In Karnal in more than half of the neo natal death cases more than one hour was spent in taking the infant from first health facility to the last referral. The major causes of death of the neo natal were premature birth & asphyxia.

Post Neo natal

Kurukshetra contributed 39% of post neo natal deaths to the sample whereas roughly one in four post neo natal deaths were contributed by Gurgaon and Hisar. Karnal contributed only 9% of post neo natal deaths to the sample. Post neo natal deaths mostly took place in families belonging to the schedule caste category of the society. More than 40% of the late neonatal deaths took place in SC families whereas 35% late neo natal deaths took place in families from other backward castes. No cases of post neo natal deaths reported from any of the districts. In 43% post neo natal death cases the family was from the below poverty line strata of the economy. In Karnal all the post neo natal death cases took place in families living below the poverty line. In 83% post neo natal death cases treatment for one of the sources such as quack/informal service provider, government district hospital, private allopathic doctor or doctors in alternate system of medicine was sought. In case where treatment was not sought it was basically due to lack of transport facility. Overall in 39% post neo natal death cases the family had no knowledge about any government hospital which provided admission and treatment to a new born. In Gurgaon in more than 80% post neo natal death cases the families did not have knowledge about government hospitals providing admission and treatment to new born. In Hisar more nearly 70% families with a post neonatal

death case did not have knowledge about government hospital providing treatment to the new born. In half of the post neo natal death cases, savings were utilized for treatment. Further, in 40% post neo natal death cases money was borrowed for the purpose of treatment. In Karnal in 100% post neo natal death cases money was borrowed. In Gurgaon in 60% post neo natal death cases money was borrowed for treatment. Most of the post neo natal deaths took place at home. 5% post neo natal death cases took place during transit whereas the same percentage of post neo natal death cases took place in medical college. Further, 9% of the post neo natal death cases took place in district hospital. Majority of the post neo natal deaths took place among female child. More than half of the post neo natal deaths took place among female children. In Kurukshetra 78% post neo natal deaths took place among female children. In Karnal all the deaths took place among female children. In case of 65% post neo natal death cases breast feeding was started immediately after birth or within one hour of birth. In 13% post neo natal death cases breast feeding was started on the same day the birth took place whereas in the same percentage of post neo natal deaths breast feeding took place in the second day or later. In 9% post neo natal death cases breast feeding was never done. Exclusive breastfeeding of the infant for the first six months is crucial to the physical and mental development of the infant as well as building of the immune system. However, in 22% post neo natal death cases the infant was fed something else other than breast milk within 6 months of the infant's birth. In Hisar in 33% post neo natal death cases the baby was given something else other than breast milk within six months period. This indicates than in 88% post neo natal death cases exclusive breast feeding for the first 6 months was not undertaken. In the district of Karnal 100% breast feeding for first six months. 45% infants were not provided DPT-3 or penta-valent dose. In Kurukshetra more than 80% infants did not receive DPT-3 or penta-valent injections. In Gurgaon in 60% post neo natal death cases DPT-3 or penta-valent injection was not provided. In 42% post neo natal death cases the time taken to reach the first health facility where some sort

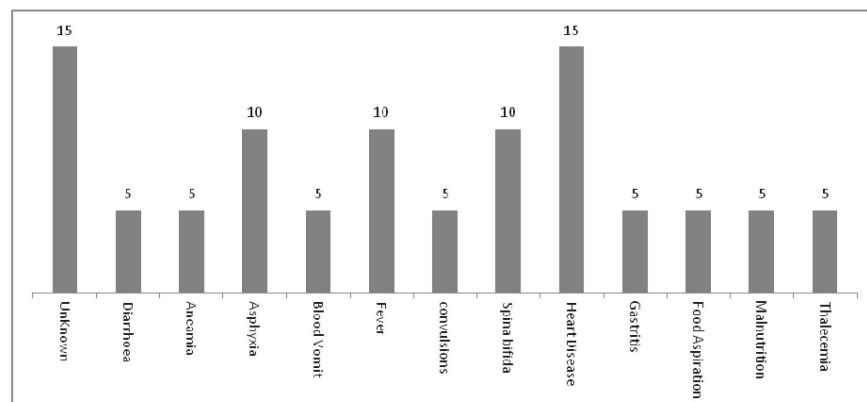


Fig 6: Cause of post neo natal deaths

of treatment was initiated, was more than 1 hour. In 17% post neo natal death cases the time taken from the onset of the problem to reaching the health facility was more than 2 hours. In 25% post neo natal death cases the time taken from the first referral to the last referral was between 1 to 2 hours. In 17% post neo natal death cases it was more than 2 hours.

Most of the post neo natal deaths took place due to heart diseases, spina bifida, asphyxia or unknown causes. In Kurukshetra in all the post neo natal death cases the cause of death was unknown whereas in Karnal most of the post neo natal death cases took place due to asphyxia. In Hisar in none of the post neo natal death cases the cause of death was known to the respondent.

Identified gaps in the present maternal and infant death audit process

The verbal autopsy formats filled by the evaluation team were compared with the secondary data provided by district health department. The rationale for selection of the indicators was majorly their presence in both the primary and secondary formats. Further, these indicators were also crucial from the point of view of getting clearer picture on the nature of factors which contribute to maternal or infant deaths. In case of all the identified indicators variance was calculated based on the mismatch of the primary and secondary data. Mismatch of data referred to either primary data not matching secondary data or secondary data corresponding to primary data completely absent.

1. Verbal autopsy formats are not filled comprehensively and completely. In case of maternal deaths data on indicators pertaining to referral services availed and quality of referral services is significantly missing. District-wise comparison of data asymmetry shows that there is a major problem in Gurgaon as far as filling of verbal autopsy formats are concerned. Compared to other districts on the select few indicators on which data has been compared, for most of the indicators there is a data mismatch in Gurgaon. Almost similar has been the observation in case of infant deaths however, the issue seems more critical in case of infant deaths. Data has not been collected on most of the indicators provided in the infant death verbal autopsy formats. The effort has been to identify and document the medical cause of death but the cause of death as perceived by the respondent who is a family member of the deceased has not been given much importance. In some cases there has been a gross mismatch of data where even suicide cases have been noted down as maternal death cases assigning a different cause of death. Mismatch of primary and secondary data is significant in Kurukshetra which indicates that infant verbal autopsy formats are not being filled comprehensively and completely majorly in this district, although this problem is critical across the study districts.
2. The verbal autopsy formats for infant death are in English and the verbal

autopsies are conducted in Hindi or in local language. Since there is a lack of standardized verbal autopsy format for data collection in Hindi or in local language there is a possibility of change in the meaning of a question in the way it is asked at the data collection level. Since the format is in English it also ensures that the responses recorded are limited to be rechecked and analyzed by only those officials who know English. Further, the present verbal autopsy formats being in English cannot be verified by the respondent. The same also cannot be shared with health functionaries at the field level in case they do not know English. The verbal autopsy formats in English might be one of the blocks in conducting verbal autopsies on all the indicators. Further, the verbal autopsy formats need to be rechecked for language and typing errors.

3. The verbal autopsy formats on maternal and infant deaths do not have substantive indicators to collect information on social and economic condition of families in which a maternal or infant death has occurred. Further, the verbal autopsy formats also do not contain indicators on knowledge, attitude, practice and behaviour. Lack of such information would ensure that a complete picture of deaths cannot be created and the cause of death would remain limited to the medical cause of death and one would not be able to analyze the various factors of death. There is evidence that infant and maternal death can be reduced significantly if desired change can be brought in the knowledge, attitude and practice of the community. In order to develop a comprehensive strategy to address maternal and infant death there is a need to understand these in their totality. Factors leading to death would actually be able to create the cause and effect model in its totality. At present greater emphasis is on the cause of death itself rather than the factors leading to the death.
4. The verbal autopsy formats need to be revised and made more systematic in capturing relevant data. The formats also need to be coded properly which ensures speedy and accurate data entry.

Discussion

A community based maternal or infant death review can be a useful tool for program planner, managers and health advocates, provided that the data are used appropriately and strengths and weaknesses of the tool are kept in mind. Strengths of MDR or IDR lie in the depth of information that can be gathered on the process that the pregnant woman and her family went through and the barriers that they faced. Limitations of the MDR or the IDR are directly related to its strength, as it cannot provide maternal or infant mortality levels in the study area. In the present study we see that although the process of maternal and infant death audit is being undertaken on a regular basis the process has several gaps which reduces the efficacy of it. Although a process of both maternal and infant death audit is defined

by NRHM the operational aspects of the processes need to be further strengthened.

The analysis of the data from the study indicates that various socio-economic factors are associated with maternal and infant death. With regards to maternal deaths, there were overall 61 maternal deaths that were covered of which most were from Karnal (39%), while 25% were from Hisar and 18% each from Kurukshetra and Gurgaon. Most of the deaths were of Hindu housewives from the socially marginalized communities like SC and OBCs and overall 45% women belonged to BPL, although 93% of households had mobile phones. These families were not spending significantly on health and were out of the security net of the government. These families were not aware about their entitlements and were either not able to avail health and nutrition services or such services did not exist at all. Only 36% of families knew about JSY and 21% knew about RSBY.

The study shows that most of the maternal deaths had taken place among families which were within a radius of 600m (87%) from the nearest AWC. Further, 28% of maternal deaths has taken place in private hospitals with the highest proportion being especially in Gurgaon (45%). This somehow indicates that in most critical of cases and situations families prefer to take mother or child to private hospitals with a hope that the services would be better there. However, this also indicates a lack of faith in government health institutions during critical times. All women had at least 1 live birth in the past and all had availed ANC at least once with around 20% of women having had some problem in the ante-natal period. Majority of deaths occurred in post-delivery period (59%) with 21% of deaths occurring during pregnancy and 16% of death occurring during delivery. Maximum number of deaths post-delivery was in Karnal (75%) with Kurukshetra close behind (55%) followed by Gurgaon (45%). In Hisar most deaths occurred during pregnancy (40%). Overall, 60% women had complications after delivery and 80% of those women had sought some treatment for it. Maximum number of women having post-delivery complications were in Karnal (88%) followed by 67% in Kurukshetra. This means that post-delivery treatment must be strengthened in these two districts. Most deaths at occurred in healthcare facilities although 43% of deaths in Hisar had occurred at Home. 45% of deaths in Gurgaon had occurred in a private hospital probably due to high number of private hospitals in Gurgaon. 55% of death in Kurukshetra had occurred in medical colleges. Overall 15% of deaths had occurred in transit with maximum deaths in transit being in Gurgaon (27%). This clearly indicates that in Hisar institutional deliveries need to be increased while transit facilities need to improve in Gurgaon.

Among the causes of death were PPH, anaemia, infection, heart attack and others. Of these PPH seems to be most important cause in Gurgaon where 60% mother died due to it followed by 20% due to infection and 20% due to heart attack. In Hisar, 33% mothers died due to heart attack while 17% each died due to PPH and anaemia. Other causes were high in Karnal and Kurukshetra although PPH claimed

26% lives in Karnal as well. Overall we observed that although women had sought health care at most stages of pregnancy including post-delivery, health care providers were not up to the mark. A pattern of weak post-delivery care with inability of health facilities to reduce PPH, heart attack and anaemia comes out strongly. Facilities for reducing PPH and consequent anaemia must be present along with provision for blood transfusion and functional blood banks must be strengthened in the state.

In the case of infant deaths – both neonatal and post-neonatal, most deaths had occurred in Hindu households in the socially marginalized sections. For neonatal deaths, 41% deaths were in SC and 37% in OBC while for post-neonatal deaths, 43% deaths were in SC and 35% in OBC. 48% of neonatal deaths and 43% of post-neonatal deaths (100% in Karnal) were in the BPL households. Most cases (79% for neonatal and 83% for post-neonatal) had sought treatment with 95% families knowing about danger signs for seeking care in case of neonatal deaths. 68% families for neonatal deaths and 61% families for post-neonatal deaths knew about government hospitals that can be approached for treatment. Majority of people used their savings or borrowed money or sold their assets to pay for the treatment. Most of the neonatal deaths (64%) occurred in a health facility while most of the post-neonatal deaths (82%) occurred at home. Most neonatal deaths (50%) in Gurgaon occurred at private hospitals while most neonatal deaths (44%) occurred at home. Only in 9% of neonatal death cases there was a delay in treatment and in 25% of cases it took 1-2 hours for referrals. Most of the deliveries in case of neonatal deaths had been attended by an allopathic doctor (70%) or an ANM (22%) although 51% neonatal infants had never been breastfed. 65% of post-neonatal cases had been breastfed from the first day of birth and only 55% had received DPT-3. Most neonatal deaths occurred due to asphyxia (Kurukshetra), still birth (Karnal, Hisar) or pre-mature birth (Hisar). Main causes for post-neonatal deaths include heart disease, spina bifida or asphyxia.

Conclusion

It seems that in most cases of neonatal deaths, although the deliveries occurred in the presence of skilled medical personnel, the provision for handling complications in neonates after delivery was grossly inadequate. This is quite possible if births occurred at home (in Hisar) or if the hospitals were ill-equipped to have any neonatal intensive care unit as seems to be the case in most government hospitals or private hospitals, especially private hospitals in Gurgaon which were most families went in Gurgaon. Lack of adequate vaccination and late presentation at a hospital seems to be the cause of death for most post-neonatal deaths. However, the role of low socio-economic status in these deaths, as in maternal deaths, along with the fact that obtaining treatment might also be pushing people into poverty in the absence of any health insurance or safety net to insulate against health costs cannot be underemphasized.

The above in addition to all the lacunae in maternal and infant death reviews in Haryana implies that appropriate and adequate information is not being obtained in a timely manner to reach to the root cause of maternal and infant deaths in the state. Thus, to conclude, it is important to note that the infant and maternal death audits need to be more rigorous and stronger actions are required to identify cause immediately and then to take remedial action to reduce MMR and IMR in the State.

Limitations of the Study

Some of the addresses of the reviewed cases of infant and maternal death could not be located despite taking assistance from local auxiliary nurse and mid-wife (ANM) and accredited social health activist (ASHA). This reduced the sample in both maternal and infant death cases. Some of the deaths had occurred in families which had migrated to Haryana in search of jobs. Post-death these families left Haryana and migrated to some other State and were untraceable. Since all the maternal death review cases were included in the sample for evaluation the sample got reduced. Real time observation of verbal autopsies was included as one of the activities in the methodology of the study. This activity was concomitant on the occurrence of verbal autopsy in any of the sample districts during the study period. During the study a single verbal autopsy took place in Karnal district which was observed by the evaluators. Since the number of observation was only one nothing substantive could be concluded about the way a verbal autopsy is conducted. There is a need to observe more such verbal autopsy to come out with conclusions on the way of conducting verbal autopsies.

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5

Prevention and Rehabilitation of Disability in Children through RCH

Gargee Basu

The problem of disability is as old as mankind. Some people and organizations are continuously working for the development of the physically or psychologically challenged persons. But people are still not much aware of the issue. There are certain measures that must be followed to prevent disability in children and adults. Social workers took initiative to educate the community people about the preventive, promotive and curative measures that may help to avoid disability among children during pre-natal and post-natal period.

According to the UN convention there are four basic rights of the child. They are

- a) Survival,
- b) Protection,
- c) Development and
- d) Participation

These rights are applicable for the normal as well as special children. Children who are physically and mentally challenged also should enjoy their rights to survival, development, protection and participation. But in reality our society shows a completely different picture. There are several examples of rejection and non-acceptance of physically and mentally challenged children in the society as well as in our communities. This social barrier is an existing challenge which is there in our society for decades. But the attitude of the common people towards disability and persons with disabilities has not much changed. And due to this terrible visage

of society parents of such children live in pain throughout their lives. They even become helpless to such extent that they prefer to keep their children hidden from all.

Due to this reason no attempt was made to collect information on disability through Census of 1951, 1961 and 1971. Then after a gap of 50 years, a question on disabilities was again canvassed at the 1981 Census. The question on disability was not canvassed again at the 1991 Census of India.

The question on disability was again incorporated in census of India 2001 under the pressure from the various stakeholders and obligation under PWD Act, 1995, although it was generally felt that it was difficult to collect accurate information on disability during the census enumeration process. Further, the concepts and definitions spelt out in the act were found to be difficult to canvass in the absence of expert investigator specifically trained for the purpose.

Comparative Statement showing the coverage of Disability in various censuses:

Category	Census-1981	Census-2001	Census-2011
Scope	<p>Only Physically Handicapped persons were enumerated as follows:</p> <ul style="list-style-type: none"> • The totally Blind • The deaf • The orthopaedically handicapped 	<p>One question covering the following categories:</p> <p>In Seeing 1 In Speech 2 In Hearing 3 In Movement 4 Mental 5</p>	<p>Three questions covering the following categories:</p> <ul style="list-style-type: none"> • In Seeing - 1 • In Hearing - 2 • In Speech - 3 • In Movement - 4 • Mental Retardation - 5 • Mental Illness - 6 • Any other-7 • MultipleDisability - 8

Prevention of disability

Giving birth is the most divine initiation to spirituality a woman can have. Birth of a child is the most unique and special gift of every parent. Irrespective of the gender of the child, each parent wants her/his child to be physically and developmentally perfect. Often some children have a temporary or permanent Physical or psychological impairment. The birth of a child with a defect or the discovery that a child has a disability can have a deep impact on the family.

So, it is our duty to take major steps for prevention of disability among the children, identify even trivial impairment among new borns and toddlers, diagnosis and treatment for a speedy recovery and to participate actively in this mission to abolish the stigma and discrimination against the disabled.

As the prime duty of everyone, i.e. the family members, caregivers and as well as the medical professionals to support each other to avoid disability among the

children who are about to come to this world. Initiative should be taken to comfort the mothers during pregnancy till delivery and even in post delivery period. Optimum care and protection must be given to every pregnant and lactating mother to avoid disability among children during pre-natal and post-natal period. The following four measures are enormously significant:

- i. Adequate nutrition must be given to every pregnant and lactating mother to avoid disability among children during pre-natal and post-natal period.
- ii. Proper medication should be prescribed by doctors and the family members and health workers should look after whether the pregnant mother is taking the medicine on time or not.
- iii. Frequent health check-up in regular basis and if any kind of abnormality is noticed inform the doctor immediately.
- iv. Safe and scientific delivery by trained persons in institutions.

Requirement of proper nutrition and medication for pregnant and lactating mothers is very much important so that they can give birth to healthy and fit children. Lack of these amenities may result in birth of children with:

- loss of limbs
 - multiple sclerosis
 - heart disease
 - Down's syndrome
 - learning difficulties
 - mental health problems, such as depression and anxiety
 - Blindness or lower vision
 - Hearing and Speech impairment
 - Orthopedic deformity etc.
- v. The process of Prevention and Rehabilitation is easier once the disability is identified.
 - vi. Thus, besides these measures some others are also important to follow like,
 - vii. For the holistic development of the child, the Ministry has been implementing the world's largest outreach programme of Integrated Child Development Services (ICDS) providing a package of services comprising supplementary nutrition, immunisation, health check up and referral services, pre-school non-formal education. Growth and development of every child should be noticed by the ICDS workers and refer them to doctors if needed.

- viii. Health check-up camps in schools should be promoted.
- ix. Measures should be taken to reduce accidents in road, factory and mine etc.
- x. There are some deformities that are directly hereditary. To prevent these defects one should be aware in case of marriage and giving birth to children. In these cases pre- marital counseling and medical tests are truly significant.
- xi. Most of the congenital deformities are traceable to unhealthy pre-natal environment. Therefore a good system of maternal and child health services would go a long way towards prevention of congenital defects.
- xii. Late marriage and late pregnancy of mothers often causes psychological disability such as Down syndrome and Autism among children.

In the Eleventh Plan, 'Towards Women Agency & Child Rights', under the section, 'Providing for Special Needs of Differently-abled Children', it states, "It is critical to see disability as a child protection issue as well. Even today, data related to disability among children varies with source. It is estimated that hardly 50% disabled children reach adulthood, and no more than 20% survive till the fourth decade of life. Although there is very little information regarding the nutritional status of children with disabilities, it is recognized that disabled children living in poverty are among the most deprived in the world. Discrimination and often abandonment is a reality for them. Ensuring access to education, health, and nutrition for children with disabilities is a formidable challenge for the Eleventh Plan. The Plan will ensure among other things, provision of ramps in schools, development of disabled friendly curricula, and training and sensitization of teachers.

A study undertaken in Gujarat revealed, "70 percent of the disabled people identified were disabled before school age. This is a surprisingly high figure, and points to the impact of India's high rates of malnutrition among the under fives, maternal mortality and poor early childhood care. Malnourishment is a major cause of developmental delay and long-term intellectual disability."

Malnourished children, unlike their well-nourished peers, not only have lifetime disabilities and

Weakened immune systems, but they also lack the capacity for learning that their well-nourished peers have. In infancy and early childhood, iron deficiency anemia can delay psychomotor development and impair cognitive development, lowering IQ by about 9 points. Low-birth weight babies have IQs that average 5 points below those of healthy children. And children who were not breastfed have IQs that are 8 points lower than breastfed children.

Prevention of any disease must be regarded as the most effective safeguard against the disablement caused by it.

Disability in children may be prevented by taking some important measures through the Reproductive and Child Health Programme in India. High rate of Infant Mortality and Mothers Mortality are major problems in India till today. The RCH programme has been implemented to reduce such problems.

Reproductive Health

World Health Organization (WHO) defines Reproductive Health as a condition in which the reproductive process is accomplished in a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The ministry of Health and Family Welfare, Government of India has taken an initiative to implement Reproductive Child health (RCH) programme during the ninth plan. RCH has been conceived as an integrated and holistic approach which combines child survival and safe motherhood, prevention of RTI, STD and AIDS and provision of family welfare and health care services in a package deal. The programme has been envisaged to address all intervention of fertility regulation, reproductive health of women and men along with assured provision for maternal and child health.

Reproductive and Child Health Programme

The Reproductive and Child Health (RCH) Programme was launched throughout the country on 15th October, 1997. Reproductive and Child Health (RCH) has been defined as a state in which “People have the ability to reproduce and regulate their fertility; women are able to go through pregnancy and childbirth safely. The outcome of pregnancy is successful in terms of maternal and infant survival and well being. Couples are able to have sexual relations free of the fear of pregnancy and contract diseases”. Along with these issues there are more over which the RCH programme put an emphasis. Such as, early marriage and first pregnancy before 20years of age, birth interval and timing between two babies, four or more than four pregnancies, late motherhood that is first pregnancy after 30 years of age, mother’s health during pregnancy, chance of anemia, personal hygiene etc. These parameters are equally important to identify the risk of physical or psychological disability in a child before its birth.

It is always better to kill the possibilities of disability in children before their birth. For that the pregnant mothers should be aware at first. When mothers do not get enough to eat during pregnancy, often their babies are born early or underweight. These babies are much more likely to have disabilities like cerebral palsy. This is one of the most common severe disabilities. Also, some birth defects are related to poor nutrition and hygiene during the first months of pregnancy.

Poor nutrition during early pregnancy is thought to be one cause of cleft lip and palate. Sometimes medicines a mother takes early in pregnancy cause a child to be born with missing or incomplete arms or legs, or both.

- **Good nutrition of the mother**, both before and during pregnancy, reduces the chance of premature birth - and of cerebral palsy.
- If possible, girls should **avoid pregnancy until full grown**
- Avoid unnecessary medicines during pregnancy.
- Try to **avoid** getting near persons with **German measles** during pregnancy. Or get vaccinated against German measles before becoming pregnant.
- Go for regular **health check-ups during pregnancy**

A question of hygiene comes with the poor sanitation and crowded living conditions where the pregnant mothers suffer from difficulties in maintaining their health and often get an infection or a disease. This may result in a severe problem to the mother when she is pregnant or in time of delivery. Mother and child both may have life risk. Most importantly, the newborn may get a disability like Polio or Cerebral Palsy.

In case of the premature babies, who born before 9 months and who weigh under 2 kilos (5 pounds) are much more likely to have cerebral palsy. In several places in India over half the cases of cerebral palsy happen in babies that are born early.

In the time of birth injuries may cause in several cases i.e. the baby gets hurt during delivery which causes a severe damage to its brain. These are mostly large babies of mothers who are small or very young. The baby's head may be pushed out of shape, blood vessels torn, and the brain gets damaged.

Sometimes the baby does not breathe soon enough and becomes blue and limp. In some areas, misuse of hormones to speed up birth, narrows the blood vessels in the womb so much that the baby does not get enough oxygen. The baby is born blue and limp-with brain damage.

The mother should go for regular health check-ups during pregnancy. Otherwise, if there is an infection like herpes zoster or German measles in mother it will do a great harm to the baby too. A physical as well as a mental disability may occur in the child. There are more factors which may cause a disability to a child before its birth and the only way to identify these factors is to become careful when examining the pregnant mothers and follow up till delivery. And this may possible through the RCH programme only. So that babies born healthy and without any complication and on the other hand, mothers also stay fit and fine. Differences between the blood of mother and child i.e. Rh incompatibility is one of the major reasons of disability among children from birth or before birth. Problems of the mother, such as diabetes or toxemia of pregnancy can also cause the same. So the mothers should be covered under the RCH programme to cure these difficulties for them and for their babies as well.

The RCH programme is envisaged to provide an integrated package of services, which will include the following:

- Services for mothers during pregnancy, child birth and post-natal period, and also safe abortion services, whenever required.
- Services for children like newborn care, immunization, Vitamin A prophylaxis, Oral Rehydration Therapy (ORT) for diarrhea, management of Acute Respiratory Infections (ARI), anemia control etc.
- Services for eligible couples through availability and promotion of use of contraceptive methods, and infertility services when required.
- Prevention and management of Reproductive Tract Infections (RTIs) and Sexually Transmitted Infections (STIs)
- Adolescent health services including counseling of family life and reproductive health.

Along with these, the preventive measures for disability in children should also be taken.

Rehabilitation

More people are living with a disability now than in the past because we're living longer, and improved medical treatments are enabling more people to manage long-term health problems. The Equality and Human Rights Commission says that 58% of people over 50 will have a long-term health condition by 2020.

Thus, beside prevention, rehabilitation of these children with disabilities is also equally important. The initial rehabilitation may be through surgical treatment and physiotherapy. Sometimes, may be by providing supportive aids and appliances such as, hearing aid, blind stick, and wheel-chair or may be with an artificial limb.

Medical Rehabilitation means the restoration of the physical capacity of disabled persons, either to its original level or as close to it as possible. Medical Rehabilitation is a process which enables children with functional, psychological, developmental, cognitive and emotional impairments or health conditions to overcome barriers to access; maintain or return to the normal life course.

Vocational Rehabilitation can require input from a range of health care professionals and other non-medical disciplines such as disability employment advisers and career counsellors. Techniques used can include:

- Assessment, appraisal, programme evaluation and research
- Goal setting and intervention planning
- Provision of health advice and promotion, in support of returning to work
- Support for self-management of health conditions

- Making adjustments to the medical and psychological impact of a disability
- Case management, referral, and service co-ordination.
- Psychosocial interventions
- Career counseling, job analysis, job development, and placement services
- Functional and work capacity evaluations

The Ministry of Women & Child Development runs Integrated Child Development Programme (ICDS Scheme), which was launched in 1975 with the objective to improve the nutritional and health status of children below the age of six and pregnant & lactating mothers; to lay foundation for the proper psychological, physical and social development of the child; to reduce the incidence of mortality, malnutrition and school drop outs; to achieve effective coordination of policy & implementation among various departments to promote child development; and to enhance the capability of the mother to look after the health and nutritional needs of the child through proper health and nutrition education. The next phase of the ICDS, i.e. ICDS IV, which is at the planning preparation stage. The ICDS IV will have two major components – Nutrition and Early Childhood Education. The Annual Report (2007-08) of the Ministry states that Sensitization Programme for ICDS Functionaries and Trainers on Early Detection and Prevention of Disabilities.

Eleventh Plan has a section on women with disabilities and children with disabilities Section on women with disability states, Reproductive & Child Health (RCH) programmes will pay attention to reproductive health needs of women with disabilities. Violation of their reproductive rights through forced sterilization, contraception and abortion especially in institutions will be dealt with severely. In the Eleventh Plan, women with disabilities will be specifically included in gender equity programmes, both as beneficiaries and as project workers. The Eleventh Plan mentions that sensitization programmes of government departments, police, and health care personnel will include sensitization to the needs of women with disabilities. Laws will be strictly enforced in cases of discrimination.

Regarding children with disability the Eleventh Five Year Plan states, it is recognized that disabled children living in poverty are among the most deprived in the world. Discrimination and often abandonment is a reality for them. Ensuring access to education, health, and nutrition for children with disabilities is a formidable challenge for the Eleventh Plan. The Plan will ensure among other things, provision of ramps in schools, development of disabled friendly curricula, and training and sensitization of teachers.

The Eleventh Plan states, “To enhance the economic potential of persons with disabilities, 199 DDRCs for comprehensive service in community setting have been sanctioned, but only 128 were made operational by the end of the Tenth Plan. The Eleventh Plan will ensure that the remaining 71 centers are also

operationalized. Also, a concerted effort will be made to extend the scheme to another 101 districts so that at least 300 districts are covered by the end of the Plan period. In the selection of the additional 101 districts, special care will be taken to cover backward areas where the prevalence of disability is higher and where services as well as facilities for them are inferior to those in other parts of the country.

And for economic rehabilitation following are the initiatives mentioned in the Annual Report of MSJE with regard to rehabilitation of people with disabilities:

The Deendayal Disabled Rehabilitation Scheme provides support to Non-Government organizations to deliver various rehabilitation services to persons with disabilities. In the financial year 2007-08 (till December 2007), 587 organizations were released grant in aid assistance of Rs.31.37 crore to benefit 1.30 lakh persons.

District Disability Rehabilitation Centers: Since inception (1999-2000), a total number of 199

DDRCs had been sanctioned, out of which 148 had been set up and started functioning. During the year 2006-07, 50 new DDRCs were sanctioned.

Rehabilitation services are available to only 5% of the disabled population

The Eleventh Plan in the Health Chapter under the section, 'Disability and Medical Rehabilitation' talks of building capacity in Medical Colleges and District Hospitals to train adequate human resources required for medical rehabilitation programme at all three levels of Health Care Delivery System. It also mentions provision of Rehabilitation Services in Medical Hospitals and to evolve strategy of care in the domiciliary and community set up. In order to achieve this, a concerted rehabilitation programme requires to be developed and launched for systematically reaching to all disabled people in the country. Article 26 of UNCRPD, Habilitation & Rehabilitation mandates States Parties to take effective and appropriate measures, to enable persons with disabilities to attain and maintain maximum independence, full physical, mental, social and vocational ability, and full inclusion and participation in all aspects of life. To that end, States Parties shall organize, strengthen and extend comprehensive habilitation and rehabilitation services and programmes, particularly in the areas of health, employment, education and social services, in such a way that these services and programmes.

Rehabilitation is not only concerned with physical or functional restoration/compensation of individuals disabled by injury or disease. Attention is also given to the total quality of life in terms of wellness, happiness and satisfaction in fulfilling the demands needs capacities of human existence in orientation, freedom of movement, independence, expression of self (with respect to age, sex and culture),

relationship and ability to ensure independent economic existence. After a serious injury, illness or surgery, one needs to recover slowly. There is the need to regain strength, to relearn skills or find new ways of doing things one did before. This is the process of rehabilitation.

Children who are born with disabilities need stimulation for development and adaptation – habilitation (Winnick, 1979), and those who acquire disabilities also need rehabilitation. Technically, therefore, rehabilitation is a creative procedure that includes the cooperative efforts of various medical specialists, and associates in other health, technical and environmental fields, to improve the physical, mental, social and vocational aptitudes of the disabled, with the objectives of preserving and improving their ability to live happily and productively on the same level, and with the same opportunities as their neighbors (Krusen et al, 1971; Olaogun, 2007). In other words, it is a process of decreasing the dependence of the disabled person, by developing to the greatest extent possible, the abilities needed for adequate functioning in his individual situation in the community (Helinder, 1984).

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6

Integrated Water Resources Management (IWRM): A Rural Livelihood Perspective

Pulak Kumar Patra

The importance of water on human activities cannot be over emphasized. Water management is now treated in a holistic conceptual framework with facets of social, economic, institutional, and ethical challenge as much as it is biophysical and engineering challenge. Public participation and communication of expert knowledge with transparent and generally accessible information systems are considered important cornerstones for sustainable integrated water management (GWP-TEC, 2000). Integrated Water Resources Management (IWRM) is now the dominant paradigm for water management in both rich and poor countries. It has unquestionably become one of the mainstream initiatives. IWRM approaches are attractive because they provide a framework to manage competition for limited resources and the potential conflicts and inefficiencies that may arise, providing mechanisms to resolve the trade-offs between different users. The integration of socio-economic and hydrological considerations represents a welcome and interesting paradigm. However, in spite of wide consensus on the need for multidisciplinary or multidimensional water resources management, the necessary methodologies and ideas for actually doing it are not yet available. The effective implementation of IWRM remains as a major challenge. The feeling is growing that the approach is not suited for addressing real, urgent needs and priorities, of which domestic water supply is invariably one. In this context, a new approach to IWRM may be considered which will put improving livelihoods of people at the centre. The present paper examines our current understanding and practices of IWRM and rural livelihood problems.

Domestic Water Supplies and Rural Livelihoods

Domestic water supplies and environmental sanitation contribute to livelihoods in a wide range of ways. Lack of access to a reliable water supply for households as well as for productive purposes is one central feature of poverty. Access to safe drinking water and sanitation and affordable irrigation is a great challenge. Making water available for agricultural production (including livestock, fish, as well as crops) in regions where rainfall is unreliable or insufficient can make a huge difference to peoples' lives, as the vast majority of rural poor depends on agriculture. There is considerable evidence that making even relatively small amounts of water available for personal and productive uses to poor people can transform their lives. Participatory assessments of needs amongst poor people have identified Water Supply and Sanitation (WSS) as a key priority in situations where resources are scarce, supplies irregular and/or water quality is poor. The poor themselves are usually acutely aware of the impact of poor WSS on their health and general well-being, whilst women in particular suffer the burden of fetching water and managing with inadequate supplies. Access to water has important roles in promoting food security, health and household maintenance, and water-based livelihoods and livelihood diversification, and maintaining the ecosystems that support livelihoods.

Some of the examples are as follows:

- i) Food security : Use of domestic water and wastewater in rural homestead and urban agriculture e.g. gardens, stall-fed livestock.
- ii) Health and household maintenance: Use of water for drinking, cooking, bathing, washing etc. effects health, productivity and workload (especially women)
- iii) Water based livelihoods and livelihood diversification: Use of water for agriculture and non-agriculture commercial activities e.g. construction, small-scale (often informal or unplanned) industries e.g. by potters, weavers, tanners.
- iv) Ecosystems maintenance: Sanitation facilities reduce the impact of waste disposal on water-bodies (e.g. through eutrophication) that support livelihoods e.g. fisherfolk.

The amount of water available to support these activities is a key constraint to improving income levels. The quantity of domestic water used is also now understood to be as or more important than improving water quality in order to reduce the transmission of disease (Well, 1998).

Despite massive investment, and impressive improvements in 'coverage', large numbers of people still don't have access to adequate water supplies. Sanitation provision is even worse. Many systems that exist are also not functioning

adequately or at all due to broken pumps and other factors. As a result people are often stuck with systems that provide intermittent supplies (e.g. a couple of hours per day), shortages during dry seasons and drought, and rely upon costly supplies from water vendors during periods of scarcity. There are many causes of persisting water supply system failures.

The most important ones can be mentioned as follows:

- i) Physical constraints not properly addressed during planning: poor aquifer with limited storage; arsenic/ fluoride risks, potential competition with other uses, especially irrigation, not addressed
- ii) Engineering short comings: reticulation systems that are too expensive to operate and maintain
- iii) Institutional/ management failure: illegal connections to water supply systems and consequent problems in tail-end villages; over exploitation of groundwater under conditions of open access; poor cost recovery leading to lack of investment/maintenance; lack of maintenance e.g. hand-pumps; poor institutional organisation for the O&M of communal facilities
- iv) Corruption: incentives for some to maintain and profit from water shortages e.g. vendors, tanker operators, kick-backs associated with large engineering contracts
- v) Rising demands: increasing population; incentives to use water inefficiently especially for irrigation; changing patterns of water use with changes to lifestyles
- vi) Social Factors: Social barriers to access to water supply facilities (e.g. caste, gender)

Many of these factors are not inevitable, but rather reflect fundamental failings in the details of the design, planning, implementation and subsequent management of facilities.

Domestic water demands are commonly assumed to be trivial with respect to the consumption by other sectors. At a macro scale, irrigation typically accounts for 80-90% of water use and other uses (industry, power, ecosystems maintenance) are also generally seen as accounting for far larger quantities of water than domestic use. But in areas of relative water scarcity – particularly the more arid regions of the world – even relatively small per capita domestic water demands may account for a large proportion of the available resource in catchments. The WSS sector, although typically given priority allocations by policy increasingly has to ‘fight’ for its water resources. The non-WSS sectors (irrigation, industry, transport, tourism, others) can safely ignore WSS issues. Given that they are better resourced, and that the constituencies that they represent are often more politically powerful and vocal, there is little evidence that policy declarations over the prioritisation of

WSS are followed in practice. A consequence of this is that competition for water from other sectors is significantly reducing the availability or quality of water resources for WSS, and raising the costs of future provision of water services. Pressures on resources in rural areas include the increasing 'footprint' of expanding cities that depend upon water resources from an ever-increasing hinterland and the rapid growth of irrigation (especially dry season irrigation) in many parts of the developing world.

Policy gives domestic water sector priority, but in practice often fails to deliver. Affordable WSS options are increasingly important given that poor consumers are expected to contribute through cost recovery initiatives. There is evidence that even the poorest people are willing to do this if the service delivery is adequate, reliable and of a good quality.

In many Indian villages, drinking water supplies drawn from traditional wells and boreholes have been severely affected over recent decades (especially during the 1990s) by widespread over-abstraction of aquifers for irrigation. Irrigated areas and the amount of groundwater abstracted have increased dramatically, associated with policies to increase food production, subsidies and increased access to loans for farmers to sink wells and purchase pumps, and incentives such as free or cheap electricity. Under effectively open-access regimes, such policies have led to widespread declines in groundwater levels. Many village water supplies now fail routinely during the dry season, and they are increasingly vulnerable to periods of drought. Tankering of supplies is a costly emergency solution, is unpopular with communities and is often wasteful of the scarce water that is available. Increasingly unable to develop local groundwater resources for drinking water supplies, district government and state development agencies have often sought large-scale engineering solutions to harness surface water resources. Many schemes have been driven by engineers, and corrupt decision-making has also played a major role in the choice of technology. Large dams, water treatment works and extensive pipeline networks have been given priority – often each serving hundreds of villages. However many disadvantages associated of this approach have emerged, and often schemes cannot be sustained. Regional piped water supply schemes have suffered from poor and unreliable infrastructure, and as responsibilities are decentralised, even the high operation and maintenance costs cannot be afforded. Local solutions are now increasingly being sought to manage water resources better, and secure sustainable resources for consumptive and productive use at lower costs.

There is an increasing risk of pollution and decline in the quality of water resources from industrial sources and poor sanitation. In other settings, water quality risks can come from "natural" sources such as fluoride, arsenic or salinisation (though human management can make these far worse). This also represents a "scarcity" – the scarcity of adequate quality. The multiple natures of water resource values and the multiplicity of water users are fundamental features of any assessment of water resources.

Integrated Water Resources Management: Concept and Practices

The concept of Integrated Water Resources Management (IWRM) emerged around the 1980s in response to increasing pressures on water resources from competition amongst various users for a limited resource, the recognition of ecosystem requirements, pollution and the risk of declining water availability due to climate change. IWRM promotes integration across sectors, applications, groups in society and time and is based upon the Dublin principles agreed in 1992. These recognise the finite and vulnerable nature of water resources, a need for more participatory approaches to development and management, and the economic value of water. IWRM is defined by the Global Water Partnership (GWP-2000) as 'A process which promotes the coordinated development and the management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems'. Indian water policies have embarked upon a vision of water management in tune with the existing management paradigms propounded across the world. As early as 1987, even before Dublin Principles, the National Water Policy (NWP) – 1987 envisaged the 'resource planning in the case of water has to be done for a hydrological unit such as basin or sub-basin as a whole' and 'there should be an integrated and multi-disciplinary approach to the planning, formulation, clearance and implementation of projects including catchment treatment and management, environment and ecological aspects, the rehabilitation of affected people and command area development'. In 2008, 3 watershed programmes viz. Integrated Wastelands Development Programme, Drought Prone Areas Programme, Desert Development Programme were brought under a comprehensive programme named Integrated Watershed Management Programme (IWMP). The main objectives of the IWMP are to restore the ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water. The outcomes are prevention of soil run-off, regeneration of natural vegetation, rain water harvesting and recharging of the ground water table. This enables multi-cropping and the introduction of diverse agro-based activities, which help to provide sustainable livelihoods to the people residing in the watershed area. In addition, there is a Scheme of Technology Development, Extension and Training (TDET) is also being implemented to promote development of cost effective and proven technologies to support watershed management.

To address the changing nature of water resources management, new technical tools such as SAWT models in GIS have been developed to take advantage of collaborative management and analysis within the IWRM framework. In line with these developments, new public engagements processes have been adopted to incorporate multiple values and interests in water resources decision-making processes. The merging of these trends has led water resources planners to embrace the use of transparent and readily understood computer models to aid consensus building across competing values and interests when making water

resources decisions. User-friendly and reliable integrated models that enable stakeholders to analyze scenarios in a rational way to aid decision-making can be invaluable in sustainable catchment water management.

Water supply and sanitation have traditionally not been addressed in watershed development programmes in India, as guidelines did not promote such activities. These projects typically bundle together a wide range of development activities such as soil and water conservation, soil fertility improvement, silviculture, micro-credit etc working on a micro-watershed basis. The more successful programmes have implemented by NGOs with considerable investments in community development structures e.g. self-help groups. There are also serious attempts to develop such approaches in state institutions, often through partnerships with NGOs as the key on-the-ground implementation agencies. Where there is demand for improved WSS, such projects - provided they have sufficient flexibility - have been able to develop WSS (e.g. new boreholes, pumps etc) or act as a facilitator in mobilising communities to access resources from other agencies e.g. local government or line ministries with responsibility for WSS. There is considerable potential for participatory watershed development projects to adopt IWRM principles and implement innovative solutions to promote sustainable water management. Water supply and sanitation may often be an appropriate entry point for area-based management initiatives, such as ICM and watershed development projects, as it can respond to a major need, and provide immediate benefits thus promoting mobilisation of communities for other development activities. In this case, integration of WSS may potentially be a means to end, to address other pressing development or environmental issues, as well as socially and politically expedient. India has also seen the recent introduction of a number of changes to water resources policies and management approaches through central government initiatives. These include seeking to link rural water supply with watershed development programmes. An integral part of these changing approaches is the idea that WSS should be more fully integrated into core water resources management processes

This has been recognised in changes in state and national-level policy (e.g. RGNDWM, 2000).

Challenges for IWRM

IWRM addresses both the management of water as a resource, and the framework for provision of water services to all categories of users, and it addresses both water quantity and quality. In doing so, the basin (river, lake or groundwater) must be recognized as the basic unit for planning and management, and a firm societal commitment and proper public participation must be pursued. Well-developed, well-tested, scientifically robust, socially acceptable and economically viable approaches to implement IWRM are still not widely available. IWRM strives for effective and reliable delivery of water services by coordinating and balancing

the various water-using sectors – this is an important part of sustainable water management. The catchment perspective is generally recognised as the basis for IWRM. It is a vital starting point for analysis, for the relationship between WSS and other aspects of water resources management can only be understood within the dynamic of hydrological processes within catchments. This means, vitally, that water resource issues inevitably transcend the immediate local community (village or equivalent): the scale at which participatory WSS planning typically takes place. Any anthropogenic changes to hydrological processes in any one place have potential impacts to all downstream users. Traditionally, in the water sector, much of the focus on rural development has been aimed at individual systems or communities. This focus has to change to cope with wider issues of competition for water, particularly for water of good quality. Looking at water from a basin perspective means that we have to look not only at water supply and demand for all users but also at institutional issues involved in the provision of services. The issue may best be exemplified by the issue of “scaling-up,” whereby each separate water use, by itself, may not have a noticeable impact, but as the number of such water uses intensifies, the overall impact on water resources and other water users becomes significant. In light of these issues, safeguarding and developing water resources for rural development require a combination of inputs or interventions in three major dimensions:

- The *upstream-downstream* dimension, which recognizes that each water use or water user potentially impacts on all the other uses and users.
- The *institutional* dimension that needs to consider how planning, policies, rights, regulations, monitoring, water user organizations, etc., need to be designed and implemented.
- The provision of services to different water uses and users

Sectoral interests have dominated water resources development. Drinking water, hydropower and irrigation facilities are planned and constructed, commonly without regard to other needs. When water is plentiful, this approach can deliver quick results with unnoticed impact. By building infrastructure to tap water for human purposes, we take water from nature. But how water is managed in agriculture has influence on downstream natural uses. Similarly, management of upstream catchment areas influences water use in agriculture, and in cities. It is rarely that management of water in developing countries has considered upstream and downstream needs of human and natural uses. As a result, there are too many confrontational situations resulting in win-lose situations. We feel there are many situations where, with co-management of water for food and nature, we can have win-win situations, and increase the overall productivity of basin-wide water resources. There are some prerequisites to it. First, we have to know what the requirements of nature are. Second, we have to have resources management that integrates concerns across sectors. Third, there must be an institutional allocation

mechanism that ensures water for environmental needs. For example, an environmentally sensitive area could obtain a right to water and an associated allocation of water.

Both governments and NGOs tend to approach communities with a single-dimension water supply development proposal: a water supply system for domestic purposes, or an irrigation scheme. Donors reinforce this narrow approach with their own single-minded perspectives. However, communities have multiple needs: water for personal uses, agriculture, livestock, fishing, laundry, and small businesses like brick making. Rural domestic water supply schemes tend to be expensive and require external funding since they do not generate an income stream. Their sustainability is often problematic for poor communities without sufficient income to pay even minimal maintenance costs. But hybrid systems, enabling irrigation and therefore intensive cultivation of small plots, can radically change the economics of water supply systems. Rather than approach communities with pre-conceived notions of what is on offer, reflecting artificial bureaucratic boundaries between providers of domestic and irrigation systems, communities should be assisted to evaluate the water and land resources at their disposal and the various options for making use of these resources for their own benefit. User-friendly models can be used to help stakeholders analyze trade offs among the various options to arrive at an affordable hybrid water system.

Another critical issue for water management is to understand the water requirements of ecosystems. We need to know much more than we do now about these water requirements in terms of minimum flows, maximum flows and peak flows, and water quality can be maintained in river basins where human water needs also have to be satisfied. While significant progress has been made in the developed world, this type of analysis is often of low priority in India.

Thus, although honourable principles, there are practical limitations and constraints to IWRM. It is increasingly seen as being too complicated to meet all the individually challenging demands. Many view it as an expert control system, in which all (or at least all "important") aspects of water resources supply and use are integrated into a centralised planning system. Also IWRM is seen as too long-term and not capable of addressing real and immediate needs. These are real issues that cannot be ignored. There is no point in putting up theoretically excellent solutions if they are not going to be implemented. We need to identify ways forward that are simple and practical, that meet immediate needs and priorities and that also contribute to a longer-term, more comprehensive approach to the sector as a whole.

A livelihood prospective to IWRM

IWRM is not about integrating institutions responsible for water into some sort of vast controlling bureaucracy. Rather, it is about the harmonisation of the approaches and understanding of the multitude of different resource managers. It is more

about the integration of ideas, beliefs and commitments than it is about the integration of data or technical approaches. This is a matter of persuasion and information, so that different actors see that it is to their long-term benefit, as well as the wider social good, to modify their management of water resources. There is consequently a need to develop a strategic approach, based on an overall strategy in which different components can be simple and practical, but also contribute to the overall process of change. The starting point for this is usually national policy. On their own, however, policies are not enough however good they are. They need to be translated into effective action, and it is this step after policy that is often the missing link. In this, there is a need to carefully define who does what: to ensure that there is effective decision-making at the appropriate level and that they have the authority, information and resources to take decisions at each level.

Many water resources problems reflect limited knowledge, and especially a lack of understanding of the needs and the impact of actions of one group of resource managers (e.g. irrigators) on other interests (e.g. drinking water supplies). *But* creating this sort of understanding cannot be dependent on conclusive scientific proof based on comprehensive data analysis, as this is just too often not a practical proposition. Awareness-raising should be based on a minimum of the right information, combined with active dialogues between the different interests to establish the best possible consensus. Where dialogue cannot create a consensus to modify potential damage, then some sort of conflict mitigation can be needed. This must be based on transparent and legitimate mechanisms and is linked to the wider governance environment. IWRM should be considered as a way of thinking, an orientation, which gives a context in which individual activities can be understood and planned to create both immediate benefits and longer-term change. This way of thinking is a shared one, with all key actors understanding and ‘owning’ the approach and able to communicate with each other.

IWRM is the promotion of human welfare, especially the reduction of poverty and encouragement of better livelihoods and balanced economic growth, through effective, democratic development, and management of water and other natural resources at community and national levels, in a framework that is equitable, sustainable, transparent, and as far as possible conserves vital ecosystems. This formulation puts people and their well being at the center of IWRM while retaining the essential features of coordination, integration, equity, and sustainability. It also explicitly recognizes that IWRM must be done at multiple levels—local, watershed, basin, etc. Both IWRM and livelihoods are exciting but challenging approaches that need to go beyond abstract principle and develop as concrete realities

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7

The Spell of Information Technology on the Minds of Developing Children

Sisir Gurung

Information Technology has changed the world we once use to live to a very great extent. The once old and crony world that our predecessors lived in has now completely been reshaped greatly through Information Technology. When Information Technology first came into existence nobody had foretold that it would one day surpass the word. The earliest of the Information Technology was there to make life less complex and easy. From calculation of long tedious numbers to managing of the database Information Technology was given preferences. But in the later years Information technology took a different pace with the contribution from pioneer people like Charles Babbage, Herman Hollerith, Dennis Ritchie, James Gosling, Tim Berners-Lee and many more. In India after the economic reforms of 1991 – 1992 huge amount of incentives were provided by the state government and government of India which has boosted the spread of Information Technology in the country and thus have been able to secure a dominant position in the world's IT scenario. Information Technology has slowly transformed India from a slow moving bureaucratic economy to a land of innovative entrepreneurs with its idea and products sold worldwide. By the end of 19th Century Information Technology very rapidly spreading throughout the word, people started using technology in almost every sectors of their life. It gradually became a part of life of every individual till the very extent that we human being are now incomplete without technology. In India itself the IT sectors generate 2.5 million direct employments. Thus information Technology, or 'IT' as it is commonly abbreviated, has become the heart of the modern world. IT has completely revolutionized the way world functions.

Keeping in view the controversial point of about technology being a positive and a negative factor I have done a research in the Hills among the children (age below 14). Technology in a form of a fashion and necessity has engulfed the minds of children of hills more than the plains because the children here in the hills of Darjeeling, Kalimpong, Kurseong and Mirik are more close to the trends of the western world. Thus the influence of Information Technology or more appropriately to quote the title of this paper itself, "The spell of Information Technology on the minds of Developing Children" is more vividly witnessed here in the hills.

Objective

The main objective of writing this paper is to bring into light the negative impacts of Information Technology in the young minds of our generation. Information Technology has always seen to be a blessing and a source of inspiration in the present world of competition but as the old saying goes, 'not all that glitters is gold' Information Technology has also been a major source of degradation of human thoughts especially in the tender minds of children. In this paper I have thus worked out to show all these darker side of the Information Technology which has remained hidden in the eyes of the world.

How does technology sustain and breed in the mind of Children?

Children are wonderful individuals; they are those little people who keep inspiring great minds of all generations. Their simplicity and innocence has help ignite the minds of many inventors to come up with newer ideas in the field of medicine and technology for example the idea of hemispherectomies operations in craniopagus twins first practiced by Dr. Ben Carson and invention of modern tire by John Boyd Dunlop, a Scottish veterinary surgeon working in Belfast, Ireland, widely recognized as the father of the modern tire. Dunlop reinvented the tire for his ten year old son's tricycle in 1887.

Children are very sensitive to newer ideas, new place and of all new technologies because they can adapt to the change better than any adults. Information Technology has thus been able to extend its territory of dominion in the minds of the children than the adults. With the tantalizing displays and attractive various products of technology marketed by the IT word children has always been the first to be in the grasp of this art.

"A mind of a child is always hunting for a fresher idea and newer appearance because this excites them, and unfortunately this desire of them are being met most appropriately by the products of Information technology , which they ultimately fall prey to," said Dr. Yolmo. Study has also revealed that the synapses of a child's brain fires more vibrantly when they get hold of a new item, a new idea, a new excitement and this is main reason why Technology has been able to breed in the minds of children so rapidly.

Some of the Impacts of Technology among the Children

The negative impact of information technology in the minds of children is very dangerous and influential. As per my research and survey I have found that the impact of Information Technology especially in the minds of the children has been very addictive and has collateral damage. Affect of technology upon developing minds has revealed to me some startling facts, like it greatly affects the child's sensory and motor development. I have found that children who spend more time with technology addictives are less likely to be sober, they talk and interact less with the outside world, they have less friends and they are found to be lost most of the time in their own world of digital infrastructures. Children who play violent games like, "Vice City", 'Counter Strike', 'Call of Duty' etc. are found to be more aggressive in nature and they get infuriated very fast and easily because their thoughts are found to be preoccupied with all the violent scenes from the computer games they play. Dr. Sonam Bhutia, a child specialist says, "Child's brain in its developing phase have the sensory and motor systems flexible enough to learn and adapt what it sees and feels, and if it is fed with the seducing, frenzied and chaotic nature of today's technology they are most likely to be a violent and aggressive person in the future". Technology that is rapidly advancing has become the main source to an increased physical, psychological and behavior disorders. This was also the reason why the government of Bhutan in the late years of 1995 did not allow the citizens to install televisions at homes, because the government knew that the technology would infest the innocent minds of its country.

With the introduction of social networking sites like Facebook, Twitter, My Space and many more, children are found to be less available for family life. It is found that children are glued to their cell phones even during the family meal times, chatting late nights and watching explicit contents through internet has not become too common. "Technology thus has not only ruined the mental health of the children today but it has also degraded the moral values of human standard", Mrs. Minu, one of my neighbor says so.

Who makes the Child's mind venerable?

The present living standard of children of the hills has sky rocketed with supports mainly from their parents and relatives. Gone are the days when parents used to lure their children with the line, "if you score good percentage in the final exam I will buy you a pair of shoes", it has now reciprocated the other way round where the children demand, "buy be a smart phone this time if I get you good grades". This is how the value of education has been bartered in the homes of almost every family in the hills. Education has now become more of a point of bargain then of a self esteemed goal.

Children are provided with laptops, ipads, tablets or a smart phone at the least and these gadgets has proven to be a fatal blow to their tender minds with no guidance from the elders in utilizing it for the better cause. Internet is now no more 'World

at the finger tips', it has now become the 'World in the pockets', because internet users especially the children of hills are online 24 x 7. Parents of the hills have unknowingly played a major role in pushing their kids into the snares of Information Technology. Miss Nandita Rai, a teacher in one of the school in Darjeeling says, "Children now a day carry more expensive cell phones and their parents have somehow not bothered to know how this device is affecting their child". Comparison of cell phone standards among the children has also played a negative role in affecting the moral value of their life. Miss. Sarin Rose a class six standard student said, "I have a Samsung DUOS smart phone but I am hoping to have iphone 5 at the end of this year, I have already told father that I want one, because my friends have iphone 4". Parents have failed to turn deaf ears to these kinds of irrational demands of their children in the hills, but in fact they have also participated in this race of showing off among the kids of other parents.

Fueled by the world of technology the present world has shrunk just within a fist of a child. Search engines like Google and Bing have made children more confident yet at the same time more venerable to the evil of the world. Influenced by the social networking sites children of hills have often met strangers fallen in love and eloped in their very tender ages. "School drop outs in the hills have increased more than in the past years because of the influence of western world in the minds of the students of Hills", said Mr. Praveen Mukhia, Principal of Shalom English School.

Table 1: percentage of children involved in different computer activities per day.

Parameters	Nil	< 1 hr	1 – 2 hours	2 – 3 hours	> 3 hours
Social networking sites	0%	10%	20%	30%	40%
Research/ education	20%	30%	25%	15%	10%
Playing games	2%	8%	10%	30%	50%

Source: field survey by the author, total respondent 200 children with age below 14 in the hills of Darjeeling district.

As per the survey done in the Hills of Darjeeling viz. Kalimpong, Mirik, Kurseong and Darjeeling it is found that 10 % of the children use Social Networking sites daily and 40% of them use the same site giving us the fact that most of the children of the hills are addicted to Social networking sites. When it comes to research and educational purpose 10 % children of the same age group are found to be using computer and astonishingly 20% of them even do not at all use it. Children who play games more than 3 hours are 50 % making it the highest in the survey and about only 2% of them do not play games at all.

Problems and Suggestions

1. **Technology infests mind:** it is addictive especially in the young minds.
2. **Technology separates children from family:** Children are lost in their own world with less time left for family and social life.
3. **Technology separates children from nature and environment:** children are home bound stuck to the machine/gadgets rather than going out and playing in the open space.
4. **Technology makes children lazy:** Children get very less exercise as they remain seated in one place and play games or surf internet at home.
5. **Technology makes children hobby less:** Since they have no time to explore the world around them physically, they are usually found to have no hobbies rather than just playing computer games and surfing internet.
6. **Technology causes disease:** Since children have less exercise their physical body is less immune to foreign infections.

Despite all the negative aspects mentioned above information technology can also be used as a source of blessing in the lives of children. Information Technology is a vast ocean of resources readily available for all ages but how we sail in this ocean determines our voyage. If we use it wisely and timely then Information Technology can be an innovative factor building the same tender minds physically and mentally. The gadgets provided to them can be used for positive use and make their struggle as a student easier. Some of the ways by which information Technology be utilized for the betterment of the children minds are:

1. Internet surfing for the kids should be allowed only for certain time limits by the parents.
2. Addictive social networking sites should be blocked for the children who are minor.
3. Parents should not allow their children to use technology based gadgets until they are of age.
4. Parents should not allow their children to play aggressive and violent games.
5. Children who are of age and needs to carry cell phone for their safety should not be given internet excess 24 x 7 hours.
6. Parents should ensure that their children's cell phone are switched off during the night, ensuring no late night chatting and conversation.

Conclusion

In writing this paper I have also found that there are few key points about technology that had positive influence in the minds on children. Like technology has developed

many application software that foster creativity in children's young minds, such as the Magic Piano Application for iPad, iPod Touch, and iPhone. Applications like 'Cut The Rope', 'Dot Line', 'Unblock Me' and many more which are available in the internet free of cost are some of the most downloaded applications that has positive and constructive effects on the minds of children. Uses of these applications are often encouraged among the children by many parents. I also found that technology can have a positive impact on child development. New interactive technologies can make it easier to create environments in which students can learn by practically implementing what they have theoretically learned from their teachers. If computers and technology based gadgets like tablet, ipad, iphone, ipod, laptops are Used appropriately it can induce positive elements in the developing brains of children even as they play and learn, explore and experiment with the aid of technology.

Technology can also be included in classrooms for classes starting from nursery and above as it is done in many of the schools here in the hills with the name 'Smart Class'. The use of technology and pipelining of its resources should be done in values oriented method especially in the infant's minds. We can find such appropriate and interactive curriculum for teachers over the internet in sites like www.cyberbee.com. As we live in a world that changes every moment these new and advanced curriculum can also be implemented in the education field as it focuses in advancing the minds of students. To prepare our children for the world we have to ensure that they are growing up in such an environment where Information technology is helping them become a complete man and women instead of lame. We must keep in mind that, the use of technology should be used in such a manner that the important factors in the life of a child for his/her development like creativity, imagination power, courage etc are not hindered.

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8

Social Exclusion: Health Concerns over Tribal Women and Children in Attappady, Kerala

Ajay Pathalil and Thresy Vallikappen

India historically evolved around certain identities such as social origin, ethnicity or religion. It is argued that ethnicity has resulted in the exclusion of groups perceived as others or different by dominant groups. Social exclusion is the failure of a society to extend to all sections of its population, the economic resources and social recognition which they need in order to participate fully in the collective life of community. It is a kind of mechanism by which access and recognition is granted or denied. It can be seen as an institutionalized form of inequality. This is most evident in the case of the marginalized communities. The obvious exclusions in India are those of caste and community along with gender. The tribes in Kerala for instance are excluded from the society where they live, to a great extent. The worst victims of social exclusion at the hands of the government are the tribal women and children who are often forgotten at the time of conception of policies.

Kerala shows immense growth indicators in all aspects of human development. The State often boasts of successful lowering of birth, death and fertility rates. The literacy rates of men as well as women are high here, when compared to other states of India. Implementation of compulsory and universal schooling has made education accessible to all children in the State. The profile of women in Kerala is seen to be much advanced in terms of education, health, empowerment and self-reliance. However, these development indicators mask many of the underlying realities with respect to the status and situation of women and children.

In this context, the condition of tribal women and children needs special mention especially at a time when the high rates of infant deaths, malnutrition of women and children and repeated stories of abortions in the tribal settlement of Attappady have recently come to the limelight of the news desks of Kerala.

Attappady, situated in the Mannarcad taluk of Palakkad district, is one of the important forest regions giving shelter to three main tribal communities of Kerala – Kurumbas, Irulas and Mudukas. Of the total Adivasi families in Kerala, 13,023 Adivasi families inhabit the 426 tribal hamlets of the Palakkad District. Of the total tribal population in the District, 98.48% lives in these settlements. Of the 98.48%, 65.92% i.e. 8385 tribal families live in the 192 tribal settlements of the Attappady Block Panchayat. The tribes who are distributed in the 192 tribal hamlets, generally known as 'ur'¹ with Irula, Muduka, and Kurumba settlements in the Agali, Putur and Sholayur panchayats, together constitute the Attappady block panchayat.² There are 25,253 Irulas (12,506 male and 12,747 female), 2,947 Mudugas (1,412 male and 1,535 female) and 2,251 Kurumbas (1,128 male and 1,123 female). Among the Irulas and Mudukas the number of women exceeds men by 50.48% and 52.09% respectively.³ Of the total population in the Block Panchayat, 1239 (i.e. 4.04%) are children below 5 years of age. There are 7000 children (i.e. 22.83%) between the ages 6 and 17. They together constitute 32.87% of the population. Hence Attappady is unique in the tribal map of Kerala. The tribal groups in the region continue to be one of the most vulnerable sections in Kerala even after 66 years of Independence. The women and children are the worst sufferers. The last three years have witnessed unprecedented rate of infant death and illness due to malnutrition and poverty. In spite of allotting huge funds by Central and State governments for the upliftment of Attappady, the tribal situation remains deplorable. All mechanisms of both governmental and non-governmental agencies so far have failed to tackle the desolate condition of tribal women and children in the valley.

¹Urmeans clusters of households occupied by homogenous tribal members.

²K.R. Suresh, *Between Development and Marginalisation – A Resurvey of Attappady Area in Studies in Local development: Social Change in Kerala – Insights from Micro-level Studies*, K.N. Nair and Vineetha Menon (ed.), Danish Books, Delhi, 2007.

³Basic information collection of Scheduled tribes 2008, District level Reports, Palakkadu District, Local Self Government and Scheduled Tribal Development Departments, Kerala Government, December 2010, p.263

Tribal Population in Attappady Block Panchayat⁴

Village Panchayat	Families	Population		Total	Percentage
		Male	Female		
Agali	3348	5751	5993	11744	38.31%
Putur	2647	4797	4887	9684	31.59%
Sholayur	2594	4631	4599	9230	30.10%
Total	8589	15179	15479	30658	100%

Almost all pregnant women and lactating mothers here are found to be anemic or malnourished. They number 1000. Out of the nearly 6000 children, a major fraction is malnourished.⁵ About 95% anemia cases during pregnancy are due to iron deficiency. India contributed 80% of the maternal deaths due to anemia in South-Asia.⁶ A survey completed in 5301 of the 8569 houses and covering 17398 people in the 192 tribal hamlets of the Attappady hills has so far identified 420 cases of anemia and malnutrition.⁷ Many women had undergone more than one abortion. There were many cases of premature birth and almost all the infants in Attappady are born with very low birth weight (only 600 grams to 800 grams) which is the main cause of the infant deaths. The newborns' survival is severely jeopardized as they do not gain sufficient weight despite breast feeding and supplementary feeds. This is because of severe protein deficiency in the primary diet of tribal mothers which is mostly starch. The diet supplied to tribals might be sufficient in calorific requirements but unless emergency measures are taken to introduce more protein into the diet of lactating tribal mothers, pregnant women and tribal children, the infant deaths are likely to continue. The deaths show that the health indicators of Attappady remain poorer than those of the State and the Nation. The maternal mortality rate is 7 per 1000 compared with the State figure of 1.3 and the infant mortality rate is 66 per 1000 as against the State figure of 14.1. Fewer institutional deliveries mean poor maternal and neonatal outcomes. High incidence of severe maternal anemia obstetric complications, deliveries by untrained persons, all contribute heavily to this situation.

⁴Basic Information Collection of Scheduled Tribes 2008, Vol.I. Part II, section I & II, Attappady Block Panchayat Level Tables, Local Self Government and Scheduled Tribal Development Departments, Government of Kerala, December 2010, p.261.

⁵Dr. B. Iqbal, Adivasikal krishikkaravatte Attappadiye rakshikkam (article), Kalakoumudhi weekly (Malayalam),p.17

⁶R.S.Balvir, J.Panda,A.K.Panda, M.Roy, A Cross Sectional study on anemia in pregnant women of eastern coast of Odisha, (Ed) Dr. S. Rajasubramaniam,Tribal Health Bulletin, Vol.17, No. 1 and 2, January and July, Regional Medical Research Centre for Tribals,2013,p.5

⁷The Hindu, Tuesday, April 16, 2013, p.4.

The Anganwadis, the most important basic unit, to provide food and health facilities to pregnant women, children and adolescent girls had failed to discharge their duties. Most of the Anganwadis were non-functional in Attappady. The institution of Anganwadi is supposed to be the first defense against malnutrition in a tribal hamlet. There are 172 Anganwadis in Attappady to take care of pregnant women and tribal children. But there was only one supervisor when infant deaths struck Attappady recently. The Anganwadis are under the control of the three Grama Panchayats of Sholayur, Putur and Agali. The Grama Panchayats allot funds for providing nutritious food and infrastructure facilities for the running of Anganwadis. The cost estimated for providing nutritious food during the current financial year in the 172 Anganwadis was Rs 60 lakhs. But what the Grama Panchayats had allotted was a mere Rs 7 lakhs so far. While the Anganwadis in other parts of the State supplied milk, eggs and bananas to pregnant women and children, what were distributed in Attappady were just wheat, upma and green gram.

The health situation in this tribal pocket of Kerala is seen to be deteriorating day by day. Apart from anemia and malnutrition, deficiency disorders, tuberculosis, typhoid and diarrhea are rampant in Attappady. Many have sickle-cell anemia and genetic disorder which has a devastating effect on their health and quality of life. The most disheartening part is that the tribal people with sickle-cell anemia do not get proper treatment to manage the disease, which cannot be cured. It is mostly people from the Irula tribe who get the disease. Children with the disease die in their early childhood if not treated. Addiction to alcohol, smoking, chewing and gunjah is a common problem for both men and women which are adversely affecting their health. From 1 January 2011 to 30 June 2012, 519 births had been reported as against 776 deaths at Attappady. At Sholayur Grama Panchayat, 49 births had been reported against 182 deaths; at Putur, 103 births against 164 deaths; and at Agali, 364 births against 430 deaths. Of these the majority were tribal people. There are three primary health centers in each of the three Grama Panchayats and twenty-eight sub-centers under it. There are three health mobile units also under the Grama Panchayats but these mobile units that are to reach and provide urgent medical help to the tribal hamlets, especially in the remote areas, remain immobilized for lack of vehicles for doctors and the medical staff to move around.⁸ The hospitals in Attappady still lack facilities. And the tribal people who are not getting medical aid here are depending on the hospitals in Coimbatore.

If a child in one of the 19 hamlets of the oldest primitive tribe of the Kurumba community in Attappady falls sick, it is the beginning of a long and hazardous trek. The men cut bamboo stick to make a hammock, a team is formed, the fittest among them runs ahead while the other take turns to carry the sick child. The journey from the ur or hamlet to the nearest primary health centre is quite far.

⁸The Hindu, Wednesday, May 15, 2013, p.5.

If it is night, they travel by instinct, guided by the distant hoods of the runner. If it rains, and the rivers are overflowing, the hamlets are trapped. If the child does manage to reach the primary health centre, chances are high that the child may be referred to the nearest tribal speciality hospital in Chanthakada. Buses are few and jeeps are expensive and so the walk continues.

These incidents show the failure of the government in taking preventive steps to bring the death of infants under control. These unpleasant episodes among women and children did not happen overnight. The deaths had been happening long before the actual reports came out and it was just that none knew or cared about it. Systematic neglect by the government authorities is very evident. Nutritious food had not been distributed to children and pregnant women through the Anganwadis in the last two years. Schemes of the Central government and State governments such as Safala and Indira Gandhi Mathru Suraksha Yojana had not been implemented in the last two years. The constitutional guarantee to ensure 100 days of work in a year under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) was not implemented here. This has resulted in increased starvation of tribal people in Attappady.

The report of the Comptroller and Auditor General (CAG) of India reveals that as per the World Health Organisation growth standard, the percentage of malnourished and severely malnourished children in Kerala is 36.92% and 0.08% respectively as on March 2011. In Assam the figure is 31.32% and 0.46%. In Madhya Pradesh the figure is 28.49% and 1.88% respectively. Rs 50, 587 crore spent on the ICDS scheme during 2006-2011, only Rs 30, 861 crores (61%) was spent for providing nutrition. Under the scheme 50% of the funds are provided by the Union government and the remaining by the State government. The CAG states that 'India's status on key child development and health indication did not compare well with its target and with that of neighbouring and other regions. The CAG report also shows that in the community mobilisation scheme, the short fall of funds in Kerala was 47% as against the 42% in Madhya Pradesh. Kerala also figured amongst states that did not off-take food grain under the Wheat-Based Nutrition Programme (WBNP). The report also said that Kerala, Assam, Bihar and Delhi did not disperse any amount for providing flexi fund to the Anganwadi centres. Kerala failed to procure medicine kits for the Anganwadi centres despite availability of funds.

Tribal organizations led by C.K. Janu and M. Geetanandan called for the appointment of a commission to prepare a comprehensive development plan for the tribes people. They say that measures to ensure their livelihood should be backed by restoration of the national level tribal policy represented by the Integrated Tribal Development Project (ITDP).⁹ When the frequency of child death and maternal undernourishment increased, it paved the way for protests from different

⁹Interview with C.K. Janu on 15 June 2013.

quarters like the media, social activists and the matter shook the floor of the Kerala Legislature. Following this, an eight member Central Team was at Attappady from 20 May 2013 to study the death of infants. A six-member Medical Expert Committee, constituted by the CPI (M), headed by B. Ekbal, public health activist and neurosurgeon, in its report submitted to the Party on 23 May 2013 said, 'neglect of the critical health situation of tribal mothers and children over the years and the disinterest shown to it by society and the criminal neglect on the part of government authorities are evidence to show that the tribal population in Attappady is facing a silent genocide that will wipe out their population in a few decades.' Subsequently government announced various developmental programmes which were often found to remain only on paper. None of the changing governments are taking effective actions to perpetually solve the problem. The measures announced recently by the government to prevent death of children due to malnutrition are inadequate.

The local tribal organizations alleged corruption in the nutrition programme implemented through Kudumbasree. The organizations alleged that the death in tribal colonies was caused by the total breakdown of the administrative apparatus in Attappady. The transfer of funds that was routed through the ITDP to local bodies following the switchover to Panchayati Raj had led to corruption and inefficiency, resulting in the funds not being used for tribal welfare. For example, the government spent over Rs 1000 crore in the Attappady hills for tribal development during the last 5 decades. During the last one decade more than Rs 400 crore was spent; Rs 219 crore by the AHADS alone. But tribal people continue to face starvation death. During the last one year, according to the Health Department figures, 25 children had died of malnutrition. Tribal people were not involved in the planning and implementation of the projects that were taken up for their welfare.

Several development packages have been planned and huge funds have been allotted for the upliftment of the Attappady tribal belt by government authorities over the years. But no improvement has been made in the life of the tribals in this region. Attappady was designated as the first Tribal Development Block of Kerala in 1962, during the Third Five Year Plan (1961- 1966). The year is important for Attappady because it saw the beginning of systematic tribal welfare programmes with free flow of funds. Later with the introduction of Tribal Sub Plan in 1975, Attappady became an Integrated Tribal Development Project area.¹⁰ ITDP conducts the developmental programmes of the scheduled tribal department and the village development department under one administrative set up.¹¹ This was followed by other nominal development programmes. One significant development project

¹⁰Basic information collection of Scheduled Tribes 2008, Attappady Block Panchayath level tables and annexure, Vol.1, Part. 2, Section.2, p.260.

¹¹Basic information collection of Scheduled Tribes 2008, Attappady Block Panchayath level tables and annexure, Vol.1, Part. 2, Section.2, p.260.

was that of Attappady Hills Area Development Society (AHADS). The climatic condition of eastern Attappady, especially in the Sholayur Panchayat, is very arid and adverse to agricultural efforts. Most of the tribal lands are degraded and infertile; the lack of irrigation facilities also aggravates the inadequacy of cultivable lands. With the distribution of infertile land, the tribals have been faced with poverty and destruction of their economic base. In this context of land degradation the Attappady Hills Area Development Society (AHADS), the result of an agreement signed between the government of India and the Japans Overseas Economic Cooperative fund in 1995, launched the Attappady Wasteland Comprehensive Environment Conservation project. The project of Rs 219 crore covered an area of 507 km of degraded waste land divided into 15 development units. This provided employment to a number of tribal families in the area. This was the first eco-restoration project launched in the country and it aimed at the ecological restoration of degraded waste land, prevention of further land degradation and promoted sustainable method of livelihood for the local people with special emphasis on tribal population. But when the project was wound up in 2010 those tribal people who were employed in it were left jobless. AHADS had also contributed in making *ayalkoottam* among tribal women and creating 'thaikulam', a women's organization in the *ur sabha* (tribal village assembly) but both endeavors turned out to be utter failures as its main agenda always remained environment conservation activities. AHADS also contributed to a housing scheme in the tribal belt. But the AHADS failed to solve perpetually many of the problems related with tribal life.

Later the Central Government sanctioned Rs. 103.41 crore agriculture package for improving the 'livelihood and food security' of the tribal people of Attappady. The package prepared on a directive of Union Agriculture Minister Sharad Pawar, was announced by Chief Minister Oommen Chandy during his visit to Attappady on 31 August 2011. It was aimed at making Attappady the food hub of Kerala by promoting organic farming. From the outlay of Rs 103.41 crore, Rs 48.46 crore was earmarked for market development; Rs 15.59 crore for soil and water conservation; Rs 16.06 crore for livestock development; Rs 9.40 crore for promotion of agriculture and allied enterprises and Rs 9.81 crore for minor irrigation. But this Rs. 103.41 crore agriculture package has been pending with the State Government for two years. The agriculture package was to be taken up as the second phase of the Rs 219 crore Japan aided eco-restoration project which was wound up in 2010. In spite of all these developmental schemes, the plight of tribal life in Attappady has not shown any marked progress and the tribes continue to lead a life of deterioration.

These development schemes have brought about a thorough change in the socio-economic and cultural life of the tribal women. But in the process of this change, the women are the worst sufferers who often end up in sexual abuse.¹² When

¹²*Withering Valley: Alienation, Degradation and Enslavement of Tribal Women in Attappady*, Centre for Development Studies, Thiruvananthapuram.

development programmes are allotted to women, they have to go to various offices to get the programmes sanctioned. Some women have to undergo sexual abuse at the hands of the officers. In order to get grants or subsidies for house construction and building of cattle shed, women are sometimes forced to oblige to officials. Women also have to be at the beck and call of officials and contractors who come to tribal areas to implement projects of development.

Since women's work is considered unskilled and unproductive in the market sense, impoverishment forces women to migrate to towns and cities as domestic servants. Many of them are also lured into prostitution. Among the victims of rape and sexual harassment 95% are tribal women and children. There are no witnesses to the thousands of unreported atrocities on tribal women like rape, sexual harassment and murders. There are 61 unmarried mothers living in dejected conditions in Attappady. Of these 35 belong to the age groups 22 and 45. It means more than 55% of the unmarried mothers, who lost their dreams are forced to live a pathetic life in the society in their most productive age. Besides, the socio-psychological condition of the so called 'illegitimate' children should also be taken into serious consideration. The government promotes and even rewards mixed marriages between tribal women and settlers from other parts of the state with monetary awards. But the settlers who marry tribal women usually have wife and children back home. After a period, the settlers go back to their native home, leaving their tribal wives and children in lurch.¹³ Among the sexual exploiters of tribal women the people involved are the police, government officials, contractors, smugglers, flesh traders and immigrant farmers. Incidence of death and murder of tribal women have also become common. And almost in every case, the culprits go unpunished.

Marginalization of the tribal people of Attappady from mainstream society had started as way back as in the 1960s when their fertile land was usurped by migrant farmers from Tamilnadu and southern parts of Kerala. The changed demographic profile of Attappady with the influx of settlers has resulted in the marginalization of tribal people in their own land. The population of Attappady has been increasing at the rate of 5.71% annually since 1951 but studies show that the tribal population grew by a moderate 2.36%, while the settler population rose sharply at the rate of 11.8%. Today, besides these three scheduled tribe population, there exist two other groups, Malayalees and Tamilians who migrated to Attappady since the first half of the 20th century and hence the tribals speak a mixture of Tamil, Malayalam and Canarese. In 1961 the tribal people had a population of 10,200 as against 10,100 of others. The trend continued till 1961, when the tribal population rose to 12972 and the number of settlers increased 8 times to 8459. But in 1971, the tribal people became a minority in Attappady with a population of 16536 as against

¹³Interview with Sreejith Paithalen, Writer and Tribal Activist in the region dated 6 June 2013.

22647 settlers. By 1981, the settler population became twice that of the tribal people - 41587 against 20659. The trend continued and in 1991, the tribal population was 24,228 and the settler population 37,805. In 2001 the tribal corresponding figures were 28,711 and 34,131. The 2011 figures show the tribal population at 29059 as against the settler population of 38,000.

Changing Population Profile of Attappady¹⁴

Year	Tribal Population	Percentage of Population	Non-Tribal Population	Percentage of Population	Total
1951	10,200	90.32%	100	9.68%	11,300
1961	12,972	60.45%	8489	39.55%	21,861
1971	16,536	42.21%	2264	57.79%	39,183
1981	20,659	33.00%	41587	67.00%	62,246
1991	24,228	39.06%	37805	60.94%	62,033
2001	27,121	41.00%	39050	59.00%	60,171

The coming of outsiders led to the beginning of land alienation. Land alienation is a dark bolt in tribal development in Kerala. Agricultural settlers, who migrated into the fertile hilly tribal areas, have been the direct beneficiaries of the alienation of tribal land. Many of them had fraudulently alienated tribal land, exploiting the ignorance and innocence of the tribes. Large scale encroachments of virgin forest lands, adjacent to tribal hamlets by the plains people on the pretext of development under various government schemes have also taken into account. In Attappady alone, over 10,796.19 acres had been alienated from tribe's people between 1960 and 1980, reportedly the highest in the state, as reported by L.K Anandakrishna Aiyer, International Centre for Anthropological Studies (AICAS), a non-governmental organization. Between 1960 and 1977, in Attappady, 10160.19 acres got alienated. Between 1977 and 1982 only 536 acres got alienated. But after 1982, 100 acres got alienated as per the survey report of the Integrated Tribal Development Project. Land alienation leads to enormous decrease and fragmentation of tribal land and increase in migrant's land which directly affects their main source of income.

The coming of outsiders into tribal areas has resulted in drastic changes in the social, economic and cultural lives of the tribals. Till the time of political independence, the Rajas of Travancore and Cochin and the British in Malabar (which together form the political entity known as Kerala from 1956 onwards) were diligently following a policy of *laissez Faire* and segregation as far as tribals were concerned. As a consequence of this they remained primitive in their economic and social life while rapid changes have been taking place in the larger society. Their interaction with the rest of the population was minimal even after the coming

¹⁴Census Report of India for various years.

in of outsiders later and their contact was limited to only those who came to settle in the tribals lands. This resulted in severe exploitation of the tribes by the migrants.

Contact with the outsiders affected the long-established practices of the tribals including their traditional form of agriculture which had given them food security over long historic periods. The tribal people depended on forest produce for their survival and that was destroyed when the Britishers cut down the forest to exploit the timber wealth. From the early days they have been fully dependent on forest and land for food. The traditional tribal diet is defined as being composed of items from the local, natural environment that are culturally and socially acceptable. They collect forest tuber, fruits, leaves, mushrooms and bamboo seeds from the forest. Many studies reveal that there are more than 350 forest food resources which were used as food.¹⁵ They used so many millets like ragi, chama, muthari, cholam, thina bamboo seeds etc. They were also familiar with more than 20 varieties of mushrooms. They consider it as same to meat. They used many medicinal pulses. Honey has important place in their dietary habits which gave health and long life.¹⁶ But unlike in the past, they now have to seek permission from the forest officials and get allotted patches of land for cultivation which may not be according to their choice.¹⁷ Since their land was taken away, they lost their agriculture and food security too. Displacement for development projects has deprived tribes folk of their land and forests from which much of their food came. Today they have to walk much longer distances than in the past to collect food and fodder. The drought situation has also deprived them employment in farmland in the area. This was the beginning of the silent genocide in Attappady. If the situation continued in this manner, the 29,000 strong tribal populations in Attappady would get extinct soon.

Thus immigration and population pressure, lack of effective educational facilities and awareness, unscientific developmental policies, corruption at the governmental and non-governmental levels, lack of a genuine interest in the upliftment of tribals, lack of facilities to maintain proper hygiene and health, inefficiency of the Public Distribution System, changes in cultivation patterns and environmental degradation had affected the *ur* system of the tribals leading to their social exclusion. Marginalization, poor infrastructure facilities, neglect at the policy level, isolation, poor acceptance of family planning and contraception, illiteracy, traditional belief system and practices also contribute to this. The tribal people who are living in

¹⁵Mini P.V. Vamsheeya Bhakshanam, from Padavukal (Malayalam), Vol I, April 17, 2007.

¹⁶Shyni Jacob, From Roots to Rice: Culinary Habits, Dietary Habits and Social Repositional of Irula Community, Unpublished M.Phil Thesis, M.G. University, Kottayam, 2009.

¹⁷K.R. Suresh, Between Development and Marginalisation – A Resurvey of Attappady Area in Studies in *Local development: Social Change in Kerala – Insights from Micro-level Studies*, K.N. Nair and Vineetha Menon (ed.), Danish Books, Delhi, 2007.

the hilly tracts of Attappady valley in Kerala are distinguished by poor access to roads to medical and educational facilities and consequent isolation. It is certainly true that the costs of access are higher, with longer distance, and less dense populations to be covered. But higher cost is no reason to exclude people from access to services that any modern state is expected to provide.

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9

Disease and Disaster in Lepcha Traditional Knowledge: A Case Study

Aritra Samajdar

We are here to say something about the relation between human knowledge and the world in which man are living. It is quite difficult to find the starting point. The world we inhabit is product of our knowledge or our knowledge is the product of experience of living in this world that is matter of theoretical debate. World is shaped by human knowledge or human knowledge is the product of living experience of human being, following paragraphs are discussing that. Here we are dealing with indigenous knowledge which is less codified and less abstract in structure.

To find out the relation between knowledge and the world we will explore ethnographic reality of Lepcha Tribe of Darjeeling Himalaya. Lepcha medical lore and folk lore and their cultural heritage will lead us to conclusion. Below we will discuss Lepcha philosophy about disease causation, their philosophy of healing, some practical use of etnomedicine and some folk stories on disaster and human responses to disasters (both natural and caused by human agent). It is very interesting to show that in Lepcha world disasters in both individual and social life coming through negation of social conducts, misbehavior, and disrespect to tradition and mistrust of heritage. In Lepcha world individual action is the sole cause for imbalances in both human and social health.

The knowledge of disease theory and health care system of a society enables us to cope more wisely, more sensitively while introducing new medical system

among people who have known traditional system previously. In colonial times, authorities frequently outlawed traditional medical systems. In the traditional medical systems, medical traditions partly cover other sectors of social life. Traditional medical systems therefore cannot be studied exceptionally. In contrast to traditional health care system, the official health care system is based on Western science and technology. The term “Traditional Medicine” or “Traditional Systems of Health Care”, refers to long standing indigenous systems of health of health care found in developing countries and among indigenous populations. Indigenous medical literature has defined two types of Traditional Health Systems-the naturalistic system and personalistic system. Lepchas of Darjeeling have an indigenous system of health care based on herbs and ritual care. In communities with strong traditional health care system for managing health, the introduction of biomedical facilities to provide health care is often met with indifference. Traditional medical knowledge is coded in to household cooking practices, home remedies; ill health prevention and health maintenance beliefs and routines. Despite opening up of Public Health Centres and massive propaganda, traditional ideas of disease and health prevail. Among Lepchas, the health care includes self care, consultation with traditional healers and /or primary health care.

Traditional knowledge has only recently touched the scientific chord of Western academic knowledge. Since tribal groups have lived within their local environments since time immemorial it is obvious that they do possess a rich knowledge about nature. Hence, research on nature and environments is enriched by incorporating knowledge of indigenous peoples. This paper also highlights some aspects of knowledge on disaster management of Lepcha tribe of Sikkim. It establishes that in the guise of folklore, the Lepcha have developed an elaborate understanding of the nature and causes of disasters and have identified accurate and precise indicators to assist in predicting disasters, as well as ways and means of mitigating their effects. We are surprised to notice that Lepcha knowledge echoes some of the current principles of disaster management.

The Area and the People

This paper is based on a fieldwork done in Menchukiun village of Kalimpong subdivision of Darjeeling district, West Bengal. Menchu means medicine and Kiun means water in Lepcha language and so Menchu kiun stands for “Dawai-Pani” in local Lepcha etymology. The locality is surrounded by a huge number of streams and dense forest which have a great storage of various species of medicinal plants, hence the village is known as Menchukiun. The village is 81 Kms. away from Jalpaiguri city. It is a hilly village as the Himalaya surrounds the village. Soil is very hard mixed with gravel in Menchukiun.

Bridled paths connect different houses in the village. One unmetalled village path divided the whole village into two divisions lower and upper Menchukiun. Villagers prefer to walk through this path. Another metalled road runs towards west and connecting this village to the outside world.

The dwelling houses are scattered along the hill terraces and on each terrace generally one house is situated. Here the houses are generally made by wood. Only in few cases they are made of bricks and cement. In case of two storied building, ground floor is made by mud and first floor is made by wood. In some cases the windows are made by glasses and the roof by tin. The roofs are generally two sloped. Rooms are nearly square in shape.

Menchukium is a Lepcha village. The entire village people use Lepcha as their language for daily use. Some also know Nepali, Hindi or English. They are following Buddhism. They mainly follow Mahayana sect of Buddhism. They have their own script, and distinct costume, language and culture. Farming is main activity in this village. They practice terrace cultivation. People from other services like army service, teaching and driving are also found in this village.

There electrification is still going on and electricity covered village households. Power off is normal incident there and sometimes specially in rainy season it goes for days. Sanitation is following traditional systems. The villagers communicated with the outside world through mobile services.

The Lepchas of the village constitute 41 families and 286 individuals. Out of this, females (144) slightly outnumber the males (142) (Table 1).

Table 1: Demographic Details of the Village Population

Sl. No.	Community	No. of households		No. of families		No. of individuals		male		female	
		No.	%	No.	%	No.	%	No.	%	No.	%
1.	Lepcha	41	100	41	100	286	100	142	49.66	144	50.34
2.	Total	41	100	41	100	286	100	142	49.66	144	50.34

Methodology

Anthropological tools and techniques like observation, village census, interview (unstructured), case study and key informant technique were used to gather data. Through observation data related to village physical structure and natural endowments were collected. Census helped in gathering demographic data. Data about ethno medicine was collected through key informant interviews.

Data related to ethno medicine also came through participation in the rituals of diagnosis and interpretation of the cause of illness; the healing rituals; the rituals associated with collections, preparation and administration of medicinal herbs and animal extracts; and the rituals associated with thanks giving to the originator and curer of illness.

During data collection the main emphasis was on exploring the meanings of all objects, actions, words, utterances, and gestures which are associated with the

domain of ethno medicine and indigenous ecological knowledge. The only method of collecting information of this nature was to follow the meanings right through, where ever they lead. Unstructured interview method is a very useful method in this regard.

Case study method helped in exploring data related to various folktales linked to disasters and other natural and human calamities. Folk stories narrated in this paper came through personal interaction with Pempu Tshiering Lepcha (m, 67), a traditional village priest, Lakpa Lepcha (m, 64), lama of village Gumpha, and Ongden Lepcha (m, 60), village medicine man.

Lepcha Knowledge of Health and Medicine

The concept of health and illness is entirely guided by belief in the supernatural among the Lepchas. Uses of medicinal plants are described in the Lepcha epics called Namthar, Tengyur, and Domang. They acknowledge certain semi divine beings or guardian spirits known as “Lungzee”, who are not gods but worthy of respect like a huge tree, cluster of trees, a land of grass, a cave or a special hillock, and other natural objects. If they are ignored or any kind of disrespect shown to them by polluting them, it may invite suffering to the village or the particular individual; they may suffer from serious illness or even may die also.

According to the Lepchas, the world is governed by good spirits, and evil spirits (Mung). All natural calamities such as bad harvests, draught, storm, and misfortunes, are believed to be actions of evil spirits, i.e, Mung. On the other hand, good health and vitality, good harvest, and prosperity are attributed to actions of good spirits.

The Lepchas are basically animist, and traditionally only the Bongthings (male Lepcha priest) and Muns (female Lepcha priestess) are called during sickness and cultural and funeral ceremonies. Such is the influence Mun / Bongthings, that even after the introduction of Buddhism, the Buddhist Lamas performed their pujas (rituals) in close association with them. The Mun, however, perform rituals connected with supernatural forces in which the Lamas have no role.

The world of illness

The common diseases are: (1) Hookworm, (2) Scabies and other skin diseases, (3) Malaria, (4) Goitre, (5) Tuberculosis, (6) Tapeworms, (7) Venereal Diseases, (8) Roundworm, (9) Other Fevers, (10) Epilepsy and other nervous disorders, (11) Throat infections and (12) Tropical Ulcers. The largest number of patients are listed under the heading “Other Diseases” in the medical registers at various hospitals and dispensaries, which includes a variety of diseases from the common cold to pneumonia.

In Darjeeling diarrhoea and dysentery have high incidence. Helminthes diseases, especially tapeworm and hookworm, goiter (prevalent in Himalayan region) and

venereal diseases are also widespread. The Lepchas of Darjeeling very much like pork and beef, preserved by hanging them over the fire for a long stretch of time. The dishes prepared from the semi-decomposed status, not fully boiled, cause enteric disorders and worm infections. Pigs that live on excreta and garbage are a major factor in the wide prevalence of this disease.

Indigenous Disease Theory and Causes of Sickness among Lepchas

The Lepcha understanding of disease causation, its dynamics and its treatments are elements of their culture. Traditional healing comprises the fundamentals of knowledge, beliefs and practices, and has existed even after alternatives have been provided. Ethnicity comprises a principal independent variable the effects of which are analysed with respect to dimensions of illness episodes and behaviour associated with the episodes. Illness and misfortunes are attributed to a variety of supernatural forces such as attacks by good and bad spirits, witches, sorcerer, forest divinities, spirits of deceased and angry gods and goddesses, breach of taboo and evil eye.

For the Lepchas, illness is something that may be caused by spirits of envy, hatred and quarrelling. Illness may be prevented by leading a good clean life and not causing trouble for others. The spirits of enmity and jealousy karo-mung cause illness through evil thoughts. If a person is annoyed with a neighbour because his animals have strayed in his fields or he has done some harm or envies his possessions, this mung is released automatically. Illness is caused by evil spirits-Sabdok Loo mung, Dade mung sent by an enemy. It is tried to find out by divination that who has released it, but no revenge of any sort is taken. Likewise annoyance or mischiefs of different mung causes various ailments. Lepchas believe that quarreling is the result of the actions of three evil spirits: su-mung (enmity of speech), ge-mung (enmity of thought), and thor-mung (enmity of action). Besides the evil trinity of sogo- thor, Tamsi mung causes quarrels and wars.

Jaundice is caused by the Lon-doon mung. Mat mung produces many unpleasant symptoms apparently having no reason are the result of the ancestral quarrels. A quarrel annoys deity- Gebu Tabrong Pano, who afflicts the offenders with all sorts of aches and pains, commencing with toothache as a punishment. Similarly, the antagonism of rum too punishes people by inflicting them with sickness. The person possessed by Padam rum, suffers with severe body ache and feels as if he is being poked with bones and sticks. Lepchas consider that people born in different years are distressed by specific mung. For example Lepchas born in Oon nam (sheep year) are troubled by chemen mung, loo desen mung, muzong rumloo and sabdong loo. The persons who are born in antagonistic years are troubled by Chemen mung, Loo Desen mung, Muzang Rum Loo and Sabdong mung. The person possessed by these mung is always hungry and if catches sight of people having food, each time attacks for more food. Lepchas believe that if a child is born with defect or disease, the father of the child to be born has done some

immoral act during pregnancy. The death of such a child occurs in the year corresponding to the month of pregnancy when the act was carried out and is considered the consequence of the endeavor. Accidents, disability, calamity, diseases and losses are readily explained by holding some elements of supernatural or another responsible for.

Lepcha Knowledge of Disaster Management

The Lepcha community in the guise of folklore has developed a good deal of understanding of the nature and causes of disasters and has identified precise indicators to assist in predicting disasters, as well as ways and means mitigating their effects.

Why disasters are there?

Socio-Philosophical explanations of natural phenomenon are important in the context of disaster management. The perceived cause of disaster is an important inquiry to promote an effective management.

The Lepcha world is free from Sin as they have no concept about Sin. When an individual involved with some uncommon, unusual, unnatural events like adultery, incest union, fraud, murder, violating existing practices of hunting/gathering or showing disrespect to respectful, invites no individual divine punishment common in the tribal world rather it produces horror to the community level. Because such incidents could welcome a year of disaster and collective suffering by the entire village as divine curse reflected via a series of natural calamity. This is known as nam-toak.

Therefore in the domain of Lepcha culture disasters have been traced back to evil intents of individual beings. Such an interpretation demands that members of society always behave appropriately and responsibly to avoid causing disasters. So it is the individuals' responsibility to save the whole community from natural calamity by behaving appropriately and responsibly according to socially accepted manner. Leaving aside the scientific explanation of such a belief, it can be argued that this approach helps to promoting a strong community feeling and it effectively neutralizes selfish and wicked impulses of individuals. It fosters a spirit of unity and harmony which is so essential for disaster management.

It is also important to determine whether such an explanation can be validated through any underlying principle. Do any of our evil intents cause disasters? Individual evil intents not only resulting disasters even also seriously compromising ability to manage disasters. But now the question is there any Lepcha knowledge that supports such an interpretation?

According one of Lepcha folk stories once there seven brothers lived with seven wives, seven daughters, seven sons, seven daughters-in-law and seven sons-in-law. They work hard to make a living throughout the day and night. But their

widow sister along with her daughter lived in prosperity near about. The brothers and their wives felled very jealous and decided to kill their sister with her daughter and grasp the property. According to their plans one day her brothers and their wives attacked the helpless sister and cut her into pieces. Being a powerful Mun the sister (priestess) able to rearrange all her body parts into a body once again. She narrated the whole incident to her daughter and advised her to not to resist her maternal uncles when they are invading for property. The uncles did same according to her mother prediction with leaving only a hen and a calf for her. Their dead sister meanwhile went and entered a cliff and prayed to divine beings to take revenge. Her prayers are answered. Seven days later a handsome man came and married her daughter and started a life. For the seven brothers and their families followed a disaster and all but two sisters-in-law died. Even those women also suffered from diseases and soon they too died. Since then the Lepchas believe that one should not show off wealth otherwise Gino Mung (the ghost of the seven brothers and their families) invoked by the envy of others and would play disasters in their lives. Similarly jealous individuals also will pass through a year of disaster as a divine punishment for their wicked thoughts.

According to another version of the same story after completion of the invocation by the dead sister inside the cliff, an earthquake came and destroyed the evil brothers with their villages. Thus Lepcha people believed that earthquakes too are to be caused as a result of wicked human action.

Another story narrating us that once Lepcha people attacked by the neighbouring Bhutias and they fought back bravely. The war lasted more than twelve years resulting negligence of agricultural chores and a prolonged famine. Nothing is there, people travelling long to find food. One day a boy and his grandfather searching for food and they did not found anything. At last grandfather requested a bird to help them and the bird took them to a tree having a large honeycomb. The boy was very happy but grandfather told the honey of that hill was poisonous. Both were seriously disappointed until a wild bear taught them how to neutralize the poison and make honey edible. This story establishes the fact as in modern economics that famine resulted from human action like war and not a natural calamity. This folklore also teaches us the principles of resilience, diversification of resources and behavioural modification to seek help in the face of disaster.

How Lepchas prepared for disaster?

It is expected that traditional knowledge system have some distinct elements related to pre-disaster preparedness. Awareness of disasters is the first step in preparedness. Natural disasters are often region specific. A particular region generally has a definite set of natural disasters occurring within the area. Which natural disasters generally occur within the geographical region of Sikkim-Darjeeling Himalaya? Lepcha memories are of flash-floods, earthquakes, forest-fires, landslides, draught, famine, high-velocity winds, etc.

We already described the story picturing famine as one of the disasters Lepchas have faced. They also sharing a strong memory of flash floods narrated in their folklore. According to this story, the two major rivers – Rungeet and Teesta – originally husband and wife, married in ancient time by elopement. After that because of some misunderstanding husband and wife had a big quarrel. To show fury against each other they started to swell beyond themselves. Water level of the two rivers began to raise higher level. The entire Nye-ma-Yel (Sikkim-Darjeeling Himalaya region) flooded. All the living beings including humans and non-humans cried for help and requested husband and wife to show pity on them and to not to quarrel more. The river couple paid no attention to the victims and kept on pouring their wrath on each other.

The situation became unthinkable worse and one only can observe water in the visibility. Not only the villages situated in green mountain valleys but also those located over mountain tops were now under water. All the living beings and the tribes got panicked by such incident and ran towards the crest of the tall mountains. The river couple kept on swelling and the water continued to rise and lastly only mounts Tendong and Montom stood above water. They are brother and sister. Both were unhappy thinking the plight of the innocent lives and took it upon themselves to protect the victim living world from the wrath of the quarrelling couple.

Water keeps on rising and peaks also rising above the water. It was a difficult task; both were terribly exhausted and grew weaker with every passing moment. Only the welfare of the living world kept them to march on. But how long could this continue? Sister unable to endure any more, ultimately sank under the water she lastly prayed for her brother to go to protect him. All the humans and non-humans who had taken shelter there went under water and died with her. The death of his sister came as a furious shock to Mount Tendong but unable to shed tears because that may increase the flood. With much effort he kept his tears and continues to rising on. Those who took shelter on him became frightened more after Mount Montom' death and they prayed with sincerity, invoking the Goddess Na-zong-nyo to come and protect them. Goddess also disappointed by the situation and knew that without any proper reason river couple was fighting and causing lives worse.

Na-zong-nyo called the blood pheasant and asked to go and protect the victimized. Blood pheasant flew down to the Mount Tendong and perched on its peak. All eyes looked towards him with hope. He fought for a while. Then he accepted Chi (local homemade liquor) from those trapped over the mountain and drank it. Chi made him thirsty as never before. He started taking water from the flood water to cool his thirst and the water began to recede, went down further and not much later other mountains, green valleys, Lepcha villages and homes that were submerged, emerged again. Only after seven days blood pheasant stopped drinking. Now it was normal everywhere. Teesta and Rungeet now stopped their shameful

quarrelling and ashamed about their behavior. Lepcha people concluding the story like this way: it is upto the individual to know what to do in an emergency.

Story of Utis (Chest Nut) tree depicts that Lepcha people are familiar with landslides since time immemorial. Forest fire also been mentioned by Lepcha people in several of their myths. Lepcha memories reveal that some of fires are natural while others resulted through wicked human action. The Lepchas are Shifting cultivators, which leading them to burn a new patch of forest for clear new land. First instance of the forest fire appears in the Lepcha narrative about how fire was brought to the earth. According to this narrative of the first marriage, Narip Nom asked Tarbong to bring gifts for her before she consented to marry him. This task was difficult as it required fire also stolen from a Mung (a benevolent supernatural being) called Deut Mung who hide in a place called Mashyok Matel. Ka- Khryak fo (a black-backed Kaleej pheasant) agreed to steal fire so that the marriage could be possible. It succeeded in stealing the fire but while he was returning he put fire on a Chestnut tree and went away to find food for himself. A strong wind blew and fire spread in the forest. Ka- kharyak fo, unfortunately caught in it and as a result he lost his wings and it also caused existence of patches of reddish skin around his eyes.

Lepcha community has also stories about earthquakes that disturbed their landscapes and resulted loss of property and lives. But we are unable to find any Lepcha experience on Tsunamis, volcano eruptions or hurricanes as such natural disasters never occurred in the land of Lepchas.

The tribe also possesses knowledge of the annual timing around when such natural disasters are expected to occur like landslides and flashfloods occur during rainy season (June to September) and forest fires in summer (April-May). A drought must be come after rainless winter and storms usually in the March, high velocity winds likely to be in April-May. One of the Lepcha songs like below (personal communication):

The hills are silent
The valleys are hushed
The cuckoos are back to Mayel Place*
It is the month of Num-Kum**
Rains are violent and incessant
Time to harvest wet paddy
*Mayel Place: Paradise
**Num-Kum: July – August

Lepcha traditional knowledge of disaster indicator is also substantial. Above we have already mentioned that a rainless winter indicate local draught. Famine is indicative when wild bear invading villages as well as langurs (monkeys) move

around in smaller groups. Both incidents have followed by logical explanations like there is scarcity of food in forests thus bears invading villages and lagurs dividing themselves into small groups which are suitable to that situation as now they can cover bigger areas and can find sufficient food in the time of food scarcity. Lepchas living in higher regions believe that harsh weather and consequent famine is indicated well advance by wolves and according to them, wolves do not breed at these time, to adapt with such harsh environment.

The Lepcha also believe that if the birds are silent, a heavy rain and storm is coming. While if the birds are singing loudly and flocking together happily on the ground good weather will continue. One of the common beliefs prevailing in North-East India, East Asia, Bangladesh, and China and also shared by the Lepcha is that in the year when a particular bamboo species blooming massively, a famine will occur as the rats will come out from their shelter to eat the bamboo fruits and their species will over populated by nutrient bamboo fruit ultimately resulting regular attack in field leading to famine. This is known as “Yu Li Hku” or rat-famine.

It is not surprising that wild animals have evolved to respond to their natural environment, coping with seasonal flood, wild fires, landslides and earthquakes. The Lepcha believe that the behavior of various pheasants (cries and nervousness) as displayed right before is an indicator of a major earthquake. The most important earthquake bio-indicator, according to the Lepcha people, is weasels, martens and shrews – animals with high metabolism and rapid heartbeat. Their unusual behavior (panic and confused movements) in animals, in response to earthquakes may be triggered by slight changes in environment which we are unable to get.

Forest fires said to be indicated by sudden movements of birds. Behind this explanation belief is that unlike earth-bound creatures it is the birds that will move out first. Lepchas holds an interesting view on migration of birds. They believe that Mayel fo (migratory birds) bring the message send by Mayel gods to inform people of the right time to sow, weed and harvest crops. The Lepcha believe that any schedule changes in the arrival of Mayel fo (migratory birds) indicates the possibility of natural disasters ultimately which will affect agricultural activities.

What is the effects of disasters and how Lepcha responses to disasters?

Disasters ultimately victimized living worlds, disrupting normal ways of life, taking lives and creating an environment of loss, panic and tension. The story of great flood mentioned previously documented well enough life in the time of and after disaster. According to another Lepcha folktale, once upon a time there was a brother and sister and unfortunately they were orphan when they were still young. Being elder, the sister went into the wild for gathering food. Once the sister found nothing to gather and this was going on for several days. Unable to see that her brother soon dying in starvation and to keep up hope to alive, the sister pretended

to have some sweet potatoes and began to dig for that. It went on for long times while the brother asking every moment for Kew (sweet potatoes) and sister replying routinely Kyon (yes I will give). Sister desperately kept on digging but found nothing. The hole in the ground going bigger until it is became like a cave and unfortunately sister was buried alive. Meanwhile the brother too died in starvation. After the death both became Yongo-hu-pho (local rusty cheeked Scimitar Babbler). Even today Lepchas believe that the brother keeps on calling Kew, asking for sweet potatoes from his sister and sister keeps on replying Kyon , yes I will give. Children are particularly vulnerable in time of disasters. Stories memorizing Bhutanese invasion marking that the main sufferers were children and the aged.

Another story describing, once there lived a husband and wife pair of Mati-tapho (a kind of white capped red bird). They love each other very much. One day the wife felt very ill. The husband put his wife in bed for rest and completing all the household activities. After a while he went to the riverbanks to wash dirty clothes. In time washing there was a sudden outbreak of flash floods and he lost in it. Then the wife came out to search for her husband. She came near to river but at that time flash flood was over and everything is normal. Unable to see her husband wife started wandering here and there and crying cee-bee, i.e, where are you? She can still be seen flying alone over the river and streams and crying cee-bee. Local nomenclature named the bird as cee-bee-pho and it is the only bird that moves towards high altitudes even during the crudest part of the winter. This folktale hints that living and working in disaster prone areas carries chances of accident.

The story about flood indicates one important issue that after disaster common people became such a helpless that they are crying for outside intervention. Above several stories reveals the truth that god intervened to save culture and ways of life. But god came after severe loses and same incident repeated today also, government and other agencies coming after severe lose. Agencies are responding to disaster much later after much destruction and lose. So people have to prepare for disaster, they have to possess knowledge, skills and ability to face the disaster.

Mitigation through Lepcha Traditional Knowledge

Lepcha possess many strategies to overcome the situation after disaster. People build their houses with timber (from a tree called Sambrang Kung) and bamboo. Such houses are known to be quite stable in the face of earthquakes, even breaks but not became cause to loss of human lives. It may be one because that Lepcha settlement not causes as taking lives. Lepcha houses traditionally built on rock and on higher reaches to avoid floods and flash floods. The floor is built up to 2-3 feet higher than the ground, with some space, called tanhanp, left below. This is done protect the house from rainwater which in crises period may flow beneath it. As mentioned earlier house construction is forbidden in landslide prone areas.

Continuous availability of food is an important feature to fight against disaster. Lepcha community evolved a sophisticated logical system to conserve food for future disaster. They never hunt game or gather plant material which is protected by taboos. The Lepcha social norm like 'buk-rup' involves avoidance of unnecessary wastage and destruction of nature. The story of wild bear detoxifying poison honey evidenced in Lepcha daily life. Elder Lepcha priests practice widely processes to detoxify poisonous elements into edible ones. This incident is known as 'Sim-Anyu-Mun'. They regularly practice behavior which may help them in the time of emergency.

Another interesting folktale mentioned that once a Rhododendron tree fell in love with an Utis tree and approached to her to communicate her father about their marriage. Father Utis tree neglect this proposal as Rhododendron tree is very dwarf and shabby looking. Proposal was failed and this happened in autumn. Then spring came, father Utis told the incident to daughter Utis and laughed at this ridiculous proposal. Daughter Utis felt very band and went search for her beloved Rhododendron, and find him in full bloom and looking heavenly. Lady Utis tree again proposed her but this time Rhododendron told her that he already promised her father that he will never marry lady Utis. Lady Utis unable to face the shock jumped from the mountain and died. Since then, the Lepchas believe that Utis always grow in landslide prone areas. So in the Utis forest they never construct their house. And also that herbaceous plant like Rhododendron is better to protect landslide than hardwood Utis (Himalayan Chest Nut).

The Lepcha also associate certain plant species with forest fires. They also tell about plants that will recover first after fire. Certain plants are also resilient to forest fires.

Conclusion:

This paper tries to explore relation between knowledge and world through the views of Lepcha tribe. Lepcha is a Himalayan agricultural tribe living in hill terraces and practicing terrace cultivation. Here we interpreted their medical tradition and their indigenous views of disasters and disaster management. There are so many spheres of society, but any one may interested about why we are citing examples of medicines and disasters. Medicines bring life to individual and continue community while disasters washed away life. So medicine and disasters are polar opposites. And interestingly Lepcha epistemology tells us that both disease of individual and disaster are the result of sin. If any individual did any serious mistakes which are affecting values of society it may resulted by disease or disaster.

The concept of health and illness is entirely guided by belief in the supernatural among the Lepchas. Illness and misfortunes are distributed to a variety of supernatural forces such as attacks by good and bad spirits, witches, sorcerer, forest divinities, spirits of deceased and angry gods and goddesses, breach of

taboo and evil eye. For the Lepchas, illness is something that may be caused by spirits of envy, hatred and quarrelling.

The Lepcha world is free from Sin as they have no concept about Sin. When an individual involved with some uncommon, unusual, unnatural events like adultery, incest union, fraud, murder, violating existing practices of hunting/gathering or showing disrespect to respectful, invites no individual divine punishment common in the tribal world rather it produces horror to the community level. Because such incidents could welcome a year of disaster and collective suffering by the entire village as divine curse reflected via a series of natural calamity.

Therefore in the domain of Lepcha culture disasters have been traced back to evil intents of individual beings. Such an interpretation demands that members of society always behave appropriately and responsibly to avoid causing disasters. So it is the individuals' responsibility to save the whole community from natural calamity by behaving appropriately and responsibly according to socially accepted manner. Leaving aside the scientific explanation of such a belief, it can be argued that this approach helps to promoting a strong community feeling and it effectively neutralizes selfish and wicked impulses of individuals. It fosters a spirit of unity and harmony which is so essential for disaster management.

This knowledge coming from their daily experiences and we cannot dismiss this on the ground of superstition. This knowledge has a past guided by tradition and heritage. Still today it is surviving because of its practical utility. It is very much compatible with all the spheres of Lepcha life. It is telling that the world is not only for human being but also for astronomical number of living species. And not only for living species but also for trees, mountains, rocks, streams and rivers and every body have equal rights. The world is for everybody. And harmony of this world expressed through this solidarity of human, non-human living beings and non-living object beings. Where are the Lepchas today if there is not Mount Tendong, Tessta and Rungeet would wash human civilization (Lepcha) during their quarrel?

Now what will be the relation of this knowledge with development? Is public policy is ready to hear this folk stories? If development wants to leads us to a proposed heaven then it should hear these folk stories. It should start a dialogue with this knowledge system once which was the only source for explanation of any incident in this material world. Monologues development knowledge originated in Western tradition may not able to solve all the problems of Lepcha society.

If knowledge means abstraction, this abstraction should have human face, bounded with human values. Traditional systems of knowledge may be a good example in this case. Any knowledge has only value while it poses some practical utility. So if still today Lepcha following some traditions it must have some practical utility. Any kind of knowledge system is not closed one, it will incorporate any new trends if that have practicability. Systems of knowledge are always dynamic and

what we are calling Traditional Knowledge System is only the remnant of useful practical knowledge of a greater knowledge tradition. We have to understand the logic of practice, and then really development is able to start dialogue between the knowledge and the world.

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10

Agricultural Status and Trend: A Village Level Study

Krishna Gopal Ghosh and Priyanka Das

Pender and Hazell (2000) define less-favoured areas as areas limited in potential for agricultural production due to biophysical constraints such as low and uncertain rainfall, steep slopes, or poor soils or that face socio-economic constraints such as poor access to markets and infrastructure (or both). Favoured areas are more densely populated than less-favoured areas and contain 42 per cent of the rural population in the region, while 58 per cent of the population lives in less-favoured areas.

The main factors causing this growth in productivity were increased use of irrigation, widespread adoption of higher-yielding varieties and increased use of chemical inputs, especially inorganic fertilizer. The total irrigated area in the SEAP region nearly doubled from the early 1960s to the late 1990s (FAO 2003).

The ecological principles underlying these technologies involve providing favourable soil conditions for plant growth by managing soil organic matter and enhancing soil biological activity; optimizing plant nutrient availability through biological nitrogen fixation, nutrient recycling and the limited use of inorganic fertilizers; minimizing losses by managing microclimates and water to prevent erosion; minimizing pest and disease problems through IPM; and exploiting complementarities in the use of genetic resources by combining these in farming systems with a high degree of genetic diversity (Reijntjes, Haverkort and Waters-Bayer 1992). Advocates of these approaches argue that increasing biological

diversity in agricultural systems helps to improve food security by increasing nutritional diversity, reducing the susceptibility of crops to biotic and abiotic stresses, and increasing the diversity of income sources among farmers. But implementation of these technological ingredients by the small or marginal farmers is the toughest task. At the same time due to lack of proper technological knowhow regarding how to imply technological ingredients ecologically, most of the cases quality of land is getting degraded. Poor economic backbone of the farmers do not sufficiently equipped them to acquire all the require items to yield a successful outlay. In this situation, where a maximum extent of land is kept in the hand of poor peasants, in future production downfall may be caused and its cumulative effects on economy may be vulnerable.

Study Area

Village Gonnaserandi is located in Ketugram- I Block under Burdwan district. Agricultural land of this village is distributed among Atgram, Serandi and Palita mouza. Geographically this area is quite depressed draining toward east, frequently inundated by even rainwater. Actually this area acts as a draining route of the surrounding land of west, south and north. Land is fertile but unscientific intensive use of land has disturbed the normal potentiality of yield. A kandar (Gully) borders this village almost in three sides. Most of the people of this village is engaged with agriculture.

Monthly climatic milieu of this region has been ascribed in table 1.

Database and Methodology

Questionnaire survey of the village; perception study of the peasants to know their motivation toward agriculture, past experience of the farmers etc. have conducted and collected from the study area. No complicated tools have been used for data analysis. Gini's coefficient has used for calculating land distribution inequality among the households.

Results and Analysis

Agricultural Land Distribution

Agricultural land distribution is one of the vital key of agricultural development. Land distribution status shows in table 2 reveals a significant level of inequality is existing there. The family having land ownership doesn't have sufficient labour force and the family having enough labour force doesn't have sufficient land. This condition withstands against agricultural practices. This condition has developed labour market and raise the cost for labour as well as agriculture in the one hand and poor status of the marginal farmers or land less labour on the other hand.

Table 1: Monthly Mean Maximum, Mean Minimum Tempt. and Mean Rainfall Pattern (1999-2008).

MonthVariable	J	F	M	A	M	J	J	A	S	O	N	D
Maximum temp. (°C)	25	29	34	36	36.5	34.5	33.50	33.5	33.00	32.00	30.50	26.00
Minimum temp. (°C)	12	15.5	20.5	24.5	25.00	26.00	26.50	26.00	25.00	23.75	19.00	12.50
Rainfall in (mm.)	8	20	23	49	107	246	320	278	256	104	17	11

Source: Statistical Handbook, Burdwan District

Table 2: Agricultural Land Distribution and Level of Inequality

Area of land holding (bigha)	% of households (X)	% of own land (Y)	X_i	Y_i	$X_i \cdot Y_{i+1}$	$Y_i \cdot X_{i+1}$
20-25	8	26	8	26	408	494
15-20	11	25	19	51	1501	1836
10-15	17	28	36	79	3276	5530
5-10	34	12	70	91	7000	9100
<5	30	9	100	100	-	-
Total	100	100	-	-	12185	16960

Source: Based on Questionnaire Survey and Land Revenue Office of the concerned village
Therefore, the Gini's Co-efficient (G) is-

$$G = \frac{1}{100 \times 100} |(\sum X_i \cdot Y_{i+1}) - (\sum Y_i \cdot X_{i+1})|$$

$$= \frac{1}{100 \times 100} |12185 - 16960|$$

$$=.4775$$

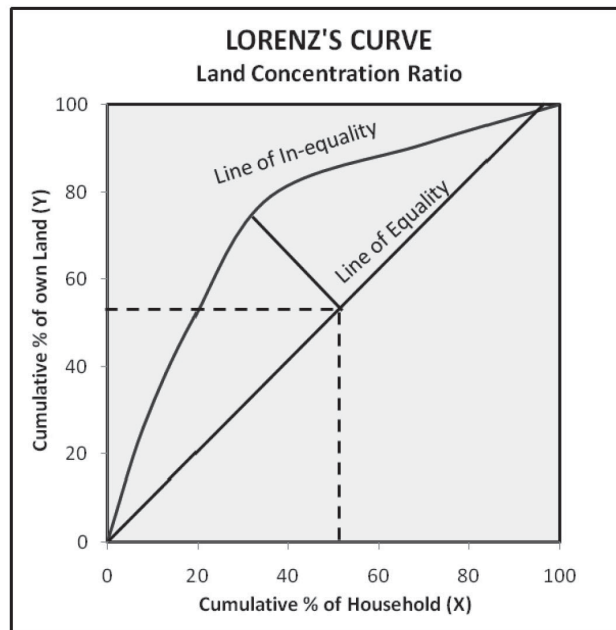


Fig. 1: The result of the Gini's Co-efficient (.478) and Lorenz's Curve (Vide Fig. 1) also supports the truth of land concentration in the hands of few farmers.

Trend of Agricultural Land Price

Of course over time the price of the land has increased but the rate is not so high in compare to the increase of the other commodities. Physical barriers, no other immediate possibilities of land uses, hike of price of most of the agricultural ingredients in compare to the agricultural products, down falling of interest on agriculture etc. arrested land price of this region in certain levels.

Demand of frequently inundated or water logged land is very less as well as land price is also increased marginally. Up to 2004 demand of relatively elevated land was high but in last nine years, people start to prefer medium or fertile low land. This recent trend can be explained by gradual lowering of rainfall during monsoon in this area.

Agricultural Pattern (Crop Calendar)

Cropping pattern means the proportion of land under different crops in a definite calendar year (Weaver, 1956). Result of crop combination shows that double crop is cultivating in this region. But it should be mentioned that although double crop is fitted in this region but paddy is the sole crop which has been cultivating both during monsoon as Aman paddy and summer as boro paddy. Crop intensity is significantly high (161.09%) in this region due to spread of boro paddy in most of the wetland parts (Table 5).

Summer periods in the sub tropical region does not yield rainfall. So for boro paddy cultivation ground water is the single dependable source. No depressed patch does no more retain water during summer. From government's side 7 mini deep tube wells were installed but most of them are in operational at present. Some of the big farmers had installed shallow tube wells for non monsoon boro paddy cultivation but steady ground water level lowering were forced farmers to dug well around shallow tube wells and keep their pump machine below 2-5 meters. It is very painstaking for the farmers. Some of the cases, failure of shallow tube wells forced to failure of crops. All these are the incidents of 1990-1998. After that the paradigm of boro paddy cultivation has changed.

Table 3: Trend of Agricultural Land Price for Different Types

Agricultural Land type	Characteristics	Location	Price of land (Rs./bigha)	
			1998	2013
Doans	(symmetric proportion of sand silt and clay)	Low land (Khal)	22000	70000
		Medium land	28000	80000
		High land (danga)	28000	75000
Sandy (Bele)	>50% is sand particles	Low land (Khal)	16000	48000
		Medium land	20000	54000
		High land (danga)	20000	55000
Silty clay (Entel)	Proportion of silt and clay is more	Low land (Khal)	15000	55000
		Medium land	17000	62000
		High land (danga)	18000	65000

Source: Field study and survey for land price

Table 4: Crop combination values in different combination levels (Weaver's Method).

Name of the Region	Mono Crop	Double Crop	Triple Crop	Four Crop	Five Crop
Gonnaserandi	45.21	17.28*	23.53	27.07	31.52

Source: Calculated by author based on the information of Statistical hand book, 2010

Table 5: Crop Intensity (CI)

Name of the Region	GCA	NSA	CI
Gonnaserandi	1576.40 ha.	978.54ha.	161.09%

Source: ADO Office, Ketugram I, 2012.

Result of crop diversification shows that both in case of Entropy and Berry's measures diversification value is around 35% which is extremely low. Rice dominance is the main cause behind such low rate of crop diversification.

Table 6: Gross Area under Different Crops in Village Gonnaserandi (area in hectare).

Name of the Region	Rice	Mustard	Jute	Wheat	Gram	Vegetation	Potato	Sugar cane	Gross Area
Gonnaserandi	87.10%	4.95%	0.68%	2.49%	1.84%	1.43%	0.94%	0.53%	100%

Discordance Between Cropping Pattern and Climatic Milieu

Rainfall and its distribution in various phases of growth are the most important climatic factors controlling healthy growth and yield of plants. Crop should therefore be selected on the basis of rainfall requirement in the absence of alternative sources of water. Sometimes it should also keep into mind whether the use of other sources of water is ecologically justified or economically effective. Keeping all these in view, National Commission on Agriculture (Govt. of India) suggested rainfall limits for particular crops. A comparison of cropping pattern of the area with the recommended rainfall limits suggests that the crops grown in principal agricultural seasons are incompatible with the required and recommended rainfall limits (vide table 7).

Costing of Different Crop Yields

A comparative cost-benefit structure has been calculated in response to paddy and few other crops following some scholars in this regard (Rahim and Sarkar, 1998).

Economic profit level for paddy is about Rs. 4000-4500 per bigha or Rs. 29000 to 31000 per hectare but in case of onion culture, net profit level is Rs. 8500 to 10000 per bigha which is about 4 folds greater than paddy, profit level is about

Table 7: Existing Cropping Pattern in Relation to Recommendation by National Commission on Agriculture

Amount of Rainfall (in mm.) along with months	Recommendation by National Commission on Agriculture		Existing Cropping Pattern			Major Observation
	Rainfall description	Suggested crops	Crop being grown	Sources of irrigation	% of area under crops to gross cropped area	
February (20), March (23), April (49), May (107)	Rainfall less than 5 cm. per month for three consecutive months	Unsuitable for crop production, only grasses may be grown as fodder crop	Boro paddy, green gram, sesame, vegetables	Shallow tube wells, submersible for boro cultivation	40% - 68%	Boro cultivation unsustainable
June (246), July (320), August (278), September (256)	Rainfall more than 30 cm. per month for three consecutive months	Crops like aman paddy, jute, sugar cane	Paddy (Aus and Aman), sugar cane, jute, vegetables	Mainly rainfall	55% - 74%	Aus varieties, sugar cane, jute in negligible portion
October (104), November	Rainfall less than 5 cm. per month for three	Unsuitable for crop production,	Wheat, mustard, chilly,	Tank, wetland water, river pump, shallow	14% - 24%	Rabi crop varieties are neglected

Rs. 99,453/hectare for potato culture, Rs. 18,800 to 27,500/hectare for khesari, Rs. 65,500 to 80,500/hectare for tomato (Table 8). Noteworthy as much devotion, care, the farmers used to extend for paddy, if such endeavour is paid for the other crop, production level as well as profit level will be increased many times. So if farmers would like to change their traditional paddy cultivation and accept those crops they will be gained economically. Similarly ground water depletion problem will be mitigated to a large extent. If an example is cited out then the matter will be much clear. One hectare boro paddy requires 45×10^5 litres to 51.57×10^5 litres of water/hectare while other mentioned crops claim only 3.86×10^5 to 5.15×10^5 litres of water in their entire life span. So water consumption is about 10 times lesser than paddy in case of pulses, vegetables etc.

Table 8: Profitability in Different Crops

Type of crop	Cost of input (Rs.)	Cost of output (Rs.)	Net profit (Rs.)
Tomato	1450	10,000-12000	8500-10000
Aman Paddy	3100	8200	4000-5000
Boro paddy	3900	8500	3500-4500
Khesari,	850	3900-4800	3000-4000
Oil seed	1200	5600	400-4500

Source: Input-Out ratio have been calculated on the basis of the local farmers' view and local market price, 2012-13.

Soil Environment

Some of the major land mark years have been selected for showing the changes of soil quality. Some of those plots have been selected whose soil quality reports are available in the ADO offices. Soil quality ingredients have been assessed from laboratory. Soil sample have been collected after one month from the period of paddy harvesting. Intentionally, no chemical fertilizers have not been used there from outside. It is observed that NPK status of the soil has degraded substantially. Organic carbon content in soil has also declined. This condition indicates that natural soil quality and level of fertility is now is the function of the applications of fertilizers externally. Inborn productive capacity is getting degraded. This phenomenon will push agriculture to the hands of some rich people as most of the poor and marginal peasants don't have enough purchasing power parity. But at the same time, reluctance of the equipped farmers on that work again erect agriculture in a hard challenge.

Table 9: Soil Quality: Status and Trend

Soil Quality Parameter	1980	1998	2013
pH	7.3	7.5	8.4
Organic carbon	0.52	0.50	0.41
N ₂ (kg./ha)	300	255	215
P ₂ O ₅ (kg./ha.)	85	68	55
K ₂ O(kg./ha.)	305	275	235

Source: ADO office and laboratory analysis

One experiment locally has been carried on selecting 12 plots. Chemical fertilizers have been used in six plots and no fertilizers have used in the rest six plots. Selection of plots prioritize nature of soil e.g. doans, sandy and silty clay. It means four plots from each soil group have been selected, two plots are with chemical fertilizers and other two are without any fertilizers. Result shows that there is hell and haven difference in productivity level. Production gap between the plots with fertilizers and without fertilizers ranges from 53% to 62% in different soil groups and the gap is maximum in case of sandy soil.

In same question, one survey has been conducted among the aged peasants to know their idea on this productivity gaps. According to their opinion, no such experiment they have performed that due to lack of capital, some of the poor farmers were not used to use any chemical fertilizers in their land and as result of it production were very meager. From their memory, they have stated the result as mentioned in Table 10.

Table 10: Level of Productivity for Paddy: with and without fertilizers

Land type	Productivity (kg./ha), 1985		Gap (%)	Productivity (kg./ha), 2013		Gap (%)	Remarks
	With fertilizers	Without fertilizers		With fertilizers	Without fertilizers		
Donas	2478	1960	20.90	3865	1630	57.82	*Fertilizer use increased
Sandy	1780	1150	30.35	2300	875	61.95	2.3times and
Silty clay	2540	1970	22.44	3985	1870	53.07	productivity increases
Average	2266	1693.33	25.27	3383.33	1458.33	56.89	1.5 times.*Productivity decreases (14%)in non fertilizers used land.

Massive use of chemical fertilizers and pesticides hampered the ecological status of the environment. During 1992-98, huge amount of retail fishes were available in the agriculture land during monsoon season but today it has almost disappeared. This incident is seemed to be one of the major causes of nutrition failure among the farmers.

Land Transfer and Levels of Production

In this critical condition when the cost of the agricultural inputs like cost of labour, cost of technological ingredients is sky high, medium and big peasants are mostly uninterested to buy new agricultural land. Even sometimes marginal farmers tend to avoid this toiling and cost ineffective jobs. Therefore, the proportion of land transfer is very less (Table 11). The amount of land which is transferred is confined within land less labour and marginal farmers. Out of total land of the study area, 22.77% of land has transferred to almost in the mentioned unidirectional path and such land transfer is maximum in case of silty clay soil frequently inundated. Low cost of those lands encourages land less labour or marginal farmers to buy and cultivate that land. This tendency again brings productivity depression. Lack of agricultural expertise, available capital etc. supports such productivity depression. Table 12 reflects the fact that newly possessed land owners don't have enough capacity to cultivate the land and yield good productions. Some inferior crops desire less attentions, less fertilizers, water; yield a satisfactory amount.

Table 11: Land Transfer (Farmer to marginal labour)

Land type	1985-90	1996-2000	2001-2005	2006-2013	Total
Doans	1.2%	0.6%	0.7%	1.3%	3.80%
Sandy	1.6%	1.42%	1.43%	1.65%	6.10%
Silty clay	2.4%	2.94%	3.21%	4.32%	12.87%
Total	5.2%	4.96%	5.34%	7.27%	22.77%

Gross Cropped Area: 1576.40 ha.

Survey conducted on 132 farmers of different socio-economic levels in aim to know their motivation toward agriculture. It is observed that 67% big farmers are willing to stay in their profession (Table 13). Capital support, their own technological equipments flavours large farmers to stay in their job. Poor farmers are quite hopeless in their profession and large proportion of farmers wants to get away from this activities. Those landless labours who have got land ownership recently, they are quite interested to stay in their profession. Labour force availability, flavour of new land ownership, no alternative means of earning etc. force them to think them stay in their sector. After completing cultivation in their own land, they employ themselves as labour and it provides some economic support to the people.

Table 12: Productivity Comparison between Farmer and Newly owned Marginal Labourer

Crops	Productivity (kg./ha)		Productivity gap		Remarks
	Farmer	Newly owned Marginal Labourer	Absolute value kg./ha	% value	
Aman paddy	3383	2436	947	27.99	Except very inferior crops, most of the cases productivity is very less in compare to the farmers.
Pulses	200	210	-10	-5	
Oilseed	360	310	50	13.88	
Onion	4800	4358	442	9.20	
Potato	4400	3876	524	11.91	

Perception on the Interest of Agriculture

Table 13: Perception of the Farmers Regarding their Interest of Cultivation

Socio-economic groups	% of farmers				
	Want to stay	Shift to business	No other means	If their son can shift	Want to stay if govt. supports
Big farmers (>15bigha/head)	67	17	11	5	nil
Medium farmers (10-15bigha/head)	43	14	21	12	10
Small farmers (5-9 bigha/head)	32	12	27	18	11
Marginal Farmers (<5bigha/head)	13	28	32	17	10
Newly owned marginal farmer	40	11	33	nil	16

Total respondents= 132 farmers

Causes of Agricultural Apathy

It is being attempted to understand the major causes of farmer's apathy on agriculture in different socio-economic farmers groups. It is observed that labour crisis is one of the emerging causes of ebb in the interest of agriculture. High costs of fertilizers have created anguish among all sections of farmers. Another major cause is the low price of the agricultural products. For this, poor farmer groups are suffering acutely. During the period of harvesting, the prices of the products remain very low, but they forced to sell their product immediately after harvesting to recover their borrowings. Big farmers keep their products in hand and wait for the high price of products. In spite of these group specific disparity of anguish against such low price of products, but actually, the cost of agricultural equipments like fertilizers, labour cost, cost of tractors and other machineries, cost of water harvesting etc. have raised on an average four times greater than the rise of price of agricultural products. Although this area is frequently devastated by flood and crop failures happen still farmers are less anguish against this issue. Out of total expressed six causes, high price of the fertilizers and low price of the products are two of the main discouraging factors to the farmers. As per the authors' experience on this matter, they have some valid reasons to express their anguish on the said issues.

Agricultural Transition in the Study Area

Agricultural development and shifting paradigms of agriculture are the functions of throngs of parameters of different dimensions. Socio-economic status, literacy, market conditions, facilities for agriculture, agricultural infrastructures, status of land distribution and land ownership etc. control the temporal change of the phases of agriculture. After 1960's Green Revolution was happened in Indian agriculture but it can't be said that the fruits of this revolution have reached in all the remote villages. This statement is supported by the mostly subsistent type of agriculture in this study area even during the period of 2nd Green Revolution. The entire time

Table 14: Causes of Reluctance for Agriculture

Socio-economic groups	Labour crisis	High rate of fertilizers	Low cost of products	High cost of labour	Excess physical labour	Frequent crop failure	Total (%) people surveyed
Big farmers (>15bigha/head)	29%	22%	19%	21%	5%	4%	8
Medium farmers (10-15bigha/head)	26%	24.50%	31%	14%	nil	4%	20
Small farmers (5-9 bigha/head)	12%	32%	31%	9%	6%	10%	29
Marginal Farmers (<5bigha/head)	8%	42%	41%	nil	nil	9%	32
Newly owned marginal farmer	nil	51%	38%	nil	nil	11%	11
Total	75%	172%	160%	44%	11%	38%	100%

Total respondents= 132 farmers

Table 15: Transition of Agriculture and Rural Development

Phase	Capital use	Technology use	Social peace	Leisure time	Surplus production	% of people engaged	CI (%)	Net profit
Subsistence (1970-85)	Very Insufficient	Traditional	Good	Enough	No	87.2	72 (%)	Negligible
Marginal Surplus (1986-1995)	Insufficient	Marginal Use of scientific tools	Good	Enough	Marginal	84.65	119 (%)	Marginal
Growing surplus (1996-2005)	Sufficient	Use of scientific tools	Not satisfactory	Busy	Marketable	78.42	137 (%)	Good
Diminishing surplus (2005 onward)	Insufficient	Use of scientific tools	Tensile	Busy	Marketable	73.56	151 (%)	Less

Source: Based on field study

spectrum of agricultural development can be sub -divided into four phases to show the agricultural transitions i.e. subsistence phase, marginal surplus phase, growing surplus phase and diminishing surplus phase. Characteristics of all the mentioned phases have been described in table 15. From the table 15, it can be said with advancing stages of agricultural transitions agricultural instability has increased. Of course, productivity level has raised but leisure time of the farmers has reduced, social peace of the farmers has disturbed, net profitability from agriculture has reduced etc.

Conclusion

From the above study, some of the major findings are as follows:

1. In agricultural land distribution inequality is existing and a large proportion of land is concentrated within very small segment of large farmers group.
2. Agricultural crop patterns are not concordant with existing ecological conditions. Non monsoon paddy cultivation creates fast rate ground water level and brings water crisis in the study area and its impact still exists. Moreover, due to running of electrified motor pump for drawing up water from underground, electricity crisis in the domestic sector is another impact. Low voltage since March to may disturb the lifestyle of the people. Apart from all these, cost benefit status of different crops show that paddy is less profitable during summer but paddy mongering exists.
3. Cost of agricultural ingredients is highly disproportional in compare to the cost of the agricultural products. Poor farmers who are forced to sell their products immediately after harvesting face maximum difficulty as they get very low cost. High labour cost and labour crisis is another barrier against agricultural development. Farmers are willing to shift to other economic activities if chance is there.
4. Agricultural land is transferred to the land less labour or marginal labour without least equipments and expectedly the production fall is the ultimatum. If this tendency goes on our rural agriculture base will face a significant negative trend.
5. Ecological environment of the agricultural land has disturbed due to excessive use of chemical fertilizers and pesticides. As result without fertilizers, volume of production is very negligible. As per farmers' statement, during rainy season, small fishes which were found in the agricultural land, depressed water stagnant land were used to support nutrition base of them but at this time these fishes are quite disappeared and they are not getting this kind of nutrition in free of cost. At the same time, their purchasing power parity is also not sufficient to buy these items. This crisis again castes negative impact on their health and power of hard work.

6. Most of the peasants are reluctant to stay in their profession; change of land price is very minimum in compare to the rise of price for other commodities reveal the fact that nobody wants to buy more agricultural land for agricultural purposes. Only some landless labourers, marginal farmers who have not other means of earning in immediate future are purchasing some inferior land with low price.

In fine, it can be said that the fate of the agriculture of the study area is approaching toward critical crisis. Tendency of agricultural apathy is not good. So, to gear up the agriculture govt. should take viable role. Similarly, farmer-govt.-scientist trinity should think about how to recover the losing status of the ecological environment. Authors opines that apart from paddy cultivation, farmers should encourage some less cost consumptive crops like tomato, khesari, other pulses, onion, potato, oil seeds, vegetables. In word agricultural diversification is required and farmers should pay due attention for cultivating these crops as they are used to pay for cultivating paddy.

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11

Women and Child Development: A Crying need of the hour

Amit Banerjee

“To achieve international cooperation in solving international problems of an economic, social, cultural or humanitarian character, and in promoting and encouraging respect for human rights and fundamental human freedoms for all without distinction as to race, sex, language or religion.”

“He is a good husband; he only hits me once a week.”

(Wife of a Nobel Prize Winner.)

“What is now needed is the political will. The strategy for the advancement of women seek first and foremost to alter the current unequal condition and structures that continue to define women as secondary persons and give women’s issues a low priority. Development should now move to another plane in which women’s pivotal role in society is recognised and given its true value.”

(The Nairobi Forward Looking Strategies for the Advancement of Women.)

The aim of every democratic society is recognition of human rights and establishment of social justice. Indeed, in every society and at workplace women are victims of discrimination, in law and reality. The principal factors responsible for this situation are family, society, State and varied inequalities towards women at workplace. The causes and consequences of discrimination against women vary from country to country. But it is no denying the fact that discrimination against women is wide spread. 1945 women enjoyed voting rights in only thirty one countries. Out of 1.2 billion poor people in the world about 70 percent are

women. Out of the rural population 60 percent are women and women constitute the greatest number of rural people living below poverty line. The economic condition of women is well illustrated by the feminization of poverty. Women's poverty is ever increasing. In the United States one out of every four children below the age of six is brought up in poverty.

The World Conference on Women held in Mexico in 1975 made the question of women's human rights important and universal. 1976-1985 was celebrated as Women's Decade. Its theme was Equality Development and Peace. On 18th December, 1979 the General Assembly of the United Nations adopted the Convention on the Elimination of All Forms of Discrimination against Women, 1979. It came into effect on 3rd September, 1981. 103 countries ratified it till 1992. The Preamble to this Declaration stated that despite the existence of the Preamble to the United Nations Charter, Universal Declaration of Human Rights, 1948 and other documents, extensive discrimination continues to exist and

“discrimination against women violates the principle of equality of rights and respect for human dignity, is an obstacle to the participation of women on equal terms with men, in the political, social and economic and cultural life of their countries, hampers the growth of the prosperity of society and the family and makes more difficult the full development of the potentialities of women in the service of their countries and of humanity.”

It cannot be denied that the end of social discrimination, race discrimination, colonialism, neo-colonialism, aggression, foreign domination, hegemony and interference in the internal affairs of the states are essential to ensure equal rights of men and women. It is worth mentioning that in case of family welfare and social development the role of women has not been properly recognized. The social significance of motherhood, of women's role in reproduction, equal importance of parents in matters relating to family and child-rearing has to be recognized. Besides, there is a need to change traditional role of men and women in family and society to ensure the equal rights of men and women.

Article 1 of the Convention on the Elimination of All Forms of Discrimination against Women, 1979, elaborately deals with the expression discrimination in the following words :

“the term discrimination against women shall mean any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field.”

The various reports of the United Nations states the following:

- (i) During a survey carried out in 1993 upon 420 women, it was found that 54

percent of them experienced some amount of gender-based violence before the age of sixteen.

- (ii) Rape during war is still a common feature.
- (iii) In many countries girl child and adolescent girls are subject to gender related misuse.
- (iv) During times of caste, communal and political conflicts women are subject to large scale violence.
- (v) Women are not much participants in the decision making process involving war or war like situation but are subject to aggression and exploitation.
- (vi) In India cruelty against wife, dowry deaths and accidental burns are common occurrences. According to official police estimates 4835 women were killed in 1990 since their families failed to meet demands of money and other materials. In Greater Bombay one out of five deaths occurred due to accidental burns. In these cases, the age of women varies from 15 to 44.
- (vii) Female genital mutilation is a traditional practice in Asia / South Asia / Africa. It also occurs to a large extent among the immigrant of America and Europe. Globally, about two million girls per year have to bear the terrible experience of genital mutilation. About five new occurrences are happening.
- (viii) Female foeticide and killing of girl child is an old practice in various countries of Asia. The main reason is economic, unable to marry out the girl.
- (ix) Domestic violence continues to be a great lot in women's life in several countries. Developed / developing countries continue to be equally guilty in this matter.
- (x) "Violence during pregnancy, is identified as a major reason for miscarriage and low birth-weight children. Besides women belonging to minorities, immigrant, destitute, and refugees are mainly greatly victims of violence. It is an inhuman and cruel irony that though women are mainly food-producers and play an important role in economic activity, yet they are victims of violence in a big manner. One of the main critical concerns of the Fourth Women Conference 1995 at Beijing was violence. It observed that "violence against women is a global problem linked to male power, privilege and control."

On 20th December 1993, the General Assembly of the United Nations passed the Declaration on the elimination of violence against women which is regarded as a landmark regulation against gender violence. Its Preamble observed :

"Violence against women constitutes a violation of the rights and fundamental freedoms of women" and "violence against women is a manifestation of historically, unequally power relations between men and women...."

Article 1 of the said Declaration defines violence which is stated hereunder:

“Violence against women means any act of gender-based violence that results in or is likely to result in physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion, or arbitrary deprivation of liberty, whether occurring in public or private life.”

“Moving into the 21st Century, the drive for women's rights has accelerated and taken on a powerful and global momentum. In the 20 years since the first global Conference on women's issues was held in Mexico City, the campaign for equality between women and men has witnessed significant changes and undeniable awareness.” (Fourth World Conference on Women, UN Chronicle, June, 1995) But the big question is how has the concept of equality touched the daily lives of the common women? Despite spending huge amount of money crores of women continue to be victims of discrimination in social, economic, political, and cultural spheres. This is a great, great disease. According to an estimate of the United Nations, only six women were the heads of governments in various countries in 1993. In about hundred countries the legislature does not have any women representative. Two-third of the illiterate are women. In South Asia and Middle East, one out of three learners are women, the girl child also significantly mark the school-droppers. For equal work with men, women receive 20-40 percent less salaries than men. Women figure in significantly less number in administrative posts. Each year nearly a half a million women die due to pregnancy related complications; nearly one lakh women die each year due to pregnancy. Women account for about 40percent of all people carrying HIV AIDS.

Violence against women continues to be immense. In the United States, a woman is assaulted every 18 minutes. In India dowry related problems continue to be very serious and a matter of great shame. In the developing countries women represent half of all workers engaged in producing food. In many countries women and girls are required to work nearly 10 kilometers to fetch water and fuel. In India women account for nearly 75% of all workers engaged in cutting of grains. If an estimate is made of the domestic work done by women in term of paid ways then the world GNP will increase by about 20-30%. Out of one billion poor people in the world about 60% are women; in comparison to 1965-70 about 47% more women live below poverty line in 1988. More than half of the poor families in the United States are run by women; they have no contact with their husband. It may be mentioned in this context that 133 counties ratified the Convention on the Elimination of All Forms of Discrimination Against Women, 1979 till 1994.

The 4th World Conference on Women was inaugurated at Beijing on 4th September, 1995. The Prime Minister of China in his inaugural speech said that the two world wars have been pressed upon the human race and women and children had to pay the maximum price for it. In his words, without world peace and stability any talk on improving women's status and guaranteeing their rights would be out of

question. He further stated that developed countries have an unshakable responsibility to help in the economic growth of developing countries, poverty reduction and helping women in the standard of living.

The Country Report released on behalf of India observed that “a huge section of the world’s population cannot be ignored.” Besides, “women’s perspective in macro-economic policies” is extremely important. “India would be pressing for, among other things, eradication of poverty, access to education and affordable health care and an end to violence against women. India further stated that “social goal cannot be achieved if the nations of the world continue to arm themselves at the current rate.”

“Each new generation offers humanity another chance. If we provide for the survival and development of children everywhere, protect them from harm and exploitation and enable them to participate in decisions directly affecting their lives, we will surely build the foundation of the just society, we all want and that children deserve.”

(Fact Sheet No.10: The Rights of the Child, UN, Geneva, September 1990)

Children constitute half of the world’s population. Their presence is our beautiful world. “Motherhood and childhood are entitled to special care and assistance. Children are immature from physical and mental standpoint. Due to their age, this protection is necessary for children. Family, society and the State adopts various measures to protect the children. These measures include their right to food, housing, medical care, education and freedom from all forms of economic and social exploitations.

Two articles of the International Covenant on Civil and Political Rights (ICCPR), 1966 are highly relevant for children, Article 23(4) of the said Convention states hereunder:

“States Parties to the present Convent shall take appropriate steps to ensure equality of rights and responsibility of spouses as to marriage, during marriage, and at its dissolution. In the case of dissolution, provision shall be made for the necessary protection of any children.”

Article 24 of ICCPR, 1966, further states as follows:

- i) “Every child shall have, without any discrimination as to race, color, sex, language, religion, national or social origin, property or birth, the right to such measures of protection as are required by his states as a minor, on the part of his family, society and the State...
- ii) “Every child shall be registered immediately after birth and shall have a name.”

iii) "Every child has the right to acquire a nationality."

The International Covenant on Economic, Social and Cultural Rights (ICESCR) 1966, observes regarding children in the following words :

"Special measures of protection and assistance should be taken on behalf of all children and young persons without any discrimination for reasons of parentage or other conditions. Children and young persons should be protected from economic and social exploitation. Their employment in work harmful to their morals or health or dangerous to life or likely to hamper their normal development should be punishable by law. States should also set age limits below which the paid employments of child labour should be prohibited and punishable by law."

The Convention on the Rights of the Child, (CRC) 1989, is an elaborate document and significant step forward in protecting the rights of the child in a global scale. It is also a promise for the future. The main spirit of this Convention is that today's children is tomorrow's future and for it a just and human social order should be set up. 1979 was celebrated by the United Nations as International year for the children. This year marked the beginning of new thinking regarding the rights of the child. UN Working Group chairperson Professor Adam Lapatake took the lead in this matter. The CRC, 1989 not only overtook all the previous Conventions regarding children, but ensured that the ratifying states took more legal responsibility in implementing the same. The CRC, 1989 was a new rallying point for legislators, educationists, non-governmental organizations and administrators.

Nearly 30 million children in various parts of the world live in pavements and roads. They live on and earn by beggary, theft, prostitution and labour. They are deprived of the affection and security of the family or home. "In Dickensian sweet shops many are pitilessly exploited as virtual slaves. Their misfortune is seen as a crime." It is not sufficient to ratify the Convention regarding the Rights of the Child, what is necessary is implementation of the same. It is necessary to build up public opinion at the national and international level and to establish social justice. It is highly essential to remove the scourge of hunger, poverty, mal-nourishment, ignorance and illiteracy Besides.

"...the education of the child shall be directed to the development of respect for human rights and fundamental freedoms, and for the principles enshrined in the Charter of the United Nations."

12

Dissemination of Farm Technologies for Poor Farmers: A Paradigm Shift

Sarthak Chowdhury and Prabuddha Ray

For the most part, information have-nots i.e. the resource-poor farmers gained very little from the processes of development and technology transfer of the Green Revolution (Pearse, 1980). Many analysts of the Green Revolution have pointed out that the new technologies were not scale-neutral. The farmers with the larger and better-endowed lands gained the most, whereas farmers with fewer resources often lost, and income disparities were often accentuated (Shiva, 1991). Not only were technologies inappropriate for poor farmers, but peasants were excluded from access to credit, information, technical support and other services that would have helped them use and adapt these new inputs.

Although subsequent studies have shown that the spread of high-yielding varieties among small farmers occurred in Green Revolution areas where they had access to irrigation and subsidized agrochemicals, disparities remain (Lipton and Longhurst, 1989). Moreover, in the most intensively cropped lands there are observable trends of yield declines (i.e. rice-wheat systems in India and rice under continuous cropping in the Philippines), linked to the cumulative effect of environmental degradation, partly caused by the use of high-input technologies (Pingali *et al.*, 1997). New approaches to enhance productivity in such high-potential areas will have to depart insignificant ways from the Green Revolution, emphasizing resource-conserving technologies (i.e. incorporation of legumes in rotation schemes) that enhance the sustainability of agro ecosystems.

In many countryside areas, intensified social differentiation and concentration of wealth have set in. Perhaps even more significant is that the areas characterized

by traditional agriculture remain poorly served by the transfer-of-technology approach, due to its bias in favour of modern scientific knowledge and its neglect of local participation and traditional knowledge Lappe *et al.*, 1998). The historical challenge of the international agricultural community is therefore to refocus its efforts on marginalized resource poor farmers and agro eco -systems and assume responsibility for the welfare of their agricultural system.

The private sector and advanced research institutions have little interest in targeting such groups as they do not represent significant markets. In order to benefit the poor more directly, technological generation must be demand driven which means that research priorities must be based on the socio-economic and environmental needs and circumstances of resource-poor farmers (Blauert and Zadek, 1998). The urgent need to combat rural poverty and to conserve and regenerate the deteriorated resource base of small farms requires an active search for new kinds of agricultural research and resource management and transfer of technology strategies. NGOs have long argued that a sustainable agricultural development strategy that is environmentally enhancing must be based on agro ecological principles and on a more participatory approach for technology development and dissemination (Altier *et al.*, 1998). Focused attention to the linkages between agriculture and natural resource management will help greatly in solving the problems of poverty, food insecurity and environmental degradation.

To be of benefit to the rural poor, agricultural research and development and dissemination should operate on the basis of a “bottom-up” approach, using and building upon the resources already available: local people, their knowledge and their surrounding natural resources. It must also seriously take into consideration, through participatory approaches, the needs, aspirations and circumstances of smallholders (Richards, 1995).

In fact many analysts (Conway, 1997; Blavert and Zadek, 1998) agree that in order to enhance food security in the developing world, the additional food production will have to come from agricultural systems located in countries where the additional people will live in, and especially where the majority of the poor people are concentrated (Pinstrup-Andersen and Cohen, 2000). Even this approach may not be enough, as current World Trade Organization (WTO) policies force developing countries to open markets, which allows rich countries to jettison their over production at prices that are disincentives to local producers (Mander and Goldsmith, 1996).

In order to benefit the information have-nots poor farmers more directly, a Technology transfer approach must directly and simultaneously tackle the following objectives:

- Poverty alleviation;
- Food security and self-reliance;

- Ecological management of productive resources;
- Empowerment of rural communities;
- Establishment of supportive policies.

This new Technology transfer strategy must be applicable under the highly heterogeneous and diverse conditions in which small holders live, it must be environmentally sustainable and based on the use of local resources and indigenous knowledge. The emphasis should be on improving whole farming systems at the field or watershed level rather than the yield of specific commodities. Technological generation as well as dissemination should be a demand-driven process meaning that research priorities should be based on the socio economic needs and environmental circumstances of information have-nots resource-poor farmers (Blauert and Zadek, 1998). The urgent need to combat rural poverty and to conserve and regenerate the deteriorated resource base of small farms requires an active search for new kinds of agricultural research and resource management strategies. Non-government organizations (NGOs) have long argued that a sustainable agricultural development strategy that is environmentally enhancing must be based on agro ecological principles and on a more participatory approach for technology development and dissemination, as many agree that this may be the most sensible avenue for solving the problems of poverty, food insecurity and environmental degradation (Altieri *et al.*, 1998).

To be of benefit to the rural poor, agricultural research and development and dissemination should operate on the basis of a “bottom-up” approach, using and building upon the resources already available: local people, their knowledge and their autochthonous natural resources. It must also seriously take into consideration, through participatory approaches, the needs, aspirations and circumstances of smallholders.

Building on Traditional Knowledge

Many agricultural scientists have argued that the starting point in the development of new pro-poor agricultural development approaches are the very systems that traditional farmers have developed and/or inherited throughout centuries (Chambers, 1983). Such complex farming systems, adapted to the local conditions, have helped small farmers to sustainably manage harsh environments and to meet their subsistence needs, without depending on mechanization, chemical fertilizers, pesticides or other technologies of modern agricultural science (Denevan, 1995). Although many of these systems have collapsed or disappeared in many parts of the Third World, the stubborn persistence of millions of hectares under traditional agriculture in the form of raised fields, terraces, polycultures, agro forestry systems, etc. are living proof of a successful indigenous agricultural strategy and comprises a tribute to the “creativity” of small farmers throughout the developing world (Wilken, 1987). These microcosms of traditional agriculture

offer promising models for other areas as they promote biodiversity, thrive without agro chemicals, and sustain year-round yields. It is estimated that about 50 million individuals belonging to about 700 different ethnic indigenous groups live and utilize the humid tropical regions of the world. About two million of these live in the Amazon and southern Mexico (Toledo, 2000). In Mexico, half of the humid tropics are utilized by indigenous communities and “*ejidos*” featuring integrated agriculture-forestry systems aimed at subsistence and local-regional markets.

Defining the target population of a pro-poor information have-nots Technology Transfer Strategy

Although estimates of the number and location of resource-poor farmers vary considerably, it is estimated that about 1.9–2.2 billion people remain directly or indirectly untouched by modern agricultural technology (Pretty, 1995). The majority of the world’s rural poor (about 370 million of the poorest) lives in areas that are resource-poor, highly heterogeneous and risk-prone. Despite the increasing industrialization of agriculture, the great majority of the farmers are peasants, or small producers, who still farm the valleys and slopes of rural landscapes with traditional and subsistence methods. Their agricultural systems are small-scale, complex and diverse, and peasants are confronted to many constraints. The worst poverty is often located in arid or semiarid zones, and in mountains and hills that are ecologically vulnerable. These areas are remote from services and roads and agricultural productivity is often low on a crop by crop basis, although total farm output can be significant. Such resource-poor farmers and their complex systems pose special research challenges and demand appropriate technologies and transfer processes.

Participatory Technology Transfer Approaches (PTTA)

A key methodological theme that cuts across PTTA is how to best integrate the various social Co-actors involved in the process of generation and diffusion of innovations. Much has been said about the potential role of farmer knowledge and experimentation as a critical link in the Technology Transfer Process, but there are very few practical examples. Most development programs that placed the interests of small-scale farmers high on their agenda fell short in their expectations as they failed to seriously address popular participation. The implication here however is not for researchers to promote participatory approaches so that farmers put to better use already made or new “technological packets”. The few existing examples of generation and diffusion of “farmer friendly” technologies suggest that full participation of farmers is essential to the development and dissemination of sustainable agriculture methods and technologies. In such cases horizontal and equitable interaction among actors replaces top-down relations, and promoted initiatives are responsive to farmer needs and ideas.

In fact, farmers’ knowledge is melded with current scientific knowledge. The

existing farmer-to-farmer networks and methods of communication have proven invaluable in the spreading of ideas and innovations. In turn, these participatory arrangements strengthen and empower local farmer and community organizations, and further learning and adoption of alternatives.

Empowerment of Rural Communities

Because rural communities are affected by factors which are in constant flux and because PTTA projects have a finite life, it is crucial that the process by which new PTTA are developed, enhance the ability of rural communities to innovate, to respond to new challenges, and to influence the policies which affect them. This is yet another reason for including members of rural communities in the research process. The benefits gained from PTTA research and development includes both the end-product—i.e. new strategies and technology to sustainably manage the technology transfer process and the process used to arrive at the end-product. By using an empowering methodology, members of rural communities, such as women's groups and indigenous peoples learn not only the technical tools for sustainable agricultural practices but also gain much needed political power and recognition that will ensure enduring results.

This process makes use of a methodology in which rural people participate in setting extension agendas. For example, members of the communities could be included on the boards of international extension organizations. Farmers, herders, and fishermen should also determine goals and design of extension agendas of such centres and be involved in carrying out and evaluation of projects. This can be achieved using approaches such as farmer-to-farmer training, farmer-led research, "land-to-lab extension", and multi-directional technology dissemination instead of one-way technology transfer from lab to land. The ability of rural communities to innovate and to respond to new challenges will then be enhanced and will continue beyond the time period of projects.

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13

Girl Child : Early Marriage Issue and Media

Aditi Bhowmick

We read the incidents in the newspapers that teenage girls protest against their forced marriage and wish to continue their study. Parallely, the incidents of abuse and torture on girls and women have been seen. Girls suffer from several types of torture and abuse from the society. Indian society, however democratic in form, does neither provide any protection for the girls, nor makes the public alert about their unconscious civic awareness. Girl-child marriage is one of those tortures girls face since long past. In the mediated society of 21st century, media must take the initiative to make the people alert about girl-child marriage, must throw a searching light on the loopholes of the society. Through repeated broadcast in print, electronic and folk media- the city people may aware of the menace and think collectively and positively to eradicate the disease.

Marriage is a union of two matured body and mind. To Rousseau, marriage is a social contract-a contract where a wife has the possession on her husband's polygamy, wealth, propriety and vice versa, a child would be a legal heir of a family and find proper social identification. As per Indian society, the traditional notion about conjugal relationship is that man should earn for the home and women should manage household works. So, responsibility due to domestic life should be divided within the two and both should respect each other and must possess the ability to take the responsibility physically and mentally. That's why a minimum age is fixed for marriage in the Constitution and that is 18 years for girls and 21 years for boys. On the very outset, child marriage is illegal. Moreover, forced marriage is highly unethical. This type of marriage may lead to abuse and trauma.

Reports say that in India 1/3 boys get married at their early stage although the number of boy-child marriage is less than the girls. Even, girls do not get the chance to express their feeling in such cases.

If we overview the history of child-marriage, the genesis of girl-child marriage would come up to the foreground. In Sultan-Age, the women received no standard respect, their position got lowered. In that age, history narrates about so many religious conversions especially the practice of girl-child marriage to save their honour and chastity. Moreover, the age was marked for fear and 'forced marriage'. There was a belief that unmarried girls might cause disaster in family as well as society. There are many reasons justifying girl-child marriage. The alliance between families and kingdom referred to "military alliances", the marriage due to "caste prejudice", the marriage to save the girls from rape and such social drawbacks as "social reasons" all are given cause in support of girl-child marriage. Parents get worried, if the girls of their family may choose somebody-else, does not belong to the same caste, if they fall prey about the dark side of society like rape, murder, and etc. All these reason impel them to do the early marriage for their daughters and sometimes instead of the daughters' unwillingness. Here, education matters. In most of the families, parents and the elders do not ready to continue education of their girls; there is a shadow of fear that if the girls may choose their life-partners and parents are quite unaccustomed about the concept of pre-marital sex. They assume that if the girls have any courtship, they surely do the sex before marriage, and to resist the issue, they fix their girls' marriage at early stage even without their consent. With it, their education is stopped. Caste prejudice show tremendous fear in some of the pocket areas in India. Even murder can happen if love-affairs can happen between two persons belonging to different castes. Some of the parents sell their daughters in the name of marriage to the brokers and thus girls are found in trafficking, in prostitution.

Poverty is one of the basic reasons of early marriage of girls. They consider girls burden of their family and attempts to get them married quickly so that they can gain something from the groom or his family as per the customs of their community. Sometimes they think that they are exempted from bearing one responsibility-responsibility in every sense. Poverty cannot afford the facility to bloom a flower with tenderness, care and affection. Dowry system also frowns at the system.

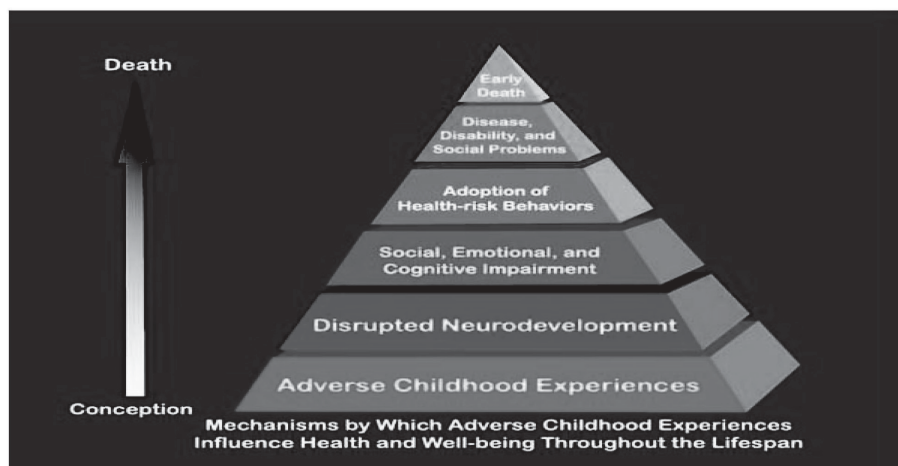
It is obvious that economically poor and socially and culturally backward family are not the proper originators or practitioners of this and such evil practices. Rather it becomes a culture to many parts of India. Statistics says that in India, around 39000 child marriages happen every which means one out of every two girls married below the age of 18 which is illegal. India signed a convention CEDAW (the Convention on the Elimination of All Forms of Discrimination against Women) in 30th July, 1980. It was an International Bill drafted to end discrimination against women. The convention proclaimed that early marriage should not have any legal effect, all actions must be taken to enforce a minimum age and that all

marriages must be put into an official registry. But India declined that with the declaration that because of the Nation's size and amount of people, it sounds impractical to have a registration of marriages. It is interesting to note that in the wake of a large number of girls opting marry before the set legal age, the Supreme Court recently observed that if it is difficult to arrive at a "straight jacket formula on marriageable age of girls to fit every case". (reported: TNN)

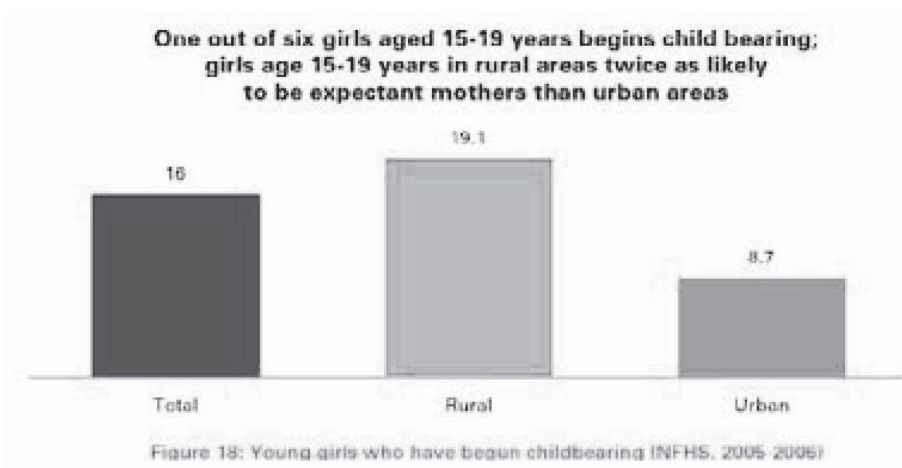
Child marriage and lack of proper education has positive correlation. Generally, the family, economically poor, does not support girls' education because girls help them in household works and sometimes they are sent to earn. In the working place, they have the threat to be harassed. Moreover, the family is not economically strong enough to continue their study. Marriage at infancy or before the age of 18 may end their schooling. And no one is there to stand by them to continue their study. Most of them are first generation learners. They have no educational-environment at their home. Besides, teaching learning materials are not supplied in a sufficient number as the Govt. and UNESCO also implemented some of the schemes. Unwillingness merges with early marriage and the total lack and void of culture and education sustains for long. Drop-out trends may have associations with trends of child marriage. It imparts into their children in future.

Now coming to the point of effect, child-marriage is overall harmful for girls in every respect. It brings psychological harm, brings risks of early pregnancy and childbirth, HIV risks on the physical and mental level. And on the social aspect, it denies taking proper education and occasionally girls are the victims of violence and abandonment. Most of the marriage in the sub-continent is likely context for sexual intercourse. Fertility rates are higher in slums than in urban areas. A study conducted in India by the International Institute for Population Sciences and Macro International in 2005 and 2006 showed high fertility, low fertility control, and poor fertility outcomes data within child marriages. Reports say that 15.3% girls are reported a pregnancy termination (stillbirths, miscarriages or abortions). Statistics also says that because of the ignorance about reproductive issues, pregnancy-related deaths are known to be the leading cause of mortality among married girls between 15-19 years of age. These girls are twice more likely to die in childbirth than between 20-24 years of age. Girls younger than 15 years of age are 5 times more likely to die in childbirth. Reports also show that infants born to mothers under the age of 18 are 60% more likely to die in their first year than to mothers over the age of 19. If the children survive, they are more likely to suffer from low birth weight, malnutrition and late physical and cognitive development.

Early marriage is obviously a cause of miscarriage and it is found out that most of the girls living especially in remote area, do not aware even their reproductive organs. Somewhere girls have to do the intercourse according to their husband's will even after two or three days after their delivery. The cutting area of vagina seems unreceptacate and sexual violence occurs silently. During the time and mostly due to unawareness about sexual intercourse process, the girls get affected

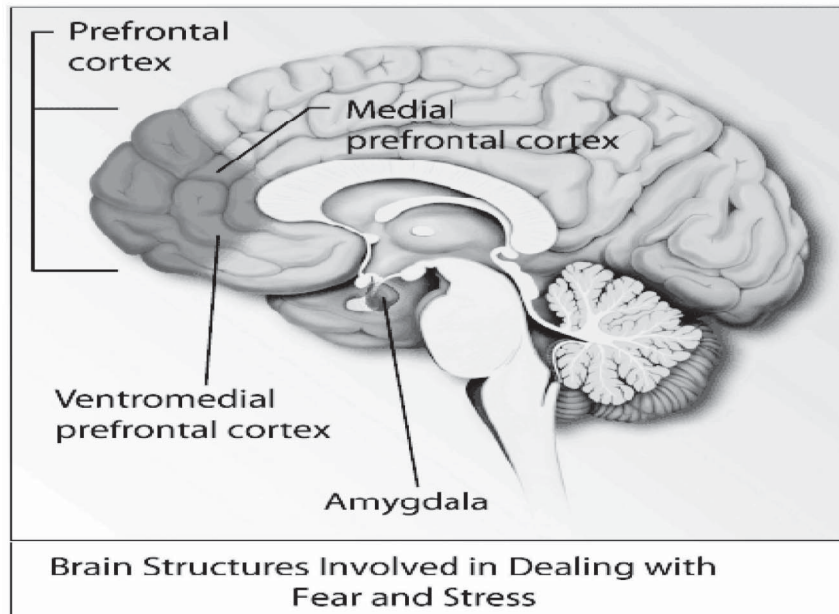


from HIV. Reports say that 17.3% are reported having three or more children over the course of marriage and 23% are reported a rapid repeat childbirth. Statistics also clear the fact that almost 90.8% of young married women are reported no use of contraceptive to having their first child. Hormonal fluctuations, permeability of vaginal tissue and social factors such as skewed power relations between women and men make it difficult for girls and young women to negotiate 'safe sex'. As a result STI (sexually transmitted infections) and HIV can occur. Even STI may lead to infertility and in the case of HIV, the outcome is premature mortality and risks of transmission to the foetus.



Most of the girls are unhappy because of their forced married life. Early marriage may lead to untimely separation. Forced intercourse and beating like other abuses make them depressed and traumatic. Their parents also do not ready to accompany them and they are forced to come back. Depression pressurises them silently. Early marriage may tend to sexual dissatisfaction. The age gap between the bride and the groom is obviously a reason. And widows do not find any status in some of the communities. For 'nata', after the death of her husband, they become the common sexual property of every male member as she has no legal husband at that time. This is very much pathetic and traumatic condition and in both cases, as the girls have no proper education, they have no source of income and they have to cope up with the traumatic situation. Trauma may lead to various types of problems such as cognitive and social difficulty, poor mental and emotional health which may lead to psychiatric disorder at the age of 21 or onward, may tend to a person delinquent even he is juvenile and adult criminality, regular in-taker of drug and alcohol, practising abusive behaviour, having poor physical health with shaken syndrome and sometimes with impaired brain development. Childhood abuse may lead to chronic trauma and it may show symptoms of mood swings, impulsivity, emotional irritability, anger and aggression, anxiety, depression and dissociation etc.

Science journal reports that the Left Cortex of the brain of abused child is generally under-developed and the Left Hippocampus is smaller in abused victims. Abuse also damages Amygdala for danger even when there is no apparent threat shown on. According to Sigmund Freud, the Id (child's need), the Ego (child's personality) and the Super-Ego (restrict, modifying and devices of the Id) determine all the



developing brain may cause fatal and the total structure of the brain may change. Here, 'serotonin' the hormone acting like a chemical messenger in the brain, affects mood and behaviour.

Here comes the role of media. Media is a powerful tool to make mass awareness in the society. People should aware about the problems and its nature they are lived in. Media should to truthful, fair and objective in catering the news and information. As the fourth pillar of democracy media has huge impact on society. Media has the ability to bring change in society in a most effective way.

We must keep in mind that we are talking about girl-child marriage, somewhere it causes voluntarily- unwilling parents but willing children, sometimes forced- willing parents but unwilling victims. Media must focus the content as a whole. As it is a social problem, first of all, media should make aware the public about the marriage and its pros and cons. Generally media can focus on the root of the problem and may chalk out a route to defend it. Media may categorise its campaign against girl-child marriage issue likewise:

- Starting campaign for sex education and health education
- Dire need for women education in a true sense
- Support the girls in every respect who stand against their 'forced marriage'
- Education of livelihood and life-skills for girls
- Lay stress on birth and marriage registration (including record of consent)
- Advocacy for awareness raising

Government with the help of media can take some projects in every school where the girls should impart the lessons and awareness of their reproductive organ separately and sex-education and health services classes for all. Projector, video should be used to make the class interesting and for a long-lasting effect of the knowledge on their minds. Remote areas should be invested more classes on sex education and the disadvantages of early marriage, than urban area. Moreover, colourful banners, hoardings, placards, posters should be displayed in the congested area where people can find and read it carefully. The content conveyed will be with the aim of mass awareness that girls are wealth of a family as well as a country. Moreover, a technique which can surely hit the bull's eye is the mode of communication through theatre, drama, music and etc. Music has an everlasting effect on human's mind and so as drama. Folk media plays an important part in it. The folk culture in India is strong and people would easily remember of the context enacted before them directly. The process applied in the regional language without any celluloid screen is obviously effective. All the programmes must contain the protest against forced girl-child marriage. The process is effective in all rural-urban areas. The remote parts of India where people only listens radio and having no T.V. set at their home personally, the street play proves a vital technique for making them aware.

Here we must remember to Gerbner’s ‘Cultivation Theory’. T.V. programme on early marriage issue must be set on the pick hour of telecasting programmes. Serials and commercial programmes on the said- issue may not drag the interest of the viewers and channels will fall from TRP and unwilling to telecast. Instead, they may telecast ad-films on the awareness programme through which a girl can be affected if she wishes to get married early below the age of 18. This types of programme also the messages from the same platform to all the rural and urban girl-viewers who are very much willing to marry early. One such programme must educate a whole family. Repeat telecast of the same advertisement or ad-films should be telecasted quite a number of times in a day so that everyone can notice and have to think over it. Television is powerful and it certainly motivates the audiences. Sometimes, channels having with high TRP may invite some of the girls who protest against such social evil and a talk show can be arranged with huge ad-campaign. We read sometimes in the newspapers about the girls who protest against their early marriage courageously and wish to continue their study. They should be example before the society. They should be awarded. Although the govt has started some of the schemes like ‘Kanyasree’ and etc but these girls should be awarded in the public function and propaganda for their courage and cause should be done with earnest essentiality so that the rests may think and gather courage themselves for doing the same. Here, the lack of academic education must be focussed on as a prime cause of it. Here media should play the role of a PRO (public relation officer) with the Govt. about the needs and necessities of the backward and economically poor sections. They should carefully observe about the teaching-learning materials because teaching aids may ignite their interest to learn lessons. Drop-out rates are found higher among females only in the higher class groups when girls are more likely to be married. Girls must be educated so that they can find their alternative options.

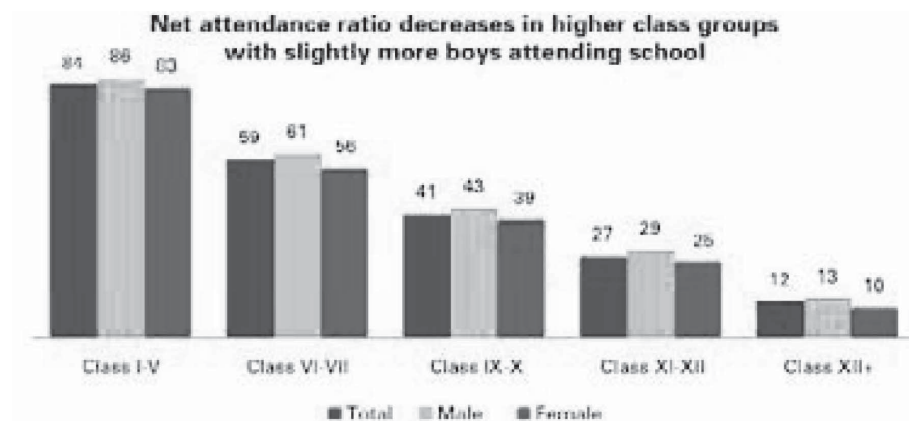


Figure 12: NAR in any educational institution by broad class group and sex (NSSO, 2007-2008)

Media should project many exemplary women faces like Sister Nibedita, Mother Teresa, Kalpana Chawla, Meri Comm so that girls and their mothers may feel proud to be a woman. If cine-stars like Amitabh Bachchan, Shahrukh Khan, Amir Khan, Vidya Balan, Aiswarya Rai do an active campaign in T.V., radio-F.M. channels and in the target areas, people will must get motivated as they like the actors-actresses and feel to believe them, identify themselves with them. And we have so many examples like in earlier times in case of Pulse-Polio campaign, in recent years programmes like 'Satyameb Jayate' etc. Self-respect should be stirred up and media must sow the seed through its various wings. Men in the family must make aware about the good companionship of their female counterpart and motivate them to be a good partner of them. Sometimes, live programme may be telecasted so that the girls, women and their family must feel confident that their courageous approach spread across the country. Some radio and T.V. channels and some of the print media take social awareness programme individually. There is no such committee set up for the creation, duration and evaluation of such social awareness programme on T.V. a committee should be set up for such purpose for a close watch on such programmes. Regular monitoring on the quality of such programmes presented on the T.V. screen and at the same time, rating card of progress in the practical field should go hand in hand.

According to UNICEF, 47% of girls are married by 18 years of age, 18% are by 15 years of age. India has the largest number of child bride in the world. The UNFPA said, projecting that 140 mn child marriages may take place between 2011-2020, cutting across most developing nations. The share of girls in the total enrolment at primary and upper primary level was 19% and 46.5% respectively in 2005 and 2006 and this increased to 48.5% and 48.1% at primary and upper primary levels respectively in 2009 and 2010.

Prohibition of Child Marriage Act (2006) declares "Child means a person who, if a male, has not completed twenty-one years of age and, if a female, has not completed eighteen years of age.". Laws and regulations (Sarada Act-1929, and Child Marriage Prohibition Act 2006) are there to restrict girl-child marriage. But no laws can ever be fruitful until and unless the practical usage of it. Mothers must come forward as a conscious-being and protect the future of their girls. Self-respect and self-awareness is the most important words in such cases. Media attempts to motivate such uneducated and unaware people. Hope, the new morning will show the age of enlightenment.

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14

Women and Computer Science: Gender Disparity (A Case Study)

Praveen Mukhia Titimus

Though the field of computer science and application is one of the emerging and sought after discipline for exponential job growth over the next several years, there's a glaring lack of women entering the field. Stereotyping women as being more close to nature and men close to culture could be one of the main reasons for growing gender disparity in the field of Computer Science and Technology. In my seven years of career as a computer science teacher, I have seen very less number of girl students in this field compared to boys and no matter how brilliant girl students are in the university examination, their invisibility and extinction in this profession afterwards is one of my greatest curiosity. Technology could be a powerful tool for women empowerment, but women are lagging behind in this field nationwide. If woman like Augusta Ada, (1842), the first computer programmer could be the pioneer of today's gigantic software companies, why not the 21st century women?

The gender issues have been plaguing our society and are more prominent and visible in less developed hilly terrains of Darjeeling District.

Objective

The main objective of writing this paper is to draw attention to the growing gender gap in the field of computer science and technology in Darjeeling hills and to discuss on the possible causes of this disparity. As the study is focused on the

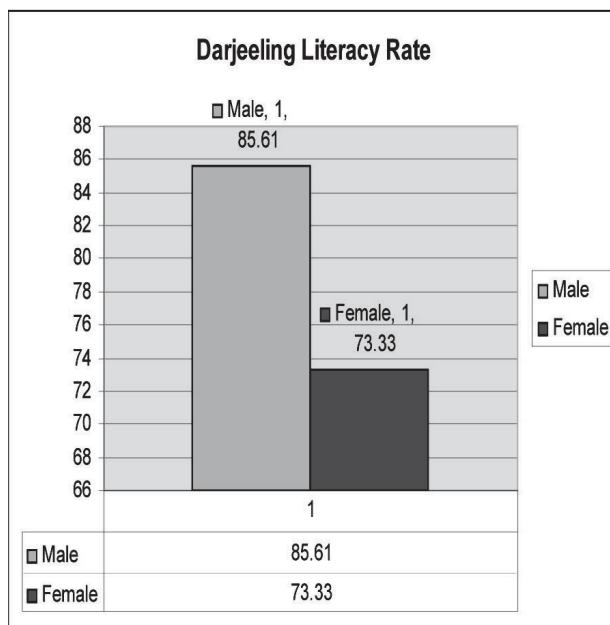
women participation, random responses from 70 Bachelor of Computer Applications undergraduate students from St. Joseph's college Darjeeling are considered.

History of Computer Science and Applications in Darjeeling Town

We have heard now and then that life is slow in this town of Darjeeling. The world of computer and its applications also set its foot slowly in this hill town. The first computer professional course was started in the St. Joseph's college in the year 2002. Since then it has produced 194 students of which only 50 (25.77 %.) are girls.

If we look at the district statistics, in 2011 Census, Darjeeling had population of 1,846,823 of which male and female were 937,259 (50.75 %) and 909,564 (49.25 %) respectively. Average literacy rate was 79.56 compared to 71.79 of 2001. If things are looked out at gender wise, male and female literacy were 85.61 and 73.33 respectively. Very interesting thing out here is that the male female total population is almost same; however, when literacy rate is compared, females are always at the lower Zone. This disparity is huge in the case of science and technology fields.

Darjeeling Literacy Rate



Source: District Statistical Handbook 2007

Table 1: Professional/ Technical colleges and total number of male/female students- Darjeeling District

Technical colleges	2004-2005			2005-2006			2006-2007		
	Total no. of institutions	Male	female	Total no. of institutions	Male	female	Total no. of institutions	Male	female
Engineering college(govt/pvt.)	1	40	-	1	52	-	1	89	-
Management colleges govt/pvt	1	20	18	1	19	20	1	67	36
Medical colleges	1	265	72	1	272	93	1	317	105
Polytechnics colleges govt/pvt	-	-	-	-	-	-	-	-	-
Institute of pharmacy	-	-	-	-	-	-	-	-	-
Institute of Radiology	-	-	-	-	-	-	-	-	-
Total	3	325	90	3	343	113	3	473	141

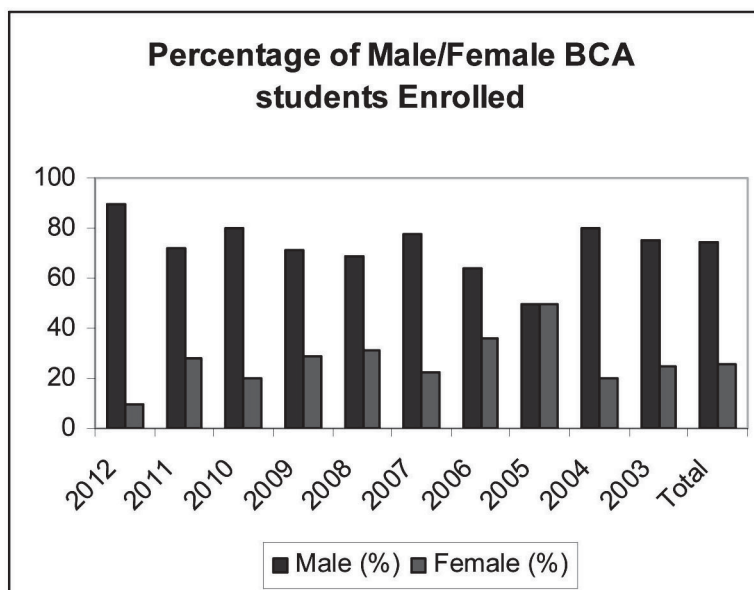
Source: District Statistical Handbook Darjeeling 2007

The numbers of technical colleges have remained same for decades. There are no female in the engineering colleges and the percentage of female in management and medical fields in 2007 were only 53.73% and 34.20 % respectively. In the absence of unavailability of data pertaining to the total number of computer professional colleges in the district, only Darjeeling town data are taken into consideration.

Table 2: Number of BCA students enrolled in S.J.C, Darjeeling

Year	Male	Percentage (%)	Female	Percentage(%)
2012	20	90	2	10
2011	13	72.22	5	27.78
2010	24	80	6	20
2009	22	70.96	9	29.03
2008	20	68.96	9	31.03
2007	21	77.77	6	22.22
2006	9	64.28	5	35.71
2005	5	50	5	50
2004	4	80	1	20
2003	6	75%	2	25%
Total	144	74.22	50	25.77

Source: St.Jospeh's college Darjeeling 2013



Causes of less participation of women in computer field.

There are many causes/ reasons for the less participation of women in computer field. It may be societal, economic, personal, psychological to many more, however, for my study, I have considered three main causes which are general and have profound impact on women’s perception and participation in this field of computers.

Societal causes

Those around young girls have great potential to influence their perception of themselves and other in relation to technology. Societies have the greatest potential to influence their children. Teachers and the educational system also have the ability to shape the self-images and futures of girls as they approach to the fields of Computer Science. Though it can be argued that they have less influence, software manufactures and Internet providers also take part in encouraging or discouraging females in technology use. Society, the educational systems, and manufacturers have the ability to help girls overcome the gender gap in technology.

Table 3: Male and female responses towards computer field as their first choice of study and profession as per the survey.

Computer as first choice		Computer as profession	
Male	Female	Male	Female
97%	15%	95%	23%

Source: Survey done by the author, 1st, 2nd and 3rd yr BCA students of St. joseph’s college, Darjeeling.

Total No. of respondents: 70

Male: 57

Female:13

Women and girls are pressurized from the society to stay away from such subjects or to accept themselves as “unfeminine”. (*Ellen Spertus*) Academically successful women are seen as being less attractive. From Childhood, computers are taught / seen to be masculine. Girls are discouraged to play computer games at all levels. Even a glance at computer games C.D store, filled with FIFA, counter strike, Call of Duty, Vice City, NFS- (most wanted, Under Ground, Carbon) Halo – I, II and many more depicts masculinity. There are very less girl friendly games so far.

Stereotyping of computer field as male friendly

Despite the relative youth of Computer Science as a field of academic study, the society has developed and continues to perpetuate a very specific image of the science. This image presents a set of values which appeal almost exclusively to males. The predominantly male-oriented uses of commercial computing technology, such as Palm Pilots and other “gadgets”, further reinforces this image. Females with little exposure to the field therefore are often “Not-interested” in becoming further involved with the subject, and many even develop a marked aversion to it.

From St. Joseph's College (hence forth referred as S.J.C), has only 10% of girl students enrolled in 2012 compared to 90% of boys. The trend shows a declining effect. When asked about respondents' perceptions towards computer field, girls show very less interest in computer programming and practical applications. 76% of the respondent girls say that they do not see the use of computer languages in their future career. Girls are more inclined towards theoretical aspects rather than practical implications, hence, when it comes to practical profession, male/ boys dominate and outnumber girls.

In fact that most people agree that Computer Science shouldn't be a field dominated by males, the fact remains that men far outnumber women in Computer Science at every level of academia and industry. This alone can deter women from studying the subject Computer Science, especially since many women place a high priority on the development of abundant and varied interpersonal relationships during their undergraduate years. More importantly, however, is the image of Computer Science as not simply a male field, but a field which is overrun by males of a specific type.

In addition to disliking the images or expectations of people who study Computer Science, many women are deterred by dislike of the material itself, or the way it is presented by their teachers' and elder once. Far more so than males, women cite a lack of a human focus and the dry, plug-and-chug nature of Computer Science work as reasons for not considering a major in the field; this is true of all engineering and many science majors, not just Computer Science.

Table 4: Male and female responses towards time spend on computer programming and innovations

Time spend on computer programming / day		Interested and time spend on new innovations	
Male	Female	Male	Female
4-6 hours	1hr occasionally	often	Occasionally, only as a part of curriculum.

Source: Survey done by the author, 1st, 2nd and 3rd yr BCA students of St. Joseph's college, Darjeeling.

Total No. of respondents: 70

Male: 57

Female: 13

Studies show furthermore that women tend to think of computers as tools, while men think of them as machines to be mastered. The nature of most introductory Computer Science courses is in this sense far more masculine: students are taught how to program the computer, but the programs are not useful beyond the programming lessons they teach. Female students often don't see the point in spending long hours writing useless programs as they view it.

They also categorize programming as a “soulless” task. They view programmers as devoting more time to the understanding of machines than people; to many women this priority set is inexplicable and bizarre—not something they would choose to spend a single term doing, let alone three years or a lifetime.

Glass-ceiling in the computer professions

Barriers to women deriving from the structure of the academic system are reinforced by “cumulative disadvantage” factors that excluded other women from science but also carry over and affect the academic careers of women. These include the differential socialization of men and women, impaired self-confidence, and expectations regarding the impact of children on women’s academic careers. The roots of this problem lie in the different gender experiences of boys and girls. As young girls and women, females are socialized to seek help and be help givers rather than to be self-reliant or to function autonomously or competitively, as are boys. Girls are encouraged to be good students in-so-far as they expect to be given a task, complete it well, and then receive a reward from an authority figure.

Table 5: Male and female university, college toppers from BCA, SJC 2003-2012

Male	-
Female	3

Source: St.Joseph’s college Darjeeling 2013

Girls outnumber boys when it comes to academic performances, but all those bright girl students and toppers extinct in the professional fields. Many women come into graduate programs in computer with low degree of self-confidence. Though some excel academically, many girls reported that their experiences further eroded their level of self- confidence, as they often fall for the opinion that “girls are technologically handicapped” and “digital dependent” etc.

Table 6: Total number of male and female computer teaching staffs in different institutions providing computer education- Darjeeling Town

Colleges/ insitutions	Male	Female
St. Joseph’s college	6	1
Adonai Insitute of Technology (PVT)	3	2
Darjeeling Insitute of IT (Pvt)	4	2
Manipal Insitute of Computer Education (Pvt)	2	1

Source: Heads of different institutions2013

Since the inception of BCA department in SJC in the year 2003, there are only 5 male teaching staffs, and it’s the same case in other private institutions also.

In graduate school, behavior is expected to be independent, strategic and void of interpersonal support. These expectations are traditional female socialization. In

addition, the needs of women, based on socialization which encourages supportive interaction with teachers, is frowned upon by many male and some female faculty as indicative of inability.

Recommendations

Firstly, if we want to see women to involve in the fields of Computer Science, we must begin with society. There are many practical and easy ways to encourage girl child in the use of technology. Several ideas for encouraging girls' interest in technology have been adapted from the recommendations of Dr. Janese Swanson (Swanson, 1999). First, children should be exposed to technology at an early age. Children should learn that technology is fun and helpful to use. They should see it as one of the many tools in our world that make life easier... Unfortunately, a majority of the CD's for children are designed for the interests of male child (Adelson, 1996). Girls rarely have interest in monsters or weapons commonly seen in computer software. Rather, they tend to want to accomplish a specific goal using the computer.

As a result, it may be more challenging to find programs that will interest young girls. "Barriers are lifted when girls play with other girls and have equal access to the control devices such as the video game control pad, keyboard, joystick, or mouse" (Swanson, 1999). Another opportunity to encourage girls' use of technology is to get the child involved in gender specific clubs such as a girls' computer club. (Dr. Swanson)

Secondly, to discuss stereotypes openly with daughters (and sons). Stereotypes can strongly influence people's perspectives and attitudes toward themselves and others.

Thirdly, a lot can be done at the administrative level to narrow the gender gap. Administrations should put policies in place that ensure equal exposure to technology for all students (female). All students should have equal accessibility regardless of sex, race, socioeconomic background, or disability.

Lastly, as a major influence on girls in the use of technology are manufacturers of software and Internet services. It is first important to see how girls and boys see computers differently. Then, it is valuable to look at what girls want to see in software and the Internet. Technology products and services have an important role to play in the attitudes of girls toward technology.

Male and female have a tendency to view computers differently. "Females tend to see computers as a means of achieving a concrete goal. Female are likely to conceptualize computers as a tool, be it for email or word processing, but still a medium with which to accomplish a task" (Chaika, 1999). Software designed specifically for girls tends to be a learning tool. According to the research of Grunner, "Women commonly saw technological instruments as people connectors, communications and collaborations devices" (Grunner, *et. al.*, 1990). Yet again, it

can be seen that women look at computers as instruments to complete a task. To the contrary, male usually view computers as recreational (Gaicquinta, *et. al.*, 1990). They see them as toys to be played with and explored. Thus male explore, challenge the limits, and often shape computers and computer use. Computers are viewed differently by males and females.

The gender gap in technology is a vicious cycle. Females are not as interested in Computer Science thus fewer products are made for them and less research is done to develop games for them. As a result, there is less of an interest in Computer Science by females, and the cycle continues.

Conclusion

The gender disparity and gender bias in technology are complicated issues. Gender bias in the world has its origins in numerous places and it is reinforced in just as many ways. Equal accessibility for women can only come when society, schools, and manufacturers work together for equal accessibility. Every woman is a unique individual with different needs, interests, aspirations and goals in life. Manufacturers of technologies, administrators, educators and society as a whole must keep this in mind as they work on the behalf of women and their empowerment to eliminate the gender gap in the field of Computer Science and technology use.

Information Technology seems to be “women-friendly” and provide ample opportunities for women to emerge as successful technocrats and executives. Steps to maximize their participation on equal terms with men in all fields, thereby removing “gender tracking”^f / “gender gaping”, are necessary so that women’s potential may be fully developed and utilized in every area of life. Otherwise half our human potential will remain untapped and unused. One should also be aware that building a gender-just and humane society is not brought about by substituting female dominance in place of male dominance but through partnership of men and women.

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15

Land reforms in North Bengal: A Case study of Siliguri Sub Division

Udai Kumar Shaw

Since independence, the objectives of the Land Reforms Policy have been as follows:

- restructuring agrarian relations to achieve an egalitarian social structure,
- eliminating exploitation in land relations,
- realising the age-old goal of land to the tiller,
- increasing agricultural production, and
- infusing equality in society.

Each state in India has its own legislation and programme of land reforms. This paper aims at a brief review of the developmental changes regarding land reforms in West Bengal. It discusses the meaning of land reforms, the historical context in which they were introduced, the measures we have adopted and finally the new developments. In this enterprise I will do a case study of the Siliguri Sub division of the Darjeeling district. Since, the nature of the problem varies widely in different regions, the policy on land reforms requires a flexible approach to respond to the local requirements. For countries with a large agricultural base, it is essential that land-man relationships are properly defined. The Government has strived to change the ownership pattern of cultivable land, but has had limited success so far. The abolition of intermediaries was a significant achievement after independence. Contrary to it, the lack of progress in the other components of the land reforms programme, viz. implementation of land ceiling laws, security of tenure for tenants

and consolidation of land holdings, remain a matter of serious concern (10th Plan document) even today. Therefore, agrarian structure in the country still continues to be as unequal as before. Even now, above 60 per cent of the workforce is engaged in agriculture, majority of whom are either marginal farmers or landless labourers living in abject poverty.

1. Land Reforms in West Bengal

Two major land reform acts were passed in West Bengal in the 1950s. The first, the Estate Acquisition Act of 1953 (EAA) aimed to eliminate the interests of intermediaries (*zamindars* and *jotedars*) on all land except that which they “self-cultivated” (using hired agricultural labourers). Two years later the state parliament enacted the second land reform law, the Land Reforms Act of 1955. The parliament intended the LRA to cure the inadequacies of the EAA by limiting landholder’s ability to transfer land (to avoid circumventing the landholding ceiling) and by providing greater protections for *bargadars*. The LRA covers a range of land-related topics, but most significantly it: (1) defines the rights and obligations of landowners and *bargadars*; (2) prohibits fixed-rent leasing of land; (3) places a ceiling on the size of landholdings; (4) defines how land taken by the government should be distributed; and (5) limits the transferability of land held by Scheduled Tribe members as well as much of the land obtained through redistribution.

The Land Reforms Act of India (1955) and its subsequent amendments stated that all share croppers would have permanent use rights on land that they had lease and that such rights would be inheritable. Such incumbency rights could be claimed as long as sharecroppers paid the legal share of the crop to their landlords or did not leave the land uncultivated or unless the landlords wished to take back the land for personal cultivation.

However, landlords routinely used the personal cultivation clause to evict tenants. There was another major barrier. A tenant would have to formally register his status (as a tenant) with the government. But few tenants registered, faced as they were with potential intimidation from their landlords, the removal of other forms of support such as consumption credit, and the prospect of a long and arduous legal battle if they truly wanted to dispute an eviction. Given this imbalance, landlords regularly exploited their tenants, either evicting them just before the harvest season, or giving them a lower share of the produce than they were entitled to, or refusing to give loans or charging extremely high rates of interest on loans taken for agricultural investments by the *bargadar*.

Enumeration of the sharecroppers and legal recording of their tenancy would have provided them with protection from eviction and exploitation under the existing laws itself. However, most *bargadars* did not know their rights under these laws, and, given their financial status, they were financially dependent on their landlords. Additionally, the long and tedious recording process, and the fear of reprisals by

the land lords meant that most bargadars did not record their names. Recording drives before Operation Barga had managed to record only 400,000, out of the estimated total of 2.2-2.5 million bargadars.¹

2. Operation Barga

The Left Front came to power in West Bengal in 1977 as the ruling state government. In existing tenant laws they found possibilities to advance their agenda of agrarian reform. The Left Front carried out a two-pronged attack. It took the no-cultivation clause seriously and closed off this loophole. Simultaneously, it encouraged the registration of tenants through the much publicized Operation Barga.

In June 1978, based on discussions held during a workshop on Land Reforms, the West Bengal government launched Operation Barga. This was given legal backing through the Bengal Land Holding Revenue Act, 1979 and the Revenue Rules of 1980. In 1981 the West Bengal Government passed a law to remove the exemptions given to orchards, plantations, fisheries and religious trusts from the purview of the land reforms (However, it took many years for this legislation to receive the approval of the Central Government).

Operation Barga aimed to record the names of the sharecroppers (*Bargadars*), who formed a major part of the agrarian population in West Bengal and to educate them about their cultivation rights. Operation Barga depended heavily on collective action by the sharecroppers and was qualitatively different from the traditional Revenue Court approach, which was biased in favour of the richer and more influential land owners.

The enumeration and recording of Sharecroppers and educating them about their rights was an important step in raising their economic and social status. By giving these farmers more rights, and protecting them from exploitation by the landowners, they were assured of a relatively stable livelihood, which would improve their living standards as well, and give them an opportunity to become landowners themselves.^[1]

While Operation Barga did not directly attempt to turn the bargadars into landowners, the legislation included two provisions intended to facilitate that conversion. Firstly, the legislation gave bargadars priority rights to purchase the barga land if the landlord decided to sell it. Secondly, the legislation authorized the state government to establish a "land corporation" that would advance funds to bargadars to purchase barga land using this priority right. The second provision has not yet been implemented due to lack of funding.

¹SuhasChattopadhyay, OperationBarga: A comment, JSTOR: Economic and Political Weekly, Vol. 14, No. 49, 8 December 1979.

3. Operation Barga in Siliguri sub-division a brief survey

3.1. Research Methodology

In historical research the primary sources are very important. The historical research will be objective when it will be written on the basis of primary sources as these are supposed to be less influenced by the subjectivity. Thus in order to understand the working of land reforms I mainly worked on the government documents. But the government documents after the period of 1947 is difficult to find in libraries or in the archives. On the other hand the government documents for the period before 1947 i.e. colonial period is abundantly available in Libraries, archives as well as in the open market. The less availability of government documents for post colonial period is the main difficulty in writing contemporary history in the South Asian context. Thus the record office of various government departments is the only place where the government documents and reports are available. Therefore the sources of my research work are mainly available in the government records offices.

The Collector of a district is in overall charge of land and land reforms work within that district. In each district there are four tiers of the Integrated Set up of Land & Land Reforms Administration namely, (a) at District level, (b) at Sub-divisional level, (c) at Block level and (d) at Gram Panchayat level. The Collector is the controlling officer in respect of the District Land & Land Reforms Officer (DLLRO). At the Sub-divisional level, there is a Sub-divisional Land and Land Reforms Officer (SDLLRO) performing the duties and responsibilities of the former Settlement Charge Officer and Sub-divisional Land Reforms Officer. At each Block level, there is a Block Land and Land Reforms Office under the overall charge of a Block Land and Land Reforms Officer (BLLRO). The Block Office has ordinarily three branches for works mainly relating to (a) survey and settlement, (b) land reform, land management and land utilisation, and (c) quasi-judicial matters. At the Gram Panchayat level, the Land and Land Reforms work is under the overall charge of a Revenue Inspector (RI) who is assisted by an Amin, a BhumiSahayak and such other staff as may be required from time to time. Works such as collection of land revenue, cases and other Government dues, crop survey and agricultural census and such other works relating to survey and settlement, land reform, land management, land utilization, etc. as may be assigned by the Board of Revenue are performed in the Office of the Revenue Inspector.

From the above description it is clear that the office of BLLRO and RI is directly responsible for the execution of the land reforms. Thus, these offices have the documents dealing with the land reforms. There are various kinds of registers in at BLLRO and RI office; these are: (1) Mutation Register, (2) Patta Register, (3) Homestead Register, (4) Bargadar Register, (6) Ryot Register, (7) Rent Collection Register, (8) Joint Survey Register, (9) Mineral and Cess Register etc. More importantly land records have been computerised in the office of BLLRO. But,

these records are exclusively for departmental use and the researchers can only access to limited data. However, the valuable documents dealing land reforms can be comfortably accessed from the office of the RI. The RI's are hesitant in sharing the Registers as these have sensitive information and meant for departmental use. However they willingly share 'Bargadar Register' because they consider it, in common parlance, 'a part of history' as the register was last compiled in early 1990's and is no longer in use. The current data or the data which is in official use is stored in the Bargadar Register and in digital form in the office of BLLRO. The comparative study of Bargadar Register in RI office and in the office of the BLLRO speaks volumes about the impact of globalization on the agrarian society. As has already been mentioned that the Bargadar Register of the RI offices is compiled in the early 1990's when the Indian economy was aggressively been liberalized. Since then, due to the working of market forces the land prices increased along with a steep rise in the cost of agricultural production inputs. Thus, the bargadars were intimated to sell their rights in land or in some cases they willingly sold their lands in expectation of the larger profits. Thus, the actual number of bargadars is lower than their official number.

The careful study of the registers related to land reforms available in the offices of RI and BLLRO is vital to understand the working of land reforms and its socio-economic impact. But being a researcher there are several limitations. **Firstly**, we the researchers are not legally empowered to ask for any kind of document from the government offices. **Secondly**, there is the significant dearth of government reports while there is great abundance of documents. The documents are however not systematically preserved in the record offices of the BLLRO, SDLLRO or DLLRO. The Bargadar register in the RI offices are also in the verge of extinction and after few years it may not be available to the researchers. Moreover, the study of documents, in absence of reports, is time-consuming and requires hard labour and patience. **Thirdly**, the government officers are hesitant in sharing documents with the researchers for the fear of misuse.

Thus, I will try to understand the working of the land reforms by the study of various registers; such as: (1) Mutation Register, (2) Patta Register, (3) Homestead Register, and (4) Bargadar Register; available in the Record Rooms of RI and BLLRO. But, as a historian we cannot wholly depend upon the government records. We must supplement the information available from the government sources from the data gleaned from the non-government sources. It is important to note that India is a democracy and thus the bureaucrats are subordinated to the elected representatives. Thus the Land and Land Reforms Department could not undertake land reforms independently or in their own discretion. In this enterprise they must be guided by the popularly elected bodies. Therefore, the records of the Gram Panchayat, PanchayatSamiti (Block Level) and ZillaParishad (District Level) and other such elected bodies are of great help in understanding the working and impact of land reforms.

4.1. A Case study of the Moniram G.P.of Naxal bari Block

District:Darjeeling

Sub division: Siliguri

Block: Naxalbari

Gram Panchayat: Maniram

4.2. Finding

Table 4 and 5 suggests that the Nepali community belonging to the caste group is the main beneficiary of land reforms in the Moniram Gram Panchayat. There are 241 Bargadars in the area out of which 71 are from Nepali community. They also held the highest area of land i.e. 133.42 acres out of the 414.05 acres of land under the Bargadars. They also own 158 plots which is highest in number. The Moniram GP is near to the Nepal border which enables the Nepali agriculturalists to occupy the Barga rights. It is clear that they emerged as the main beneficiary of the land reform or the Barga reform. The indigenous communities like Adivasis and Rajbansis were also benefited but in a lesser degree.

The average size of Holding, however, is highest in the case of the Muslims (3.16 acres) who are linguistically Bengali. Thus the Bengali farmers are although numerically less but their position is comparatively better.

The Adivasis constitutes the second largest group followed by the Rajbansis and Bodos. Bodos are the most primitive tribe in the region. However they are mainly suffering with the problems of land alienation. The Adivasis and the Rajbansis are comparatively better.

The social impact of land reforms is an interesting area of research particularly in a region like North Bengal where the various ethnic and linguistic groups are earning their livelihood by agriculture and allied works.

3.2. Conclusion

The sharecroppers acquired an important position in the agrarian studies. Historically, they also acted as the main agent in the agrarian movements. The practice of sharecropping increased in the India during the colonial period.² The practice of sharecropping was very much regressive in the Permanent Settlement regions of eastern India. However, there are significant regional differences, with northern Bengal being characterised by most polarised sharecropping system. Their grievances led to the Tebhaga movement on the eve of independence; and later the Naxalbari movement. Interestingly, the region witnessed agrarian growth

²BinayBhusanChaudhuri. 1975. 'The Process of *Depeasantization* in Bengal and Bihar, 1885-1947', The Indian Historical Review, July 1975, Section 3d.

Table 1: Community wise Number of Bargadars

Mouza	Bargadars	Area (Acres)	ST			SC			Others			
			Adivasis	Bodos	Others	Rajabansis	Namasudras	Others	Bengalis	Nepalis	Others	Muslims
Jurajber	18	23.31	1		3				3	11		
Mir Jangla	9	8.33	3						6			
Chottagunja	6	11.01	6									
Siubar	36	61.88	5		2				12	15	2	
Maniram	68	123.64	7	19	1	25				11		5
Nehal	22	34.39	-	1	2					19		
Pataram	54	111.74	23			7			9	9		6
Dayaram	28	39.75	12	2	1	5			1	6	-	1
Total	241	414.05	57	22	9	37			31	71	2	12
Percentage	100		23.66	9.13	3.74	15.36			12.90	29.47	.83	4.98

Table 2: Community wise break-up of the land holding of Bargadars

Mouza	No	Area (Acres)	St			Sc			Others			
			Adivasis	Bodos	Others	Rajabansis	Namasudras	Others	Bengalis	Nepalis	Others	Muslims
Jurajber	18	23.31	.62		3.94				7.56	11.19		
Mir Jangla	9	8.33	2.06						6.27			
ChottaGunja	6	11.01	11.01									
Siubar	36	61.88	5.83		1.28				21.04	31.78	1.95	
Maniram	68	123.64	11.03	38.06	.20	32.97				28.66		12.72
Nehal	22	34.39		.09	.20					34.10		
Pataram	54	111.74	42.77			10.92			15.58	20.99		21.48
Dayaram	28	39.75	16.67	1.75	1.27	8.45			1.28	6.7	-	3.63
Total	241	414.05	89.99	39.9	6.89	52.34			51.73	133.42	1.95	37.83
Percentage		100	21.74	9.64	1.67	12.65			12.50	32.23	0.48	9.14

Table 3: Community wise break-up of the Number of Plots held by the Bargadars

Mouza	No of Bargadars	No. of Plots	St			Sc			Others			
			Adivasis	Bodos	Others	Rajabansis	Namasudras	Others	Bengalis	Nepalis	Others	Muslims
Jurajber	18	36	2		4				11	19		
Mir Jangla	9	10	3						7			
ChottaGunja	6	6	6									
Siubar	36	43	6		2				14	19	2	
Maniram	68	163	12	56	3	58				27		7
Nehal	22	67		1	2					64		
Pataram	54	117	38			22			17	19		21
Dayaram	28	41	20	2	1	6			1	10		1
Total	241	483	87	59	12	86			50	158	2	29
Percentage		100	18.02	12.21	2.49	17.81			10.36	32.72	0.42	6.1

Table 4: Bargadars at a glance

	Total	St			Sc			Others			
		Adivasis	Bodos	Others	Rajabansis	Namasudras	Others	Bengalis	Nepalis	Others	Muslims
Area(in acres)	414.05	89.99	39.9	6.89	52.34			51.73	133.42	1.95	37.83
Plots	483	87	59	12	86			50	158	2	29
Bargadars	241	57	22	9	37			31	71	2	12

Table 5: Bargadars at a Glance (Percentage Wise)

	Total	St			Sc			Others			
		Adivasis	Bodos	Others	Rajabansis	Namasudras	Others	Bengalis	Nepalis	Others	Muslims
Area	100	21.74	9.64	1.67	12.65			12.50	32.23	0.48	9.14
Plots	100	18.02	12.21	2.49	17.81			10.36	32.72	0.42	6.1
Bargadars	100	23.66	9.13	3.74	15.36			12.90	29.47	.83	4.98

Table 6: Aaverage Size of Holding/Bargadar

	Total	St			Sc			Others			
		Adivasis	Bodos	Others	Rajabansis	Namasudras	Others	Bengalis	Nepalis	Others	Muslims
Area	414.05	89.99	39.9	6.89	52.34			51.73	133.42	1.95	37.83
Bargadars	241	57	22	9	37			31	71	2	12
Average Size Of Holding/Bargadar	1.72	1.58	1.82	0.77	1.41			1.67	1.87	.98	3.16

Table 7: Average Size of Holding Plot Wise

	Total	St			Sc			Others			
		Adivasis	Bodos	Others	Rajabansis	Namasudras	Others	Bengalis	Nepalis	Others	Muslims
Area	414.05	89.99	39.9	6.89	52.34			51.73	133.42	1.95	37.83
Plots	483	87	59	12	86			50	158	2	29
Average Size of Holding (IN Acres) Plot Wise	0.86	1.04	.68	.58	.60			1.03	.85	.98	1.38

from 1940's to 1960's, in spite of the large scale migration from east Bengal (later Bangladesh). The North Bengal plain was full of activity this time. However, from the 1980s the region began to lag behind in the agricultural growth than the rest of Bengal. The agrarian reforms of the Left Front government disproportionately benefited the migrant peasants which led to the land alienation among the indigenous communities. This land alienation gave birth to the *Desi* (indigenous communities) vs *Bhatia* (people from the lower Bengal) sentiment; which later on took the shape of separate Kamtapur state movement. Thus, agrarian northern Bengal became a contested terrain and the subaltern place was claimed by Adivasis, Hill tribes, Namasudras and the Rajbansis. The land alienation among the agriculturalists in northern Bengal should be seen as a part of global process of increasing capitalization of agriculture. The land reforms in the region failed to enhance the agricultural productivity. The reforms could not lead to equitable distribution of the land. It reinforces the consolidation of land among the rich and powerful strata of the society.

16

Rural Development Programme of Govt. of India and their effectiveness: An Assessment

Neelmani Jaysawal

The Rural Development reflects a comprehensive approach of development for rural areas. The main objective is to improve livelihood pattern of villagers through providing adequate resources like food, clothes, shelter, health, security, education, purchasing power and freedom from servitude. Therefore, the measures of rural development should provide availability of life-sustaining goods, generation of assets, loans, increasing per-capita income of individuals as well as ensuring food security in the rural households. The endogenous model of rural development has drawn much from alternative development approaches like putting people first, sustainable livelihood etc (Prasad R.R and G. Rajanikanth, 2006). It is assumed that Growth should be treated as the function of investment and the benefits of development areas are expected to trickle down to neediest sectors of society. Hence, people's participation in their development has been central theme for rural development. Several theoreticians like Robert Chambers and Kabeer have been supporting participation-oriented development in rural areas (IBID). The decision-making activity of individuals will ensure control of masses over their resources and directed change for growth. The rural people will not only be equipped with skills but resources for generating their income as well as preserving resources for sustainable development. The UN Secretary General's High Level Panel on Sustainability notes that there exists tremendous opportunity for a dramatic improvement in the lives of the rural poor, even while they move towards more sustainable production models. Resource users will need access to assets, technology and markets. Success will depend, in great part, on investment. Success

will also depend on institutions and initiatives with capacity to effectively coordinate efforts in priority areas of agriculture, land management and water. Therefore, the Schemes of the Ministry of Rural Development (MORD), Govt. of India are well located to deliver positive outcomes in multi-dimensional areas like employment generation, assets generation, livelihood security, preservation of natural resources, sustainable use of land, water, forests etc. Some of those major programmes of Government of India in this sphere are: Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), National Rural Livelihood Mission (NRLM). These three rural development programmes are different in their approach. They carry their different strategies of intervention on their thematic lines. For example:

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS): This aims at enhancing the livelihood security of people in rural areas by guaranteeing hundred days of wage employment in a financial year to a rural household whose adult members volunteer to do unskilled manual work (Greening Rural Development in India: UNDP Report' 2012).

National Rural Livelihoods Mission (NRLM): The basic objective of the National Rural Livelihood Mission is to create efficient and effective institutional platforms of the rural poor that enable them to increase their household incomes through sustainable livelihood enhancements and improved access to financial services. It plans to cover 70 million households living below the poverty line (BPL) in rural India (Greening Rural Development in India: UNDP Report' 2012).

After getting a glimpse of these government programmes based on their individual thematic representation, it is imperative for us to explore their effectiveness in rural development. The in-depth analysis of intervention of these programmes will help us in outlining success rate of India's rural development programmes/schemes.

Overview of some Rural Development Programmes of Government of India: An Assessment

The Government of India has launched several programmes for upliftment of rural areas since 1952. Some of these programmes aim at providing direct employment through engagement in various developmental activities. Direct provision of wage employment is obviously an attractive instrument for poverty alleviation wherever the poor depend heavily upon wage employment for their income and also suffer from considerable unemployment and underemployment. Wage employment Programmes have sought to achieve multiple objectives. They not only provide employment opportunities during lean agricultural seasons but also in times of floods, droughts and other natural calamities. They create rural infrastructure which supports further economic activity. Rural people get security of job for a specified period of time which partly fulfils their requirement of

employment. One of the major programmes in this sector is; Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).

Mahatma Gandhi National Rural Employment Guarantee Scheme

MGNREGS is the largest rural development programme in the country in terms of its reach and budget. It is the biggest poverty alleviation programme in the world which is started with an initial outlay of Rs. 11,300 crore in year 2006-07 and now it is Rs. 40,000 crore (2010-11). The central government formulated this programme as an Act called “National Rural Employment Guarantee Act” in 2005. Notified on September 7, 2005, MGNREGA aims at enhancing livelihood security by providing at least one hundred days of guaranteed wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work. The Act covered 200 districts in its first phase, implemented on February 2, 2006, and was extended to 130 additional districts in 2007- 2008. All the remaining rural areas have been notified with effect from April 1, 2008 (see <http://www.nrega.nic.in/netnrega/forum/2-MGNREGA.pdf>). The central Government provides 90 per cent of the fund and the rest is provided by the states. This programme has outlined certain goals which reflect its features also.

Objectives of MGNREGS

Long-term objectives of the Act include:

- Enhancement of livelihood security in rural areas by guaranteeing 100 days of wage employment in a financial year to every registered household.
- Creating productive assets.
- Protecting the environment.
- Reducing migration.
- Empowering rural women and the poor through the provision of a right-based law.
- Fostering social equity.
- To create strong social safety net for the vulnerable groups by providing employment source, when other alternative are inadequate.

Features of MGNREGS

Right based-frame work

- All adult members of a rural household willing to do unskilled manual work have the right to demand employment.
- The Gram Panchayat (GP) after due verification will issue a job card.
- After verification, the GP will issue a job card (contain details of the mem-

ber) to the household with photograph free of cost within 15 days of application.

Time bound guarantee of employment

- Employment will be provided by the GP within 15 days of work application, else unemployment allowance will be paid.
- A household may avail to 100 days of guaranteed employment in a financial year, depending on its need.

Permissible works

- Water conservation, drought proofing (including plantation & afforestation), flood protection, land development, minor irrigation.

Labour intensive works

- A ratio of 60:40 will be maintained between wage and material.
- Contractors/machinery is not permitted.
- Wages will be paid at the wage earners through their bank/post office accounts.
- Payment of wages to be made in every week and in any case not later than a fortnight.

Decentralization

- Gram Sabha (local community) will recommend works to be taken up.
- Gram Panchayats will execute at least 50 percent of work.
- PRI will have a principal role in planning, monitoring and implementation.

Work site management and facilities

- Work should be provided within 5 km radius of the village.
- In case the number of children below the age of 6 years accompanying the women working at any site is 5 or more, provisions shall be made to assign one women worker to look after such children. The person assigned for this shall be paid the statutory minimum wage.
- Thus crèche, drinking water, first-aid and shade are to be provided on the work sites.
- Timely measurement to be ensured.

Women Empowerment

- At least one-third of the workers should be women.
- Equal wages will be provided to both men & women.

Transparency and Accountability

- Proactive disclosure of information.
- Social Audit by the Gram Sabha is compulsory.
- Regular monitoring at all levels.

The careful review of its goals and features portray a picture of decentralized implementation plan of this programme which endorses people-centric development paradigm. It responds to various issues ranging from economic paradigm to social aspects. As envisaged in its goals, social equity, women empowerment, right-based approach are indicators of reducing societal cleavages. In addition to it, it fosters ecological balance also so that development may not be at the cost of environmental degradation. Now let’s see its effectiveness on various lines in detail:-

Effectiveness of MGNREGS

Security of livelihood

Mahatma Gandhi NREGA has provided basic income security to a large number of beneficiaries. The Scheme provides employment to around 5 crore households, on an average, every year. This is almost one-fourth of the total rural households

Figure 1: Households provided employment in FY 2012-13 (Upto Dec’ 2012)

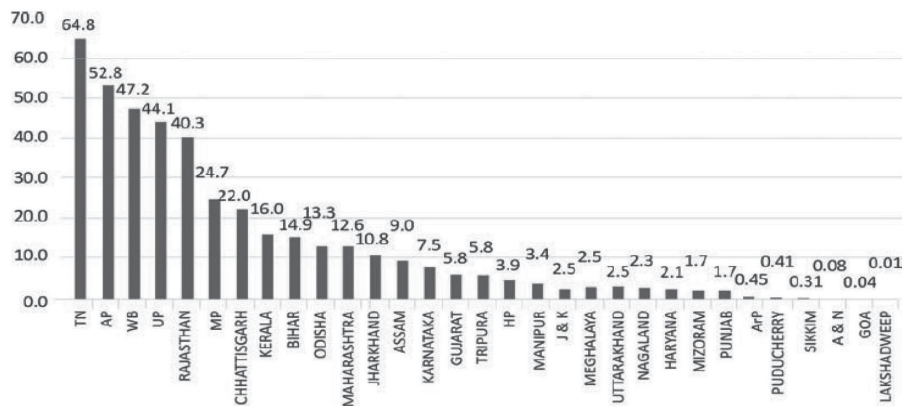


Figure 1: (Source: MGNREGA: Report to the People, 2013 excerpted from (http://nrega.nic.in/netnrega/WriteReaddata/circulars/Report_to_the_people_English2013.pdf))

in the country. Since its inception Mahatma Gandhi NREGA has generated 1348 crore persondays of employment (MGNREGA: Report to the People, 2013). The average wage earned per beneficiary has risen from Rs. 65 per person/ day in 2006 to Rs. 115 by 2012 (IBID). In fact a recent report by a global research organization indicates that for the first time in nearly 25 years, growth in rural spending outpaced urban consumption in the two years between 2009-10 and 2011-12. This proposition of livelihood security through provision of employment is shown through following figure:-

Inclusive Growth in Society

MGNREGS is a programme contributing towards inclusive growth which means employment generation will be made for all including backward communities. At the national level, the share of SCs and STs in the work provided under MGNREGA has been high and ranged between 40–60 per cent across each of the years of the Scheme's implementation (MGNREGA: Report to the People, 2013). SCs and STs participation rate in the Scheme exceeds the percentage share in the total population in most states. Works on private lands under the Scheme, has also greatly benefited the marginalized. Since 2006–07, around 10 lakh households have benefited under this category of works. Micro-level case studies indicate the positive impact of the Scheme in creating sustainable livelihoods for these individual beneficiary households.

Sustainable development of natural resources

MGNREGS gives importance to sustainability in regeneration of natural resources. It gives priority to activities related to water harvesting, groundwater recharge, drought-proofing, and flood protection. Its works focus on regenerating the rural ecosystem and creating rural infrastructure that supports sustainable livelihoods.

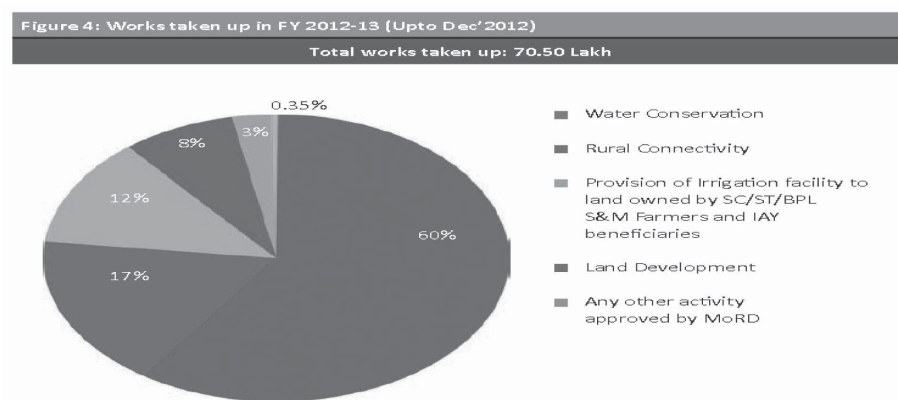


Figure 2: (Source: MGNREGA: Report to the People, 2013, excerpted from http://nrega.nic.in/netnrega/WriteReaddata/circulars/Report_to_the_people_English2013.pdf)

Almost 60 percent works relate to water conservation. MGNREGS works have led to a rise in ground water, improvement in soil quality and reduction in vulnerability of production system to climate variability. A study found that due to check dams created under the Mahatma Gandhi NREGS, the percolation potential of the villages studied improved by 1,000–28,000 cubic metres a year (MGNREGA: Report to the People, 2013). It may further, be visualized through following figure:-

Women' Empowerment

MGNREGS has concern for women also. The participation rate of women under the Scheme has been higher than in all forms of recorded work. Research studies also indicate that MGNREGA is an important work opportunity for women who would have otherwise remained unemployed or underemployed. Women participation rate has ranged between 40-48 per cent of the total person-days generated, much above the statutory minimum requirement of 33 per cent (MGNREGA: Report to the People, 2013). Access to economic resources has also had a favourable impact on the social status of women, for example women have a greater say in the way the money is spent in households. A large percentage of these women spend their money to avoid hunger, repay small debts, paying their child's schooling etc (IBID).

Increase in Agricultural Productivity

MGNREGS has affected our agriculture through indirect route. The conservation and regeneration of our natural resources have led to growth in cultivation. Provision of water is vital for agriculture and ensuring food and water security in rural India. Research suggests that water-related assets created under MGNREGS have increased the number of days in a year water is available and also the quantity of water available for irrigation. The increased availability of water has also led to changes in crop patterns and increased area under cultivation according to some studies (ibid).

Shifting Pattern of Occupation

The emergence of MGNREGS has brought tremendous shift in labour pattern and their nature of job. The percentage of cultivators (21.43%) and household small industry (3.24%) had decreased in 2009 over 2001 while agricultural labourer (11.74%), other manufacturing /mining (0.31%), labourer engaged in construction (34.71%), trade, commerce and business (18.86%), transport and communication (4.57%) and other services (5.14%) recorded marginal increase in 2009 over 2001 (Bordoloi, Jotin). Labourer in construction work might have increased due to impact of MGNREGS. Due to introduction of MGNREGS, the attached labourer in agriculture became scarce as they can earn more when employed in this programme.

Reduction in migration from Rural areas

One of the major goals of the MNREGS is to arrest rate of distress migration of the rural poor by providing wage employment within the village. Therefore, it has ensured that labourers get proper wages within their own land. Manual works provided under NREGA are thus expected to bring down the level of out-migration. The study conducted in Malda, Nadia and Jalpaiguri districts of West Bengal shows that in-migration has occurred from urban to rural areas (Ghosh, Jibon Kumar, 2011). Majority of the shifting households reported that they are remaining better off now migrating back into the village compared to the previous occupation in urban areas (ibid).

In this way, the review of effect of MGNREGS on rural development brings various issues into limelight. It explores various dimensions of intervention of this programme into our rural economy. Being world's biggest livelihood programme, it stabilizes the rate of employment in rural areas so that regional disparity may be diminished. The rural-urban gaps are supposed to be bridged through this programme. It also assists in empowering the disadvantaged groups in society and ensures that women get much say in employment. From wages generation, livelihood security to sustainable development of our natural resources, MGNREGS has penetrated. It has proved to be an umbrella programme for rural employment.

National Rural Livelihoods Mission (NRLM)

The National Rural Livelihood Mission called as "Ajeevika" was started by the Ministry of Rural Development, Govt. of India in June' 2011. This programme aims at creating efficient and effective institutional platforms of the rural poor enabling them to increase household income through sustainable livelihood enhancements and improved access to financial services. The focus has been on three key livelihood components of the NRLM mainly livelihood based on non-timber forest produce (NTFP), sustainable agriculture and non-farm employment (Greening Rural Development in India: UNDP Report' 2012). It aims to reach out to all the rural poor families (BPL families) and link them to sustainable livelihoods opportunities. NRLM endeavours, through its dedicated sensitive support structures and organisations at various levels, to reach out to all the BPL households in the country, and take them out of poverty through building their capacities, financial muscle and access, and self-managed self-reliant institutions (National Rural Livelihoods Mission Document, 2011). The core belief of National Rural Livelihoods Mission (NRLM) is that the poor have innate capabilities and a strong desire to come out of poverty. They are entrepreneurial, an essential coping mechanism to survive under conditions of poverty. The challenge is to unleash their capabilities to generate meaningful livelihoods and enable them to come out of poverty (ibid). Therefore, NRLM follows certain principles which are a guiding instrument for its functions:-

2.2.1 NRLM Guiding Principles

- Poor have a strong desire to come out of poverty, and they have innate capabilities.
- Social mobilisation and building strong institutions of the poor is critical for unleashing the innate capabilities of the poor.
- An external dedicated and sensitive support structure is required to induce the social mobilisation, institution building and empowerment process.
- Facilitating knowledge dissemination, skill building, access to credit, access to marketing, and access to other livelihoods services enables them to enjoy a portfolio of sustainable livelihoods.
- Ownership and key role of the poor and their institutions in all stages – planning, implementation and monitoring.
- Community self-reliance and self-dependence.
- Transparency and accountability of all processes and institutions.

Features of National Rural Livelihoods Mission

Universal Social Mobilisation

NRLM seeks to promote universal social mobilisation. NRLM would ensure adequate coverage of vulnerable sections of the society such that 50 percent of the beneficiaries are SC/STs, 15 percent are minorities and 3 percent are persons with disability, while keeping in view the ultimate target of 100 percent coverage of BPL families (National Rural Livelihoods Mission Document, 2011). It would also ensure that at least one member from each identified rural poor household, preferably a woman, is brought under the Self Help Group (SHG) network.

Promotion of Institutions for the Poor

NRLM emphasizes over strengthening of poor people-centric institutions like SHGs, Cooperatives, livelihood collectives for providing space, voice and resources for the poor. NRLM promotes specialised institutions like Livelihoods collectives, producers' cooperatives or companies for livelihoods promotion through deriving economies of scale, backward and forward linkages, and access to information, credit, technology, markets etc. The Livelihoods collectives would enable the poor to optimise their limited resources.

Training and Skill enhancement of the Poor

NRLM ensures that the poor are provided with requisite skills for managing their institutions, linking it with market, enhancing their credit absorption and managing their existing livelihood. A multi-pronged approach is, envisaged, for continuous

capacity building of the targeted families, SHGs, their federations, government functionaries, bankers, NGOs and other key stakeholders. Particular focus would be on developing and engaging community professionals and community resource persons for capacity building of SHGs, their federations and other collectives (ibid). NRLM encourages public sector banks to set up Rural Self-Employment Training Institutes (RSETI) in all districts of the country. RSETIs transform unemployed rural youth in the district into confident self-employed entrepreneurs through need-based experiential learning programme followed by systematic handholding support. 15 percent of the central allocation under NRLM is earmarked for this purpose.

Universal Financial Inclusion

NRLM works towards achieving universal financial inclusion, beyond basic banking services to all the poor households, SHGs and their federations. NRLM works on both demand and supply side of Financial Inclusion. On the demand side, it promotes financial literacy among the poor and provides catalytic capital to the SHGs and their federations. On the supply side, it would coordinate with the financial sector and encourage use of Information; Communication & Technology based financial technologies, business correspondents (ibid).

Provision for minimal interest on loan

NRLM has also a provision for ensuring availability of minimum interest on loan given to SHGs. In order to ensure affordable credit, NRLM has a provision for subsidy on interest rate above 7 percent per annum for all eligible SHGs, who have availed loans from mainstream financial institutions, based on prompt loan repayment. This subsidy would be available to SHGs, where at least 70 percent of the members are from BPL households. Interest subsidy would be provided to this SHG, when they avail a fresh loan after repaying the capital subsidy linked loan.

Development of Infrastructure

NRLM seeks to ensure that the infrastructure needs for key livelihood activities of the poor are fully met. NRLM encourages and support partnerships with public and private organisations and their associations for these activities. NRLM provides for utilization of up to 20 percent of the total fund outlay in the annual NRLM plan of the state (25 percent in the case of North-Eastern States) for the infrastructure and marketing support (NRLM Framework for Implementation-A Report).

Emphasis on Sustainable Agriculture

The focal point of NRLM is evolution of sustainable agriculture. In simple words, it is all about promoting natural pattern of agriculture free of chemicals, pesticides. Hence, it insists on certain indicators which are as follows:-

- A shift away from using chemical inputs in agriculture that will reduce external costs of cultivation and also help in restoration of natural processes such as replenishment of soil nutrition, higher moisture capture in soils, increase in beneficial insects etc.
- Restoration of soil health and multiple crop-systems that can build up soil organic carbon and help in carbon sequestration.
- Intensive knowledge inputs to farmers in closely observing and strengthening natural cycles and farm-level ecologies that will build a 'green perspective' to farming on a large scale.
- Strengthening livestock-crop integration into the sustainable agriculture strategies.
- Incentivizing farmers for sustaining the green practices in agriculture.
- Strengthening community-owned diverse seed systems to protect against climatic adversities and is also healthier for the soils.

The sustainable approach towards agriculture deals with common pool natural resources such as grazing lands, ground or surface water resources, fisheries in common pool water bodies. It also consists of non-chemical fertilizers, prohibition of pesticides in cultivation.

Effectiveness of NRLM

Promotion of Self-employment

National Rural Livelihood Mission is geared towards promoting self-employment in rural areas. NRLM provides revolving fund and capital subsidy fund to the institutions of the poor. Through supporting formation of SHGs and Cooperatives, it enhances self-employment among rural poor. Close interaction with poor households reveal that, SHG members are keen on taking up individual or household based enterprises, than being part of group based enterprises. It provides financial assistance to the rural people through linkage of their SHG with banks. The performance-linked interest subsidy would provide the perspective of long term engagement with banks over the entire credit cycle. This subsidy would be available to each BPL household till their cumulative loaning, over several doses, reaches Rs. 1.00 lakh. The interest subsidy will be reimbursed periodically, subject to regular repayment of loans by the beneficiaries. A villager may get loan for starting their enterprise. Apart from financial assistance, it provides skills through liaisoning with various training institutes. NRLM has supported all the Self Help Groups.

Encouragement to micro-enterprises

One of the major impacts of NRLM is its push towards establishment of micro-enterprise. It supports formation of either agricultural enterprise or allied enterprises.

Current design of NRLM has more thrust on providing credit services. NRLM focuses on both credit and non-credit services, with emphasis on non-credit services. Therefore, the focus of NRLM is on supporting revolving fund, capital subsidy and interest subsidy.

Insurance for assets of the Poor

NRLM has a provision for universal coverage of micro-insurance services to cover life, health and assets risks of the poor and vulnerable households. It seeks convergence with a few insurance schemes launched by Government of India like 'Aam Admi Bima Yojana', 'Jan Shree Bima Yojana', 'Rashtriya Swasthya Yojana' and agriculture and livestock insurance schemes.

Skill enhancement of rural poor for Placement

NRLM seeks to bridge gap in skills of the rural poor people so that they may have access to higher wages employment. It offers complete jobs solution - identifying the unemployed, skilling and re-skilling them, placing them in jobs, providing post placement support. NRLM supports a string of academies delivering job related courses and build networks with the private sector to explore employment opportunities. These programmes also enables the poor to migrate to growth centers for jobs in organized sector on better terms, with better skills, higher wages and a sensitive support network instead of distressed migration as in the past. NRLM partners with NSDC and Ministry of Labour & Employment to facilitate establishment of a high profile Skill Development Council with various stakeholders from the industry and from training institutions as members to guide the entire effort. 15 percent of the NRLM Central allocation has been earmarked for placement-linked skill development.

Conclusion

In this way, Rural Development programmes of Government of India keeps an important position in eradication of rural poverty. Although there have been numerous programmes for promotion of rural infrastructure yet, the contribution of National Rural livelihoods Mission is significant. It has penetrated not only in terms of credit availability to farmers and agricultural labourers but supported establishment of micro-enterprises in the village. It has established linkage with several training institutes for upgradation of skills among rural entrepreneurs. The Self-Help Group (SHG) mechanism of NRLM has initiated a step for empowerment of women. Apart from NRLM, another Rural Development Programme named as "Mahatma Gandhi National Rural Employment Guarantee Scheme" has progressed in terms of ensuring availability of job to the rural poor. It has made every effort possible for giving 100 days of employment to a person of each poor rural household so that imbalance between rural and urban areas may be diminished. It has also supported sustainable approach of livelihood through employment of

labour in water conservation, afforestation etc. In other words, it has given a green shape to rural development programme.

Therefore, NRLM and MGNREGS have been major rural development programmes for encouraging sustainable livelihood along with livelihood security.

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17

Rural Tourism Development Programme of Ministry of Tourism ,Govt of India and their Effectiveness –An Assesment:A Case sudy on Pochampally Rural Tourism

G. Mahender Reddy and YSR Nithm

Tourism is different types and forms based on activities and resources. Typologies reflect the variety of options that the tourists can avail a wide range of opportunities to participate in tourism activities. These forms which range from pilgrimage, leisure and adventure to space tourism also reflect the styles, interests, values, preferences and motivations. The basic nature of tourism product offers a particular form for a particular tourism activity (Reddy and Reddy. 2012). Rural tourism is a type of tourism which having huge potential in India and well promoted in most of the countries. Studies on the subject have concluded that there is evidence that in Europe rural tourism has made important contributions to rural incomes both at the level of the individual farmer and more widely in the local community. While not necessarily substituting for agricultural income, it has delivered supplementary income and inter-sectoral linkages.Rural tourism is currently the focus of attention throughout the world and is being recognized as an important instrument of growth for the rural economy. Planners are using rural tourism, which also includes eco tourism and farm tourism to increase economic opportunities for the rural people. In India where 70 per cent of the population live in rural areas and are dependent solely on agriculture, newer opportunities need to be created and Rural tourism is certainly on top of the charts of fulfilling this dream.Studies on the subject have concluded that there is evidence that in Europe rural tourism has made important

contributions to rural incomes both at the level of the individual farmer and more widely in the local community. While not necessarily substituting for agricultural income, it has delivered supplementary income and inter-sectoral linkages (Mukherjee. 2012).

Rural tourism is nothing but participating in tourism to appreciate rural activities and rural lifestyle. The emphasis is on having an experience in rural setting. Recreational experience involving visits to rural settings or rural environments for the purpose of participating in or experiencing activities. Any village is a tourist destination and most villagers are very hospitable across globe. Farming as an agricultural choice is getting highly mechanized and therefore requires less labor. This is causing economic pressure on the village leading to exodus of innocent youths to urban landscape. Rural Tourism has focus on participating in rural lifestyle. It can be a variant of ecotourism. The emphasis is on having an experience in rural setting. It allows creation of alternative source of income in the non-farming sector for the rural folks. The reverse cash flow from cityscape also allows lost folk arts and handicrafts to reinvigorate and thrive locally. It is an ideal and natural setting for rural and urban economic exchange. Travelers interested in local cultures and the heritage of places they visit find an added benefit in having the town's local history buff lead a tour through the battlefield, or in the personal touches of a small bed and breakfast. Agritourism (farm-based tourism) invites tourists to experience working ranches, hay rides, corn mazes, pumpkin patches, and much more. (Reddy and Reddy. 2012). The Department of Rural Development is implementing a number of programs in rural areas through the state Governments for poverty reduction, employment generation, rural infrastructure habitant development, provision of basic minimum services. (Department of Rural Development. 2013).

Ministry of Tourism Government of India initiatives for rural tourism Development in India

The development of infrastructure in rural areas having potential for tourism is being supported under the existing scheme of destination development. The objective is to showcase rural life, art, culture and heritage at rural locations and in villages, which have core competence in art & craft, handloom, and textiles as also an asset base in the natural environment. The intention is to benefit the local community economically and socially as well as enable interaction between tourists and local population for a mutually enriching experience. Under this scheme, the thrust is to promote village tourism as the primary tourism product to spread tourism and its socio-economic benefits to rural and its new geographic regions, thereby stopping the exodus from rural to urban areas. The Village Level Council (VLC) is the interactive forum for local community participation in work plan implementation, further supported by other community level institutions. For the visitor, whose expenditure creates revenue for host community service providers;

rural tourism adds value through packaged programs in art & craft imparted by skilled local artisans. Village entertainment groups unveil local history and culture, natural and oral treasures. The visitor thus comes face to face with India's rural traditions. So far, 153 rural tourism projects in 28 States/Union Territories have been sanctioned by the Ministry of Tourism including 36 rural sites where UNDP has supported for capacity building (Rural Tourism Scheme 2013)

Across the world the trends of industrialization and development have had an urban centric approach. Alongside, the stresses of urban lifestyles have led to a "counter-urbanization" syndrome. This has led to growing interest in the rural areas. At the same time this trend of urbanization has led to falling income levels, lesser job opportunities in the total areas leading to an urbanization syndrome in the rural areas. Rural Tourism is one of the few activities which can provide a solution to these problems. Besides, there are other factors which are shifting the trend towards rural tourism like increasing levels of awareness, growing interest in heritage and culture and improved accessibility, and environmental consciousness. In the developed countries, this has resulted in a new style of tourism of visiting village settings to experience and live a relaxed and healthy lifestyle. This concept has taken the shape of a formal kind of Rural Tourism. Ministry of Tourism and the United Nations Development Programme (UNDP) in India have been involved in an initiative on Rural Tourism. Covering 36 sites spread geographically over the country (Redefining Tourism. 2008) Under this Scheme, thrust will be to promote village tourism as the primary tourism product to spread tourism and its socio-economic benefits to rural and its new geographic regions. Key geographic regions would be identified for development and promotion of Rural Tourism. The implementation would be done through a Convergence Committee headed by the District Collector. Activities like improving the

Table: State wise Rural Tourism Projects Completed/ about to be completed

Sr. No	States	Projects completed	Projects about to be completed	Total
1	Andhra Pradesh	4	0	4
2	Chattisgarh	0	1	1
3	Gujarat	1	0	1
4	Haryana	0	1	1
5	Himachal Pradesh	0	2	2
6	Karnataka	2	1	3
7	Kerala	1	0	1
8	Madhya Pradesh	1	1	2
9	Maharashtra	1	0	1
10	Nagaland	1	0	1
11	Orissa	1	0	1
12	Rajasthan	1	0	1
13	Sikkim	1	0	1
14	Tamil Nadu	1	1	2
15	Uttaranchal	1	1	2
16	West Bengal	0	1	1
	Total	16	9	25

Source: Ministry of Tourism, Government of India

environment, hygiene, infrastructure etc. would be eligible for assistance. Apart from providing financial assistance the focus would be to tap the resources available under different schemes of Department of Rural Development, State Governments and other concerned Departments of the Govt. of India.

Marketing Initiatives

Globally recognized Incredible India brand, now supported by the Ministry's new Explore Rural India subbrand, is strengthening the visitors' attraction to India as a multiple-interest, all-season destination targeting higher visitor yields.

Community participation in rural tourism has been strengthened through the site artisans' structured involvement in Dilli Haat, Mega Craft Mela in cities such as Bhubaneswar, Aurangabad etc., India at 60 road show in Singapore and Volvo Ocean Race in Cochin. Wide media 28 Annual Report 2009-10 and trade focus were also given at the World Tourism Mart (WTM) and International Tourism Bourse (ITB), the world's principal tourism forums.

At the India at 60 events in Singapore, as a unique first-time highlight, eight skilled artisans from four of the Ministry's UNDP-partnered rural tourism locations showcased their site attraction through impressive on-site art & craft demonstration and display. The eight participating artisans, many of those who travelled overseas for the first time, gained first-hand exposure to international competitive, merchandising and promotional practices. This enabled their extensive direct interface with the tourism trade, consumers, craft stores, corporate organizations, and the media. The artisans from 5 rural tourism sites participated in the Pacific Asia Travel Association (PATA) Travel Mart held in September 2008 to showcase their arts & crafts. Rural Eco-holidays: 15 rural tourism sites have been selected as rural eco-holidays sites for Visit India Year 2009. Under this marketing campaign of Visit India Year 2009 foreign tourists are offered one night stay with breakfast on complimentary basis in any one of the chosen rural eco-holiday site. The booking can be done through the Tour Operators approved by the Ministry of Tourism.

The project website www.ExplorerruralIndia.org was upgraded, showcasing the first 29 sites of the Project's 36 sites which are now ready for marketing. (Explore rural India 2012) Recognition and Awards: CNBC Awaaz Travel Award in 2008 was awarded to the following two rural tourism sites:

- Village Hodka, Distt. Kachchh, Gujarat for Best Tourism Income Generating Community.
- Village Naggar, Distt. Kullu, Himachal Pradesh for Tourism site for Best Demonstrating Women Empowerment.
- World Travel Award for most Responsible Tourism Destination at WTM-2008, London.

- Ministry of Tourism (Incredible India) won the Global SASI (Shop America Salutes Innovation) Award Presented by National Geography Society for innovation in creating long lasting sustainable authentic shopping opportunities for travelers as well as residents of India.

Objectives and Methodology

The research conducted for this study consists of several parts. Primary data was collected to ascertain the information gathered from secondary data. Primary data was collected through interviews and observation method. The respondents' are comprised of members of management team, villagers, working staff and tourists. Pochampally rural tourism project in Nalgonda District near Hyderabad from Andhra Pradesh was selected for Case study. The source of these projects selected for study is based on the data published by Ministry of Tourism Government of India, Andhra Pradesh Tourism, APTDC and information available through internet. The secondary data was collected from books, journals, internet, magazines, news paper reports, Reports of Ministry of Tourism and Parliamentary committees etc. Objective of the study is to know the Ministry of Tourism Government of India rural tourism scheme and the other objective is to know the impact and to assess the status of rural tourism project in Pochampally,

Rural Tourism in Andhra Pradesh

Andhra Pradesh is called as a 'Rice Bowl' of India. It is having a rich and unique culture in India. The Andhra Pradesh Tourism department has promoted by it's as a "Kohinoor" of India. It is a domicile for all types of tourism i.e. Pilgrimage tourism, Heritage tourism, Adventure tourism, Cultural tourism, Educational tourism, Beach tourism, Eco-Tourism, Geological tourism, Rural Tourism etc., The noted pilgrimage centers in Andhra Pradesh state is Tirumala and Tirupati, in chittoor district, it is one of the famous Hindu's temple throughout India, and one of the richest pilgrimage centre in the world. It was developed by the Vijayanagara emperor Sri Krishna Devaraya in the 16th century. Now, every day more than 70,000 pilgrims are having the darshan of Lord Venkateswara, and the income of the temple is more than 10 billion per annum, from hundi collections, selling of Prasadams and other incomes etc., besides this Srikalahasthi and Kanipakam temples are famous in chittoor district. And also the five ancient Shiva temples are existing in Andhra Pradesh it is called as a Pancharama Kshetras i.e. Amararama, Draksharama, Somarama, Ksheerarama and Kumararama. In all the five temples the Shiva lingas were made in a single stone (Krishnaiah, D. P. (2012).

Policy Initiatives of Andhra Pradesh Tourism: Rural tourism aims to provide the discerning traveler with a multitude of distinctive, first-hand experiences in an interactive, informative and organic setting in rural Andhra Pradesh. Community based rural tourism is envisaged to provide sustainable livelihoods and strengthen rural economy through the preservation and promotion of rural craft, culture,

heritage and environment in their natural forms by offering an enhanced choice to visitors seeking a unique experience, thus increasing awareness and exposure to rural way of life across the state while improving the quality of life of the village communities, encouraging gender equity and community ownership through an equal partnership between hosts and tourists leading to overall holistic development through tourism. Rural culture, craft, heritage & environment: Preservation and conservation, rejuvenation and promotion, basis for infrastructure plan. Tourists: Unique experience enhanced choice, development, Improvement in the quality of life, Community ownership, and overall development through tourism. People in rural communities as stakeholders and equal partners; not mere objects. Economy & livelihoods: Sustainable, commercially viable

Pochampally rural Tourism Project in Andhra Pradesh

Bhoodan Pochampally is located in Nalgonda District. Nalgonda District in turn is a district in Andhra Pradesh in southern India and is popularly known as Silk City of India. It is most popular for its Pochampally Ikat style of saris and material. Bhoodan Pochampally is located at 17°23'29.963" N 78°38'23.883" E (17.3861, 78.6433) Pochampally is an interesting collage of tradition, history, heritage, modernity and widely known for Pochampally Saree . Surrounded by hills, tanks and ponds, and lush green fields, spread-out silk warps, neera tapping from palm trees, mat-making women, open-sky chatrashala houses, a perennially full tank, hills, temples, Vinoba Mandir - Bhoodan Ashram, and cultural complexes, Pochampally makes up for an exciting destination to spend one's vacation. Also it is a perfect place to celebrate the festivals in rich colors. Pochampally, a cluster of 80 villages, is the place where threads and colours find their way into the hands of skillful weavers and meander into the market as beautiful sarees and dress material is the most typical weaving village in Nalgonda District of Andhra Pradesh. Basking under the glory on par with the weaves of other places (Such as Kanchi, Dharmavaram, Gadwal, Venkatagiri etc.), Pochampally weave is popularly known as ikkat or tie and dye weave. The uniqueness lies in the transfer of design and coloring onto warp and weft threads first and then weave them together. The fabric is cotton, silk and sico - a mix of silk and cotton. Increasingly, the colours themselves are from natural sources and their blends. Pochampally has traditional looms, whose design is more than a century-old. Today this Silk City is home to more than 10000 weaving families in 100 villages. (Pochampally, Wikipedia. 2013)

Impact and effectiveness:

Implementation of the project: Organization, implementing agency for hardware is Directorate of Tourism, Government of Andhra Pradesh and the Secretary, Tourism, Government of Andhra Pradesh, the hardware component is completed in 2007. Directorate of tourism took care for the hardware implementation; construction work was done by local contractor at that time on the basis of tenders.

Hardware Components consist of construction of Information centre, textile bazaar, weavers' resource center. Software: Organization, Implementing agency for software is Akshara Network for Development support Service (Akshara) and it was completed in 2008. Akshara Network for Development Support service, with their head office in Hyderabad, is a not-for-profit development support organization and is initiated by practicing development management professionals to fulfill the need for affordable and timely professional support to individual organizations in development sector. Akshara's motto is to promote, support, sustain and offer appropriate support services to development organizations, groups, individuals and government organizations for the purpose of contributing to professionalism in the development sector, integrated human development and ecological integrity/security.

Software Components: Mapping the creating reality of livelihoods situation, preparation of business plans, livelihood enhancement. Status of Implementation: This is a big handloom cluster. Approximately 192 Self Help Groups are there, it is not possible for them to select few artisans for training purpose. Everyone needs training at the same time. If they select only few artisans, then the other unselected artisans may create problem. At the time of training session, the Implementing Agency didn't select the Artisans. Those artisans who required training came and received training; therefore they didn't make any list or database of artisans they imparted training to. From time to time, different departments offer training sessions in Pochampally, therefore artisans' livelihood has improved and it has increased revenue. Due to the short duration of training sessions, not all artisans have received proper training; hence the project has benefited the select artisans who had attended the open training sessions held by the implementing agency. Apart from the rural tourism project, the State Government and Department of Handicraft has organized and implemented a lot of other projects in Pochampally. Weaver's have received benefits from the rural tourism project initiate and their socio economic condition has improved – although this is true for the select few artisans who received training – not true for all the artisans present in Pochampally, production has also improved. Local Infrastructure has been improved by the initiative of the state government. Maximum Artisans have also received Health card. In future artisan would require more training & financial help from state/central Government to make this project a real success and hence draw tourists in droves perception about the Rural Tourism Project: The artisans are not happy with the particular scheme due to very less time, selection of weaver, marketing support; they are facing lot of problem day to day due to increase in raw material cost, Market support. People are getting better products from power looms and a lot of duplicate material is coming into the market so they need more help from Govt. to improve Handloom sector.

Consultant's Gradation of the Rural Tourism Project: With regards to the infrastructure and training perspective, this project is a successful one due to the

implementation of the same. But considering the fact that tourist arrivals to Pochampally has not increased since the implementation of this project, it can be deduced that this project has not generated enough interest to draw the tourists to Pochampally. Hence more initiatives need to be undertaken to put Pochampally as a major rural tourism hub.

Pochampally is famous for its Pochampally Patola tie and die saris known as Ikatsarees. It is also known for its rich devotional practices and there are six famous Hindu temples, including Markandeya temple. Besides, the place has prominence as it is the first village for the Bhoodan movement initiated by Vinobha Bhave. Pochampally is located 46 kms from the Hyderabad city (36 kms on national highway). Ramoji Film city is another major place of attraction, located very near the village. The village has a lake known as Peddacheruvu with greenery all around. Besides, there are two other lakes and the historical 101 Darwaja House. All these draw a lot of tourists to this site based on the reality assessment, perspective plans for the tourism project in the village was drawn which was divided into two parts viz weaving plan and tourism plan. An internal workshop was conducted with the stakeholders of the project in order to validate the finding and plans. The need to develop hardware structures like craft museum, amphitheatre, cafeteria, toilet block etc was identified in the tourism plan. Most of the civil construction of structures like crafts museum, amphitheatre, cafeteria, toilet block etc are complete with only some interiors left. In the Museum block, only flooring & painting is left. The Amphitheatre is complete with some portion of plastering left. Besides, the Guest house, Cafeteria, Toilet Block, Compound wall have also been completed

Craft, Weaver Museum: A building to house the exhibition on traditional weaving has been constructed in Pochampally village of Nalgona district. The main purpose of creating the museum is not only to exhibit the weaving, but to focus on the life of the weaver, the weaving techniques and also on the textile pattern made at this weaver's village. There is a central hall which displays the making of dyes, dyeing of the yarn, looms demonstrating the weaving process. The idea is to showcase to the tourists, the process, source of material, history of Andhra handlooms etc. The structure has been completed and is being maintained by state tourism department of Andhra Pradesh. It will soon become operational and discussions are going on for handing the maintenance to the local gram Panchayat. The amphitheatre has been completed in the Pochampalli village with some work of plastering left. The craft museum is also completed with only flooring and painting left. The civil construction is over. The women in Pochampalli have always been hard working, helping their men in winding bobbins, making warps, tying resist areas, etc. The Kalanetha committee in the village is the community level implementing partner having all female members. This also acts as the village level committee. It has representation from weaving community (5 members), Leather work 2, Neera making and tailoring community 4, Basket weaving 2,

Vadrangi 1, Kummari 1, Chakali 1 and 1 from the almond making community. There are in total 18 members and this was formed in November 2005. The Kalanetha committee has resulted in encouraging the women. Another local NGO has been involved in creating the bag making women members. Such activities have resulted in empowerment of the women

There are 11 guides in the village. They have been given training on linguistic courses, hospitality management and other visitor handling aspects by the NGO. The guide training was undertaken at the National Institute of Tourism and Hospitality Management in Hyderabad. The local youths in the village are quite eager to take up tour guide as a profession. The publicity has been done by printing leaflets, brochures and participation in seminars, workshops. Information about the village is also given in the NGO's own site and prospectus. The location map, places of interest, way to reach Pochampallietc is given in these publicity material. A film made on the village is in finalization stages and a website particularly for the site is under construction. The status of Palm craft workers and Ikkatsarree weavers has improved. The Kalanetha has emerged as a Pochampally Development (Livelihoods and Tourism) Community Organization. The weavers in the village have been integrated into SHGs and their federations formed. They meet twice in a month and discuss their issues and progress. There are 138 Self Help Groups in the village. Mandal MahilaSamaika, a federation of all the SHGs at the Mandal level is co-ordinating with them. These community level federations are on the path of self-reliance through managing enterprises that benefit the community. An exposure of Handicrafts made on Palm leaves has been held in Hyderabad where the artisans got exposure in price structure and sales avenue. Sri Ramananda Teertha Rural Institute (SRTRI), the training institute has been tied to give skill-building inputs to the artisans as per their emerging need At present, there is no proper waste disposal system in the village. Except agriculture and dairy based families who maintain their own waste and manure pits, other families do not have any waste disposal system. They dispose the waste in the open places and near the tank. Although 90% of the streets are covered with drainage system, they are not in good condition. At present 6 employees are working on sanitation in the village and the Panchayat pays them for maintenance of drains and removing garbage. There is a problem of high fluoride in the water of the village, because of which many people have to buy water for drinking purposes. The Panchayat has been maintaining 5 overhand tanks and 4 ground tanks. Establishment of community based defluoridation plant is planned to minimize the health risk and cost of drinking water. The gram panchayat and the community level implementing partners like the Men and women of Bhoodan Pochampalli, SHGs and their federations, Kalanetha Committee and cooperatives are working together for developing the weavers cause. Specifically the Kalanetha Committee with support from the NGO has helped in improving the level of participation of the weaker sections of people, especially the women. With 138 SHGs in the village and various training programs

being conducted, the situation has improved a lot. The level of participation will increase when the integrated tourism complex will be given to the villagers.

Conclusion

The basic trend that can be observed in Pochampally project is that the implementation of hardware and software components has been incomplete. This rural tourism project got inherent advantages in terms of historic importance, craft, culture, cuisine, natural beauty etc. It was assessed that prior to the intervention of Ministry of Tourism, there were a basic issues hindering the flow of tourist. The village is very close and well connected to the city of Hyderabad. Guide training and other capacity building programs among the local youths have led to an increasing number of youths helping the tourists in knowing the places of attraction in the villages. The reason for failure in some of the areas of the project is mainly the reason that although the infrastructure is good and the trainings have been already done, the main purpose of the project is defeated here. The artisans are not getting benefitted by this project. The problems that face them are humongous compared to the help the project provided. The revival of Tourism products like folk arts by formation of activity groups has also helped the local population. These folk arts provides link with the past and bring alive ancient traditional art forms and culture. They also helped in perpetuating legacy for the future. The support to rejuvenate the folk arts has lead to the revival of the folk arts and also providing livelihoods to the practitioners of the arts. Support to the artisans are required in the form of marketing their products, raw material support and publicity of the craft is required to make this project a successful one

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18

A critical evaluation of IEC strategy of MGNREGA, developed by Ministry of Rural Development of Govt. of India

Arita Samajdar

Few impact assessment studies and specially CAG performance audit report on MGNREGA had critically examined some critical issues on the Information Education and Communication activities taken up by the Ministry of Rural Development (MoRD) of Govt. of India and the State governments and marked their dissatisfaction on IEC activities. The CAG report further highlighted the absence of an IEC strategy in most of the States. The audit report states that “Audit observed that Information, Education and Communication (IEC) plans were not formulated in 12 states and two UTs. Shortfalls in utilization of IEC funds were also noticed. In a demand driven scheme like MGNREGS, awareness of beneficiary rights would be a critical factor in its success. The low level of IEC activities would have an adverse effect on the awareness levels of the beneficiaries and would, in turn, hamper the beneficiaries from fully realizing their rights.” (Page viii, point 2)

The report also recommends that “MGNREGS, being a demand driven programme, requires the beneficiaries to be aware of their rights. However, the shortfall in IEC expenditure and non-formulation of IEC plans indicated gaps in the creation of awareness among beneficiaries. *IEC activities need to be stepped up for better beneficiary awareness.*”(Page30, second recommendation)

Taking lessons from the study MGNREGA division of MoRD has developed fruitful IEC strategies. An IEC action plan is prepared for the financial year of 2013-14 and all the States and Union Territory are requested to develop their own IEC strategy. The strategy aims to create awareness among rural people and other stake holders with special focus on MGNREGA workers about various aspects of MGNREGA. The strategy also aims at facilitating dissemination of right based provisions of the Act to ensure that the workers know their right to demand wage employment and exercise their right by applying for such employment as per their need. Beyond raising awareness, interventions at interpersonal level have been provided to ensure that individuals convert their awareness into action. For this, Social and Behaviour Change Communication (SBCC) activities would be taken up by the states, at the grass root level.

What is IEC - The acronym IEC stands for Information Education and Communication. Ministry of Rural Development (MoRD) of India describes 'IEC as the combination of strategies, approaches and methods that play a pivotal role in creating awareness, mobilizing people and making the development participatory through advocacy and by transferring knowledge, skills, and techniques to the people' (2002). IEC is the process of learning that empowers people to make decisions, modify behaviours and change their social conditions by taking scope of development programmes. IEC activities are essential ingredients of a development programme and play a crucial role in opening the gateway to social transformation. It is now established that the willing participation of the people in the development process is a pre-requisite for reaching the objectives of various development and awareness programmes.. IEC is the part of communication for development. It not only plays a important role in creating awareness through dissemination of developmental messages and information but it also helps in capacity building through diffusion of knowledge, advocacy for behavioral change, mobilizing people and making development participatory. In the past few years, there has been a growing realization regarding the integral role IEC can play as a vehicle of motivation.

IEC strategy of MGNREGA

National Rural Employment Guarantee Act (NREGA) was enacted on 7 September 2005 as "An Act to provide for the enhancement of livelihood security of the households in rural areas of the country by providing at least one hundred days of guaranteed wage employment in every financial year to every household whose adult members volunteer to do unskilled manual work and for matters connected therewith or incidental thereto." The act was renamed as Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) on 2nd October 2009, on the birth day of 'Father of the Nation' and the great visionary Mahatma Gandhi, to whom the entire act, was dedicated. Initially implemented in 200 districts, implementation of the Act was up-scaled in rapid succession covering all 615 rural districts of the

country within two years. The primary objective of the Act is augmenting wage employment. Its secondary objective is strengthening natural resource management through works that address causes of chronic poverty like drought, deforestation and soil erosion and so encourage sustainable development. MGNREGS seeks to develop durable assets capable of providing further livelihood to the rural masses by way of creating enhanced opportunity for agricultural activity. The MGNREGA marks a paradigm shift from previous wage employment programmes. It has an integrated natural resource management and livelihoods generation perspective. The transparency and accountability mechanisms under MGNREGA create unprecedented accountability of performance, especially towards immediate stakeholders. An important precondition to ensure effective implementation of MGNREGA is the creation of awareness among rural people and other stakeholders, particularly MGNREGA workers in respect of the act provisions as well as their rights and entitlements. Beyond raising awareness, interventions at interpersonal level need to be extended to ensure that individuals are converting their awareness into action. Different studies and monitoring reports pointed out gaps in implementation due to inadequate communication. So in this context, the Ministry of Rural Development, Government of India has developed a comprehensive IEC strategy for MGNREGA for the financial year 2013-14 at the National, State and Local Levels.

In this strategy various activities are broadly categorized into three components:

- A Information Component
- B Educational Component and
- C Communication component

Information Component:-This strategy has integrated various activities to generate information, processing and dissemination. Management of information related to MGNREGA need to be shared among different platforms for better effectiveness in programme management and cost effectiveness. Preparation of success stories, setting up a best practice documentation system, and dissemination strategy for success stories and good practices fall under this category.

Under the information component an exclusive website (www.nrega.nic.in) for the programme is developed by MoRD. It works as a portal to provide different information on the Act and its implementation activities in all the States of India. The portal is also used to disseminate information about the programme and implementation to the citizen and implementers. Designed as a dynamic website, it is regularly updated with latest information on the Act and its implementation. Success stories and case studies from the field are uploaded time to time for wider dissemination. The website links to the MGNREGA website of the different states. Now social media are very popular. Currently MGNREGA at the Central level has profiles in Facebook, YouTube and Twitter. Advantages of these rapidly

expanding networks will be utilized particularly to connect to the youth and other decision makers. News, photos and viewpoints will be shared from all the States through these profiles, which will help the public to have an understanding and information about latest happenings under MGNREGA. Rural Development departments of all states are instructed to open a facebook page of MGNREGA to attract the youths for better understanding of the programme.

Education Component: Education is a process of learning through which a person gains knowledge and understanding of a subject. Capacity building activities at various levels of MGNREGA for better implementation of IEC activities have been envisaged and planned under this component. This includes the participatory activities involving the implementers, and various trainings imparted to them, as part of the grass root level activities. Under education component, the focus would be on capacity building of different stakeholders through training and orientation. In West Bengal The State Institute of Panchayats & Rural Development (SIPRD) at Kalyani, Nadia is designated as the nodal agency for developing the capacity building plan, its implementation, monitoring & evaluation. MoRD of government of India would arrange training and orientation programme for the key officials of MGNREGA programme. The respective state governments would undertake the responsibility to arrange training programmes for the officials at the District, Block and Gram Panchayats level, the elected representatives at the Zilla Parishad, Panchayat Samity and Gram Panchayats levels, NGOs, SHG members and other field level facilitators like Anganwadi Workers, health workers, school teachers, local opinion leaders etc. There would also be media sensitization to promote dissemination of knowledge on MGNREGA in the right perspectives.

Communication component: - Communication activities concern with the understanding of communication needs of the communities and developing various instruments carrying the key messages and disseminating those through appropriate channels of communication. Under communication component it is necessary to develop behavioral change communication plan for direct inter-personal communication with the citizens, especially the job seeking households.

Communication need of MGNREGA: Awareness generation through Information, Education and Communication, for people to know their rights under the Act, effective communication of information about the Act and Scheme is essential. Communication need may differ from state to state. But the basic communication needs are more or less common. Goal of IEC strategy is to ensure that the workers should know their right to demand wage employment and exercise their right by applying for jobs as per their need. But demand for employment under MGNREGA is affected by many variables like:

- Lack of knowledge on how to exercise their rights by applying for the job
- Lack of knowledge about the number of days of employment to which they are entitled.

- Lack of awareness about the time period within which wages were to be received.
- Lack of awareness about the prescribed quantum of work which entitled full wage payment
- Lack of knowledge about the manner of wage calculations.
- Lack of comprehensive knowledge about the Scheme
- Wage differentials
- Lack of infrastructure and capacity at GP/Block/District level
- Delayed wage payments to the labourers
- Delayed fund release to the GP etc
- Availability of alternate employment opportunities
- Proximity to urban areas
- Visibility of the programme
- Lack of knowledge about the nature of works that can be taken up under MGNREGA.

The concerned state would prioritize their communication need depending on the area and community. The MoRD has developed messages to address the issues which accordingly to be translated in local dialects. The success of MGNREGA has largely depended on its ability to communicate information and motivation to the target audience.

Target Audience - Target audience is a specific group of people to whom a certain message is to be delivered. For the MGNREGA programme the target audience would differ according to the types of messages to be disseminated. The target groups of the programme are broadly divided as:

- MGNREGA labors / Job Card holders
- General public
- Opinion leaders
- State level authorities
- District authorities
- Block/Taluk authorities
- GP authorities
- Post office staff
- Bankers

- SHG unit members
- Beneficiary groups of various development projects implemented in GPs
- Anganwadi Workers

Key messages to be disseminated: - Messages are the vital ingredients of any IEC plan which is being implemented. Key messages are those messages which are designed according to the objectives of the proposed IEC strategy. These may be the same for the whole programme period or may change in tune with the requirements during its implementation. It is based on the key messages that various creative campaigns and other activities can be effectively planned and realized. Therefore for the programme like MGNREGA it is essential to have messages. The following key messages are developed by the MoRD for different stakeholder groups, especially job card holding households.

- MGNREGA guarantees hundred days of wage employment in a financial year, to a rural household whose adult members volunteer to do unskilled manual work.
- Individual beneficiary oriented works can be taken up on the cards of Scheduled Castes and Scheduled Tribes, small or marginal farmers or beneficiaries of land reforms or beneficiaries under the Indira Awaas Yojana of the Government of India.
- Within 15 days of submitting the application or from the day work is demanded, wage employment will be provided to the applicant.
- Right to get unemployment allowance in case employment is not provided within fifteen days of submitting the application or from the date when work is sought.
- Receipt of wages within fifteen days of work done
- Variety of permissible works which can be taken up by the Gram Panchayats
- MGNREGA focuses on the economic and social empowerment of women
- MGNREGA provides “Green” and “Decent” work.
- Social Audit of MGNREGA works is mandatory, which lends to accountability and transparency
- MGNREGA works address the climate change vulnerability and protect the farmers from such risks and conserve natural resources.
- The Gram Sabha is the principal forum for wage seekers to raise their voices and make demands. It is the Gram Sabha and the Gram Panchayat which approves the shelf of works under MGNREGA and fix their priority.
- Since MGNREGA ensures the rural households’ right to work with dignity,

facilities like drinking water, First Aid, Shade, Crèche for children accompanying women worker are to be mandatorily provided at all worksites

- All wages are to be paid through Bank accounts /Post Office accounts
- Job cards and Post Office /Bank pass books are essential documents and are to be kept with the households without handing over to any other intermediary

Uniformity in messaging should be ensured, for better results. The key messages which are disseminated across the country in different languages should contain uniform elements. Uniformity in message would help to increase awareness level and more visibility of the Act which leads better identification of MGNREGA by name, among literates and illiterates.

Specific Actions: In operational guidelines of MGNREGA (2013) specific actions are listed for states, districts, blocks and GPs to disseminate key messages of MGNREGA properly. These are as follows:

- All States should develop an IEC Plan on MGNREGA with focus on reaching out to the registered workers as well as other groups which could benefit from MGNREGA. The IEC plan should clearly indicate State, District, Block and local level activities. Creative mix of interpersonal communication methods, mid media and mass media need to be evolved to disseminate the chosen
- messages. The State Public Relations Department as well as publicity and extension units of different departments like Agriculture, Social Welfare, Education, and Health & Family Welfare of both State and Central Govt. should be actively involved in the planning as well as in implementation stages to achieve maximum spread of the key messages. Special communication strategies targeting women, small and marginal farmers, BPL families, scheduled tribes, scheduled castes and other extremely disadvantaged groups should be undertaken to ensure their greater participation in MGNREGA works.
- Civil Society Organisations (CSO) can play a major role in creating awareness about rights and entitlements as well as mobilizing workers. These CSOs can be engaged for support and strengthening of IEC activities to eventually ensure that wage seekers are able to secure their rights, entitlements, demand work and demand wage payments on time.
- For awareness generation all State Governments will undertake intensive and regular IEC drives using different media to publicise the key messages and key provisions of MGNREGA to various stake holders. More intensive campaigns shall be done in migration prone areas in advance of and during migration months. It is very important to standardize the key messages

across all media, including interpersonal communication methods to avoid confusion and to ensure clear understanding.

- Studies show that interpersonal communication (IPC) methods are the most effective methods to create awareness among grass root level communities and induce behavior change among them, when compared to mass media and mid media methods. While planning IEC activities, State can earmark more activities with IPC methods.
- Cost effective media interventions like puppet shows, folk dance and songs, street plays, focused group discussions, participatory games, wall writings, posters, notice boards etc. can be used for dissemination of messages in rural areas.
- Youths need to be involved in the campaigns. Bharat Nirman Volunteers (BNV) can be catalysts for campaigns at grass root level.
- All efforts are to be taken to identify the communication need of each target group. But basic focus should be on workers, people's representatives, panchayat level officers, block level officers, district level officers and secondary stakeholders like public opinion leaders and media personnel.

Modes of Communication: Few modes of communication are also referred in the Operational Guidelines of MGNREGA (2013). These modes of communication are accepted to be useful for disseminating key messages. These are

- ***Project initiation meetings*** must be held not only to discuss the details of work but also to explain them about the entitlements of the workers and the expected benefits of the work very clearly. While intensive communication should precede the introduction of the Act, communication is also an integral part of the implementation process, aimed at making this legislation a 'People's Act'. The effectiveness of the communication process will be evident in the extent to which people who need work under this Act register and apply for work. Other signs of successful communication include the active involvement of local communities at every stage; prompt grievance redressal, vigilant social audits by the Gram Sabhas, and wide use of the right to information.
- ***Use of help lines and rural common service centres*** can be utilized for communication with various target groups.
- ***Wall Paintings:*** One of the most effective and popular methods to raise awareness among the people is through wall painting which may be given utmost importance as tool for the dissemination of knowledge related with MGNREGA. Details of MGNREGS can be exhibited in all the offices of Panchayats and other offices which are frequently visited by the common people. Also, anganwadis and schools, fair price shops could be utilized for

this purpose. Templates for wall writings will be shared by MoRD with the States whenever national level campaigns are realized.

- **Door to door contact Programme:** Social mobilization and awareness generation should be carried out through door to door contact campaign.
- **Schools and colleges:** Activities like interactive sessions on MGNREGS and quiz competitions targeting schools and colleges would be useful.
- **Village libraries:** These should be provided with copies of MGNREGS Guidelines, local labour budgets and performance data from time to time.
- **Engagement of Bharat Nirman Volunteers and Nehru Yuva Kendra:** In the process of raising awareness and contacting people State Governments may engage volunteers of Nehru Yuva Kendra and Bharat Nirman Volunteers to mobilize Gram Sabhas and PRIs.
- **Engagement of SHGs:** Members of SHGs, many of whom themselves may be beneficiaries of MGNREGA can be engaged for the mobilization of workers and to educate them on their rights and entitlements.

Communication Management levels: National/State/District/Block/GP

IEC activities need to be executed from various levels. Roles to be played at different levels are different, when it comes in terms of IEC management of MGNREGA. While at National level, policies and strategies are formulated, and IEC management is being monitored, States implement the proposed plan, and at the grass root level, functionaries and partners realize the activities envisaged under each plan.

The prime responsibilities of various levels are mentioned below:-

National level

- Communication need assessment
- Developing key messages
- Development and upgrading of IEC/BCC strategy
- Developing visibility plan, branding strategy and indicative media buying plan.
- Developing Annual IEC plan (National and State level) and approving the same
- Monitoring the implementation of IEC plan (National and State level)
- Empanelment of creative agencies
- Sharing the guidelines for creative agencies with the States and monitoring

- Conceiving and implementing national level mass media campaigns
- Developing various IEC products based on key messages and sharing it with States
- Rolling out the grass root level versions of those campaigns
- Developing BCC products on a set of communication gaps assessed
- Probing the possibilities of convergence with Govt. of India organisations like Song and Drama Division, DAVP, PIB, FPB, NYK, JSS, NLM, BNV etc for being partnered in IEC activities at State level and grass root levels. Developing an action plan for each department.
- Capacity building of States on IEC management
- Capacity building of States on how MGNREGA works address the vulnerability and protect the environment from the issues related to climate change, and how IEC activities can encourage the States taking up such works of MGNREGA.
- Best practice documentation and dissemination

State level

- Doing Communication need assessment (Only if necessary)
- Developing State specific key messages
- Developing the IEC plan as sharing it with the MoRD, and later implementing the approved plan.
- Empanelment of creative agencies, folk agencies etc based on guidelines of the Ministry
- Adaptation of IEC materials and BCC tools developed by the MoRD as part of the comprehensive IEC strategy
- Rolling out the grass root level campaigns
- Convergence activities with GOI organisations like Song and Drama Division, DAVP, PIB, FPB, NYK, JSS, NLM, BNV etc as per the action plan developed for each department.
- Capacity building of blocks and GPs on IEC management
- Monitoring and evaluation
- Best practice documentation and dissemination

District

- Understanding the district level priority messages, relevant media for dissemination and proposing the State to include these in the yearly IEC plan
- Implementing the IEC and BCC plan as shared by the State
- Identifying the areas where activities are to be done
- Monitoring the blocks for implementation of the plan
- Identifying best practices and sharing those

Block

- Understanding the block level priority messages, relevant media for dissemination and proposing the district to include these in the yearly IEC plan
- Implementing the IEC and BCC plan as shared by the State/District
- Identifying the areas where activities are to be done

GP

- Understanding the GP level priority messages, relevant media for dissemination and proposing the block/district to include these in the yearly IEC plan
- Implementing the IEC and BCC plan as shared by the State/District/Block
- Identifying the areas where activities are to be done
- Taking leadership and ownership to implement the programme
- Identifying best practices and sharing those

MGNREGA with its inter-sectoral approach opens up opportunities for convergence with different programmes. So IEC activities of MGNREGA are now being converged with the IEC activities of other Ministries, departments and organizations those have a good impact on grass root level. IEC activities at the field level of MGNREGA are being aimed to brand the service and as well as the act. An internal study done by All India Radio during 2008 shows that only 47% of the respondents could identify the Act by name. This shows the need of focused brand building activities at the grass root level. Mahatma Gandhi NREGA has a strong ICT (Information and Communication Technology) enabled Management Information System. All the data is available on the website; www.mgnrega.nic.in. Biometric enabled ICT based Mahatma Gandhi NREGA processes are being made operational.

Strategy revisited: MoRD of GOI was conducted an Impact Assessment Study of IEC Activities on MGNREGA in February, 2011. IEC Division of the MoRD had carried out a special campaign on Television to popularize and create awareness about MGNREGS through the two visuals namely “Hindustan Ki Guarantee” and

“ZamanaKehtaHai”. So the objective of Impact assessment study of IEC activities on MGNREGA was assess the reach, efficacy and of these two spots in the three identified States i.e. Bihar, Rajashtan and Uttar Pradesh and also the National Capital Region. The sample size was pre-determined as 3600 households, spread over there states but 3593 households as sample could be obtained. Majority of the sample houses belong to APL families because exposure to TV was one of the criteria for selection sample. About two fifths of the sample of 3593 households belongs to SC category. The study is found very effective to understand the media habits of the rural people and efficacy of the MGNREGA messages disseminated through various media. The findings of this study pointout the limited penetration of TV among the BPL households who are the core target group of MGNREGS. The study finds a detailed analysis of the different media available for communication of messages, their reach, preferences of the target group regarding the various forms of presentation, profile of the households etc is needed to arrive at proper conclusions to decide the impact of IEC activities .The study proposes that IEC campaign should be organized in the village level. If the village headmen address the crowd, they listen to them attentively and with due respect. Further the headmen also use the local language and also know how to capture the moods of their fellow villagers. It also recommends campaigns in local dialects and idiom through other forms like puppet shows and folk songs. The study echoes the findings of PrasarBharati in 2009.

Impact Assessment Study conducted by PrasarBharati during 2009 reveals that for 61.6% of the population Interpersonal Communication (IPC) methods have served as the primary source of information about MGNREGA. Besides that, folk-media or mid media and mass media have played an important role as source of information.

Keeping in mind these recommendations MoRD suggests that IEC activities plan should be prepared as 50% of the IEC budget shall be focusing on IPC methods. While 30% of the budget will be used for Folk media or Mid-media and the mass media activities can be limited to 20% cost of the budgetary allocation.

In the year 2012-13, Rs 43 crore was sanctioned for IEC activities. From the sanctioned budget 35.00crore was sanctioned for Management Support to Rural Development Programmes and Strengthening District Planning Process and 8.00 crore under other programmes. For MGNREGA the budgetary allocation was 5.00 crore which was the highest among all programmes.

Conclusion

The importance of the role of communication for national development was recognized in India from the independence. The Indian Govt. while formulating policies for National Development for Independent India set up a Sub-committee on Communication under the National Planning Committee to offer

recommendations for development of communication for independent India. After independence of the country in 1947, the new Indian government announced a development-oriented agenda of governance dedicated to the amelioration of the economic, educational, and health conditions of the people. With the target of Development Communication, the new government adopted the recommendations of the erstwhile National Planning Committee as the mainstay of its communication policies. Famous development communication expert Wilbur Schram visualized the power of mass media for development and he guided the development communication initiatives which were mostly through mass media, of India on invitation of our government. But these mass media approaches could not bring desired result and change. As far as development is concerned, there has been a wide production and dissemination of information in India, related to various schemes and programmes. But most of them suffer from extreme transmission loss. Schram also revised his opinion and his later observation pointed out the futility of utilizing mass media as dominant media in rural population. India followed Western approach of media usage in development and such strategy failed in villages due to absence of cultural sensitivity and ownership. Communication for development needs to have certain values which are often absent in mass media based communication strategy and action. Indian communication approach is predominantly Inter Personal and Group Communication. India had realized the power of Inter Personal and Group communication from the ancient time. Even today we find that the Indian Society is predominantly rural and following its social norms. In the past years IEC activities mainly were carried out in a centralized manner primarily through mass media like Radio, TV, Press Advertisements. But there has been a sea change in the approach to the developmental issues in our rural areas. More and more programmes and schemes of the MoRD have become right based and demand driven in nature aiming at holistic coverage. From the year 2011-12, MoRD has adopted a highly decentralized IEC strategy with emphasis on community based mobilization and interpersonal communication directly targeting the rural households through a cadre of village based volunteers known as Bharat Nirman Volunteers. MGNREGA is a landmark legislation aimed at strengthening livelihood security for the rural poor. The Act prescribed the MGNREG programme which is the largest wage employment programme in the world. It is also the only wage employment programme which is derived from legislation. This programme has the potential to transform the lives of millions of rural poor by guaranteeing wage employment through the creation of productive assets. Recent studies indicate that programmes under MGNREGA have reduced distress migration from poor regions, provided secure incomes for women, supported agricultural wages and increased incomes for wage workers who are arguably amongst the poorest in the country. Effective and efficient implementation of MGNREGA is possible only by developing innovative participatory approaches and systematic methodologies for impact analysis. The IEC strategy, developed to disseminate key messages of act is not flawless. There are many contradictions.

The success of such massive training programmes for the stakeholders is under a big question. But it is true that the strategy is definitely unique in its nature and is expected to be fruitful in creating awareness among rural people.

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19

Status of Women: Power Empower Welfare and Development in India

Sashi Sekhar Biswal

A nation without mother! A child without mother! Felicity of child without mother! The mother is undoubtedly the object of the greatest reverence for her son. Her superiority over all other women in the world is admitted and all the religions give her highest position. There is no country or race which does not recognize her sanctity and greatness. Mother is ever respected by the every society. How greatly the Greeks respected their mothers is evident from the sentiments expressed by Alexis who says, "God reveals Himself to us in the mother more than in anything". Vasistha says, A father who is an out caste may be abundant but a mother is never an out caste to the son. In the Hindu epic Mahabharat says "the mother excels the father in greatness and in the whole universe there is no preceptor like her" and in the Ramayan, Purusattam Ramachandra uttered a shloka "Janani Janma-bhoomi-scha Swargadapi Gariyasi". This Sanskrit verse can be translated as "*Mother and motherland are superior to Heaven*". The word *Janani* refers to "*Mother*" (*one who gives birth*) who is opposite of father or male human being (Man).

India has always held women in high esteem and in no literature in the world do we come across stronger, purer and nobler thoughts of womanhood as we do in that of India. Half of the divine Being has been incarnated as women, and this half is dedicated to creativeness, to building of forms and to the nourishing and guarding nature is love, compassion and feeling as intellect or reason is that of the other half, the man.

Concept

The Etymology states from Old English, *wifman* meant *wife* (female or woman) *plus* and *man* human being, man” before 12 Century. The medial labial consonants ‘f’ and ‘m’ in *wifman* coalesced into the modern form “woman”. Here ‘human’ is a gender neutral and female is opposite of male consequently woman opposite of man. So, it has been absolved that female human is called as Woman. Nature has differentiated the sexes. In spite of this fact, or rather because of it, women is a human being and hence at the apex of the living species. As a human being there are more similarities than dissimilarities between man and woman, which fact is usually overlooked. The impact of dissimilarities has been too heavy on womanhood. The word ‘Sex’ has also been used in scientific approach to define one another. In this aspect “Sex” refers to the biological and physiological characteristics that define men and women. In Sanskrit literature ‘Nara’ and ‘Nari’ refers to Man and Woman respectively. The word *woman* can be used generally, to mean any female human, or specifically, to mean an adult female human as contrasted with *girl*. The word *girl* originally meant “young person of either sex” in English. It was only around the beginning of the 16th century that it came to mean specifically a *female* child. The term *girl* is sometimes used colloquially to refer to a young or unmarried woman; however during the early 1970s feminists challenged such use because the use of the word to refer to a fully grown woman may cause offence. In particular, previously common terms such as office girl are no longer widely used. Conversely, in certain cultures which link family honor with female virginity, the word *girl* is still used to refer to a never-married woman; in this sense it is used in a fashion roughly analogous to the obsolete English *maid* or *maiden*. Time to time on the name of culture, tradition and science the male and his opposite which is called as female human as a woman being changed and there are various words used to refer to the quality of being a woman. The status, position and condition women in India have been changed gradually and progressively from ancient to modern.

The concept of the female in Hinduism presents an important duality: on the one hand, the woman is fertile, benevolent-the bestower; on the other she is aggressive, malevolent-the destroyer. A popular statement characterizes the goddess in all her manifestation thus: ‘in times of prosperity she indeed is Lakshmi, who who bestows prosperity in the homes of men; and in the times of misfortune, she herself becomes the goddess misfortune and brings about ruin. The female is first of all *sakti* (energy/power), the energizing principle of the universe. The female/woman is also *Prakriti* (Nature)-the undifferentiated Matter of the universe. The Hindu notion divinity rests upon that *sakti* greater power is what distinguishes gods from men. So, *sakti* underlies both creation and divinity; and *sakti* is female. Therefore, all creation and all power in the Hindu world is based on femaleness-there would be no being without energy/power. The universe is the union of the *Prakriti* and *Purusa* and created this world. *Purusa* is the provider of the *Spirit* which is a

structure code. Purusa is code as opposed to prakriti which is nature (undifferentiated Matter). Thus, union of Spirit and Matter, code and non code, inactive and active, leads to the creation of the world with all of its differentiated life forms. No life exists without both *Matter* and *Spirit*; *Prakrit* and *Purusa* are in all.

Women Power

Power is not a commodity to be transacted. Power cannot be given away as alms. Power has to be acquired. Once acquired, it needs to be exercised, sustained and preserved. Men and Women were created after the image and likeness of God. This equally stands solemnly inscribed in the first page of the Bible. 'In the Indian way of thinking, a human being is a positive asset and a precious national resource which needs to be cherished, nurtured and developed with tenderness and care coupled with dynamism'. Human resources and specially the women power need to be assigned key role in any development strategy. Women become an asset in accelerating social, cultural, political and economic growth in the history of era.

Literary and historical researches claim that women held a position of equality in almost all spheres of life in the early Vedic period (2500-1500 B.C.) Degradation started in Brahmanic period (1500-500 B.C.) and it was during the period of Sutras and Epics (500 B.C.-500 A.D.) that the position of women deteriorated to a great extent due to previous socio-political factors, foreign invention and misinterpretation of the old religious text. This situation continued in the period of later Smriti (500 A.D-1800A.D.)

Ancient India

Ancient period in India marks the dawn of our civilization. Dawn means the freshness of mind. It is the time of day break covered with the golden rays of the early morning sun signifying joy and hope. The dawn of our civilization also present the same picture of freshness, joy and the same golden hope. Human behavior and thinking had not set to a specific pattern. There was scope of novelty and a verity. Social organization had not yet become rigid and stagnant. It was amenable to changes according to the needs of times and circumstance. We have also to consider the question of determining the time of the beginning of our civilization. The worth of a civilization can be judged from the position that it gives to women. Of the several factors that justify the greatness of India's ancient culture, one of the greatest is the honoured place ascribed to women. There are certain milestones of our civilization. In the light of these milestones, our ancient civilization is said to have begun from the Vedic period so far. The Vedic Period can be placed before five thousand years that is from 2500 B.C. to 1500 B.C. This is followed by the Upanishad period which is also said to have lasted for a thousand years that is from 1500 B.C. to 500 B.C. The women of ancient India would mean the women of the Vedic and the Upanishad period.

Manu in his Manusmriti, who was the first to codify the laws in India, also writes about this, "Where women are verily honored, there the gods rejoice. Where, however, they are not honored, there all sacred rites prove useless." In addition, he further declared: "In whatever house a woman is not duly honored, that house, with all that belongs to it shall utterly perish."

Women in Vedic Age

It is popularly known through the Rig Veda that some women themselves were Brahnavddinis (they remained lifelong students). Women in those times were considered as prophets. Prominent among them are Ghosa, Apala, Visvavara. Certain Vedic mantras make the glorious position, accorded to a woman in the house-hold very clear. The Rig Veda considered the wife as a haven of rest. Considerable liberty was enjoyed by women in the Vedic Period. The wife had the complete control over the servants, unmarried brothers and sisters of the husband and actually over the whole establishment. Further, in Vedic texts there are references to women publicly attending feasts, dances, and other festive gatherings.

Women in the Epic Age

From the two great epics, it has been found that even in the epic age women enjoyed a respectable position. Like for instance, the Mahabharata asks a man to treat his wife with great kindness even if he is extremely angry. A man is not supposed to use cruel words to her, as because a person himself is born as his son; so it is expected from him that he should treat his wife with the same regard as he shows towards his mother. Further, in another context of this great epic, it is stated that one's wife is one's friend at the time of death; which means that though a person may have many friends but his wife is the real friend in his difficult times. In another passage, women are said to be honourable. It was believed that by dishonouring or neglecting a woman one honours or disregards Goddess Laxmi.

The women enjoyed a high position in the age of the Upanishads. It is borne out by the story of Yajnavalkya and Maitreyi in the Brhadaranyaka Upanishad. She is allowed to participate in the intellectual activities of the society. In the same Upanishad, there is the mention of Gargi asking difficult questions. Thus, it makes clear that even the highest modes of education were open to women in the ancient age. In Chandogya Upanishad, it is mentioned that that women were looked upon with great regard. That they were initiated to Vedic studies like men is proved by Gobhila Griha Sutra that uses the word yajnopavltini (a woman wearing the sacred thread). Yama too, states that women are allowed to the upanayan ceremony. From certain ancient works, for example Gobhila Grhya Sutra and Kathaka Grhya Sutra it has been learnt that women were allowed to recite Vedic mantras.

Women in Puranic Age

Position of women in the age of Puranas was very respectable. It is in the Puranic age that women enjoyed considerable liberty in the performance of religious rites. The Smṛti debarred them from reciting Vedic mantras, and performing various rites which were the exclusive preserve of men only. It has been stated in literary works that among all castes, the wife should be protected even at the cost of prosperity. If a girl be not married within a reasonable time by her guardian, she is allowed to choose her husband. The custodian of a girl is frequently asked not to give a girl in marriage with an undesirable person. Though the marriage of a girl was compulsory before puberty, yet if an appropriate match was not available, she was allowed to remain at her father's house even till death.

Women in Indo-Aryan Society

Aryan-Vaishnavism (Hinduism) is the most oppressive system on record in its suppression of women. From conception to death, woman had to suffer in uncountable ways. Ancient India failed to establish women power and the later were deprived of equal opportunity with men not only in worldly matters such as inheritance and succession, but also in societal status as well as spiritual practices. Further, in ancient Indian societies, women were believed to be given a low position even within the family. Thus, the status of women in ancient India can be properly examined with reference to authoritative works in Sanskrit literature and those in the Indo-Aryan.

Some historians preach that ancient India witnessed of women being treated equal to men and in fact they were measured superior to men in many aspects. It is indeed incredible to note that the word for strength, virility and power in Hindu culture is represented by the "Shakti". Shakti is the all customary universal materialization of the feminine and she is worshiped as the goddess of potency, valour and clout in Hinduism. All male authority is said to be a derived plagiarism from this universal power and strength of the feminine principle. As per Hindu Mythology and literature kings and towns were utterly smashed because a single woman was wronged by the state or the people in power. Examples are Ravana in the epic called Ramayana and the Kauravas in Mahabharata.

Medieval India

Medieval period was not a comfortable place for most women. Women invariably had a hard time in an era when many men lived harsh lives. A few women lived comfortable lives but medieval society was completely dominated by men and women had to know 'their place' in such a society.

Medieval society would have been very traditional. Women had little or no role to play within the country at large. About 90% of all women lived in rural areas and were therefore involved in some form of farm work. Within a village, women

would have done many of the tasks men did on the land. However, they were paid less for doing the same job. Within towns, society would have effectively dictated what jobs a woman could do and her role in a medieval village would have been to support her husband. As well as doing her daily work, whether in a town or village, a woman would have had many responsibilities with regards to her family. In medieval towns, women would have found it difficult to advance into a trade as medieval guilds frequently barred women from joining them. Therefore, a skilled job as recognized by a guild was usually out of reach for any woman living in a town. Within towns, women were usually allowed to do work that involved some form of clothes making but little else.

The law, set by men, also greatly limited the freedom of women. Women were not allowed to marry without their parents' consent. They could not own business with special permission not allowed to divorce their husbands could not own property of any kind unless they were widows could not inherit land from their parents' if they had any surviving brothers

Girls from richer families tended to marry earlier than girls from poor families. Many women from rich backgrounds would have married when they were teenagers where poor families did not get married until they were in their twenties. The poorer families needed as many working for them as was possible, so a daughter getting married at an early age would have deprived them of a worker. This was not true for a rich family. Girls had no choice over who they married and many girls from rich families were usually married to someone as a political gesture or because it was an advantage to the girl's family itself - as opposed to what the girl herself wanted. Once married, the young lady came under the control of her husband. Wives from a rich family usually did not look after their children. This was done by a wet nurse. Women from a poor family not only had to look after the children but had to continue doing her day-to-day work both in the home and on the land. Many women from poor families did not live past the age of forty.

Modern India

Women in modern India have largely been influenced by the programs of reform and upliftment which brought about a radical change in their position. Before the advent of British rule in India, the Indian women were in a quite a deplorable social condition with a number of oppressive rules being thrust upon them by society. With the various reform movements and a gradual change in the perception of women in society, there was seen a radical transformation in the position of women in modern India. They now emerged as educated, socially aware, competent "new women" with a strong sense of their individuality and increasingly looking towards newer avenues for self expression.

Women in Pre-Colonial India

Before the coming of the British in India the life of Indian women was rather oppressive, and they were subject to a constant process of subjugation and social oppression. The woman's youth was spent in the preparation of marriage and her entire life was one dependant on the male members of her family. Added to this were various repressive social customs such as Sati, child marriage, polygamy, lack of proper education and her confinement to the household. Historically, women experienced these rules and prescriptions differently depending on religion, caste, class, age and their place in the family hierarchy. Though a few women became educated, attained fame, and commanded armies, most were denied men's opportunities to acquire knowledge, property, and social status.

Women in the British

The status of women has been a matter of much debate and varied opinions during the British period. During the British rule, a number of changes were made in the economic and social structures of Indian society, and some substantial progress was achieved in elimination of inequalities between men and women, in education, employment, social rights etc. By the second half of the nineteenth century women in India suffered from disabilities like, sati, female infanticide, child-marriage, practice of polygamy, sale of girls for marriage, Purdah System, prohibitions on female education, Devadasi (temple dancers wedded to the gods), and the patriarchal joint family.

The constant works of the Indian reformers such as Ram Mohan Roy, who were trying to elevate the status of Indian women, and the renewed efforts by British reformers, there was seen a gradual change in the position of women in modern India. He was an Indian religious, social, and educational reformer who challenged traditional Hindu culture and indicated the lines of progress for Indian society under British rule. He is called the "*Maker of Modern India*" and also as "*Father of Modern India*". He is also regarded as the "Father of the *Bengal Renaissance*". He is known for his efforts to abolish *sati* (The first enactment passed by British government in India was Sati-Pratha Abolition Act 1929), the Hindu funeral practice in which the widow immolated herself on her husband's funeral pyre, child marriage (Child Marriage Restraints Act 1929) and raised voices against Purdah System too, and fought for the right of inheritance for women. *Ishwar Chandra Vidyasagar* launched a movement for the right of widows to re-marry and also pleaded for educating women. *Maharaja S. Rao, ruler of Baroda State* worked for prevention of Polygamy and getting the rights of education to women, and the right of re-marriage to widows. *Swami Vivekananda, Annie Besant, and Mahatma Gandhi, Swami Dayanand Saraswati* also took interest in the social and political rights of women. *Gandhiji* was of the opinion that, women should labour under no legal disability. He was in favour of treating daughters and sons on an equal footing.

Gurudev Rabindranath Tagore a poet, writer, novelist, composer and philosopher worshipped by millions - was also a man heavily influenced by the fascinating women who were part of his life. Through his novels and Plays brings out the problems of the women of his age. For this purpose he makes women the protagonists in almost all his novels. He tries to focus the attention of the society on the major problems of the women such as-

- (i) The struggle of the modern educated young women for equality and freedom in the male-dominated conservative society.
- (ii) (ii) The plight of widows in the joint families who are economically exploited and prevented from remarrying.
- (iii) (iii) The complications that arise in the family set up when the modern women participate in the freedom struggle.

In 'Personality' and 'Creative Unity', Tagore has given us essays titled 'Women' and "Women and Home" respectively and in them, Tagore not only suggests alternatives but also supplies us with accurate reasons why social harmony happens to be the key for resolving issues right from the domestic to the international level. The core ideas that are built up in the two essays that to categorically outline the key concepts that primarily revolves round that-

- Female Self: A creative power (Shakti or Devi).
- Female responsibility and equality: Artists not Artisans
- Feminist Ethic: humanity, stability, inner potentiality, vitality and growth, sensibility.
- Female differences: biological and psychological
- Female ideas: loves's mission truly performed.

Independent India

Pandit Jawaharlal Nehru once remarked that "you can tell the condition of a nation by looking at the status of its women". The independent India has been given a special the status to the women. The constitutional rights (right is a claim recognized by a society or guaranteed by the state) and act has been enacted by the state to invoke their power which are enabling them for self development and to participate in the nation's development mechanism. The framers of the constitution were carefully embodied in the preamble to the constitution of India to promote social, political, economic liberal and ethical values and to provide justice of individuals and general welfare. The Preamble of the Indian Constitution briefly crystallizes and solemnly declares we, the People of India, have solemnly resolved to constitute India into a "Sovereign Socialist Secular Democratic Republic" and to secure to all its citizens:

Justice, social, economic and political;

Liberty, of thought, expression, belief, faith and worship;

Equality of status and of opportunity; and to promote among them all

Fraternity assuring the dignity of the individual and the unity and integrity of the Nation;

In recent years the concept of “empowerment” was modified to include “the power in plural form as “powers”. This “powers” approach was picked up by several feminist bodies and development NGOs which have argued that empowerment process should be broken down in four levels of power – power over, power to, power with and power within. The some special fundamental rights and acts of the Indian constitution has declared for women to bring power equally refer to position of men as follows-

- Article 14: Equality before law
- Article 15: Prohibition of Discrimination on ground of religion, sex, race, caste and place
- Article 16: Equality of Opportunity in matter of public employment
- Article 23: Traffic in human beings and beggar and other similar forms forced labour/ Right against Exploitation
- Article 39: The Citizens, men & women equally have the right to an adequate means to livelihood
- Article 39 (a): Men and Women, Equally have the right to an adequate means of Livelihood
- Article 39 (c): Ensure that women are not exploited to their age and strength.
- Article 39 (d): Equal pay for equal work for both men and women
- Article 39(e): ‘protection of the health and strength of workers – men, women and children from abuse and entry into a vocations unsuited to their age and strength
- Article 42: just and humane conditions of work and maternity relief’
- Article 45: Provision for free and compulsory education for all children until they complete the age of fourteen years
- Articles 325 and 326: Franchise without distinction of sex

The Constitution of India lays that an Indian Woman will function as a citizen and as an individual partner in the task of nation building whatever her social position role or activities may be. While motherhood is an important function, the constitution implies that this is not the ‘only role’ for women of India. There are so many other roles for the Indian Women as a partner in the nation building.

- **Immoral Traffic Prevention Act (ITPA) 1956:** The Immoral Traffic (Prevention) Act or PITA is a 1956 amendment of legislation passed in 1956 as a result of the signing by India of the United Nations' declaration in 1950 in New York on the suppression of trafficking. The act, then called the All India Suppression of Immoral Traffic Act (SITA), was amended to the current law. The laws were intended as a means of limiting and eventually abolishing prostitution in India by gradually criminalizing various aspects of sex work.
- **Maternity Benefit Act 1961(Amended in 1995):** The object of maternity leave and benefit is to protect the dignity of motherhood by providing for the full and healthy maintenance of women and her child when she is not working. With the advent of modern age, as the number of women employees is growing, the maternity leave and other maternity benefits are becoming increasingly common.
- **Dowry Prohibition Act 1961:** Any property or valuable security given or agreed to be given either directly or indirectly- (a) by one party to a marriage to the other party to the marriage; or (b) by the parents of either party to a marriage or by any other person, to either party to the marriage or to any other person, at or before (or any time after the marriage) (in connection with the marriage of the said parties, but does not include) dower or mahr in the case of persons to whom the Muslim Personal Law (Shariat) applies.
- **Medical Termination Pregnancy Act (MTPA) 1971:** All the restrictions imposed therein, including the time limit of 20 weeks, other than the ones to ensure good medical conditions, infringe the right to abortion and the right to health, which emanate from right to life as guaranteed by Article 21 of the Constitution. Any law forbidding an abortion under good medical conditions is immoral and in addition unconstitutional, for it violates her right to control her property - her body as well as her life, liberty and happiness.
- **Equal Remuneration Act 1976 (Amendment 1987):** Duty of employer to pay equal remuneration to men and women workers for same work or work of a similar nature. No discrimination to be made while recruiting men and women workers.
- **Criminal Law Act 1983 (Amended 2013):** To protect women who have been victims of rape or assaults on their modesty was highlighted and severely criticized.
- **Muslim Women's Protection Act 1986:** An Act to protect the rights of Muslim women who have been divorced by, or have obtained divorce from, their husbands and to provide for matters connected therewith or incidental thereto.

- **Sati Prevention Act 1987:** The Commission of Sati (Prevention) Act, 1987 by Government of India in 1988. The Act seeks to prevent Sati practice or the voluntary or forced burning or burying alive of widows, and to prohibit glorification of this action through the observance of any ceremony, the participation in any procession, the creation of a financial trust, the construction of a temple, or any actions to commemorate or honor the memory of a widow who committed sati.
- **73rd and 74th Constitutional Amendment Act 1992:** Not less than one-third of the total membership has been reserved for women (in both reserved and general category) and these seats may be allotted by rotation to different constituencies in a Panchayat. Similar reservations have been made in respect of the office of the chairperson also.
- **Pre Conception and Pre-Natal Diagnostic Technologies Act (PNDTA) 1994:** An Act to provide for the prohibition of sex selection, before or after conception, and for regulation of prenatal diagnostic techniques for the purposes of detecting genetic abnormalities or metabolic disorders or chromosomal abnormalities or certain congenital malformations or sex-linked disorders and for the prevention of their misuse for sex determination leading to female foeticide; and, for matters connected therewith or incidental thereto.
- **Protection of Women form Domestic Violence Act 2005:** An Act to provide for more effective protection of the rights of women guaranteed under the Constitution who are victims of violence of any kind occurring within the family and for matters connected therewith or incidental thereto.
- **Protection of Women against Sexual Harassment at Work Place 2007:** An act to provide for prevention and redresses of sexual harassment of women at workplace and for matters connected therewith or incidental thereto. No woman employee at a work place shall be subjected to sexual harassment including unwelcome sexually determined behavior, physical contact, advances, sexually coloured remarks, showing pornography, sexual demand, request for sexual favours or any other unwelcome conduct of sexual nature whether verbal, textual, physical, graphic or electronic or by any other actions.

Women and Empowerment

Women empowerment is a new phrase in the vocabulary of gender literature. The phrase is used in two broad senses i.e. general and specific. In a general sense, it refers to empowering women to be self-dependent by providing them access to all the freedoms and opportunities, which they were denied in the past only because of their being women. In a specific sense, women's empowerment refers to enhancing their position in the power structure of the society. The word women empowerment essentially means that the women have the power or capacity to

regulate their day- to- day lives in the social, political and economic terms -a power which enables them to move from the periphery to the centre stage.

Empowerment is an active process. Education is like fuel for the mechanism of development and empowerment because education makes active to the human being. Without education s/he is fully paralyzed in the society. Education is not only central to the process or of women empowers or progress but it essential for all round development of a nation. Once Nehru said "If you educate a man you educate an individual, however, if you educate a woman you educate a whole family. Women empowered means mother India empowered". Educated women not only tend to promote education of their girl children, but also can provide better guidance to all their children. Moreover educated women can also help in the reduction of infant mortality rate, maternal mortality rate and growth of the population. It is true not only because education is an entry point to other opportunities, but also because the educational achievements of women can have ripple effects within the family and across generations. Investing in girls' education is one of the most effective ways to reduce poverty. Education of women can bring gender and other socioeconomic equality, changes quality of life and development of nation.

The modern India has always been attempted to create opportunity for women education. Jotiba Phule and his wife Savitribai Phule were pioneers of women's education in India. Mahatma Jyotirao Phule opened first a school for girls in India in August 1848. Bethune College is the first women's college in India at Kolkata. It was founded as a school in 1849 by John Elliot Drinkwater Bethune with supporters of Pandit Madan Mohan Tarkalankar, Ram Gopal Ghosh, Raja Dakshinaraman Mukherjee and other eminent personalities in his effort to promote women's education. Later, in 1879 developed into the first women's college in India, after whom it is named as Bethune College. In 1878, the University of Calcutta became one of the first universities to admit female graduates to its academic degree programmes, before any of the British universities. In 1920 the university Shreemati Nathibai Damodar Thackersey Women's University was established at Mumbai in India as first Women University for the progress of women's higher education.

Women Welfare and Development

The multifaceted word development has been a dominant theme is not only sociology or economics but also social science literature since the days of antiquity. Social thinkers like Kautilya and others have assumed that development is the most fundamental and primary social fact. Development needs association of basic things of human beings which can leads optimum utility or needs completeness for happiness. The optimum utility or happiness is forced to opportunity and functioning of capability. The opportunity and function of capability of human beings should not be hindered their 'freedom'. Freedom leads the 'Well-

Beings' (Welfare) of the human beings. The freedom makes opportunity and functioning of capability. Welfare builds opportunity and more functioning of capability. Now a day's capability approach to development is very much popular and a significant dimension of all-round development of human beings. The welfare economist Prof. Amartya Sen views 'development as freedom of human beings (Freedom from social, economic, cultural and political facts) which can bring true happiness in human mind. Prof. Sen says *freedom* to achieve (real opportunity or capabilities) is most important in the process of functioning. Achievement judges the utility or consumption or quality of life (well-being) of a person. So, women welfare and development mostly depends on their freedom, functioning, capability and opportunity. There are a number of steps have been taken by the individuals, organizations and international bodies for the purpose of women welfare and development. Some of important organizations, institutions and departments are functioning for women welfare and development and also various programmes have been implemented for the same purposes by the union government i.e.-

- The International Council of Women (ICW) was the first women's organization to work across national boundaries for the common cause of advocating human rights for women. In March and April 1888, women leaders came together in Washington D.C. with 80 speakers and 49 delegates representing 53 women's organizations from 9 countries including India.
- Bharat Stree Mahamandal was the first women's organization in India founded by Sarala Devi Chaudhurani at Allahabad in 1910. One of the primary goals of the organization was to promote female education. The organization opened several offices in Lahore, Karachi (then part of undivided India), Allahabad, Delhi, Amritsar, Hyderabad, Kanpur, Bankura, Hazaribagh, Madnapur and Kolakata to improve the situation of women all over India.
- The National Council of Women in India was formed in 1925 as a national branch of the International Council of Women. Mehribai Tata was first chair of the Executive Committee of the Bombay Council. She urged men to support female education and freedom of movement for women.
- The All India Women's Conference (AIWC) is an organization based in Delhi. It was founded in 1927 by Margaret Cousins and Kamaladevi Chattopadhyay "as an organization dedicated to upliftment and betterment of women and children".
- The National Organization for Women (NOW) is an organization founded in 1966 was set up for the advancement of women.
- The Self Employed Women's Association (SEWA) was born in 1972 as a trade union of self employed women with the aim of developing unity, personality and strengthening capability of worker in the industry as well as in

home.

- The Department of Women and Child Development was set up in the year 1985 as a part of the Ministry of Human Resource Development to give the much needed impetus to the holistic development of women and children.
- The National Commission for Women was set up as statutory body in January 1992 under the National Commission for Women Act, 1990 (Act No. 20 of 1990 of Govt.of India) to review the Constitutional and legal safeguards for women; recommend remedial legislative measures, facilitate redresses of grievances and advise the Government on all policy matters affecting women.
- The National Mission for Empowerment of Women (NMEW) was launched by the Government of India (GoI) on International Women's Day (8th March) in 2010 with the aim to strengthen overall processes that promote all-round Development of women.

Welfare and Development Programmes

- Development of Women and Children in Rural Areas (DWCRA) introduced in 1982-83. The primary objective of the scheme is to focus attention on the women members of rural families below the poverty line to provide them the opportunities of self-employment on a sustained basis.
- Janani Suraksha Yojana (JSY) is a safe motherhood intervention under the National Rural Health Mission (NRHM) being implemented with the objective of reducing maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women.
- Rashtriya Mahila Kosh (RMK) was setup on 30.03.1993 with the objective to promote or undertake activities for the promotion of or to provide credit as an instrument of socio-economic change and development through the provision of a package of financial and social development services for the development of women.
- **National Mission for Empowerment of Women (NMEW):** It is a Centrally Sponsored Scheme sanctioned in April 2011 and acts as an umbrella Mission with a mandate to strengthen inter-sectoral convergence and facilitate the process of coordination of all the women's welfare and socio-economic development programmes across Ministries and Departments. NMEW is being implemented in all the 35 States and Union Territories.
- **Working Women's Hostel (WWH):** Scheme envisages provision of safe and affordable hostel accommodation to working women, single working women, women working at places away from their home-towns and for women being trained for employment.

- Support to Training and Employment Programme (Step): STEP for Women was launched during 1986-87 with aims to upgrade skills for self and wage employment among rural and urban poor of women. This also includes wage labourers, unpaid daily workers, female headed households, migrant labourers, tribal and other dispossessed groups, with special focus on SC/ST households, women headed households and families below the poverty line.
- Women's Empowerment and Livelihood Programme in Mid-Gangetic Plain (WELP) also called Priyadarshini is implemented in December 2009. It aims at holistic empowerment of vulnerable groups of women and adolescent girls in the project area through formation of Women's Self Help Groups (shgs) and promotion of improved livelihood opportunities.
- **Indira Gandhi Matritva Sahyog Yojana (IGMSY):** IGMSY is a Conditional Cash Transfer scheme for pregnant and lactating (P&L) women introduced in the October 2010 to contribute to better enabling environment by providing cash incentives for improved health and nutrition to pregnant and nursing mothers.
- **Swadhar Greh Scheme:** The Ministry of Women and Child Development had been administering Swadhar scheme since 2001 for Women in difficult circumstances. Under the Scheme, temporary accommodation, maintenance and rehabilitative services are provided to women and girls rendered homeless due to family discord, crime, violence, mental stress, social ostracism.

Conclusion

Status of women in India is vast, complex and dynamic. Manu, the great law-giver, said long ago, 'where women are honoured there reside the gods'. According to ancient Hindu scriptures no religious rite can be performed with perfection by a man without the participation of his wife. Wife's participation is essential to any religious rite. They are given not only important but equal position with men. We all agree that now women have: higher literacy and education, better care of health for herself and her children, better employment and greater work participation, better consciousness of their rights, independency (No dependency on male), higher standard of living and enjoy quality of life, etc. Women of India are now uplifted and emancipated and granted equal status with men in all walks of life-political, social, economic, domestic and education. They have a franchise, they are free to join any service or follow any profession. No distinction is now made in matters of education between boys and girls. Their voice is now as forceful and important as that of men but their number is very countable. After all better protective steps taken by the government, still women have lagged behind because of a verity of constraints. Women have been considered inferior to men in practical life. It is theoretically high but practically low. Women have been

prohibited to take part in domestic as well as in external matter. They were under the influence of their parents before marriage and their husbands after marriage. They are at present bound in a net work of social limitation affecting their whole lives and complicated by their own vulnerability and the fact of female poverty. The gains of economic development would be null and void and no improvement in the standard of life would be possible if women are kept out of the process of development. Change in their status can occur only as long term aspect of our social process and will require continuous examination and assessment. Hence there is an urgency in helping women towards gaining social and economic emancipation.

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20

From Women Empowerment to Entrepreneurship Development through SHG's Finding ,Observation and Analysis by Focus Group Discussions

Bikas Majhi

The Government of India introduced in 1999 'Swarnajayanti Gram Swarojgar Yojana' the largest national poverty alleviation programme is implementing to help the rural people to identify and promote viable micro-enterprise in rural areas. In fact, the SGSY based on the lessons learnt from the implementation of the former Integrated Rural Development Programme popularly known as IRDP. SGSY is conceived as a holistic programme with the objectives of establishing a large number of micro-enterprises in rural areas covering all aspects of self-employment such as organization of poor women into Self-Help Groups (SHGs), training, credit, transfer, infrastructure, technology, and marketing.¹

Self-Help Groups is a community based innovative approach emerged for growing habits of small savings and credit activities of women to develop their socio-economic condition with their own efforts and qualities. It is a common platform of inclusion of women for their all round development which legitimate new roles of women for their empowerment, own decision making and to address their common needs fulfillment, ensure social mobilization, growing need for integration with developmental activities to improve their quality of life as well as their social security.

¹<http://www.Ministry of Rural Development.org/guideline of SGSY/ Govt. of India/ 2008>

The Role of Women as Entrepreneur

The entrepreneurs plays key role to accelerate the process for economic growth and development of a country like India. Entrepreneurship is an activity that aims at starting, establishing and increasing the size of an enterprise that produces and sells goods or services in a market. It is a creative art. It involves an attitude that tries to find out opportunities and then drives benefits from them. The dictionary meaning says that entrepreneur is an organizer of an economic adventure especially one who organizes, owns, manages and assumes the risks.²

A women entrepreneur is responsible for setting up a business unit or an enterprise. In fact, she is a catalyst of change. It may be regarded that as innovative path finding process in which a woman is trying to establishing and increasing an enterprise that produces and sell goods or services in competitive market economy. Entrepreneurship development through self-help concept is the process to promote entrepreneurial skills and knowledge through orientation, training and capacity building in organized way to achieve the goal and objectives of entrepreneurship among the Self-Help Group members. Social Work discipline has very reach history of working with the Self-Help concept. Entrepreneurship development through group approach is recently getting momentum and new dimension explored in the field of empowerment of rural women particularly after successful experimentation of Grameen Bank by Md. Yunis in Bangladesh.

A women entrepreneur has following characteristics:

- A. A Women entrepreneur is an organizer as well as catalytic agent of an economic adventure.
- B. She is one of the leaders who initiates manage and assume all the risk of entrepreneurship.
- C. It also creates job opportunities of other and has contribution to utilize national resources in a greater way.
- D. Innovation of entrepreneur is the hallmark of entrepreneurship.

From Social Work perspectives, the role of women as entrepreneur is very important because she will act as change agent in self-help group process and creating space for others for sharing the experiences. Different scholars in the field women entrepreneurship have identified different role and functions. In a broad sense, this is a risk bearing in process of entrepreneurship development, organization of business unit and innovation for marketability. Frederick Haribson has classified the function of women entrepreneurs as exploration of new business enterprise, risk bearing, innovation or imitation of innovation, coordination and

²Rao Prabhakar and J.V Prabhakar, 'Entrepreneurship and Economic Development', Kanishka Publication, 2000

leadership.

Women entrepreneurs in a particular process, involves the identification of gainful business activity, arrangement of essential resources, finding opportunities, monitoring and progress in performance, reviewing, making suitable adjustments in business environment with the function of uncertainty bearing and risk taking. When a businessperson doing his job in a traditional way is not considered as entrepreneur by economist like Schumpeter. An entrepreneur is primarily an innovator who identifies business opportunities and growth with the support of other contributors of production accomplishes the production process for his personal gain and for the benefit of the society.³ In backward community self-help, group approach is relevant to make the entrepreneurial process more participatory and sustained process. The study designed to highlight the initiative role of women as entrepreneur. This emerging trend of entrepreneurship through self-help group approach is relating with different important aspects/variables of family life and society.

Focus Group Discussion

Focus group discussions are consists of 4-15 members who are relating with each other to fulfill the specific objectives. The homogeneous groups invited for sharing their experiences and views on a specific subject. SHG functionaries are invited in the Focus Group Discussion. Group Work methods and principles are followed during Focus Group Discussion to make qualitative representation. The meeting resolution, cash book, stock and asset registrar, credit registers, gradation certificate, Bank A/C Book etc. was consider as a source of secondary data.

The researcher intended to use 'Focus Group Interviewing'⁴ method for this research study because it was a qualitative research method of Social Work research today. It is helped not only gathering authentic data but also help to get powerful insights into the actual experiences and feelings of the respondents involved in the process of developing entrepreneurship through self-help group approach. Women self-help group based on small group norms and has homogeneity characteristic with common objectives and goals to fulfill common needs. Therefore, focus group discussion was most viable methodology for exploration of facts of respondents. It was helped to generate a rich understanding of respondent's experience, beliefs, barriers, socio-economic and psychological factors involved in the process of developing entrepreneurship. Focus group discussion is a systematic analysis process. The researcher helped group members to create comfortable and productive environment for sharing their experiences. The

³Haribson Frederick, 'Entrepreneurial Organization as a Factor in Economic Development', Quarterly Journal of Economics, August, 1956

⁴David L. Morgon and Richard A. Krueger, 'The Focus Group Kit', Sage Publication, New Delhi, 1997

researcher reviewed field notes, tape, transcript etc. to find out the central idea. From Social Work point of view focus group discussion helped to identify nature, patterns, prospects and problems of SHGs, to make a proper strategy and planning for implementation of various programmes for developing entrepreneurship among women of backward communities. Literature and reports published in this field by various authors, commission, National and State Governments, National and International NGOs, secondary data from District and Block level administration etc. reviewed for this research. Camera, Tape-Recorder, Note Book and other essential tools utilized to collect authentic data for presentation.

Sampling

The researcher at first enlisted 25 Self-Help Groups from each selected Block namely Bolpur Sriniketan, Moynaguri and Bishnupur-II. These blocks are situated in three districts namely Birbhum, Jalpaiguri and South 24 Pgs respectively and located in three administrative zones (Burdwan, Kolkata, and Jalpaiguri respectively). The researcher used random sampling and giving equal representation for the three Blocks. Then he selected 30 Self-Help Groups (10 from each Block) for Focus Group Discussion for in-depth analysis. The researcher also conducted Patterns of Training Need Assessment (PTNA) for identification of training needs of respondents and SWOT (Strength, Weakness, Opportunity and Threat) analysis through Focus Group Discussions (FGDs) for in-depth analysis of the performance of the groups and entrepreneurship development.

The major findings and observation of a Social Work researcher is basically based on Field Work (FW) experiences, and SWOT (Strength, Weakness, Opportunity, Threats) analysis, Pattern of Training Need Assessment (PTNA) through Focus Group Discussions (FGDs). These were the important tool for collection of data, facts, and information about the research study undertaken by the researcher. The researcher prepared (before his study) a set of structured questions, which considered as a Check List for Focus Group Discussions Session.

Following are the views and opinions expressed by the respondents with their justifications and analysis. As the research study is *eclectic type* of nature the following qualitative analysis will help to understand the subject better than merely presentation of quantitative data. The researcher tried to avoid imposing anything on respondents but critically observed with his professional skills and knowledge.

Major Observation and Findings based on the Focus Group Discussions (FGDs) and Field Work (FW) Experiences

The following major observations and findings based on the Focus Group Discussions (FGDs) and Field Work (FW) experiences of the researcher are presented. The researcher visited Gram Panchayats, Block development Offices of sample areas and met the functionaries such as Resource Persons (RP) and Women Development Officers (WDO), DRDC personnel, different functionaries of Gram Panchayats (GP) and Panchayat Samities (PS) responsible for managing SGSY Self-Help Groups and NGOs representatives for collection actual facts and information. Following are the summaries of major findings and observations from Focus Group Discussions and fieldwork experiences of the researcher.

Observation and Analysis of Group Performance

1. The researcher observed that every SHG has a particular name given by the organizers or leaders of the group or group members. The name itself is the basic identity of the group in the bank, Panchayat and Block and other areas for communication. Bank Account of the group is open in the name of the particular group. Name of group given as per name of the particular Para of the village. Name of the great personality of India and Bengal also used. These names represent their esthetic sense, creativity, sometimes group activities/work in short form.
2. Most of the group formation idea comes from the local leaders, functionaries of local Panchayats and non-government organizations. There is 10-20 members involved in the group and this is the average size of the group for both SGSY and other SHGs. In case of SGSY, group most of the group members belong to BPL family. Few-mixed group comprising of women belongs to Above Poverty Line and Below Poverty Line (APL and BPL) have emerged. The ratio is 60:40. In case of formation of other SHGs by non-government organization or other organization this norms are not followed.
3. Most of the group member belongs to same Para and same sub caste group. In certain cases, mixed group (mixing of different sub-caste or ST and SC) is also functioning. Most of the meeting of the group held regularly in a month or bi-monthly. Attendance in the group is satisfactory according to them. However, managing time is the problems for most of the group members.
4. Groups are maintaining minute's book and other register for maintenance of the accounts of the group. Most of the groups linked with the Bank. Cash credit account is open in most cases. Long distance between bank and village create problems for the group to submit their deposit timely. Not all members are aware about the transaction of the group. In most cases

Table 1: Self Evaluation by Members of Group through Focus Group Discussions

Sl No	Criteria(N=30)	Very Good (Marks-100) (Avg. Score)	Good (Marks-80) (Avg. Score)	Not Good (Marks < 80,> 50) (Avg. Score)	Very Bad (Marks <50) (Avg. Score)
	Scale→	3	2	1	0
1.	Regular Meeting Conducted	18 (1.8)	6 (.4)	6 (0.2)	0 (0)
2.	Attendance in the Meeting	21 (2.1)	6 (.4)	3 (0.1)	0 (0)
3.	Aware about Rules and Regulation of the group	12 (1.2)	12 (0.8)	6 (0.2)	0 (0)
4.	Regular Group Savings	18 (1.8)	6 (.4)	6 (.2)	0 (0)
5.	Maintenance of Records and Registrar in time	18 (1.8)	9 (.6)	3 (0.1)	0 (0)
6.	Meeting Resolution, Records written in front of all	9 (0.9)	12 (0.8)	6 (.2)	3 (0)
7.	Disbursement of Credit	21(2.1)	6 (.4)	3 (0.1)	0 (0)
8.	Regular Repayment of Credit	12 (1.2)	9 (.6)	6 (0.2)	3 (0)
9.	Bank A/C Open	30 (1)	0 (0)	0 (0)	0 (0)
10.	Decision Taken by All	27 (2.7)	3 (0.2)	0 (0)	0 (0)
12.	Initiatives Taken for Economic Activities	18 (1.8)	6 (.4)	6 (.2)	0 (0)
13.	Networking with Outside Agency	6 (0.6)	6 (.4)	9 (0.3)	9 (0)
14.	Utilization of Local Resources	6(0.6)	3 (0.2)	9 (0.3)	12 (0)

Dalanetri, (Secretary), President and Treasurer are the joint operators of the bank account. Most of the SGSY group has Saving Account and Cash Credit Account. In case of other SHGs, they have only Savings Account for transaction.

5. The purpose of the taking loan from the SHGs is for social festivals like marriage of their daughters or for emergency such as treatment. The roles of leaders are very vital for the self-help group according to them. In most cases, democratic environment and leadership found among the groups.

Self Evaluation by Members of Group through Focus Group Discussion

Self-Evaluation is important aspects of modern management science. Following table shows self-evaluation of the 30 groups invited for focus group discussion. The selected group members give the marks unanimously against their group performance. The researcher has conducted FGDs and applied four-point scale as stated below for better understanding the performance of the groups, which ultimately leads members to the entrepreneurial situation in the Self-Help Groups.

In the above table, significant criteria asked to indicate the extent of performance of the group as their case Very Good, Good, Not So Good, and Very Bad. These were given weights 4, 3, 2, 1 respectively and weighted score was calculating for each criteria wise performance of all groups. The weighted score of each criterion wise performance of all the groups divided by the total number (10) of groups gave the average score of criteria wise performance. On an average, the performance of the groups is satisfactory and indicating their empowering status.

Observation and Analysis about Emerging Entrepreneurship

1. Women are motivated to take small business /economic activities/services because of their economic necessity. The researcher observed that in certain cases when the head of the family is unable to earn, women have no option but to choose one type of productive activities to earn for their family members. Most of the respondents believe that group approach has promoted this opportunity for getting financial help with minimum rate of interest and supportive services from group. It is positive trend that the community at large accepts women self-help groups. Problems of marketing of the products/services reflected in every focus group discussion, observation and case studies. Majority of the women entrepreneurs largely dependent on the local market and others are depend on local and outside market.
2. The nature of their production is home based and most of them preferred their home as the location of their entrepreneurship and for production/ services. The reason behind this preference is to maintain and manage different affairs and responsibilities of their family and children. Most of them believe that, an activity outside home is quite disadvantageous for them to

develop their business. At the same time, few women entrepreneurs believe in between balance of family and their business. They are trying to manage outside communication and networking. They believe that networking with other agency is very essential for marketing, training, production, and recognition of their business. This may be considered one of the emerging trends of women entrepreneurship. As most of the women, entrepreneurs believe that family, as a group is more secure place for women than any other group. Family bondage is most powerful bonds than any other bond in human society. The feelings of security are more applicable in family business. Family members make them and create feelings of security in every aspect supports the businesses. According to them, family business initiatives help them to be more responsible and self-sufficient.

3. For developing entrepreneurship required sufficient time to manage the whole affairs of small business. However, due to responsibility of their family in many cases it is not possible for them to dedicate more time for their business development. Sufficient time is not given in-group meeting also. It happened for those who have child below 3 years of age and in case of joint family.
4. There is remarkable thinking expressed by women entrepreneurs to utilize local resources for production in the sample area of study. Local natural resources like grass '*kesh*' and '*sola*' is available from pond, river, Lake etc. and being utilizes for handicraft production and mostly found among the scheduled caste women of refuge colony.
5. They also utilizes community resources like ponds, lake, land, forest etc for group entrepreneurship approach like fishery, vegetable cultivation, rice processing, *Sal* leaf plate making and other handicrafts production. They collected these natural resources and being utilizes for making different kind of handicrafts production, which has market value in locality and outside. Tribal are mostly dependent on the natural resources of the forest.
6. Another major group entrepreneurship activities is mid day meal cooking services for primary and high school students of the locality. This mid day meal scheme helps large number of groups to be involved in the process of development of education at the same time the groups benefited financially.
7. After taking entrepreneurial activities by women, the attitudes of the family members towards them became positive according to the respondents because family members think that it benefited them financially. Most women of self-help groups believe that only (even in case of educated women also) earning by women make women respected in the family and society, otherwise it is not possible for them to get recognition in the family and the society.

8. For few entrepreneurs group model is helpful. However, sometimes problem arises and became the barrier for them, as they do not get training individually. Number of such kind of entrepreneurship training organized for specific entrepreneurship development by the block administration or gram panchayat is very limited according to them.
9. Federation was set up at the block level and cluster at panchayat level from the selected members of the group of particular panchayat area. Representatives of clusters formed federation committee. The main function of the Federation is to monitor and help cluster and SHGs for smooth functioning. The federation committee for identification of need based training requirements prepares no such list. In this regard, they are mostly dependent on the Block and District administration. According to them, the emerging concept of '*federation*' is not always encouraging for individual entrepreneurs due to organizational complexities and hierarchical process and delay approval of the financial sanction and influence on gradation method. They prefer individualistic pattern of entrepreneurship or strong group entrepreneurship rather than federative directed entrepreneurship. It is reported that governing body largely dependent on the decision of Panchayat Samiti at Block level which is sometime very much politicized.
10. Seasonal entrepreneurship found in certain cases. In the time of *Puja* and festivals, they join the market to make profit. Such as huge production and sale of handicrafts of '*sola*' and garments at the time of *Durga Puja* festivals reported.
11. Block administration has also organized different training on economic, livelihood activities and capacity building for members of different groups and participation of women in these programme is significant than male groups observed .
12. It is observed that geographical backwardness, problems of communication from the village to the block and marketing place is real problem for the women entrepreneurs to fulfill different objectives and needs. According to them mobile phone is essential for easy and quick communication is significant.
13. In certain cases, entrepreneurship followed by the hereditary occupation, which may consider quite suitable for women and it became successful venture according to them. The family support system for developing this hereditary entrepreneurship is stronger than newly learned entrepreneurship. For example, fishery and garments production found among backward community.
14. The traditional products like '*Bori. Jute Products, Paddy Processing, Kantha Stich etc.*' has good local and outside marketing opportunities for sale ac-

ording to them. It is common in respect of three Blocks.

15. Savings growth of the group is basic and positive indicators for their development and benefited from SHG formation in different way. In many cases group started initially with minimum of Rs.30 per month/per member savings now savings rise to 40 per month /per head observed.
16. Most of the women opined that illiteracy, problem of access to regular and frequent capital investment, and specific entrepreneurship development training and marketing networking are the three basic and powerful barriers for developing entrepreneurship. According to them, to a certain extent the need for capital is met after group formation, but due to illiteracy and lack of need base training they can not fulfill their objectives. They think that they are able to identify their own problems after involving in-group activities and sharing their experiences and views in group meeting and connectivity with outer agency. They set one of the strong examples for their justification that they would like to send their children to the school for at least primary education. According to them, this may be considered one of the positive trend of women and indirect impact of group initiatives on the family and children's growth and development. According to the respondents few members of their group has created assets such as making of gold ornaments, cycle, to make teen shed, purchase of cows, buffalo etc. which are positive indication for empowerment, entrepreneurship and group efforts.
17. It is the opinion of the respondents that the process of evaluation for graduation is lengthy and time consuming for many successful groups. The gestation period of SHGs is to get through the grading process and avail the loan for economic and productive activity is more than two years from group formation. SHGs are not getting loan from the bank even after more than two year of its formation and group activities.
18. No such economic activities identified and selected after feasibility report based on market studies and availability of local resources. In most cases, the economic activities based on the decision of PRIs and Govt. officials.
19. There is lack of initiatives for capacity building of the women entrepreneurs and tap the services of professional agency to identify local resources including raw material and skill development.
20. Lack of coordination among different line departments of the Government and university or other academic institution for transfer of technology in the rural areas observed.
21. Lack of infrastructure facilities in the different level observed. Only micro-finance and small loan will not solve the problems, infrastructure is required. Such as road, electricity, water facilities in the village is the most essential requirements for developing business according to them.

Table 2: Individual and Group Entrepreneurship & Emerging Trends

Name of the Block	Individual Entrepreneurship	Group Entrepreneurship	Emerging Trends among Backward Communities
Bolpur –Sriniketan	Handicrafts including Kantha Stitch Batik, Leather production etc	Animal husbandry such as goatery, piggery, poultry, Mid day meal cooking and fishery etc.	Handicrafts among SC and OBC community is major and Animal husbandry among ST community is major entrepreneurial trend
Moynaguri	Petty business like Bori making, dust spice preparation, Packet making etc. Handicrafts like soft toy making, foam bag making, bamboo craft , jute product etc.	Animal husbandry, Mid day meal cooking, production of seedlings, Paddy processing, Agriculture including vegetable & Mushroom cultivation, Nursery, horticulture, Sal leaf plate Making, ornamental fish culture etc.	Animal husbandry, Sal leaf plate making among ST community is major entrepreneurial trend. Agriculture and allied activities among SC and OBC Communities is found.
Bishnupur-II	Handicrafts like Jori work, Readymade garments manufacturing tailoring etc.	Fishery, Agriculture/Vegetable production, Mid day meal cooking, Ornamental Fish culture etc.	Agriculture and allied activities, Fishery handicrafts like Jori among SC and OBC and Jori and garments production among minorities community found the major entrepreneurial trend of the block.

22. It has been repeatedly discussed in the focus group discussion that if any member of the group or few members of a particular group (if those members are economically, politically and socially powerful) is involved in corruption or misutilization of the fund who will be accountable for that to manage? No appropriate answer received from the group members. They said that mostly they are dependent on the Panchayat in this regard. However, issue arises that if powerful members influence Panchayat in that case what happen. On the other hand, it is observed by the researcher that many groups are formed of mixed sub castes, APL and BPL families where the problems and conflicts may arises within the power structure of the group.
23. Most of the women entrepreneurs expressed their views that due to intermediaries the earning of women hampered. Such as intermediaries '*ostagar*' for garments business or intermediary for '*Kantha*' or batik has big role to regulate the market and prices of the products. According to them, organizing fair and exhibition by government is a great help for them. According to them, government supported marketing facilities is required for selling their products.
24. Respondents opined that their groups are not only helped to take economic activities but have become popular to fulfill other needs of the backward communities. Such as social forestry, smooth functioning of the *Anganwadi* Centre and Primary Schools, protection against alcoholism etc.

Following are the summery of individual and group entrepreneurship and the emerging trend of women entrepreneurship is found from observation of fieldwork and focus group discussion conducted by the researcher in three sample blocks of three backward districts:

From the above table it is clear that *handicrafts* production is prime individual entrepreneurship and *animal husbandry* and agriculture and allied production/*activities* is the prime group entrepreneurship efforts observed. Several interactions was held during field visit with the representatives of PRIs like Panchayat Pradhan, Panchayat Samiti Savapati, women, Block Development Officers, Women Development Officers (in charge of SGSY Groups), Gram Sevikas, Resource Persons of concerned Panchayat areas and Blocks etc. According the functionaries, Agriculture and allied Production, Animal husbandry, and handicrafts are three areas of intervention for 'economic activities' as identified by the Gram Panchayats, Blocks and District administration. It is to be mention here that most of the entrepreneurship is Individual entrepreneurship or family based entrepreneurship. Same kind of entrepreneurial activities found within the group members. Another important observation is that there is difference between different sub caste under scheduled caste community in terms of performance in entrepreneurial activities, networking with the Government and other facilities. Sub caste like Mal, Bouri, Bagdi, Dom, Muchi, Duley, Bede Etc. are in the most backward position in every

aspect of entrepreneurial activities. On the other side sub caste like Namasudra, Sunri etc. are in the advanced position. Most of the Subcaste like namasudra and others come from Bangladesh as refugee is in the advanced position for taking initiatives in entrepreneurial activities. They are in advance position of education and taking initiatives for group entrepreneurship. Geographical position of the village and panchayats and communication with the cities has a great role for developing entrepreneurship. The communities living nearer to the city life are more in advance position in entrepreneurial activities. It is applicable for Boplur-Sriniketan Block (particularly Rupur Gram Panchyat) as they are in advance position.

SWOT (Strength, Weakness, Opportunity and Threat) Analysis

SWOT analysis is one of the powerful tools for identification of strength, weakness, opportunity and threat of a particular area of study such as self-help groups and entrepreneurship. Qualitative SWOT analysis in relation to the relationship between group dynamics and promotion of entrepreneurship is vital to search the interconnectivity of variables. This will reflect their perception about themselves and the socio-economic environment in which they belong.

The SWOT analysis method applied in the focus group discussion session by the researcher. The researcher explained his objectives, question elaborately among the participants, and tries to receive their responses one by one. At first, the researcher explained and analyzed the responses of the participants then he concluded by logical interpretation on the applicability of SWOT items on entrepreneurship development. After completion of all FGD (n=30), he concluded as given below:

Strength

1. Backward women develop their habits for small savings (*dream of convert Rs.1000 to Rs. 2000 and above*) after introduction of group efforts. These phenomena widely socially accepted in all three sample Blocks. Self-Confidence and feeling of independency is developing through this group effort and small savings. The group and its positive efforts towards group unity, growth and development as a process of group and recognition being a group may be consider as strength of group and entrepreneurship. Most of the groups are formed within the same sub-caste. It is observed that natural solidarity and fellow feelings among the members of the group based on kinship. The Self-Help Group process has very positive impact on the family as group. This feeling is a source of powerful motivation and strength of the group to follow entrepreneurial activities.
2. Self-Help Groups has strength of cohesiveness if the common needs fulfilled through the groups. Here Self-Help Group is the platform of common need fulfillment like financial, social, etc. needs of the members of a par-

ticular group. Cohesiveness really empowers them in social life also. Backward women are coming forward and more politically and socially conscious about bad effects of untouchables and discrimination. There is minimum confusion regarding strength of the group among respondents and they realize the strength of the group for small savings, disbursement and repayment of credit for taking up economic and other social activities.

3. As all women of Self-Help Groups emerged from more or less same socio-economic patterns, so it observed that there are '*feelings of 'weness'*' among them. Group becomes the place to express and exchange their ideas and emotion and entertaining them. This may be consider as the strength of the Self-Help Groups based on gender assertiveness and improvements of their socio-economic condition by taking small business.
4. It is observed that women entrepreneurs are dedicated to develop their business after managing their duties and responsibilities of the family. Most of the entrepreneurs are literate and maintain *good quality of products/services*. The product of handicrafts produced by them reflects their quality and skill of production. The attitude and behavior of women entrepreneurs is positive regarding their group and economic activities initiated through groups.
5. Support system of PRIs and other institution is the strength of the group as well as women entrepreneurs. The federative structure (as stated in annexure) of SHGs is influencing power structure of the PRIs largely and their role relationship is complimentary to each other. Therefore, a model is emerging from *Experience to Empowerment to Entrepreneurship*.

Impact of Different Strength of Group on Entrepreneurship Development

Following Table shows applicability of different strength of group on entrepreneurship:

Table 3: Impact of Different Strength of Group on Entrepreneurship Development

Sl.No.	Items of Strength of Group (N=30)	Impact on Entrepreneurship Development
1.	Group Cohesiveness	Common need fulfillment through identification of economic activities
2.	Norms of Group	Availability of fund in crisis situation both in family and entrepreneurship
3.	Support System of Group Structure	It is develop because of more or less same socio-economic status and feeling of economic security developing in the entrepreneurial activities.
4.	Group Leadership	Financial management and networking with outer agency.

The researcher has identified above items of strength out of the views and opinion of the group members of the Self-Help Groups. The significant strength variables listed out and noted and they asked to indicate the extent of applicability on developing entrepreneurship.

Weakness

1. It is observed that *sub-ordination, weaker positioning family and educational backwardness* of women in family and society is influencing the status of the group and their entrepreneurial capabilities to large extent considered as weakness. Lack of self confidence, feeling of fear for taking risks and outside atmosphere as well Government bureaucratic system, age old feeling of suppression and lack of capacity to assess own need and development, too much dependency on the Government subsidy is considered as major weakness. Most of the decision taken by the women on the basis of the guidance of male dominated power structure of the family as well as panchayat.
2. Developing entrepreneurship is not easy task according to the respondents. The obligation of the family creates *role conflict* in the time of taking group and entrepreneurial activities. Lack of sufficient infrastructure and skilled personnel is the major problem for developing group entrepreneurship.
3. Self-Help groups are much dependent on the process, terms, and conditions of the *government's bureaucratic system*. It is considered as blockage of the spirit of self-help and cooperation. Long process of gradation and other procedural complexities arises for taking economic activities. There is no scope for exposure visit and interaction with outside world.
4. *Lack of capacity building and skill development* initiatives as well as problems of identification of pattern of business is the major weaknesses observed by the researcher. There is lack of appropriate plan of action developed by the specialized agency in the field of women entrepreneurship. For example, limited coordinated efforts between National Institute of Fashion Technology and DRDC of Birbhum proved this justification of the respondents.
5. *Problem of marketing* is the major weakness according to the respondents. No such cluster formed based on same categories of production. According to them, a marketing centre may help to certain extent to sell the products.

Impact of different Weakness of Groups on Entrepreneurship Development
Following table shows different weakness of groups applicable for taking entrepreneurship:

Table 4: Impact of Different Weakness of Groups on Entrepreneurship Development

Sl.No.	Items of Weakness of Groups (N=30)	Impact on Entrepreneurship Development
1.	Group members (socio-economic patterns)	Production and marketability
2.	Group obligation (maintain group norms)	Role conflict in family and entrepreneurship
3.	Procedural complexities of maintaining as SHGs	Barrier before developing individual and group entrepreneurship
4.	Interpersonal problems between group members	Damaging spirit of entrepreneurship

The researcher has identified above items of weakness out of the views and opinions of the group members of the Self-Help Groups. The significant weakness listed out and they asked to indicate the extent of applicability on developing entrepreneurship. These items are given rank by the researcher.

Opportunity

According to the respondents, Self-Help Group itself is the appropriate way for *expanding the span of opportunity* in different way for the growth and development of group and empowerment and entrepreneurship development of women.

1. It is the opinion of the majority of the members of the group that they are empowered by the group approach in different way. They believe that there is sufficient scope of marketing by the help of Panchayat and other development institution. According to them group entrepreneurship including family business has major scope and opportunity for developing entrepreneurship.
2. They think that there is sufficient *scope and opportunity for capacity building and skill development* by bank and panchayat. The groups are confident to acquired skill of production according to the demand of the market if entrepreneurial development training given to them.
3. According to them, there is an opportunity to establish a marketing centre, which may help to certain extent to sell the products of Self-Help Groups. *This marketing centre* will be a source of demand and has to establish networking with the districts also.
4. Economic activity cluster has sufficient opportunity for business in integrated manner. Such as *integrated business* of nursery, fishery, seed plan etc. by involving a cluster of group within one area on project base may help largely. In this regard, local governance may extend their help to arrange the required land and other resources to the cluster.
5. It observed that organizing different exhibition, fair for the SHGs groups to

sale their products at the different level are very much helpful to increase their marketing of the products. This will also create opportunity for developing their marketing network and sharing of ideas and knowledge about SHGs Products. The researcher would like to know through Focus Group Discussion about the different feelings of the group members about the different opportunities of the group. The researcher discussed and listed all the items of opportunities of groups and came into conclusion regarding applicability of different opportunities of groups on the entrepreneurship development as given below:

Table 5: Impact of Different Opportunities of Groups on Entrepreneurship Development

Sl.No.	Items of Opportunities of Groups (N=30)	Impact on Entrepreneurship Development
1.	Feelings of Group Empowerment	Confidence building for developing entrepreneurship
2.	Interaction process of SHGs with outer agency	Developing marketing ideas and process
3.	Training of Capacity Building	Identification and choice of entrepreneurship development
4.	Sharing of business problems	To overcome the barrier of entrepreneurship development

The researcher has identified above items of opportunity out of the views and opinions of the group members of the Self-Help Groups. The significant opinions listed out and asked to indicate the extent of applicability on developing entrepreneurship as stated.

Threats

1. The major threat before the entrepreneurs is *tough competition* in the market as these entrepreneurs has limited source of technical knowledge and skill about marketability of the product and services.
2. Discriminating attitude of male dominated and caste based society and their *illiteracy, education and family obligation* are major threats according to them.
3. It is reported that limited capital for investment is risk-bearing factor for them may be consider as threat. *The procedural complexities* for getting long term finance and problem of communication in every aspect of business is a threat for emerging women entrepreneurs.
4. Group efforts may not be always leading to successful pattern of entrepreneurship. Few members sometimes avoid their responsibilities for maintenance of rules and regulation of the group. The *complexities of financial management* lead conflicts and crisis within the group sometimes. Due to

this situation, few members of the group wanted to come to outside the group. This is the internal threat of the group, which break down the group cohesiveness.

5. *Feelings of low self-esteem among women*, fear of sexual harassment and feeling of insecurity in time of dealing with business matter is a threat for women is observe even after joining in the group. Following table shows applicability of different threats of groups on entrepreneurship development.

Table 6: Impact of Different Threats of Group on Entrepreneurship Development

Sl.No.	Items of threats of Groups (N=30)	Extent of Applicability on Entrepreneurship Development
1.	Family obligation of group members	Barrier for full fledged Entrepreneur
2.	Illiterate group members	Existence of inequality in the group
3.	Group dependency on outer agency	Dependency on outer agency for entrepreneurship development
4.	Recognition by PRIs	Barrier for getting benefits from PRIs

The researcher has identified above items of threats out of the views and opinions of the group members of the Self-Help Groups. The significant opinions listed out and they asked to indicate the extent of applicability on developing entrepreneurship.

Patterns of Training Need Assessment (PTNA)

From Social Work point of view, the assessment of Patterns Training Needs is important for further Social Work intervention. It could help the Social Worker to be very specific in designing the training programmes for entrepreneurship development among backward women. Entrepreneurship Development Programme (EDP) considered as primary need of the entrepreneurship. Government and Non Government Organizations have imparting training in the field of entrepreneurship but not all these trainings programmes are fruitful to the trainees or beneficiaries and in reality, they are not utilizing these training programmes. The researcher would like to know the actual training needs of backward women.

The researcher has conducted Patterns of Training Need Assessment (PTNA) by applying Participatory Rural Appraisal (PRA) method for identification of training needs of the groups of women of backward communities. The researcher has conducted this PTNA with 10 Self-Help Groups by simple random sampling from list of groups of three different study areas. As the average or mean size of the group is 10 and on an average they participated in the PTNA session conducted by the researcher in three Blocks, so here N=100. The participants of 10 Self-Help Groups requested for identification of different training needs of their groups according to the priority basis.

Following table shows different training needs of group for developing entrepreneurship:

Table 7: Different Training Needs of Groups for Developing Entrepreneurship

Sl No	Items of Training NeedN=100	Strong Need (Avg. Score)	Rank	AverageNeed (Avg. Score)	Rank	LowNeed (Avg. Score)	Rank	NoNeed (Avg. Score)	Rank
	Scale ->	3		2		1		0	0
1.	Guttery	55(1.65)	3	35(0.7)	2	20(0.2)		0	0
2.	Poultry	50 (1.5)	4	40(0.4)	1	10(0.1)		0	0
3.	Ducker	45(1.35)	5	30(0.6)	3	25(0.25)		0 (0)	0
4.	Piggery	10 (.3)		10(0.2)		15(0.15)		65(0)	0
5.	AgriculturalVeg. Products	50(1.5)	4	25(.5)	4	20(0.2)		5(0)	0
6.	Fishery	65(1.95)	1	20(0.2)		10 (0.1)		5(0)	0
7.	Horticulture	35(1.05)		35(0.7)	2	25(0.25)	2	5(0)	0
8.	Mushroom Cultivation	40(1.2)	6	30(0.6)	3	30(0.3)	1	0(0)	0
9.	Food Processing,	45(1.35)	5	35 (0.7)	2	15(0.15)	3	5(0)	0
10.	Ornamental Fish Cultivation	45(1.35)	5	25(0.5)	4	25(0.25)	2	5(0)	0
11.	Bee Keeping	35(1.05)		35(0.7)	2	25(0.25)	2	5(0)	0
12.	Kantha	60 (1.8)	2	25(0.5)	4	15(0.15)	4	0(0)	0
13.	Batick,	45(1.35)	5	25(0.5)	4	30(0.3)	1	0(0)	0
14.	Bori Making,	55(1.65)	3	25(0.5)	4	20(0.2)	3	0(0)	0
15.	Shola Products	45(1.35)	5	30(0.6)	3	20(0.2)	3	5(0)	0
16.	Leather Bag Manufacturing	65(1.95)	1	30(0.6)	3	10(0.1)	5	5(0)	0
17.	Zori Embroidery,	65(1.95)	1	35 (0.7)	2	10(0.1)	5	0(0)	0
18.	Tailoring,	60(1.8)	2	30(0.6)	3	10(0.1)	5	0(0)	0
19.	Soft Toys,	40(1.2)	6	35(0.7)	2	25(0.25)	2	0(0)	0
20.	Shola Products	35(1.05)	7	35(0.7)	2	30(0.3)	1	0(0)	0

Table 8: Distribution of Common Training Needs

Blocks	1st Common TNA	2 nd Common TNA	3 rd Common TNA
Bolpur-Sriniketan	Animal Husbandry(Guttery, Poultry, Duckery, Piggery).	Agricultural Products including Fishery, Horticulture, Mushroom cultivation	Handicrafts Like Kantha, Batick, Bori Making, Shola Products, Leather Bag Manufacturing
Bishnupur-II	Animal Husbandry (Poultry, Duckery)	Agricultural products, Fishery, Vegetable Cultivation, Food Processing, Bee Keeping	Handicrafts like Zori Embroidery, Garments , Tailoring, Bag Making
Moynaguri	Agricultural Products, Horticulture, Vegetable and Mushroom Cultivation, Nursery, Food Processing	Animal Husbandry like Poultry, Duckery, Ornamental Fish Cultivation	Handicrafts like Soft Toys, Weaving, Ready Made Garments, Zori Embroidery

The researcher has identified above items of training needs out of the views and opinion of the group members of the Self-Help Groups. The significant training needs listed out and they asked to indicate the extent of applicability in their case as strong training need, average need, low need and no need of training of the group members. These given weights 3, 2, 1 and 0 respectively and weighted score calculated for each training need. As need is based on the different needs of group members the researcher identified mean size of all the groups i.e. 10 and identified on an average (10x10) 100 women entrepreneur's training need for developing entrepreneurship. These are given weightages as 3, 2, 1 and 0 respectively and weighted score calculated for each training needs. The weighted score of each training need for the entire group divided by the number of total average group members gave the average score of training needs and then rank given according to the highest score to the lowest one.

Common Training Needs

Based on training need assessment following table shows the 1st, 2nd and 3rd common needs of three study areas. The researcher also considered the expressed opinion of the group members in the FGD.

It is to be mention here that animal husbandry is the first common training need assessment of the Scheduled Tribes community and agricultural activities is the second choice and agricultural and animal husbandry is the first and second choice of needs of training respectively among Scheduled Castes and Other Backward Communities. Handicrafts are the third choice and need of training of all the communities for entrepreneurship development training. In summary, we can say that 1st common need is Animal Husbandry, 2nd common need is Agriculture Products/related items and 3rd common need is Handicrafts.

All these needs categorized at first then percentage calculated by the Participants in the study areas then summarizes on the Pie Chart. Following summaries of Pie Chart presentation as prepared by the participants by using colour on art paper in the Focus Group Discussions conducted by the researcher is helpful for understanding the actual training needs of the group members.

The above pie chart reveals percentage wise common patterns of training needs identified through focus group discussion with the members of the self-help groups. The table reveals that animal husbandry such as cow, goat, hen and duck rearing is the most common needs of training among the members of the Self-Help Group. These training needs like goat and duck rearing are very justified according the researcher. Because Bengal black goat is the rear species of the world, which is available in the Bengal and it originating from only four parts of Bengal and Bihar. The meat of this black goat is most testy meat in the world and high demand not only in the local market but also in the different parts of the world. Farm based Goat rearing is most profitable business activities particularly for the tribal villages

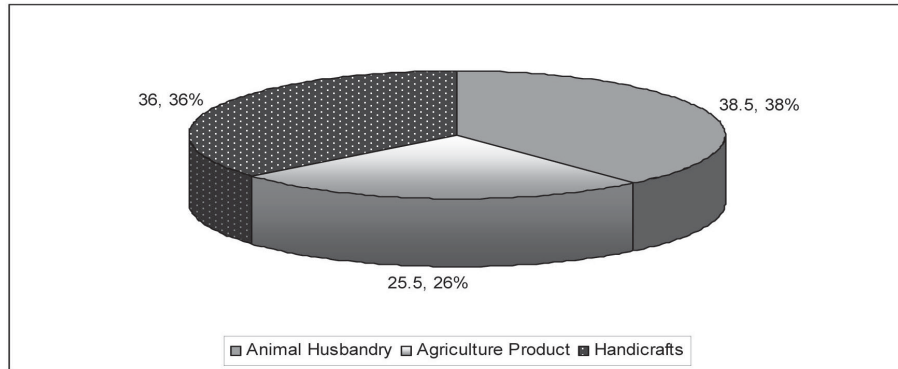


Figure 1: Patterns of Training Need Assessment (PTNA)

residing just beside or within the forest area. At the same time *Khaki* camble duck rearing is another profitable and suitable business activity of members of SHGs. Second common need is agricultural products and process and third is handicrafts.

Analysis Based on Field Work Experiences of Researcher

Overall Field Work experiences of the researcher motivated to develop diagrammatic presentation of following aspects. This diagrammatic presentation will help us to understand different positive aspects of Self-Help Groups. These diagrammed based on the researcher's understanding, fieldwork experiences, and experiences of Focus Group Discussion with Self-Help Group members of three different blocks.

The researcher had developed the following diagrammatic pattern of Self-Help Groups that Self-Help Group promotes experiences, empowerment and entrepreneurship and these three aspects interrelated with each other:

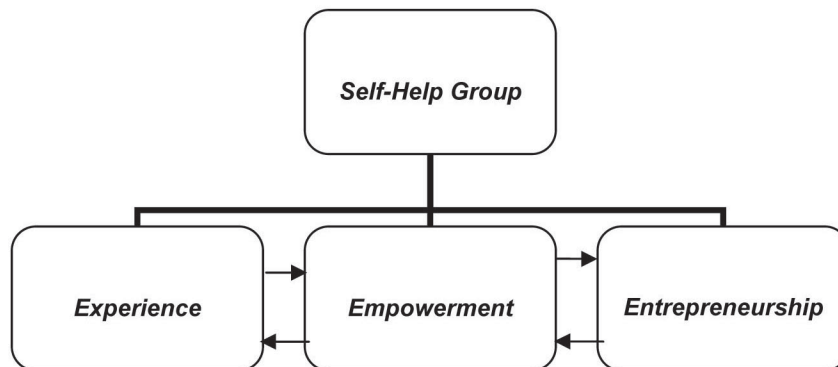


Figure 2: Diagrammatic Patterns of Self-Help Group

From the above table it is reveals that self-help group promotes experience, empowerment and entrepreneurship among the members of the self-help groups. The experience gained by the members of the group, which is interrelated with the empowerment and empowerment related with the entrepreneurship. The position of empowerment is in the middle, which is interrelated with the experiences and entrepreneurship. They feel more secure and confident due to small savings. Sharing experiences with other group members as well with outer agency are important. Experiences in terms of dealing with financial matters could help a member of group to start small saving and small savings leads to entrepreneurial activities among women. Women feel more secure with transaction of Self-Help Groups and nationalized bank rather than other micro-finance institutions. Therefore, experience is important variable. The Social worker could play important role to create an atmosphere by sharing each other experiences to prote entrepreneurship among women by formation of Self-Help Group.

Input and Output of SHGs

Based on analysis and observation the basic concept developed that *SHG emerged as an idea, an institution and form of practice among the women of backward communities*. It is most significant that it is emerging as movement and an instrumental process of entrepreneurship development. SHG has every potential to multiply their money and members could be benefited in different way. Therefore, proper functioning of SHG related with the greater output of SHG.

SHG as Problem Solving Approach

From Group Work perspectives, the ‘Self-Help’ approach has enormous importance to deal with the different groups with problems such as alcoholic anonymous, psychosocial problems of children group etc.

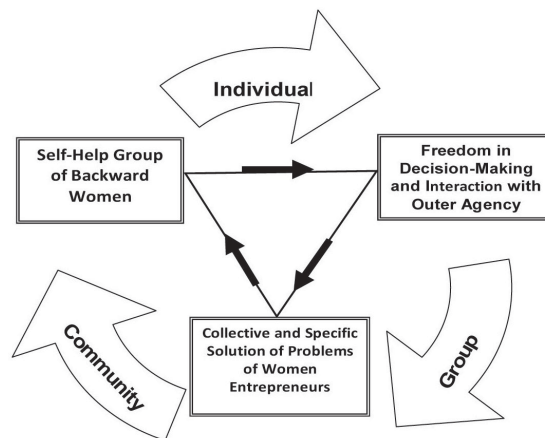


Figure 3: SHG as a Problem Solving Approach

Women Self-Help Groups has also potential to solve the problems of women entrepreneurs in specific and collective way. Self-Help Groups itself create a situation of interaction for dealing with different problems of the members and the group and the community as a whole. It becomes the power of the members to attach with the groups for their common interest. The researcher had tried to develop the following diagram for better understanding of SHG as problem solving approach of women entrepreneurs within the framework of individual, group and community.

The above diagram shows the relationship between individual, group and the community as a whole. Within this community Self-Help Group of Backward women getting opportunity of freedom for decision-making and interaction with the outer agency. Within this framework the problems of women entrepreneurs has both collective and specific solution.

Integrated Aspects for Women Entrepreneurship Development

Development of women entrepreneurship is the focal point of view. The effectiveness of Self-Help Group approach depends upon certain aspects, which better understood by the following diagrammatic patterns of integrated Social Work practice for women entrepreneurship development at large.

The researcher had developed following diagrammatic pattern for better understanding of different integrated aspects for women entrepreneurship

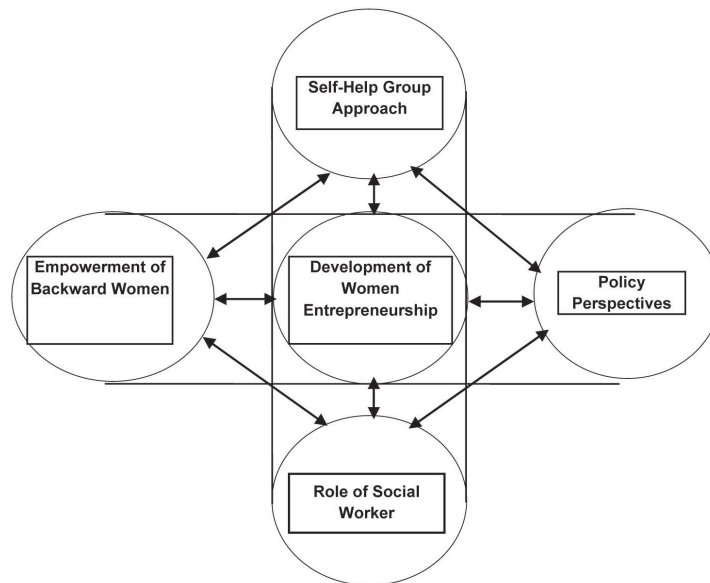


Figure 4: Integrated Aspects for Women Entrepreneurship Development

development. Considering the psychosocial patterns of the group the researcher tried to make a framework for entrepreneurship development through SHGs intervention. It is to be remembering that the emotional attachment and support to each other among the group members is the vital resources of the group. The policy of the Government and the policy of the implementing agency are also important aspects of integrated practice. The implementing agency may be PRIs, NGO's, and Clusters etc. having authority for implementing the policy of the Government for women entrepreneurship development.

The above table reveals that Self-Help Group approach is interrelated with the policy perspectives of the Government and other development agency for women empowerment. In the present socio-economic scenario of rural India definitely, we cannot ignore the role of the Social Worker for development of women entrepreneurship by utilizing the resources of the Government and other development agency as well as resources of the group. In this process, the Social Worker could act as mobilizer or coordinator, if needed. The decision making power ultimately depends on the decision of the group members.

The researcher following cases highlighted on the women entrepreneurs belong to the backward communities who have taken the initiatives to form the group and develop her entrepreneurship through assessing the demand of the local markets. They needs more support from the local *Panchayat* in the areas of marketing, infrastructure development, providing technological inputs etc. There is certain limitation of the Self-Help Groups where the support of policy of the Government needed to strengthen the functioning of the Self-Help Groups in the backward Districts in all respects.

21

Community Development Society -the Platform for Empowerment of Urban Poor Women: A Study in Selected Municipal Areas of West Bengal

Kuntak Ghosh

In December 1997, 'Swarna Jayanti Shahari Rojgar Yojana' (SJSRY) was introduced by Government of India as a comprehensive scheme for eradication of urban poverty with a special focus on livelihood promotion opportunities for urban poor women. It was an amalgamation of all the previous urban poverty eradication programmes viz. Nehru Rojgar Yojana (NRY), Prime Minister's Integrated Urban Poverty Eradication Programme (PMIUPEP) and Urban Basic Services for the Poor (UBSP). The goal of SJSRY is to eradicate urban poverty through ensuring self help and setting up of self employment ventures for urban poor. One of the major objectives of this programme is to Empowering the community to tackle the issues of urban poverty through suitable self managed community structures like Neighbourhood Groups (NHGs), Neighbourhood Committees (NHC) and Community Development Society (CDS). At the grass root level of an Urban area there are several Self Help Groups (SHG) and Thrift and Credit Societies(T&CS) formed by women from BPL families. Selected members from these SHGs and T&CSs form Neighbourhood Groups (NHGs). With the Presidents and Secretaries from these NHGs several committees are formed which are called Neighbourhood Committees (NHCs). Above all there are

several Community Development Societies (CDSs) which are formed with the presidents and secretaries of NHCs. Each CDS is a registered society.

Empowerment is a continuous process which enables an individual or a group or a community to gain control over their resources, potentials, abilities and above all to become conscious about their rights and thus to grow self esteem and influential capacity. There are three basic strands of ideas relevant to understand the factors which may influence degrees of empowerment. These three strands are as follows,

- A. **Choice:** A person/group/community should have the power to choose from amongst various options related to their need fulfillment. It is also called 'the choice to exit'. It means that human beings should not be compelled to take any decision and they should have freedom to choose their own way.
- B. **Voice:** This is to have a 'say' in what should be provided by an existing service and what should be provided through future policies. This is the power to speak to influence decision or policies.
- C. **Rights:** This is the entitlement of people towards having specific opportunities and ways to acquire self esteem.

The process of Empowerment can be described in this way that, the people should have a positive sense of self as well as a critical awareness about their social condition and should be supported by resources and strategies.

CDS is the highest platform from where the self help programmes and self employment ventures for urban poor can be formulated, implemented and supervised as well as the SHG and T and CS members can place their demands and express their needs for future sustainability. Each CDS is entitled to undertake any development programme funded by Government and Non-Government Organizations by involving urban poor women from NHGs and NHCs as the Human Resources. Thus CDS can help them to achieve Socio-economic independence. Selected CDS members are the members of Ward Committees and they are entitled to place their demands in Ward Committee meetings to be included in larger plan of the urban area. The CDSs also have representation in Urban Poverty Eradication Cell to place the needs and demands of the poor people for further intervention and preparation of poverty eradication plan. Therefore it can be interpreted that CDS is a major stake holder for the empowerment of urban poor women. This study has therefore tried to describe the CDS activities and their impact for empowerment of urban poor women in respect to primary information collected from selected Urban Local Bodies (Municipalities) of West Bengal.

Situation in West Bengal

Up to the year 2010 there have been 306 Community Development Societies in

different ULBs of West Bengal. Number of CDS is increasing every year. Department of Municipal Affairs, Government of West Bengal issued circulars to the municipalities to include such women groups in various civic services like Solid Waste Management, creation of urban infrastructure in slums etc. and in several ULBs these groups have been actively involved in some basic civic services like conservancy services, maintenance of street lights and collection of user charges. In the year 2004 Government of West Bengal established a new entity named Change Management Unit (CMU) under Department of Municipal Affairs to deal with the critical issues in urban areas in West Bengal such as poverty alleviation, urban planning and development, citizen's participation etc. CMU also launched a programme called 'Kolkata Urban Services for the Poor (KUSP)' with the funding support of DFID, Government of UK under which there was a major component for Slum Level Infrastructural Work. Under this component the CDS members were involved through 'Community Contract' system in creation of such infrastructures in place of general Contractors. The regular maintenance works were also been handed over to them. The CDS members undertook the works under the supervision of Municipal engineers. Such initiatives were taken for the first time in India. This programme covered 339 slums in West Bengal in which total 9219 two-pit pour flush latrines were constructed, 59 deep tube wells and 560 hand pumps were installed, 193354.58 meters of pipeline was laid down, 193354.58 meters of drain and 255257.58 meters of road were constructed and 11 Community Centres were built. These estimates prove the efficiency of CDSs towards successful implementation of infrastructural works. Another component was also introduced under KUSP which was 'Innovative/Challenge Fund (I/CF)' which has also supported many CDSs of various ULBs to implement various social development programmes. Under the funding support of I/CF, CDS of Haldibari Municipality established a Pre-Primary Education Centre at Haldibari from where they provided pre-primary education along with regular health check up facilities to children from BPL families. The facilitators of these programmes were the CDS members who were also benefitted in terms of getting honourariums from this project. CDS-II of Chanpadani Municipality established several Non Formal Education Centres for mainstreaming the School dropped out children and children with special need for care and protection such as child labours, street children etc under the patronage of I/CF. At Contai Municipal area , Deshbandhu CDS-I submitted a project to I/CF for setting up of a Small Scale Industrial unit to produce puffed rice. The project got funding support from I/CF in 2010. Poorer T&CG members were selected as the beneficiaries under the project. The beneficiaries received the training to produce puffed rice and became engaged in the unit as the human resource. Thus they obtained a sustainable livelihood source from this project. CDS-II of South Dumdum Municipality designed and implemented a project for setting up a Municipal Canteen involving their members as the Human Resources there. Indian Institute of Hotel Management supported them in this regard by providing hand holding kitchen training to 50

CDS members to run the project. This project enabled the CDS members to earn Rs.1200/- to Rs.1500 per month.

These examples prove the efficiency of CDS towards designing and implementation of income generation and social development activities and through the process of designing and implementation of such projects the CDS members could definitely become empowered in terms of securing their choice, voice and rights in respect to Socio-economic context.

Goal and Objectives of the study

The aforesaid success stories in case of a few ULBs out of 127 in West Bengal cannot explain the actual picture. To describe the actual condition of CDS movement and its impact on Women Empowerment in urban areas a detail analysis was therefore strongly required on the basis of primary data. This study therefore had a specific goal to describe 'The actual scenario of CDS movement in West Bengal and its impact to ensure empowerment for urban poor women' with special emphasize on exploring the problems facing by the CDS members. The detail objectives of the study were as follows,

- To describe the major activities undertaken by the selected CDS in last 5 years
- To find out how have the urban poor women been benefitted from those activities and
- To describe how have those activities contributed towards empowerment of urban poor women.
- To explore the problems those have been facing by the CDS members since last 5 years during undertaking the activities.
- To explore and describe how the problems have impacted over the empowerment process of urban poor women. And
- To find out expected solutions of such problems towards betterment and strengthening of CDS movement for women empowerment.

Methodology

The study was conducted on 13 Community Development Societies from various ULBs of Murshidabad district. As Murshidabad is one of the most underdeveloped districts of West Bengal therefore the respondent CDSs were selected from this district to get the actual scenario of CDS activities in respect to such underdevelopment. The Community Organizers (COs) are the major nurturing agents of the CDSs and they are intensively related with the functioning of the CDS. Therefore the Community Organizers were chosen as the respondents on behalf of the CDSs. Based up on the objectives of the study the COs were

interviewed on the basis of some pre formulated questions. Then the data were analyzed and conclusion was drawn.

Distribution of Respondents

There are 7 Urban Local Bodies (Municipalities) in Murshidabad district. The distribution of CDSs and COs under these 7 ULBs are as follows

Table 1 Urban Local Bodies(Municipalities) in Murshidabad District

Sl. No.	Name of the ULB	Number of CDS	Number of COs
1.	Berhampore	5	3
2.	Jangipur	1	1
3.	Jiaganj-Azimganj	1	1
4.	Dhulian	2	1
5.	Beldanga	1	1
6.	Kandi	2	1
7.	Murshidabad	2	1
Total		14	9

Berhampore, Kandi, Murshidabad, Jangipur, Dhulian and Beldanga ULBs were considered under this study for data collection. 8 Community Organizers were the respondents on behalf of the 13 CDSs of the aforesaid 6 ULBs. In case of Berhampore Municipality two COs are in charge to monitor 2 CDSs each and the rest one nurtures a single CDS. Therefore in case of Berhampore Municipality the COs were interviewed on behalf of only their concerned CDSs.

Data Collection

All the 8 Community Organizers from the 6 ULBs of Murshidabad district were interviewed for the study. The Community Organizers (COs) are the major nurturing agents of the CDS as well as they act as the Ex-Officio Secretary of the concerned CDS. Therefore they were selected for interview on behalf of their concerned CDS. Some questions based up on the objectives of the study were formulated and on their basis the respondents were interviewed. The information were sought from the interview were as follows,

Activity Specific

- Information regarding both the infrastructural and socio-economic development programmes undertaken by a particular CDS in last five years.
- Involvement of CDS in formulation of ideas of the projects.
- Involvement of CDS to select beneficiaries.
- How did the urban poor women get benefitted from the projects.

- Present status of each of the projects.
- Involvement of CDS members in every project in respect to specific jobs undertaken by them and number of CDS members involved.
- Problem faced by the CDS in course of implementing the projects
- Future plans to sustain the projects.

General Information

- Number of the members of each CDS.
- Average number of general meetings held in last two years for each CDS.
- The involvement of CDS members to maintain official records, bank accounts etc.
- Whether the CDS has any involvement in decision making in grass root level units of ULBs viz. the Ward Committees.
- Assets owned by the CDS.
- Major problems being faced by the CDS
- Future plan to sustain the CDS.

Findings

The information collected through the study represents an overall picture of the existing situation of the CDS movements in ULBs of Murshidabad. The analysis of that information shows both the achievements and failures of the CDS movements in Murshidabad district in course of empowering the urban poor women. Some aspects really show a ray of light regarding the opportunities for future progress of such Community Structures in ensuring socio-economic empowerment of urban poor women and some aspects that have been revealed would really be a matter of worry for sustainability of such initiatives. In respect to this study it can obviously be interpreted that in case of rest of the West Bengal the scenario of CDS movement is more or less the same but as the study was confined within only Murshidabad district therefore it can also be stated that there is further scope for study in rest of the West Bengal for more perfection.

The following statistics show the present status of all the 13 CDSs regarding undertaking of constructional and socio-economic development projects in last five years

Table 2: Projects Undertaken By CDSs

Si.No.	CDS	Socio-economic Development Projects	Infrastructural Project
1.	Berhampore CDS I	Nil	Nil
2.	Berhampore CDS II	Nil	Nil
3.	Berhampore CDS III	Geriatric Care and Support	Nil
4.	Berhampore CDS IV	Nil	Nil
5.	Berhampore CDS V	Adult Literacy	Nil
6.	Murshidabad Uttara CDS	Adult Literacy	Nil
7.	Murshidabad Dakshinin CDS	Nil	Nil
8.	Kandi Nabadiganta CDS	Health awareness	IHSDP Project for Housing for Urban Poor
9.	Kandi Paurasree CDS	Adult Literacy	IHSDP Project for Housing for Urban Poor
10.	Jangipur CDS	Handloom Weaving	Nil
11.	Dhulian Sudhir Kumar Saha CDS	Adult Literacy	Nil
12.	Dhulian Abdul Hamid Sardar CDS	Nil	Nil
13.	Beldanga CDS	Adult Literacy	Nil

This Table interprets that only 2 CDSs out of 13 have worked under Infrastructural projects and 8 CDSs have undertaken 8 Socio-Economic development projects. The two CDSs under Kandi ULB have undertaken both the infrastructural and socio-economic development projects. 5 CDSs are those who have not undertaken any projects so far. It means, almost 60 % of the total 13 CDSs have been engaged with different projects in last 5 years and 40% of them have not yet been undertaken any project.

Table 3: Beneficiary Coverage:

Sl. No.	CDS	Project Undertaken	Urban Poor women Benefitted
1	Berhampore CDS III	Geriatric Care and Support	50
2	Berhampore CDS V	Adult Literacy	740
3	Murshidabad Uttara CDS	Adult Literacy	600
4	Kandi Nabadiganta CDS	Health awareness	1900
5	Kandi Paurasree CDS	Adult Literacy	240
6	Jangipur CDS	Handloom Weaving	160
7	Dhulian Sudhir Kumar Saha CDS	Adult Literacy	600
8	Beldanga CDS	Adult Literacy	450
Total			4740

This table reflects that total 4740 urban poor have been benefitted by different socio-economic development projects undertaken by the CDSs. Two CDSs under Kandi ULB have undertaken projects for house building of urban poor which have

benefitted 454 poor families to get their own houses. Except the Health Awareness generation programme taken by 'Kandi Nabadiganta CDS' the beneficiaries of the other Socio-Economic Development projects were only the women. Therefore it is seen that a number of total 2840 urban poor women have directly been benefitted in terms of availing educational and income generation opportunities which is near about **60 %** of the total beneficiaries of Socio-Economic development projects. 2630 non literate urban poor women, who were also the members of different TCSs and SHGs, have been able to get basic literacy through the adult literacy programmes.

Table 4: Members directly involved with projects

Sl No.	CDS	Total members	Members directly involved with project activity and management
1.	Berhampore CDS III	16	0
2.	Berhampore CDS V	24	11
3.	Murshidabad Uttara CDS	38	40
4.	Kandi Nabadiganta CDS	196	102
5.	Kandi Paurasree CDS	220	102
6.	Jangipur CDS	21	12
7.	Dhulian Sudhir Kumar Saha CDS	38	15
8.	Beldanga CDS	32	5
Total		585	287

It has been found that the 8 CDSs who have undertaken project having a number of total **585** members from amongst whom 287 members were directly involved with the management and other activities related to the implementation of the projects. Table 4 reflects the scenario. It can therefore be interpreted that only about 49 % of the total CDS members were directly involved with activity and management of such projects.

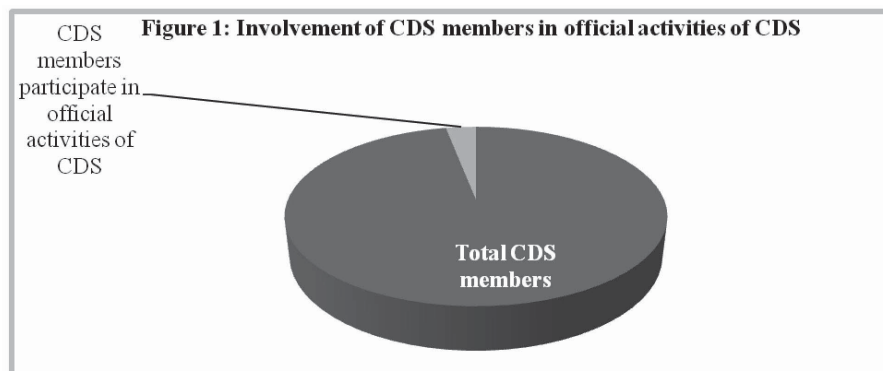
In relation to sustainability of all the projects it has been found that only Berhampore CDS III and Jangipur CDS have concrete future plans to sustain their project through setting up of their own project cell. In case of Berhampore CDS III it has been decided that a Geriatric Care and Support Cell will be established under Municipal Supervision and Jangipur CDS has decided to run a handloom weaving unit for ensuring self-employment of all the trainees. Kandi Municipality has decided to engage their two CDSs in forthcoming sanitary latrine construction programme for poor. But in case of rest of the CDSs the data show no future plan for sustainability of the projects. That is why all the adult literacy centres, which already provided basic literacy to 2630 poor non-literate women under TCSs and SHGs now remain closed. It has also been found that all the socio-economic development activities undertaken by the aforesaid CDSs have been funded by Innovative/Challenge Fund only. As per the respondents the ideas of all the projects

mentioned above were proposed by either the municipal authorities or the funding organization itself and there was a very little scope for the CDS members to decide about designing and undertaking projects as per their needs therefore, as per the respondents, the projects especially the adult literacy programmes and health awareness camp could not be able to achieve expected success.

6 of the respondents out of 8 complained that the CDS members under their jurisdiction usually do not get any information or notification to participate in ward committee meetings though they are ex-officio members of ward committees. Therefore it has been found that **10** CDSs which is almost **77%** of the total 13 CDSs under the study do not have proper stake or participation in ward level decision making process in their ULBs.

In case of participation of the members in CDS official activities such as bank account maintenance and book keeping etc. it has been found that out of total **638** members in all the 13 CDSs only 20 members (which is near about only 3 % of the total members) are actively involved in official activities of CDS . This following figure represents this fact.

As per the responses, 8 CDSs out of the 13(which is almost 61%) suffer from the problem of unwillingness of the members to participate in usual activities of CDS. The respondents said, as the members are from BPL families and they always seek for employment or income generation opportunities therefore it seems to be the loss of valuable time for majority of them to participate in CDS activities as generally the CDS activities do not provide income opportunities for them. 11 CDSs out of the 13 (which is almost 85%) do not have own office. Therefore they usually use the ULB office for their official work or regular meetings. It has also been found that in case of almost all the CDSs under the study have been facing problems of lack of control over their own activities, planning, decision making and even on assets, due to direct control from the part of the ULBs .Sometimes direct political involvement is making them unable to achieve their actual goals and objectives.



Conclusion

This study reveals that 40% of the 13 CDSs have not been able to get any project support so far which means there is still a wide need for such initiatives from the parts of both the government and the ULBs for self sufficiency and sustainability of the CDSs. It has been found that only **two** CDSs under Kandi ULB could be able to get opportunity to work under infrastructural projects which means the initiative of the government for involving the CDSs in such activities through community contract system have not been able to impact the system at all. As the infrastructural projects can ensure more financial profit and income generation for the CDS members therefore for real economic empowerment of urban poor women through CDS movement it needs maximum involvement of CDSs in such activities. Coverage of urban poor and non literate women under such socio economic development projects shows the picture of successful intervention from the part of the CDSs to ensure women empowerment through literacy and self employment trainings but matter of worry is that all the socio-economic development projects have been funded by Innovative/Challenge Fund under Government of West Bengal only and there is no evidence of intervention from the part of other funding organizations. It means if there is no I/CF support no socio-economic development projects can be ensured for the CDSs. In this case it will be a challenge for existence and sustainability of the CDSs. It therefore needs concrete planning and expert intervention from the part of CDS members, ULB authorities and both the state and union governments otherwise women empowerment through CDSs movements could never be achieved completely. In case of having concrete future plan it has also been found that majority of the CDSs do not have any concrete plan for their project sustainability and availing of new programmes. It is also a matter of worry. If the CDSs do not have comprehensive and concrete future plans they will never sustain. In maximum cases the idea of such projects has been proposed by the funding agency or the Municipal authorities and there have not been sufficient scope for stake holding for CDS members to decide a project as per their needs. If such practices go on therefore CDSs could never be able to get scopes for choice, voice and rights for the urban poor women through their activities. Though it is mandatory by law that there must be active participation of CDS members in Ward Level decision making process for urban development through Ward Committees but reality is that in case of **77%** of the total 13 CDSs no evidence of such participation in wards level decision making has been found. The respondents have pointed out unwillingness and ignorance of the ULB authority as the main causes here. In regard to the direct participation of the CDS members in management and maintenance of project activities it is being seen that only 49 % of the CDS members were directly related here which means 51 % which is a very large percentage did not get opportunity to participate. In case of participation of the CDS members in regular official matters of the CDSs the scenario is much more alarming. Here only **3 %** of the total CDSs member from all the 13 CDSs directly

participates in such matters. As per the responses it could be interpreted that 61 % of the CDSs suffer from the problem of poor participation from the part of their members in project implementation and other regular activities of CDSs due to the unwillingness and indifferent mentality of the members. As the main cause of such problem, the respondents pointed out the lack of opportunity for self employment and income generation for the members through CDS activities. Another problematic aspect which has also been revealed here is the absence of office infrastructures in case of 85% of the CDSs. It is also a great cause for worry. Along with this the respondents also pointed out the problem that in case of almost all the CDSs, there is no direct control of them over their own activities, planning, decision making and even on their own assets, due to ignorance , unwillingness and political influence from the part of the ULBs.

All the above mentioned problems are the major challenges for sustainability and progress of the CDS movement. If these problems remain unchanged it will affect the empowering process of urban poor women through CDS movement. It therefore requires active intervention, honest will and strong policies from the parts of both the Urban Local Bodies (Municipalities) and Government in case of ensuring Socio-Economic empowerment for urban poor women through CDS activities. Sensitization of CDS members from the part of the ULBs, Government and Civil Societies regarding their rights and opportunities is also very much required here. Reconstruction and review of policies in this regard is also a basic requirement to ensure complete socio-economic empowerment of urban poor women through their active participation in CDS activities.

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22

Deplorable Health Conditions In Rural India : A Thematic Review

Sudeshna Saha

India is the second most populous country of the world and has changing socio-political-demographic and morbidity patterns that have been drawing global attention in recent years. Despite several growth orientated policies adopted by the government, the widening economic, regional and gender disparities are posing challenges for the health sector. About 75% of health infrastructure, medical manpower and other health resources are concentrated in urban areas where 27% of the populations live. Contagious, infectious and waterborne diseases such as diarrhea, amoebiasis, typhoid, infectious hepatitis, worm infestations, measles, malaria, tuberculosis, whooping cough, respiratory infections, pneumonia and reproductive tract infections dominate the morbidity pattern, especially in rural areas. However, non-communicable diseases such as cancer, blindness, mental illness, hypertension, diabetes, HIV/AIDS, accidents and injuries are also on the rise. The health status of Indians, is still a cause for grave concern, especially that of the rural population. This is reflected in the life expectancy (63 years), infant mortality rate (80/1000 live births), maternal mortality rate (438/100 000 live births); however, over a period of time some progress has been made. To improve the prevailing situation, the problem of rural health is to be addressed both at macro (national and state) and micro (district and regional) levels. Over the years development planning in India has focused on reducing the burden of illness and mortality among women and children. A large number of development and public

health programmes such as the Integrated Child Development Services (ICDS) have been geared towards this, since a long time. India is committed to achieve the Millennium Development Goals, particularly with respect to maternal and child health. Awareness generation is a major responsibility and fundamental importance, to ensure utilization of various healthcare programmes implemented by Government. Rural India contains over 68% of India's total population, and half of all residents of rural areas live below the poverty line, struggling for better and easy access to health care and services. Health issues confronted by rural people are many and diverse – from severe malaria to uncontrolled diabetes, from a badly infected wound to cancer. Postpartum maternal illness is a serious problem in rural-poor settings and contributes to maternal mortality; particularly in rural India. A study conducted in 2009 found that 43.9% of mothers reported they experienced postpartum illnesses six weeks after delivery. Most of India's people, and most of its poor, still live in rural India. The burden of disease and its effects are disproportionately seen in the poor, with a clear gradient in illness and mortality. The crisis in rural health which is becoming more complex and tenacious and it is worsening the crisis of rural life in India. There is a widely prevalent myth that people in rural areas have small health problems which can be addressed by a minimally staffed and equipped health centre.

Real Health Care Scenario in the Rural Areas

Providing quality healthcare in India is a formidable task. While the majority of people live in rural India, the majority of physicians live in urban centers—the ratio of doctors per thousand people in urban India is said to be seven times more than that of rural India.

In addition there are several factors that make delivery of healthcare in rural villages particularly challenging :

- Government health centers are understaffed and ill-equipped— there is less than one doctor per 10,000 people in rural India
- Health staff are undertrained and lack the knowledge for diagnosing certain medical conditions and undertaking specialized treatment
- In most cases, patients who can afford it, are forced to travel to towns and cities, often with their relatives, for diagnosis and treatment, all of which translate into high cost and loss of daily income of every Rupee spent, 70% is overhead and only 30% is used for medical care
- All diagnosis and prescription documents are in English, which is not the working language of rural people.

The disparity of rural and urban health in India

Sector Indicator Rural Urban Combined Ref year

1.	Population	716.02	86.01	002.0	2000
2.	Birth rate	30.0	22.6	28.3	1995
3.	Death rate	9.7	6.5	9.0	1997
4.	IMR	80.0	42.07	2.0	1998
5.	MMR (per 100 000)	438.03	78.04	08	1997
6.	Stillbirth rate	10.8	5.31	0.5	1995
7.	% Deliveries attended by untrained people	71.02	7.05	9.0	1995
8.	% Deaths attended by untrained people	60.02	2.05	4.0	1995
9.	Total fertility rate	3.8	2.8	3.5	1993

Source: Sample Registration System, Government of India, 1997–98

The experience of running the OPD has completely debunked this illusion. People come with a bewildering diversity of problems from HIV disease, advanced tuberculosis to severe malaria, uncontrolled diabetes with a low body weight and a badly infected wound to cancer of the cervix, a B.P. of 240/140 diagnosed for the first time in life, to burns sustained after falling in the fire after a convulsion. The underlying stories are most often the same: profound susceptibility because of associated under nutrition, delayed health care seeking because of difficulties of physical access, dissatisfaction with non-functioning or poorly functioning public health facilities, problems exacerbated by irrational care by an unqualified practitioner. In rural areas, there are massive levels of hunger and massive levels of morbidity, and a vast unmet need for curative health care. There are therefore high numbers of premature deaths, leading to the further marginalization of these populations and trivialization of their problems.

Pre-Government Health Intervention Phase

Primary Health Centres (PHCs) comprise the second tier in rural healthcare structure envisaged to provide integrated curative and preventive healthcare to the rural population with emphasis on preventive and promotive aspects. (Promotive activities include promotion of better health and hygiene practices, tetanus inoculation of pregnant women, intake of IFA tablets and institutional deliveries.) PHCs are established and maintained by State Governments under the Minimum Needs Programme (MNP)/Basic Minimum Services Programme (BMS). A medical officer is in charge of the PHC supported by fourteen paramedical and other staff. It acts as a referral unit for six sub-centres. It has four to six beds for in-patients. The activities of PHC involve curative, preventive, and Family Welfare Services. There were 23,236 PHCs functioning in September 2005 compared to 23,109 a year earlier, according to the Ministry of Health. Though the numbers appear to be increasing there is still a shortfall of about 16 per cent when compared to the required norms for PHCs. Community Health Centres (CHC) forming the

uppermost tier are established and maintained by the State Government under the MNP/BMS programme.

PHC is the first contact point between the village community and the Medical Officer. The dearth of trained doctors, lab technicians and pharmacists is acutely felt. What these data do not reveal is that even if the personnel are present, their level of participation in providing health services is lower than desired due to lack of supplies, inadequately functioning equipment, poor monitoring of the staff, and so on. Most reports and evaluation studies point to the lack of equipment, poor or absence of repairs, improper functioning, or lack of complementary facilities such as 24-hour running water, electricity back-ups, and so on. But conditions being what they are, unreliable electricity and water supplies also take their toll on the performance of these centres. Moreover, the patterns of absence from duty as well as closure of facility were found to be unpredictable, so people could not even count on facilities being open on certain days or certain times. This rate of absenteeism can be attributed to the fact that there is certainly a serious lack of zealous administrative action towards effective service provisioning. The government has failed to provide the basic infrastructure and incentive structure (not necessarily monetary but in terms of job environment and recognition) for doctors and other health workers to be motivated enough to do their job.

Health infrastructure: urban versus rural

Rural Urban Total Year

Hospitals 3968 (31%) 7286 (69%) 13 6921993

Beds 95 315 (20%) 524 118 (80%) 696 2031993

Dispensaries 12 284 (40%) 15 710 (60%) 27 4031993

Doctors 440 000660 0001 100 0001994

All systems 440 000660 0001 100 0001994%

allopathy 25% 75% 38%

Source: Duggal R. Health Care Budgets in a Changing Political Economy. Economic and Political Weekly May 1997

Many factors may Contribute to this gap

- Failure to create Family Practice and Rural Health Practice oriented Doctors by the system .
- Paucity of Doctors. Doctor population Ratio is 1.62 per 10000 only.
- Doctors not serving and settling in rural areas.
- Lack of infrastructure facilities in rural areas.

However, the socioeconomic, cultural and political onslaughts, arising partly from

the erratic exploitation of human and material resources, have endangered the naturally healthy environment (e.g. access to healthy and nutritious food, clean air and water, nutritious vegetation, healthy life styles, and advantageous value systems and community harmony). The basic nature of rural health problems is attributed also to lack of health literature and health consciousness, poor maternal and child health services and occupational hazards.

The rural populations, who are the prime victims of the policies, work in the most hazardous atmosphere and live in abysmal living conditions. Unsafe and unhygienic birth practices, unclean water, poor nutrition, subhuman habitats, and degraded and unsanitary environments are challenges to the public health system. The majority of the rural populations are smallholders, artisans and labourers, with limited resources that they spend cheaply on food and necessities such as clothing and shelter. They have no money left to spend on health. The rural peasant worker, who strives hard under adverse weather conditions to produce food for others, is often the first victim of epidemics. Malnutrition is one of the most dominant health related problems in rural areas. There is widespread prevalence of protein energy malnutrition (PEM), anaemia, vitamin A deficiency and iodine deficiency. Nearly 100 million children do not get two meals a day. More than 85% of rural children are undernourished (150 000 die every year).

A Recent Survey by the Rural Medical College, Loni (unpublished data), in the villages of Maharashtra State

Maharashtra is one of the progressive states, has revealed some alarming facts. Illness and deaths related to pregnancy and childbirth are predominant in the rural areas, due to the following reasons:-

- Very early marriage: 72.5% of women aged 25–49 years marry before 18, where the literacy rate is 80%.
- Very early pregnancy: 75% married women had their first pregnancy below 18 years
- All women invariably do hard physical work until late into their pregnancy.
- Fifty-one per cent of deliveries are conducted at home by an untrained traditional birth attendant.
- Only 28% of pregnant women had their antenatal checkup before 16 weeks of pregnancy.
- Only 67% of pregnant women had complete antenatal checks (minimum of three checkups).
- Only 30% of women had postnatal checkups.
- 80% of general practitioners practice western medical (allopathic medicine) without proper training.

- 73% consider cost to be the most important fact when prescribing a drug, without considering pharmacological properties.
- 75% were aware of the Government-run Primary Health Center (PHC) or village subcentres without knowing the names of the medical officer at the PHC half (53%) do not know the health workers in the own area.
- About 67% had knowledge of various national health programs but only 33% participated.
- Over 68% received information regarding the health programs through the media, and only 28% receive information through public health staff.
- About 74% provide family planning services, main oral contraceptives and condoms. General practitioners do provide services to pregnant women (65%), but only 35% registered them.
- Almost all general practitioners routinely handle cases of diarrhoea, but only 29% know the exact composition of oral dehydration solution (ORS); amazingly, none knew the right method to prepare the ORS pack.

A new study on access to healthcare facilities shows that rural areas remain significantly underdeveloped in terms of health infrastructure: about half the people in India and over three-fifths of those who live in rural areas have to travel beyond 5 km to reach a healthcare centre. Availability of healthcare services is skewed towards urban centers with these residents, who make up only 28% of the country's population, enjoying access to 66% of India's available hospital beds, while the remaining 72%, who live in rural areas, have access to just one-third of the beds. Insufficiencies in public healthcare services have driven people across socio-economic strata to private healthcare facilities leading to issues of affordability challenges. In 2012, 61% of rural patients and 69% of urban patients chose private in-patient service providers, up from 40% reported in a 1986-87 government survey.

But since the cost of treatment at private healthcare facilities is at least 2 to 9 times higher than at public facilities, it leads to the factor. Poor patients receiving outpatient care for chronic conditions at a private facility spent on an average 44% of their monthly household expenditure per treatment, against 23% for those using a public facility, says the study conducted by IMS Institute for Healthcare Informatics.

"The healthcare system in India is not delivering affordable, acceptable and accessible healthcare to all Indians - which must be the test of its quality," said Arun Maira, member, Planning Commission. "In fact, some fixes to only a part, without considering their effects on other parts of the system, can backfire as indeed some are." According to the IMS study, the lack of accessible healthcare facilities in rural areas, the difficulty in accessing transport and the loss of earnings means

patients postpone treatment, or make do with facilities that may be closer but are not cost-effective or even suited to their needs. The study, which was based on a survey of nearly 15,000 households across 12 states, says that a 40-45% reduction in out-of-pocket expenditures for both outpatient and inpatient treatments can be achieved by addressing physical accessibility of healthcare facilities, availability and capacity of needed resources; quality and functionality of service, and affordability of treatment relative to a patient's income. While expanding, healthcare access is a critical priority for the Indian government and the private sector, the gap between aspiration and today's reality is all too apparent.

Post-Government Intervention Phase

National Rural Health Mission (NRHM) is an Indian health program for improving health care delivery across rural India. The mission, initially mooted for 7 years (2005-2012), is run by the Ministry of Health. The scheme proposes a number of new mechanism for healthcare delivery including mobile health care facilities, training local residents as Accredited Social Health Activists (ASHA), and the JananiSurakshayYojana(motherhood protection program). It also aims at improving hygiene and sanitation infrastructure. Noted economists Ajay Mahal and BibekDebroy have called it "the most ambitious rural health initiative ever". The mission has a special focus on 18 states Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu and Kashmir, Manipur, Mizoram, Meghalaya, Madhya Pradesh, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttarkhand and Uttar Pradesh. Under the mission, health funding had increased from ₹27,700 crores in 2004-05 to 39,000 crores in 2005-06 (from 0.95% of GDP to 1.05%). This has further increased from 14,974 crores in 2007-08 to 34,488 crores in 2012-13. As of 2009, economists noted that "the mid-term appraisal of the NRHM has found that there has been a significant improvement in health indicators even in this short period". However, in many situations, the state level apparatus have not been able to deploy the additional funds, often owing to inadequacies in the Panchayati Raj functioning. Fund utilization in many states is around 70%.The main objective of NRHM is to provide health care services under one umbrella programme in rural areas.

The Mission seeks to provide accessible, affordable and quality health care to rural populations, especially vulnerable and underserved population groups in the Country. The Mission aims to achieve infant mortality rate (IMR) of 30 per 1000 live births, maternal mortality 100 per 100 thousand live births and total fertility rate of 2.1 by the year 2012. The Mission attempts to achieve these goals through a set of core strategies including enhancement in Budgetary Outlays for Public Health, decentralized village and district level health planning and management, appointment of Accredited Social Health Activist (ASHA) to facilitate access to health services, strengthening the public health service delivery infrastructure,

particularly at village, primary and secondary levels, improved management capacity to organize health systems and services in public health, promoting the non-profit sector to increase social participation, and community empowerment, inter-sectoral convergence, up gradation of the public health facilities to Indian Public Health Standards (IPHS), reduction of infant and maternal mortality through Janani Suraksha Yojana (JSY), etc. (NRHM, 2005; MoHFW, 2007). The Mission aims at operationalising existing health facilities to meet Indian Public Health Standards in each Block of the Country. Mainstreaming of AYUSH is needed to facilitate comprehensive and integrated health care to rural population, especially underserved groups in India. The strategic options before the Mission included integration of RCH, family welfare, and national programs of disease control under NRHM to achieve desired population stabilization goals within reasonable period. The National Disease Control Program (NDCP) comprise of preventive and curative measure for control of Malaria, Filariasis, Encephalitis, Dengue, Kalazar, Leprosy, Tuberculosis, Blindness, Iodine Deficiency disorders, and Polio. However, the National AIDS and Cancer programs were not integrated to the NRHM scheme. A funnel type approach was adopted to ensure the integration of funds for all the national level schemes and thereby the flow of funds to the District Health Mission through the State Health Society. Thus, under the decentralization scheme the district was supposed to be the hub around which all health and family welfare services were supposed to be planned and managed. The NRHM strategy carefully mentions that the population stabilization goal needs focused attention on basic health care, and access to quality family welfare services for fertility choice or fertility control, not through coercion or disincentives or inducements.

Decentralized Planning and Communitization also encompasses capacity building in terms of training and sensitization of ASHAs, Village Health and Sanitation Committee (VHSC) and Rogi Kalyan Samiti (RKS) members about their roles and responsibilities towards proper utilization of Grants and Funds in the best interest of the users. The financial management also entails evaluation of utilization of untied funds to VHSC, SC, PHC and CHC. Communitization process necessitates involvement of Panchayats in governance of VHSCs, hospital development committees and district health societies. The process parameters for the success of the Communitization process can be adjudged in terms of constitution of VHSCs, recruitment and functioning of ASHAs, constitution of registered Rogi Kalyan Samities at District Hospitals (DHs), Sub-Divisional Hospitals (SDHs), Community Health Centres (CHCs) and Primary Health Centres (PHCs). The detailed action plan to achieve the objectives comprised primarily of an increase in the public spending on health and family welfare from 0.9 percent to 2-3 percent of the Gross Domestic Product (GDP) during 2005-12. Strengthening of policies and programs to revitalize the health systems through decentralized management at the local level and synergize health with social determinants of health viz. nutrition, sanitation, hygiene and safe drinking water. The Mission strategize

decentralization in the administrative and management of the public health care delivery system to effectively meet the health and family welfare needs of the people in diverse social, economic and cultural settings. The Mission also addresses the issue of empowerment of the community to own, manage and control the public health care delivery system.

State of Health: A Critical Appraisal

The National Rural Health Mission (NRHM) has been described as one of the largest and most ambitious programmes to revive health care in the world and has many achievements to its credit. It seeks to provide universal access to health care, which is affordable, equitable, and of good quality. It has increased health finance, improved infrastructure for health delivery, established institutional standards, trained health care staff and has provided technical support. It has facilitated financial management, assisted in computerisation of health data, suggested centralised procurement of drugs, equipment and supplies, mandated the formation of village health and hospital committees and community monitoring of services. It has revived and revitalised a neglected public health care delivery system.

Challenges and Solutions: The NRHM has injected new hope into the health care delivery system in India. However, it continues to face diverse challenges, which need to be addressed if its goals are to be achieved in the near future.

Health as a State subject: The location of health in the State list rather than the concurrent list poses major problems for service delivery. This is also compounded by the fact that the NRHM funding is from the Centre while the implementation is by the State governments. Health care delivery cannot be improved to provide a seamless service without the removal of these barriers.

Project mode and problems: The NRHM is currently functioning as a project of the Government of India and is due to end in 2012. Its significant contribution to improving health care infrastructure and service delivery across the country will be frittered away if its funding ceases with the 11th Five Year Plan (FYP). The NRHM should be not only included in the 12th FYP but also be changed from its limited term project mode to a permanent solution to India's health problems.

Its status as a project makes the integration of the NRHM with the State health care systems problematic. The divisions run deep resulting in irrational distribution of human resource and infrastructure. The inertia of the old system and the low morale and discipline of its staff continue to be major challenges. The NRHM has been able to add new infrastructure and personnel; however, its impact on re-inventing and re-invigorating systems seems to be limited, with much more effort being required. There is a need for a more coordinated approach which optimally utilises resources.

Improving governance: A comparison of data between States and within regions and social groups suggests marked variations in the NRHM process indicators, utilisation of funds, improvements in health care delivery, health indices and in community participation. Regions with prior good health indices have shown marked improvements, while those with prior poor indices have recorded much less change. This is true, despite a greater NRHM focus on and inputs to poor-performance States. Improving governance and stewardship within the NRHM programmes mandates general improvement in the overall governance of States and regions.

Increased funding: Health care costs for the average Indian usually results in catastrophic out-of-pocket expenditure and is a well recognised cause of indebtedness in the country. The total health budget for India is about 1 per cent of the country's GDP. Most developed nations prioritise health care and provide 5-10 per cent of their GDP. The 12th FYP should increase funding for health to the tune of 2-3 per cent as promised by the United Progressive Alliance.

The diversion of funds, through private health insurance schemes for the care of rare disorders to be treated in corporate hospitals, takes away funding from the public health care system. The injection of such money into the public system would allow for the provision of universal health care, improve government health systems and provide for common health conditions benefiting larger numbers.

Urban health: The NRHM has focussed on rural health. Many parts of urban India have similar health care needs and currently have glaring deficiencies. The National Urban Health Mission should be accorded the same status as the NRHM. Both efforts should be coordinated and combined into a National Health Mission.

Expand focus: The major focus of NRHM is on maternal and child health. While this is vital, there is a need to expand the vision to other common general health problems. There is evidence to suggest that other crucial government programmes (e.g. blindness) have taken a back seat.

Cash transfers and outcome: The NRHM currently employs process indicators to measure its implementation. The measures used are mainly related to finance, infrastructure and personnel. There is need to shift over to indicators of efficient functioning and examine their impact on health outcomes. The initial high rates of mortality tend to reduce rapidly with early inputs but require fully functional, efficient and effective systems for sustained results. The Janani Suraksha Yojana, a conditional cash transfer scheme to incentivize the use of health services to reduce maternal and neo-natal mortality among poor women, has become a success by encouraging institutional deliveries. However, the evaluation of its success should be based on its impact on the health outcome of the mother and baby, rather than on financial process indicators.

Similarly, the diverse and difficult circumstances of medical practice across the

country mandate a differential reinforcement for health professionals. There is need for differential payments to health care staff who work in remote situations and difficult contexts.

Health information and monitoring: The NRHM has provided for infrastructure, personnel and training for Health Management Information Systems. However, these are not optimally utilised. There is need to improve the information system as part of the process of monitoring health indices of populations and functioning of the public health care system. The NRHM already has a programme of community monitoring and social audit. This should be strengthened in order to monitor the use of funds and empower local communities.

Social determinants and public health approaches: The goals of the NRHM clearly state the need to impact on the social determinants of health by coordinating efforts to provide clean water, sanitation, nutrition, housing, education and employment. It should, in conjunction with other government programmes, work towards the reduction of poverty, social exclusion and gender discrimination, all of which have a significant impact on health. There is need to increase the synergy and coordination between government programmes (e.g. the Integrated Child Development Scheme, the Mahatma Gandhi National Rural Employment Guarantee Act, etc.) and the NRHM.

Funding Priorities

Improvements in health of populations contribute to economic development and vice versa. This bidirectional relationship justifies increased investment in health. The NRHM should become an integral part of the Five Year Plans and the health budget should be increased to 2-3 per cent of GDP. The National Urban Health Mission should receive equal funding priority and be coordinated with the NRHM. Greater financial inputs to improve governance and specific funding to coordinate NRHM programmes with those of the State health services are crucial, as is cooperation with other government programmes to target social determinants of health. Strengthening of health information, community monitoring and social audits to assess its impact on health outcome indicators is necessary. Improved funding for the public health sector to treat common health conditions, rather than providing private health insurance for uncommon disorders, is mandatory. State governments also need to prioritise health and increase their share of the health budget.

Conclusion

The health care system has flaws, both at the conceptual and operational levels. However, there is no simple, band-aid solution to the problem. There is a need for continuous monitoring and appraisal, allowing for regular course corrections. Unfortunately, health is a prime example where good politics and good policy diverge. One cannot ignore the economic interests of the health education-hospital-

pharmaceutical-insurance industries who directly profit from tertiary specialist care, indirectly when public health delivery systems are run down and when the social determinants of health are neglected. In our capitalistic world, these interest groups cannot be expected to look beyond their strategy to generate profit. Politicians and governments are also unable to see the ethical issues related to equity and lack the conviction to provide services for the poor. Health, a human right, and universal health care should not remain an aspiration but should become operational in the near future. A nation prospers only when the health conditions of its population remains intact as Health is a Nation's Wealth.

23

Health Care System in India –Issues and Intricacies

Alluri V.N.Varma, K.A.S.P.Rama Raju and J.S.P.Rao

The estimated 4.2% of GDP generated from the healthcare market to reach over 1.2 billion denizens is underdeveloped and seems like a great opportunity for growth. However, before rushing into this prospect, there must be an examination of the intricate facets of the current healthcare market in India.

The existing contrast in the availability of India's healthcare seems as large as its population. When it comes to healthcare, the estimated 1,205,073,612 Indians are split into two groups. The middle and upper classes, which generally live in the urban areas of India, have access to quality medical care. However, the majority of India lives below the poverty line in rural areas and has extremely limited access to medical care. Most rely on homeopathic or cultural remedies. The stark inequality of available healthcare has shaped the current market environment and should always be kept in mind when exploring the industry.

Besides the lack of overall healthcare infrastructure, the second most important influence on India's healthcare industry is its lack of a medically insured population and high out-of-pocket expenditure (71.13%). India's insurance industry has fluctuated between public and private ownership for most of the 20th century. While the insurance industry is limited in the number of people it reaches, it does make up some ground in terms of sophistication. There is a public reinsurer,

general insurance company (GIC), which is the sole reinsurance company of India. There are also over 12,000 registered actuaries with the Institute of Actuaries of India who are involved in the pricing, reserving and other analytical roles in health insurance companies. Through the Actuaries Act of 2006; these professionals are governed by a myriad of regulations mandated by a collection of councils, committees and advisory groups.

Major Health Concerns

The World Health Organization's 2000 global healthcare profile ranked India's healthcare system 112th out of 190 countries. This survey highlighted four major health concerns for India that still are prominent today. The first concern is the high vulnerability of young children. Among children under five, 43.5% are underweight (the highest percentage in the world) and have 6.6% die before their fifth birthday (which is quite high compared to United States' rate of 0.8%) the second major concern is poor sanitation. Only about 30% of the population uses improved sanitation facilities and this figure dips below 20% when focusing solely on the rural population.

The final concern is disease. The top three are malaria, tuberculosis, and diarrhea. Combined, these health concerns have hindered India's life expectancy: 63 for males and 66 for females, which are considerably lower than the United States life expectancy of 69 and 75 respectively. (2009 World Health Organization Health Profile)

Social Health Initiatives

It is both challenging and expensive to try to attain the goal of universal health coverage in a country where most of its people are unemployed or employed informally. From 1948 to now, the Indian government has launched a series of social health insurance schemes to ensure healthcare access to the middle and upper classes as well as the poor and other special populations. The following table is a summary of the schemes launched.

1. Means of Financing ESIS: Employee's State Insurance Scheme 1948(<http://wcd.nic.in/icds.htm>) - Employees with income less than Rs 15000/month and dependents to achieve universal health coverage Financed by state government, employers and employees.
2. CGHS: Central Government Health Scheme 1954 - Government employees and families to achieve universal health coverage.
3. Financed by state government, employers and employees ICDS: Integrated Child Development Services 1975(http://www.unicef.org/earlychildhood/files/india_icds.pdf)
4. Malnutrition children under age 6 to improve nutrition and health status to children

5. The government, the United Nations Children’s Fund (UNICEF) and the World Bank RSBY:RashtriyaSwasthyaBimaYojana2009(<http://www.rsby.gov.in/>)
6. The poor below the poverty line - To provide affordable healthcare to the poor Financed by Central (75%) and State (25%) Government NPHCE:National Programme for the Health Care of the Elderly 2011(national program for the health care of the elderly operational guidelines)

Regulation:After the Insurance Regulatory and Development Authority Act were passed in 1999, a governing body under the same name (IRDA) was set up to regulate insurers and protect the insured’s interests (<http://www.irda.gov.in>).

IRDA’s objectives include setting and enforcing standards, ensuring speedy settlement, preventing claim frauds and building information systems. These regulations have accelerated the growth of the insurance industry and the economy in India.

Urban versus Rural

There is a large gap in the healthcare system between urban and rural areas. The inequity among regions is due to a lack of healthcare resources and infrastructure in the rural region. Compounding the issue, most of the population resides in rural part of the country (68.84%) (http://www.censusindia.gov.in/Census_Data_2001/India_at_glance/rural.aspx).Consequently, only a quarter of the Indian population has access to allopathic medicine, and most of them live in urban areas. The majority of the hospitals are privately owned and located in cities due to the sector’s awareness of the health related issues and financial viability. However, the disadvantaged urban population can’t afford the private facilities in the cities. In response to this lack of availability, the Indian government has launched the National Urban Health Mission. Its principal mission is to ensure adequate resources and to reduce health problems for thevulnerable poor urban sector (National Urban Health Mission: An analysis of strategies and mechanisms for improving services for urban poor). Under this mission, the government pays the insurance premium for select individuals and works in conjunction with the private sector.

While the National Urban Health Mission has had some success, it does not address India’s biggest healthcare concern. The rural regions have less access to modern medical treatments and depend more on traditional treatment such as unani and acupuncture. The rural population has significantly less financial capital and relies heavily on government funded medical facilities. The Economic and social development is complimentary to each other. Empirical evidence suggests that mere emphasis on economic development and neglect of social development results in lopsided development and ultimately slowing down the tempo of economic development. The top priority accorded to economic sector and marginal policy attention to social sectors like education and health results in economic prosperity

accompanied by social poverty. Social poverty particularly in the fields like education and health finally eclipses economic development and ultimately quality of life. A balanced strategy of allocating resources between economic and social sectors, thus, is very essential policy decision for a developing country like India. Assigning adequate priority to social sectors has also become non-negotiable in the light of knowledge emerging as a new found source of economic growth and also reaping the benefits of 'demographic dividends' which India has in form of a largest number of population in the working age group (15 to 64 years). It is in this backdrop of growing importance of health service that the present paper has been initiated.

Objectives, Hypotheses and Research Methodology

Objectives: The present paper aims to examine the problems and prospects of health services in India.

Research Methodology

The paper largely depends upon secondary sources of data. The various sources of data include reports of the Union Ministry of Health and Family Welfare, the National Planning Commission, National Rural Health Mission, National Health Policies, Reports of the Nine Expert Committees constituted by the Government of India, etc.

Findings

Some of the most appealing growth opportunities in the Indian healthcare industry are what the country needs the most. First, 70 percent of the Indian population lives in rural areas while only two percent qualified medical doctors are available in these areas (Data from National Health Accounts in India). Indian health care today is urban-centric. It needs to be reformed through growth of medical infrastructure and professionals. Next, state-sponsored or community health insurance plans provide coverage for inpatient primary care. However, secondary/tertiary and outpatient care is very underdeveloped and is need of improvement. Thirdly, the insurance payment structure is almost exclusively retroactive. Beneficiaries need a plan which can cover medical costs up front instead of paying out-of-pocket and waiting long periods of time to get reimbursed. Lastly, India has been limited to critical illness coverage for inpatient surgical procedures and often one-time lump-sum payouts. The lack of clarity in the government's insurance and health care regulatory policies has had a limiting effect on the growth of private health insurance in India. An organization that can understand the current environment of India's healthcare system and can come up with practical solutions to its inadequacies can help a lot of people and can generate quite a worthwhile venture.

It is not only that India spends very low proportion of its GDP on public health

services, another problem is the wide ranging regional variations in expenditure on public health services is also reported. A comparison of inter-state variations in expenditure on health suggests that Rajasthan spent 5.75 % of its budget on health, whereas it was only 3.63% in case of Gujarat in 2003-2004. The State wise expenditure on health also reveals that the share of health sector in the overall budget has been declining over time. For example all the States spent 7.02% of their budget on health in 1985-86, which declined to 5.72% in 1991-92 and further to 4.97% in 2003-04.

Similarly in rural areas there are only 0.6 doctors per 1000 population, which is as high as 3.4 in urban areas. Rural-urban disparities are equally pronounced on account of outcome of health services. For instance Infant Mortality Rate (IMR) in rural areas is 74 per one thousand live births which is about 44 per thousand live births in urban areas. Similarly Under-Five Mortality Rate (U5MR) is 137 per thousand live births in rural areas and 87 per thousand live births in urban areas (De, 2008).

The Government of India has taken a new massive policy initiative known as National Rural Health Mission (NRHM) to reduce the divide between urban and rural areas in the field of health. The major objectives of NRHM are to improve the availability of and access to quality health care by people, especially for those residing in rural areas, the poor, women and children (NRHM, 2005). The pace of implementation of the Mission is very slow. Garg and Nath have opined that the progress of the Mission in Uttar Pradesh, one of the most populous states is very dismal. In NRHM, Accredited Social Health Activist (ASHA) is the key player, whose role is to work as an interface between the community and the public health system. In case of Uttar Pradesh, the performance on account of ASHAs is very discouraging. The State has selected only 9,548 ASHAs against the target of 65,000. Unfortunately, the State has not made any arrangement for their training. In most of the other States also the progress of NRHM is very tardy. In India as a whole out of the total 228,327 ASHAs proposed to be selected; only 145,546 ASHAs were selected (Garg and Nath, 2007).

A government-funded review of NRHM also revealed its slow progress. The major problems in the implementation of the NRHM are: administrative constraints, governance issues, inadequacies in human resources as well as the poor investment in public health services in the recent past (Shrivastava, 2008). Commercialization and privatization of health services and introduction of users' charges in public health institutions during post-globalization phase have excluded a sizeable number of populations particularly belonging to socially disadvantaged groups and poor from the coverage of health services provided by organized sector.

Gender disparities in health services are also very acute and deserve special attention of the policy makers. Gender disparities are found on account of utilization of health services both for in-patient and out-patient care. National Sample Survey

Organization (NSSO) data reveal that in the rural areas the money spent per illness episode for outpatient care was Rs. 151 and Rs. 137 respectively for male and female. The respective amounts for urban areas were Rs. 187 and Rs. 164. Gender variation in expenditure spent for in-patient care is also reported (Saha and Ravindran, 2002). Glaring spatial disparities in health services and their outcomes are also found particularly in rural India (Kathuria and Shankar, 2005).

In addition to inequity in health services, the quality of health services and governance of public health organizations are also matter of concern. First the infrastructural facilities are inadequate followed by their poor maintenance. Secondly most of public health institutions are understaffed accompanied by a high absence rate among the personnel. Thirdly, medicines are normally not available in the health institutions (Dreze, 2004).

NGOs: The Tireless effort-makers

Because of the need for additional and more qualitative health care to cover the gap in rural areas, NGOs have grasped the opportunity to help increase the standard of living in the communities by providing their services. The LEPRAs Society or the Uday Foundation are only some of the many examples of NGOs that work in health-related projects focused in poor communities in India. Despite their efforts, there is still the need for projects or organizations that can scale at a faster rate to assure the sustainability of the final social impact, as well as the support from government to invest in them and to encourage others do the same.

Policy Recommendations

With a view to take optimal advantage of demographic dividends and knowledge as a source of growth, it is essential to improve quality of human resources. For enhancing quality of human resources through health sector the following policy recommendations have been made:

First very meager funds are allocated to health sector in India. It is recommended that level of public expenditure on health in India should be enhanced considerably. Most of the policy documents including National Health Policy, 2002; and the National Rural Health Mission (2005-2012) have recommended increasing health expenditure to around 3 per cent of GDP (Choudhury, 2006). This recommendation should be adopted with immediate effect.

Secondly, it is recommended to reduce regional disparities in the provision of health services. With a view to ensure minimum health services across states a study undertaken by the National Commission on Macro economics and Health, Ministry of Health and Family Welfare, Government of India (Rao, *et al.*, 2005) has recommended expenditure on basic health services State wise. Poor and backward states lagging behind need quantum jump in the level of funding of health services.

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24

Land Reform in Darjeeling Hills and its Consequences

Durga K. Sahu

Operation Barga stands for the process of recording or documentation of the Bargadars or sharecroppers in West Bengal. The recording of Bargadars to save them from illegitimate evictions by the landowners was considered soon after the independence. However the first ever attempt to provide security to them was found in the West Bengal Land Reforms Act, 1955 Swction 50 (e). This section of the Act made provisions for the recording of the Bargadars names in the village record-of-rights. This work started in 1974, during the Congress rule in West Bengal but no satisfactory progress was made. The most difficult problem was the identification of the Bargadars and incidentally the above Section of the Act was not very clear about their definition. Thus, section 21 B was inserted in this Act in 1977, which defined a bargadar as :

A person lawfully cultivating any land belonging to another person shall be presumed to be a bargadar in respect of such land if such person is not a member of the family of the other person whose land he cultivates and the burden of proving that such a person is not a Bargadar or that the land is in his (landowner's) personal cultivation shall lie on the landowner¹.

¹Quoted in Ghosh, R. 'Agrarian Programme of Left Front Government', EPW. Vol. 16, Nos, 25-26, June 20-27, 1981, pp. 50-51.

In July, 1978 the Left Front Government put a special emphasis on this matter by implementing the Operation Barga.

The recording of the bargadars before 1978 received a set-back due to the stiff resistance offered by landlords on whose behalf the Courts issued injunctions staying thereby the progress of the Operation Barga. The Left Front government came in power in June 1977 and could mobilize sufficient public opinion to its side and by December, 1980 it could, with the help of party workers and government officials, register as many as 10,01,926 bargadars constituting 2.3 percent of the state's total population. The magnitude of recorded bargadars is attempted to bring out in the following Table.

Table-1 Recording of the Bargadars

State/District	Total Population	Bargadars recorded upto Dec. 31, 1980	% of Bargadars against state/ district population
West Bengal	44,312,011	10,01,926	2.3
1. 24 Parganas	8,449,482	1,31,042	1.6
2. Howrah	2,417,286	30,743	1.3
3. Nadia	2,230,270	38,691	1.7
4. Murshidabad	2,940,204	48,248	1.6
5. Burdwan	3,916,174	79,835	2.0
6. Birbhum	1,775,909	60,449	3.4
7. Bankura	2,031,039	77,599	3.8
8. Midnapore	5,509,247	2,13,698	3.9
9. Hoogly	2,872,116	66,329	2.3
10. Malda	1,612,657	60,325	3.7
11. West Dinajpur	1,859,887	84,995	4.6
12. Cooch Behar	1,414,183	54,797	3.9
13. Jalpaiguri	1,750,159	45,405	2.6
14. Darjeeling	781,777	9,820	1.3

Source: Figures on recorded bargadars from N. Bandyopadhyay, "Operation Barga" and Land Reforms Perspective in West Bengal : A Discursive Review, EPW, June 20-27, 1981 : A-39 and on population from Census of India 1971, Series 22, West Bengal, Paper IIA, General Population Tables, pp.11-12.

The above table brings out some interesting profiles. It is seen, for example, that the percentage of recorded bargadars is lower than the State average in Darjeeling and the districts of Southern Bengal. On the other hand, all other districts of north Bengal and south-western Bengal, except Burdwan (which has 2.0 percent) and Hoogly (2.3 percent) have, compared to the state average again, a higher percentage of recorded Bargadars against the district population. The higher percentage in these districts could be due to (i) a greater number of Bargadars and/or (ii) more successful Operation Barga. It may also be noted that, with the exception of

Howrah, Darjeeling has the lowest percentage (1.3) of recorded Bargadars against the district population. While the reasons for this in Howrah is beyond the scope of discussion here, the same about Darjeeling are, amongst others, the following:

1. Out of 767.7 thousand acres of land in Darjeeling the net area sown 1967-68 was only 238.9 thousand acres or 31.3 percent and the area sown more than once was 28.9 acres or 3.8 percent only². If data could be available at the subdivision level also it would perhaps be seen that both the net area sown and the area sown more than once would have a lower percentage in the Hill areas because of the reasons given in the following.
2. Three of its four subdivisions – Sadar, Kurseong and Kalimpong have a different ecological set-up from the rest of West Bengal or even its Terai subdivision, Siliguri. There is usually no irrigated land above 4000 feet from sea level and virtually no sharecroppers exist around and above 7000 feet from the sea level. They are generally found below 4000 feet and in areas irrigated and/facing east or west; the dry lands and the areas facing north and south are less productive and have less of Bargadars even in low altitudes.
3. The social, cultural, political and historical background of this district is also, by and large, different from the rest of West Bengal. Though this background does not always have a correlation with the extent of bargadars there, it has a significant role to play in the partial success of the Operation Barga in this district. The hill areas of Darjeeling are unlike other districts of West Bengal in very many respects. And unless the peculiar historical and ecological factors of this region are taken into account, the generalizations based on the state level, with the aid of secondary data, may not be of much use.

Darjeeling in the Past

The whole of the present Darjeeling district once belong to Sikkim. The four subdivisions of it were gradually incorporated into the district by the British India. Most of the present Sadar and Kurseong subdivision (then comprising 138 square miles) was granted to the East India Company by the Raja of Sikkim in 1835. Siliguri was annexed in 1850 as a kind of punishment to Sikkim for the ill treatments which Captain Lloyd and Joseph Hooker had to bear in that country. And Kalimpong which was wrested away by Bhutan in 1706 was annexed after the Indo-Bhutan war of 1865.³

²District Statistical Handbook : Darjeeling, 1971 and 1972 (combined), Calcutta, Bureau of Applied Economics and Statistics, Government of West Bengal, 1974, pp. 40-41.

³Dash, A.J., Bengal District Gazetteers : Darjeeling , Alipore, Govt. Printing, 1947,p, 49.

Table 2 Growth of population in the Hills areas of the Darjeeling District

Year	Population	Source
1850	10000(approx)	According to Dr. Campbell
1869	22000(approx)	Mr. Hooker
1881	92141	(First Census)
1891	1,50,311	(Second Census)
1901	1,73,342	(Third Census)
1911	1,89,763	(Fourth Census)
1921	2,06,961	(Fifth Census)
1931	2,39,377	(Sixth Census)
1941	2,86,355	(Seventh Census)
1951	3,28,785	(Eighth Census)
1961	4,04,792	(Ninth Census)
1971	4,79,978	(Tenth Census)

The population of the hill tract with 138 square miles in 1835 was about 100 and almost the whole area was covered with forest. Kalimpong and Siliguri, which joined later had relatively more population. An all-round change in Darjeeling began in 1866 when tea and agriculture were extensively introduced and roads and bungalows were constructed all over the region. However, at the initial stage, the rapidly growing tea industry absorbed the major influx of the people from the outside; those who could not be absorbed there alone went for agricultural production. Land though covered with forest was plenty and anybody could become a landowner by clearing a patch of forest and paying a certain amount of revenue or khajana to the mandals or headmen. There was one agrarian class unlike a few at present: they could be called tenant cultivators. Agrarian hierarchy in true sense had not developed though there were mandals and karbaris (account assistants of the mandals) above the common masses. Moreover, the agrarian relations were overshadowed by the relationships of caste, tribe, religion or place of migration. In Bengal, the Permanent Settlement was introduced in 1793 and it may be remembered here that by 1830's, the problem of the impoverished peasantry of Bengal had assumed so dangerous proportions that even a social reformer like Raja Rammohun Roy had pleaded for their cause. On the other hand, Darjeeling was outside West Bengal and with very sparse population till about the mid-nineteenth century. It was also declared a Non-Regulation District till March 1937 which meant that the Acts and Regulations of the State Government were not implemented there unless specially extended.

It can be assumed that bargadari system in Darjeeling is a twentieth century phenomenon. The first Settlement Report of 1892 on Kalimpong does not mention

⁴Manas Dasgupta and A. Sanad: Nepal's Land Revenue System and Demographic Changes in the Darjeeling Hill areas, North Bengal History Review(Humanities and Social Sciences), Vol. 1, No.1, 1980.

anything about sharecroppers; it only notes, amongst others, that Kalimpong has 3717 raiyats and the average size of land holding per raiyat was 9.7 acres and the rent, Rs 6-8 per year. It is also noted that there were 55 grazing grounds covering an area of 7,900 acres.⁵ The establishment of a 'Development Area' in 1919 and a municipal area in 1945 reduced the acreage in Kalimpong drastically, throwing many of them to the category of sharecroppers. More people who were thrown out from the tea gardens of Sadar and Kurseong subdivisions (especially after they began to fall sick) joined this category. Some of their partners came from Sikkim also where a very crude form of feudalism with forced and free labour systems existed and many peasants found it worthwhile to leave the lands which they had made cultivable after years of hard work.

Another crisis which was gradually flourishing in Darjeeling was the gradual swelling up of the category of agricultural labourers. Though, a category of purely agricultural labourers cannot exist, as it may elsewhere, in the hill areas of Darjeeling due to insufficient irrigated lands, single cropping, low sustenance power of the land, etc. the Census began to record their growing presence. The category of agricultural labourers was not noticed at all till 1940s. The Census of India 1971 recorded the presence of this category as 9.3 and the Census of 1981 as 8.8 percent. But since the Census operations are based on 'individuals' rather than 'households' or 'family' these figures do not help much in gauging the magnitude of the agrarian crisis in the hills.

Operation Barga and Agrarian Change

The impact of Operation Barga on the agrarian society is difficult to show, quantitatively and even qualitatively, at this stage. Since the Census does not bring out the figures on the periodical increase or decrease in the number of sharecroppers, it is clear that its impact will be difficult to assess. Figures on agricultural labourers are available but the fluctuation or increase in their number cannot be justly related to Operation Barga: it may be due to the host of other factors like lack of other employment opportunities, demographic and other ecological changes.⁶

The definition of a bargadar as per the 1977 Amendment of the West Bengal Land Reforms Act, 1955 may also be recapitulated here. The word bargadar is not used in the Darjeeling hills. The local word widely prevalent there and pretty close to the term bargadar is *pakhurey*. But a *pakhurey* means a landless tenant : he may be a sharecropper or an agricultural labour. A bargadar or a sharecropper, on the

⁵Bell, C.A., Final Report on the Survey and Settlement of the Kalimpong Govt. Estate In the district of Darjeeling, 1901-1903, Calcutta, Govt. Press, 1905, p. 9.

⁶Subba, T.B., 'Migration and Agrarian Change in Darjeeling', North Bengal University Review, Special Issue on North Bengal, Vols, 4-5, Nos. 1 & 2, Dec. 1983, - June, 1984, pp. 127-135.

other hand, may be a land owner or a landless. The question of registration does not carry much sense in the context of the landowning sharecroppers; those who really need the security of tenure and are therefore registered or supposed to be registered are the *pakhureys* referring to the landless sharecropper or agricultural labourer.⁷

It is also seen that the landowner has the upper hand in deciding who is his *pakhurey* if in case he is compelled to identify one. The question of 'lawfully cultivating any land belonging to another person' is again rather meaningless because sharecropping or leasing of lands is never based on written records. Even otherwise, 'insecurity of the landless' is only one of the many agrarian maladies, an important one though.

Nonetheless, some changes are occurring in the rural areas of the hill Darjeeling today. All these changes are not necessarily due to the Operation Barga as said earlier but some of them are certainly due to it. Some of these changes may be discussed here.

Among the recent changes in the Darjeeling hills, the stoppage of leasing out seems to be the most striking. Leasing out became rather intermittent after 1960 but it virtually stopped after 1978 though the replacement of the bargadars is still occurring in some villages.⁸ As a consequent event, self-cultivation with or without hired labourers has become the rule of the day. Theoretically, this is expected to increase the wage level because the landowners need labourers to cultivate the land in lieu of the sharecroppers as before. But in practice, this has not happened and rather the use of family labour has become more common. In some cases, the lands withdrawn from the sharecroppers are even left fallow.

Another change is the growing complicity of the concept of ownership after the implementation of the Operation Barga. The landowners today cannot sell or lease out their lands under cultivation by the registered bargadars without the consent of the latter. The sharecroppers in such situations appear to be *de facto* landowners. It is so found despite a few cases where the weak sharecroppers have succumbed to the pressure of landowners to leave the latter's land. Incidentally, the Operation Barga has affected more minds than people as the registration of bargadars was few and far between.

It may also be added that the landowner-sharecropper relationship has become less cordial than before. This has an added implication in hill Darjeeling. In most such cases, the landowning class is represented by the Lepchas (as in some cases, Bhutias) and the bargadars class is overwhelmed by the Nepalis though

⁷Subba, Tanka Bahadur, Operation Barga and Agrarian Change in Hill Darjeeling, North Bengal University Review, 1981.

⁸ibid

there are many Nepali landowners also. When the landowners and the sharecroppers belong to the same community, it often cut across caste, lineage and religion. But due to the land reforms measures, especially the Operation Barga, a tension has crept not only between or among communities but also within a community, caste or lineage. Thus, a change in land relations has also affected the social, cultural and religious relationships.

The division of produce in Darjeeling hills is very much on 50:50 basis though the seed required for the next season is separated before the division takes place. But this is no new a phenomenon. The sharecroppers still bear all other costs of production though in some tenancies where the lessor and the lessees belong to the same kinship or caste, only the major harvests are divided and other subsidiary crops are given away to the sharecroppers.

On the whole, it is observed that the landowners have developed a sore feeling towards the Left Front Government in West Bengal and their inclination to the Congress (I), Gorkha League and other regional outfits is being heavier. The sharecroppers on the other hand, are found caught in a dilemma – the landowners' political affiliation being not outright discardable for a deep feeling of tenurial insecurity prevails in the hills and the gorges of Darjeeling.

Finally, a word about the spatial disparity in the impact of the Operation Barga in the region under discussion. Its impact is found more in the lower altitude villages than in the higher altitude ones where sharecropping is very shallow or nil. In the lower altitude villages again, the impact is more in the Communist Party of India (Marxist) dominated villages or areas where the CADP (Comprehensive Area Development Project, established in 1974) is functioning than in regions where the Congress (I) or the Gorkha League has a stronghold. This is probably because of the fact that the CPI (M) supporters and the CADP officials actively participated in the implementation of the Operation Barga while the Congress (I) and Gorkha League supporters were reluctant if not totally against its implementation.

Conclusion

It is difficult to say if the changes discussed above are desirable even in the general context and an old debate on this question is still on. It is always a proper thing to find, in the first place, if the recording of the Bargadars in a region is really necessary and to what extent may the recording help them. A fair idea of the agrarian relations with all its local variations is imperative before implementing a programme like the Operation Barga. It was perhaps a mistake on the part of ambitious Left Front Government to hurry with some preconceived ideas about bargadars' insecure position in all districts of West Bengal.

It is due perhaps to a lack of these considerations that the Operation Barga became only a partial success in the Darjeeling hills. In fact, it lost almost all valour after 1980 and hardly and hardly any new registration of the Bargadar took place after

that. Even if it were a cent percent success it is still doubtful if any development could take place in this region. Security to sharecroppers is important wherever they are but whether they really need it in the projected manner is difficult to say. The problem, especially in the Darjeeling hills, is not as much the bargadars system as it is probably so elsewhere in West Bengal. The main problems are rather: (i) to increase the agricultural production within the given land and other ecological constraints; (ii) diversification of economy so that more people could be shifted from agricultural to non-agricultural occupations; (iii) extension of the existing cultivable lands so that more land could be available for cultivation, etc. Thus, while the Operation Barga may appear very promising in the plains of West Bengal it does not mean much to the society and economy of the hill area of Darjeeling.

25

Maternity Matters' in Colonial Malabar: The Politicalization and Medicalization of Obstetrics

K. Mamatha

James Mill in his writings articulated a version of gender relations prevalent in India that justified the British presence. “The condition of women is one of the most remarkable circumstances in the manners of nations.....the history of uncultivated nations uniformly represents the women as in a state of abject slavery from which they slowly emerge as civilization advances. As society refines upon its enjoyments...the condition of weaker sex is gradually improved until they associate on equal terms with the men and occupy the place of voluntary and useful coadjutors. A state of dependence more strict and humiliating than that which is ordained for the weaker sex among the Hindus cannot easily be conceived”.¹

In nineteenth-century Malabar an institutional and administrative infrastructure necessary for the spread of western medicine was gradually setup by the colonial state. Hospitals² and dispensaries³, opened in British Malabar and this formed the nucleus from which western medicine sought to establish the superiority over indigenous forms of medicine and culture.

¹Sujata Mukherje, 'Imperialism, Medicine and Women's Health in Nineteenth Century India', in Arun Bandopadhyay, *Science and Society in India 1750- 2000*, Manohar, 2010, p. 101.

²Report on the Civil Hospitals and Dispensaries in Malabar District- 1905. The first general hospital was started in Malabar district in 1860's in Palghat which was one of the milestones in the institutionalization of health care in Colonial Malabar.

³The dispensary was started in Malabar district in 1860's at Palghat under the name of Palghat Branch Dispensary.

Up to the earlier 1885 the European treatment in Malabar was mainly concentrated on manpower and especially they preferred only for 'male production'⁴. The health care of women was of no concern in this colonial perspective nor was it considered a state responsibility. Reproduction of population was crucial for the bio-political state. In colonial perspective, male body became 'strong', 'able' and 'moral' body while on the other hand women's body was characterized as 'weak', 'problematic' and 'dangerous', to be put under control and ordered⁵. British had started Lock Hospitals not to protect Malabar women from dreaded disease but to protect British civilian population from the diseases such as syphilis and gonorrhoea. Repeatedly they blamed Malabar women and their dress habits and the profession of prostitution for the cause of disease and not the weaknesses of British soldiers⁶. If the British administration had any concern on women welfare and health, they would not have ignored and failed to establish any hospital for women up to 1904.⁷

Traditional system of midwifery⁸ had undergone transformation particularly since 19th century, when management of childbirth became an agenda of intervention in favour of establishing western medicine by the British in India. The colonial intervention in health care practice was projected as an attempt of 'modernization'⁹.

The historical studies in the field of maternity and childbirth was mainly done by the historians like Harrison¹⁰, Qadeer¹¹, Guha¹², Malhotra¹³, Arnold¹⁴, Girija¹⁵,

⁴Arnold, David Arnold., *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth Century India*, Oxford, Delhi, 1993, p. 254.

⁵Madhwi Jha, "Indian Women's Emigration Experience: Power, Labour and Sexuality in Colonial Natal C.1860-1911", *Proceedings of Indian History Congress*, 2010, p .960

⁶Also see, Devika J., *Engendering Individuals: The Language of Reforming in Twentieth Century Kerala*, Orient Longman, Hyderabad, 2007.

⁷The first Women and Children's Hospital was established in Malabar in 1904, in Calicut and it enjoyed a very good reputation from the people towards hospital

⁸During the early historical epoch, people of Malabar rarely approached hospitals and resorted to modern facilities for treatment during pregnancy and delivery, traditionally *Osatti* were employed as nurses during post childbirth period as midwives. They were influential in the society of the villages of Malabar.

⁹Krishna Soman, *Women Medicine and Politics Of Gender: Institution of Traditional Midwives in Twentieth Century Bengal*, Institute of Developmental Studies, Kolkata, 2011, p. 2.

¹⁰Harrison M, 'Medicine and Orientalism: Perspectives on Encounter with Indian Medical Systems'. In Biswamoy Pati and Mark Harrison (E ds.), *Health, Medicine and Empire: Perspective on Colonial India*, Orient Longman, 2006.

¹¹Qadeer I., 'Continuities and Discontinuities in Public Health: The Indian Experience', in Amiya Kumar Bagchi and Krishna Soman (eds.), *Maladies, Preventives and Curatives: Debates in Public Health in India*, New Delhi, Tulika, 2005.

¹²Guha S, 'The Best Swadeshi: Reproductive Health in Bengal, 1840-1940', In Sara Hodges (Ed.) *Reproductive Health In India: History, Politics, Controversies*, Orient Longman, New Delhi, 2006.

¹³Malhotra A., 'Of Dais and Midwives: 'Middle-class 'intervention in the Management of Women's Reproductive Health in Colonial Punjab. In Sara Hodges (Ed.) *Reproductive Health In India: History, Politics And Controversies*, Orient Longman, New Delhi, 2006.

¹⁴Arnold D., *Science Technology and Medicine in Colonial India*, Cambridge, 2000, pp. 57-91.

¹⁵Girija P.L, 'Natal Care', *The Hindu Folio: Indian Health Traditions*, 2000, 8 October, pp. 48- 49.

Forbes¹⁶, Sadgopal¹⁷, Richardson¹⁸, Gopal¹⁹, Aparna Nair²⁰, Sujatha Mukherji²¹, Krishna Soman²²etc.

The movement started with attempts to train the indigenous *vayataati*²³ for the practice of better standards of midwifery than those she had been accustomed in practice. The earliest attempt in this direction was made by Miss Hewlett of the Church of England Zenana Mission in 1866. In 1885, the Dufferine Fund Committee was established with the objective of providing medical aid to the women of India through women doctors. This fund was assisted by a small grant from the government of India, the Lady Reading Health School in Delhi in 1918 for the training of health visitors. This was followed by the founding in 1919, of the Lady Chelmsford All India League for maternity and child welfare. In 1930, under the auspices of the Indian Red Cross Society, a Maternity and Child Welfare Bureau was established for the purpose of promoting Maternity and child welfare work throughout the country. The next step was the establishment in 1933, of a training course in the All India Institute of Hygiene and Public Health.

Medical education for women in India began more as a necessity than as a natural development of general education. It was sought as early as the nineteenth and twentieth century not much to provide women with a medical career but to afford relief to the ailing women who could not consult men doctors. The system of seclusion had not only been a hindrance to women's freedom but it made them suffer a great deal when they were ill, for there were no women doctors to attend them. The untrained midwife, who has by virtue of her calling, undertook unscientific diagnosis and treatment of various gynaecological conditions which resulted in large number of maternal mortality. In fact it was this suffering that persuaded women to take medical career and their services became inevitable and were prepared to study with men to receive medical training in Madras Presidency.

The response of women towards western health care in Malabar was a highly restricted one. Due to strict social conditions and rigidity of caste system, female sections hesitated to consult male doctors and state had not appointed female

¹⁶Forbes G., 'Managing Midwifery in India', in Dagmer Engels and Shula Marks (Eds.), *Contesting Colonial Hegemony: State and Society in Africa and India*, I B Tauris, London, pp. 152-172.

¹⁷Sadgopal M., 'Can Maternity Services Open Up To The Indigenous Traditional Midwifery?', *Economic and Political Weekly*, XLIV, 16 pp. 52-59.

¹⁸Richardson R., *Death, Dissection and Destitute*, Penguin, 1998.

¹⁹Gopal M., 'Traditional Knowledge and Feminist Dilemmas : Experience of Midwives of The Barber Caste in South Tamil Nadu' paper presented at the peer review workshop on *Transformation Science: Feminist Perspectives*, held on 16-17 February at the Research Centre For Women's Studies, S N D T Women's University, Mumbai, 2010.

²⁰Aparna Nair, Paper presented relating on the paper *vayattatis* of Travancore, Delhi University 2011.

²¹Sujata Mukherjee., 'Imperialism, Medicine and Women's Health in Nineteenth Century India' in Arun Bandopadhyay, *Science and Society in India 1750- 2000*, Manohar, 2010, p. 106.

²²Krishna Soman, op.cit.,

²³*Vayattati* the traditional midwifery in Malabar (overwhelmingly comprising women practitioners) had attended childbirths for ages and performed a range of tasks before, during and after delivery.

doctors or vaccinators in the area of Malabar because of the 'lack of finance'. In the traditional Indian system of medicine, physical examination of body was not preferred, but in western system cutting of body or physical examination of body is very common. As the spread of education changed social circumstances, women also began to consult male doctors even for their reproductive health problems.

Education became one of the prestigious things and educated women were started to be identified in society as 'modern'. They started to imitate European women in their lifestyle, way of life and health related aspects. They had started to prefer allopathic doctors for their health problems and for their reproductive health. Allopathic treatment itself was started to be identified as the symbol of 'modernity'.

The result of the interaction between the Western and indigenous were perhaps most innovatively and creatively represented in literature. The story of *Indulekha*²⁴, one of the early novels in Malayalam, published in 1889, is set in the context of the interaction between the western and the traditional that colonialism occasioned²⁵. The novel represents the embodiment of modernity arising out of integration of the western and the indigenous. A lengthy discussion on the intellectual discussion on the west and the indigenous response to it is reflective of the complex and contradictory ways in which Indians were trying to come to terms with the new situation endangered by colonialism²⁶. Basheer's work has an ideal model representing the stage of transition from "tradition to modernity". The writer protracted the influence of 'westernization' and changing attitude of Malabar women towards health care and treatment. In the novel, the female protagonist demanded for an allopathic doctor to conduct her delivery. The allopathic doctor came as the result of her demand but unfortunately before his arrival she had given birth to her child. During this period, delivery of the child with the assistance from a western doctor was also considered as a matter of status in the society. The protagonist considers the western doctor as the 'indicator of modernity'. The response in the society regarding western medicine changed 'from resistance to recognition' and this has been clearly illustrated by the author²⁷.

In Malabar, a marked decline in women's fertility was taken very seriously by the government in the later part of nineteenth century. Government statisticians and health experts tried to occupy the new 'empty' space, gathered information on birth-control methods and usage, on abortion, on infant and maternal mortality rates, on venereal diseases and techniques of new space of confinement.

In 1890, midwives were attached to the Civil Hospitals at Manjeri and Ponnani. They attended cases not only in hospitals but also out of hospitals. In comparison the number of cases attended outside was higher than that in hospitals²⁸.

²⁴Chandu Menon O., *Indulekha*, Malayam Novel, 1889.

²⁵Panikkar K.N., *Colonialism, Culture and Resistance*, Oxford, New Delhi, 2011, p. 16.

²⁶*Ibid.*, p.146.

²⁷Basheer, *Cherukathakkal*,

²⁸*Local & Municipal*, No. 3024 L., 24th Nov, 1890. Regional Archives Calicut.

There was a provision of Rs.250 for training a female medical pupil which was not utilized owing to the want of a suitable candidate²⁹. But although an advertisement inviting candidates was published in three successive issues of a local newspaper; no candidate had come forward to undergo training at the Madras Medical College. The provision had therefore lapsed.

The contribution towards childbirth of midwives was not a satisfactory one. Sometimes they had conducted only 9-12 cases per month. So the council requested the district medical and sanitary officer to frame the necessary rules³⁰. The council had also introduced the system of remuneration attached to this hospital, partly by results and from 1889-90, in addition to a fixed salary of Rs.10; she also received an additional rupee for every extra case she attends³¹. The Council had an intension that "such a practice will, have a good result and with a midwife who evinces an interest in her work and is deserving of making herself popular, the people of Malabar in the future will be more ready to avail of her services."³² And measures had been taken to employ a sufficient number and compel them to perform a reasonable amount of work.

Statistical reports mention that compared to Hindus and Christian women, Moplah women using the services was lesser in number³³. In 1894, there were 5 midwives in the Malabar District and it has been recorded that they had attended very less number of cases³⁴. The main cause for the backwardness of midwifery system was the illiteracy of the people and their unwillingness to change their traditional mindedness. The results are stated not to be due to any fault of theirs but to the fact that the people choose to prefer the old custom of employing their own midwives and only send for the local fund midwives in difficult and often hopeless cases³⁵.

Number of Labour Cases Attended in Malabar District

Year	No. of Cases Attended
1888-1889	37
1889-1890	54
1891-1892	74
1892-1893	116
1893-1894	215
1894-1895	345

²⁹Ibid.,

³⁰*Local & Municipal*, No. 1438, M., 7th Sept. 1891.

³¹G O No. 1263 M., dated 27th Sept. 1889. Regional Archives Calicut.

³²*Local and Municipal*, No. 1438 M., 7th Sept. 1897. Regional Archives Calicut.

³³*Malabar District Gazette*, 1891.

³⁴*Local & Municipal*, No. 2313, 20th Oct. 1894. In 1893, the four midwives attached to the hospitals of Badagara, Manjeri, Chavakkad and Vaythiri.

³⁵*Local & Municipal*, No. 2313, L., 20th Oct. 1893. Regional Archives Calicut.

As the result of the development of women's health with the support of Dufferine Fund, Malabar started a new revolution in the field of women's health. In 1902, government proposed a new 'Hospital for Women and Children' at Calicut. The funds for the hospital were contributed almost entirely by the philanthropist- Sir Ramaswami Mudaliyar. Shortly afterwards, the government opened a dispensary for women and children at Palghat, but it was abolished in 1909, 'for the lack of popular support towards its maintenance'³⁶. As a result, the hospital at Calicut was the only medical institution for women in Malabar till the 1950s.

In terms of maternal mortality, Malabar ranked second among Presidency districts, next only to Tanjore. In 1921-22 infant mortality per mille of births was 141.79(death from childbirth was 233). In 1922-23 it had increased to 149.08(death from childbirth was 360). Voluntary associations such as health and welfare associations, baby nursing homes etc. did not exist in the district. No propaganda work had been done nor any bye-laws framed³⁷. Infantile mortality showed a marked increase from 136.37 per mille of registered births in the year 1923-24 to 179.5 in the year 1924-25. The number of registered deaths from childbirth was only 250 against 331 in the previous year³⁸.

A comparative table of 4 years of Infant Mortality in the Malabar District

Year	Infant Mortality From Birth Per Mille	Death From Childbirth
1921-1922	141.79	233
1922-1923	149.08	360
1923-1924	136.37	331
1924-1925	179.5	250

In the earlier years women of Malabar hesitated to consult male doctors for their usual health problems and also for their reproductive health concerns. In the absence of any facility, women had to depend on general hospitals and male doctors. All over India, the male-oriented colonial medical establishment had opposed the training and appointment of women as doctors³⁹. The indifference of the government to female health care arose not only because of male domination at the top levels of the colonial medical administration, but also by the colonial financial concerns. Since training in western midwifery was expensive, an alternative strategy was suggested, of co-opting indigenous midwives into modern system. An experimental programme was in fact started in 1913 to give training to the indigenous midwives at the Hospital for Women and Children,⁴⁰ but was

³⁶Annual Returns on Civil Hospitals of Madras Presidency, Government of Madras, 1909.

³⁷Report, Malabar District Board, 25th June, 1924.

³⁸During the period, Malabar had two Baby Welcome Centres in Chirakkal taluk. No bye-laws were framed nor any health visitors trained.

³⁹Arnold, 1993, pp. 260-263.

⁴⁰G O No.1603, Local, 30.9. 1913, Tamilnadu state Archives.

suspended the next year after training one.⁴¹The programme continued, however, under the Taluk Boards for some more time by fits and starts. But only 11 dhais underwent training in Malabar till the Taluk Board gave up the programme, in 1914, for 'lack of finance'⁴².

The attempt was repeated in 1921, this time to train 'dhais' under the District Health Scheme. Midwifery training in Indian universities started⁴³ in 1921, whereas compulsory registration of domestic occurrences was introduced in 1923-24. In the regions where registration of births and deaths were compulsory, it was the village officers who performed registrations. Compared to 1893, where there were only 116 labour cases attended by trained midwives, who were 4 in number,⁴⁴ there was an observed increase from 1,318 to 1,393 in the year from 1893 to 1924.⁴⁵ District Board paid Rs.10 to two people Srimathi Janaki and Srimathi Devaki for undergoing midwifery training.⁴⁶

The District Boards were directed, in 1926, to train native 'dhais' at the district at taluk headquarter hospitals and to bear half the cost for their registration and training⁴⁷. Further, the government offered an additional subsidy of Rs.100 to such medical men who engaged and maintained a qualified midwife for affording maternity relief. This initiative failed to make much headway in Malabar for lack of finance in the local bodies and the apathy of the indigenous midwives. Of course, a small number of dhais did undergo training, but they preferred to work either in the government hospitals or independently. No rural practitioner could appoint a midwife, till the suspension of the Subsidized Rural Medical Relief Scheme, as they found it impossible to find suitable hands. Even by 1929, Malabar had only 40 midwives who had their training in modern practices of midwifery, and only 1.6 percent of births received any kind of medical attention either by doctors or by trained midwives.

Thus, when proposals were made in 1932, to appoint women doctors in the rural dispensaries under Subsidized Rural Medical Relief Scheme in the Madras Presidency it was rejected consequently on the opposition of the medical establishment. As late as 1932, Malabar, which had a female population of about 18 lakhs, had only two female medical consultants- one employed by the Basel Evangelical Mission and the other working in the Government Hospital for Women and Children at Calicut. Appointment of women in the governmental medical institutions and subsidized rural dispensaries was agreed upon in 1940. Even then,

⁴¹G O No.1419, Local, 11. 8. 1914, Tamilnadu state Archives.

⁴²GO. No. 1017- A, Public Health, 21.7.1924, Tamilnadu State Archives, Egmore.

⁴³GO No. 1118. P. H. Sept. 8, 1 921. Regional Archives Calicut.

⁴⁴G.O. No. 2313, Local and Municipal, Oct, 20, 1893. Regional Archives Calicut.

⁴⁵*Proceedings' of Local Fund Board, 1923-1924.*

⁴⁶G.O. No. 4370, P.H, Nov. 28. 1939. Regional Archives Calicut.

⁴⁷GO. No. 1067, Local Self Government, Public Health, 9. 1. 1926, Tamilnadu State Archives, Egmore.

it was possible to appoint a woman only in rural dispensary & that too 'only if the institution concerned had a male medical officer.'

The number of midwives, however, increased to 106 in 1937. Though the government introduced a scheme for maternity and child welfare centers in 1938, it could not make much progress in Malabar as a consequence of war and the subsequent famine. The number of dhais who received training itself increased only marginally, to 137 in 1947.

The role played by midwives in assisting the reproductive process has been highly valuable. In 1900-01, midwives of the Civil Hospital, Calicut attended 64 cases of labour. Medical and Sanitary Officer T N Hackett-Wilkins highlighted that "Besides attending labour cases, she helps me in gynaecological cases and attends daily at the out-patient room when her services are not required elsewhere".

In 1900, the total number of midwives was six in number and the total number of cases attended was 185⁴⁸. In 1910, the total number of midwives was 8, their cost Rs.1,300 the number of labour cases attended was 462. The decrease in the number of cases was credited due to the absence on leave of some of the midwives and the unpopularity and incompetence of one of the midwives who had since 1911 been dispensed from the service⁴⁹. In 1924, 22 midwives were employed by Local Boards (as same in previous year) and they had attended 1,318 labour cases. There were qualified midwives in all the taluk head quarter stations and unions. However government had not taken any measures to improve the quality of work done by dhais.

Government had started a lot of activities to create awareness programmes for the welfare of Maternity and Child health. The midwives in charge of the maternity centre had been deputed to work as a creator of health awareness in Malabar. She had daily rounds, house to house visits giving necessary instructions to the sick people to avail treatment from the dispensary and doing propaganda on maternity and child welfare. She was assisted by an ayah⁵⁰.

Even though women's health came to be emphasized by the colonial higher-ups from the 1880s, the government's attitude in Malabar remained half-supportive and unwelcome. At no stage, did it take up the health care of women as its responsibility. For the neglect of the government they blamed the 'disinterest' of the people.

British sympathy towards Indian Women and Maternity Care was not only to 'care' and to 'cure' but to build their ideology, class, power and supremacy. In 1901, Lady Curzon launched the Victoria Memorial Scholarship Fund to retrain

⁴⁸Malabar Gazette, No.1669 L., 13th Sept, 1900. Regional Archives Calicut.

⁴⁹Malabar Gazette, No. 1291 L., 3rd Oct. 1911. Regional Archives Calicut.

⁵⁰GO No.722, PH, 18. 2.1941, Regional Archives Calicut.

dhais to work in *zenanas*.⁵¹ To win the heart of Indian women in *zenanas* they exploited Maternity services as a 'tool' to Christianize and to project western ideologies. The hegemonic ambitions of Western Medicine was represented by the activities of women missionaries from England and the United States, who came to India since the 1860s, established hospitals dispensaries, and training centers for midwives and nurses. Before long, missions on both sides of the Atlantic began to champion the ability of women to apply the 'double cure': healing the body as well as spirit.⁵²

Efforts on promotion of western health care for Malabar Women, as represented by Dufferine Fund, on other hand provided ideological support for imperialism by putting emphasis on the benevolent and philanthropic aspects of British rule. This could have been politically exploited by the British government. It has been pointed out that the Dufferine fund was a 'distinctive example of what became a characteristic effort of the British government of India, to graft onto India the English model of philanthropy, which colonial rulers believed represented a progressive civic ideal.'⁵³ However, there were number of complaints related to Lady Dufferine Fund - native women had not received the same consideration as was shown to their European and Eurasian sisters.⁵⁴ The doctors paid attention only to the European and Eurasian women and neglected the natives.⁵⁵

The trained midwives were assigned to perform at least four labour cases per month, the failure of which lead to complaints or suspension. Every extra case was considered for extra remuneration, which in 1895 was Rs 1/- per each extra case handled⁵⁶. The system of paying extra remuneration had been initiated from the year 1891-92.⁵⁷ However the colonial administration could not say whether inducement had been the cause of increased number of cases attended, or the popularisation of western medical care. Even though midwifery was becoming popular, everybody was not very keen to get the assistance of midwives. The conservative society still preferred untrained women. However, the intention of such remuneration was perhaps not to literally encourage the number of labour cases taken, but instead to popularize western medical care.

⁵¹Ibid., p. 107.

⁵²Sujata Mukherje. Op.cit, p. 104.

⁵³Ibid., p.113-114.

⁵⁴Hindujanasamskarini., March, 1892 .

⁵⁵Vrittanta Chintamani., April 13, 1892.

⁵⁶Malabar District Gazette Supplement, No.1295, M, 1896, August, 1895. In 1895 Kuppamma attended only thirteen cases during a period of over seven months of duty. The minimum number of cases fixed is four per month, and she was subsequently dismissed. For every additional case attended the midwife would get a remuneration of one rupee.

⁵⁷Jose N. M., *Health Services in Colonial South Canara-1800-1947*, unpublished PhD thesis, Mangalore University, 2007, p. 128.

The earlier stage of midwifery system saw failure just like the one vaccination saw.⁵⁸ Women hesitated to use modern system but later the popularity, benefits of the system and improved awareness through education, socio-economic circumstances, changed the viewpoints of Malabar women, and they started to prefer western health care in the nineteenth century. This caused the decline in the popularity of old system and educated, trained midwives occupied this place. Natural process of Maternity and childbirth got medicalized. Reformers of Malabar were not of one mind when it came to childbirth, they wrote articles urging to reform of the birthing process and encouraged the use of both doctors and trained midwives in delivery. The hegemony and cultural domination of the British Government was once again proved.

At the beginning of the century, birthing in villages was a major domain of *vayattatis* who served as an important support not only in the biological, but also social aspects of reproduction. They were offered the status of 'mother'. Their status and dignity however came under the threat of imperial projects of modernizing medicine that had subsequently engaged in reforms of the traditional practices of childbirth. Preludes of imperialism that were already set in attempted in establishing the then 'modern' western medicine and it primarily received attention and support from the urban elite – men and women - who were convinced of the benefits of it.

The Baby Welcome Centre which was established in January 1925 did very useful work in the field of child healthcare. The special midwifery section attached to the centre gave advice to the expectant mothers and at times attended them during confinement. In cases of itch, enema and other skin infections, ointments were supplied to children.⁵⁹ The colonialist began to run classes in 'mother – craft' and babies entered into competitions for 'most healthy' baby.⁶⁰

In the area of Malabar, community response towards midwifery was different from one to another because lower castes highly preferred western form of midwifery than upper caste people. *Namboodiris* mainly preferred indigenous *Vayataati* in the early 1800s. However after the development of English education, they too came to prefer modern system. Just as in western education, even in the field of maternity, *Thiya* women were highest in number in dependence to western health care. Next came the *Nayars*, *Musalman*s, *Cherumis* etc.⁶¹ The religion of midwife women was also considered important for the local people to avail their

⁵⁸Report on vaccination of Madras Presidency., 1903-1904, Malabar was backward in regard to vaccination. Statistics for 1903-1904 show that the number of persons successfully vaccinated was 23 per 1000 compared with an average for presidency of 30.

⁵⁹*Malabar Gazette.*, Palghat Municipality, 1926. Regional Archives Calicut.

⁶⁰Cecilia Van Hollen., *Birth on the Threshold: Childbirth and Modernity in South India*, California, 2003, p. 51.

⁶¹*Malabar Gazette.*, No.2165, Local and Municipal 23, Sept. 1889.

services. Traditional Muslim women did not prefer midwives belonging to Christian community.⁶² Midwives generally were a lower caste Hindu or poor Muslim women.

The observers like William Logan⁶³ and K P Padmanabha Menon⁶⁴ highlighted that modern midwives not only made revolution in the obstetrics in Malabar but also tried to impose European 'civilizing' aspects to women community of Malabar "... the women, however modest and discreet, will wear no garment above the waist: *they are not prostitutes, they say, that they should cover the bosom*. English ladies who engage them as nurses have tried over and over again, in the name of English decorum, to make them wear a neckerchief but have encountered the determined resistance which they would have offered had they been asked to promenade the highways unclothed"⁶⁵. Whether European nurses acted as the socio-cultural 'lawyers' in Malabar?

As the result of the development of modern trained midwifery system traditional midwives quit their profession and started to engage in the professions as a beautician or to train as a nurse in the society of Malabar⁶⁶. Midwifery system not only changed and revolutionarised the foundation of childbirth in Malabar but also led to a creation of a good social fabric. Nineteenth century in Malabar district became the era of shift from traditional *vayataattis* to modern midwifery⁶⁷.

The demand for trained midwives came from urban district hospitals and dispensaries, factories and plantations, not from individual families. Many families preferred the old system, which sometime found institutional support.⁶⁸

In Malabar, colonial sympathizers and nationalists alike depicted the conditions of childbirth as deplorable and used these images to legitimize their own political and economic goals in the name of protecting the "defenceless" members of society, i.e., women and children.

British administrative reports pointed that infant mortality was very high in the Presidency of Madras⁶⁹ and mentioned that the main cause of infant mortality was improper, untrained and unscientific care of children by mother. Nevertheless, the real fact is that those belonging to poor families could not afford to live in

⁶²Ibid., Ponnani is a large town almost exclusively inhabited by Musalmans and apparently they refused to avail themselves of the proffered help. The midwife was a native Christian.

⁶³William Logan, Malabar, Vol. I, Madras, 1906, p. 134.

⁶⁴Padmanabhamenon K.P., *History of Kerala*, Vol. III.

⁶⁵Ibid., p. 210.

⁶⁶Pramod T M., age 47, Velan, *Vaidya* Community, Researcher on Folk Medicine, Calicut University, Interview on. 29 April. 2012.

⁶⁷Mamatha K., "From Traditional *Vayataati* to Modern Midwifery: The Colonial Malabar scenario", *IRISH*, Vol.7, pp.180-194.

⁶⁸Geraldine Forbes., op.cit, p. 106.

⁶⁹*Annual Medical Report of the Madras Government Lying in Hospital - 1878.*

sanitary dwellings⁷⁰ and mother and child had severe shortage of nutrition. However, this condition was not only in India but also in England in the earlier periods. What the British administration did was to consider and treat the human body as a commodity and “bodies were being counted and categorized, they were being disciplined, discussed upon and dissected”.⁷¹ Many travellers’ and medical men’s accounts in the 19th century and early 20th centuries suggested that the birthing process was no less hazardous in India than it was in England. Little was actually known about prenatal and postnatal care. In fact, 26 % of children died in England in 1868 before the age of five. Undoubtedly, in most part of the world in the nineteenth century, child delivery was a hazardous process and was painful until the discovery of chloroform in 1847.⁷²

Modern system of midwifery got completely technical, scientific and institutionalized by the time of independence. ‘Hospital- Centered’ pregnancy, Maternity and Childbirth care system not only at medicalized but also commercialized. The British used Maternity and Childbirth as a ‘centre’ to attain their politico-cultural goal. Mothers’ body became a ‘site’ for their commercial activities⁷³. The status of women’s health can also be viewed as the “grounds” rather than the subject of discourse on the care of Malabar women during childbirth in the colonial era.

Though western maternal healthcare and child welfare in practice was also a major ‘tool’ of the British to highlight their hegemony over innocent mothers of Malabar; it is also to be remembered that it revolutionised women community and its needs and rights with respect to health in Malabar. There is no denying of the fact that it saved a large number of mothers from the pain of delivery, maternal mortality and infant mortality in the later part of the 19th century. But British government projected it as their achievement and not as their duty to protect its citizens. Thus maternity mattered a lot to the British in colonizing the female body and mind and also revolutionised the Maternity matters in colonial Malabar.

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⁷¹Arnold David, *Colonizing the Body: State Medicine and Epidemic Diseases in Nineteenth Century India*, University of California Press, 1993, p. 9.

⁷²Sujata Mukherje, Op.cit, p.103.

⁷³Cecilia Van Hollen, Op. cit, p. 37.

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26

Endangered Gender: Discrimination by Default Decision

K.C.Sahoo, Kalyani Sahoo and Sashi Shekher

“Development, if not engendered, is endangered.”

(UNDP Human Development Report, 1995)

Development is decision executed and manifested. Any decision is vital and critical for development of any democratic country. Equitable distribution of justice, amongst men and women, in terms of opportunity and participation in power and decision making process is far more crucial for any sustainable development. Ironically, bearing a very few success stories, global development agenda, by default decision, has resulted in increasing discrimination and marginalization of girls and women. Sen’s observation of ‘missing women’ in millions every year is quite disturbing. If continued unabated, it is not far that our society is thrown off-balance. UNDP’s often quoted statement *“Development, if not engendered, is endangered.”* is of seminal importance in the context.

Dipping Child Sex Ratio

Indicating a continuing preference for boys in society, the child sex ratio in India has dropped to 914 females against 1,000 males - the lowest since Independence - in the provisional 2011 Census report released.

Despite a slew of laws to prevent female foeticide and schemes to encourage families to have girl child, the ratio has declined from 927 females against 1,000 males in 2001 to 914, which was described as a “matter of grave concern” by Census Commissioner of India C Chandramauli.

Though an increasing trend in the child sex ratio (0-6 years) has been seen in Punjab, Haryana, Himachal Pradesh, Gujarat, Tamil Nadu, Mizoram and Andaman and Nicobar Islands, in all remaining 27 states and Union Territories, the child sex ratio shows decline over Census 2001.

The highest child sex ratio has been reported in Mizoram (971 females against 1000 males) and Meghalaya (970).

Notably, Punjab and Haryana, which have traditionally seen low sex ratio, have recorded an increasing trend but still remained at the bottom of the list. Haryana has 830 female children and Punjab 846 against per 1000 male child.

Haryana's Jhajjar (774 females) and Mahendragarh (778 females) districts have the lowest sex ratio while Lahul and Spiti district of Himachal Pradesh has the highest sex ratio (1,013 females).

Krishna Tirath, Minister of State for Women and Child Development, said the fall in girl child population is a matter of concern. Tirath said she will take up the issue with the problem states and stressed on proper implementation of women and child development schemes.

Uttar Pradesh (29.7 million), Bihar (18.6 million), Maharashtra (12.8 million), Madhya Pradesh (10.5 million) and Rajasthan (10.5 million) constitute 52 per cent children in the age group of 0-6 years. Population (0-6 years) 2001-2011 registered minus 3.08 per cent growth with minus 2.42 for males and minus 3.80 for females.

However, in some good news, the overall sex ratio at the national level has increased by 7 points since the 2001 Census to reach 940 females per 1000 male at Census 2011.

This is the highest sex ratio recorded since 1971 and a shade lower than 1961. Increase in sex ratio has been recorded in 29 states and UTs while three major states - Bihar, Gujarat and Jammu and Kashmir - have shown a decline in sex ratio as compared to Census 2001.

Kerala with 1084 has the highest sex ratio followed by Puducherry with 1038. Daman and Diu has the lowest sex ratio of 618.

Gender Perspective in Decision Making

Gender discrimination is a consequence as well as an antecedent of any decision making process. If, by any decision, one gender is privileged, the other is bound to be endangered. Gender, being a socio-cultural construct, needs to be addressed socially and culturally.

Equal participation of women in decision making processes is not only a demand for justice and democracy, but a necessary condition for improving the status of women. It is obvious that the objectives of development and modernity cannot be achieved without ensuring the active participation of women at all levels of

management, and without securing the mainstreaming of the gender equality perspective in decision-making processes. How social opportunities will be distributed across different social sections is determined by decision-making bodies, such as the parliament, government, policy-making and other public bodies. Therefore, the starting point of efforts aimed at ensuring equality between men and women is taking steps to ensure the equal participation of women in power and decision-making processes. Achieving this is also important for the democratic representation and for the democratic process.

Gender sensitive education has value for all members of society. It is probably the best education for creating a learning atmosphere that is fair and sustainable for all. It promises to be a viable alternative for the development of the society.

Mainstreaming Gender in the Development Process

In order to get rid of gender discrimination, fair and informed decisions are required to be taken at all levels. Policies, programmes and systems will be needed to be established to ensure mainstreaming of women's perspectives in all developmental processes, as catalysts, participants and recipients. Wherever there are gaps in policies and programmes, women specific interventions would be undertaken to bridge these. Coordinating and monitoring mechanisms will also be required to be devised to assess from time to time the progress of such mainstreaming mechanisms. Women's issues and concerns as a result will specially be addressed and reflected in all concerned laws, sectoral policies, plans and programmes of action.

Gender Equality-Equity Balance

Gender is the social construction of the biological differences between men and women. Differences are not inequities unless they systematically disadvantage one group in terms of opportunities.

Governments across the globe, through various Policy Decisions, Acts, Laws and Awareness programmes are trying to tackle the problems of gender discrimination at social and individual levels. But unfortunately the result is far from being satisfactory. Everywhere women are found to be discriminated, be it in the family, society, politics, education or economics. They are either overlooked or usually marginalized and suppressed by the means of power, position, emotion, love or fear.

Gender equality speaks of the provision of equal enjoyment of human rights, socially valued goods, opportunities and resources, whereas Gender equity speaks of the process in which fair and just opportunities will be given to men and women including the measures to compensate social disadvantages that prevent men and women from operating on the level of playing fields. Hence, only provision of gender equality is not enough to solve the problem rather the issues need to be tackled with gender equity.

Gender equity actually helps to provide empowerment to women and constructive engagement to men. It emphasizes a joint effort from both men and women as per their decision making skills in specific fields. Men and women have different needs, desires, expertise as well as differences in skill of decision making. It is well recognized that having them work together to make decision keeps very satisfactory results all around.

In short, to reach equal social results, political actions are required taking special measures favouring disadvantaged groups (positive discrimination). Providing a solution for those problems, which cannot be solved under the nondiscrimination principle alone, these policies aim at taking measures in favour of disadvantaged groups until equality is secured in social life that is equality is reached in the results.

Gender Sensitive Education

The Dakar framework of action (UNESCO-2000) stated that gender based discrimination remains one of the most intractable constraints in realizing the right to education, “without overcoming this obstacle Education for All (EFA) can not be achieved”.

Gender disparity in education nurtured traditionally through social, cultural and economic norms frequently blocks access of women to education and thus weaken their participation in, and contribution to, their families and their society.

The low level of education, among others, is an important factor having an adverse effect on women's political and social participation, as it does in many other fields. The significance of a gender-sensitive education becomes even more evident when taking into account that equality between the sexes cannot be achieved only through women becoming aware and more equal, but through all children, men, families and society as a whole being sensitive enough to be on the side of women. Gender bias education reflects through a belief as boys are praised for accomplishment and girls for neatness and appearance.

A social and cultural consciousness needs to be developed against the practices of ‘Son-Preferences’ and ‘Daughter Aversion’. Upholding the spirit of equity high, on the basis of capabilities, gender-sensitive decisions are to be taken with regard to distribution of role and responsibilities amongst men and women. Work and opportunities need not always be mechanically divided into equal halves (50 %) between men and women. Rather it should be on the basis of capability and entitlement, personal expertise and preferences. Accordingly career paths have to be chosen. Human rights should prevail over and above all kinds of derogatory and gender discriminatory practices. No work is great or small. No one is greater or smaller than the other. Hence, domestic duties / activities need not be looked down upon as being designated as the job of house wives and maid servants. Disordered houses can jeopardize the nation as much as the default decision in the

parliament can devastate our homes. A house wife is as good a human being as the head of the nation.

Attention must be drawn to the fact that the inadequacy of support mechanisms in relation to care for children, the elderly and the disabled increases the domestic responsibilities of women and this constitutes one of the obstacles for active participation of women in power and decision making process.

Mindset of the people with regard to gender needs to be changed. The girl child, instead of being considered as a burden on the family and society, must be viewed as an asset. Women, like their counterpart men, should be facilitated to equally participate in power and decision making process. Development, without equal contribution from both men and women, is likely to be always lopsided and unsustainable.

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27

Field level Constraints as Experienced by the Vegetable Growers Regarding the Proper Use of Pesticides in Vegetable Cultivation

Prabuddha Ray and Sarthak Chowdhary

Proper use of pesticides is a scientific paradigm which is now of global significance. Its basic concern is with designing and implementing pest management practices that meet the goals of farmers, consumers and governments in reducing pest losses while, at the same time, safeguarding against the longer term risk of environmental pollution, hazards to human health, and reduced agricultural sustainability. While the philosophy and ideas of proper use of pesticides, rather to say judicious use of the same, are now widely accepted in the political and scientific arena, the practical implementation of it has proved far more difficult to achieve.

Several past studies (Gomez, 1977; Lal, 1977; Swaminathan, 1978; Mahapatra, 1984; Tantray and Nanda, 1991; Singh *et al.*, 1993) identified different categories of constraints that stand in the way of agricultural production. So, it is quite natural that the analysis of field level constraints is an important factor for the proper use of pesticides. The nature and extent of constraints as perceived by the respondents were thoroughly assessed in this Paper.

Objectives of the study

1. To study the field level constraints (as perceived by the respondents) in the

proper use of pesticides on the selected vegetable in a participatory approach method,

2. To examine extent or magnitude of these field level constraints in the proper use of pesticides on the selected vegetable category wise and
3. To suggest some ameliorative measures based on findings.

Materials and Methods

The study was conducted on purposively selected Katwa Sub-Division of Bardhaman District of the State of West Bengal.

Four vegetables viz. Brinjal, Pointed Gourd, Cabbage and Cauliflower were selected for the present investigation. Brinjal and Pointed Gourd are the two main summer vegetables and Cabbage and Cauliflower are the two main winter vegetables of this Block as far as area and production of these vegetables are concerned.

These areas also consumed a large amount of pesticides for plant protection purposes and nearly 8000 litres of pesticides were consumed in the year of 2008-09. All the villages, eighteen (18) in numbers falling under the five (5) kilometers radius of river side belt of Ajay were selected for the present study. As these villages have sizeable population who grew these four vegetables commercially in more than 0.33 acre or 0.57 hectare of farm land were taken into consideration for present study. At present 150 such farmers were there. So, all the 150 vegetable growers were selected as the sample population of the present study.

The data was collected with the help of a structured question-schedule developed for the study and through the personal interview method. The data was collected from June, 2011 to May, 2012 at the selected villages. After completion of data collection, thorough checking was made on the filled up schedules and then the schedules were numbered. The numbered schedules were tabulated according to their numbers.

In the present study, the investigators had categorized the field level constraints in relation to proper use of pesticides in vegetable cultivation into six heads viz.

- A. Socio-economic constraints,
- B. Infrastructural constraints,
- C. Situational constraints,
- D. Technological and Communication constraints,
- E. Knowledge and Information constraints and
- F. Administrative and Managerial constraints.

This categorization was done after consulting various literatures as well as seeking the expert opinion in this field. However, some of these constraints are overlapping in nature to some extent.

Here a participatory constraint analysis method was utilized where the respondent farmers were asked to mention the constraints, place the constraints in a four point continuum and rank them following the complimentary mix of participatory as well as formal approach as developed by Hubert (1991), NCAER (1993), Shah (1993), Rajaratnam *et al.*, (1993) and Malik and Edwards (1993/1994).

Following the Participatory Approach as mentioned by Hubert (1991), at first the respondents noted the constraints regarding the proper use of pesticides according to their own wishes. Then formal method was adopted to measure the degree of constraints as experienced by the respondents in relation to the proper use of pesticides and the respondents were asked to indicate on a four point continuum about the extent to which each constraint was perceived as crucial factor for proper use of pesticides on the selected vegetable. The scoring procedure was as follows:

Category Score

1. High 3
2. Medium 2
3. Low 1
4. Not at all 0

Results and Discussion

The ranking (both category-wise ranking and overall ranking) of various constraints as perceived by the respondent regarding proper use of pesticides in the selected four vegetable cultivation was given in following table.

However there was no water-tight categorization in this regard. A particular type of constraint might belong to more than one category. In these cases, the respondents' preference i.e. in which category the respondent wished to place the constraint were given the up most importance.

From the Table 1, it became clear that among the socio-economic constraints as perceived by the respondents regarding the proper use of pesticides, lack of cosmopolitanness of the respondents held the first rank position followed by lack of financial resources of the vegetable growers, lack of education of the respondent, small size of land holding of the respondent, age of the respondent and gender of the respondents. This was apparently because of more the cosmopolitanness of the respondents, more they would have exposures to various sources of information which would encourage the respondents to use pesticides properly.

Table 1: Rank position of various constraints (as perceived by the respondents) regarding the proper use of pesticides in the vegetables cultivation

Si.No.	Different types of constraints	Rank score	Rank position within a particular category	Overall rank position
A. Socio-economic Constraints				
1.	Lack of cosmopolitaness of the vegetable growers	1217	I	V
2.	Lack of financial resources of the vegetable growers	682	II	XIX
3.	Lack of education of the vegetable growers	613	III	XXIII
4.	Small size of land holding of the vegetable growers	612	IV	XXIV
5.	Age of the vegetable growers	47	V	XXXLV
6.	Gender of the vegetable growers	29	VI	XXXLVI
	Total of Category	3200		IV
B. Infrastructural Constraints				
.	Lack of preservation and cold-storage facilities for the selected vegetables	806	I	XII
8.	Lack of communication and transport	486	II	XXXIII
9.	Lack of irrigational facilities	240	III	XXXLI
10.	Lack of vegetable market	225	IV	XXXLII
11.	Lack of proper plant protection implements	221	V	XXXLIII
	Total of category	2246		VI
C. Situational Constraints				
12.	Average distance between the fragments of the cultivated land of the vegetable growers	684	I	XVIII
13.	Lack of mutual co-operation among the vegetable growers	677	II	XX
14.	Fragmentation of the cultivated land of the vegetable growers	523	III	XXX
15.	Lack of supply of the pesticides in the market at the right time	463	IV	XXXIV
16.	Topography of land	202	V	XXXLIV
	Total of category	2549		V
D. Technological and Communication Constraints				
17.	Inadequate / complicated description regarding the precautions to be taken in the case of toxicity related accidents in the written materials kept in the containers of pesticides	929	I	IX

Contd.

Si.No.	Different types of constraints	Rank score	Rank position within a particular category	Overall rank position
18.	Lack of proper Integrated Pest Management (IPM) technologies for the selected vegetables	800	II	XIII
19.	The quality of the printing of the written materials kept in the containers of the pesticides	711	III	XVII
20.	The colour used in the written materials kept in the containers of pesticides	644	IV	XXI
21.	The quality of the pictures of the pests used in the written materials kept in the containers of the pesticides	595	V	XXV
22.	Size of the letters of the written materials kept in the pesticide containers	456	VI	XXXV
23.	Language of the written materials kept in the containers of the pesticides	426	VII	XXXVI
24.	The quality of the various diagrammatic representations used in the written materials kept in the containers of the pesticides	416	VIII	XXXVII
	Total of category	4975		III
	E. Knowledge and Information Constraints			
25.	Lack of knowledge of the respondents (vegetable growers) about the Economic Threshold Limit (ETL) concept of the selected vegetables	1302	I	I
26.	Lack of knowledge of the vegetable growers regarding the bio-pesticides	1296	II	II
27.	Lack of knowledge of the respondents about the Integrated Pest Management (IPM) techniques for the cultivation of the selected vegetables	1288	III	III
28.	Lack of proper information on the judicious use of pesticides	932	IV	VII
29.	Lack of knowledge of the vegetable growers regarding the process of diagnosis of the attacking pests	930	V	VIII
30.	Lack of information regarding the pesticide application on the selected vegetables	799	VI	XIV
31.	Lack of knowledge of the respondents regarding the proper handling procedure of the pesticides	631	VII	XXII
32.	Lack of knowledge of the vegetable growers regarding the proper pesticide application procedure on the selected vegetables	578	VIII	XXVI
33.	Lack of knowledge of the vegetable growers about the ideal dose of the applied pesticides in the cultivation of the selected vegetables	566	IX	XXXVII

Contd.

Si.No.	Different types of constraints	Rank score	Rank position within a particular category	Overall rank position
34.	Lack of knowledge of the vegetable growers regarding the proper pesticide storage procedure to be maintained by the vegetable growers	550	X	XXVIII
35.	Lack of knowledge of the vegetable growers regarding the proper way of disposing off of the date expired, unused pesticide containers	540	XI	XXIX
36.	Lack of Knowledge of the vegetable growers regarding the ideal time of the day when the pesticide should be applied	518	XII	XXXI
37.	Lack of knowledge of the vegetable growers regarding the precautions to be taken when the pesticide application was on	444	XIII	XXXVI
38.	Lack of knowledge of the vegetable growers regarding proper way of disposing off of the empty containers of the pesticides	350	XIV	XXXIX
39.	Lack of knowledge of the vegetable growers regarding the ideal crop stage for the pesticide application	342	XV	XXXL
	Total of category	11065		I
	F. Administrative and Managerial Constraints			
40.	Lack of training of the vegetable growers on the proper use of pesticides	1278	I	IV
41.	Non-availability of extension personnel in time	1186	II	VI
42.	Lack of loan sanctioning mechanism for the vegetable growers for the cultivation of the selected vegetables	928	III	X
43.	Malpractices by the sales agents and dealers of pesticide companies	921	IV	XI
44.	Lack of the agricultural extension mechanisms for the selected vegetables	765	V	XV
45.	Problems created by the middlemen in the wholesale or the retail vegetable market	758	VI	XVI
46.	Adulteration of the pesticides by the dealers of pesticide companies	514	VII	XXXII
	Total of category	6350		II

Table 1 depicted the picture that revealed that among the infrastructural constraints lack of preservation and cold-storage facilities for the selected vegetables enjoyed the first position followed by lack of communication and transport which held the second position among the infrastructural constraints, followed by lack of irrigational facilities. The lack of vegetable market held the fourth position among the infrastructural constraints. Among infrastructural constraints, lack of preservation and cold-storage facilities enjoyed the first position might be because of the fact without proper preservation facilities, the vegetable growers were under pressure to sell the harvested selected vegetables immediately which in turn encouraged vegetable growers to apply the pesticides more for increased level protection from the pests and vis-à-vis increased yield of the selected vegetables.

Table 1 clearly showed us that among the situational constraints regarding the proper use of pesticides, average distance between the fragments of the cultivated land of the respondents held the first position, closely followed by fragmentation of the cultivated land of the respondents. Fragmentation of the cultivated land of the respondents and lack of supply of the pesticides in the market at the right time enjoyed the third and fourth positions respectively.

From the above table, it became clear that among technological and communication constraints perceived by the respondents, the inadequate or complicated description regarding the precautions to be taken in the case of toxicity related accidents in the written materials kept in the containers of pesticides enjoyed the first position, followed by lack of proper Integrated Pest Management (IPM) technologies for the selected vegetables enjoying the second position, closely followed by the colour used in the written materials kept in the containers of the pesticides in the third position. The quality of the pictures of the pests used in the written materials kept in the containers of the pesticides occupied the fourth position. The fact that the given description regarding the precautions to be taken in the case of toxicity related accidents in the written materials kept in the containers of pesticides enjoyed the first rank position might be due to the fact that without the proper precautions, it was nearly impossible for the farmers to apply pesticides as per the recommended application procedure.

From the Table 1, it became clear that among the knowledge and information constraints as perceived by the respondents regarding the proper use of the pesticides, the lack of knowledge of the respondents (vegetable growers) about the Economic Threshold Limit (ETL) concept of the selected vegetables held the first rank position, closely followed by the lack of knowledge of the vegetable growers regarding the bio-pesticides in the second position which was closely followed by the lack of knowledge of the respondents about the Integrated Pest Management (IPM) techniques for the cultivation of the selected vegetables. Lack of proper information on the judicious use of pesticides was in the fourth position. The fact that the lack of knowledge of the respondents (vegetable growers) about the Economic Threshold Limit (ETL) concept of the selected vegetables held the

first rank position among the knowledge and information constraints might be due to the cause that without the knowledge about the Economic Threshold Limit (ETL) concept of the selected vegetables, the respondents were prone to use the chemical pesticides more in numbers, frequency and quantity.

From the above table, it was apparent that among the administrative and managerial constraints perceived by respondent's lack of training of the respondents on the proper use of pesticides enjoyed the first position, closely followed by non-availability of extension personnel in time in the second position and distantly followed by cheating by the sales agents and dealers of pesticide companies. In the fourth position lack of loan sanctioning mechanism for the vegetable growers for the cultivation of the selected vegetable was there. Among the administrative and managerial constraints, lack of training of the vegetable growers on the proper use of pesticides enjoyed the first position because of the fact that without proper training of the respondents regarding proper use of pesticides, the respondents would be likely prone to misuse of pesticides.

Table 1, revealed that among all the various types of constraints perceived by the respondents regarding proper use of pesticides, the lack of knowledge of the respondents (vegetable growers) about the Economic Threshold Limit (ETL) concept of the selected vegetables (under the category of knowledge and information constraints) enjoyed the first rank position, closely followed by the lack of knowledge of the vegetable growers regarding the bio-pesticides (under the category of knowledge and information constraints) in second position, the lack of knowledge of the respondents about the Integrated Pest Management (IPM) techniques for the cultivation of the selected vegetables (under the category of knowledge and information constraints) enjoyed third position, closely followed by lack of training of the vegetable growers on the proper use of pesticides (under category of administrative and managerial constraints) in the fourth position. It proved that the knowledge and information constraints like the lack of knowledge of the respondents (vegetable growers) about the Economic Threshold Limit (ETL) concept of the selected vegetables, lack of knowledge of the respondents regarding the bio-pesticides and the lack knowledge of the respondents about the Integrated Pest Management (IPM) techniques for the cultivation of the selected vegetables put the most formidable hurdle before the respondents regarding proper use of pesticides.

Table 1, clearly showed us that among six numbers of different categories of perceived constraints regarding the proper use of pesticides, knowledge and information constraints with a rank score of 11065 enjoyed the first rank position followed by administrative and managerial constraints (with a rank score of 6350) in second position, technological and communication constraints with a rank score of 4975 in the third position and socio-economic constraint with a rank score of 3200 held the fourth position. It was interesting to note that infrastructural constraints enjoyed the last position with only 2246 rank score. The fact that the

knowledge and information constraints held the highest position among different categories of constraints might because of the reason that the respondents had very poor level of knowledge regarding the various aspects of the judicious use of the pesticides as well as they had very poor access to the sources of the information regarding the proper use of the pesticides which was already indicated in the different results obtained in the earlier sections of this chapter. The above results also showed us that various administrative and managerial lacunae (incompetent extension services, inadequate monitoring of the markets etc.) on the part of the central and state governments contributed to a great extent to misuse of pesticides among the respondents. The results also revealed that the respondents were technologically ill equipped as well as there were various problems in the communication processes with the vegetable farmers to use the pesticides judiciously in their selected four vegetables cultivation. The percentage distribution of various categories of constraints was given in following table.

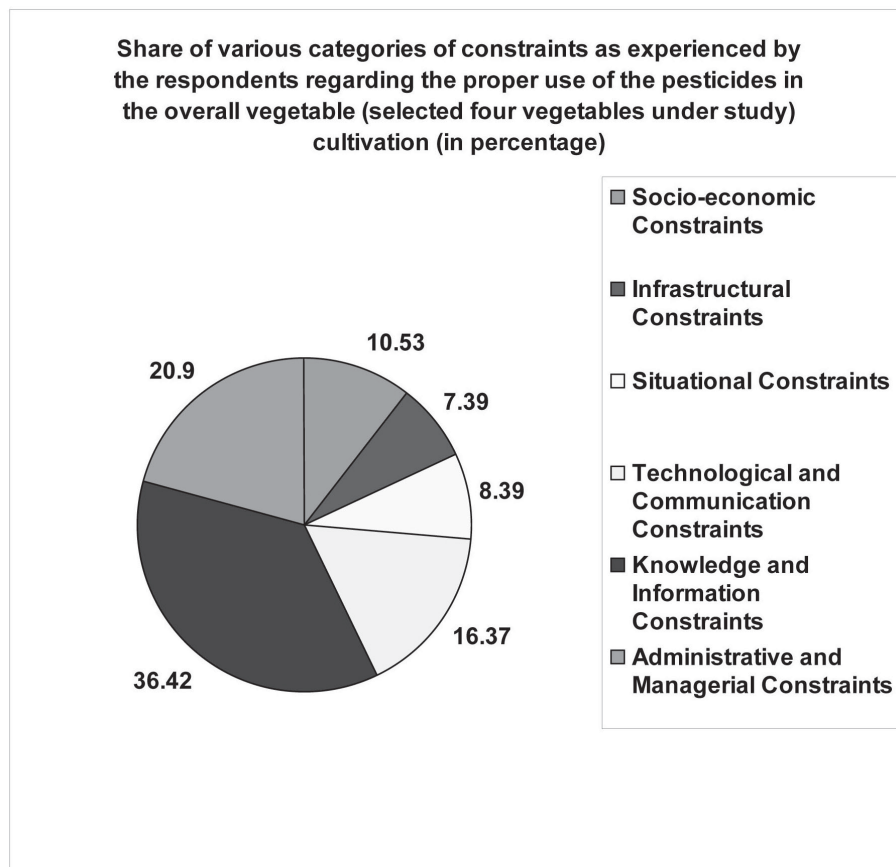


Figure 1: Share of various categories of field level constraints (as perceived by the respondents) regarding the proper use of pesticides in the overall vegetable cultivation

Table 2: Distribution of various categories of constraints (as perceived by the respondents) regarding the proper use of pesticides in the vegetable cultivation

Sl. No.	Categories of constraints	Total Score	Percentage	Rank position
1.	Knowledge and Information constraints	11065	36.42	I
2.	Administrative and managerial constraints	6350	20.90	II
3.	Technological and Communication constraints	4975	16.37	III
4.	Socio-economic constraints	3200	10.53	IV
5.	Situational constraints	2549	08.39	V
6.	Infrastructural constraints	2246	07.39	VI
	Total	30385	100.00	

Table 2 and Figure 1, showed us that among various categories of constraints, knowledge and information constraints had highest percentage of 36.42 percent, followed by administrative and managerial constraints (20.90 percent) in the second position and technological and communication constraints (16.37 percent) in the third position respectively. It was interesting to note that the infrastructural constraints held the lowest position with only 07.39 percentage points. The above table clearly depicted a picture that the biggest constraint before the respondents was knowledge and information constraints regarding proper use of pesticides. This meant that the respondents had very poor level of knowledge regarding the various aspects of the judicious use of the pesticides as well as they had very poor access to the sources of the information regarding the proper use of the pesticides which was already indicated in the different results obtained in the earlier sections of this chapter.

It was interesting to note that poor extension services, poor vigilance of the central and state governments on the pesticide market, inadequate and poorly governed vegetable markets etc. led the administrative and managerial constraints to the second position.

The above table clearly depicted a picture that the third biggest constraint before the respondents was technological and communication constraint regarding proper use of pesticides in the vegetable production. This meant that the respondents were technologically ill equipped for the proper use of the pesticides for the vegetable crops and the communication channel for making the respondents aware about the technical specifications and information regarding the judicious use of the pesticides was poorly developed and to some extent ineffective in nature.

The socio-economic constraints like lack of cosmopolitaness, lack of financial resources, lack of education, small size of land holdings etc. considerably affected the proper use of the pesticides by the respondents in the vegetable cultivation. As a result, socio-economic constraints came in the fourth position among the various categories of constraints regarding the proper use of pesticides.

It was interesting to note that the infrastructural constraints came in last position with only 07.75 percentage points. This means that respondents did not attach too much importance on these factors regarding the proper use of the pesticides.

The present Research Paper pointed to the fact that to overcome the knowledge and information constraints regarding the proper use of the Pesticides in vegetable cultivation, the extension agencies should try to make the vegetable farmers aware about the possible diverse aspects of abuse of the pesticides. The extension agencies both public sector and private sector should focus their campaign on educating the vegetable growers on the number of different chemical groups of the pesticides used, frequency of the pesticide use, quantity of the pesticides use and the strength of the different pesticides to be used and Economic Threshold Limit (ETL) of the attacking pests in the vegetable cultivation. The present Research Findings also

suggested that to mitigate the administrative and managerial constraints regarding the proper use of the Pesticides in vegetable cultivation, both the Central and State Governments and the Pesticide Law enforcing agencies like Police, Excise, Customer, and Consumer Affairs Department should and must come down heavily on the unscrupulous sales agents and dealers of the pesticide companies. Better regulation of the pesticide sales and reduction of the number of the pesticide formulations legally sold should be given priority. Regarding the technological and communication constraints, the findings suggested that The manufacturing companies of the pesticides should compose the written materials kept in the containers of the pesticides (A) in a more lucid language ; (B) easy and smooth translation of the materials in the local languages is a must; (C) avoidance of technical terms as much as possible is a necessary; (D) the description must be clear, brief and scientifically proven; (E) the letters should be bold and readable with normal naked eyes; (F) the diagrams and pictures should be comprehensible by the vegetable growers; (G) the pictures of the pests should be clear enough to be used by the vegetable growers in the real field and (H) the colours used in the written material must be attractive to the vegetable farmers. In this regard, Wilkinson *et al.*, (1997) suggested that the pictogram systems needed to be improved further if they were to have a more complete effect on improving the effectiveness of warnings about the chemical pesticides.

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Prevalence of Substance Abuse among Street Teens of Purulia District, West Bengal

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Health of the street youths has been seriously affected by the abuse of substance in present day. More than a health problem it is a formidable social and economic challenge with pandemic dimensions (WHO, 1997). It is true that most of the researches on adolescents' substance abuse mainly conducted on household and school based adolescents. Very few researches counted street teens of railway platforms and bus stops up to now. According to World Health Organization (1997) has estimated that 25 to 90 percent of the world's street children use some kind of drugs. In this context Sinha (2009) added that 'this issue is especially important for a predominantly young country like India, which has the largest number of street children in the world (Sinha-Deb *et al.*, 2009). In the writings of Nato (1997), Kombarakaran (2004), Pagare (2004) and Sherman (2005) it is found that disability and unnatural death among youths become a substantial loss to potential years of life, work and income and potential contribution to society. Further study in this respect also found in the contributions of Mundy (1990), Cates (1991), Tayler (2000), Wanger (2001), Nayar (2002), Aral (2005), Pagare (2005), Ahmadkhaniha (2007) etc. where all of them addressed that use of inexpensive drugs, chewing tobacco (locally better known as *Gutka*) are causing detrimental to their health, mental disorder and depression and helping to promote delinquent activities, emptiness, AIDS etc. Beside them, according to Auerswald (2002) such affection increases day by day because of lack of societal control, easy availability of different tobacco products and involvement with deviant peers push street youths to clearly initiation substance abuse.

It is revealed that age of initial start to have tobacco substance among street children is about 5 years. But in this study street teens those are using drugs of more than five to ten years, residing in the railway platforms of Purulia and Adra Junctions, district's main bus stand and small slums in few pockets of municipality of Purulia town are taken to conduct the study particularly to get the effect of substance abuse on the health. This study primarily focuses with five sets of hypothesis i.e. (i) teens (13-19 years of age) would be counted larger frequency of substance abuse compare to younger children, (ii) boys are much addicted than girls, (iii) longer the duration of living in footpaths, railway platforms, shades of bus stands higher will be intake capacity and proportion of drugs and related materials, (iv) larger the peer pressure higher will be use of substance abuse and (v) increasing capacity of income may increase the purchasing capacity and much higher consumption of substance abuse. This research is conducted with an ambition that the major findings of this study may be helpful to the policy makers of Planning Commission, India for better intervention planning to provide adequate effective support services and reduction of harmful substance abuse among street teens of the country.

Materials and Methods

This study is mainly based on primary survey on street teens of both the sexes living in railway platforms Purulia and Adra junctions (South-Eastern Railway), main bus stand of Purulia town and small slums under the flyover in the municipality of Purulia town. A questionnaire has set to conduct the survey in the above mentioned areas during November 2012 to April 2013 on two hundred and four (204) street teens including forty nine (49) girls and one hundred and fifty-five (155) boys under the age between thirteen to nineteen years of age. The interview is also based on forty-three TLCs (Time Location Clusters) by using both quantitative and qualitative techniques. Selection of TLCs (it is the natural settings in which street teens are known to congregate in the course of their participation in the street economy) is based on random sampling method. All eligible respondents in a selected TLC were interviewed. Collected data is calculated with the aid of SPSS-10 software. Descriptive statistics were generated by frequency distribution analysis. Bivariate statistical significance is determined by Chi-square (χ^2) test. Composite index for peer pressure named as Peer-Pressure Index (PPI) on street youth behavior has been designed by considering responses to five questions viz 'do your friends pressurize you for doing any activity with them?'; 'do your friends group pressurize you for doing such activities which you don't like?'; 'do your friends laugh at you if you deny to do something with them?' and 'how frequently your friends insist you to take alcohol with them?'. The responses are: Never/Sometimes/Always. Based on responses each variable are given scores ranging between '0' to '2' according to the intensity in a three-point scale and then are summed up to get the total value of the index. Cronbach's alpha coefficient for these items is 0.69. The variable PPI is obtained by summing of all five

responses, which yielded a lowest possible score of '0' and highest possible score of '10'. Finally the composite score has been divided into three equal quarters and named as 'less peer pressure', 'moderate peer pressure' and 'high peer pressure'.

Results and Discussion

Out of total 204 street teens under study, nearly 76 percent are boys and 24 percent are girls. This finding is similar to other researches on street children where they have found comparatively less girls than boys. In this study it is revealed that girls are much younger than boys. About three-quarters (73 percent) of the girls and little more than half (52 percent) of the boys are in the age group between 13 to 15 years. The median age for boys and girls are 15 and 14 years respectively with an overall median of 15 years. Educational attainment among studied teens is very low standard, only a quarter have completed grade four to sixth standard of schooling. Illiteracy among girls is higher than boys (Table-1). Moreover, on an average boys have been living much longer than their counterpart. Cent percent street teens under observation are living with their, friends or alone. Median income of the sample population was 25 per day. Almost 40 percent of the respondents are in the higher peer pressure category.

Table 1: Sex wise Demographic and Social Characteristics of Street Teens

Characteristics	Street Teens by Sex		
	Boys (%) / No.	Girls (%) / No.	Total (%) / No.
Age Group (in Year)			
13-15	52.1	73.2	57.1
16-19	47.9	26.8	42.9
Median Age	15	14	15
Duration of Living (in Year)			
< 2.5	34.7	42.3	36.5
2.5-4	32.2	37.1	33.3
>4	33.1	20.6	30.1
Peer Pressure			
Low	28.0	52.6	33.8
Medium	41.8	35.1	40.2
High	30.2	12.4	26.0
Educational Attainment			
Illiterate or Class 1	35.4	48.5	38.5
Class 2-3	35.4	39.2	36.3
Class 4 and above	29.3	12.4	25.2
Median Income (in Rupees)	25	25	25
Total Respondents	155	49	204

Source: Compiled by the Authors

Distribution of street teens by use of different substances is shown in Table-2. It also gives the value of 'p' to measure whether significant difference is lies in substance abuse behavior between boys and girls. Chewing *gutka* is prevalent (91 percent) among the studied teens followed by smoking bidi (75 percent) and inhalants glue (62 percent). Significantly more boys (71 percent) have ever used any non-tobacco substances than girls (58 percent) ($\chi^2 = 5.72$, d.f = 1, $p=0.02$). More interestingly in case of medical drugs higher number of girls (26 percent) reported to addict it compare to boys (12 percent).

Table 2: Use of Substances abuse among Street Children

Use rate of Substances	Street Teens by Sex	
	Boys (%)	Girls (%)
Ever used chewed tobacco product***	96.78	73.20
Ever smoked bidi/cigarettee***	91.64	20.62
Ever used alcohol***	35.69	4.12
Ever smoked Ganja***	34.08	0.00
Ever sniffed Glue (like Dendrite)*	63.99	55.67
Ever used medicinal drug***	12.22	25.77
Ever used any non-tobacco product**	70.70	57.70

Responses are not mutually exclusive; Significant Levels for χ^2 test * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Source: Compiled by the Authors

Table 3: Mean age of Initial Alcohol and Substances of Street Teens by sex

Parameters (in Mean age)	Boys	Girls
Chewing tobacco	11.12	10.58
Smoking Bidi or Cigarette	12.06	12.60
Drinking alcohol	15.05	15.00
Taking Ganza	15.03	-
Sniffing Glue (Like Dendrite)	12.72	11.70
Taking medicinal drugs	12.66	12.36

Source: Compiled by the Authors

Table-3 exhibits a brief picture of mean age of substance abuse for boys and girls as well as the overall mean. It is observed that the initial age of subsistence abuse for this study is as low as 7 years. The overall mean age of initiation of chewing product like tobacco is lowest among all products, approximately 11 years followed by bidi or cigarette (13 years), alcohol (15 years). So it is evident that street teens in their younger age first addicted to tobacco products and then subsequently took other substances in their lives. This result is further consolidated by the previous research findings of Sinha (2003) and Arora (2005) where they found that chewing tobacco is the gateway of substance abuse.

Table-4 is revealed that about 48 percent street teen have been suffering from at least one of the following health related problems like oral infection, staining on teeth, tuberculosis, high fever, dry cough sometimes with blood, heart disease, skin disease, respiration problem etc. Among these staining on teeth is the commonest health problem followed by dry cough with blood, respiratory related problem, oral infection, tuberculosis etc. It is evident that these kind of diseases are substance abuse borne diseases and good amount of intake of such products have been seriously affected the respondents that's for sure. Unfortunately majority of the affected teens have not been under any sort of treatment from government or non-government level.

Thus high rate of substance abuse among street teens is started at very low age. Easy availability of several tobacco and non-tobacco products and its serious effect on street teens reflects insufficient implementation of plans and policies of the existing legislations (NDPS: The Narcotic Drug and Psychotropic Substances) Act. of India 1985; New Ordinance on Drug Trafficking July 1988; NDPS Amendment Act, 2001 etc.) made for controlling the use of drugs and the prevention of illicit drug trafficking. Appropriate intervention should be taken up to minimize the substance abuse related health problems among street teens and children. Combination of Double Control Schemes i.e. Demand Control and Supply Control measures may be implemented more effectively to reduce the prevalence of harmful substance abuse among the target population. Supply control can be practiced by means of developing legal framework by setting up laws, rules, and regulations and monitoring. On the contrary Demand Control is related with behavioral change communication for the street teens. Government, grass root activists or any non-government organization may play a qualitative role in exercising demand control measures.

More accessibility of health care facilities and treatments to the affected street teens should be impacted by setting health camps near to railway station, bus stops, foot paths, flyovers etc. places. Significant focus should be given on interpersonal communication so that the street children, their parents, and all possible teens who ever take the first taste of such substance will get to know the related health hazards and economic loss on taking tobacco and non-tobacco products. The study ends with an optimistic view that sometime near future with the hand of better educational attainment and economic life these street adolescents will manage to live substance abuse free life in the world.

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29

Farm Women's Access to Farm Information: A study In Bolpur Sub- Division of Birbhum District

Sarthak Chowdhury and Suparna Bose

Information is the data that has been put into meaningful and useful context and communicated to a recipient who uses it to make decisions. Information cannot provide finance, input or infrastructure. But, it can help in creating awareness about technologies and mobilise people to use them. It also helps in imparting training to people, organising community and ultimately the development of the whole nation. Farm women as human being are also anxious and become more desirous with the advancement in science and technology to know what is happening in the field of agriculture. Policies of planners have aimed at improving more of agricultural practices under the High Yielding Variety Programmes and Green Revolution and very little attention paid to the problems of farm women of this sector. The World Conference at Nairobi in 1985 to review the achievement of the UN decade for women observed that the rural women are key producers in many regions and participating in all phases of production cycle. According to Dubey and Dey (1990) social system can be divided into three distinct strata in terms of information system:

1. Information holders: They are the persons or group of persons who hold the information. They have least desire to share information.
2. Information seekers: They are the persons who accumulate process and store the information.

3. Aphonic persons: They are those persons who don't have the ability to seek, hold and use information gainfully in their favour.

Most of the farmwomen belong to the third category. The transfer of improved farm related technological information to them is neglected. It is largely felt that the technological knowledge of the farm women acquired over the generations is not being updated. Farm information tends to reach men more than women. Women had reduced access to information for a number of reasons, ranging from socio-cultural attitudes and preconceptions about women's interaction with technology to resource constraints (Theerthalingam, 2008). This results in two situations; it restricts them to low paid unskilled jobs and denying them access to better paid works. Keeping this in view, the present study was undertaken with the following set of objectives:

Objectives

- i) To study the information needs of the farm women in relation to Kharif paddy cultivation.
- ii) To examine the information gap of farm women with respect to Kharif paddy cultivation.
- iii) To examine the relationship between socio-economic traits and access to farm information source of the respondents.

Research Methodology

The present study was undertaken in randomly selected two blocks; i.e. Bolpur-Sriniketan Block and Illumbazar Block of Bolpur sub-division of Birbhum District. For the present study 250 farm women were selected by the use of simple random sampling technique. The data were collected with the help of a pre-tested structured interview schedule by personal interview method.

Results and Discussion

Information needs related to kharif paddy cultivation

It was clear from the results (table 1) that farm women wanted to know more about nursery raising, disease management, selling of product and storage which were assigned first, second, third and fourth rank. Winnowing, seed treatment, pest control, threshing and pre-harvest desiccation occupied the next five positions. Seed variety, fertilizing, transplanting and transportation were also sought after operations for information at tenth, eleventh, twelfth and thirteenth rank. Respondents comparatively showed less interest in information on water management, puddling, harvesting, land preparation and weed control.

Table 1: Distribution of respondents according to relative position of items of information needs related to kharif paddy cultivation n=250

Sl.No.	Information regarding Kharif Paddy Cultivation	Extent of Need				TotalScore	Rank
		Most (3)	Moderate(2)	Somewhat(1)	Not At All (0)		
1.	Nursery Raising	227	5	18	0	709	I
2.	Disease Management	197	41	12	0	685	II
3.	Selling of Product	192	18	40	0	652	III
4.	Storage	190	12	48	0	642	IV
5.	Winnowing	166	57	27	0	639	V
6.	Seed Treatment	154	70	19	0	621	VI
7.	Pest Control	179	5	7	0	590	VII
8.	Threshing	127	87	20	0	575	VIII
9.	Pre-Harvest Desiccation	179	10	16	0	573	IX
10.	Seed Variety	183	5	12	0	571	X
11.	Fertilizing	167	18	33	0	570	XI
12.	Transplanting	144	40	51	0	563	XII
13.	Transportation	134	51	10	0	514	XIII
14.	Water Management	108	58	42	0	482	XIV
15.	Puddling	75	68	31	0	392	XV
16.	Harvesting	98	27	20	0	368	XVI
17.	Land Preparation	96	22	8	0	340	XVII
18.	Weed Control	27	19	17	0	136	XVIII

Information supply related to Kharif Paddy Cultivation

As far as supply of farm information is concerned it was clear from the results (table 2) that the farm women in the study area had scored better in scientific storage, seed variety, fertilizing, and seed-treatment and land preparation as this operations stepped in first, second, third, fourth and fifth rank. Whereas nursery raising, water-management, transplanting, selling and harvesting were positioned in next five ranks. The supply of information to the respondents were less in case of pest-management, transportation, disease-management, puddling and winnowing as these operations of kharif paddy cultivation ranked eleventh, twelfth, thirteenth, fourteenth and fifteenth rank. In operations like weed control and threshing respondents had least supply of information.

Information gap

The data presented in table 3 reveals that overall knowledge gaps of the women farmers in relation to the selected practices of recommended rice production technology was 37.3 %. In case of women farmers, the practices of higher percentage grouped into complete knowledge category (100%) were knowledge about HYV seeds, fertilizer used during tillage operation, use of chemical fertilizer and use of mechanical thresher. Knowledge Gap was minimum in case of plant spacing (1.8%) followed by method of storage (3.6%), water requirement (6.4%), idea about fertilizer application (8.8%), use of organic matter during tillage operation (8%) and idea regarding healthy seedling (9.6%). More significant gaps were noticed in practices of paddy cultivation such as idea about diseases (46.8%) followed by measure during/after infestation (insect pest) (43.2%), measure during/after infestation (diseases) (36.8%), idea about insect pest (41.2%), control measure during storage (23.6%) and seed rate (19.6). The practices such as practice of scientific management of nursery field and chemical weed control (both at 98%) followed by soil test (95.6%), use of micro-nutrient (95.2%), idea about scientific management of nursery field (93.2%), use of disease prevention measure (85.2%) and seed treatment (79.6%) showed very high percentage of gap among the respondents. Whereas idea about integrated nutrient management, idea about economic threshold level and pre-harvest treatment there was 100% information gap among the respondents.

Table 2: Distribution of respondents according to relative position of items of information supply related to kharif paddy cultivation n=250

Sl.No.	Information regarding Kharif Paddy Cultivation	Extent of Information Supply				TotalScore	Rank
		Most (3)	Moderate(2)	Somewhat(1)	Not At All (0)		
1.	Storage	111	32	66	0	463	I
2.	Seed Variety	86	77	29	0	441	II
3.	Fertilizing	91	27	23	0	350	III
4.	Seed Treatment	57	62	52	0	347	IV
5.	Land Preparation	43	36	37	0	238	V
6.	Nursery Raising	49	33	14	0	227	VI
7.	Water Management	27	11	116	0	219	VII
8.	Transplanting	55	10	8	0	193	VIII
9.	Selling	35	30	19	0	184	IX
10.	Harvesting	28	21	30	0	156	X
11.	Pest Control	33	9	27	0	144	XI
12.	Transportation	22	19	20	0	124	XII
13.	Disease Management	21	9	7	0	108	XIII
14.	Puddling	19	7	33	0	104	XIV
15.	Winnowing	18	3	6	0	66	XV
16.	Weed Control	17	2	3	0	58	XVI
17.	Threshing	5	0	0	0	15	XVII
18.	Pre-Harvest Desiccation	0	0	0	0	0	

Table 3 Classification of respondents according to information gap n=250

S.N.	Name of Technology	No. of Respondents Adopted	Gap (if any)	Gap (%)	Rank
1.	HYV Seed	250	0	0.0	XIX
2.	Healthy Seedling	226	24	9.6	XIV
3.	Seed rate	201	49	19.6	XIII
4.	Seed Treatment	51	199	79.6	VII
5.	Idea about Scientific Management of Nursery Field	17	233	93.2	V
6.	Practice of Scientific Management of Nursery Field	05	245	98.0	II
7.	Soil Test	15	235	94.0	III
8.	Chemical Weed Control	06	244	97.6	II
9.	Fertilizer used during Tillage Operation	250	0	0.0	XIX
10.	Use of Organic Matter during Tillage Operation	230	20	8.0	XIX
11.	Water Requirement	234	16	6.4	XVI
12.	Plant Spacing	237	13	1.8	XVIII
13.	Use of Chemical Fertilizer	250	0	0	XIX
14.	Use of Micro-Nutrient	12	238	95.2	IV
15.	Idea About Fertilizer Application	228	22	8.8	XV
16.	Idea about integrated Nutrient Management	0	250	100	I
17.	Use of Disease Prevention Measure	37	213	85.2	VI
18.	Idea about Diseases	133	117	46.8	VII
19.	Measure during/after Infestation (Diseases)	156	94	37.6	XI
20.	Idea about Insect Pest	147	103	41.2	X
21.	Measure during/after Infestation(Insect Pest)	142	108	43.2	IX
22.	Idea about Economic Threshold Level	0	250	100	I
23.	Pre-Harvest Treatment	0	250	100	I
24.	Use of Mechanical Thresher	250	0	0	XIX
25.	Method of Scientific Storage	241	09	3.6	XVII
26.	Control Measure during Storage	191	59	23.6	XII

In the Table 4, R^2 of the stepwise multiple regression analysis between socio-economic traits and access to farm information sources was 0.8192 which indicates that 81.92 percent variation in access to farm information sources was explained by the five variables put together.

Table 4 Stepwise multiple regression analysis between socio-economic traits and access to farm information sources

Sl. No.	Independent Variable	Beta weight of Standardised partial regression coefficient	Regression Coefficient	't' value of partial regression
1.	Education	0.1740	18.6915	3.8163**
2.	Farm income	0.2170	15.8299	3.2022**
3.	Transportation and	0.0670	6.3557	1.324**
4.	Size of holding Communication items	0.1407	3.6751	1.7931**
5.	Social Participation	0.0794	10.1351	1.8318**

$R^2 = 0.8192$ **Significant at 1%

Conclusion

The results of the study will help to understand flows and network of farm information, information sources that farm women use. The findings of the study can also be used in guiding policy makers and development planners who are concerned about gender issues while designing agricultural projects within the region and elsewhere in the country.

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30

An Ecological Analysis of Eco-Tourism in Sikkim: A Case Study of Kechopalri Lake

Hasibul Rahaman

Tourism has been described as the world's largest and fastest growing industry. It has estimated by the world Tourism organization that the industry will employ 250 million persons and promote over 10 percent of total capital investment by 2010. Mountain tourism in its various forms will account for about 20 percent of the total (WTTC 1999). Religious pilgrimage, drawing travelers to the sources of sacred rivers and the abodes of gods, has a long history in the Himalaya, and in some areas continues to have important economic and ecological impacts. Over the last half century, mountaineering, trekking, and mass tourism have developed dramatically in the Himalayan region. In some respects these newer forms are homologous with traditional pilgrimage, certainly the secular inspiration derived from recreation in the high places is comparable to the spiritual inspiration associated with pilgrimage. There is an important difference however: modern tourism in the Himalaya, unlike traditional pilgrimage, necessarily entails 'development', fundamental change in livelihoods and social structures of the impacted communities.

Tourism is one of the rapidly growing industries in the present day world influencing societal, governmental and academic circles. Emerging trend of tourism industry needing comparatively lesser import content can bear promise to the countries and regions of the world, which are otherwise economically backward to afford large scale investment in other capital intensive industrial sectors. As a service industry, tourism has flexible character, having capability of accommodating people-skilled, semi-skilled and unskilled.

The north eastern part of India with both physical and human diversities is one of the most potential areas of India in respect of tourism promotion. Proper campaigning of the region's wider variety of physical and cultural products can certainly bring a dramatic change to the present socio-economic situation of the region. However, tourism sector necessities formulation of a sustainable tourism strategy, so that it can be utilized as a tool for regional development.

Being a mountainous area, Sikkim too has welcomed this industry as soon as it became the 22nd State. But like Darjeeling, it has not been able to benefit from the foreign tourist as much as central or western Himalayas. In this regard, the lack of adequate communication facilities and the long distance from the rail-head or the air-field cannot be brushed aside as insignificant. But with special regard to the foreign tourists an important reason why this industry has not been able to take off is the restriction on foreign tourists to visit this place. The intending tourists needed to apply the Ministry of Home Affairs, Government of India, at least a month before they wanted to visit Sikkim. Even after that they were not allowed to stay there for more than two days if they were lucky while half of the applications for permission used to be turned down on or that plea. Recently the Government of India has announced that they can visit some parts of Sikkim for the fifteen days. But even now getting the permission, unless they land at Bagdogra by plane, is as difficult as it used to be.

This study has been done at Kechopalri lake of west district of Sikkim having a objective of the exploration of the nature of ecotourism in the eastern Himalayan area by using sociological tools and techniques.

Demographic Composition of Sikkim

Sikkim, a small and beautiful state nested in the Himalayas is a landlocked state bounded and its 3 sides by the international border Tibet, Bhutan and Nepal in the North-East, East and West respectively and south by the Darjeeling district of West Bengal. It has a total population of 6.7lacs (according to the 2011 Census). The social compositions (ethnic group) of Sikkim are - Lepcha (19%), Bhutia (16%) and Nepali (56%) which constitutes a majority of the population of Sikkim is a multi-ethnic state- Lepcha, Bhutia and Nepali forming the main ethnic group.

Broadly, the population can be divided into tribal and non-tribal groups. Lepchas, Bhutias, Sherpas, Limboos and Tamangs are categorized as Scheduled Tribes.

The Lepcha are the original inhabitants of the state. Compared to other ethnic groups, the Lepchas still maintain many of their traditional ways. The Bhutias comprise, the Sikkimese Bhutia and Bhutia from Bhutan and Tibet. Ethnically, Limboos and Tamangs belong to the Nepali community. The Sherpas are a marginal ethnic group in the state. Over 70% population consists of Nepalese. They are dominant ethnic group in the state. The people from the plains, mostly involved in trade and services represent a marginal group.

Tourism in Sikkim: An Overview of Art

The tourism of Sikkim is hardly three or four decade old. There were tourists before 1975 but there was no tourist industry because just as manufacturing industry requires land, labour, capital and management, it depends on a system of relationship between tourists, government, entrepreneurs and the local citizens. The tourist industry should essentially be understood as a service industry.

In the above sense, Sikkim has now, what called, 'incipient tourism'. Some picture of what may the tourist industry of Sikkim be like tomorrow can be drawn the state of affairs in the capital result, most tourist activities take place in this capital town. Multistoried buildings have sprouted up in large numbers which are not only ecologically unwise but also aesthetically painful. The concretes are raised without keeping the least harmony with nature. The national high way (NH 31 A) is perhaps nowhere allowed to be encroached more where than in Gangtok.

Much of the filth that has gathered in Gangtok could have been avoided with little decentralization of this industry. Any further deterioration is to be avoided at all cost, even at the displeasure of the hoteliers and businessmen at Gangtok, who are some of the most influential people of there.

The tourist industry is not only created an opportunity for the local people to come in contact with outsiders but also generated a lot of employment for them. And this is true not only the urban areas but also the remote rural areas like Kechopalri Lake area of West Sikkim. It is however unfortunate that no figures for employment are available either in absolute or in relative term.

With regard to the rural areas, the following developments have taken place after the inception of the tourist industry in Sikkim. First, tourism is partly responsible for bringing about capitalist relations in the rural areas by almost institutionalizing wage laboring which earlier was dormant as the wages were paid in kind. Second, it has monetized economy. The places which are beaten by tourists have lost the traditional systems of labour exchange like *hoori* (cyclical system between 10 to 20 members) and *parma* (direct labour exchange between two members or families). The traditional concept of *guhar* or mutual assistance in the form of labour has eroded in places like *Yuksom* in West Sikkim. Third, it has generated some domestic trade in such backward areas as the West Sikkim through which hundred of trekkers and mountaineers pass by twice every year. And, finally, it has served them as a market where they can sell not only their labour at a fairly high price (Rs. 500/- per day) but also sell their fowls and livestock at high prices.

Tourism in Sikkim

The present chief minister Mr. Pawan K Chamling has repeatedly remarked “tourism and hydroelectric power are the only two viable sources of revenue of Sikkim.” The connection between hydroelectricity and pilgrim tourism is not random since the trajectory of the Rathongchu hydroelectric project and the active marketing of Sikkim as Buddhist pilgrimage centre are interconnected. Democratization and secularization were perceived as complementary process that would lead to the integration of Sikkim into India. Paradoxically pilgrimage tourism and its proactive marketing by the current government of Sikkim, is encouraging a religious perception of the Sikkimese landscape.

Today the state government is proactively marketing pilgrimage tourism and encouraging a religious perception of the landscape. The government is not merely drawing of Sikkim's Buddhist heritage.

The State is endowed by nature with a variety of destinations and circuits required for the tourists. Sikkim has impressive varieties of Tourism Products. The people are encouraged to preserve the old monuments and heritage sites. Village tourism is encouraged to preserve cultural heritage and handicrafts and to create better economic and employment opportunity in the rural areas. Floriculture is being promoted and all the hotels and restaurants have been requested to use natural flowers instead of artificial flowers.

Though Sikkim is a hilly State, it could not develop as a ‘HILL STATION’ in the past. The unlimited and unparalleled natural potential of the State which has immense tourism prospects are yet to be fully exploited; even then Sikkim has shown the sign of a well sought after destination in the country and worldwide. In the coming years, the State Government will make the State, the best ‘HILL STATION’ on the globe –the land of peace and tranquility, green, neat and clean, best hospitality and most beautiful place to compel feel Sikkim from within.

‘To make tourism as main livelihood of the people of Sikkim, each and every household and individuals shall become a skilled force for tourism industry. Enrichment of Peace and Tranquility, Culture, Tradition, Customs Art, Natural resources and Environment through tourism, Enhancement of quality of life and happiness Index through tourism and provide the experience to tourists to ‘Feel Sikkim from within’. The Minimum Growth Graph (MGG) for future increased proposed is 11-17 % annually with more quality tourists. Tourism Development shall not only benefit the economic and contentment in the society’

Eco-Tourism

Ecotourism essentially means ecological tourism; where ecological has both environmental and social connotations. It is defined both as a concept/tourism movement and as a tourism sector. Born in its current form in the late 1980s, ecotourism came of age in 2002, where the United Nation celebrated the “national

year of Ecotourism". In fact, tourism is now growing segment. In response to this increasing appreciation of nature experience, a new travel ethic has arisen which is now called ecotourism. This term has become increasingly popular in both conservation and travel circles, but what exactly it does mean? The nature conservancy has joined the World Conservation Union (IUCN) in adopting the following the definition of ecotourism. " Environmentally responsible travel to natural areas, in order to enjoy and appreciate nature and accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples". Most tourism in natural areas today is not ecotourism and is not therefore, sustainable. Ecotourism can be distinguished from nature tourism by its emphasis on conservation, education traveler responsibility and Active participation.

Associated with growth of nature, related travel sector is the facet of eco-tourism. The Ecotourism Society defines ecotourism as, 'Responsible travel that conserves natural environment and sustains the well being of people' (Lindbergh and Howkins, 1993 as found in Gulia, 2005:240-242). In other words, ecotourism is the symbolic relationship between tourism and environment which benefits the socio-economic condition of the local inhabitants and the same time promotes tourism and protect the environment.

By harbouring environmental awareness, both, among local people and visitors and by linking tourism to social and economic development, it is potentially possible to conserve the natural and cultural heritage of an area, and to improve the living standards of the host region inhabitants. Ecotourism, if developed responsibly, and managed properly, can become a powerful instrument and strategy for the biodiversity conservation. It is a form of tourism that promotes tourism-environment linkages, and at the same time, the host regions can take pride in what they have to offer for their people and the tourists.

The potential of ecotourism as a strategy for sustainable development was recognized during the Earth Summit in 1992, when sustainable tourism was considered as environment friendly economic activity. The fundamental function of the ecotourism is the protection of natural and cultural resources as well as income generation, education, local participation and capacity building. As per the fundamental principles, the ecotourism should be: i) Nature-friendly, ii) ecological sustainable, iii) environmentally educative and iv) economically beneficial to the local community. It should also offer satisfaction to the tourists (Kumari et al., 2010: 77-76).

Ecotourism has strong correction with sustainable tourism. The latter depends on the relationship between tourism and environment. This can be judged with the help of criteria and indicators approach, which is basically a concept of sustainable ecotourism management developed in to a set of principles, and indicators (Kumari et al., 2010; 77-76).

The Kechopalri Lake: Tourist Destination

As we can say from the notion of field observation that the Kechopalri Lake has its own charisma to attract the tourists for visit this place. As per the record of the field work it is to be noted that the lake has a colourful potential to become tourist destination.

The lake area, in true sense, preservation of such rich nature heritage is not yet been a priority of the concerned states. Some of the monuments are preserved at the cost of their historic flavor and most of them are at a neglected state, witnessing harsh wounds of time. Other cultural products of tourism in the region include the typical forms for visual and performing arts, crafts, dress materials, fairs and festivals, folk music, oral literature, life and lifestyle, dietary habit etc. in terms of all these components the region is rich enough with greater spatial diversity. However, gradual intrusion of market economy, even to the interior parts of the region has already distorted such uniqueness at different magnitude. As cultural tourism starts with commodification of culture, adaptation of a supply oriented approach in cultural tourism expansion strategy may go a long way in reevaluating and pressuring the charm of its cultural components that make the region unique. Even in the cultural fronts too, ceremonies and festivals are closely associated with the climate calendar of the essentially agrarian society of the region.

Tourist facilities and services are one of the important components of the whole gamut of tangible and intangible products of tourism industry. However, a study on tourist's perception towards of facilities and services in the region has reflected a low key profile of its tourist transport facilities. It shows the need of immediate attention to tourist transport component, apart from strategy building for optimizing performances of other tourist facilities and services for tourists is polarized in a couple of pockets of the region, restricting horizontal expansion of tourism industry in the region.

Kechopalri Lake is set of amidst the thick and luxuriant forest cover in West Sikkim. It is considered as one of the most sacred lakes of Sikkim, and it is believed that wishes are fulfilled when prayers are offered to the deities of the lake. Many domestic as well as foreign tourists visit this lake each year. The lake attracts many migratory ducks during the winter season. The Kechopalri monastery is situated above the lake and is half and hours walk uphill. A large number of visitors come to visit to this lake during the Kechopai Lake (Bumchu) festivals which is normally falls in the month of March.

Percentage wise list of Motivated Items for Tourist attraction

Motivated Item	Percentage (%)
Lake	50%
Forest	20%
Monastery	25%
Coolness	5%
Silence	D.N.A.
Mountain	10%
Other	10%

Source: Field Work

The above table shows that 50% tourists are subjected to visit this lake due to its sacredness and for performing sacred activities. There are 25% tourists would like to visit this lake due to monastic point of view and they are known as ‘Buddha Vikhuk’ (Buddhist monk). As we can say that rest of the tourists are express their consent to visit the lake area only for mountain, coolness and other as well.

Conclusion

Most of the ecotourism activities in Sikkim are either in protected areas or cultural sites. Protected areas are the State Properties where ownership, control and management of resource and claims rest with the government. Rights for tourism purpose are with a variety of users including local entrepreneurs, communities, commercial tour operators and government agencies such as the Forest and Tourism Departments. Permits are often issued by the Tourism and Forest Departments of the State Government with the intention of generating revenue and regulating visitor flow. Cultural sites of tourism interest such as monasteries and their sacred forests are under the control of local institutions. There is a unique and only one example of Kechopalri sacred lake where the legal rights lie with the State Government but the operational rights seem to be with a local institution, like Kechopalri holy Lake Welfare Committee.

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31

Promoting Grasspea (*Lathyrus sativus* L.) Cultivation in Rice-Fallows of West Bengal

M. K. Bhowmick, B. Duary and P. K. Biswas

West Bengal is an eastern state with only 2.7% geographical area and about 7.5% population in India. Although the state is self-sufficient in the production of rice, potato and vegetables, there are still deficits in the production of pulses, oilseeds and wheat. Among three rice-growing seasons (summer or *aus*, winter or *aman* and autumn or *boro*) in the state, maximum rice area gets covered during wet (*kharif* or *aman*) season and higher soil moisture is generally observed at the time of harvesting *aman* rice in lowlands, compared with moisture stress under upland conditions. Such lowland rice-fallows can favourably be exploited for successful cultivation of *rabi* pulses with appropriate manipulation in the selection of improved varieties of rice as well as succeeding pulse crops, following suitable management practices (Ali and Mishra, 2002; Gupta and Bhowmick, 2012).

There was a traditional practice of the Bengal farmers that they used to sow the seeds of various *rabi* pulse crops like lentil, grasspea, chickpea and fieldpea in the standing rice crop field, just before rice harvest to ensure germination of pulses using residual moisture and to avoid tillage operations for pulse cultivation (Gupta and Bhowmick, 2005). Such a relay cropping operation was earlier very popular for growing grasspea, *khesari*, chickling pea or lathyrus (*Lathyrus sativus* L.) among different pulses (Bhowmick, 2013b). Grasspea is also known by different local names such as Lakhori, Teora, Matra, Batra, Latri or Lankalu. Subsequently due to high content of β -ODAP (β -*N*-oxalyl-L- α -amino acid), β -diaminopropionic acid) in seeds of local land races, however, the farmers tended to have a shift from relay cropping of grasspea to that of other alternative crops like lentil, linseed, mustard, chickpea,

fieldpea, etc. which also require less water. Presence of the neurotoxin has been the major constraint for promotion of this crop for commercial cultivation. β -ODAP is considered as the cause of the disease neurolathyrism that causes paralysis. Research has shown that β -ODAP concentration increases in plants under stressful conditions, compounding the problem. Breeding programmes are underway to produce lines with low β -ODAP. A few varieties with lower β -ODAP level have already been developed (Gupta and Bhowmick, 2012). Now, the time has come to promote this potential hardy pulse crop having high nutritional value. Its cultivation does not need any irrigation facilities. Being drought resistant, it can thrive even under adverse conditions and, therefore, can be regarded as 'insurance crop' when other crops fail. Being a legume, it can improve soil health also. Thus, the crop holds a great promise in the rice-fallows of the state as well as north eastern and central regions of the country.

The trends in area coverage under grasspea along with its production and productivity in the last decade (Table 1) show that average productivity level is quite lower than potential yield of a standard variety. There are many reasons put forward to explain such a low productivity in the state (Gupta and Bhowmick, 2013). Emphasis should, therefore, be given on the use of improved varieties along with recommended package of practices including low-cost technologies for enhancing productivity of grasspea with a view to minimize the gap between demand and supply in terms of pulse production in the state as a whole.

Table 1: Area, production and productivity of grasspea in West Bengal during the period from 2000-01 to 2010-11

Year	Area ('000 ha)	Production ('000 t)	Productivity (t ha ⁻¹)
2000-01	40.39	42.55	1,053
2001-02	34.67	28.70	828
2002-03	32.80	27.13	827
2003-04	35.67	40.94	1,148
2004-05	35.05	33.28	949
2005-06	33.25	30.38	913
2006-07	32.15	30.50	948
2007-08	33.50	26.93	804
2008-09	27.74	17.41	628
2009-10	28.13	19.66	699
2010-11	25.78	30.22	1,172

Source: Anon. (2010 and 2011); Gupta and Bhowmick (2013)

Varietal Selection and Suitability- Location-specific high-yielding varieties (HYVs) with earliness, close canopy, synchronous maturity, resistance to key diseases and insects, and tolerance to moisture stress, besides having near zero or negative content of β -ODAP need to be selected and cultivated. Concerted efforts to develop grasspea varieties with β -ODAP content of less than a critical limit

Table 2: Grasspea varieties suitable for cultivation in the state of West Bengal

Varieties	Pedigree	Duration (Days)	Average yield (q ha ⁻¹)	Characteristics
Nirmal(B 1)	Improved selection from local land races	120-130	12.0-15.0	Small seeded, medium β -ODAP content (0.20%), light grey in colour, blue flower
Pusa 24	Selection from germplasm	150-160	15.0-20.0	Medium β -ODAP content (0.20%), triangular reddish brown seeds
Ratan(BioL 212)	Somaclone of Pusa 24	108-116	15.3	Low β -ODAP content (0.07%), large seeded, blue flower, tolerant to stress
Prateek(LS 157-14)	LS 8246 x G 60	110-115	13.0-15.6	Low β -ODAP content (0.109%), tolerant to stress and powdery mildew
Mahateora(RLS 4595)	Ratan x JRL 2	110-115	15.5	Low β -ODAP content (0.074%), large seeded, tolerant to stress

Source: Gupta and Bhowmick (2013)

(0.10%) led to the evolution of varieties like Nirmal, Ratan, Prateek, Mahateora, BioR 202, LSD 3 and Pusa 24. A list of suitable varieties is given in Table 2.

Package of Practices

Seed Treatment: Certified seeds of improved varieties should be used and treated with thiram + carbendazim (1:2 mixture) 3.0 g or mancozeb 3.0 g kg⁻¹ of seeds at one week before seed inoculation followed by sowing of seeds to combat seedling mortality and seed-borne diseases. Such a low-cost but important treatment can help the farmers a lot in minimizing the subsequent use of plant protection chemicals.

Seed Priming: Seed priming (pre-sowing soaking of seeds) is an important low-cost technology to obtain better plant stand and high crop yield (Ali *et al.*, 2005; Bhowmick *et al.*, 2005). Pre-sowing seed soaking with KH₂PO₄, Na₂HPO₄, etc. or simple water was earlier reported to improve seed germination, seedling vigour and root growth early in the season, resulting in good establishment, better drought tolerance and more yield of crop plants (Solaimalai and Subburamu, 2004). Experiments at the Pulses and Oilseeds Research Station, Berhampore, Murshidabad (West Bengal) showed that sowing of sprouted seeds or seeds soaked in 2% KH₂PO₄ solution (for 6 hours) in standing rice significantly increased seed yield (Bhowmick, 2013a; Bhowmick *et al.*, 2013) due to improvement in most of the growth and yield attributes. Yield advantages with sprouted seeds and 2% KH₂PO₄ soaked seeds were 20.15 and 13.24%, respectively, compared with non-soaked seeds. Soaking of seeds simply in water also exhibited 6.97% yield advantage over no soaking. This has also come as a national recommendation. Better performance of crop plants under seed priming treatments could be attributed to their good establishment as well as tolerance to soil moisture stress, which might be explained due to a number of physico-chemical changes within the cytoplasm including greater hydration of colloids, higher viscosity and elasticity of the protoplasm, etc. (Solaimalai and Subburamu, 2004).

Seed Inoculation: When grasspea will be grown for the first time in any rice-fallows, the seeds must be inoculated with efficient strains of *Rhizobium leguminosarum* culture as the soil may not have that particular *Rhizobium* species. The method of seed inoculation is quite easy and convenient. It consists of (i) adding 50 g *gur* and 2 g gum *Arabica* to a litre of water, (ii) heating the solution for 15-20 minutes to dissolve the ingredients and then cooling to room temperature, (iii) adding one packet (250 g) of rhizobial culture to the solution and stirring it thoroughly to get a homogenized mixture, (iv) applying this mixture gently on seeds (10 kg) to get a uniform thin coating, and (v) drying the seeds in shade for few hours to enable separation of seeds. A more simplified method of inoculation under special circumstances is to moisten the seeds by sprinkling a little amount of water, and then mixing up the culture thoroughly with seeds and drying in shade for about 2 hours. The culture treatment is generally given for 3-4 hours before sowing (Ali and Chandra, 1985). Besides using *Rhizobium*, plant growth

promoting rhizobacteria (PGPR) and phosphate solubilizing bacteria (PSB) are also recommended for use.

Method of Sowing: Grasspea is generally sown by broadcasting properly treated, primed and inoculated seeds without any preparatory tillage in the standing crop of lowland rice before harvesting *aman* rice. This is known as *paira* (*utera*) cropping, in which growing periods of both the crops (grasspea and rice) overlap for a short period of 2-3 weeks, enabling the succeeding crop (grasspea) to utilize residual soil moisture. In other words, it is a sort of no-tillage relay cropping system. However, it will be better if pathways are made in the field and seeds are sown along the lines / rows / pathways. Higher seed rate (nearly 1.5-2.0 times more than normal) is used to obtain desired plant stand as because (i) substantial amount of seeds fail to reach the soil surface; (ii) some seeds get affected with microbial attack; (iii) some do not germinate or establish due to moisture variation (high or low); and (iv) some are lost due to trampling during rice harvest and subsequent bird damage. Generally a seed rate of 50-60 kg ha⁻¹ is recommended for *paira* / *utera* cropping of grasspea.

Sowing Time: Availability of soil moisture is must at the time of sowing grasspea seeds for proper seed germination, better seedling emergence and early crop establishment. Timely sowing is, therefore, the key factor to better utilize the residual soil moisture on rice-fallows. It was found that sowing of grasspea in standing *aman* paddy field at 15-20 days before rice harvest (DBRH) can give higher seed yield due to effective utilization of residual soil moisture. Duary *et al.*, (2004) were of the same opinion. The ideal time is to sow seeds between middle of October and middle of November although sowing time depends on the time of rice harvest.

Weed management: Because of practical difficulties in applying pre-emergence herbicides, and otherwise, for employing labourers with higher wages for hand weeding, use of post-emergence herbicide might be effective for weed management. Further studies need to be undertaken on this line. But weed management practices should be followed for the entire system as a unit instead of considering weed problems of individual crops (Bhowmick *et al.*, 2005).

Nutrient Management: Resource-poor farmers generally grow grasspea in marginal lands. As no tillage operation is done for its sowing as a relay (*paira*) crop, it is difficult to apply fertilizers (Das, 2006) either through placement or through top dressing and consequently, they do not apply any fertilizers to *paira* crop. Therefore, the scope of fertilizer application becomes confined to foliar spray or top dressing. Foliar nutrition is a useful option particularly for the areas where soil application of fertilizers often leads to locking or loss of nutrients. With this technique, nutrients can reach to the site of food synthesis directly, leaving no wastage (Bhowmick, 2008). But foliar nutrition is supplementary to and cannot replace the basal fertilization (Gupta and Bhowmick, 2013). In addition, the *utera*

or *paira* crop may need some initial nutrition as a starter dose of NPK, possibly to enhance symbiotic activities with *Rhizobium* bacteria. Hence, a basal dose of N: P₂O₅: K₂O at 20:40:40 kg ha⁻¹ at 2-3 days prior to grasspea sowing in between the rows of rice crop plants may be given, if possible. But foliar spray of either 2% urea or 2% DAP (diammonium phosphate) solution is must at pre-flowering stage (60-65 days after sowing) and 10 days thereafter (Bhowmick *et al.*, 2012 and 2013; Bhowmick, 2013a). Yield advantages were reported due to foliar spray of 2% urea (23.68 and 13.83%) and 2% DAP (19.85 and 10.31%), compared with no spray and water spray, respectively. Higher yields due to urea and DAP spray could be obtained because of the respective improvement in terms of crop growth and yield attributes. Ali and Kumar (2006) reported beneficial effect of foliar nutrition with 2% urea solution at the reproductive stage in most of the pulse crops. This might be due to the fact that pulses under rainfed condition often experience nitrogen deficiency at this stage, because nitrogen fixation usually declines at reproductive stage and this is preceded by a decrease in fixation rate per unit weight of root nodules which probably results from bacteriod decay in the oldest nodules or in other words, gradual degeneration of root nodules.

Harvesting: Preceding rice straw management is important, especially when *paira* crops are grown in rainfed rice-fallows. Because moisture in the soil should be ensured for better establishment, growth and yield of *paira* crop, and this can be done with rice straw management (Das, 2006). Grasspea showed higher seed yields when *aman* rice plants were harvested at a stubble (straw) height of 15-20 cm above the ground level whereas the crop performed better for fodder with the highest preceding rice straw height (30 cm). Harvesting of grasspea for seed purpose is to be done when plants dry up and are at pod ripening stage.

Conclusion

With the adoption of HYVs and improved management practices, *paira (utera)* cropping of grasspea in rice-fallows not only can increase overall pulse production in West Bengal, it can also sustain productivity of the rice-based cropping systems as it is a leguminous crop. Without going for intensive use of agricultural inputs, resource-poor farmers can easily and profitably grow the crop without any hesitation under rice-*utera* system, thereby increasing cropping intensity in considerable areas which actually remain idle after *aman* rice in the state.

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32

Rural Health Scenario of the Districts of West Bengal

Kaustuva Banerjee

‘Health is a state of well being in which the harmonious development of physical and mental capacities of the individual lead to the enjoyment of a rich and full life’. Good health is a necessary condition for economic development. Improved health contributes to economic growth by reducing production losses due to illness of workers. The health status of a population depends on nutrition, access to safe drinking water and sanitation facilities, environment, type of shelter, awareness about health and health care. The health status of a population is usually measured in terms of indicators of mortality and morbidity. The commonly used mortality indicators are crude death rate, infant mortality rate, child mortality rate and maternal mortality rate. A meeting of representatives of 189 countries took place at the Millennium Summit in September 2000, committing their nations to a new global partnership to reduce extreme poverty and setting out a series of time-bound targets, with a deadline of 2015 that have become known as Millennium Development Goal (MDG). There are 8 goals under MDGs, where goal 4 states about reduction of child mortality. Under this goal, different indicators have been fixed for improving child health. They are:

- Under 5 Mortality Rate (U5MR)
- Infant Mortality Rate(IMR)
- Proportion of one-year old children immunized against measles.

In the year 1990, the Under 5 Mortality Rate taken was 116 per 1000 live births. The U5MR goal for 2015 for India is 38 per 1000 live births (Source: UNICEF

State of the World Children, 2010), the IMR taken was 83 per 1000 live births. The IMR goal for India is 28 per 1000 live births (Source: State of the World Children, 2010).

The Health Status of West Bengal In Comparison with India

Indicators	West Bengal	India
Birth rate(2011)	16.3	21.8
Death Rate(2011)	6.2	7.1
IMR(2011)	32	44
Total Fertility Rate (TFR) (2010)	1.8	2.5
Neo-Natal Mortality Rate(2010)	23	33
U5MR(2010)	37	59
Maternal Mortality Ratio(2007-09)	145	212

Source: Health on the March, West Bengal, 2011-12

From the above table it is clear that West Bengal stands at a good position in comparison with whole of India's average condition. Regarding birth rate, West Bengal ranks 4th lowest among the states of India (Kerala-15.2, Tamil Nadu- and 15.9 Punjab-16.2). West Bengal has the lowest death rate in India, Thus ranks 1st. West Bengal ranks 5th in infant mortality rate (Kerala-12, Tamil Nadu-22, Maharashtra-25 and Punjab-30). Though West Bengal is in a good health status when compared with India, there exist a huge rural-urban difference. The following statistical figures will reveal the fact-

Indicators	West Bengal(Rural)	West Bengal(Urban)
General Fertility Rate(2010)	68.3	41.8
Total Fertility Rate(2010)	2.0	1.3
Gross Reproduction Rate(2010)	0.9	0.6
General Marital Fertility Rate(2010)	89.1	59.7
Total Marital Fertility Rate(2010)	3.5	3.2
Population served per doctor(2011)	4581	773
Population served per bed(2012)	3771	321

Source: Health on the March, West Bengal, 2011-12

All the fertility indicators show that rural areas of West Bengal have higher fertility rate than the urban areas. According to Sample Registration System, 2011, rural areas have a birth rate of 18.1 when urban areas stands at 11.5. Doctors availability is quiet low in the rural areas. Population served per doctor is almost six times higher in the rural areas when compared to the urban areas of West Bengal. Population per bed is almost ten times higher in rural areas than in the urban places. Thus the rural West Bengal needs special attention.

Rural Health Status of West Bengal

According to 2011 Census, 68.1% of the total population of West Bengal resides in the rural areas. The rural areas (88752sqkms) extend over eighteen districts of West Bengal leaving only Kolkata. The rural population density of West Bengal is 743.53population per square kilometers. The highest population density is found in Haora (1714.31) followed by North 24 Paraganas(1232.71) and Hugli(1202.09).Sex ratio (number of females per thousand males)of rural areas of West Bengal is 950 which is higher than the urban areas(939). The most probable cause for it is high rate of male selective migration from rural to urban areas in search for job. Thus all the most it becomes necessary to improve the health care system in the villages of Bengal to take care of the left back females, children and old aged people.

Status of Goal-4(MDG)

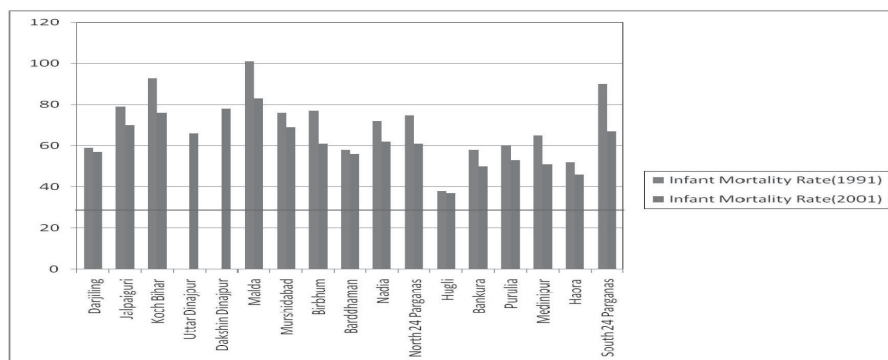
Infant Mortality Rate (IMR): It is the probability of dying before completing the first year of birth. In 1991 the total IMR (including male and female) of rural West Bengal was lower than India's average. But according to 2001 data, total IMR and male IMR was higher than India's average.

From the above data it is evident that IMR for all the districts has decreased from 1991 to 2001. The highest IMR is observed in Malda (1991and 2001) and lowest in Hugli (1991 and 2001). The highest decrease is noticed in South 24 Paraganas. The red line indicates the target needed to be achieved by the end of 2015(MDG).

Child Mortality Rate (CMR): It is the probability of dying before completing the fifth year of birth. According to 1991 data CMR of Rural west Bengal was lower than India's average. But again as observed in IMR, Total CMR and male CMR of West Bengal was higher than India's average.

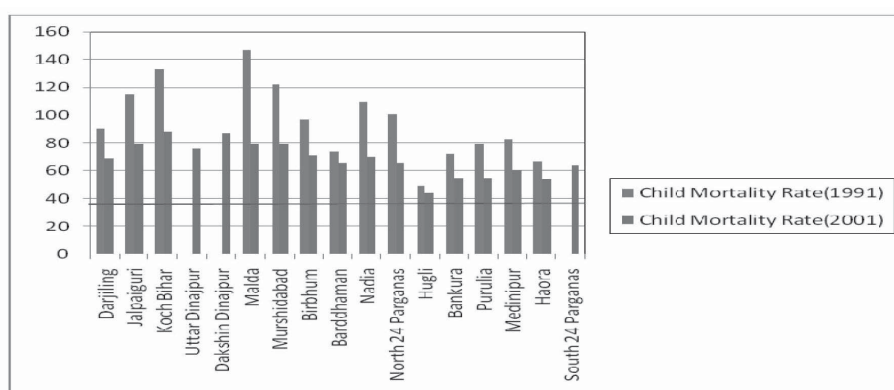
From the above bar graph it can be concluded that Malda has the highest CMR (1991). But according to 2001 data, Dakshin Dinajpur and Kochbihar almost had similarly high CMR. The maximum decrease is observed in the district of Malda.

A correlation was done between rural total IMR and rural total literacy rate of the districts of West Bengal, 2001. A negative correlation of -0.6was found between total IMR and total literacy rate. This correctly explains that with increase in the literacy rate there will be an obvious decrease in IMR. Similarly correlation value between Female IMR and female literacy rate is -0.4. The correlation between CMR and literacy rate is also negative indicating that with increase in the female literacy rate, female CMR will definitely decrease.



District-wise Rural Total Infant Mortality Rate of West Bengal

Source: Infant and Child Mortality in India-District Level Estimates, Population Foundation in India- 2008



District-wise Rural Total Child Mortality Rate of West Bengal

Source: Infant and Child Mortality in India-District Level Estimates, Population Foundation in India- 2008

Causes of Infant Deaths and Under Five Mortality in India

The medical causes of Infant Deaths in India from 2001 to 2003, as given by the Registrar General of India, Ministry Of Home Affairs are- detrimental prenatal conditions (46%), respiratory infections (22%), diarrheal disease (10%), other infections and parasitic diseases (8%) and congenital anomalies(3.1%).

As per WHO (World Health Organization) estimates, the causes of child mortality in the age group of 0 to five years in India are- Neonatal causes (55%), pneumonia (11%), diarrheal diseases (11%), measles (4%), injuries (3%) and other causes (16%). Thus the rural health infrastructure plays a very important role to improve the fertility and mortality situations in rural West Bengal.

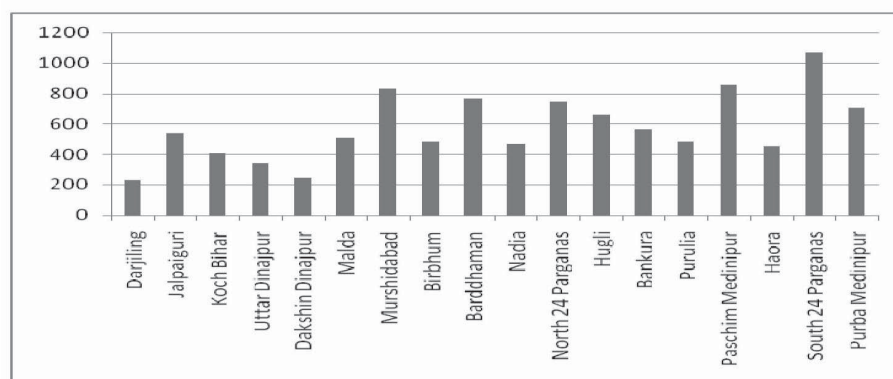
Rural Health Infrastructure of West Bengal

The health care infrastructure in rural areas has been developed as a three tier system and is based on the following population norms.

Centre	Plain Area	Hills/Tribal /Difficult Area
Sub-Centre	5000	3000
Primary Health Centre	30000	20000
Community Health Centre	120000	80000

Sub-Centre: 'The sub-centre is the most peripheral and first contact point between the primary health care system and the community'. Each sub-centre should have at least one Auxiliary Nurse Midwife (ANM)/Female Health Worker and one Male Health Worker. Under National Rural Health Mission, there is a provision for one additional second ANM on contact basis and one Lady Health Visitor (LHV) who is entrusted with the task of supervision of six sub-centres. It provides services in relation to maternal and child health, family welfare, nutrition, immunization, diarrhea and control of communicable diseases. Basic drugs for minor ailments are provided to the sub-centres. The Ministry of Health and Family Welfare provides full Central assistance to all the sub-centres from April 2002 at the rate of Rs 3000 per annum and contingency at the rate of Rs 3200 per annum in addition to drugs and equipments. According to Health on the March, West Bengal, 2011-12, there is a total of 10356 sub-centre. From 2005-06 to 2011-12, the number of sub-centre have remained same. The district wise variation of the number of sub-centre is showed in the graph below.

The number of sub-centres does not reveal its distribution throughout the district. From the number it is evident that the districts of South 24 Parganas and Paschim Medinipur have the highest number of sub-centres whereas districts like Darjiling

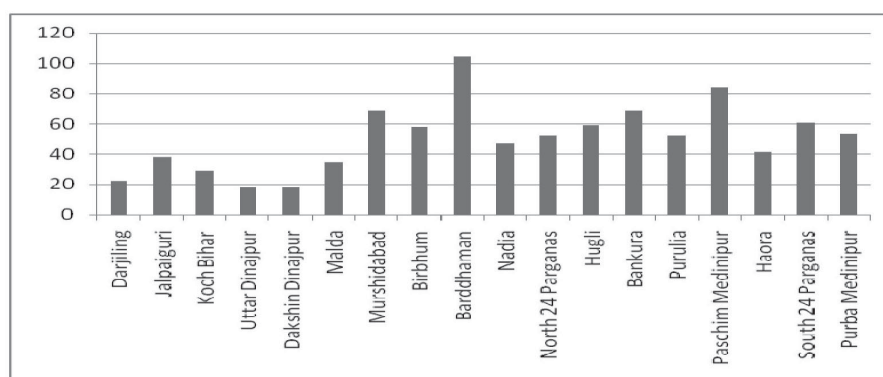


District wise variation of the Number of Sub-Centres

Source: Health on the March, West Bengal, 2011-12

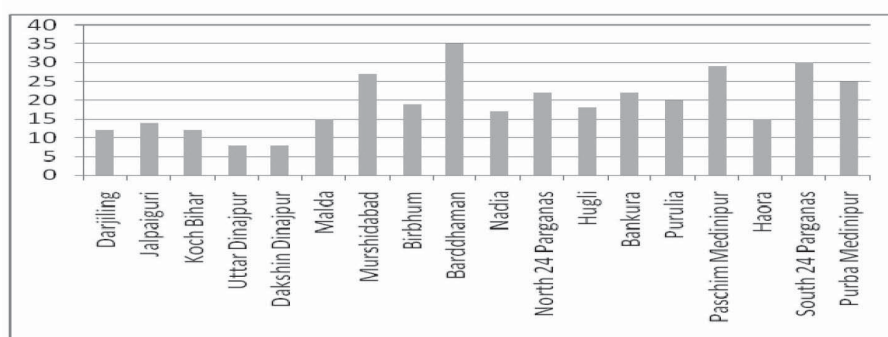
and Dakshin Dinajpur has the lowest numbers. In the present study Darjiling, Jalpaiguri, Birbhum, Puruliya, Paschim Medinipur and South 24 Pargana districts have been considered as hilly, tribal or difficult regions in West Bengal. According to the population norm only Haora has the requisite number of Sub-centres. The highest deprivation is located in the districts of Uttar Dinajpur and Kochbihar.

Primary Health Centre (PHC): PHC is the first contact point between village community and medical officers. The PHCs provide an integrated curative and preventive health care to the rural population. The PHCs are established and maintained by the State Government under the Minimum Need Programme (MNP) or Basic Minimum Services Programme (BMS). As per the minimum requirement, a PHC should have a medical officer supported by 14 paramedical and other staffs. Under NRHM there is provision for two additional Staff nurses on contact basis. It acts as a referral unit for 6 sub- centres and it should have provisions for



District wise variation of the Number of Primary Health Centres

Source: Health on the March, West Bengal, 2011-12



District wise variation of the Number of Community Health Centres

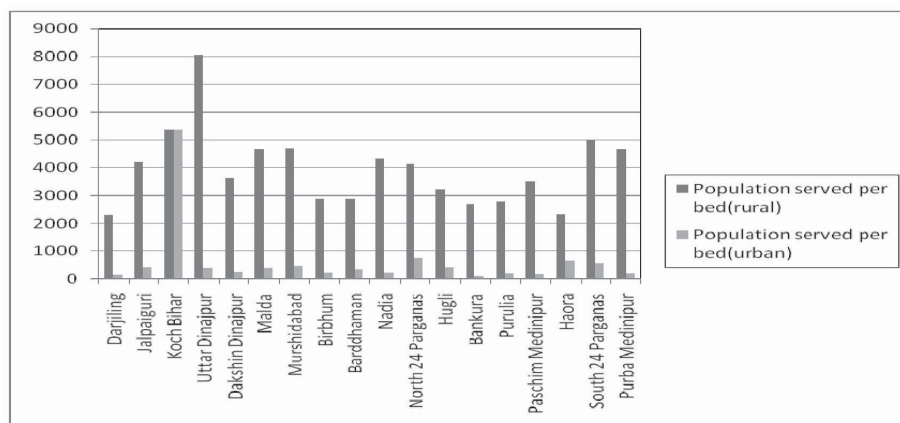
Source: Health on the March, West Bengal, 2011-12

4-6 beds. According to Health on the March, West Bengal, 2011-12, there is a total of 909 PHC in West Bengal having 6592 number of beds. From the given graph it is clear that highest number of PHC is found in Barddhaman and lowest number in Uttar and Dakshin Dinajpur. But again the number does not describe the served population. All the districts lack in PHC's and the maximum deprivation is observed in the districts of Uttar Dinajpur followed by South 24 Paraganas.

Community Health Centres(CHC): These are being established and maintained by the State Government under MNP/BMS programme. A CHC is required to have 4 medical specialists (surgeon, physician, gynecologists and paediatrician) supported by 2 paramedical and other staffs. It should have 30 indoor beds with 1OT, X-ray, labour room and laboratory facilities. It should serve as a referral centre for 4 PHC's and also provide facilities for obstetric care and specialists consultations. According to Health on the March, West Bengal, 2011-12, there are 348 CHCs which includes Rural Hospitals (RH) and Block Primary Health Centres (BPHC). In all the districts a number of BPHC has been converted to RHs. In Barddhaman, 16 BPHCs (maximum) has been converted as against 5 BPHCs in Uttar Dinajpur.

From the above figure it can be concluded that Barddhaman has the highest number of CHCs the lowest being again in Uttar Dinajpur. According to population norm only Haora has the required number of CHCs. The highest deprivation exist in the districts of Uttar Dinajpur and South 24 Paraganas.

Population served per bed: This indicates the ratio of population to the number of beds. The following graph will show the variation in the population served per bed in the rural and urban areas of West Bengal. Uttar Dinajpur has the highest value indicating a very bad situation. The difference in rural and urban area is also maximum in this district. The lowest value is observed in Haora and Darjeeling.



District wise Rural-Urban Population Served per Bed
Source: Health on the March, West Bengal, 2011-12

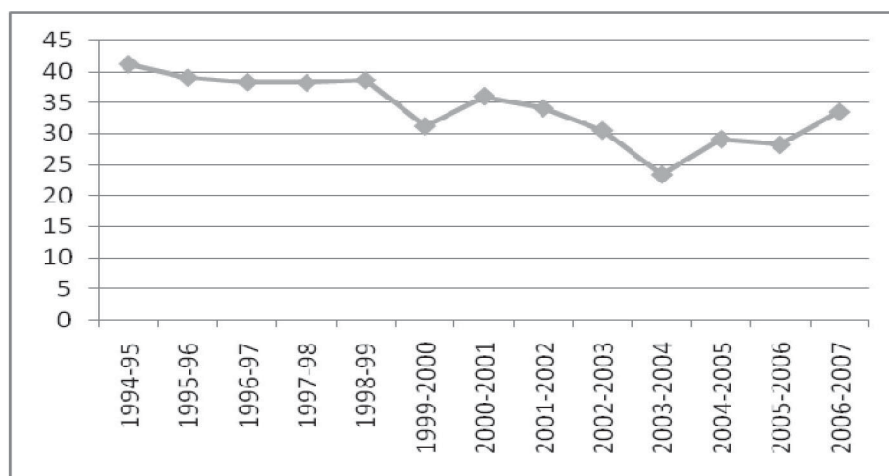
Conclusion

'A number of factors typically associated with income poverty are also determinants of ill-health, malnutrition and high fertility. These includes high level of female illiteracy, lack of access to clean water, insanitary conditions, food insecurity, poor household caring practices, heavy work load and lack of fertility control as well as low access to preventive and basic curative care. Communicable diseases which are mostly preventable represent most of the burdens of illness of the poor. Consequently, ample evidences suggest that increased use by the poor and other vulnerable group of a basic package of cost effective health interventions can significantly improve their health and general welfare.'

West Bengal ranks ninth among fifteen major states in India in terms of Human Poverty Index (HPI), measured by using National Family Health Survey (NFHS)-3 data for the year 2005-06. For the district level data health deprivation is not available and thus HPI for each district of West Bengal has been constructed by taking the weighted average of the indices of knowledge deprivation and that of public provisioning.

- Lack of data on health deprivation indicates low development in Health Information System.

The major component of both revenue and capital expenditure of the state is development expenditure. Development expenditure is undertaken by the State Government to provide social as well as economic services. Social services include education, sports, art, culture, public health, family welfare, water supply, sanitation, housing, urban development, welfare of backward classes and social security. During the period from 1990-91 to 1999-2000, developmental expenditure



Social Sector Expenditure as % to Total Expenditure of West Bengal
Source: West Bengal Development Report

in the state has grown by more than 230% (West Bengal Development Report). The annual growth rate of development expenditure in the state estimated is based on a log linear trend and is found to be 12.53% for a period of 1985-86 to 1994-95 and 9.27% for a period of 1995-96 to 2004-05. Within developmental expenditure, social sector expenditure (SSE) of a State Government comprises expenditure on social services and rural development. The overall ratio of SSE to total expenditure has been declining across the states, particularly during the late 1990s. During 1994-95 SSE as percentage to total expenditure was 41.2 whereas it decreased to 33.5 in 2006-07.

- Health Expenditure is a subject of Social Sector Expenditure. From the above line graph it is clear that SSE as % to Total Expenditure is decreasing, which is not a very favourable fact. There is still a lot of lacking in rural infrastructure for which investment is needed.

‘National Rural Health Mission Envisages a fully functional thirty bedded Rural Hospitals at the block level providing emergency obstetric care and neonatal care...’. This is one of the suggested guidelines from Implementation of Indian Public Health Standards (IPHS) in SCs, PHCs and CHCs. From the data available, it is observed that leaving aside blocks, one of the sub-division of Kochbihar does not have a rural hospital (Mekhliganj). Out of 343 blocks of West Bengal, 86 blocks does not have rural hospitals. By finding out a ratio between blocks without rural hospitals and total number of blocks in each district it can be concluded that Kochbihar has the highest deprivation value. (Calculation has been done on the basis of data available from Health and Family Welfare Department, West Bengal).

- Rural Hospitals are the highest treatment providers in the rural areas. There number and services are needed to be increased and developed.

According to Rural Health Statistics 2012 of West Bengal, there was a shortage of 2459 female health workers in SCs and PHCs in 2005 but in 2010, the shortfall no longer exists. There was a vacancy of 241 Doctors in PHCs in 2005 which has further increased to 370. According to 2010 data there is a shortage of 1217 total specialists, 122 radiographers, 154 pharmacists and 123 laboratory technicians at CHCs and PHCs.

- Though the shortfall when compared with whole of India seems very less, but these are the major obstacles in fulfilling the IPHS guidelines.

‘The district development for West Bengal indicates that Malda, Uttar Dinajpur, Dakshin Dinajpur, Murshidabad, Puruliya and Kochbihar have the highest levels of children not fully immunised and non-institutional deliveries’. ‘This reflects the inadequacies of outreach of health services provided by the state alongside poor quality delivery services. Children born in the poorest districts are less likely to survive than to children born in other districts.

- According to NRHM, West Bengal has a very well developed Panchayati Raj Institution network at all levels down to village. It has been decided that all health programmes should be monitored by the community in order to develop ownership amongst the community members. Then and only then can health is truly of the people and for the people.
- 'An analysis of the 'reasons for non-utilisation of governmental facilities for outpatient care' based on NSS 60th Round data suggest that bad treatment(as perceived by the patients),poor accessibility and long waiting times are the major reasons in West Bengal. In fact high opportunity cost of time due to long distance and long waiting time seems to be the major reason for non-utilization of government health facilities by people belonging to labour and self-employed households.'
- From the above study it can be concluded that among the districts of West Bengal the condition of rural infrastructure is adverse in Kochbihar, South 24 Paraganas and Uttar Dinajpur. The favourable districts are Haora, Hugli and to some extent Barddhaman.

Thus following the core and supplementary strategies of NRHM, by training and enhancing the capacities of Panchayati Raj Institution to own, control and manage public health services, improving health care at household level through the female health activist(ASHA), preparing health plans through Village Health Committee, strengthening the funds of SCs, PHCs and CHCs, integrating vertical Health and Family Welfare programme from national to block level, improving the capacities of data collection, preparing transparent policies, regulating the private sector including the informal rural practitioners to ensure availability of quality service to citizens at reasonable cost, promoting Public-Private Partnership for achieving public goals, mainstreaming AYUSH, revitalizing local health traditions, reorienting medical education to support rural health issues including medical care and medical ethics, the rural-urban gap can be bridged which will finally help to achieve the Millennium Development Goals.

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33

Technological Change, Land Holding Structure and Crop Diversification of the Farmers : A Study of West Bengal Agriculture

Tushar Das

Section-I

The West Bengal's economy is basically agro - based where almost 75 percent of her population lives in rural areas with agriculture being their main occupation. Again, agriculture in West Bengal consists predominantly of crop production where paddy with its various traditional and improved varieties is the major crop covering. Generally it is believed that prosperity of agriculture and for that matter, the prosperity of an agricultural household depends to a great extent upon the crop-output , crop -yield and the pattern of cropping. Though cropping pattern is mostly determined by natural constraints, yet it gives us an idea of the cultivators' involvement in the output as well as input markets reflecting farm income on the one hand and the extent to which purchased inputs enter his production activities on the other. Thus, the adoption of modern agricultural technology in the production activities and the structure of existing farm size may be reflected through the changing cropping pattern. Technological progress in agriculture of West Bengal is highly desirable at least for two reasons. Firstly, to partly ameliorate the land scarcity problem, which, in a densely populated state with a significant population growth rate but without any significant extension of area under cultivation may exert evil effects on the rural economy. Secondly, as there is insufficient

opportunities of non-farm activities in West Bengal, rapid agricultural growth in this region is likely to benefit to large workforce dependent on agriculture, thereby reducing significantly the rural poverty. Technological progress in agriculture increases the productive efficiency of the inputs used which in turn increases the annual crop yield augmenting the effective supply of the most scarce land resource.

The agricultural dynamisation policy consisting of 'seed-fertilizer-water' package which was started in India in mid 60's resulted in raising yield rate and output levels especially in 80's. In the beginning, the new technology was confined to wheat only and it was applied in the north-western region of India having large growth potential particularly where better irrigation facilities, environment for the use of chemical fertilizers, pesticides and weedicides were present. But over time, it covered rice and some other crops and its geographical coverage extended from the north-western region to many other parts of the country. By 2009-10, despite considerable interstate variation, most states in India were able to share the gains of the new technology and West Bengal, of course, was no exception to this. Again, as we know, the macro representation conceals many things happenings in reality. A greater portion of our cultivated area especially in the districts of western zone of West Bengal is not irrigated. Fertilizer consumption is mostly concentrated on the rice crops and even in rice the actual use-level is far below the recommended levels. Large areas under rice (particularly in Aus and Aman paddy) remain without the application of fertilizer. For non rice crops, even the farmers who have already adopted HYVs, get no or very small amount of fertilizers due to economic and biological causes. Thus, technological change in WB's agriculture is not uniform. It may be due to the natural constraints, but it is also observed that a single farmer is not adopting the same technology(or technologies) in all of his non contiguous plots. So, in West Bengal, both traditional and modern technologies are interwoven in farming practices.

Keeping the above fact in mind, in this paper, we have made an attempt to study the structure of existing operational holdings and cropping pattern of two blocks namely Contai-II of East Midnapur and Jhalda-II of Purulia district in West Bengal. In this context, it is to be mentioned here that Bhalla and Singh (2009) points out that the post-reform period has been characterized by deceleration in the growth rate of crop yields as well as total agricultural output in most states. Their paper also highlights the slowdown in the process of cropping pattern change. This then suggest that the government efforts to diversify agriculture have failed to take off especially in the post reform periods. Against this background, it seems relevant to understand at the primary level the extent of adoption of modern technology and its impact on the cropping pattern of the cultivating community.

The existing economic literature regarding the impact of technological change and its effect on the pattern of crop diversification seems quite illuminating and exciting too. As indicated earlier, study by Bhalla and Singh (2009) regarding the performance of agriculture at the state level in India during the post-reform period

(1990-93 to 2003-06) and the immediate pre-reform period (1980-83 to 1990-93) shows that the post-reform period has been characterized by deceleration in the growth rate of crop yields as well as total agricultural output in most states. They also suggest that the slowdown in the process of cropping pattern change is the failure of government efforts to diversify agriculture. Ghosal (2011) examines the impact of the degradation of the agro-ecosystem by using the resilience based criterion of sustainability on the livelihood pattern of the rural people of a small farm dominated agro economy of West Bengal. He argues that the institutional measures like land reform, establishment of property rights are the necessary conditions and efficient pricing of natural resources and the eco-friendly technological progress are the sufficient conditions for the sustainability. Using the Minhas and Parikh substitution and expansion effects methodology, Ghosh (2011) studied that the cropping pattern in West Bengal in terms of allocation of acreage had been skewed towards food grain. Hazra (2001) shows that with the advent of irrigation and new farm technologies in India, the yield level of most crops-especially that of cereals-has witnessed an upward shift making it possible to obtain a given level of output with reduced area or more output with a given level of area and creating thereby the condition for inter-crop area shift (diversification) without much disturbance in output level. Based on National Sample Survey Reports, Das(2012) argues that though the supporting role of agriculture (at least for food security and employment generation) cannot be denied, agriculture in India has basically failed to promote rural growth and to reduce rural poverty at the desired level and he emphasizes that the rural non-farm activities may deserve reprioritization in our development thinking.

The paper is organized as follows

After highlighting some basic characteristics of West Bengal's agriculture and the objectives of this paper in section-I, operational definition of concepts used and their measurements are presented in section-II. Data base and the methodology are discussed in section-III. Section-IV highlights the results of our field study. Finally, Section-V concludes with some policy implications.

Section-II Operational Definition of Concepts Used and Their Measurements

Technological Change

In this study, Technological Change has been defined as a shift from traditional to new technology in the context of cultivation. Traditional technology is an art of cultivation associated with local varieties of crops. The use of High Yielding Varieties (HYVs) of crops, chemical fertilizers, insecticides, pesticides, modern agricultural implements are absent or very low.

New technology on the other hand includes a new set of inputs or factors of

production which are different, at least partially, if not wholly, from the traditional sets. Thus, we define the production practices as new technology when shallow tube wells, pump sets and tractors are used for irrigation and use of HYV seeds, chemical fertilizers and insecticides are highly prevalent and/or spreading.

Farm Size

We measure farm size in two ways- from ownership viewpoint and from operational view point. Farm size measured from ownership view point refers to the actual amount of land in bigha legally owned by the family.

Farm size measured from operational viewpoint refers to the effective farm size of the family and is measured in bigha as :-

Cultivated area owned by the farmer plus cultivated area taken on lease by him from others minus area given by the farmer to others for cultivation. Naturally, the ownership land holdings may not be equal to operational land holdings.

Cropping Intensity(CI)

Cropping Intensity refers to the number of crops grown in a year multiplied by 100. It is given by-

$$\text{Cropping Intensity (\%)} = \frac{\text{Total Cropped Area}}{\text{Net Cultivated Area}} * 100$$

Where cropped area is equal to net cropped area plus area sown more than once. A cropping intensity of 100 is equivalent to a single crop per crop year, and a cropping intensity of 300 refers to 3 crops per crop year.

Herphindal Index(HI) of Crop Diversification

Herphindal Index to measure the crop diversification is defined as-

$$i=1$$

$$HI = 1 - \sum_{i=1}^N p_i^2, \text{ where HI} \Rightarrow \text{Herphindal Index, } p_i \Rightarrow \text{Proportion of area under } i^{\text{th}} \text{ crop.}$$

$$N$$

Again, P_i can be defined as-

$$i=1$$

$$P_i = \frac{A_i}{\sum_{i=1}^N A_i} \text{ Where } A_i \Rightarrow \text{Area under } i^{\text{th}} \text{ crop, } \sum_{i=1}^N A_i \Rightarrow \text{total cropped area.}$$

$$N$$

The value of Herphindal index varies from zero and one. It is one in case of perfect specialization and zero in case of perfect diversion.

Degree of Cash Crop (DCC) Cultivation

It is measured by the area allotted to the production of each cash crops as a percentage of total cropped area. Formally, it is given by, $DCC = B_i / \sum B_i * 100$ where DCC => Degree of Cash Crops, B_i => Area allotted to i^{th} cash crop, $\sum B_i$ => Total cash cropped area. Larger value of DCC is associated with greater degree of cash crop cultivation.

Section-III Data Base and Methodology

In order to verify the likely impact of technological change on farm size and the cropping pattern of the cultivators at the micro level, it is necessary to conduct a 'before' and 'after' analysis. So, it seems essential to construct a time series framework supplying 'treated' and 'control' measures. In short, a researcher who intends to pursue a comparative study should have at least two sets of data in hand, one set for the 'treated' unit and the other set for the 'controlled' one. Accordingly, we have selected two blocks of different technological set up for our study and collected relevant data from a cross section of 200 farmers. To collect data, the researcher interviewed and discussed agriculture with them. These direct observations and in-depth interviews, augmented by consultation of village documents/records and a survey of secondary statistics provide the major data source of our study.

Selection of the Study Blocks

On the basis of our operational definitions of technological change, we purposively selected Contai-II, a block under East Midnapur District as our 'treated' or 'changed' block. We came to know that Contai-II block realized a higher degree of technological change in the form of irrigation, fertilizers, improved seeds, plant protection chemicals, improved implements etc. The farmers of the block were then well acquainted with the cultivation of various high yielding varieties of crops together with their traditional crop mix. In addition to producing sugar cane, jute and banana, some of the farmers were shifting to the production of some new cash crops like water melon and chili on commercial scale. We selected Jhalda-II as our traditional block from Purulia district. We displayed our choice in selecting Jhalda-II block of Purulia district, a typical arid zone, as it pointed out the traditionality in agriculture without having the modern agricultural facilities. These considerations, together with easy accessibility, largely dictated our choice in selecting the study blocks.

Selection of Respondents

After the selection of the two blocks, lists of the cultivating households were made. While, Contai-II block lists 200 households, it is 180 for Jhalda-II block. We stratify the households on the basis of farm size measured from ownership view point. We have taken the unit of measurement as bigha as the unit is more

familiar to the farmers and one bigha is equivalent to about .33 acres . The seven strata are as follows:

- Stratum: I : Households having no land for cultivation(Landless)
 Stratum II: Households having land in the range of .01-3.00 Bigha
 Stratum III : Households having land in the range of 3.01-5.00 Bigha
 Stratum IV : Household having land in the range of 5.01-9.00 Bigha
 Stratum V : Household having land in the range of 9.01-14.00 Bigha
 Stratum VI : Household having land in the range of 14.01 -25.00 Bigha
 Stratum VII : Household having land in the range of 25.00 Bigha and Above

The above stratification was followed in both the blocks. Our choice of stratification on the basis of farm size for the selection of respondents is persuaded by the reasoning that farm size in any peasant society is a critical variable in any economic study related to agriculture. It is the most scarce and the most important among all the factors of production in our rural economy and since the accessibility and use of other factors are largely determined by it, the stratification of households on the basis of land area might be considered the most appropriate.

After stratification of the households in both the blocks, on manageability considerations within limited time and other constraints, we fixed our sample size at 200 households - 100 from Contai-II block and 100 from Jhalda-II block. For both the blocks, sample selection was made randomly, using random number tables, according to probability proportional to the number of households in each stratum. The actual number and proportions of households within each stratum in each of the blocks and their numbers and proportions in our sample are shown in table-6. In both the blocks, the farm size group, .01-3.00 consists of the maximum households-80 in Contai-II and 60 in Jhalda-II. The large farm size group, 25.01 and above contains the lowest number of households ie, 5 from each block.

Table 1 : Number of Households by Size Categories(Stratification), Proportion in the Population and Samples

Farm Size or Number of Stratum (In Bigha)	Proportion of Households in Population	Number of Households	Proportion of Households in Sample	Number of Households in Sample
Contai-II				
0	.15	30	.15	15
.01-3.00	.40	80	.40	40
3.01-5.00	.20	40	.20	20
5.01 -9.00	.10	20	.10	10
9.01-14.00	.08	15	.08	8
14.01-25.00	.05	10	.05	5
25.01 and Above	.03	5	.02	2
Total	1.00	200	1.00	100

Contd.

 Farm Size or Number of Proportion of Number of Households Proportion of Households
 Stratum (In Bigha) Households Households in Sample in Sample

Jhalda-II				
0	40	.22	20	.20
.01-3.00	60	.33	40	.40
3.01-5.00	30	.17	15	.15
5.01 -9.00	20	.11	10	.10
9.01-14.00	15	.08	8	.08
14.01-25.00	10	.06	5	.05
25.00 and Above	5	.03	2	.02
Total	180	1.00	100	1.00

Section- IV Results of the Field Study

For the analysis of the impact of technological change on the cropping pattern, it is necessary to know, among other things, the operational size of the farmers, Again, command over economic resources which village people achieve or inherit has a significant role in the dynamics of the socio economic framework of the village economy. In a densely populated agricultural country like ours where land is considered as most scarce and where private property in land exists, command over labour power and access to other resources are likely to emanate mostly from command over land. In this section, our focus of attention has been directed to examine command over land (considered both from ownership as well as operational viewpoints) of the sample households in our study blocks.

Farm Size and Land Ownership

Table-7 shows the distribution of sample households of our study blocks in seven size categories ranging from landless (having no cultivated land) to very large (over 25 bighas of land). It also provides the net area owned in each size group as well as average size of holding. So far as the distribution of households in different size groups is concerned, it is seen that in both the blocks 93 percent of farm households are marginal, small and medium and they together own more than 60 percent of cultivable land. Again, among the marginal , small and medium farmers, 75 percent of households own land 5 bighas or below in both the blocks. Thus, less than 50 percent of the total households have land above 5 bighas and a large majority of them own land below 14 bighas in both the blocks. The existence of large farmers and their share in land are insignificant. It is also seen from the table that averages size of farms in both the blocks are small (4.83 Bigha in Contai-II and 4.60 Bigha in Jhalda-II). Categoriwise, the average area operated by the marginal and small, medium and large farmers are about 2 Bigha, 9 Bigha and 23 Bihga respectively for both the blocks.

The cumulative distribution of the ownership holdings is shown in table-8 and the

corresponding Lorenz Curves are shown in diagram F_6 . The Lorenz curves are drawn by plotting the cumulative percentages of area against cumulative percentages of holdings in each size category. In order to show the extent of inequality in the distribution of owned land, Gini Coefficients have been computed for each blocks and are presented in tables 9, 10 and in figure- F_7 . The higher coefficient is .586 for Jhalda-II where as many as 93 percent of the farmers , comprising small and medium farms, possess 66 percent of the total owned area. A lower numerical value of the coefficient, .551 is found for Contai-II where 93 percent of the small and medium farmers owned 67 percent of the land.

It seems that the policy - led transformation of the land holding structure of West Bengal has been found to bring about remarkable increase in the number of marginal ,small and medium farmers as evidenced by our case study. Again, our study reveals that the marginalisation is accompanied by a stedy declining tendency of the number of large farms with very low share in land. Besides, the average area operated by the marginal and small farmers are significantly low and highly fragmented.

Table 8: Land Ownership According to Size of Holdings in Contai-II and Jhalda-II Blocks

Farm Size	Contai-II		Jhalda-II			
	Households (in Bigha)	Aggregate Area No (in bigha)	Average Size of Holding (in Bigha)	Households (in Bigha)	Aggregate Area No (in bigha)	Average Size of Holding (in Bigha)
0	15	0	0	20	0	0
.01-3.00	40	76	1.90	40	80	2.00
3.01-5.00	20	80	4.00	15	60	4.00
5.01-9.00	10	72	7.20	10	70	7.00
9.01-14.00	8	90	11.25	8	95	11.87
14.01-25.00	5	100	20.00	5	90	18.00
25.01 & above	2	65	32.50	2	65	32.50
All Farms	100	483	4.83	100	460	4.60

Source: Field Survey

Note: Marginal and Small = .01-5.00 Bigha, Medium = 5.01-14.00 Bigha and Large = 14.01 and above

Table 8: Cumulative Distribution of Ownership Holdings in Contai-II and Jhalda-II Blocks.

Farm Size (in Bigha)	Contai-II			Jhalda-II		
	% of Cumulative Household of land	% of Cumulative Household of land	% Amt of Land Households (in Bigha)	% of Cumulative Household of land	% of Cumulative Household of land	% Amt of Land Households (in Bigha)
0	15	15	0	0	0	20
.01-3.00	40	55	76	16	16	40
3.01-5.00	20	75	80	17	33	15
5.01-9.00	10	85	72	15	48	10
9.01-14.00	8	93	90	19	67	8
14.01-25.00	5	98	100	21	88	5
25.01 & above	2	100	65	12	100	2
Total	100	-	483	100	-	100

Source: Author's Own Calculation Based on the Field Survey Data

Note: Marginal and Small = .01-5.00 Bigha, Medium = 5.01-14.00 Bigha and Large = 14.01 and above

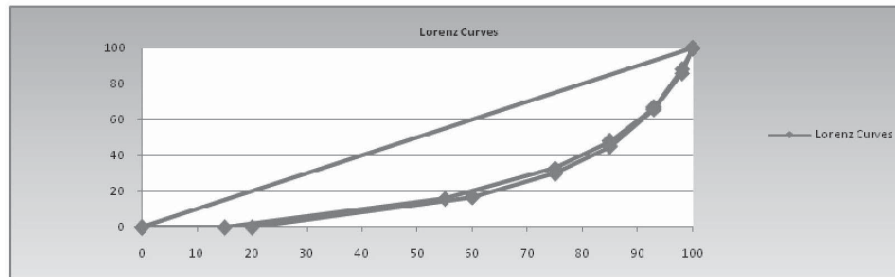


Fig. F₆ : Lorenz Curves for the Distribution of Ownership Holdings in Contai-II and Jhalda-II Blocks.

Source: Table-8

Table 9: Calculation of Gini Ratio of Concentration of Owned Land in Contai-II Block

Farm Size (in Bigha)	% of Proportion Household of Households (in Bigha)	Amt of Land Proportion Xi	Proportion of Cumulative Proportion Yi + Yi _{i-1}	Xi(Yi+Yi-1)	Aggregate Area Yi	Aggregate Area Yi
0	15	.15	0	0	0	0
.01-3.00	40	.40	76	.16	.16	.16
3.01-5.00	20	.20	80	.17	.33	.49
5.01-9.00	10	.10	72	.15	.48	.81
9.01-14.00	8	.08	90	.19	.67	1.15
14.01-25.00	5	.05	100	.21	.88	1.55
25.01 & above	2	.02	65	.12	1.00	1.88
Total	100	-	483	1.00	-	-

Gini Ratio = 1-.449 =.551

Source : Author's Own Calculation Based on the Field Survey Data

Note: Marginal and Small = .01-5.00 Bigha, Medium = 5.01-14.00 Bigha and Large = 14.01 and above

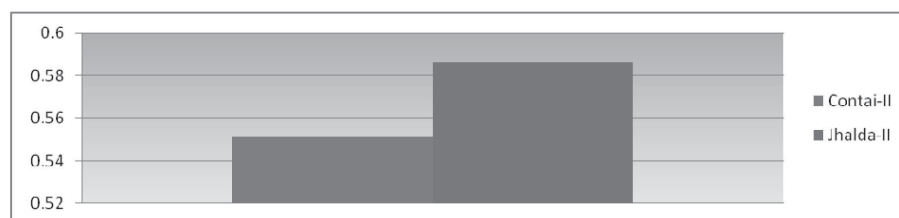
Table 10: Calculation of Gini Ratio of Concentration of Owned Land in Jhalda-II Block

Farm Size (in Bigha)	% of Households	Proportion of Land (Xi)	Amt of Land (in Bigha)	Proportion of Cumulative Proportion (Yi)	Yi + Yi ₋₁	Xi(Yi + Yi ₋₁)
0	20	.20	0	0	0	0
.01-3.00	40	.40	80	.17	.17	.068
3.01-5.00	15	.15	60	.13	.30	.070
5.01-9.00	10	.10	70	.15	.45	.075
9.01-14.00	8	.08	95	.21	.66	.088
14.01-25.00	5	.05	90	.20	.86	.076
25.01 & above	2	.02	65	.14	1.00	.037
Total	100	-	460	1.00	-	.414

Gini Ratio = $1 - .414 = .586$

Source: Author's Own Calculation Based on the Field Survey Data

Note: Marginal and Small = .01-5.00 Bigha, Medium = 5.01-14.00 Bigha and Large = 14.01 and above

**Fig-F₇:** Gini Ratio of Concentration of Owned Land in Contai-II and Jhalda-II Block

Source : Tables-9 and 10

The total amount of land under the ownership of a household does not necessarily indicate the total amount of land which will be utilized for cultivation. Therefore, the consideration to the operational arrangement of land holdings becomes relevant. Apart from the cropping pattern, the land productivity and the farmers well being vastly depend on the size of operational holdings.

Tables 11 and 12 show the operational arrangement of land holdings of the sample households in our study blocks. Total operational area under a household is the land owned by the household plus land taken on lease less land leased out to others. Defining operational area in this way, a close look in to tables -11 and 12 makes it clear that Contai-II cultivators especially marginal and small, are, to some extent, involved in the lease market as compared to Jhalda-II. The area under operational holdings of the landless and small farmers in Contai-II have increased from the ownership position by 25 percent. The land lease market is basically inactive among the medium and large farmers of this block. In Jhalda-II, the lease market fails to facilitate the marginal and small farmers in gaining much

control over additional land though a few of the medium households gained limited access to the cultivation of other's land. Like Contai-II, the land lease market is also inactive among the large farmers of this block.

Cumulative distribution of sample households according to their operational area is shown in table-12 and the resulting Lorenze Curves are shown in Figure-F₈. Extent of inequality measured by Gini ratio is presented in table-13 for Contai-II block and in table-14 for Jhalda-II block. Figure-F₉ depicts the Gini Ratio of concentration of operational holdings for these two blocks. So far as the distribution of sample households in different size groups is concerned, it is seen that in both the blocks 93 percent of farm households are marginal, small and medium and they together operate 69 percent of cultivable land. Again, among the marginal, small and medium farmers, 75 percent of households, who owns the land 5 Bigha or less, operate only about 30 percent of cultivable land in both the blocks. Thus, about 25 percent of the total households who owns land above 5 bighas operate nearly 70 percent of cultivable land. It is observed from the tables and the diagram that the Gini coefficient for Jhalda-II is .552 where as many as 93 percent of the farmers, comprising small and medium farms, possess 69 percent of the total operated area. Like Jhalda-II, in Contai -II also, 93 percent of the small and medium farms owns 69 percent of the land but we see that the value of the Gini coefficient (.456) is lower than that of Jhalda -II.

Table 11: Operational Arrangement of Land Holding in Contai-II and Jhalda-II Blocks (Area in Bigha)

Contai-II Farm Size Total	Leased In		Leased out		Total Owned		Total operated		Total
	Area	Area	Area	Area	Area	Area	Area Operated		
0	25	-	0		25	7	-	0	7
.01-3.00	27	12	76		91	2	5	80	77
3.01-5.00	9	10	80		79	2	6	60	56
5.01-9.00	14	9	72		77	4	-	70	74
9.01-14.00	12	17	90	85		8	3	95	100
14.01-25.00	9	14	100	95		3	5	90	88
25.01 & above	12	12	65	65		—	4	65	61
All farms	108	74	483		517	26	23	460	463

Source: Field Survey

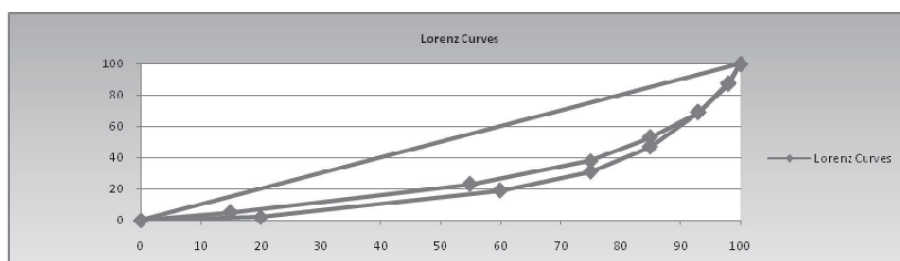
Note: Marginal and Small = .01-5.00 Bigha, Medium = 5.01-14.00 Bigha and Large = 14.01 and above

Table 12: Cumulative Distribution of Operational Holdings in Contai-II and Jhalda-II Blocks

Farm Size % of Cumulative % of Households (in Bigha) of land	Contai-II				Jhalda-II					
	Operated		Operated		Operated		Operated			
0	15	15	25	5	5	20	20	7	2	2
.01-3.00	40	55	91	18	23	40	60	77	17	19
3.01-5.00	20	75	79	15	38	15	75	56	12	31
5.01-9.00	10	85	77	15	53	10	85	74	16	47
9.01-14.00	8	93	85	16	69	8	93	100	22	69
14.01-25.00	5	98	95	18	87	5	98	88	19	88
25.01 & above	2	100	65	13	100	2	100	61	12	100
Total	100	-	517	100	-	100	-	463	100	-

Source: Author's Own Calculation Based on the Field Survey Data

Note: Marginal and Small = .01-5.00 Bigha, Medium = 5.01-14.00 Bigha and Large = 14.01 and above

**Fig.-F₈** : Lorenz Curves for the Distribution of Operational Holdings in Contai-II and Jhalda-II Blocks.

Source: Table-12

Table-13: Calculation of Gini Ratio of Concentration of Operated Land in Contai-II Block

Farm Size % of (in Bigha)	Household of Xi (Operated)	Households (in Bigha)	Proportion of Xi (Operated)	Aggregate Area of Yi	Aggregate Area of Yi	Proportion of Yi	Proportion of Yi + Yi-1
0	15	.15	25	.05	.05	.05	.007
.01-3.00	40	.40	91	.18	.23	.28	.112
3.01-5.00	20	.20	79	.15	.38	.61	.122
5.01-9.00	10	.10	77	.15	.53	.91	.091
9.01-14.00	8	.08	85	.16	.69	1.22	.097
14.01-25.00	5	.05	95	.18	.87	1.56	.078
25.01 & above	2	.02	65	.13	1.00	1.87	.037
Total	100	1.00	517	1.00	-	-	.544

Gini Ratio = $1 - .544 = .456$

Source: Author's Own Calculation Based on the Field Survey Data

Note: Marginal and Small = .01-5.00 Bigha, Medium = 5.01-14.00 Bigha and Large = 14.01 and above

Table 14: Calculation of Gini Ratio of Concentration of Operated Land in Jhalda-II

(in Bigha)	Household of Households (in Bigha)		Aggregate Area of Aggregate Area		Cumulative Proportion $Y_i + Y_{i-1}$		$X_i(Y_i + Y_{i-1})$
	X_i	Operated	Y_i				
0	20	.20	7	.02	.02	.02	.004
.01-3.00	40	.40	77	.17	.19	.21	.084
3.01-5.00	15	.15	56	.12	.31	.50	.075
5.01-9.00	10	.10	74	.16	.47	.78	.078
9.01-14.00	8	.08	100	.22	.69	1.16	.092
14.01-25.00	5	.05	88	.19	.88	1.57	.078
25.01 & above	2	.02	61	.12	1.00	1.88	.037
Total	100	1.00	463	1.00	-	-	.448

Gini Ratio = $1 - .448 = .552$

Source : Author’s Own Calculation Based on the Field Survey Data

Note: Marginal and Small = .01-5.00 Bigha, Medium = 5.01-14.00 Bigha and Large = 14.01 and above



Fig-F_q: Gini Ratio of Concentration of Owned Land in Contai-II and Jhalda-II Block

Source : Tables-13 and 14

We observe that significant inequality exists among the farmers of two blocks regarding the ownership as well as operational land holdings. While in Contai-II, the distribution of operational area is to some extent unequal than that of owned area, the inequality virtually remains absent in Jhalda-II. This then implies the inactiveness of land lease market. Some of the small farmers in both the blocks have shown a tendency to rent out their land. In Contai-II, this is due to the fact that the small farmers without having sufficient agricultural implements find it economic to change themselves as wage labour on a whole time basis than to manage their own tiny plots as landless and small farmers in rural areas take land on lease mainly for their subsistence.

Cropping Pattern

The extent of cultivation of various crops by the sample farms in our study blocks is set forth in table-15. The table shows that in both Contai-II and Jhalda-

II paddy with its various traditional and improved varieties is the major crops covering respectively 40 percent and 50 percent of the total cultivated area. In Jhalda-II, cultivation of paddy is followed by sugarcane with 16 percent, pulses with 14 percent, Jute and oil seeds with 8 percent each of the total cultivated land. In Contai-II, however cultivation of paddy is followed by HYV wheat with 12 percent, Local Wheat with 7 percent, jute and pulses with 6 percent each of total cultivated area.

Table-16 and figure-F₁₀ present the Herphindal Index of Crop Diversification. As indicated earlier, it varies from 0 to 1. It is 1 in case of perfect specialization and 0 in case of perfect diversion. It is observed from the table and the figure that the HI is significantly high for both the blocks and it suggests that both the blocks are specializing in crop productions.

Table-17 and figure-F₁₁ provide the information on the degree of cash crop cultivation prevailing on the sample farms in our study blocks. It is seen that Contai-II farmers, excepting those in the landless and 14.01-25.00 bigha size groups, have a greater degree of cash crop cultivation than the Jhalda-II ones. Again a look across the size groups in each block reveals that there is a general tendency for degree of cash crop cultivation to rise with the increase in the size of farm. The small farmers' basic motivation of production is consumption. They, therefore, in general, concentrate on subsistence crops and thus allow relatively lower allocation of land under cash crops. The larger farmers on the other hand, being sure of sufficient grains for own consumption and being guided by profit motive, resort to crop diversification by devoting a part of their land under remunerative crops.

Table-18 and figure-F₁₂ show the intensity of cropping on sample farms in our study blocks. We observe from the table that overall cropping intensity of Contai-II farmers was higher (174 percent) than that of Jhalda-II farmers (129 percent). It is also seen from table-18 that higher cropping intensities in Contai-II block persist in all size groups with the only exception in 3.01-5.00 bigha size group. Availability of fairly assured irrigation from deep and shallow tube wells, canal source induced the Contai-II farmers to shift away from traditional to water using HYV crops. These HYV crops brought about a change in the cropping season and the frequency of raising crops from the irrigated land increased there. In Jhalda-II block, the 3.01-5.00 bigha size group manifested the highest cropping intensity (193 percent) which is closer to Contai-II highest figure (200 %). In the absence of better irrigation facilities, modern or indigenous, this spectacular display of the Jhalda-II small farmers (3.01-5.00) bigha can be explained by their allocation of relatively higher proportion of land under pulses most of which were raised as intercrops. Again, as regards farm size and cropping intensity, an inverse relationship was observed in Jhalda-II block. That is, in Jhalda-II, larger farmers cultivate land less intensively than the smaller ones. The reason is that the big farmer has a multiplicity of channels for earning a profit. Higher profitability in trading, and

similar activities allows him to leave some plots uncultivated during one crop season. But in Contai-II, the intergroup differences in the cropping intensity is not so pronounced. This gives an indication that after the penetration of new technology larger farmers have become more interested in the cultivation of land thereby making the inverse relation less pronounced.

Table 15: Cropping Pattern of sample farms in Contai-II and Jhalda-II Blocks

Crops	Jhalda-II		Contai-II	
	Land Allocated	Allocated land as % In Bigha GCA	Land Allocated	Allocated land as % In Bigha GCA
Aus	60	16	75	10
Amon	70	20	90	12
Boro	20	5	35	5
HYV Aus	-	-	98	14
HYV amon	-	-	72	10
Jute	30	8	45	6
Sugarcane	60	16	20	3
HYV Wheat	10	3	84	12
Local wheat	20	5	53	7
Oil seeds	30	8	40	5
Pulses	50	14	45	6
Banana	-	-	20	3
Watermelon	-	-	8	1
Other Crops	20	5	40	6
Total	370	100	725	100

Source : Field Survey

Table 16 : Herphindal Index(HI) of Crop Diversification Fig-F₁₀ : Herphindal Index(HI) of Crop Diversification

Blocks HI Index	
Contai-II	.909
Jhalda-II	.868

Source: Author's Own Calculation Based on the Field Survey Data

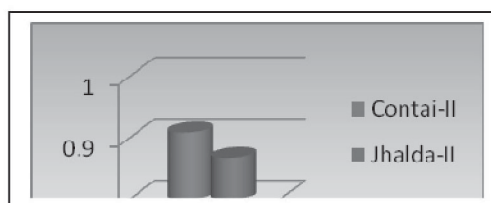
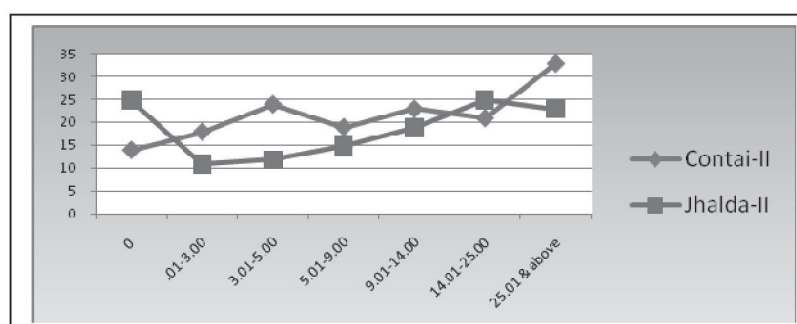


Table 17: Degree of Cash Crops Production Fig.-F11: Degree of Cash Crops Production

Farm Size	Jhalda-II	Contai-II
0	25	14
.01-3.00	11	18
3.01-5.00	12	24
5.01-9.00	15	19
9.01-14.00	19	23
14.01-25.00	25	21
25.01 & above	23	33
All Farms	20	25

Author's Own Calculation Based on the Field Survey Data

**Table 18:** Cropping Intensities in Contai-II and Jhalda-II Blocks

Farm size (In Bigha)	Jhalda-II			Contai-II		
	Net Cultivated Area	Total Cropped Area	Cropping Intensity	Net Cultivated Area	Total Cropped Area	Cropping Intensity
0	7	10	143	27	54	200
.01-3.00	13	19	146	56	100	179
3.01-5.00	14	27	193	36	57	158
Small	34	56	165	119	211	177
14.01-25.00	30	42	140	52	89	171
9.01-14.00	62	76	123	64	123	192
Medium	92	118	128	116	212	183
14.01-25.00	55	67	122	76	128	168
25.01 & above	115	142	123	176	294	167
Large	170	209	123	252	422	167
All farms	296	383	129	487	845	174

Author's Own Calculation Based on the Field Survey Data

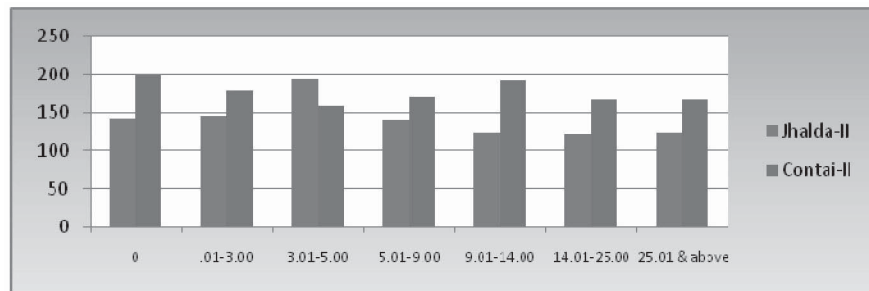


Fig.-F₁₂: Cropping Intensities in Contai-II and Jhalda-II Blocks

Section-V Conclusion and Policy Implication

In this paper, we have made an attempt to study at the micro level the impact of technological change on the structure of farm size and the cropping pattern. In order to do so, we have selected two blocks in West Bengal namely-Contai-II of East Midnapur district and Jhalda-II of Purulia district. While Contai-II represents technologically advanced block, Jhalda-II has been selected as a traditional block. Though the blocks are selected purposively, the farmers are selected by adopting stratified random sampling design. The selected farmers in each block are classified into seven size categories. The data used in the study are based on the survey of 200 farmers (100 from each block) which was conducted in the year 2013. The major findings of our field study are as follows-

1. It seems that the policy - led transformation of the land holding structure of West Bengal has been found to bring about remarkable increase in the number of marginal ,small and medium farmers as evidenced by our case study. Again, our study reveals that the marginalization is accompanied by a steady declining tendency of the number of large farms with very low share in land. Besides, the average area operated by the marginal and small farmers are significantly low and highly fragmented. While in Contai-II, the distribution of operational area is to some extent unequal than that of owned area , the inequality virtually remains absent in Jhalda-II. This implies the inactiveness of land lease market.
2. The extent of inequality in the operational holdings measured by the Gini Concentration Ratio(GCR) emerged as .552 .456 for Jhalda-II and Contai-II respectively where 93 percent of the farmers belonging to small and medium farms possess 69 percent of the total operated area in both the cases.
3. The extent of cultivation of various crops shows that in both Contai-II and Jhalda-II block paddy with its various traditional and improved varieties, is the major crops covering respectively 40 percent and 50 percent of the total cultivated area. Again , we find that there is a general tendency for degree of

cash crop cultivation to rise with the increase in the size of farm. The small farmers' basic motivation of production, no doubt, is consumption. They therefore, in general, concentrate on subsistence crops and thus allow relatively lower allocation of land under cash crops. The larger farmers on the other hand, being sure of sufficient grains for own consumption and being guided by profit motive, resort to crop diversification by devoting a part of their land under remunerative cash crops. Again, as is observed, the overall cropping intensity (CI) of Contai-II farmers is higher (174 percent) than that of Jhalda-II farmers (129 percent). It is also seen that higher cropping intensities in Contai-II block persist in all size groups with the only exception in 3.01-5.00 bigha size group. It seems that better irrigation facilities induced the Contai-II farmers to shift away from traditional to irrigation based HYV crops. Through the cropping intensity is higher for Contai-II block than that of Jhalda-II, the Herphindal index of crop diversification is significantly high for both the blocks. This, then, suggests that both the blocks are specializing in production.

4. We find the existence of an inverse relationship between the farm size and the cropping intensity in Jhalda-II block. In other words, in Jhalda-II, larger farmers cultivate land less intensively than the smaller ones. This may be due to the fact that the big farmers can adopt multiplicity of channels for earning a profit. Higher profitability in trading, and similar activities allows him to leave some plots uncultivated during one crop season. But in Contai-II, the intergroup differences in the cropping intensity is not so pronounced. This gives an indication that after the penetration of new technology larger farmers have become more interested in the cultivation of land thereby making the inverse relation less focused.

The existing structure of land holding (Ownership and Operational) and the cropping pattern may not be appropriate to enjoy the scale economics in agricultural operation under modern technology and further institutional breakthrough seems essential for consolidation of land holding and the formation of cooperative production structure.

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Index

A

Agricultural Apathy 137
Agriculture land 129
Agricultural Transition 137
Amygdala 159

B

Backward region 37
Barga 177

C

Children 23
Child Health 75
Constraints 332
Crop Diversification 390
Crop Yield 131
Cropping Intensity 390
Cultivation 332

D

Decentralize 190
Deplorable 283
Destination 364
Develop Children 93
Disability 71
Discrimination 325
Disease 111
Disseminate 149
Disparity 167

E

Ecology 359
Empowerment 153,239,245
Evaluation 49

G

Grasspea 369

H

Health care 295
Hill 303
Homogeneity 5
Hypothesis 298

I

Independent 236
Inregrated 268
Invertibility 5

L

Land Reform 178
Lepcha 111

M

Maternity 311
MGNREGS 189
Media 155
Medieval India 233
Municipality 271

N

Naxal Bari 180
NRLM 194
Nutrient Management 371

O

Observation 246

P

Poor Farmer 149
Prefrontal cortex 159
Prevalence 346
PTNA 263

R

Rehabilitation 71
Rural Development 84
Rural Health 376

S

Seed Priming 370
Seed Inoculation 370
Social Exclusion 99
Soil Environment 133

Street Children 31

SWOT 257

T

Thematic 283
Threats 261
Transitivity 5
Tourism 202

V

Vegetable 332
Venerable 95
Ventromedial 159

W

Weed Management 371