

Issues in Sustainable Development: Gender and Agrarian Change

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CONTENTS

1	Informal Sector Enterprises in the Developing Countries Pranab Kumar Chattopadhyay	1
2	Landlessness and Micro-Plot Allocation of Government: A Study of 'Nijo-Griha-Nijo-Bhumi' Programme with special reference to West Bengal Sudipta Biswas and Sukumar Pal	23
3	Role of Library in Education of Mental Disorder Student : A Study on West Bengal Laksman Sarkar and Mosaraf Hossain	43
4	The Trend, Pattern and Impact of Declining Child Sex Ratio: A study in Howrah and Coachbehar district of West Bengal. Wasim Rana and Subhrangsu Santra	57
5	Status of Woman in Ancient India Swati Chatterjee	69
6	Important Factors to Improve the Implementation of Pre- School Education Component of ICDS Scheme: A Case Study of Uttar Dinajpur District in West Bengal Argha Roy and Subranghsu Santra	77
7	Fishery based Integrated Farming System (IFS) Krishna Mitra, Madhuchhanda Khan, Subrata Mandal and Prabuddha Ray	87

8	Gender Disparity in West Bengal and Some Social Development Indicators	99
	Subhrangsu Santra	
9	Strategies to Double Farmer's Income	113
	Debabrata Mondal	

1

Informal Sector Enterprises in the Developing Countries

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Introduction and background

This is a study with the focus on the workforce in the lower echelons of the economy . “Behind the facade of the middle to higher class and their ever- increasing prosperity, so adored in the lore on shining India, lies the vast terrain in which the labouring poor masses are made to squat and toil in squalor. Because of increasing population and paucity of agricultural land, per capita or per household availability of land is declining. Agriculture is non-supporting the minimum livelihood of the families. People are gradually becoming landless in the villages and are thrown out of agriculture and the countryside. There is no social capital and no appropriate skill and these people are not fit for industrial jobs in the cities. The cities are also not equipped to absorb the swelling tide of migrants from the rural households. They find it difficult to settle down in this new habitat and find a regular job. Casualisation became the reality of their life and work.

Since 1951, the adoption of planning as the mechanism of development – there was a positive link between industrialization and, development, urbanization and formalization of the labour force in India. But recent changes in the international economy, visa-a-visa, Indian economy in the wake of globalization, formalization slowed significantly. There appeared a distinct disconnect between urbanization and formalization. Formalization now stalled and informalization is growing rapidly and there is a tendency to increased urban informality. Lewis does not use the term ‘informal sector’ but it seems clear that he touched upon the problem in his analysis of the characteristics of the developing countries.

Keith Hart (1973) introduced the term informal sector to the literature describing economic activity in an urban slum in Accra, Ghana.

“The main purpose of the paper (Hart 1973) was that Accra’s poor are not unemployed. They worked, often casually, for erratic and generally low returns; but they were definitely workingFollowing Weber, I argued that the ability to stabilize economic activity within a bureaucratic form made returns more calculable and regular for the workers as well as their bosses. That stability was in turn guaranteed by the state’s laws, which only extended so far into the depths Ghana’s economy. “Formal” incomes come from regulated economic activities, and an informal income comes, legal and illegal, lay beyond the scope of regulation. I did not identify the informal economy with a place or a class or even whole persons. Everyone in Accra, but specially the inhabitants of the slums where I lived, tried to combine the two source of income. Informal opportunities ranged from market gardening and brewing through every kind of trade to gambling, theft and political corruption.” (Hart- 2006, 25)

His views were echoed and re-stated by the ILO (International Labour Organization) and gave a systematic and proper definition of the informal activity. ILO formalized that the entries recognized by the law were formal and those not so recognized were Informal. ILO (1993, Para 5) provides the following definition.

“Informal enterprises are private unincorporated enterprises----- that is, enterprises owned by individuals or households that are not constituted as separate legal entities independent of their owners and for which no complete accounts are available that would permit a financial separation of the production activities of the enterprise from the other activities of the owners.”

The concepts of formality and informality were there in the early writings (J.H.Boeke-1943) though these terms were not used at that time. Boeke discussed dualism between activities that came under the jurisdiction of colonial law and the traditional sphere outside the ambit of these rules and regulation. He experienced two spheres of activities – one domain is ordered by regulation and the other domain there was disorder and disorganization. Elinor Ostrom in 1990 looked more deeply in the activities outside the realm of conventional state regulation. She focused carefully the management mechanisms of both the organised and disorganised – ordered and disordered sides of aspects of the activities. In the writings of Lewis (1954) the glimpses of the ideas are projected though in a different way. In this writings we have the ideas of which are called urban informal activities in the current parlance. He, in the context of massive army of labour in the urban settings wrote:

“The phenomenon is not, however, by any means confined to the countryside. Another large sector to which it applies in the whole range of casual jobs – the workers on the docks, the young men who rush forward asking to carry your bag as you appear, the jabbing gardener and the like. These occupations usually have a multiple of the number they need, each of them earning very small sum from occasional employment; frequently their number could be halved without reducing output in this sector. Petty retail trading is also exactly of this type. It is enormously expanded in over populated

economies, and each trader makes only a few sales. Markets are crowded with stalls, and if the number of stalls were greatly reduced, the consumers would be no whit worse off.” (Lewis 1954, 2)

Enterprisesthat is , enterprises owned by individuals or households that are not constituted as separate legal entities independent of their owners and for which no complete accounts are available that would permit a financial separation of the production activities of the enterprise from the activities of its owner(s).

This definition of the informal sector activity has been broadened later and there is a shift of attention from the enterprise based entities to worker based entities. The informal economy “ extended the focus to include not only enterprises that are not legally regulated or protected. In brief, the new definition of the ‘informal economy’ focuses on the nature of employment in addition to the characteristics of the enterprises.” (Chen, 2006, p- 76)

Thus we have different concepts and definitions of informal sector. The detailed specification varies across countries depending on registration requirements and rules. But it is fact that informal sector is large in most developing countries including India. It is the overwhelming employer of labour in the non-agricultural sector. This sector is also very large not only in terms of employment but also in terms of enterprises. It is increasing because of globalization, and new labour laws leading to casualization of labour. It is present both in urban sector as well as rural sector of the economy. But in this research we are interested to focus on Informal sector has emerged as the core sector in India and the urban informal sector of some urban centres of West Bengal. At present its size is increasing. Formal sector is gradually coming out of many activities and informal sector is becoming more and more penetrative sector in terms of employment, production, income generation etc.

The informal sector in developing countries has received increased attention over the last couple of decades. However, most of this attention has been directed at the fact that often the earnings and employment situation of IS workers is inferior to that of the formal sector (FS) workers. This contrasts the tendencies of developed countries, where recent years have seen an emergence of labor which, by one or more of the previously discussed definitions, could be termed “informal”. Specifically, rather than traditional street traders and vendors, which are well-known from developed and developing countries alike, we refer to the emergence of more flexible forms of employment in the putative “New Economy”. In essence, we see an increased informalization of the formal sector of developed countries, wherein new breeds of workers allow greater flexibility in production at the expense of job stability and social security benefits, which were standard in the archetypal employer-employee relationship in the formal sector. One of the forces at play in precipitating this transformation in the nature of employment is increasing market competition stemming from globalization (greater economic integration). It is interesting to note how this directly opposes the notion

of how (developing) countries “should” move towards greater formalization of the labor force, which was traditionally considered the preferred goal by development practitioners and policy makers.

These observations beg a more nuanced debate of issues related to the informal sector. In particular, great strides in improving the conditions and circumstances of informal sector workers can be only achieved with greater recognition of their economic contributions and potential as well as with removal of long-standing policy biases against them. Indeed, the IS is often, by far, the most important source of employment in many developing economies as the formal sector – both private and public - has struggled to generate sufficient employment.

Moreover, the growth of the informal sector may not be entirely undesirable as it plays an important role in the growth and development of the overall economy.

This contrasts to the formal sector, where, to some extent, skills acquisition is supply driven, with education, for example, often serving as a signal and/or a screening device without necessarily being productivity-enhancing to the same degree it is wage-enhancing (if the latter was the case, skills acquisition would instead be demand driven). Hence, rather than trying to merely “formalize” the informal sector, one needs to realize that the most significant obstacle to growth in informal sector employment is the lack of access to markets and resources, most notably, factor and financial markets.

Dimensions of Informality

(a) Legality

From the beginning, legality has been a central aspect of the concept. One dimension concerns registration: informal enterprises are those that are not officially registered, or that do not have required licenses or permits to operate. A second question concerns payment of taxes. A third area relates to regulations of working conditions for the labour force (e.g., payment of minimum wages and paid holidays, abiding by rules for worker safety, payments for social insurance and retirement benefits). A fourth area involves a host of other institutional regulations and requirements that are legally binding on producers and traders: those designed to protect consumers, those governing the quality of the product or restricting the location in which the enterprise is permitted to operate or sell. The general presumption is that these different dimensions of legality come as a package: enterprises that are not registered would not pay taxes and would not obey other regulations. The contrary was expected to be equally true: once an enterprise is registered, it would be subject to a whole list of complementary requirements and regulations. From this perspective, informal enterprises might seek to remain hidden, operating in a clandestine way living in fear that they would be discovered and thereby forced to obey all the rules. Alternatively, officials may be fully aware of the existence of these enterprises but may choose not to enforce the rules, perhaps out of concern that this would drive the enterprises out of business, with a consequent loss of employment. A third possibility is that officials may know about the enterprises and wish to enforce

the rules but may not have the staff or the resources to do so. The fact that many so-called informal enterprises operate in clearly visible locations supports one of the latter two interpretations, at least for an important subset of enterprises.⁴

(b) Size:

All studies of the informal sector focus on small enterprises. While a number of different measures of enterprise size are possible, the one most commonly used in empirical work refers to the number of workers; many studies focus on enterprises with up to five, 10 or sometimes 20 workers. Of course, one must include in this measure all types of workers. One of the characteristics of enterprises at the lower end of the size scale is their heavy reliance on unpaid family members and, in some countries and sectors, apprentices. If one looked at enterprises with a maximum of five or 10 workers, in most countries, only a minority are paid a regular salary.

(c) Capital intensity:

This could be thought of in terms of fixed capital, measured either in absolute terms or by capital/labour ratios and reflecting different levels of mechanization or modernization. It could also be thought of in terms of human capital. Skilled artisans working alone often have substantially more human capital than workers in a factory, even though the productivity per worker of the latter may be significantly higher, since they are working with more machinery and equipment. To the extent that this dimension has been used in the informal sector literature, the emphasis has generally been on fixed capital per worker, which is often associated with levels of labour productivity. There may be a correspondingly low level of human capital and of income, although this is not necessarily the case.

(d) Poverty and the informal sector?

Some have argued that poverty is a key characteristic of the informal sector, since it is presumed to follow from the ways in which the state has disadvantaged those operating in this portion of the economy. We have no information in our data set that permits us to test this proposition. Several other analysts, however, have examined this association and found it wanting. Cartaya, for example, examines levels of income for informal producers in Venezuela. She finds that, while there is considerable overlap between poverty and informality, the association is far from perfect. There are plenty of poor households - including poor workers - not associated with the informal sector; conversely, there are significant numbers of people in the informal sector that are not poor. Similarly, studies by Charmes in Tunisia and Morocco, by DIAL in Cameroun and by Lube in several countries found average returns to informal sector entrepreneurs that were often a multiple of the minimum wage⁶ In general, while there is some association between poverty and informality, this is by no means a clear-cut relationship. It would seem quite inappropriate to use poverty as a defining characteristic of informality.

Background: The informal sector across time: origins, changes, and developments

In this section the changes and developments in the understanding of the concept of the “informal sector” over the last decades has been reviewed. We do so by presenting ten specific areas or points (for the sake of exposition) where the understanding of the concept of the informal sector has changed over time, either due to new evidence or methodological or theoretical reconsiderations.

The concept of the informal sector is a fuzzy one. Indeed, Kabra (1995) states that some thirty terms including the survival sector, non-structured sector, and transitional activities have been and/or are currently used to describe the IS. The understanding of this concept has changed over time in several dimensions:

Marginal or basic sector: The initial view of the informal sector was that it was a marginal sector in terms of its place in and contribution to the overall economy. It has later been conjectured and substantiated, however, that rather than marginal, the informal sector is basic, contributing significantly to employment and output mainly through the proliferation of labor-intensive undertakings, some of which are considered unprofitable for larger (formal) enterprises (Williams and Tumusiime-Mutebile 1978).

Short or long term phenomenon: The IS was traditionally viewed as a transitional phenomenon but has recently come to be accepted as a more permanent phenomenon (Bekkers and Stoffers 1995). Relatedly, recent evidence that – contrary to what one might hypothesize under the abovementioned more “traditional” view – the informal sector did not contract following economic reforms. On the contrary, the evidence suggests that – at least in Africa and Latin America – the informal sector actually shows expansionary tendencies following adjustment and reform policies (Tokman 1990).

Type of labor employed: The first official report to apply this concept, ILO (1972), proved somewhat successful in contrasting the characteristics of the informal and formal sectors, the former being characterized by ease of entry, low resource-base, family ownership, small-scale, labor-intensive, adapted technology, unregulated but competitive markets, and informal processes of acquiring skills. However, it failed to adequately recognize that in addition to self-employment and family labor in various guises, wage labor (regular as well as casual) and apprentices, for example, were also a very important component of the IS.

Linkages to the formal sector: Another issue typically absent in the earlier literature, for example, the ILO-study just mentioned, was the general lack of recognition of linkages between the formal and the informal sectors, or, at a minimum, of the character and basis of these linkages, for example, subordination or superordination, Sethuraman (1981), Hugon (1991), were not even raised (see Kabra 1995). Recent evidence shows that in some countries, linkages between the formal and informal sectors can often be quite dense and extensive, particularly in urban areas.

Productivity and contribution to GDP: While initially the informal sector was viewed as more or less a “residual sector”, a source of employment for those who were unable to find employment in the formal sector, and the informal sector worker, correspondingly, being regarded a low productivity worker, recent empirical research has shown this not to be true. For example, Charmes (1990) finds evidence that the informal sector worker generally contributes to GDP over and beyond the minimum wage. Furthermore, Charmes (1990) suggests that generally, productivity in the sector is much higher than average per capita GNP in the economy. Another important fact which has not received attention until recently is that there are non-trivial numbers of households engaging in both informal and formal sector activities (King 1990).

Geography: The term also came to have a geographical dimension in that the notion of the informal sector was implicitly linked to the urban economy, a tendency which has continued to persist (Todaro, 1987). However, recent studies find evidence of the informal sector is far more pervasive, applying equally to urban and rural areas. For example, King (1990, p. 95) states that “in the 1980s, there seem to be some point in re-conceptualizing the informal sector as the ordinary economy cutting across rural and urban areas, agriculture and commerce, across survival skills and income-generating strategies”.

Importance of context: While initially the term “informal sector” was entirely descriptive and somewhat decontextualized, recently, increased attention has been directed towards understanding the informal sector in the context of the specific historical, political and social aspects of the country or region in question. For example, Kabra (1995, p. 200) stresses the importance of applying a historical framework, since “any unhistorical approach to the informal sector would hardly be able to capture its diversity, varying degrees of cohesion, linkages with the rest of the economy and future directions...”.

Technological base: Another area where the understanding of the informal sector has undergone change is with respect to the technological base of the informal sector. Where it was initially generally supposed that the technological base of the informal sector was traditional – hence, practically static, recent empirical evidence seems to show that this view does not hold uniformly. Although IS enterprises tend to use simple technology and have low capital intensity, some are highly dynamic, with innovations taking place in inputs, processes, and output, allowing them to adapt to new circumstances and exploit market opportunities (Arye 1981).

The informal sector – or informal sectors? Dividing economic activities into two mutually exclusive formal and informal sectors, though perhaps desirable on analytical grounds is clearly an over-simplification. Some establishments may be characterized by elements from both sectors, complicating their proper classification. Hence, as an alternative, it has been suggested that enterprises be classified on a *continuum* between the two extreme and opposite poles of formal and informal. This alternative

representation improves upon the earlier and cruder dual sector depiction by allowing intermediate categories and movements along the overall continuum (Bromley 1978).

Policy intervention: An outcome of the previously discussed sharp dichotomy between the formal and the informal sector was the perception that a single policy prescription can be applied to the entire informal sector, without consideration for the specific circumstances of individual establishments. Consistent with this view, “governments should adopt similar programs towards artisans making furniture, artisans illegally manufacturing fireworks, towards sellers of basic food-stuffs, and towards prostitutes and drug-peddlers”, as put provocatively but enlighteningly by Bromley (1978, pp. 1035). However, given growing recognition of the wide diversity of activities, occupations, and individuals in the informal sector, rather than a single uniform policy, a wide range of policies and programs are argued for – one size does *not* fit all. Policy instruments need to be fine tuned to the particular conditions and circumstances of a given segment of the IS in a given economy.

Measurement and Trends

With so many different conceptualizations of informality and formality, it is perhaps not surprising that getting nationally comparable estimates of informality is fraught with difficulties. Even if the basic concept is agreed, for example, registered enterprises, the detailed specification may vary across countries, since the requirement for registration will vary. Estimates produced by national authorities may differ from those produced by international agencies because of differing definitions and data sources.

Despite concerns about data and definitions, there is an agreement that the informal sector is large in most developing countries, and it is the overwhelming employer of labor in the non-agricultural sector. For developing countries as a group, more than half of all jobs—over 900 million workers—are in the informal sector (Jutting and de Laglesia, 2009). The sector is large not just in terms of employment, but also by the number of enterprises. Many more new establishments are created in the informal sector than in the formal sector.

Figure 1 plots the share of informal employment in total non-agricultural employment for 50 developing countries against their per capita income, using data from ILO KLIM, OECD, and World Development Indicators. For these 50 developing countries as a group, nearly half of the total non-agricultural jobs are generated in the informal sector. In India, it is much higher, at more than 80 percent of total non-agricultural jobs generated in the informal sector. It is also high in Sub Saharan Africa. The share of the informal sector is slightly lower in Latin America, with Brazil at 42% and Mexico at more than 50%. As a region, the lowest share of informal employment is in the Central & South-Eastern Europe, with the share of informal employment in Poland and Russia in single digits.

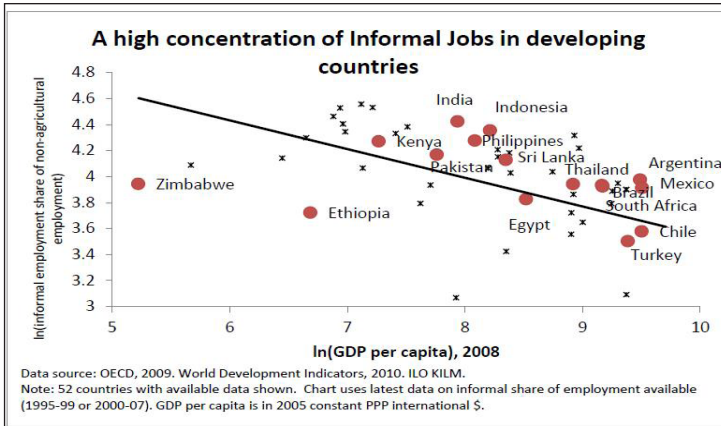
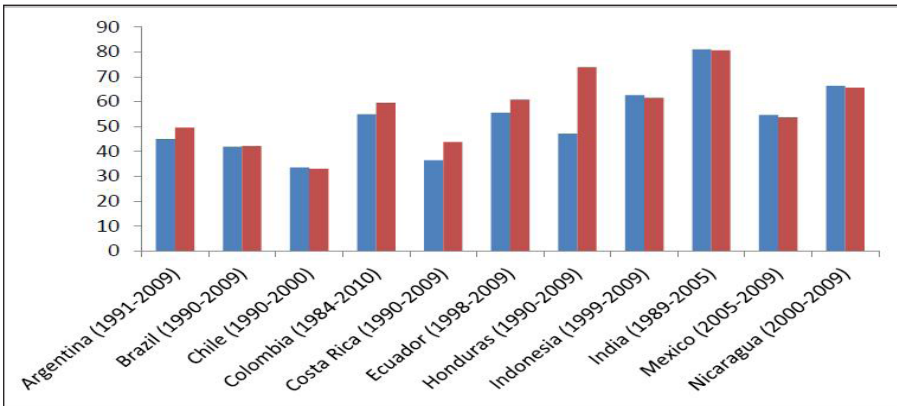


Figure 1: Jobs are concentrated in the Informal Sectors in developing countries



Data source: ILO KILM Table 8, “Employment in the informal economy”. India: Annual Survey of Industries/National Sample Survey (Manufacturing only).

Figure 2: Informal sectors are exceptionally Persistent (Share of Population in Informal Employment, Earliest and Latest Data Points Available)

Figure 2 compares the trend over time in the share of informal employment in total non-agricultural employment for a dozen developing countries. What is striking is that the size of informal sector has remained exceptionally persistent.

Why Worry About Informality?

There are (at least) three reasons why informality is of concern in policy circles—it is associated with higher levels of poverty and vulnerability, lower levels of productivity, and lower contributions to fiscal revenue. Let us consider each of these in turn.

Figure 3 plots the share of informal jobs against poverty rates across countries. The line is upward sloping suggesting that a larger size of the informal sector is associated with higher poverty rates. The macro level association is confirmed by almost every micro

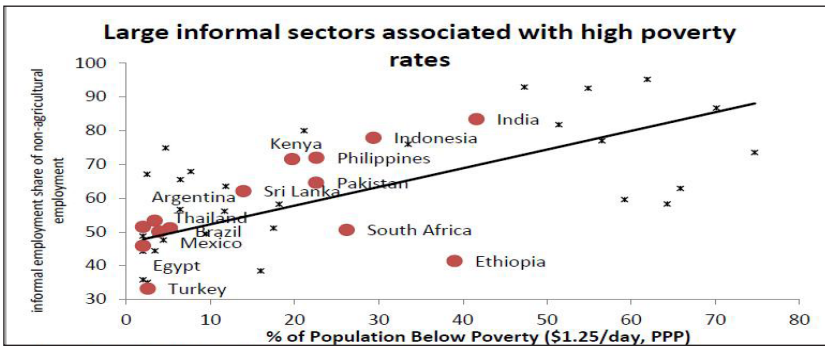
level country specific study that looks at the association between poverty and informality. Most people who work in the informal sector are predominantly poor in income and in non-income dimensions. This is because informal jobs have low productivity, and certain groups, such as the young or women are over represented in the informal sector (Jutting and de Laglesia, 2009). In India, workers in the unorganized sector have a much higher incidence of poverty (20.5 %) than their counterparts in the organized sector (11.3 percent, NCEUS (2007)). Studies also find lower levels of achievement in health, education and other non-income achievements in the informal sector.

Along with lower levels of income, lower levels of productivity among enterprises in the informal sector are well documented (Jutting and de Laglesia, 2009). Most recently, careful work by Busso, Fazio and Levy (2012) for Mexico argues that Total Factor Productivity (TFP) is much higher in the formal sector than in the informal sector—so much so that “one peso of capital and labor allocated to formal and legal firms is worth 28% more than if allocated to illegal and informal firms, and 50% more than if allocated to legal and informal firms.” However, other studies have pointed out strong evidence for manufacturing convergence. In a cross-country study of 100 countries, using industry data for formal sectors, Rodrik (2012) finds that industries that start at lower levels of labor productivity grow faster.

Figure 4a, plots labor productivity levels in the unorganized industry at the district level in India. Each dot in the scatter plot reflects labor productivity in the unorganized industry in a district. The horizontal axis is the initial labor productivity in 1989. The vertical axis shows the growth of labor productivity in unorganized industry for that district for the period 1989-2005. A downward sloping line suggests that districts that started with a lower level of labor productivity in the initial period experienced a faster productivity growth rate in subsequent periods. But there is a lot of dispersion. No doubt, the pace of convergence will accelerate with better infrastructure, improved policies, and stronger institutions. The convergence in the unorganized manufacturing sector can have a huge impact on aggregate manufacturing convergence, given that more than 80% of manufacturing employment in India is in the unorganized sector. The impact of formal manufacturing on aggregate manufacturing convergence is reduced by its small share of employment.

What about fiscal implications of the informal sectors? Policy makers worry about the fiscal consequences of a large informal sector since this sector is largely outside the tax net. Indeed, in some countries the statistical definition of informality of an enterprise is based on whether it is registered for tax purposes. Of course, if an exogenous shift in conditions brings more firms into the tax net, that is good fiscally. On the other hand, if there is an increase in informality, the fiscal policy suffers. The important question from a policy perspective, however, is whether policy measures could be taken to induce greater formality and greater revenue. The answer to this is not self-evident and certainly it is not as simple as relaxing regulations so as to bring more firms into the formal sector. For example, for profits taxation Auriol and Warlters (2005) argue that there is a trade-off between restricting entry to the formal sector, which would raise taxable profits per firm,

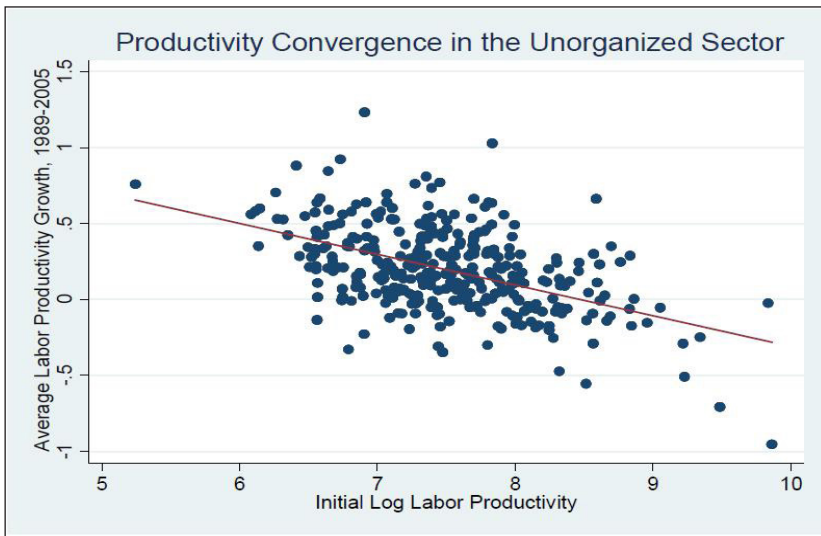
and increasing the number of formal sector firms by relaxing regulation. The argument is confirmed by an empirical analysis of regulation, taxation and informality for a cross section of 64 countries. In similar vein but focusing on tax collection, Keen and Mintz (2004), model tradeoffs in lowering tax threshold to bring in more firms into the VAT net: “Too high a threshold compromises the basic objective of raising revenue; too low a threshold may leave the authorities overwhelmed by the difficulties of implementation and impose excessive compliance costs on taxpayers.” (p. 559).



Source: OECD, 2009. World Development Indicators, 2010. ILO KILM.

Notes: 48 countries with available data shown. Chart uses latest available data on informal share of employment (1995-99-or 2000-07).

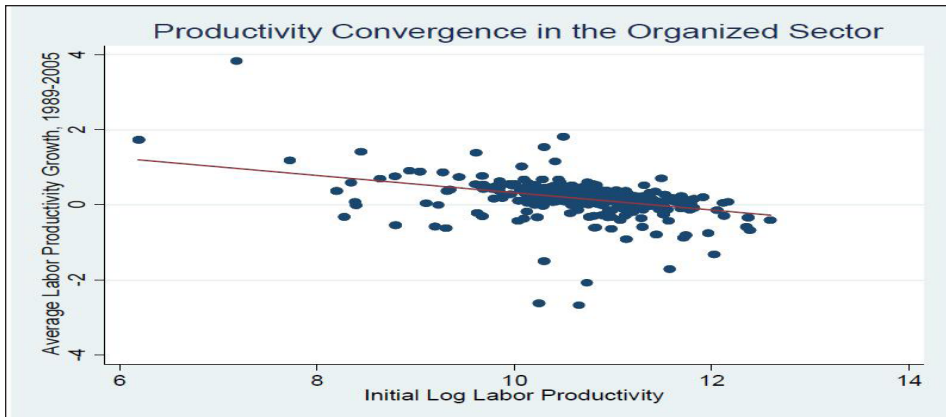
Figure 3: Strong Association between Informality and Poverty



Source: Kanbur (2013).

Notes: The horizontal axis is the initial labor productivity of unorganized industry in a district in 1989. The vertical axis is the growth of labor productivity in unorganized industry in that district.

Figure 4a: Convergence in unorganized manufacturing industry in India, 1989-2005



Source: Kanbur (2013).

Figure 4b: Convergence in Organized manufacturing industry in India, 1989-2005

To conclude this part, a lot of research has been carried out combining both the formal and informal sectors and its implications. But the two basic models that in general dealt with this topic, *e.g.*, the Lewis model and Harris – Todaro model did not much light about complete eradication of informal sector. In fact, as the analysis has so far suggested, the IS is expanding and countries, especially the developing economies have to live with the IS. Two relatively distinct policy orientations can be observed. One is the welfare aspect of the informal workers that deals with general standard of living, education, food, health etc. The other is related to the policies that may result in formalization of informal sectors.

In our proposed research we plan to understand the actual causes behind informalisation of firms and other business identities and how the policies should be oriented and formulated for smooth formalization of IS as formalization has benefits both for the government and the labourers.

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Literature Survey

Let us begin with the traditional literature on dualism and on the formal/informal divide reviewed in the last section, to see what different elements of it have to say about the connections between the rural-urban transition and the informal-formal transition. In Boeke's (1943) perspective, to the extent that the urban comes under the ambit of colonial regulation while rural does not, urbanization would be associated with increased formality. In the Lewis (1954) framework the key distinction is between capitalist and non-capitalist modes of production. As investment takes place in the capitalist (or "modern") sector, labor is drawn away from the traditional sector, which is the pool of surplus labor. It is only if we identify the traditional sector with rural and the capitalist sector with urban that urbanization and formalization go together in the Lewis framework. The Hart (1973) framework is focused within the urban sector, and informality is identified as those activities outside the reach of state regulation. In this setting urbanization would lead to an increase in informality if rural migrants went disproportionately into informal sector activities as envisioned by Hart. But migration is under explored in Hart (1973), although there are suggestions that recent migrants may be more likely to be found in the informal sector. The Harris-Todaro (1970) framework, in the original and as developed by a large number of subsequent studies, comes closest to offering the possibility of a systematic link between rural-urban migration and informality. This framework thus provides some insights into possible connections between urbanization and informality, but it is entirely worker based, the location decision of enterprises is not a consideration at all. And yet it is these decisions which are as important for the overall pattern of urbanization. And consideration of enterprise behavior links the discussion to the recent literature on agglomeration benefit and congestion externalities. Beall, Guha-Khasnobis and Kanbur (2010) discuss the key features of the urban context as proximity, density, diversity, dynamics and complexity. The origins of this discourse go back at least as far as Lewis Wirth (1938), who said that a city was a "*relatively large, dense and permanent settlement of socially heterogeneous individuals.*" For economists, starting at least with Marshall (1920, pp 267-277), dense proximity of a diverse pool of skills has been the foundation of agglomeration benefits. However, disciplines such as sociology and anthropology have emphasized the problems of differences in close proximity—for example ethnic cleavages—and urban responses to these challenges. Of course, economists have also discussed the costs of agglomeration in the form of congestion costs. The recent literature has discussed the balance between agglomeration benefits and costs to arrive at optimal city concentration (Overman and Venables, 2011; Desmet, Ghani, O'Connell, Rossi-Hansberg 2012).

The relationship between increased globalization and informality has also been discussed at length. Kar and Marjit (2001) and Marjit (2003) have tried to analyze the impact of trade reforms on informal wage in terms of general equilibrium models. These models build on the assumption of a dual labor market with fixed as well as flexible wage contracts and labor mobility. In a way this is also related to Bulow and

Summers (1986), Carruth and Oswald (1981), Saint-Paul (1996), Agenor and Montiel (1996) etc. Marjit, Kar and Sarkar (2003) substantiates earlier theoretical claims with evidence drawn from informal manufacturing in India. In these papers reform tends to expand size of the informal sector through a cut back in employment in the formal sector when formal and informal are producing *different* goods and a tariff protects the formal sector. Apparently, if one focuses on a typical import competing sector, which has both formal and informal segments, the impact of a reform is less clear. For example, a negative output effect of a tariff cut should be felt by both segments and one does not know a priori how the composition will change. In their paper, Goldberg and Pavcnik (2003) provide a detailed empirical evidence on Brazil and Colombia to highlight the impact of trade reform on the size of the informal sector. While Colombia clearly demonstrates an expansion in the informal segment, Brazil demonstrates very little change. With this backdrop in place, our purpose is to understand the relationship between the size of informal production and reformatory policies by treating the case of an import-competing sector. Marjit, Ghosh & Biswas (2007) have shown that a decline in tariff rates and in interest rates, the two cornerstones of reformatory policies, have offsetting effects on the size of informal production within an import-competing sector. This paper tried to match the theoretical conjecture by supplementing the existing evidence from Brazil and Colombia.

Evidence from India

The official definition of formality in India, from the enterprise perspective, turns essentially on enterprise size. In manufacturing, the “*organized*” sector includes establishments with more than 10 workers if the establishment uses electricity. If the establishment does not use electricity, the threshold is 20 workers or more. These establishments are required to register under the India Factories Act of 1948. The “*unorganized*” manufacturing sector is, by default, composed of establishments which fall outside the scope of the Factories Act. India is the second fastest growing economy in the world, but it also has a very large informal sector. In the manufacturing sector, nearly 99% of enterprises and 81% of employment are in the unorganized sector. In the services sector, the estimated size of the unorganized sector ranges from 74% to 90% of employment, depending on the definition used. The Indian economy has undergone amazing structural transformation during the last two decades, but the share of the unorganized sector has remained high (Ghani *et al.*, 2011a, b). The employment share in the unorganized sector for manufacturing in 2005 is almost exactly the same as it was in 1989 at 81%. So the unorganized sector is also exceptionally persistent. India provides a good case study to examine how urbanization and formalization have interacted and evolved over time. Are formal sectors moving out of urban areas? Is informal sector moving into cities? Do cities generate agglomeration economies in the informal sector? Has the spatial allocation of plants improved across urban and rural locations?

Ghani *et al* (2012) examine the trends in the spatial location of organized and unorganized enterprises in India. They combine the enterprise data from the Annual

Survey of Industries for the organized (formal) sector and from the National Sample Survey for the unorganized (informal). The organized manufacturing sector is surveyed by the Central Statistical Organization every year through the Annual Survey of Industries (ASI), while unorganized manufacturing establishments are separately surveyed by the National Sample Survey Organization (NSSO) at approximately five-year intervals. These surveys identify for each establishment whether or not it is in an urban or rural location. Establishments are surveyed with state and four-digit National Industry Classification (NIC) stratification. The authors note: *“On the whole, India’s manufacturing sector became more urbanized, with the share of workers in urban areas rising from 33% of employees in 1989 to 41% in 2005 (Figure 3a). Urbanization growth was most dramatic from 1989 to 1994, but slowed down from 1994 to 2000. The urbanized employment share was basically flat from 2000 to 2005. This pattern of increasing urbanization was also present when looking just at manufacturing plant counts, but the opposite trend is observed for manufacturing output. The latter has increasingly moved towards rural areas”*.

In case of India according to NSSO data for 2009-10, more than 90% of employment in the agricultural sector and close to 70% in the non – agricultural sector falls under the informal category. Thus informal sector is not the residual sector in the economy – in reality it is the dominant sector –

It continues to be the most dynamic sector in the economy.

While the organised sector is lagged behind – the informal sector has shown improvement in productivity, real wages and capital accumulation.

Empirical data underlines the fact that the informal sector has done better than its formal counterparts on economic parameters such as investment and accumulation of fixed assets, among others. It also encompasses – LokaVidya – the traditional and indigenous knowledge,- that includes ancient and well-established,’ institutions of knowledge production and transfer’ which is under a big strain now. The informal economy of India that remained largely outside the realm of social security, workers do not enjoy the life of dignity,no decent work,mostly are not registered activity that is not regulated either by the state or necessarily according to its law, requires a proper regulatory framework. With the Passage of the development decades it became clear that the Informal Economy (IE) was hard wired into the structure of many economies in which formal registered activity not only directly exploited the IE through sub – contracting but also gained from the cheap products and services it generated. IE and black economy are the inescapable basis of Indian representative politics.IE is ‘unorganised’ – although it is labelled as such in statistical and official documents – It does not follow that the IE is disorganised. Informal markets are not state regulated, but socially regulated.Thousands of Chambers of Commerce and tens of thousands of business associations exercise a societal and corporate control over apprenticeships, entry into jobs and access to work sites.They influence contracts, price-formation,-dictate term in derived markets(labour markets) – organise collective insurance,

defends them from threats from states. Mobilise redistributive resources for those they approve, disseminate innovative information about technology and demand and much more. They have proved more compatible with the Capitalist economy. They have become not soft but hard regulators of economic opportunity, entry and practice- They limit the mobility of both capital and labour-less simultaneously facilitates, structure and stabilized economic growth. Contrary to received wisdom new researches shows that informal economy is not resistant to change but is the dynamic manifestations of India's high growth rates and the site of all kinds of innovation, adaptive and adoptive innovation, incremental and radical innovation. technological, processual and organisational innovation.

India's informal economy is not marginal – or a minor component of the economy as in other BRICS and the EU- it is distinctively pervasive; an estimated 92.5% of livelihoods are not registered, producing up to two-third of country's GDPs and showing no sign of retreat. The rural labourers- pushed out of agricultural sector due to lack of productive source of livelihood – and could not be absorbed in the rural non-firm sector or the high productivity manufacturing sector in the urban areas-are likely to get residually absorbed in the low productivity – urban informal sector. Urban informal economy became the sources of livelihood to rural migrants and low income households residing in urban slums. Rapid natural growth of population might be the major cause of this. A large component of this labour force is either unskilled or semi-skilled variety. Informal sector employment defined as the proportion of informal sector employment to total employment is high both in the rural and urban areas. The rural urban differences are not spectacular.

NSS (2009-2010) –definition comprises employment in the informal sector enterprises (proprietary and partnership enterprises) excluded own accounts workers (engaged in the production of the goods exclusively for own final use by their hold) and employed in the household sector which actually have been a part of the informal sector employment. Since the employment in the household sector is quite substantial, its exclusion so grossly under estimate the relative size of informal sector employment -- suppresses the incidence of informal sector employment among the women workers. Registration procedure and labour laws are stringent in the formal sector –then the unit may prefer to operate from the informal sector – deliberately choosing to remain small in size – the firm may decide to remain small so that it can take the advantage of the labour market the informal sector offers. In such situation the informal sector units are not necessarily unproductive in nature – they may be technically efficient and highly competitive. Formal sector has adopted the informalization process at various levels though in some of the activities, - the process has followed only at lower rungs (labourers in the industries and class IV employees in various organisations including universities and government offices).

Many petty enterprises especially in the garment, leather and gems and jewellery and related industries are now connected to large units falling in the domain of the formal sector- since the large units provide them- raw materials etc.- uncertainty component

faced by the small informal sector units in carrying out their operations has declined—they are not required to explore possibilities for credit assistance or production outletsrather they have supplies of raw materials and work consignments etc available at their doorsteps – all this likely to contribute a smooth and efficient functioning of the units.

Positive effects of growth experienced by the large units get transmitted to the micro units through the process of subcontracting and ancillarisation. Thus globalization is expected to be pro-poor as well..

Employment growth in informal economy declined between 2005-06 and 2010-11- informal economy were unable to compete and wanted to reduce labour cost the downsizing of workforce has taken place widely.

- since Indian manufacturing exports have not picked up more so from the unorganised informal economy because of the poor quality of the products—the advantages that the Chinese enterprises could draw in the context of globalization—is a distant dream of their Indian counterparts,
- Lack of modernization and inaccessibility to ICT, neither have product diversification taken place nor have enterprises been able to graduate to high value products.
- Informal economy ---lack of physical and financial capital – resulting sluggish labour growth and earning – for marketing dependence on contracts- reduces the profitability significantly- benefits tend to get minimized due to practice of intermediation and income earned on piece rate basis – all this brings new Informal Economy policy which may reduce the welfare loss of labour employed at the lower rungs is the mode of working of the existing system of informal on the job skill – acquisition through the traditional method is not sufficient.

Well designed and informed policies can make a large difference to improving skills, integrating modern techniques into traditional occupations and raising incomes. Public sector has experienced a negative growth rate of employment. It was –0.03 percent in 1994—2000 . Private sector employment growth was, however, positive in the corresponding period and it was 1.83 per cent.

Share of employment in the public sector was much higher. Nearly 69 per cent of total work-force were engaged there, since the onset of globalisation the size of the public sector is declining and that of the private sector is increasing. But the enlargement of the private sector failed to offset the deceleration effectively. Globalisation pushed workers from the organised sector to swell the ranks of workers in the in the organised sector, In the organised sector the workers are better paid than those in the unorganised sector. Globalization has increased the process of informalisation of the economy – led to casualization of the workforce. The proportion of casual work force increased from 28.7% in 1983 to 33.2% in 1999-2000. Even in the organised sector an increasing number of jobs are assuming characteristics of those in the unorganised informal sector as a consequences of policies of flexibilisation of labour in the wake of globalisation’

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Landlessness and Micro-Plot Allocation of Government: A Study of ‘Nijo-Griha-Nijo-Bhumi’ Programme with special reference to West Bengal

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Abstract

Distribution of land has remained as one the priority area of national government since independence. Land reform laws have enabled this redistribution of ceiling surplus land in different states. West Bengal is one of them. Enactment of West Bengal Land Reforms Act 1955 played an instrumental role in this respect. Late 1970s Left Front government launched ‘Operation Barga’, a state wide effort to document and enumerate West Bengal’s ‘bargadars’ (sharecroppers), thus providing them with greater tenure security under the law. Though, landlessness remained an issue in the state. According to the National Sample Survey Organization’s 59th Round Survey Report, 427,000 households in the state were landless and homesteadless (NSSO, 2003). Against this backdrop, the government launched a homestead land allocation program, ‘Chas-O-Basobaser-Janyo-Bhumidan-Prakalpo’ (Cultivation and Dwelling Plot Allotment Scheme) in 2006 for the first time in the state. Under the program, the government purchased tracts of land and provided homestead plots to landless rural agricultural labourers households. The programme was renamed as ‘NijoGrihaNijo Bhumi’ (NGNB) which can be translated into English as ‘My Home My Land’. Major objective of the programme is to provide homestead plots to poorest landless and homesteadless agricultural labourers, rural artisans and fishermen. This paper examines at what extent this programme is successful to distribute land to the poor people and how far they are benefited out of the government programme.

Keywords: Homestead plot, Landlessness, Land allocation, Livelihoods, Micro-plot, NGNB, Poverty.

Introduction

India is the home for about one third of the extreme poor people in the world (United Nations, 2014). In rural India an estimated 15 million extremely poor families are landless (RDI, 2009). According to National Sample Survey Organization (NSSO) data 2003-04 about 41.63 percent of households do not own land other than homestead. This data also shows that while one third of the households are landless, those near to landlessness add up one third more. The next 20 percent hold less than 1 hectare. In other words, 60 percent of the country's population has right over only 5 percent of country's land; whereas 10 percent of the population has control over 55 percent of the land (shown in Table 1).

Table 1: Distribution of Ownership Holdings of Land in India

Category	Proportion of Households (%)	Proportion of Area Owned (%)
Landless	31.12	0
Less than 0.4 ha	29.82	5.11
0.4-1 ha	18.97	16.89
1 -2 ha	10.68	20.47
2-3 ha	4.22	13.94
3-5 ha	3.06	16.59
5-10 ha	1.6	15.21
More than 10 ha	0.52	11.77

Source: NSSO, 2003-04

A World Bank study shows that landlessness is the greatest predictor of poverty in India. The finding of the study is that the incidence of poverty to be 68 percent among landless wage earners. By comparison, the incidence of poverty was found to be 51 percent for Scheduled Caste (SC), Scheduled Tribes (ST); and 45 percent for households where no one was literate (World Bank, 1997). The government has recently released Socio-Economic Caste Census Report 2011 and considered landlessness as a major indicator of rural poverty. The figures indicate that almost 56 percent of the rural population lives without any ownership of land (GoI, 2011). The fact of dependence of half of Indian population on land and land based livelihood while 54 percent of them without access to land is definitely a matter of grave concern for policy makers and thinker (GoI, 2014).

West Bengal is the second most densely populated state and it has the third largest number of poor people in India with a total of 52.2 million living in poverty according

to the Multidimensional Poverty Index developed by the Oxford University. West Bengal ranked 9th among 15 major states in India in terms of Human Poverty Index (HPI) measured by using National Family Health Survey-III data for the year 2005-06. Deprivation of public provisioning has been very high compared to health deprivation and deprivation in knowledge. The Headcount Ratio (HCR) of rural poverty shows a declining trend from 73.16 percent in 1973-74 to 40.8 percent in 1993-94, 31.85 percent in 1999-2000, and further to 28.6 percent in 2004-05 (West Bengal State Development Report, 2008).

Objectives

The main objectives of this paper are as follows:

- 1 To review the nature and types of micro-plots allocation programme of Government of India
- 2 To examine the extent of micro-plot allocation programme in West Bengal.
- 3 To examine how far the programme NGNB has been able to reduce the landlessness and poverty in rural areas of West Bengal.

Methodology

This study is based on secondary data. The data were collected from concerned government departments. Different published documents like journal articles, books, study reports, government reports, and web documents etc. from various sources were also used for the purpose of cross-references and analysis. Author's own field observation has also been taken into account for understanding the use of such land by the receivers of micro-plot in the area.

Micro-plots: The Concept

'Micro-plots' are defined as 'plots of land comprising one acre or less than include or are located near the household's house' (Mitchel, R., Hanstad, T. and Nielson, R., 2009). In many development literatures, micro-plots are also referred as 'home gardens', 'kitchen gardens', 'house-and-garden plots' and 'homestead plots'. Intensive gardening and other productive use of micro-plots have developed independently in natural course in developing countries like India, Indonesia, tropical Pacific islands, Caribbean and various parts of tropical Latin America and Africa. When a micro-plot is optimum in size and suitable to erect basic shelter and engage in vegetable gardening, trees cultivation, tending small scale livestock cultivation, home-based business, and other income generating activities, these small plots immediately diversify livelihood strategies and provide a cushion for the most vulnerable populations against economic and environmental shocks. Such micro-plots can offer multiple benefits to a poor family including enhancing family nutrition, increasing family income, providing physical security, serving as a vehicle for generating wealth, and securing the family's status within the community (Mitchel, R., Hanstad, T. and Nielson, R., 2009).

Micro-plot has several common characteristics across the geographies as it includes household's residence or are located nearby the residence, contains a garden and are used for keeping poultry and other livestock. Garden again containing high diversity of plants, production on the micro-plot is typically supplemental to rather than the primary source of family income or consumption, the area is typically protected by fencing reducing the risk of crop damage from animals or loss of assets to theft, micro-plot is a support for a poor family for entering into economic activities at any level as it requires very small economic resources (Brownrigg, 1985; Vasey, 1985; Marsh, 1998).

Emergence of Micro plot concept in Government Policies in India

The concept of micro plot or homestead plot received attention of academicians and policy makers in India in late 90s. The concept of homestead plot has been recognized by the central government as well as some state governments later on. In the Tenth Five Year Plan (2002-2007), the government stated that "access to even small pieces of land, which may not be sufficient for providing income to a family for subsistence, can significantly reduce poverty and food insecurity by providing an essential component in a diversified livelihood system." The Plan further stated that "ownership of even a small plot of land enables a family to raise its income, improve its nutritional status, have access to credit facilities and lead a more dignified life." The Eleventh Five Year Plan (2007-2012) identified the importance of micro plots for the landless households as it stated that an estimated 13-18 million families (1.3-1.8 crores) in rural India were reported to be landless, of which about 8 million (80 lakhs) lack homes of their own. Some of these persons do not have land to construct a house, while other may have small patches of land but no resources to build a hutment. The Plan also states 'the right to a roof over one's head needs to be seen as a basic human rights, along with the right to freedom from hunger and right to education. The Eleventh Five Year Plan provides the opportunity to realize this vision'. The plan also urged that all landless families with no homestead land as well as those without regularized homesteads should be allotted 10-15 cents [0.10 to 0.15 acres] of land each where in female headed families should be given priority (GoI, 2008).

Draft National Land Reforms Policy, 2013 mentions that there are about eight million rural households who do not have houses of their own. Land is an essential element of the human right to adequate housing; and that land, as a source of livelihood and security, is essential to realizing the right to live with dignity. The national policy states that Right to equal access to and ownership of a homestead of at least 10 cents would, in addition to enabling a landless and homeless family live with dignity, provide social security and social insurance. This policy document guides the state governments like this, 'States may identify all the landless and homeless households in the rural areas by conducting a thorough survey involving the gram panchayats. Land available with the Government may be distributed to the landless and homeless households at the rate of 10 cents per households. If Government land is not adequate, suitable land may be acquired. The State Governments may also take steps for developing

basic civil amenities for the homestead allotted. The provision of homestead and the amenities may be completed in a phased manner over a period of ten years in every state' (MoRD, 2013a). Government of India drafted the National Right to Homestead Bill, 2013 which was supposed to be tabled in the Parliament of India in 2013. This bill, referring to various judgements of Hon'ble Supreme Court of India, clearly states that 'a roof over one's head needs to be seen as a basic human right, and a fundamental right that guarantees dignity to an individual. The Government of India believes that a homestead of 10 cents provided to a poor homesteadless family shall help in enabling the family build a shelter and take up supplementary livelihood activities such as backyard poultry, goat-rearing, horticulture and vegetable cultivation' (MoRD, 2013b). Unfortunately, this bill has not seen the light of the day.

Micro-plots allocation in different states

Micro-plot allocation programs are distinguished from traditional methods of land tenure reform because they require only a small fraction of the amount of land compared to traditional land reforms. Some state government included allocation of micro-plots to rural landless households as post-independence land reform agenda. States have distributed land from a variety of sources, including vested ceiling surplus land, state government land and land under the control of local governments. Some land distribution programmes do not provide new land but grant current occupants enhanced rights like granting residential tenant ownership of the land they occupy, regularizing the possession of illegally occupied land etc. Some states like West Bengal and Bihar enacted separate laws for one or more of these methods but most states have incorporated provisions in their land reform laws, land revenue laws, or both. Kerala government run homestead plot allocation programme during 1970s-1980s and 2,84,203 families acquired permanent rights to their homesteads (P. S. Appu: 1996).

Later on, in 2005-06, several state governments initiated homestead plot allocation programmes which vary across states in terms of size of land, mode of implementation etc., the basic objective remaining the same. Namma Bhumi-Namma Thota (My Land My Garden) in Karnataka, Chas-O-Basobaser-Janyo-Bhumi-dan-Prakalpa (Cultivation & Dwelling Plots Allocation Scheme or CDPA) in West Bengal, Land Purchase Project Sub-component under Indira Kranthi Patham (IKP) in Andhra Pradesh and Vasundhara in Odisha are worth mentioning here. Pursuant to these laws and provisions, an estimated four million households received homestead plots across India till 2007. The plots typically have ranged in size from 0.02 acre to 0.1 acre (Hanstad, T. et al 2008).

Government of Andhra Pradesh launched Indira Kranthi Patham, a livelihood programme in 2002 which included land purchase and land allocation component in 2004. It was a beneficiary driven programme. SHG women who belong to landless category household were encouraged to purchase land in a subsidized rate. Special thrust was on Scheduled Caste and Scheduled Tribe families. The size of the land ranged from 0.5 acre to 1.0 acre. During 2004-09, IKP subsidized the purchase of

about 4540.24 acre of land by 5303 women. Out of this 5303 women 2799 (53%) belong to SC and 1979 (37%) belong to ST community (SERP, 2009). Govt. of Odisha conducted an enumeration of landless households in 2003-04 and found 2.49 lakh such families. The government launched Vasundhara scheme in 2004, which aimed at providing homestead plot of at least 0.04 acre in size per beneficiary to all the homestead less rural households in Odisha in about 3 years period. Till March 2008, more than 2.32 lakh landless families in the state benefitted from allocation of micro plots. The size of the land was increased up to 10 decimal subsequently. The government again conducted a survey in 2012 and identified 1.49 lakh homesteadless families and as on 30.04.2013 allocated homestead plots to 1.15 lakh such families. Government remained very much committed to the issue and conducted revised enumeration in 2015 again. Out of 1.03 lakh homesteadless families identified, 58,143 such families have been allocated micro-plot till 31.03.2016 (Govt. of Odisha, 2017). Similarly, Government of Karnataka launched Namma Bhumi-Namma Thota in 2005-06 to ensure that every rural household owns its own homestead plot. The programme was primarily targeted to landless agricultural labourers. The size of the plot ranged from .05 acre to 0.1 acre. Government allocated Rs.20 crore budget for purchasing land for each year and the plan was for next five years. Till 2009, the government has allocated micro-plot to more than 30,000 households (Manjunatha, H. T., 2013).

Micro-plots Allocation in West Bengal

The State has recognized as one of the progressive states in terms of effective distribution of ceiling-surplus land, having allocated 1.04 million acres of land to 2.54 million land-poor households by 2001 (Hanstad & Brown, 2001). In spite of its noteworthy attempts to reduce the land-poverty, West Bengal is the home for a large number of rural landless families. As per National Sample Survey Organization (NSSO) 66th round data 2009-10, there are around 0.55 million landless poor families in rural West Bengal. But, as per an estimate by the government of West Bengal, the number of rural landless families in the state was around 0.35 million. The Government of West Bengal launched Cultivation and Dwelling Plot Allotment (CDPA) Scheme, the homestead plot allocation program in 2006 to provide land for the poorest landless and homesteadless agricultural labourer households. The programme had the provision of allocation of 10-16 decimal of land to rural landless agricultural labourers. Till October, 2011, the state government has provided micro-plots to 6,954 rural households for making dwelling units and utilizing rest of the land for production purposes.

Introduction of 'Nijo Griha Nijo Bhumi' (NGNB) in West-Bengal

Later on, when new government came into power they renamed the programme as '*Nijo Griha, Nijo Bhumi*' (My Home My Land) or NGNB in 2011 with certain changes in the provisions of CDPA. The NGNB program is mainly implemented by the Department of Land and Land Reforms, with major roles for the Block Development

Office and Panchayati Raj Institutions (PRIs). As per the provision of the programme, government purchases land suitable for homestead development at the market price to be distributed to landless labourers, artisans and fishermen for settling them in a cluster of minimum ten families. In addition to the allotment of purchased land, there is also provision for distribution of ceiling surplus vested vacant land or regularization of encroached government vested land. The programme has recently expanded its scope of purchasing 'rayati' land from private owners which are already occupied by landless families.

NGNB and its role in addressing landlessness

Under the programme, an eligible family is provided with maximum five decimal of land for making dwelling units and utilizing rest of the land for livelihood augmentation. Women headed households from Scheduled Tribes (STs) are given first priority, women headed households from Scheduled Castes (SC), then minority communities, and finally those belonging to any other caste. Next priority is given to male-headed households in the same order with titles in joint names of wife and husband. There is a programme implementation committee at the block level, called Land Purchase and Land Distribution (LPLD) Committee to ensure certain quality aspect of land distribution. After selection of the households in order of priority, suitable land is identified, purchased and allocated to those families. Government provides support for relocation of those families in a cluster by providing basic infrastructure support through convergence with existing other government schemes and programmes. Under the convergence component of the programme, the government provides agricultural extension services for land-based livelihood development by leveraging resources from different government departments (GoWB, 2011).

In spite of the presence of Forest and Land Reforms Standing Committee at Panchayat Samiti level, the government took an alternative strategy for the formation of LPLD Committee, headed by Sub Divisional Officer, at Block level. This strategy worked well from three aspects, (1) gearing up the process of identification of suitable land for development of habitation, identification of landless poor families through Gram Panchayat level Task Force and distribution of 'patta' (land titles) to eligible poor landless families, (2) ensuring women's name in *patta*, individually or jointly with their husbands and (3) making the process transparent keeping aside the political biasness. The present government showed the political commitment for allocation of micro-plots in a very time bound manner. As a result, 2,19,373 absolute landless poor families have been allocated land within a very short time span (November, 2011 to March, 2017). Government conducted a survey for enumeration of absolute landless families on its own in 2011 and identified 0.29 million odd such families. So, around 75 percent of the identified eligible landless poor families received *patta* for micro-plots within this time period. District wise achievement of government in micro-plot allocation along with eligible identified landless families is shown below (Table 2).

Table 2: District wise distribution of patta under NGNB Scheme in West Bengal

Sl No.	Districts	No. of eligible landless families identified (in 2011)	Total patta distributed since 2011
1	Bankura	6335	6000
2	Bardhaman	37870	24057
3	Birhum	15069	14970
4	Darjeeling	16530	11058
5	Howrah	7670	3830
6	Hugli	17194	7548
7	Jalpaiguri	11400	11400
8	Coochbehar	12304	9568
9	Malda	22453	12082
10	Paschim Medinipur	24540	20207
11	Purba Medinipur	9762	9103
12	Murshadabad	10593	8053
13	Nadia	20778	18786
14	Purulia	11179	8822
15	North 24 Parganas	13294	6669
16	South 24 Parganas	31629	25090
17	Dakshin Dinajpur	5266	5266
18	Uttar Dinajpur	10370	10261
19	Alipurduar	6932	6603
	TOTAL	2,91,168	2,19,373

Source: Land & Land Reforms Department, Government of West Bengal

Around 25 percent identified eligible families are still yet to receive the *patta* from the government. Most of them (64,954) are living in banned zones and are no more considered as eligible. Rests of the families (6,841) are yet to be covered under the Scheme. Strong monitoring mechanism developed by the government helped ensure micro-plot allocation to such a good number of eligible landless families within this stipulated time period. Year wise allocation of micro-plots under NGNB is shown below (Figure 1).

Since the West Bengal is densely populated, there is huge land crunch in the state. Considering this reality, though CDPA Programme has not been able to address rural landlessness in terms of quantity but, it has helped beneficiary families to ensure rise in level of income, food security in the family and empowering them. On the other hand, NGNB Programme has been able to cover huge number of landless families including regularization of occupants of government vested lands. It has instilled confidence among landless families by rooting out fear of eviction, thus ensuring secured tenure. NGNB Programme has played crucial role in addressing tribal landlessness spread across West Midnapore, Purulia, Bankura, Jalpaiguri and Bardhaman districts. Apart from that, a huge number of Scheduled Caste families, landlessness among them being the matter of concern, have been covered by the programme. Above all, in 83 percent

cases (an estimated) women’s name in the land titles either individually or jointly with their husbands has been ensured by the programme which can be considered as major success in addressing gender dimension of the issue.

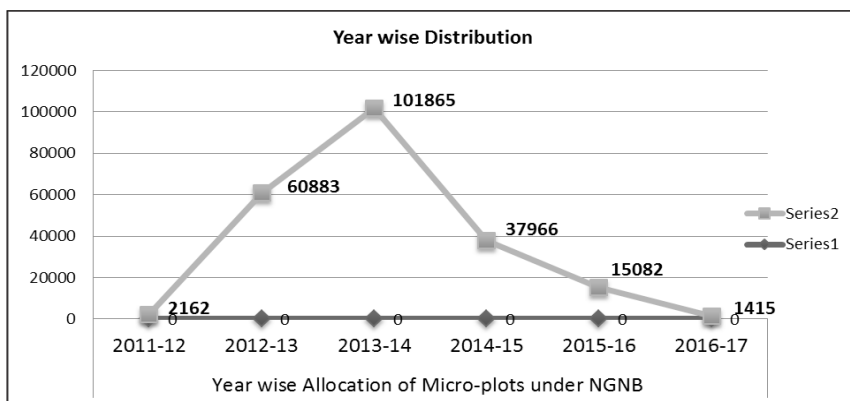


Figure 1: Year wise Allocation of Micro-plots in West Bengal

Source: Land & Land Reforms Department, Government of West Bengal Outcomes of the micro-plot allocation programme

As a measure of post-land allocation convergence support, enshrined in the NGNB Programme implementation guideline, micro-plot recipient families have received support for development of lands, internal roads, drinking water, electricity connection etc. in at least 61 percent high convergence sites where families have been settled in purchased land in the form of a cluster. Field evidences also reflect that around 27 percent regularized families have received at least 1-2 convergence supports (Landesa, 2016). Getting land titles in the hand enabled those families for the entitlement of other government supports like housing, toilets, institutional credits, livestock supports etc. Landesa working in partnership with the state government has been promoting site specific convergence model and facilitating convergence support in particular sites by leveraging support from other government schemes and programmes. The organization has also been facilitating the government to replicate the model in a scalable manner in other potential places. The organization is also promoting agricultural extension support to specific sites for livelihood augmentation of micro-plot recipient families. There are many examples where beneficiary families have received training and other inputs from the government and started income generating activities to come out of poverty. Though comprehensive data is not available to evaluate the impact of the programme as a whole, but evidences and case stories available from the fields are enough to substantiate the fact (Author’s Field Notes, 2017).

Impact of the Micro-plot Allocation Programme

The programme has brought about certain qualitative changes in the lives of the poor landless families. Field evidences show that a piece of land has enhanced confidence

and self-esteem to take planned steps towards a life with dignity and prosperity. It has diversified livelihood options and enhanced income of those families. There is a security that the families are staying at their own land. Micro-plot recipient families reported that after receiving the land, they have the freedom to use their land as per their own wish; not controlled by the landowners. Since there is no threat of eviction from the landowner, families are free to find their work and earn as per their own capacity. Families have a better negotiation power at the wage labor market. By increased income in the family, they have been able to create new assets for the use of productive purposes. Families have been able to give emphasis of sending their children to schools, capacity to save money for the future leading to prosperity.

International Food Policy Research Institute (IFPRI) in partnership with Landesa conducted a study in the state in 2012 to evaluate the impact of micro-plot allocation programme on women and their families and its contribution to food security. The key findings of the study indicate that including women's names on *patta* matters – it significantly contributes to women's perceptions of increased tenure security and to women's involvement in decision making in the family regarding food consumption patterns and agricultural productions (what to produce and what extent). Women's report on tenure security outcomes improves up to 10 percent when their names are included on the land documents. When women's name are on the *patta*, women are 14 percent, 15 percent, and 13 percent more likely to participate in decisions about taking loans, purchasing productive assets, and food purchasing and consumption, respectively (Santos et al, 2014).

Finally, women with *patta* in their names have say over a larger share of their households' land when it comes to decisions on how to use the land, what to grow on it, and whether or not to sell the produce from that. Moreover, the results of this study reflect that if their households are micro-plot beneficiaries, women are more likely to be involved in important food and agriculture decisions.

Case Study No: I

Name: Moyna Bauri,

Age 56 years,

Vill - Karrah, G.P. - Chhatna -I, Block – Chhatna,

District - Bankura

Narratives: Moyna Bauri, aged 56 year old widow, belonging to scheduled caste, received micro-plot of five decimal from government under '*Nijo-Griha-Nijo-Bhumi*' Scheme in December, 2012. Before that, she had to live in her father's land with her two daughters when her husband died at a very early age. That small piece of land had many claimants including her brothers. She worked as daily wage worker in other people's land and had to struggle a lot to run her family and make arrangements for all her daughters. After having a piece of land she feels proud and happy as this piece

of land is in her own name. And her happiness multiplied manifolds when on this piece of land she received a house under government's Indira Awaas Yojana scheme and a sanitary toilet under MGNREGS and Nirmal Bharat Abhiyan schemes. 'When something belongs to you,' said Moyna, 'you can use it the way you want to'. Moyna has organised her small patch of land to erect a little elevated tulusi platform for prayer, a kitchen garden area, a kitchen shed with thatch, tin and bamboo and secured her land with a fence. She has been raising vegetables like tomato, chilly, bitter gourd, flat beans, papaya plant and even fruit trees like mango, guava and pomegranate in her garden. Moyna also raised 13 chickens, six of which are laying eggs. She has sold off two goats couple of weeks back out of her 10 goats she received from government last year. Moyna has no fix work. Sometimes during the season she works in the field to sow paddy and harvest it. Other times she separates husk from paddy and earn a couple of kilos of rice or some money. 'Earlier we used to buy vegetables,' added Moyna, 'now we can use vegetables from our garden for around 10 days a month.' This saves money to buy vegetables for that number of days. Moyna is saving her eggs for hatching. She has also preserved some lentil seeds, which she plans to sow in monsoon, 'and some carrots in May,' she further added. Her main source of earning remained the same as daily wage labourer but the situation changed. Nobody can take the opportunity of her vulnerability and she can bargain for wage rate. Her additional annual income from micro-plot may be enumerated as follows.

Additional annual income from the micro-plot:

Source (s) of income (in Rs.)	Before Patta (in Rs.)	After Patta (in Rs.)
Vegetable cultivation in the kitchen garden round the year*	Not applicable	1200.00
No. of poultry birds (chicks-13)**	Not applicable	2700.00
Number of small/medium livestock (goat-10 nos.)***	Not applicable	3500.00
Total		7400.00

Note: *Vegetable produced for own consumption and surplus sale @ 10 days per month x 12 months = 120 days x Rs. 10.00 per day = Rs. 1200.00

** Six chicks out of thirteen chicks laying eggs for 90 days. Total eggs produced = 6 x 90 = 540 numbers. Rate of an egg @ Rs. 5.00 (average). Total income = Rs. 5 x 540 = Rs. 2700.00

*** Rearing 10 goats. Sold two goats on Rs. 3500.00 last year.

Annual accrued benefit out of the micro-plot is around Rs. 8000.00 excluding the recurring expenditure of annual house repairing, which is now used in household expenditure.

Case Study No: 2

Name: Suradhani

Age:24

Vill. Majramura, G.P – Gourangdih, Block – Kashipur,
District - Purulia

Narratives: Suradhani, aged 24, belongs to scheduled caste community received patta under NGNB along with her husband Akanda Chitrakar (28) for a piece of five decimal land in September, 2012 followed by housing allocation through the ‘Geetanjali’ scheme. Like Suradhani and Akanda 52 others of this village have received the same benefits. Before shifting to this micro-plot, they used to live in a tiny mud and thatch house built on his uncle’s land. ‘My uncle could have asked me to vacate his land any moment,’ reasoned Akanda, ‘so we never had the confidence to think in long terms.’ ‘No one can take this land away from us,’ added his wife Suradhani, ‘we can cultivate vegetables, eat them, sell them,’

Akanda earns his living by painting pictures and exhibiting it door to door. The couple has one cow, five sheep and three chickens; one of which is laying eggs. Akanda created these assets by raising a few chicken initially. He sold off the chickens to buy sheep, which gave birth to some more. He then sold a few sheep to purchase a cow. Suradhani takes out time from her domestic chores for using her agri-extension knowledge she received from government through training for vegetable cultivation in arid soil of Purulia. She has planted a few lentils, a papaya and a mango tree. ‘In winter I had also planted a few potatoes, cauliflowers and tomatoes,’ she reminded. The papaya tree is already yielding fruits. ‘Earlier we had no place, no knowledge and consequently no motivation to plant these,’ said Suradhani as she broke off some dead leaves from her papaya tree. She has been saving money regularly in her Self Help Group she joined two years back. She is sending her two children, Akash and Kabita, to ICDS centre in their colony where they get nutritious food.

Additional annual income from the micro-plot:

Source (s) of income (in Rs.)	Before Patta (in Rs.)	After Patta (in Rs.)
Vegetable cultivation in the kitchen garden round the year*	Not applicable	1800.00
No. of poultry birds (chicks- 3 & duck – 2nos.)**	Three chicks	900.00
Number of small/medium livestock (Sheep-7, calf-1, etc.)***	Not applicable	6400.00
Total		9100.00

Note: *Vegetable produced for own consumption and surplus sale @ 15 days per month x 12 months = 180 days x Rs. 10.00 per day = Rs. 1800.00

** One chick and one duck are laying eggs for 90 days. Total eggs produced = 2 x 90 = 180 numbers. Rate of an egg @ Rs. 5.00 (average). Total income = Rs. 5 x 180 = Rs. 900.00

*** Sold four sheep on 6400.00 last year.

Case Study No: 3

Name: Jerima Ekka

Age: 33

Vill. Keshardoba, G.P. – Kharibari, Block – Kharibari,

District - Darjeeling

Narratives: Jerima Ekka, agd 33 belongs to Scheduled Tribe, received land titles under NGNB scheme in 2013 for four decimal of land. Jerima lives with her two sons and her husband Deepak, who is a daily wage earner. “It’s difficult to make both ends meet with the meagre income. The land however is a big relief” Jerima said.

Jermia received training and agricultural inputs from government along with 42 other families and she has been raising tomato, chilly, gourd and bitter gourd in her small patch of land. The produce is kept for consumption in the family. The bargaining power they achieved for having a piece of land helped the family earn more from labour market. Vegetable garden has helped to some extent to save money. Utilizing the capital, they cultivated maize by leasing in land informally because they think it is profitable. ‘It can be sold at Rs. 9 per kg,’ Jerima said and she hopes to get almost a 1,000 kgs at harvest.

Like many other patta holders, Jerima also received 20 chickens from the ARD Department along with chicken feed. These chicken sell at a price of more than Rs. 250 per kilogram and eggs can cost up to Rs. 9 in the market. ‘I sold a few chickens and few more died,’ she said trying to locate the remaining four chickens. Jerima also has a pig. ‘Actually I had two,’ she corrected, ‘I sold one last November for Rs. 6,000.’

Additional annual income from the micro-plot:

Source (s) of income (in Rs.)	Before Patta (in Rs.)	After Patta (in Rs.)
Vegetable cultivation in the kitchen garden round the year*	Not applicable	1800.00
Selling poultry birds and eggs (chicks- 4)**	Three chicks	2430.00
Number of small/medium livestock (Pig-1)***	Not applicable	6000.00
Total		10,230.00

Note: *Vegetable produced for own consumption and surplus sale @ 15 days per month x 12 months = 180 days x Rs. 10.00 per day = Rs. 1800.00

** Three chick laying eggs for 90 days. Total eggs produced = 3 x 90 = 270 numbers. Rate of an egg @ Rs. 9.00 (average). Total income = Rs. 9 x 270 = Rs. 2430.00

*** Sold one pig on 6000.00 last year.

Case Study No: 4

Name: Amala Sarkar

Age: 57

Village – Paradubi, G.P. – Angarkata Paradubi, Block: Mathabhanga-II,

Dist. – Coochbehar

Naratives: Amala Sarkar. Aged 57 years belongs to scheduled caste community. His wife Late Fani Sarkar received patta of five decimal of land under NGNB in 2012. After having land title she received housing support under Gitanjali, toilet under MGNREGA and MNB, saplings of banana and betel nut under Individual Benefit Scheme of MGNREGA, support for constructing poultry shed under MGNREGA, chicks (50) from Animal Resource Development Department along with training on chick rearing and feeds. She also received lemon, papaya, neem and toher sapling from CADC. She married off her daughters, Fulmala and Madhumala 15 and 12 years back respectively when her husband was alive. Fani Sarkar died around 10 years back. “I am not alone, as I have been residing here with neighbours and feeling more closed with my SHG members” she said. She has been saving money regularly with SHG. She has recently started earning from poultry as marketing is not a problem (local sale). Poultry rearing in her own piece of land has changed her life as she does not have look for daily wage. “My house has made my life secured and savings from my earning is going to protect my future” she expressed proudly.

Case Study No: 5

Name(s): Sandhya Baid, age 24 and Bimal Baid, age 28

Village – Churabhandar, G.P. - Churabhandar, Block – Maynaguri,

District – Jalpaiguri

Naratives: Sandhya Baid, aged 24 years and Bimal Baid (28), belong to SC community, received patta of five decimal of land under NGNB in 2014 where they had been for a long time but without any paper. There was constant fear of eviction and also few middlemen took advantage of their vulnerability. Now they feel secured along with 25 other patta holders at Baidpara. Their house is surrounded by a number of trees, some fruit bearing and some with high wood value. There are around 6 big jackfruit trees, a few mango trees along with guava and lemon, a small bamboo grove and in addition around 3-4 trees which could be sold for wood at high value. She has even planted pumpkin in her backyard. Bimal works as a daily wage earner in the field.

This land title enabled the household to receive other support from government like electricity connection, sanitary toilet etc. Sandhya received training on kitchen gardening and backyard animal rearing along with saplings of lemon and guava. She also received training on piggery along with four pigs from government in January, 2017. She has been taking care of these animals at home. ‘I had to make this place for them, so that they are safe,’ said Sandhya showing a small fenced area which she and her husband constructed for the piglets. ‘Now I need to think of putting a shed over

this,' she added pointing to the open space above. 'Pigs are very profitable,' she said, 'a full grown pig can sell for up to Rs. 8,000.' With 4 pigs presently in her possession Sandhya dreams of a handsome earning in the coming days. And she does not have to worry about the market either; the buyers come to the house and pay instant money to buy the pigs.

Case Study No: 6

Name: Muni Roy

Age: 50

Village – Satvendi, G.P. – Ramsai, Block – Maynaguri,

Dist. – Jalpaiguri

Narratives: Muni Roy, aged 50 belongs to scheduled castes, and her family were living in a piece of vested land and were considered as unauthorized occupant at Purba Satvendi village, Jalpaiguri. Seasonal engagement at tea garden as daily labour and cultivation at occupied vested land was not enough to survive for the family. They have tried to open a poultry firm at their land to augment their family income and better hope of livelihood. They could not go ahead because of insufficient capital.

She received homestead plot of 5 decimal of land. This land title enabled her to take credit from nationalized bank amounting of Rs 25,000.00 and invest Rs. 15,000.00 from her own savings and start poultry at their patta land with supervision and support from a poultry firm business chain.

Loan has been taken by her name. It made her feel proud. It has inspired her to have ownership in this micro-enterprise. Now, she takes her own decision on when to purchase chick, feeds and when to sell. Future is waiting to instill bargaining power within her to extract more income from the company.

Case Study – 7

Name: Marjina Bibi

Age: 34

Village - Khirotta, G.P. – Hazratpur, Block – Tapan,

Dist. – Dakshin Dinajpur

Narratives: Marjina Bibi, aged 34 and her husband Rafikul Sarkar who belong to religious minority group, received patta of four decimal of land under NGNB in 2013. Convergence component under the programme facilitated the housejold to receive other support like housing under Gitanjali, Sanitary toilet under MNB & MGNREGA, electricity, drinking water etc. She like other 60 patta holder women in the village received some additional support from government for augmentation of their livelihood. Government provided them training as they formed women SHG with new neighbours in the shifted government allocated land. Training followed by inputs (chicks, vaccination, feed) helped her develop full-fledged backyard poultry of 20 chickens. Her husband work as daily wage labour in the field and she takes care of

the poultry unit apart from her regular job of taking care of two daughters and one son. Last year she earned Rs.5,500.00 and this year she is expecting to earn more. Income from her husband as daily wage labourer is not sufficient for running the family. Out of her additional income, she supports her family to live a decent life, nutritional support for children. She has been saving a portion from her income so that she can continue education for her children in future.

Case Study – 8

Name: Rina Sarkar

Age: 27

Village – Ghatishal, G.P. – Malgaon, Block – Kaliyaganj,

Dist. – Uttar Dinajpur

Narratives: Rina Sarkar, aged 27 years and her husband Madhab Sarkar (31), SC, received patta of five decimal of land under NGNB which was under their possession without any legal recognition. Government land allocation programme has enabled this family to secure their tenure through land titles and record of rights. Madhab is migrated to Delhi and comes back home twice or thrice in a year. Rina takes care of her daughter who is four year old. She does not depend on her husband's income. She has raised homestead garden after receiving training and seed and saplings from government. She has been growing pumpkin, bittergourd, lemon, papaya, brinjal, ladies finger etc. round the year. Produce from the garden is sufficient for the family to meet the requirement of vegetables. It saves money otherwise she had to purchase from the market. Even the variations of vegetables meet the dietary nutritional demand of the family. Apart from that, she takes care of five goats and sold one goad last month at the price of Rs.7,000.00. She has joined SHG and also has been saving money in bank account separately as she wants to build her own dream home and send her daughter to school.

Case Study – 9

Name: Samita Mallick

Age: 38

Vill.- Sankoa, G.P. – Sankoa, Block – Kharagpur-II,

Dist. – Paschim Medinipur

Narratives: Samita Mallick, aged 38 years and Kalipada Mallick, aged 43 years received land titles in joint name under NGNB in 2013. They had been residing at the same place without any legal rights. NGNB programme has provided this Lodha (ST) family secure tenure of five decimal of land. Since they did not have legal rights before that, they could not avail the benefits of other development schemes. After having patta, they received housing support under IAY and agri-extension training from Agriculture Dept. It has changed their life successively. Samita joined women SHG and started saving money. After receiving training from the government she started backyard poultry rearing taking loan from SHG. Both of them work as daily

wage labourers but Samita takes out some time to take care of eight poultry and three goats and two cows. Recently, they have invested some money for leasing in 25 Katha of land informally for boro rice cultivation. Last year they earned Rs.3,000.00 from rice. They have sent their elder son to Ashram School Hostel who reads in class VIII and younger son has been attending class VI from home.

Case Study – 10

Name: Srimati Nayek

Age: 30

Vill.- Sankoa, G.P. – Sankoa, Block – Kharagpur-II,

Dist. – Paschim Medinipur

Narratives: Srimati Nayek, aged 30 years and Nirmal Nayek, aged 36 belong to Lodha tribes. They both are daily wage earners and usually work in the agricultural fields. They used to possess a piece of government vested land without any legal document in hand. Government has provided them with patta and record of rights in 2013 under NGNB programme and now they have secured tenure of that five decimal of land. Land allocation was followed by housing benefit. Srimati received training on animal husbandry from government followed by 10 chicks along with feed and vaccination. This kind of support from the government has boosted her motivation level. Now, she has been taking care of poultry apart from two cows which they were usually having earlier. Six of them are laying eggs and she has been saving money regularly in the SHG she joined two years back. Out of her four children, three are going to school while the little son is receiving nutritional support from ICDS centre. Srimati is looking for a brighter future for her children.

Conclusion

The NGNB programme holds great promise for helping the poorest homesteadless and landless rural households to obtain a small plot of land by which they can construct a modest house, plant trees and vegetables, and raise poultry and small livestock. A homestead less family that obtains land for a house gains important protection against eviction. And if the family can plan the optimal use of house-cum-garden by planting trees and keeping animals, the family is able thereby to supplement the family diet and perhaps supplement the family income from sale of garden production.

Practically, there is still large number of landless families in the state of West Bengal for which a more comprehensive strategy needs to be developed for including those families under these kinds of programmes. Reducing political biasness during enumeration and selection of landless families, adopting more pro-active service delivery mechanism, building the capacities of government functionaries and sensitizing them for working in a gender responsive manner can make the programme more effective. In spite of all these, nobody can deny that the programme has played an instrumental role in addressing landlessness, the root cause of rural poverty.

Taking the lessons from the micro-plot allocation programme in West Bengal, similar programmes may be designed for implementation in other states considering the socio-economic, political and cultural context of the states. Apart from West Bengal, building on the experiences from other states, central government should go ahead to pass the draft National Rights to Homestead Bill, 2013. It can set a new milestone in the history of development in India addressing the issues of landlessness. It is also noteworthy to mention that the government should adopt a nationwide holistic approach for implementation of other development programmes along with land allocation programme in a convergent manner to address the multi-dimensional aspects of poverty.

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- PACS: Poorest Area Civil Society Programme worked from 2009 – 2016 in seven of India's poorest States to help socially excluded communities to claim their rights and entitlements more effectively.*

Role of Library in Education of Mental Disorder Student : A Study on West Bengal

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Abstract

According to the World Health Organization (WHO) mental disorder is the result of a disease process. When a person is diagnosed with a form of dementia, e.g., Alzheimer's disease or a related disorder, he/she exhibits clear symptoms of impaired memory, thinking processes, and behavior. Early signs include problems in remembering recent events and difficulty performing routine and familiar tasks. Mental disorder person will gradually lose his or her memory, the personality may undergo profound changes, physical limitations develop and behave abnormal comparatively. In spite of such mental and physical limitations, a person with dementia can benefit greatly from many types of library services.

The objectives of this paper are to discuss which library services and how a library may help in education of mental disorder student to become a mentally able student. Without this to know how librarians prepared themselves to provide services for mental disorder student. It is find out from this study that there are four types of users use the library collections. They are - Disable children, Able children, Parents and Teachers. Personal service is the most important service for this type of user among all types of library services.

Keywords: Government Institute, Library services, Library materials, Library staff, Mental disorder, Mental illness, NGO.

Introduction

During last few years number of mental disorder persons are increasing rapidly, which we can know from different sources in our society. If we search the causes, then we may find so many reasons for this problem. Many countries have paid attention on this matter. Consequently many rehabilitation centre or Institutions or Department in association with private support have been implemented.

Mental disorder person will gradually lose his or her memory, the personality may undergo profound changes, physical limitations develop and behave abnormal comparatively. In spite of such mental and physical limitations, a person with dementia can be benefited greatly from many types of library services.

In this paper I want to discuss which materials and how library services may help to mental disorder student to improve them from disabled to able person.

Objectives

The objectives of this paper are as follows:

- To know the role of libraries in education of Mental disorder student;
- To know the library materials which may use by the Mental disorder student;
- To know the library services which may help the Mental disorder student; and
- To know how librarians prepared themselves to provide services for Mental disorder student.

Methodology

Data collection:

For data collection I have consulted different types of information sources like documentary sources, Institutional sources and human sources.

Documentary sources like different journals, books, etc. Without this electronic sources like different websites also have been used for this purpose.

Institutional sources like different libraries, mental health care institutions, etc. have been used. There exist seven institutions under the Government control in West Bengal. There exist also some non-governmental institutions. Four Government Institutions have been surveyed with the help of a questionnaire for this study.

Finally, different experts like Doctors, Librarians have been consulted for this study.

Analysis:

After collection of data analysis have been made with the help of Tables and diagrams and on the basis of analysis conclusion has been drawn.

Literature Review

Sambo, A. S., Rabi, N. and Shaba, A. A. (2016) have made a study on Physically Challenged Students and their Information needs Ilorin, Nigeria. This study is aimed at exploring the information needs of the physically challenged students in Kwara State Library, Ilorin, Nigeria. Findings showed that 76% were male while 24% were female. Findings also reveal that the information needs of physically challenged students covered medical (94%), academic (82%), security (78%), news/current awareness, training/conference, seminar respectively (76%), transport/travel (53%), sport (55%), politics (18%), and (4%) among others. The study revealed that (82%) used the library occasionally while (18%) regularly. The study showed that (65%) found the information resources inadequate in meeting their needs. Problems confronting information needs of the physically challenged include, furniture in the library are not good for relaxing (100%), lack of infrastructural facility (82%), lack of information materials (76%), lack of architectural design (73%), staff attitude is discouraging (67%), library environment is not accommodating (61%), and others (41%).

According to Lawal-Solarin (2012), carry out a survey of library and information services to physically challenged students in academic libraries in Ogun State. Noted that 21 (87.5%) of the respondents use the library occasionally while the remaining 3 (12.5%) respondents use it regularly. From the foregoing, it is evident that persons with disabilities need information and therefore it is essential that providers and producers of information for persons with disabilities in Nigeria should establish their reading interest and information needs for improved service provision. This information needs will help these people with disabilities function and essentially improve their knowledge and well-being.

Okoli (2010), observed horrors of architectural buildings which have discouraged many challenged persons from having education.

A lot of studies have been conducted on the information needs of the physically challenged in the Western world. Okoye (2010) submitted that in situations where a challenged person is not able to cope, it results in stereotyping, derogatory labelling and depersonalization.

Adebowale (2009) in a study investigating the nearness of public places like schools, banks, hospitals, recreation sports, offices etc. from the residence of the physically challenged, notes that on the average about 40% of the physically challenged are not satisfied with the distance they have to cover.

Adesokan (2003) noted that most challenged persons suffer rejection, isolation, and maltreatment from other members of the society. He opined that challenged persons are shown negative attitudes and in the Traditional Yoruba society terms such as Abirun meaning handicap, Didinrin meaning imbecile, Abami meaning strange person, and Alawoku meaning mentally imbalance are used to refer to them. They are seen as objects of ridicule, shame and pity.

Scope and Limitations

In this paper I have tried to discuss about only mental disorder student and role of library in West Bengal. Without this it is trying to discuss the process of library services, training of librarian for provide services to this special types of users. Another physically challenged student have not included in this study.

What is Mental Disorder or dementia?

According to the World Health Organization (WHO) mental disorder is the result of a disease process. When a person is diagnosed with a form of dementia, e.g., Alzheimer's disease or a related disorder, he/she exhibits clear symptoms of impaired memory, thinking processes, and behavior. Early signs include problems in remembering recent events and difficulty performing routine and familiar tasks. The person may also experience confusion, personality change, behavior change, impaired judgement, difficulties finding words, finishing thoughts, or following directions.

Types of Mental Disabilities

Learning disability: It is a disorder which affects the basic psychological processes of understanding or using written or spoken language. It can damage the ability to speak, read, write, listen, spell or do mathematical calculations. Conditions such as brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia are examples of learning disabilities.

Mental Illnesses: These encompass Schizophrenia, anxiety disorders and depressive disorders. Schizophrenia is a highly complex disorder which is caused due to a series of chemical changes in the brain. It usually occurs between the age groups of 15-25 years and is characterized by fragmented thoughts followed by an inability to process information. The condition affects the individual's family, professional and social life making him incapable of functioning normally. Surprisingly their intelligence is not affected and many of them are capable of leading partially normal life if they follow their regular pattern of medication and rehabilitation programmes such as those offered by half-way-homes.

Mental Retardation: It is distinguished from mental illness because of its presence before birth. A condition characterized by abnormal brain development in the womb not corresponding with normal physical growth. Their learning ability, reasoning power and judgment all develop at a slower pace. Accidents, poisoning, or illness after birth can be a cause for mental retardation. Many of the mentally retarded people are able to participate in activities with non-disabled people given an appropriate adaptation and support. Others may require a long term structured programme. With adequate training and education such persons can be more self reliant citizens. They can be found holding non-skilled or semi skilled jobs and can be made to effectively integrate into the social structure.

Statistics of mentally retarded persons in India!

Prior to the International year of the Disabled (1981) in India, there was no nationwide statistics available regarding the incidence of mental retardation. Of course, some small scale surveys were conducted which give the percentage of incidence of mental retardation ranging from 0.7 to 4 per cent in India. However, recently survey made during the International year of the Disabled (1981) in India, indicated that approximately 3 per cent of the population are mentally retarded. Among these 3 per cent, one per cent comes under the severely retarded category. However, when the incidence of cases of mental retardation recorded in all hospitals of Madras was taken into account, it was found to be 3 per cent of the total cases recorded. Mental retardation accounts for 50 to 75 per cent of the work load of the 54 child guidance centres in India. The adult retarded constitute about 1 to 3 per cent of the total adult population. Mental sub normality is therefore a problem of the childhood and is essentially a problem of the school going children.

The National Sample Survey Organisation (NSSO- 1991) revealed that 1.9% of the country's total population was affected with physical and sensory disabilities and surveys conducted by various research organizations indicate that about 3% are mentally disabled. Disabled people in India have been subjected to direct and indirect discrimination for centuries.

In India, though there is no proper record of the number of institutes serving the mentally retarded there are about 120 such out of which less than half are residential. Apart from these schools there are a number of day care institutions run by private persons.

Needs of mental disorder student

Individuals with disability have varying degrees of need. Their needs are just like those who are not disabled. They often strive hard for a high quality of life as other normal individuals. Unfortunately many a times people fail to understand that disability in simple terms is nothing but a natural part of the human life. Often they are shrouded by misconceptions such as, that the disabled are forced to lead a poor quality of life. But the fact is, a person with disability with all limitations can carry out normal activities of living if they have an easy access to community based long term services such as an attendant care, accesses to buildings, public transportation, etc. Even the severely disabled, when provided with quality health care services and the necessary equipments are able to carry on the tasks similar to those done by the non-disabled. One cannot but feel disturbed that in spite of having the capacity they have to continue remaining disabled because of lack of a strong community based support system. A disabled who is in the prime of his youth, demands an equal opportunity and must therefore be offered a range of assistance such as examination support-specialized equipments, library assistance, note taking in class, reader sign interpreters and parking provisions etc. Only when they have a strong support such as the ones mentioned above they can hope to lead normal lives.

Library Staff training Programme

In order to provide efficient and effective library services for the disabled, Libraries need managers who are up to date and are aware of the latest developments that are likely to have profound effect on their services. It is their collective responsibility to promote quality services by gaining a good insight into the problems faced by the disabled. Library staff must recognize that some disabled persons have no control over their behavior and must be competent enough to handle difficult situations. They must be prepared to give individual attention so as to understand their strongest communication mode.

Effective library services depend largely on the continuous upgrading of staff through training on a regular basis. It could be fortnightly, monthly, or seasonal training. Special training requirements can be determined by the Library management and training Officers depending upon the skills and training needs of the individuals. Once the need has been assessed the method of training can be planned.

Role of library in education of mental disorder students

Mental disorder people are not mental patient. They can overcome from the difficulties and taste the essence of life with the proper help and suitable environment. That is why libraries have taken the responsibility to direct them in a proper way through their friendly help. If we can able to liberate in front of the general people then our friends will find out a new way to live their life with lots of hope. So the librarian should go ahead as a teacher with latest information to help the parents.

User Types: This type of library has minimum no of user. However, the mental disorder students are not the only user, their parents and teacher also the user of this library.

System: The main user of this library should be the students who are unable to gather information from book and document. So, their parents and teachers may always help them. Beside this, the library also has books, educational magazine which help them to back to the normal life style. As they are unable to follow the general rules of library, they are allowed to use the library with some basic rules which are easy to follow.

Services: Library should take some essential steps to help these friends of our society. To push them towards the progress of life and let them know about the wealth of library, they can provide them different types of services: Reference service, Inter library loan service, extension Services, newspaper clippings, and audio-visual cum digital or online services.

Analysis

It is true that recently West Bengal government think about the mental retardation people however it is not possible to give them high quality services, till now. To help them some NGO are working. Governmental Institutions which been selected for survey are as follows:

MANOVIKAS KENDRA

Address: 482, Madudah, Plot No. 1-24, Sec – J,
Eastern Metropolitan Bypass, Kolkata - 700107.

NIMH RC (KOLKATA)

Address: NIOH campus, B.T. Road, Bonhoogly, Kolkata – 700050.

ALAKENDU BODH NIKETAN RESIDENTAIL (ABNR)

Address: 1/4/1, C.I.T Scheme, VII – M, VIP Road,
Kankurgachi, Kolkata – 700054.

SHELTER, Society for Help Education Love

(Training & employment for the Retarded)

Address: 3, Kalbati Lane, Bhadreswar, Hooghly, West Bengal - 712124

Total number of Library User :

In each Institute every student is a library user of that Institute.

Table 1: Total number of Library User

Name of Institute	Number of users	% among Total
ABNR	225	16.60
Manovikas Kendra	275	20.30
NIMH RC	650	47.97
SHELTER	205	15.13
Total	1355	100

From Table 1 we can say that maximum number of library users (47.97%) exist in NIMH RC library. So we can say that NIMH RC library resources are maximum used by their member. It can also say that minimum number of users (15.13%) belongs to SHELTER.

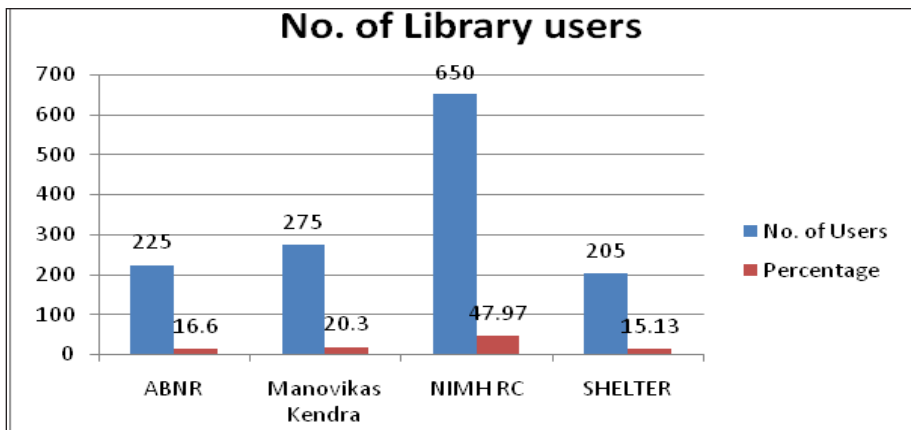


Diagram 1: Total number of Library User

Library Collections

A library collection means documentary sources exist in that library which includes books and non-book materials including audiovisual materials. We have obtained only the record of books. Without this there exist some governmental publications including periodicals.

Table 2: Library Collections

Name of Institute	Books	Periodicals	Audio-Visual	Music systems	Others
ABNR	470	2 Newspaper	X	X	Govt. pub.
Manovikas Kendra	527	2 Newspaper	X	X	Govt. pub.
NIMH RC	1115	3 Newspaper	X	X	Govt. pub.
SHELTER	410	2 Newspaper	X	X	Govt. pub.
Total	2522	9	X	X	

Reading materials and music can help stimulate memory, as well as provide enjoyment and entertainment. Reading and listening to music, in particular, stimulate several brain functions. The popular saying *“if you don’t use it, you lose it”* has been found to be true. Calm music and meditative chants have also been shown to decrease nervousness and anxiety. Music can be used in small groups or with individuals. The music should be popular and familiar. From the above Table we noticed that there are no Audio-Visual and Music systems available in any surveyed libraries.

From the Table 2 it can say that all institutes subscribe only books and maximum numbers of books (1115) exist at NIMH RC library. There exists minimum number of books (410) in SHELTER which is very poor collection. Without this there are some Government publications also available at all libraries on related topics. Since these libraries have no collections of Journals but News Papers (both in English and Bengali languages) are available in all libraries. So users can access or read newspapers daily.

Types of Collected Books

There are some printed books are being published for specifically for mental disorder users like Audio books. Some books are common for both mental disorder and normal persons.

Table 3: Types of Collected Books

Name of Institute	Illustrated books	Books for reading aloud	Thematic books for the staff	Local history	Audio books
ABNR	√	√	√	√	X
Manovikas Kendra	√	√	√	√	X
NIMH RC	√	√	√	√	X
SHELTER	√	√	√	√	X

Since there are so many types of books are being published for both mental disorder and normal persons but from Table 3 we can say that most important type of books i.e. Audio books are not available in any of the surveyed libraries. Other types i.e. Illustrated books, Books for reading aloud, Thematic books for the staff and Local history books are available in all libraries.

Types of User

The users of this type of libraries are not normal, they are different. They are furnished in the following Table.

Table 4: Types of User

Name of Institute	Disable children	Able children	Parents	Teachers
ABNR	√	√	X	√
Manovikas Kendra	√	√	√	√
NIMH RC	√	X	√	√
SHELTER	√	√	√	√

It is depicted from the above table that there are four types of users use the library collections. They are - Disable children, able children, Parents and Teachers. It can say that only Manovikas Kendra and SHELTER have all types of users. But in ABNR parents are not member of the library and in NIMH RC library able children are not allowed for library use.

Library staff

Library staff providing services to persons with dementia must be knowledgeable of dementia related diseases and how these patrons may react. There is a large amount of literature available and it is strongly recommended that library staff consult with professionals in the field, participate in relevant courses and conferences and, if possible, spend some time with a mentor observing dementia patients in a care facility. Special training requirements can be determined by the Library management and training Officers depending upon the skills and training needs of the individuals. Through survey the selected libraries we have noticed that only NIMH RC and SHELTER have trained Librarian.

Services rendered

Mental disorder students living in their own homes can be served through the library's home delivery service and day care for those who are residential in professional organization. Persons with Mental disorder should be an obvious target population for these library outreach services.

Library services are very important for improvement of mental disorder student. Each library tries to provide maximum services to its users. Persons suffering from mental disability can be served by helping to locate and retrieve materials. Because

reading is a common problem for them they may enquire assistance in identifying the materials of both the print and-electronic types of documents. They also need help in turning catalogue cards or computerized catalogue.

Table 5: Types of Library Services

Services	ABNR	Manovikas Kendra	NIMH RC	SHELTER
Book lending	√	√	√	√
Reading room	√	√	√	√
Reference Services	√	√	√	√
Extension Services	√	√	√	√
ILL		√	√	
News Paper	√	√	√	√
CAS	√	√	√	√
Computer service	√	√	√	√
Catalogue service		√	√	
Personal service	√	√	√	√

From Table 4 we can notice that except ABNR and SHELTER all libraries provide all types of services. They do not provide ILL (Inter Library Loan) and Catalogue service. Book is a very dependable tool to improve mentally disorder persons. Here teachers / trainers including Librarians play an important role for selection of books. All libraries issue books to the students which is a basic service of a library.

Reading room is an important pillar of a good library environment. It can motivate a user for use the library. This service is also available in all libraries. Reference Services, Extension Services, Newspaper service, CAS – all services are disseminated by the libraries as required by the users like normal users for satisfy them. Personal service is the most important and fruitful service for mental disorder persons. All surveyed libraries provide this service to become from mental disorder to normal person.

Other new electronic media, e.g., computer games, will be of interest to the new generation of persons with mental disorder. Many elderly are already familiar with computers. They may enjoy searching on the Internet with help from caregivers, relatives or library staff. The pictures on the computer screen may be used to stimulate conversation and illustrate certain subjects. Library staff can introduce relevant sites to care givers.

Findings

From the above analysis we have extracted some findings which are as follows:

- Govt. institutes as well as non-govt. institutes are working for mental disorder students simultaneously. So it may expect that they back to normal life in short

term.

- Maximum number of library users (47.97%) exists in NIMH RC library.
- All institutes subscribe only books.
- There are no Audio-Visual and Music systems available in any surveyed libraries.
- News Papers (both in English and Bengali languages) are available in all libraries.
- Audio books are not available in any of the surveyed libraries.
- Illustrated books, Books for reading aloud, Thematic books for the staff and Local history books are available in all libraries.
- Only NIMH RC and SHELTER have trained Librarian.
- There are four types of users use the library collections. They are - Disable children, Able children, Parents and Teachers.
- Except ABNR and SHELTER all libraries provide all types of services. They do not provide ILL (Inter Library Loan) and Catalogue service.
- Personal service is the most important service for this type of user.

Conclusion and Suggestions

Conclusion

Library staff can thus play a significant role in bringing hope to the mental disorder students' world. Adequate financial support must be sought in order to sustain the above mentioned library services and subsequently expand them to suit the latest technological advancement. There is a need to explore new sources of funding taking into account the reality that the networking of Indian libraries can save funds by way of avoiding duplication of services and also help in providing an efficient inter library loan service thus reducing the time of the reader considerably. Like normal individuals the disabled also need information and other services to help them rise above their disability. Library and information centers in educational institutions must be encouraged to raise funds by marketing their services. In the process they must try-to integrate not only persons with disability with normal users but also integrate the electronic media with their collections and develop local networks. Libraries and Librarians will thus bridge the gap of disability and ability by creating a networked society where in, every individual will be connected without any discrimination.

Suggestions

Some recommendations have been provided here for betterment of users as well as library functions. They are as follows:

- Librarians should have the knowledge of dementia related diseases and how these patrons may react.
- Librarians should have the knowledge on latest Information and Communication Technology.

- Institutes should arrange regular training or awareness programme for library staff about the behavior of mental disorder students by the professionals or specialists in this field.
- Govt. should sanction more funds for library collections including ICT tools.
- More computer should installed with Internet connection.
- Music system is very important for mental disorder student so it should must be available in all libraries.
- Audio Books are also important for mental disorder persons so it should be exist in the collections of all libraries.
- Library should subscribe periodicals and including Audio-visual materials.
- Library should have projector, scanner and copier machine.
- Libraries should have sufficient trained staff.
- Libraries should have Home Delivery services of library resources,
- Library staff should visit or meet with student regularly so they can get feedback of the users.

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4

The Trend, Pattern and Impact of Declining Child Sex Ratio: A study in Howrah and Coachbehar district of West Bengal.

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Abstract

India once known more for its mystical traditions and depressing poverty has gradually shed not too flattering sobriquets of the past. In the world's eyes now, the country is an emerging economic power. We feel proud when other countries and leaders like former President Obama describe India as an emerging economy. But as Indians we know that India is a country of contradictions. We have modern appearance and habits and way of living, but have 18th century mindset in several matters. The best example for this contradiction is the attitude towards girl children.

Despite being one of the fastest growing economies in the world, India is still grappled with the declining Child Sex Ratio (CSR). Sex ratio which has always been a matter of concern for India and a UN report on the same has raised more questions on the dwindling number of girls in the country.

Every year, an estimated 26 millions of children are born in India which is nearly 4 million more than the population of Australia. It is significant that while an absolute increase of 181 million in the country's population has been recorded during the decade 2001-2011, there is a reduction of 5.05 million in the population of children aged 0-6 years during this period. The decline in male children is 2.06 million and in female children is 2.99 million.

During the period 1991 -2011, child sex ratio declined from 945 to 918, whereas the overall sex ratio showed an improvement from 927 to 943. Compared to 2001, only 5 States /UTs showed decline in overall sex ratio in 2011, while 27 States /UTs showed decline in child sex ratio during this period. This opposite direction in the movement of sex ratios of children aged 0-6 years compared to the overall sex ratio suggests a shift in the demographic composition of the population.

The child sex ratio, which is based on the number of boys and girls between 0 and 6 years of age registered at the time of the census, shows whether sex selection is prevalent in the country. A sex ratio less than the normal range of 943-980 girls per 1,000 boys, suggests discrimination against girls, and the presence of female infanticide, which is the killing of girls after birth, or of female foeticide, sex-selective abortion of the foetus.

Thus the government and the civil society must go beyond policy-making and must quickly identify specific behaviours, cultural attributes, practices, media representations, mind-sets and notions that propagate discrimination against daughters and consequently help sex-determination testing flourish despite its illegality.

This report bears testimony to the research work thus far, and points to the wisdom that we can build on for evolving a definitive response to skewed sex ratios in India; it also provides a brief overview of the sociological and ethnographical areas of study, including the role of civil society and the state, and changing familial patterns.

Keywords: Sex ratio, Skewed, Infanticide, Abortion, Discrimination, Diminishing, Contradiction.

Sex ratio is defined as the number of females per 1000 males in the population and is an important social indicator to measure the extent of prevailing equity between males and females in a society at a given point of time. It may be noted that the sex ratio is expected to be almost at parity in nature. According to experts sex differential in mortality, sex selective outmigration, skewed sex ratio (Children in India 2012 - A Statistical Appraisal: Ministry of statistics and Programme) at birth are the major contributory factors that influence changes in sex ratio. In India, sex ratio is skewed in favour of males and has continued to rise and expand in various forms. This has drawn wide attention of policy makers and planners to reverse the trend to bring it back to parity.

Objectives of the Study

- 1 To know the actual status of the child FMR caste and community wise in the study area through Socio-Economic survey.
- 2 To enumerate the impact of education (especially Female literacy rate) on child FMR.
- 3 To identify the impact of crime against women on the child FMR.
- 4 To find out the role of local institution and administration to reduce the CAW and increase the FMR.

- 5 To study the status of health service delivery in the area.
- 6 To study the survival rate of boys & girls children among the different castes & communities of the study areas with possible reasons.
- 7 To find out the factors responsible for increasing/decreasing the FMR & birth rate of the study area and the possible solution through PRA to reduce the gap of FMR.

Study area and Methodology

Out of 19 districts of West Bengal, two districts will be selected for the purpose of the study. Two districts namely Coachbehar and Howrah as my study area to fulfil the objective regarding the child sex ratio. One of the district of West Bengal is Coachbehar has been considered as the highest regarding declining and imbalance of child sex ratio on the contrary, Howrah has been recorded lowest regarding declining child sex ratio and so I have to find out the reason behind the discrimination of child sex ratio between the two district. So these districts are the main focus of my study.

Trends of Child Sex Ratio of India

India, with 1.21 billion populations as per Census 2011 is the second most populous country in the world, after China. Every year, an estimated 26 millions of children are born in India which is nearly 4 million more than the population of Australia. An absolute increase of 181 million in the country's population has been recorded during the last decade; there is a reduction of 5.05 million in the population of children aged 0-6 years during this period. The decline in male children is 2.06 million and female children are 2.99 million. While the size of child population in the age group (0-6 years) is declining with decline in the share of children in the total population, the share of girls in 0-6 years is declining faster than that of boys of 0-6 years. This process has led to missing of nearly 3 million girl children compared to 2 million missing boy children in 2011, compared to 2001.(Census of India 2011).

As per Census 2011, the State/ UTs with alarmingly low (<900) child sex ratio are, Haryana (834), Punjab (846), Jammu & Kashmir (862), Delhi (871), Chandigarh (880), Rajasthan (888), Maharashtra (894), Uttrakhand (890) and Gujarat (890).

During 1991-2011, child sex ratio declined in both rural and urban India. Though, the child sex ratio in rural India is 923 which is 18 points higher than that of urban India, the decline in Child Sex Ratio (0-6 years) during 2001-2011 in rural areas is more than three times as compared to drop in urban India which is a matter of grave concern. However, the gap in rural and urban child sex ratio has been reduced from 28 points in 2001 to 18 points in 2011.

CHILD (0-6YRS) SEX RATIO

SL NO	STATE/UT	CHILD SEX RATIO 2001			CHILD SEX RATIO 2011		
		TOTAL	RURAL	URBAN	TOTAL	RURAL	URBAN
	INDIA	927	934	906	918	923	905
1	Jammu & Kashmir	941	957	873	862	865	850
2	Himachal Pradesh	896	900	844	909	912	881
3	Punjab	798	799	796	846	844	852
4	Chandigarh	845	847	845	880	871	880
5	Uttarakhand	908	918	872	890	899	868
6	Haryana	819	823	808	834	835	832
7	NCT of Delhi	868	850	870	871	814	873
8	Rajasthan	909	914	887	888	892	874
9	Uttar Pradesh	916	921	890	902	906	885
10	Bihar	942	944	924	935	938	912
11	Sikkim	963	966	922	957	964	934
12	Arunachal Pradesh	964	960	980	972	975	957
13	Nagaland	964	969	939	943	933	973
14	Manipur	957	956	961	936	931	949
15	Mizoram	964	965	963	970	966	974
16	Tripura	966	968	948	957	960	947
17	Meghalaya	973	973	969	970	972	954
18	Assam	965	967	943	962	964	944
19	West Bengal	960	963	948	956	959	947
20	Jharkhand	965	973	930	948	957	908
21	Orissa	953	955	933	941	946	913
22	Chattisgarh	975	982	938	969	977	937
23	Madhya Pradesh	932	939	907	918	923	901
24	Gujrat	883	906	837	890	914	852
25	Daman & Diu	926	916	943	904	932	894
26	Dadra & Nagar Haveli	979	1003	888	926	970	872
27	Maharashtra	913	916	908	894	890	889
28	Andra Pradesh	961	963	955	939	941	935
29	Karnataka	946	949	940	948	950	946
30	Goa	938	952	924	942	945	940
31	Lakshadweep	959	999	900	911	911	911
32	Kerala	960	961	958	964	965	963
33	Tamil Nadu	942	933	955	943	936	952
34	Puducherry	967	967	967	965	957	969
35	Andaman & Nicobar Island	937	937	945	945

Source: Census of India 2011 (P)

Trends of Child Sex Ratio and Overall Sex Ratio of West Bengal:

While West Bengal has a total population of 9,12,76,115 with 4,68,09,027 males and 4,44,67,088 females with sex ratio of 950. It is the fourth most populous state in India with 19 districts, 341 blocks and 40,782 villages. With a literacy rate of 76.30%, above the national average of 72.99%, as per 2011 Census, West Bengal ranks 13th amongst the 35 states and union territories in India in terms of literacy rate. It has grown from 68.64% in 2001 to 76.26% in 2011. Purba Medinipur has the highest literacy rate of 87.02% in Bengal. Kolkata has a literacy rate of 86.31% followed by North 24 Parganas with 84.06% Haora with 83.31% and Hugli with 81.80%.

The sex composition by age group especially the 0-6 years is vital for studying the demographic trends of child population, its future patterns and particularly, the status of the girl child. In West Bengal CSR always decreased since 1971 onwards and OSR always increased after Independence. The child sex ratio in West Bengal has historically negative or in other words, unfavorable to females since 1981. In the post-independence period, the trend of sex ratio slipped down for four consecutive decades after 1971. During 1971-2011 a steep fall of 54 points was seen in the child sex ratio in West Bengal.

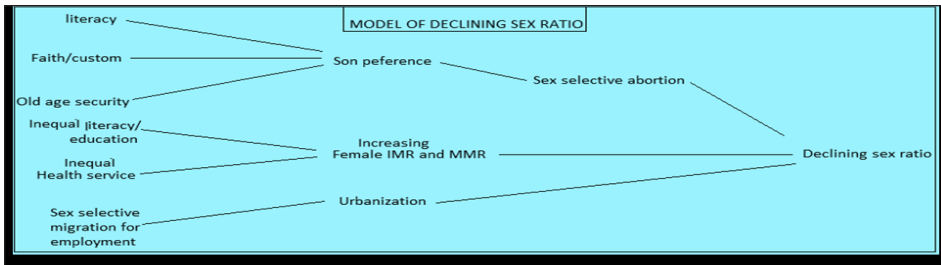
YEAR	1951	1961	1971	1981	1991	2001	2011
OSR	865	878	891	911	917	934	950
CSR		1008	1010	981	967	960	956

Source: Census of India 2011 (P)

At the Census 2011, sex ratio of the population in the age group 0-6 years is registered as 956, in West Bengal, declining from 960 of 2001 Census. The decreasing sex ratio in this age group will have a cascading effect on population over a period of time leading to diminishing sex ratio in the state. The State level figures on child sex ratio for rural and urban areas recorded as 959 and 947 respectively.

The following are some reasons for declining trends of child sex ratio in West Bengal: Analysis has drawn attention to two possible factors behind the falling CSRs that is-

- 1 The Sex Ratio at Birth (SRB: Male live birth per 1000 female live births) has become biased against females due to the continuing pressure of son preference and neglected of girl child.
- 2 The female Age Specific Death Rates (ASDR) for the age group 0-4 years and 5-9 years have been found to be higher than corresponding male rates.
- 3 Indeed, in a rapidly growing country, a concerning recent trend is age sex selective abortion, resulting in an increasing skewed sex ratio at birth United Nations Population Fund, (UNFPA, 2009). This hints at the on-going rampant misuse of technology in this state.



Source: Gender Imbalance: Trends, Pattern and its impact on West Bengal.

West Bengal as a whole has 950 number of females per thousand of males population in 2011. But the district level sex ratio is varies from district to district ranges from 908 to 970. All 19 districts are categorized into three groups as follows:

PATTERN OF SEX RATIO OF WEST BENGAL

CATEGORIES	DISTRICTS
High sex ratio (Above 947 female per 1000 males.	Birbhum, Bankura, West Mednipur, Hugly, North 24 Parganas, South 24 Parganas, Murshidabad, Dakshi nDinajpur, Jalpaipuri, Darjeeling and Puruliya.
Moderate sex ratio (900 to 947 female per 1000 males)	Burdwan, East Mednipur, Howrah, Nadia, Uttar Dinajpur, Malda and Cooch Behar.
Low sex ratio (below 910)	Kolkata.

Source: Census of India, 2011 (P)

Opinion of the Social Scientists & Economists on Socio Economic and Cultural Behaviour on Child Sex Ratio:

Most of the Social Scientists& Economists engaged in the field arranged that one of the change agents of FMR is the literacy rate and the fact is directly propositional. But the reality comes to light is just opposite in most of the cases, so the increasing literacy rate has no positive impact on FMR if we acknowledge that the literacy rate increase truly. The reality is that the FMR is different among the different social group. The backward in nature the greater is the value of FMR. But in case of literacy rate backward community performed poor. So literacy rate has apparently negative impact on FMR. So there must be some different reasons having impact on FMR.

Professor AmartyaSen started work on this issue since 1972 and gave number of suggestions to decrease sex discrimination in our country. He tried to analyse the fact with a new concept of “Missing Women” and “Women Agency” in his article “*Many faces of gender inequality*” (2003).

Trends of Over All Sex Ratio in West Bengal (1991-2011)				Trends Of Child Sex Ratio Of West Bengal		
DISTRICT	YEAR			2001	2011	Gap
	1991	2001	2011			
Darjeeling	914	937	970	962	953	-9
Jalpaiguri	927	942	953	969	955	-14
Coachbehar	935	949	942	964	948	-16
Uttar Dinajpur	921	938	939	965	953	-12
DahksinDinajpur	944	951	956	966	957	-9
Malda	938	948	944	964	950	-14
Mursidabad	943	952	958	972	968	- 4
Birbhum	946	950	956	964	959	-5
Burdwan	899	922	945	956	951	-5
Nadia	936	946	947	972	960	-12
North 24 Parganas	907	926	955	958	956	-2
Hugli	917	947	961	951	952	-1
Bankura	951	952	957	953	949	-4
Puruliya	947	954	957	964	953	-11
East Mednipur	944	947	938	942	946	+4
West Mednipur	944	961	966	959	963	+4
Howrah	881	906	939	956	962	+6
Kolkata	799	829	908	927	933	+6
South 24 Parganas	929	937	956	964	963	-1

Source: Census of India, 2011 (P)

Nowhere in his first essay did he mention “sex-selective abortion” or “female infanticide”. Over a decade later, in a short piece published in the *British Medical Journal*, he explicitly refers to sex selective abortion as a possible factor in explaining the “Missing Women” (Sen 2003: 1297-98). He followed some demographers and other social scientists in suggesting that the problem of missing women and declining sex ratio can only be explained by “the availability of modern techniques to determine the sex of the foetus...[that] has made such sex-selective abortion possible and easy” (e.g., see Agnihotri 2003; Arnold et al 2002; Balakrishnan 1994; Basu 1999; Das Gupta and Bhat 1998; Harriss-White 1999; Klasen and Wink 2003; Krishnaji 2000; Patel 2002; Premi 2001; Sudha and Rajan 1999). These discussions, however, omit a clear analysis of who is “responsible” for the changing sex ratio.

Until the publication of the 1991 Census results, demographers were largely preoccupied with factors other than female infanticide and sex-selective abortion in explaining the reasons for consistent sex ratio decline. Several important developments

changed this emphasis, especially the feminist movement of the 1980s against sex-selective abortion. In 1978, amniocentesis was introduced in India to detect foetal genetic abnormalities. Soon the technology was used commercially almost entirely for sex determination and the induced termination of “unwanted” female fetuses. Feminists mobilised to pressure the government, leading to the Maharashtra Bill of 1988 banning the use of prenatal diagnostic tests for sex determination. Eventually, the Government of India formulated the Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act in 1994. This was brought into force in 1996 and has been amended twice since then, first in 1996 and again in 2003. Despite this legislation, the CSR has become even more masculine. In addition, nationwide reports of two episodes of female infanticide from villages in Tamil Nadu and Rajasthan (*India Today*, 15 June 1986 and 31 October 1988, respectively) helped to establish a long-lasting discourse linking sex-selective abortion and masculine CSRs in the public mind.

Daughter disadvantage persists in most parts of Indian society – though not universally or equally so – and is expressed through sex-selective abortion, neglect of female children, and female infanticide (Sudha and Rajan 2003). How it is linked to the declining CSR and the number of missing females is, however, contentious. Until the early 2000s, leading authors argued that sex selective abortion had little or no effect on sex ratio differences (Basu 1992; Visaria 1994, cited in Sunder Rajan 2003:267). Similarly, Drèze and Sen (2002:233) argued that the age groups beyond that of female infanticide are more crucial for understanding the implications of daughter disadvantage and neglect. However, since 2000, the conventional wisdom that sex-selective abortions, as a modern-technological expression of female infanticide, are the main causes has been reinforced in a number of articles. With respect to sex-selective abortion, increasing attention is being paid to the sex ratio at birth (SRB) in relation to the sex composition of children already born in a family. Using fertility data from 2001 Census and National Family Health Survey (NFHS) of 1998-99, Bhat and Zavier (2007: 2299) demonstrated that families are more likely to resort to sex-selective abortion, if there are previous daughter/s in a family: “the misuse of the technology (for sex selective abortion) is the highest when the woman had no son, but had one or more daughters. Among such women, the misuse is estimated to be 25-51%”. Krishnaji (2000: 1162) also shows that “if the first birth is female; the next pregnancy has diminishing chances of going to full term, if the foetus is female”. The NFHS *Bulletin* yields a similar result: “the sex ratio at birth is particularly high (feminine) in certain western and northern states, in families that have daughters but no sons, and among women with a high level of education and media exposure” (Retherford and Roy 2003: 1). Likewise, Das Gupta (2005: 531) cited the findings of Arnold et al (2002) to show that the use of ultrasound and amniocentesis tests (to establish the sex of fetuses) is higher in north-western states of India “among women who had only borne daughters as compared to those with a son”.

Government Initiatives to Save Girl Child in India:

The government of India has taken number of programmes in its five year plan to address the issue. But the actual result indicates that the long way to go to achieve the goal. Some recent programmes which have direct impact on the issue are given below:

- Beti Bachao, Beti Padhao
- Sukanya Samridhi Account Yojana
- Indira Gandhi Scholarship for Single Girl Child 2015
- Balika Samridhi Yojana
- Kishori Shakti Yojana

Beti Bachao, Beti Padhao (Save girl child, educate girl child): Is a Government of India scheme that aims to generate awareness and improving the efficiency of welfare services meant for women. The scheme was initiated with an initial corpus of Rs 100 crore. According to census data, the child sex Ratio (0-6 years) in India was 927 girls per 1,000 boys in 2001, which dropped drastically to 914 girls for every 1,000 boys in 2011. At 2012 United Nation Children's Fund (UNICEF), report ranked in India 41st among 195 countries. The Government also proposed Rs 150 crore to be spent by Ministry of Home Affairs on a scheme to increase the safety of women in large cities. Speaking on International Day of the Girl Child, Prime Minister Modi, called for eradication of female foeticide and invited suggestions from the citizens of India on "Beti Bachao, Beti Padhao" on the My Gov portal. Prime Minister Modi launched the programme on January 22, 2015 from Panipat, Haryana.

Sukanya Samridhi Account Yojana: The Sukanya Samridhi Account Yojana, also known as girl child prosperity scheme is launched by Prime Minister Narendra Modi. Sukanya Samridhi account is to ensure a bright future for girl children in India. This yojana is to facilitate them proper education and carefree marriage expenses. The scheme has well been accepted by the masses in wake of the financial security and independence it would provide to the girl child as well as their parents and guardians.

Indira Gandhi Scholarship for Single Girl Child 2015: UGC has decided to provide Indira Gandhi Scholarship for Single Girl Child 2015 for achieving and promoting girl's education. University Grants Commission invited online application form from those applicants, who has the single girl child in our family and want to take admission in Post Graduate course.

Balika Samridhi Yojana: The recast Balika Samridhi Yojana will be a 100% Centrally Sponsored Scheme to extend 100% central assistance to States/Union Territories to provide benefits under the Scheme in accordance with the norms, guidelines and conditions laid down by the Central Government.

Objectives of the scheme are:

- To change negative family and community attitudes towards the girl child at birth and towards her mother.
- To improve enrolment and retention of girl children in schools.
- To raise the age at marriage of girls.
- To assist the girl to undertake income generating activities.

Kishori Shakti Yojana (KSY) : Seeks to empower adolescent girls, so as to enable them to take charge of their lives. It is viewed as a holistic initiative for the development of adolescent girls. The programme through its interventions aims at bringing about a difference in the lives of the adolescent girls. It seeks to provide them with an opportunity to realize their full potential.

Objective: The broad objectives of the Scheme are to improve the nutritional, health and development status of adolescent girls, promote awareness of health, hygiene, nutrition and family care, link them to opportunities for learning life skills, going back to school, help them gain a better understanding of their social environment and take initiatives to become productive members of the society.

The present situation of our country is in increasing stage in respect of all developmental indicators like income through employment generation both in organised and unorganised sectors, education, health service facilities, role and impact of local institutions and other social security. Side by side issues like sex discrimination or gender inequalities and crime against women are increasing with a multiple number. The recurring event of crime against women especially on the school and college going girls created a fear with pain among parents and even newly married couple.

Violence against Women in India:

According to the National Crime Records Bureau of India, reported incidents of crime against women increased 6.4% during 2012, and a crime against a woman is committed every three minutes. In 2012, there were a total of 244,270 reported incidents of crime against women, while in 2011, there were 228,650 reported incidents. Of the women living in India, 7.5% live in West Bengal where 12.7% of the total reported crime against women occurs. Andhra Pradesh is home to 7.3% of India's female population and accounts for 11.5% of the total reported crimes against women.

West Bengal ranked third in crimes against women, according to the Crimes in India 2013 report released by National Crime Records Bureau (NCRB). According to the report, undivided Andhra Pradesh and Uttar Pradesh ranked first and second, respectively. According to the 2012 NCRB report, 30,942 crimes were committed against women. However, the figure has fallen marginally to 29,836 crimes in the 2013 report. Kolkata recorded 2,399 incidents of crimes against women (down from 2,073 incidents in 2012), accounting for 4.49 per cent of the country's share with a population of 67.93 lakh women, the 2013 report stated.

West Bengal and Kolkata ranked the highest in importation of girls from foreign countries. West Bengal accounts for the highest number of cases of importing girls among all the States with nine incidents, which accounts for 29.03 per cent of such crimes in the country. All nine cases were reported from Kolkata, which accounted for 100 per cent share among all the cities, the report says. West Bengal shares a porous border with Bangladesh and incidents of girls getting trafficked from there to the State are rampant. Both the State and Kolkata recorded high number of cruelty cases against women by husbands or relatives. While West Bengal recorded 18,116 cases, Kolkata recorded 1,005 cases. Cases of assaults with intent to outrage modesty were also high with the State recording 4,913 incidents and the city recording 707 cases. In the past year, West Bengal recorded 1,685 cases of rape, 3,830 cases of kidnapping and abduction, 481 cases of dowry deaths and 577 incidents of insult to modesty. Kolkata recorded 75 rape cases, 145 cases of kidnapping and abduction, 15 cases of dowry deaths, 1,005 cases of cruelty by husband or by his relative and 412 incidents of insult to modesty. As many as 104 and 31 incidents of Immoral Traffic Act, 1956, were registered in the State and the city, respectively. According to the 2013 report, with a population of 444.25 lakh girls in the State, the State's rate of crime against women accounted for 9.64 per cent of the country's share. The rate of cognizable crimes in the State was 67.14%.

This increases the male preferences at the time of birth of their child. They even violate the law of anti-abortion with the help of doctor after paying considerable fees to get relief from getting assaulted rather to say getting raped of their daughter in such an unlawful society in which we are living. At present women are getting double discrimination one from the society and another from the family for being women as even most of the literate persons do not know biological reason who is responsible for giving birth of a girl child.

Conclusion and Recommendations

Literacy and education is universally recognized as a major component of human development. As such, certain minimum level of literacy seems to be essential for a population to break out the vicious of poverty. Literacy affected on various attributes of the population such as fertility, mortality, migration and also sex ratio. The knowledge of sex ratio is essential for the understanding the condition of women in society. A decline or low number of female population in the total population is strongly suggestive of the neglect of girl children, sex selective abortions and traditional attitudes of the society. Son preference is the main culprit is known to be found in certain type of cultures, that is part lineal cultures. Restoration of the gender balance is not only the sole duty of the Government but its responsibility is bestowed on Non –government Organization also for championing for mass awareness. Empowerment of women in the field of socio-economic and political arena should be the essence of modern Indian Society and then only a balanced demographic structure within the country could be achieved. Thus, the proposed study is highly significant in present day.

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5

Status of Woman in Ancient India

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Social thinkers of the present day are committed to secure to all its citizen justice-social, economic and political; liberty-of thought, expression, belief, faith and worship; equality-of status and opportunity. *All societies must strive to do everything possible to integrate women in all walks of life in an equitable and just manner. However, the fact remains that the denial of rights to women has been often defended by various cultures and religions. In the Indian tradition the status and role of an individual, man and woman, in society is guided by India's sacred scriptures. These ancient treatises contain the vast literature of Sanskrit religious laws. The condition of women was not that bad in the early years of Indian civilization.* In the days of epics, women were considered pivots not only of domestic life but of the entire society. Vedic literature which is the prime source of all cultural manifestations in India depicts a vivid picture of ancient Indian womanhood. In the early Vedic ages too the women's importance even in a patriarchal society was recognized. Only during the Upanishadic ages we find passages in Aitereya Brahmana and Maitraani Samhita to show that women were forbidden to go to the assemblies. Women are placed on par with dice and drink, and she is described as one of the major evils in human society. But we have the very contrary picture in the Brihadaranyaka Upanisad where get the depth of philosophical acumen gained by the Brahmavadini Gargi.

Women are vital element in society. A society's progress depends a lot on them. All societies must strive to do everything possible to integrate women in all walks of life in an equitable and just manner. Any genuine concern about over all human rights question cannot be complete if women are not given due coverage and response. Women need to be considered the pivot not only of domestic life but of entire society. In recent years there has been a growing awareness about the discrimination against women and its long term impact on the empowerment, employment and development of women.

The preamble to the Constitution of the India promises "to secure to all its citizen justice- social, economic and political; Liberty-of thought, expression, belief, faith and

worship; Equality-of status and of opportunity; and promote among them all: Fraternity assuring the dignity of the individual and the unity of the National". To realize these goals the Constitution guarantees certain fundamental rights and freedoms, e.g. freedom of speech protection of life and personal liberty etc, which may be termed positive rights. Along with these certain negative rights, prohibiting discrimination or denial of equal protection of law, are also guaranteed. As equal citizens of India, women benefit from these rights equally with men. However, since the Constitution recognized the unequal social provisions for women and children even in violation of the obligation not to discriminate among citizens. This power has been used to enact special laws for the protection of women workers in factories, mines and plantations, and to provide maternity relief to women workers in the organized sector.

However, the fact remains that the denial of rights to women has been often defended by various cultures and religions. As a result almost all sections of contemporary societies suffer from varying degrees of violation of human rights of women. Today, all women share a common degradation, indignity, oppression, violence and discrimination in every society.

III

Inequalities between men and women are very important and dominant questions in a society since long and the questions have not lost their sheen even today. Problem is that how the conditions of women in a particular society and their quality of life should be judged. We have seen and it is also an established truth that women are deprived as they are often unable to enjoy the necessities and conveniences of life compared to their male counterpart in a society. Women's well-being and quality of their life should be judged by looking at what they are actually able to do and what they wanted to be. We have seen that there are barriers in society erected against full justice for women. Also the fact that this discrimination on the basis of gender is so deeply rooted in the history of humanity that it is not even perceived as discrimination.

What is the traditional view of Hindu women? According to the classical and orthodox view as described in early Sanskrit literature and religious texts is that the perfect Hindu woman is the devoted wife whose entire existence is dedicated to her husband, a perfect mother dedicated to her children and a perfect servant dedicated to the all members of the family. Sometimes the word *pativrata* in Sanskrit, meaning a woman whose vow is to her husband, generally used to identify a perfect traditional Hindu woman. During her lifetime the good wife should regard her husband as her personal god. This also as per the ancient myths and traditional stories. This ideology was extremely powerful and was deeply rooted in Hindu society. This is widely accepted and followed by both men and women even in India today.

IV

In the Indian tradition the status and role of an individual, man and woman, in society is guided by India's sacred scriptures. These ancient treatises contain the vast literature

of sanskrit religious laws. These sacred treatises are threefold----SRUTI, SMRITI and NYAYA. The most sacred of these three are the SRUTIS---the VEDAS. The VEDAS are the oldest religious texts of Hinduism, composed in archaic sanskrita and brought to India by the Aryans approximately in thirteen thousand B. C. The second most sacred source of right behavior is provided by the SMRITIS, that is by the precepts of sacred Sanskrit religious laws and by the principles laid down in the great epics, the RAMAYANA and the MAHABHARATA. These two epics are also deriving their basic principles from the ultimate sources, the VEDAS. The third source is the accepted customs based on the behavior of the respected members of the early orthodox society. Individuals, both man and woman should not do anything that comes into conflict with the guidelines set by these three authorities. If, in any case, there is a conflict between these three authorities, some texts allow an internal guideline. The entire corpus of the treatises containing Sanskrit religious laws, from the ancient to the present day, derives their basic postulates from the tradition of the VEDAS. In the later scriptures the sanctity and authority is emphasized by quotations from and allusions to Vedic texts. The process of development within the literature of religious laws is self-perpetuating. Later texts quote or allude to earlier ones. Commentators quote earlier commentators as they expound upon and reinterpret the great and established authorities of the past. Compilers of digests rearrange earlier ancient material in new combinations for the edification of their contemporaries. This complex literature forever feeding upon itself is divided into two main groups ----primary texts and secondary ma In the past few years there has been a growing awareness of this disturbing phenomenon of discrimination against women and its long term impact on the empowerment, employment and development of women.

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However, the fact remains that the denial of rights to women has been often defended by various cultures and religions. As a result almost all sections of contemporary societies suffer from varying degrees of violation of human rights of women. Today, all women share a common degradation, indignity, oppression, violence and discrimination in every society.

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justice for women. Also the fact that this discrimination on the basis of gender is so deeply rooted in the history of humanity that it is not even perceived as discrimination. Centuries have passed but little change is noticed in the condition of women in Hindu society. Let us begin from the editorial of the feminist magazine MANUSHI that describes the status of women in India as follows:

“The pervasive popular cultural ideal of womanhood has become a death trap for too many of us. It is woman as a selfless giver, someone who gives and gives endlessly, gracefully, seemingly, whatever the demand, however unreasonable and harmful to herself. She gives not just love, affection and ungrudging service but also, if need be, her health and ultimately her life at the altar of her duty to her husband, children and the rest of her family.....This ideology of slavery and contempt for women in the family plays a more important part than even beatings or bullets in keeping women oppressed.”

(Quoted in Julia Leslie’s article Recycling Ancient Material: An Orthodox View of Hindu Women, in WOMEN IN ANCIENT SOCIETIES ed by Leonie J Archer et al, P.233, Macmillan, London,1994.)

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Earlier that is in ancient days , in the days of epics,woman were considered pivots not only of domestic life but of the entire society. Her education also was taken care of. A woman was never sacrificed at the altar of marriage. She was also allowed to select her life partner. She never enjoyed lower social status. The nucleus of family life was centred round her and on women dependent the prosperity and future progeny of the family.. The sacramental nature of marriage also strengthened the position of a wife even in a polygamous society.. She was considered the creator, protector, and educator of her children. Children respected their parents, particularly the mother. Widowed mothers were looked after and protected by their sons Hindu tradition have generally respected womanhood.. The history of ancient India may be said to commence from the period during which the Rig Veda was composed. In Rig Veda we find a great literary monument of hoary antiquity, containing a code of ethical life reflecting the thoughts and aspirations of the people. Vedic literature which is the prime source of all cultural manifestations in India depicts a vivid picture of ancient Indian womanhood. The Vedic society was a patriarchal one, and hence father was the head of the family. During the period we find that prayers were uttered for the birth of a son, and we never come across any reference deprecating the birth of a daughter. There was a concept of hell and it was PUT. It was the belief that a son helps his father and ancestors to escape from that hell—PUT NAMO NARAKA. For girls no such thing is mentioned. We find in the Rig Veda a number of names to denote a girl at different stages of her life. A girl is variously called kanya, duhita, kaninaka, kunyana, kanyala, putrik etc. Of all these epithets for girls, the word duhita seems to have been in frequent use in the Rig Veda, referring to a daughter.

Marriage was a union of the two individuals of opposite sexes who had attained full physical development. No reference regarding age or its limitations, such as are found in later works, can be traced in the Rig Veda. Neither can it be stated that the notion of child-marriage existed then, as reference to it finds a place only during the Sutra period. During this period, some girls even remained unmarried in their father's houses upto an advanced age. A well-known example of this was Ghosha. The form of marriage that was widely prevalent during this period was monogamy. There were some references to polygamy. Rituals formed a part in the Vedic marriage. Woman as wife is denoted by the words Jaya, Jani and patni, each denoting special characteristics of wifhood. Jaya means the sharer of the husband's affections; Jani, the mother of children; and Patni, the partner in the observance and performance of religious

sacrifices. Besides these, some reference clearly go to show that the household fire was tended by the husband and wife together. The word *dampatiya kratuvidya* refers to this aspects of womanhood.

With regard to education of women during this period, it may be noted briefly that the position of women was generally not unequal to that of the men. The proof of this is the fact that the Rig Veda contains hymns (*suktas*) by as many as twenty-seven women, called *brahmavadinis* or women seers. Saunaka in his *Brihaddevata*, a work on Rig Veda, has stated the names of these twenty-seven women seers. During this age, we note that domestic life was not in any way inconsistent with spiritual life. The highest traits of *brahmavadini* and a *sadyovaadhu* are exemplified in the famous hymns of Surya.. This testifies to the fact that men and women were regarded as having equally important status in the social life of the early Vedic period. In the time of the Vedas, all writers agreed that, she enjoyed much freedom and was clearly in most cases was considered an equal of man. Nevertheless, from the very outset we must recognize the fact that two conflicting views are set forth regarding women's character. With women there can be no lasting friendship; hearts of hyenas are the hearts of women. Indra himself has said, the mind of woman brooks no discipline. Her intellect has little weight. Side by side with this picture, exist much fine delineation of the highest traits of feminine character. Her status during the Vedic period was really high. She was the presiding deity of the house

V

The Rig Veda contains no clear evidence of divorce. Marriage was considered sacred and divorce was against all spiritual laws. The society during this period set up a high order of morality. Hence, there were hardly any instances of adultery among married women. It is true that towards the close of Rig Vedic period, several restrictions were gradually imposed on the freedom and privileges which women enjoyed and led to the degradation of women in society. The early Rig Vedic age which saw the dawn of power and influence which the Indo-Aryan woman wielded in her household, gradually deteriorated during the end of the period. Nevertheless, the picture of the ideal womanhood depicted in the lives and characters of such exalted women as Gargi, Maitreyi, Katyayani, Ghosha, Lopamudra, Sasvati, Apala, Indrani, etc., would ever remain as embodiments and personifications of all that is pure, noble and chaste in Indian Womanhood. That a husband and wife constituted an indivisible unit in society, and the duties of each towards the other, can be inferred from the nuptial hymn as depicted in the Atharva Vedic passages, be thou supreme among fathers-in-law, supreme also among brothers-in-law, be thou supreme over sisters-in-law, supreme also over mother-in-law. The above passage indicates the supremacy of woman. She was at the helm of affairs, and partook in the sacrifices performed by her husband and was ultimately a helper in the path of virtue. That the practice of *sati* was in vogue even during this period is amply clear in the Vedic statements. In the Atharva Veda, cremation and not burial was the accepted way of disposal of the dead. It is further stated that women were capable of going through the *Brahmacharya* stage of life and entering

the last stage. 'Although shorn in a way of some of her fundamental rights, woman does not lose everything in the way of happiness. 'woman should always be adored by the husband, brother, father, kinsmen, mother-in-law, father-in-law, husband's younger brother and other relatives with ornaments, clothes and food'. The position assigned to women during the period of Brahmanas is significant in that the need of women for religious and social welfare first began to take a clear shape. Women had a part to play whenever ceremonies took place for bringing about the birth of a son or for conferring blessings on the progeny. The participation of woman at rituals was doubted. It is stated that, during this period even if one had no wife, he could offer the Agnihotra. A verse is quoted in support of it: 'Even one who has no wife, and drinks no soma, should offer the Sautramani sacrifice to free himself from debt to father and mother. In accord with this command is the rule of scripture. A man without a wife is allowed to offer at command the Agnihotra because 'the wife is faith, the sacrifice, the truth; as a pair he conquers the world of heaven.

We find passages in Aitereya Brahmana and Maitraani Samhita to show that women were forbidden to go to the assemblies. Women is placed on par with dice and drink, and she is described as one of the major evils in human society. Taittiriya Samhita and Shatapatha Brahmana rank her as inferior even to a bead and evil man. Polygamy was quite common during this period. Sacrifices in which a woman had an important part to play were Ashvamedha, Varunapraghasa and Vaapeya. Women were allowed to read holy text and they played the of preceptor. The Taittiriya Brahmana explains the significance of Vralopanayana, in which the girding of the wife was considered to be similar to the usual Upanayana ceremony or initiation of a woman into the sacred rite. Generally, we find that Brahmanas reflect a transitional development in the status of woman limiting her role except in the performance of religious sacrifices. In short, woman was a partner in the religious life of a man. From the oft quoted statements from the Vedic texts it is quite evident that women played an important role, particularly in religious life. A man could not become a spiritual whole unless he was accompanied by his wife. The gods were thought not to accept the objection offered by a bachelor. Besides the privileges she enjoyed in the matter of religion, the wife was greatly honoured in the family and after marriage she was looked upon as guardian of all the members of the new family. The Aitereya Brahmana after explaining the utility of a son, states that 'a wife is a comrade; a daughter a misery, and a son is light in the highest heaven'. It is evident that the decline in education was responsible for the gradual deterioration of the social status women during the Vedic period.

VI

It is only in the Chhandogya and Brihadaranyaka Upanisads that we get some glimpse of the status of women during this period. The Upanisads represents the aim or goal of the Veda. Sankara interprets the expressions 'Upanisad' to mean what 'destroys' ignorance or what 'leads' to Brahmana. It is during this period that we meet with the most glorious example of a brahmavadini as well as a sadyovadhu. The brahmavadini is Gargi of immortal reputation whose enlightening discussions on meta-physical problems of philosophy with

the great sage Yajnavalkya have been recorded in the classical and elaborated text of the Upanisad known as the Brihadaranyaka Upanisad. The crystal example of a sadyovadhu too in the person of Yajnavalkya is also found in the above text. In the Brihadaranyaka Upanisad, the ideal picture of wife (patni) as the other half of husband (pati) has been beautifully delineated by a very telling simile of the half of a shell. Ceremonials for beg shell. Ceremonials for begetting a son is described as a religious duty. This does not preclude the role of having an educated daughter. In the Brihadaranyaka Upanisad we get nucleus of the Grihya rituals that were later developed in the law books with distinct names, as Jatakarma, etc. In short, woman was viewed not as an object of sensuous pleasure, but as an inseparable partner-in-life performing the religious obligations of a man. The famous immortal discussion of Gargi with her husband Yajnavalkya on the eve of his retirement from the world, resulting in her being gifted with knowledge of the Absolute: ‘This is the immortal, this is brahmana, this is all, reveal the innermost depth of philosophical acumen gained by the Brahmavadini Gargi.

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6

Important Factors to Improve the Implementation of Pre- School Education Component of ICDS Scheme: A Case Study of Uttar Dinajpur District in West Bengal

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Abstract

Different programmes under Integrated Child Development Scheme (ICDS) are being successfully implemented nationwide in India. Among the package of services under ICDS for physical, psychological, cognitive and social development of the children, Pre-school education is a very crucial component. The positive impact of pre-school education besides nutrition, growth monitoring and immunizations of children in the Anganwadi Centres through ICDS has been evident in Uttar Dinajpur district. Most of the children under the study could perform well in different tests which were conducted regarding their learning abilities through pre-school education in the Anganwadi Centres. The effort of the service providers and the awareness of the beneficiaries are the two significant factors behind their good performance. The service providers include the Anganwadi workers and Anganwadi helpers. The infrastructural aspects, sufficient playing and learning materials and other relevant issues of the Anganwadi centres are also of importance besides the dedication of the Anganwadi workers and helpers. On the other hand, the motivation of the beneficiaries to avail the benefits of ICDS and the awareness of the mothers regarding the cognitive development as well as physical development of their children play vital roles. The prime reason behind the good performance and continuous learning of the children is their regular attendance in the respective Anganwadi centres. Thus, if more awareness about the benefits of ICDS is generated and the regularity of the attendance of the children in the Anganwadi centres are maintained, improvements in their learning through better pre-school education will be ensured and the actual purpose of the implementation of ICDS will be achieved.

Keywords: *Pre - school education, Anganwadi Centre, Children, Development.*

Introduction

India, with only 33 experimental projects in the country, first launched ICDS programme on October 2, 1975 with 1 urban and 1 rural project in West Bengal. This Centrally Sponsored scheme is administered by Ministry of Women and Child Development which is crucial programme of the Government of India. Owing to resource constraints, fragmented approach and inadequate coverage the programme did not have the desired impact which was revealed in 1972 by an inter-ministerial survey. Now it is one of the unique and world's largest programme which provides food, pre-school education and health care to the children of age group of 0-6 years and their mothers aiming for holistic development. To universalize the programme ICDS now covers almost all development blocks in India, is potentially well-poised to address some of the underlying causes of persistent under nutrition and is implemented through a network of 'anganwadi' centres (AWCs) at the community level. The word Anganwadi is derived from a hindi word "Angan" which refers to the courtyard of a house. It is a central place for children's play and care and is located within the village. In an anganwadi centre a worker and her helper is supposed to deliver various services as a part of ICDS scheme. The worker of the Anganwadi Centre plays a prime role as she is in contact with the beneficiary continuously. The beneficiaries under the Scheme are children in the age group of 0-6 years, pregnant women and lactating mothers.

Pre-school education is a very crucial component of the package of services envisaged under ICDS as it seeks to lay the foundation for proper physical, psychological, cognitive and social development of the child. Though, the records available at the AWCs indicate that they impart PSE to all the enrolled children throughout the year, but it was found that the PSE was imparted only when the nutrition was available in the Centre. Further, there is a need to improve the skills of the AWWs on concepts and approaches of the joyful learning (play-way methods). Adequate provisions need to be made for procuring of relevant teaching and learning aids. Provisions need also to be made for suitable accommodation with matting and heating provisions at each of the AWCs.

Objective of the Study

The scope of the present study is to evaluate the impact of pre-schooling education and factors influencing in pre-schooling education programme of ICDS on children from 3 to 6 years age.

Methodology

In order to achieve the objective, preschool education one of the components of ICDS

was taken for the present study. We selected ICDS beneficiary children between age group of 3 years to 6 years of Uttar Dinajpur in West Bengal. Four anganwadi centres from Kaliaganj ICDS project were selected on the basis of random sampling. Total 40 children (age group 3 years to 6 years) also selected for study. Besides that, interviewing those 40 households having beneficiaries as the mothers were also done. For primary data, responses were elicited from the chosen sample through some open and close ended question.

Findings

There are some AWCs where the AWWs have to take responsibility of more than one centre due to insufficiency in the number of staffs employed. Due to this additional burden face hindrance in organising the pre-schooling properly in the centres. On the other hand, as for the poor villagers, supplementary nutrition is of prime importance, the AWWs have to concentrate more in providing that. “Because of these additional workloads, I can’t devote even a minimum of one hour for pre-schooling in a day”-said Mohosena Khatun, the AWW of AWC.

According to neuroscience research, between birth and 5+ year’s age, 90 per cent of a child’s brain development occurs. After which there remain not much scope for further structural improvement of the brain. The responsibility of the AWCs is to help and monitor the children in their overall development through proper stimuli before acquiring primary education.

A child takes birth with some natural instincts and capabilities like looking at objects and feeling them which along with other primary abilities get improved on a continuous basis while growing up. Development of basic ideas like different colours, shapes numerical concepts etc are essential to get familiar with the nature and to understand the surrounding environment.

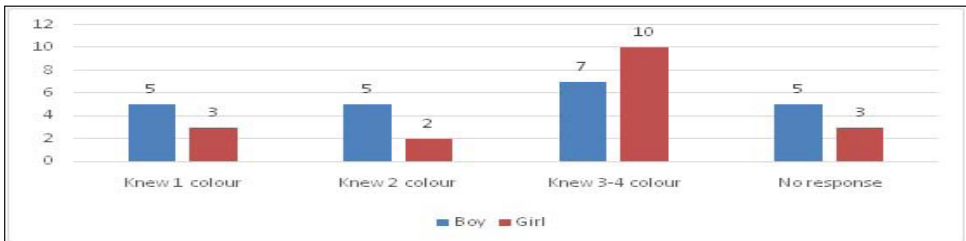


Figure 1 Children knowing colours by name

To examine the ability of identification of different colours by showing the charts, toys and colour boxes available in the AWC, it has been observed that 42 per cent i.e 17 out of 40 children could identify three or more colours, 20 per cent among them could identify only one colour and 17.5 per cent among the children examined could identify two colours. Most of the kids could identify red and yellow colours properly. It was quite strange to observe that 50 per cent of the children had the tendency to mistake

green colour as blue. It was quite disgraceful that 20 per cent i.e 8 out of 40 children did not give any response while identifying the colours.

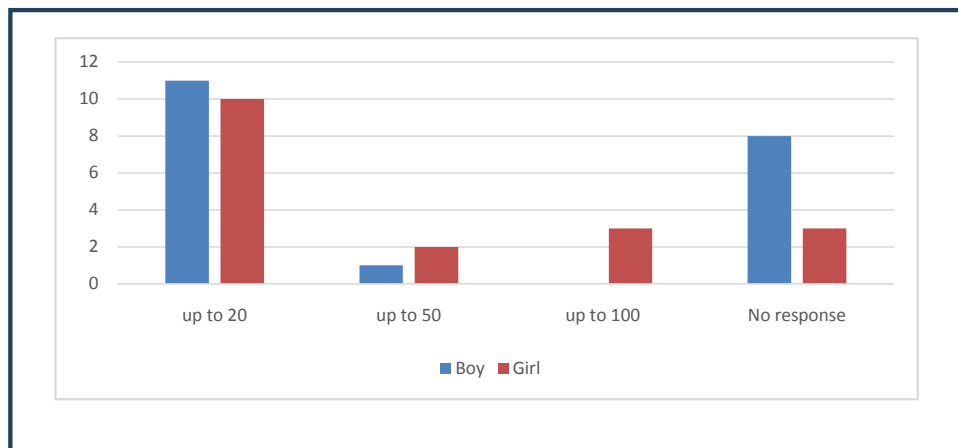


Figure 2: Children count up to

To know about the counting abilities of the children demonstration method was applied. Among all 52.5 per cent children could count up to 20 when were asked to count up to 100. Only 5 out of 40 i.e 12.5 per cent children could count up to 100 properly. Farther it was seen that 27.5 per cent children did not give any response at all. According to our observation children Paligoan II AWC (Faridpur 45/1) were much more competent in counting compared to the children of other AWCs.

Language development helps in understanding different things by listening and expressing oneself properly, indeed in communicating. Language development actually takes place by making familiar with different objects, showing them repeatedly and demonstrating them.

Each and every AWC has vegetable charts, which are used to generate awareness about colour, taste, shape and nutritional value of different vegetables among the children. The children were shown pictures of vegetables and were asked to tell the names to analyse if they can identify them. Most of the children could not tell the names of all the vegetables. Only 10 per cent could name and describe all the vegetables while 20 per cent kids could not respond properly.

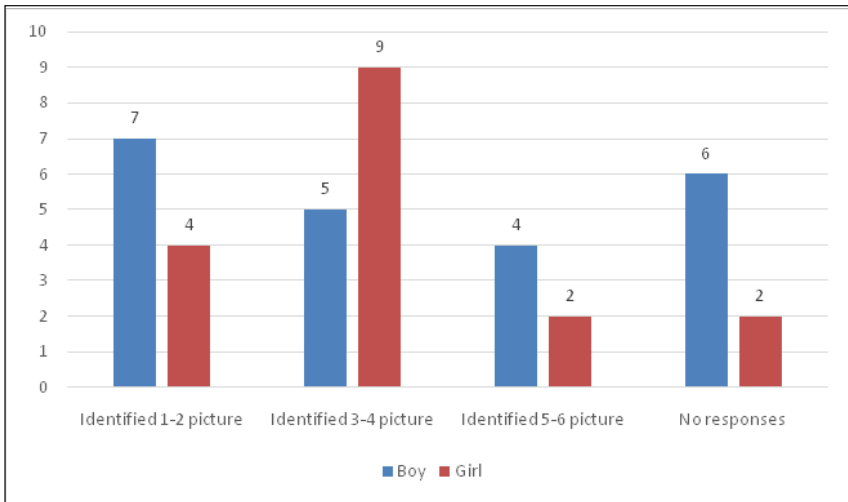


Figure 3: Identified picture of Vegetable

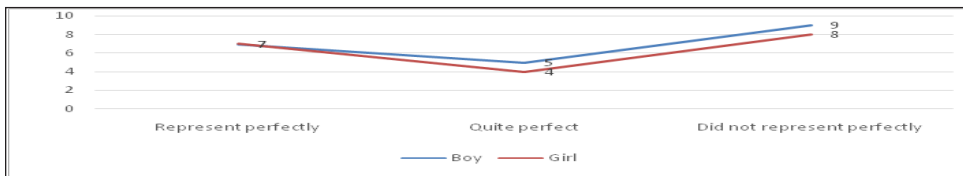


Figure 4: Children were able to responding name & address

Beside linguistic development, the development of social and emotional awareness is also important for overall development of a child’s mind set. Societal development is the key for a child, to build positive relationship with family, relative and school. Considering this, self-awareness and development along with awareness of child’s surrounding environment is also important.

To examine the extent of the children’s personal and social awareness, they were asked to tell the individual name and address. Each and every one among them could tell their names correctly, but 17 children could not tell their address properly. There were 14 children who could represent their address perfectly and 9 out of 40 children somehow managed to respond but could not tell their address correctly. For some instances, Iman Ali – a five years old from Paligoan does not know where is the post office of their villages. Md Akbar– another 5 years old boy of the same village just knows the name of the village and nothing more than that, whereas, for Iqbal Ahmed, Zilla (district) means the state itself as he kept on saying “our Zilla (district) is West Bengal”.

Every child has his or her own inner aesthetic sense. But aesthetic value is inseparably related with intelligence. Thus, the more a child gets familiar with the nature and surrounding environment, the better gets the aesthetic sense developed. It is important to develop a child's imagination power and allow more chances or possibilities to evolve the imagination power of a child. They should be given some questions or incomplete things which they will answer and make complete using their imagination power.

Task	Boy	Girl	Total
Made shape & coloured inside	8	14	22
Did not made shape & coloured inside	4	1	5
No responses	7	6	13

Figure 5: Children made shape and coloured

The children were asked to draw different shapes like circle, triangle, square, rectangle etc. and put colour inside them. Total 22 children out of 40 could complete the task properly and correctly while 13 children did not respond. There were 5 children who performed the task in an incomplete manner like some could make the shape but could not colour that, on the other hand some, in spite of having idea about colours, could not make correct shapes. Taking the example of Mansura Khatun, a girl aged 5 and enrolled in the AWC-II of Paligoan, Majer Para who neither has any correct idea about the shape, nor has knowledge about colours- evident her in -capabilities. When she was asked to draw triangle and square, she made a circle and when was asked to draw a red circle, she just made a triangle with pencil.

Along with psychological development, physical growth and development is also necessary for a child's overall development. Both mental, physical growth and development take place gradually as a child grow up. The reason behind that is, physical growth and development plays important role in skill development, sensitive muscular development and hand- eye coordination. Indeed, in future it helps the child to gain perfection in playing, drawing and handicrafts.

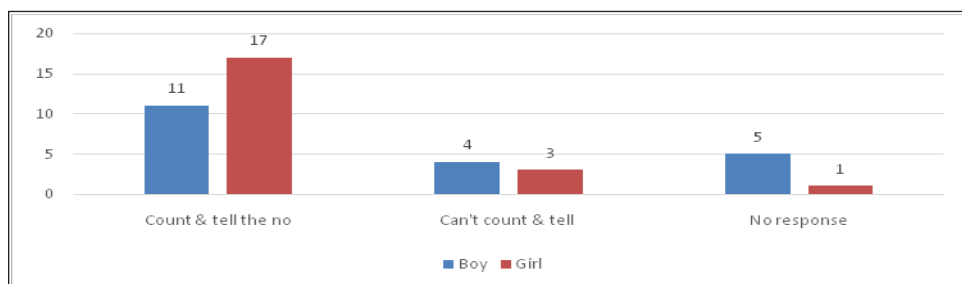


Figure 6: Children were given some balls to count

To evaluate the physical development of the children a specific test was conducted. The children were asked to sit together and were given some balls to count. They were also instructed to follow a straight-line mark and then to throw the balls in a basket. Among the participants, most of the children i.e. 27 to be specific could count the balls correctly and could perform the task completely in proper manner. There were 7 children who could not perform the task properly. Some could not throw the balls properly like others, while some could not follow the straight-line mark or counted the number of balls wrong. There were only 6 children who did not any response during this test or did not participate at all.

Factor Influences

Service Provider:-The service providers are actually the AWCs themselves which involves the active AWWs and AWHs. The AWWs attributed the infrastructural deficiencies as the reason behind the poor performance of some children during different tests. If an AWC lacks own building, adequate space (both indoor & outdoor), playground.etc., the children do not get attracted towards the centre and feel reluctant to visit the centre. Beauty Mondal Sardar (the AWW of the centre) said that she could not implement the play-way and demonstration methods to teach the children ever due the lack of own building, as well as adequate indoor and outdoor space.

Service Receiver: - Here, the service – receivers are those who are the beneficiaries of the six packages of ICDS i.e the children and their mothers. With a determined vision of proper development of the children, the parents and the Anganwadi Workers work together. On this note, it is the responsibility of the AWWs to increase the awareness of the parents regarding their children’s overall development.

The attendance of the children at the Anganwadi Centres is an indication of this awareness of parents. The awareness of the mothers signifies the motivation for enrolment in AWCs. 78.3 per cent households have enrolled with their own motivation. Rest 21.7 per cent mothers were motivated by the AWWs, AWHs, ANMs, Panchayat Members etc. to enrol. According to the study we observed this 21.7 per cent mothers, initially used to think these AWCs as valueless and could not analyse the usefulness of the ICDS scheme that is why they had no self-motivation to go to the AWCs. But now they are gradually realizing the benefits and importance of the scheme.

The attendance of the children has a clear impact on the difference in the level of performance of the children during the tests. Those who are regular- could perform better in different tests compared to those who attend the centres irregularly or rarely. Precisely 21.7 per cent children are those who attend centres irregularly or occasionally. One of the main reasons behind children’s low attendance is that, their parents consider attending madrasa at this early age is much important than attending AWCs. Anwar Ali- father of Md Osman aged 5 years said, “It is very important to learn Arbi since early days of childhood”. Thus it was observed that, there are 8.7 per cent children whose attendance is pretty rare i.e. less than a week in a month.

Besides the awareness regarding ICDS and the motivation of sending the children to the AWCs, the highest educational qualification of a particular household also plays an important role in the children's (age group of 0-6 years) linguistic, cultural, aesthetic, social physical and mental development. During the household survey, it was found that 34.7 per cent households had qualification of below class 8 level as their highest qualification. More detailed enquiry showed that 14.3 per cent among the households even do not have highest qualification of more than class 4 levels. "We do not have adequate qualification, we spend most of the day in ploughing, we can't monitor on our children's learning at AWCs" – as Maqbool Hossain, guardian of Omar Abdullah (age 4) said.

Conclusion

The children are the future of a nation."There is growing evidence from the fields of neuroscience, social science and psychology that the first five years play a significant role in children's learning. Recent findings reveal that the environment plays an important role in children's development."

The above discussion leads us to conclude, Good pre-school experience has the potential to deeply influence the learning and development of the children. ICDS, which has an integrated approach in its implementation for the proper mental, physical and psychological development of the children, has been reduced just to Khichri Centre. While analyzing this particular service of the scheme, the situation there too is not satisfactory. Service receiving and service provider factors are responsible for the mal functioning of these centres and few have been mentioned above. AWW are to be trained time to time and again about pre-school component of ICDS to develop the skills to be applied more effectively in pre-school education and it should be done through the involvement of children by the AWC in the aspect of learning. Comprehensive supervision of AWW is important, which is intimately attached with the foundation education of the children. Pre-school education should be emphasised along with the nutrition and immunization of the children in ICDS.

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Fishery based Integrated Farming System (IFS)

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Abstract

Integrated farming is defined as biologically integrated system, which integrates natural resources in a regulation mechanisms into farming activities to achieve maximum replacement of off-farm inputs, secures sustainable production of high quality food and other products through ecologically preferred technologies, sustain farm income, eliminates or reduces sources of present environment pollutions generated by agriculture and sustains the multiple function of agriculture. It emphasizes a holistic approach.

The Birbhum District is one of the marginalized district of the state of West Bengal with a huge majority of subsistence land-less and small and marginal farmers dominating resource poor agro-ecological situations, which is still centering around only one crop in a year i.e. Kharif Paddy. To change this situation, the Rathindra Krishi Vigyan Kendra, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati, Sriniketan, Birbhum, West Bengal is doing On Farm Trials (OFTs) on various combinations of components of fishery based IFS for the last decade. This paper will try to elucidate the multi-location Trial and its results obtained in 2015-16 by the Rathindra Krishi Vigyan Kendra (KVK) in its mandated Birbhum District.

The result of the trial indicated that Technology Option – 1 i.e. Composite fish Culture with Indian Major Carps (IMC) + Ducks Poultry farming + Azolla + Pulses exhibited higher BC ratio (2.21) than those of Technology Option - 2 (2.06) and farmers practice (1.14). Here it is to be mentioned that gross return and net return was higher in integrated farming system where vegetable cultivation was one of the components.

It might be due to higher value of vegetables than pulses. But due to low cost of cultivation, BC ratio was higher in integrated farming system where pulses were the component.

Keywords: *Integrated Farming System (IFS), BC Ratio, Fishery.*

In the Indian economy the declining trend in size of land holding poses a serious challenge to the sustainability and profitability of farming. In view of the decline in per capita availability of land from 0.5 ha in 1950-51 to 0.15 ha by the turn of the century and a projected further decline to less than 0.1 ha by 2020, it is imperative to develop strategies and agricultural technologies that enable adequate employment and income generation, especially for small and marginal farmers who constitute more than 80 per cent of the farming community. The crop and cropping system based perspective of research needs to make way for farming systems based research conducted in a holistic manner for the sound management of available resources by small farmers (Jha, 2003). Under the gradual shrinking of land holding, it is necessary to integrate land based enterprises like fishery, poultry, duckery, apiary, field and horticultural crops, etc. within the bio-physical and socio-economic environment of the farmers to make farming more profitable and dependable (Behera *et al.*, 2004). No single farm enterprise is likely to be able to sustain the small and marginal farmers without resorting to Integrated Farming System (IFS) for the generation of adequate income and gainful employment year round (Mahapatra, 1992; 1994). Farming systems approach, therefore, is a valuable approach to addressing the problems of sustainable economic growth for farming communities in India.

Integrated farming is defined as biologically integrated system, which integrates natural resources in a regulation mechanisms into farming activities to achieve maximum replacement of off-farm inputs, secures sustainable production of high quality food and other products through ecologically preferred technologies, sustain farm income, eliminates or reduces sources of present environment pollutions generated by agriculture and sustains the multiple function of agriculture (IOBC, 1993). It emphasizes a holistic approach.

However, in reality, integrated farming is commonly and narrowly equated with the direct use of fresh livestock manure in fish culture (Little and Edwards, 2003). However, there are broader definitions that better illustrate potential linkages. Indeed, the term 'integrated farming' has been used for integrated resource management which may not include either livestock or fish components.

Benefits of integration are synergistic rather than additive; and the fish and livestock components may benefit to varying degrees. The term "waste" has not been omitted because of common usage but philosophically and practically it is better to consider wastes as "resources out of place" (Taiganides, 1978).

This is a multidisciplinary whole-farm approach and very effective in solving the problems of small and marginal farmers. The approach aims at increasing income and employment from small-holdings by integrating various farm enterprises and recycling crop residues and by-products within the farm itself (Behera and Mahapatra, 1999; Singh *et al.*, 2006).

The basic aim of IFS is to derive a set of resource development and utilization practices, which lead to substantial and sustained increase in agricultural production (Kumar and Jain, 2005). Integrated farming systems are often less risky, if managed efficiently, they benefit from synergisms among enterprises, diversity in produce, and environmental soundness (Lightfoot, 1990). On this basis, IFS models have been suggested by several workers for the development of small and marginal farms across the country (Rangaswamy *et al.*, 1996; Behera and Mahapatra, 1999; Singh *et al.*, 2006).

In South and South-east Asian countries, the focus is the integration of livestock and fish, often within a larger farming or livelihood system. Although housing of livestock over or adjacent to fish ponds facilitates loading of wastes, in practice livestock and fish may be produced at separate locations and by different people yet be integrated. Chen *et al.* (1995) distinguished between the use of manures produced next to the fishpond and elsewhere on the same farm. A wider definition includes manures obtained from off-farm and transported in bags, e.g. poultry manure, or as slurry in tanks, such as for pig and large ruminant manure. Integrated farming involving aquaculture defined broadly is the concurrent or sequential linkage between two or more activities, of which at least one is aquaculture. These may occur directly on-site, or indirectly through off-site needs and opportunities, or both (Edwards, 1998).

Integration of livestock in fish culture is an old age system of practice. Ducks, poultry, pig, cattle, buffalo, sheep and goat are common in IFS. Nowadays rabbit also incorporated in integrated livestock cum fish culture. Due to progressive shrinking of farm holding to obtain maximum output adoption of mixed farming system with livestock and fish become very popular in wetland and water shed areas of the country. The by-product utilization of one sub-system e.g. excreta of livestock becomes an input to a second sub-system i.e. in fish culture. To avoid environmental problems with animal excreta apart from manure production the animal excreta could be efficiently utilized as feed for fish and the end product is valuable animal protein, which is very much needed in India. States like West Bengal, Orissa, Bihar, Jharkhand, Andhra Pradesh, Assam and North Eastern state the demand for fish and fish products along with meat and animal products are very high. To meet this gap, the integration with fish and livestock is very promising and could bring a significant profitability from a unit area particularly for small holding farmers.

Most of the small holder farmers cannot afford the concentrate feed requirements of the fishes in intensive fish farming. Hence, the integrated fish farming with livestock

and utilization of livestock excreta could meet demand by growing fish food organism i.e. plankton in the pond or water bodies along with direct feeding of animal waste. The popular livestock- fish integrated farming systems are – (a) Duck- fish integration system, (b) Poultry- fish integration system, (c) Pig- fish integration system, (d) Sheep/ Goat- fish integration system, (e) Cattle- fish integration system, (f) Buffalo- fish integration system etc. A variety of aquatic plants e.g. duckweeds and the aquatic fern *Azolla* have proven potential as livestock feeds; and invertebrates such as snails and crustaceans can be used for poultry feeds.

The Birbhum District is one of the marginalized district of the state of West Bengal with a huge majority of subsistence land-less and small and marginal farmers dominating resource poor agro-ecological situations, which is still centering around only one crop in a year i.e. Kharif Paddy. To change this situation, the Rathindra Krishi Vigyan Kendra, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati, Sriniketan, Birbhum, West Bengal is doing On Farm Trials (OFTs) on various combinations of components of fishery based IFS for the last decade. This paper will try to elucidate the multi-location Trial and its results obtained in 2015-16 by the Rathindra Krishi Vigyan Kendra (KVK) in its mandated Birbhum District.

Objectives of the Study

The main objectives of the study are as follows:

- 1 A brief conceptual grounding on the basic principles for IFS models as popularized by the Rathindra KVK;
- 2 The detail technicalities of the components and its management practices and
- 3 The detailed yield and economic parameters of the model IFSS.

Materials and Methods

The Rathindra KVK has conducted On Farm Trials on Integrated Farming System with different components in 7 (Seven) numbers of replications with 7 (Seven) numbers of partner farmers [representing the three Agro Ecological Situations of Birbhum District viz. AES – 1, AES – 2 and AES – 3] each treated with 3 (Three) Technology Options i.e. (A) Farmers' Practice (FP): 1 unit = Traditional Fish Farming in 0.19 ha pond only + fallow land, (B) Technology Option – 1 (Tech. Opt. – 1): 1 unit = Composite Fish Culture with Indian Major Carps (IMC) in 0.19 ha pond + 20 nos. of Ducks Breed Khaki Campbell + 0.13 ha utilised land adjacent to pond with pulse cultivation in Summer and Rainy season Black Gram and in Rainy Season Red Gram + *Azolla* culture in Pond and (C) Technology Option – 2 (Tech. Opt. – 2): 1 unit = Composite Fish Culture with Indian Major Carps (IMC) in 0.19 ha pond + 20 nos. of Ducks Breed Khaki Campbell + 0.13 ha pond embankment land under vegetable cultivation in Rainy Season Lady's Finger and in Winter Season Capsicum for Nutrition Garden + *Azolla* culture in Pond in 2015 – 16. Partner Farmers helped the KVK scientists for data collection and implementation of the technology very carefully. Day to

day supervisory practices was also done through proper participation by the partner farmers. Besides this, the partner farmers also invested different cost of cultivation like labour, netting etc.

Observations

Basic Principles for Fishery based IFS Models as Popularized by the Rathindra KVK

The basic principles for fish based integrated farming system are full utilization of livestock farm wastes and conversion of waste in to valuable fish protein. The spilled over feed or feed derived from livestock manure may be utilized as direct feed or the manure from livestock helps in production of planktons which form the feed for fishes in the pond. In addition to the fish and livestock component, the pond embankments and pond adjoining areas are being used for seasonal nutrition gardening and pulse cultivation. In this integrated farming system optimal stocking density with desired fish species, optimum utilization of manure and lime also play an important role for successful production of fish. Excess manuring with livestock excreta may cause poor water quality and may lead to depletion of dissolved oxygen in water causing mortality to fishes. So, culture of the aquatic fern *Azolla* (*Azolla pinnata*) in the pond have proven potential as green fish feed and green and dried livestock feeds as well as bio-fertilizer in the adjoining nutrition gardens and pulse fields. The livestock-fish farming may be extensive, intensive or semi-intensive system depending upon the availability of resources and capital.

The Detail Technicalities of the Components and Its Management Practices of the IPM Models as popularized by the Rathindra KVK

Though the Rathindra KVK has experimented with only Composite Fish Culture, Ducks breed Khaki Campbell, Pulse Cultivation viz. Black Gram in Summer and Rainy Season and Red Gram in Rainy Season, Vegetable Cultivation viz. Lady's Finger in Rainy Season and Capsicum in Winter Season and *Azolla* culture in Pond in 2015 -16; all the other components mentioned below are tried by the Rathindra KVK in the previous years with various degrees of successes.

Fish Species for Fishery based IFS Models popularized by the Rathindra KVK

The most suitable species of fishes for fishery based IFS are those fishes that can filter and feed on phytoplankton, zooplankton and bacteria from water. The objective of fishery based IFS is to produce maximum plankton in water through manuring which is rich in protein and a natural feed for fishes. The species of fishes which are consumed by the people and are efficient utilizer of phyto and zooplankton and also with macrophytic feeding nature are excellent for fishery based IFS. Depending on the feeding nature the fishes are divided into three categories viz. Surface feeder, Column feeder and Bottom feeder. In integrated system of fish farming both indigenous and

exotic species are recommended. Indigenous species like Catla (*Catla catla*) which are zooplankton feeder and exotic species Silver carp (*Hypophthalmichthys molitrix*) which are phytoplankton consumer are best example of surface feeder, whereas Rohu (*Labeo rohita*) an indigenous species is omnivorous in nature and column feeder. The indigenous species Mrigal (*Cirrhinus mrigala*), Kalabasu (*Labeo calbasu*) are detritivorous and common carp (*Cyprinus carpio*) an exotic species which are detritivorous / omnivorous in nature are bottom feeder. Exotic species like Grass carp (*Ctenopharyngodon idella*) which are herbivorous cover surface, column and marginal area of feeding zone.

Management of Pond in Fishery based IFS

The pond should be water retentive and not to be situated in flood prone area. There should be constant water supply or throughout the year there should be water in the pond. Seasonal ponds, which can retain 8 to 9 month water also, can be considered for integrated farming system. At least there should be 1.0 m of water and ideal is 1.5 to 3.0 m. Soil pH should be within the range of 6.5 to 7.5. If the soil pH is not up to the desired level, the pH may be corrected by application of lime and the quantity of lime is 2000 kg/ ha for 4.0 to 5.0 pH, 1200 kg for 5.1 to 6.0, 1000 kg for 6.1 to 6.5 (mild acidic), 400 kg for 6.6 to 7.0 (more or less neutral) and 200 kg/ ha for pH 7.1 to 7.5, which is mildly alkaline. Lime helps in maintaining pH, kills and decomposes parasites. The lime should be applied in 3 to 4 split doses. The basal dose of lime and cow dung application in per hectare of water bodies is 1200 kg and 5000 kg, respectively. The pond should be regularly cleaned from aquatic plants which prevents sunlight penetration and oxygen circulation in water as well as shelter fish predators. The weeding can be done by manually, mechanically, biologically, chemically or by increasing the water depth in the pond. To kill predatory fishes, Mahua (*Bassicala trifolia*) may be applied at the rate of 2500 kg/ ha of water bodies. By repeated netting unwanted fishes may also be removed. The ammonia, tea seed cake and bleaching powder also can be applied to remove enemy fishes.

Stocking and Harvesting Time of Fishes

June and July is the best suitable months for stocking of fingerlings. The stocking time varies depending upon the climate in different regions of the country and also the availability of optimum water level in pond. Below 18 to 20°C growth of the fishes restricted. During winter months growth is slow but in rainy season faster growth observed in fishes. Moreover, in winter months and in dry season water level comes down drastically in the water bodies, especially in the red lateritic situation in Birbhum District. It is advisable to stocking fingerlings after winter months i.e. in rainy season and harvested before the water scarcity in pond. Generally, fishes are harvested after 12 months of stocking. But, where water bodies remain functional for 6 to 9 months fingerlings may be stocked in July - August and harvested in the month of November - December. In composite fish culture 3 species, 4 species or 6 species may be stocked

depending upon the availability of fingerlings in the market. In fishery based IFS, considering the surface, column and bottom feeder the ratio of fishes viz. Catla, Rohu and Mrigal should be 4: 3: 3 (3 species), in 4 species Catla, Rohu, Mrigal and Common carp ratio 3: 3: 3: 2 whereas, in 6 species Catla, Rohu, Mrigal, Silver carp, Grass carp and Common carp ratio should be 1.5: 2.0: 1.5: 1.5: 1.5: 2.0, respectively. For example, as Catla and Silver carp are surface feeder, the combined stocking density should not be more than 30 to 35 per cent, but for Rohu which is column feeder grows well in ponds with 3 to 4 m water depth should be stocked at the rate of 15 to 20 per cent, whereas, bottom feeder like Mrigal and Common carp the ratio may be 40 to 45 per cent. Grass carp should not be more than 5 to 10 per cent, which can be fed with land grasses, vegetable refuse from the kitchen garden and also kitchen itself, banana leaves (practiced at ICAR RC ER, Patna) or with aquatic plants like *Azolla*. Central Inland Fisheries Research Institute and ICAR Research Complex for NEH Region, Barapani recommended 6000 fingerlings/ ha for duck-fish integrated system.

Ideal Housing for Live Stocks in the Fishery based IFS as popularized by the Rathindra KVK

Considering the easy operation of day to day farm management and optimum production the livestock house is constructed above the water bodies especially for duck or poultry or partly in water and land. In duck cum fish farming the duck house may be constructed above the pond thus the excreta and feed waste directly goes to the pond and serve as a feed for fishes. When the house is constructed in bank of the water bodies, a channel is diverted from animal shed to the pond, so that the feed waste or excreta rinsed to the pond. In this case optimum livestock-fish ratio should be maintained to avoid excess manuring in water. In this type of housing duck, poultry is recommended. In third type i.e. slatted floor is considered for both birds. The animal excreta channelized in the pond directly. The slatted type floor may be constructed with wood, bamboo etc.

Types of Livestock- Fish Integrated Farming System

Duck cum Fish Farming- This system is very popular and widely practiced in our country particularly in Assam, West Bengal, Bihar, Orissa, Andhra Pradesh, Kerala and in North Eastern States. It is one of the best livestock – fish integration system. Duck droppings directly fall in water or collected and used for fertilization in pond. Fish gather duck droppings as direct food or consume spilled feed. Ducks consume mosquito larvae, tadpoles, dragon fly larvae and snails which also serve as vector for certain parasites. The dabbling habit of ducks increases the available oxygen in pond water. For commercial farming or for maximum profit high egg producing ducks like Khaki Campbell or Indian Runner is preferred instead of local ducks. About 200 to 240 eggs/ duck/ year is expected for commercial farming and on an average 250 ducks/ ha is recommended for duck cum fish farming.

Poultry cum Fish Farming - Poultry excreta is an excellent feed for fish as it contains highly soluble organic salts, more N and P as compared to other livestock manure. Broiler or layer bird can be raised in the integrated system. In Birbhum situation, breeds like Rhode Island Red and Black Australop are used successfully. It was found suitable even with dual purpose poultry bird breeds like Vanaraja. For one hectre fish pond 500 to 600 birds can be reared and on average 60 kg poultry manure is produced per day.

Potentiality of Livestock Manure in Fishery based IFS

Livestock excreta contain about 70 to 80 per cent water and 20 to 25 per cent dry matter. A poultry layer bird can produce 68 kg of excreta per year. Livestock excreta are generally used as potential manure in agricultural production system adjacent to the pond. It is rich in Nitrogen (N), Phosphorous (P) and Potassium (K) and also contains micronutrients. Thus, it makes the soil fertile. The average dung production in different animals varies according to their body size, body weight and feed and water consumption. In poultry manure production is 0.014 tonnes/ bird/ year, respectively on dry weight basis. The N, P, K level in excreta varies in different species of birds, like poultry 0.76, 0.63 and 0.22 per cent and in duck 0.91, 0.38 and 0.36 per cent respectively.

Cultivation of Vegetables in the Nutrition Garden on the Embankments of the Pond in the Fishery based IFS

The top, inner and outer dykes of ponds as well as adjoining areas can be best utilized for horticulture crops. Pond water is used for irrigation and silt, which is high-quality manure and is used for crops, vegetables and fruit bearing plants. The success of the system depends on the selection of plants. They should be of dwarf type, less shady, evergreen, seasonal and highly remunerative. Seasonal vegetables like Brinjal, Pointed Gourd, Ridge Gourd, Bitter Gourd, Lady's Finger etc. in the Rainy Season and Capsicum, Broccoli, Brinjal, Tomato, Spinach, Cabbage, Cauliflower etc. in the Winter Season are cultivated with a special emphasis on nutritional aspects of the vegetables grown in the Kitchen Garden on the embankment of the pond provide additional income to farmers. The cultivation should be organic using *Azolla* and Poultry and Duck excreta as bio-fertilizer and Neem oil as pest repellent. The crop dbris of the vegetables are used as fish feed for fishes like Grass Carp.

Cultivation of Pulses on the Embankments and Adjacent Areas of the Pond in the Fishery based IFS

Cultivation of improved varieties of Black Gram and Green Gram in summer season, Black Gram and Red Gram in rainy season and pulses like Lentil and Field Pea in winter season on the embankments and the adjoining areas of the pond are part of the fishery based IFS models popularized by the Rathindra KVK. Here also the *Azolla* and

excreta of the birds are used as bio-fertilizers.

The Detailed Yield and Economic Parameters of the On Farm Trials of the IFSs conducted by the Rathindra KVK

Table 1: Profitability under Fish based Integrated Farming System

Technology Option	No. of Trials	Man days utilized per Year	Cost of Cultivation (Rs./Unit*)	Gross Return (Rs./Unit)	Net Return (Rs. /Unit)	BC Ratio
Farmers' Practice (FP): Traditional fish farming		15	36,240.00	41,200.00	4960.00	1.14
Tech. Opt. - 1. Composite Fish Culture (IMC) + Duck farming (20 nos) + <i>Azolla</i> + Pulses (Redgram + Blackgram)	7	247	55,380.00	1,22,430.00	67050.00	2.21
Tech. Opt. - 2. Composite Fish Culture (IMC) + Duck farming (20 nos) + <i>Azolla</i> + Vegetables (Ladys' Finger + Capsicum)		262	82,440.00	1,70,080.00	87640.00	2.06

FP: 1 unit = 0.19 ha pond only + fallow land

Tech. Opt. - 1: 1 unit = Composite Fish Culture with Indian Major Carps (IMC) in 0.19 ha pond + 20 nos. of Ducks breed Khaki Campbell + 0.13 ha utilised land with pulse

Tech. Opt. - 2: 1 unit = Composite Fish Culture with Indian Major Carps (IMC) in 0.19 ha pond + 20 nos. of Ducks breed Khaki Campbell + 0.13 ha land under vegetables

Result

The result of the trial (Table - 1) indicated that Technology Option – 1 i.e. Composite fish Culture with Indian Major Carps (IMC) + Ducks Poultry farming + *Azolla* + Pulses exhibited higher BC ratio (2.21) than those of Technology Option - 2 (2.06) and farmers practice (1.14). Here it is to be mentioned that gross return and net return was higher in integrated farming system where vegetable cultivation was one of the components. It might be due to higher value of vegetables than pulses. But due to low cost of cultivation, BC ratio was higher in integrated farming system where pulses were the component. Droppings of ducks were also used as feed of fishes in both Technology Option - 1 and 2. Both in Technology Option – 1 and Technology Option - 2, the leftover materials of pulses as well as of vegetables were also used as feed of fishes and ducks. Moreover, *Azolla* was also used as feed of fish and ducks.

Besides that, the *Azolla* was also used as organic manure and bio fertilizer in pulses and vegetables. Further, man day's utilization (262 per year) was slightly higher in Technology Option – 2 than Technology Option - 1 (247 per year). In farmers practice, man days utilization was very low (15 per year) and BC ratio was also very low (1.14). Therefore, it may be concluded that integrated farming system with composite fish culture, duck farming, *Azolla* and pulse cultivation in bank of the pond is very economically efficient to integrate the components in profitable manner in Birbhum District. However, the performance of the IFS with components of composite fish culture, duck farming, *Azolla* and vegetable cultivation in bank of the pond is also quite impressive as it fetches highest Gross and Net Returns as well provides highest numbers of man days as labour.

It may be concluded that integrated farming system with composite fish culture, duck farming, *Azolla* and pulse cultivation (Technology Option - 1) on the bank of the pond is very effective to integrate the components in profitable manner in Birbhum District.

Conclusion

From the present study, it may be concluded that integrated farming system with composite fish culture, duck farming, *Azolla* and pulse cultivation in bank of the pond is very economically efficient to integrate the components in profitable manner in Birbhum District. However, the performance of the IFS with components of composite fish culture, duck farming, *Azolla* and vegetable cultivation in bank of the pond is also quite impressive as it fetches highest Gross and Net Returns as well provides highest numbers of man days as labour.

However, from the previous years' experiments the Rathindra KVK can safely suggest that integration of various components like Composite Fish Culture with both Indian Major Carps and Exotic Carps, Poultry Farming with breeds like Rhode Island Red (RIR) or Black Australop (though under Back Yard Situation of Integration RIR is a big hit), seasonal Vegetables as well as Pulse Cultivation can be safely incorporated into a IFS.

But still, lack of technological knowhow in integration of components in a proper way among the farming community for higher profitability, inadequate monetary transaction in the lean period etc. pose obstacles in the path of popularization of the IFS concept in Birbhum District. Other factors like low level of managerial skills in coordinating and synchronizing various components of an IFS and low level of skills in documentation and record keeping are also posing great challenges on the path to popularize IFS concept among the farming community of Birbhum District, West Bengal.

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8

Gender Disparity in West Bengal and Some Social Development Indicators

Subhrangsu Santra

Abstract

Gender disparity exists each and every corner of our society and even getting deep rooted in course of time in spite of minimising the gap. The determinants, like – economic empowerment of women, improve the level of awareness and literacy rate, reported to be responsible to minimise the gap, have found to maintain a steady growth in last three decades but the status of women more or less remain unchanged. Many social activists involved in development sector tried in their own way to analyse the problem better and some of them even gave some dimensions to reduce the gender disparity.

In this paper I have tried to examine the status of women in West Bengal in terms of four social development indicators like- FMR, literacy, health and women work force. The finding of the study is not satisfactory in all the respect.

Keywords: *FMR, literacy, health and women work force*

Introduction

“*Naino me pataye shanti na putra na bandhva/ na bhratarau na cha pita nayang tu Madhusudanana-nobody of my own neither my husbands, nor my brothers, nor my father and not even you O Lord Madhusudana*”¹ –this is the expression of Draupadi, the grand queen of Mahabharat. Can we tell that her expression entangled with helplessness towards the male dominated society is just a past story? What is the status of women at present in our society? Her suffering has perhaps relevance till today.

The suffering of women and their worldwide unequal status since the period of Draupadi's (or even earlier) somehow managed to get importance of the social researchers. As a result of that the 'Women Studies' has been emerged as a popular subject now a days.

Amartya Sen pointed out, "Gender is certainly an additional contributor to social inequality, but it does not act independently of class ... It is the interactive presence of these two features of deprivation – being low class and being female – that can massively impoverish women from the less privileged classes."²

The complex social context, therefore, makes it important to examine the case of gender inequality in a comprehensive manner – both in its wholeness and particularities.

As for class, we do not have much data on gender based on different economic groups. However, in our country, notwithstanding some variations, the different social groups often represent the economic groups. For example, the Scheduled Castes, Scheduled Tribes and the Muslims, according to the available Census data, form the majority of the rural working class in West Bengal. Similarly, according to NSSO data³ these three groups mainly comprise the poorest of the poor both in rural and urban areas.

Amartya Sen has broadly categorised the many faces of gender inequality in six headings, viz. survival inequality, natality inequality, unequal facilities, ownership inequality, unequal sharing of household benefits and chores, and domestic violence and physical victimization.⁴ But this study we do not have much scope to deal with all the different inequalities at length.

In the following section we would try to draw a broader picture of gender disparity in West Bengal, by using four of the basic indicators, viz. female male ratio, literacy, health and work participation rate. There are many other areas of disparity between men and women.

Female-male ratio (FMR)

The ratio of female to male in a population is a good indicator of measuring gender inequality as it indicates towards the inequalities in terms of health care and nutrition faced by the women. In spite of the female children's greater probability of survival, the disparities in health care and nutritional support reduced this ability to a large extent. It is a fact that male babies are born in more number than females, everywhere in the world. But, their number gradually reduced and because of female children's greater survival probability this ratio at birth is often reversed, provided that there is no dissimilarity in the provision of health care and nutrition. Thus the population of the developed countries in Europe and North America have more females than males (1050 females per 1000 male).⁵

In India in general we have a poor record as regards the FMR. As a contrasting exception, thanks to its better and relatively equal health and nutritional coverage both at domestic level and by the state⁶, the FMR in Kerala is not only much better than the Indian average but also than many developed countries. On the other hand the growing inequalities in many other Indian states has actually caused in a reverse trend in the FMR. While Kerala has not only maintained, and bettered, its record of over 1000 female per 1000 male throughout the century (1901-2001), in some of the states, such as Bihar, this ratio has been declining drastically, if not criminally. In 1901, 11 of the Indian states had more than 1000 females per 1000 males. But in 2001, no other state than Kerala and the union territory of Pondicherry have a similar figure. Such falls in some states and the poor records of some states, such as Punjab and Haryana, since the beginning of the century have severely damaged the All India figures which were 972 in 1901 and 933 in 2001. West Bengal had 945 females per 1000 males in 1901, which drastically fell in the middle years before it rose to 934 (one point ahead of the national average) in 2001.

Table 1. Female Male Ratio : India and West Bengal

	2001	Rank	1901	Rank
West Bengal	934	17	945	20
India	933		972	

West Bengal is still much behind the desired number of women per thousand of men, although it has made some progress that helped in escalating its position in the all India context from 20 to 17.

Except in some of the states, the general pattern of FMR among the backward social groups, or the SCs and STs, according to the 2001 Census, is higher than that of the combined figures. The major exception, of course, is Kerala where the FMR figures of both the SCs (1048) and the STs(1021) are lower than the state average (1058). In general the FMR among the ST groups is found to be much better than the other groups. This has much to do with the egalitarian nature of the society. But, the exception in Kerala indicates towards an important aspect of the Kerala society – better treatment towards women among all different communities, which is very unlikely in many of the states.

In West Bengal, we find wide disparity in the FMR of the SC (949), ST (982) and the total (934). Also there is another aspect of importance. When the SC and ST communities in many other states have much been influenced by the so called mainstream societies to adapt a biased view on women that has caused in a decline in the FMR in those societies over decades, West Bengal has actually seen a reverse but positive trend. In 1961 the FMR of the SC and ST communities, in West Bengal, were 915 and 971 respectively. The comparative figures in 2001 are 949 and 982 respectively. This improvement has also contributed to an enhancement in the total to bring it to 934 in 2001 from an alarmingly lower figure of 878 in 1961.

Table 2. FMR among different social groups in India –1961 and 2001.

	2001			1961		
	Total	SC	ST	Total	SC	ST
West Bengal	934	949	982	878	915	971
India**	933	936	978	941	957	987

In fact it is the high FMR among the SC and ST communities that has also contributed much to the FMR of the Hindus. (In West Bengal most of the Scheduled Caste communities and a large number of Scheduled Tribe communities are returned as Hindus. Some of them are returned as Christians, but the number does not seem to be substantial). With this consideration, if one deducts the SC and ST from the total Hindu population, the FMR among the so called *Varna Hindus*, appears to be frighteningly lower.

Table 3. FMR among different religious groups in West Bengal – 2001

	FMR	
	West Bengal	India
All	934	933
Hindus	932	931
Muslims	933	936
Christians	1002	1,009
Sikhs	807	893
Buddhists	981	953
Jains	929	940
Others	985	992
Religion not stated	883	900

Female Literacy Rate

Thanks to special attention and drives in the field of literacy in general, and female literacy in particular, India has made some good progress in enhancing the level of female literacy. Yet, the gap between male and female literacy rates is still far wider. In addition, the line of progress in female literacy is still very skewed in nature. Some of the states, mainly in the Hindi heartland are still lagging far behind the national female literacy rate (54.2 percent). While the all India gender gap (male minus female) in literacy in 2001 is 21.7 percent point (henceforth p.p), UP and Bihar, the two very populous states, have alarmingly high distance in the male and female literacy rates (the respective figures of gender gap in literacy being 27.3 p.p and 26.8 p.p for UP and Bihar). For Jharkhand, a home for a large number of tribes, this gap is even wider (28.6 p.p).

West Bengal, given the much lower rate of female literacy in 1961 (17 percent), has made a significant achievement to increase this level to 60.2 percent in 2001. Also it has made a good progress in narrowing the gender gap from 21 in 1961 to 17 p.p. in 2001, in a period that has actually seen slight improvement in the national figure. Notwithstanding this success, West Bengal is still much behind many of the Indian states and union territories – its rank in female literacy in 2001 is 19.

And, when contrasted with some states, like Himachal Pradesh, Tamil Nadu and Maharashtra, West Bengal's progress look relatively much slower. For example, in 1961, the female literacy rate in Maharashtra (16.8 percent) and Tamilnadu (18.2 percent) were much or less similar to that of West Bengal figure (17 percent). But in 2001, both Maharashtra (67.5 percent) and Tamil Nadu (64.6 percent) are ahead of West Bengal. Or, let us take the example of Himachal Pradesh, which had a female literacy rate of only 7.4 percent in 1971. In a period of 30 years it has raised the figure to 68.1 percent– nearly ten times higher. However, in Himachal unlike in Maharashtra and West Bengal the gender gap in literacy has actually widened from 7.4 percent point (p.p.) to 17 percent point (p.p.).

In 1961, female literacy rate in Kerala (39.8 percent) was much better than all other states and UTs except Delhi (42.5 percent). The difference between Kerala and West Bengal in that time was 21.9 p.p., but in 2001 this difference has actually expanded to 27.7 p.p. Also the difference in the gender gap in literacy between Kerala and West Bengal is quite noticeable – the gender gap in literacy in West Bengal (17.4 p.p.) is nearly three times higher than that of Kerala (6.3 p.p.).

Table 4. Decadal change in female literacy and gender gap in literacy: West Bengal and India

	1961		1971		1981		1991		2001	
	FLR	G-gap	FLR	G-gap	FLR	G-gap	FLR	G-gap	FLR	G-gap
West Bengal	17.0	23.1	22.4	20.4	30.3	20.4	46.6	21.3	60.2	17.4
INDIA	12.9	21.5	18.7	20.8	24.8	22.1	39.3	24.8	54.2	21.7

West Bengal's particular lacking in the field of female literacy, in fact, lies in its lower rate of success among the socially and economically backward sections, viz. the SC, ST and Muslims. According to the 2001 Census, the female literacy rates among the SC, ST and Muslims in West Bengal are (46.9 percent, 29.5 percent and 49.8 percent respectively) much lower than the combined figure of the state as a whole. Among the 35 states and union territories in India West Bengal's rank in female literacy rates of the SC, ST and Muslims are 22, 21 and 21 respectively. Also the respective figures of gender gap in literacy among the SC and ST communities (23.6 p.p. and 29.15 p.p. respectively) are much depressing than that of the state as a whole. However, the gender gap in literacy among the Muslims (14.9) is better than the combined figure of the state.

In terms of gender gap in literacy amongst the SC and ST communities, West Bengal's performance is rather poor. Its positions in the all India ranking in gender gap in literacy, according to the width of the gap, among the SCs and STs are 9th and 3rd respectively. The position is much better in case of the Muslims (ranked 19th), though the overall figure should be considered poor.

The discussion above leads to a definite conclusion: a much bigger task is ahead in the field of female literacy, particularly among the socially and economically disadvantaged communities. It also demands substantial improvement in the overall literacy rates (female as well as male) amongst the underprivileged communities.

Table 5. Female Literacy and Gender gap in literacy among different communities in West Bengal- 2001

	SC		ST		Muslims	
	FLR	G-gap	FLR	G-gap	FLR	G-gap
West Bengal	46.9	23.6	29.2	28.2	49.8	14.9
INDIA	41.9 ¹	24.7	34.8	24.4	50.1	17.5

Women's Health

While illiteracy is a major ill that severely blights the chances of women's equal status that with the men, the condition of women's health is an area with equal, or even more, concern. The weaker health status of women not only affects the prospect of women but also of the men as the health of the children irrespective of their gender heavily depends upon mother's health.⁶ This is reflected well in the high infant and child mortality rates and also in children's lower health status (high rate of anaemia, lower weight and height, etc.).

According to the NFHS II, about half of the women in India (15-49 years) were found with any anaemia, more than one third with lower body mass index and two third of the mothers had not had the opportunity to give birth at any medical institution. More than one third had not received any antenatal check-up, and so on. The infant mortality rate was as high as 67.6 per thousand. The under-five mortality rate was even higher - 94.9 per thousand.

West Bengal, compared with the all India figures, has a mixed record. It has better figures of infant and under 5 mortality rates (48.7 and 67.6 respectively), institutional delivery (40.1 percent), antenatal check-up (90 percent), mothers' receiving of two or more TT injection and iron and folic acid (82.4 percent and 71.6 percent respectively). While the state's score in the parameters concerning reproductive health service deliveries were better than the all India figures, the status of women's physical health was severely inflicted by the high rate of anaemia (62.7 percent) and lower body mass index (43.7 percent). As for the prevalence of anaemia, West Bengal's position is 5th highest among the Indian provinces and UTs. For lower body mass index, it is even

worse – of all the states and UTs, West Bengal has the highest percentage of women in this category (see appendix table 6).

Though, unlike in the northern Indian states, West Bengal females in West Bengal do not face the cruellest forms of gender discrimination, such as, female foeticide and female infanticide here too, as evident from the NFHS II findings, girl children suffer from discriminations of various descriptions.

Table 6. Women’s health : India and West Bengal

	Ever married women of(15-49) not exposed to any media	IMR	<5MR	Mothers receiving at least one anti-natal check up	Mothers Res ceiving two or more TT injection	Mothers receiving Iron and F-acid	Deliveries at medical Institutions	Deliveries assisted by a health professional	Women with BMI < 18.5kg/m2 in%	Wonen (15-49) with any anaemia
India	40.3	67.6	94.9	65.4	66.8	57.6	33.6	42.3	35.8	51.8
W B	38.6	48.7	67.6	90	82.4	71.6	40.1	44.2	43.7	62.7

Table 7. Nutritional status of children – West Bengal

	Weight for age		Height for age		Weight for height	
	% below –3 SD	% below –2 SD	% below –3 SD	% below –2 SD	% below –3 SD	% below –2 SD
Male	13.7	45.5	14.4	36.6	1.5	14.8
Female	19.1	52.3	24.5	47.0	1.7	12.3
Total	16.3	48.7	19.2	41.5	1.6	13.6

Again, in line with the relationship of socio-economic condition and other development indices, the status of women’s health also greatly varies among different socio-economic groups. For example, the scheduled tribe women, followed by their scheduled caste sisters, suffer most from anaemia. Percentage of women with lower body mass index among the SC, ST and Muslim is higher than the state average. Tribal and Muslim women are facilitated with very little opportunity of institutional delivery. Both the infant and under five mortality rates among SC, ST and Muslim women are, in some cases startlingly, higher than the state average. Again these women are the least privileged in terms of achievement in literacy and level of awareness. One example would suffice: the percentage of women not exposed to any mass media was much higher among the SC, ST and Muslims than the West Bengal average.

Work Participation

From the ancient days of magic and taboo, “work” has been a major divisive element both at the level of perception as well as practice. Man has often devoted much time on prescribing what the woman should and should not do. The subjugation of women by men essentially lies in the codification of the social laws that define, often strictly, the “works” to be carried out, and to be abstain from doing, by women. It is the particularisation of work that excludes women from the

control of the productive forces (as land), through the imposition of prohibition on certain works (as ploughing). Notwithstanding their major contributory role in the household economy women's work often remain unrecognised, both at family level and at societal level, which reflected in the undermining of women's work. Extent of female non-workers, according to the 2001 Census, is 74.4 percent, while the corresponding figure for the males is 48.3 percent. Although, there has been some improvement in the female work participation rate (WPR) in the past 50 years (1951-2001), while the male work participation rate remained more or less static, the difference between men and women as regards the population-worker ratio is still very high. The difference is not only numerical, but also very much qualitative. While men's engagement has been on the switch to 'other' works, 70 percent of the female workers are still tied with agriculture. In spite of some progress achieved in this regard the pace of females' switching to other work has been slower than that of the men. The following table gives the detail.

The trend of the work participation rate in West Bengal, as can be seen from the Census data for the past 50 years, has a marked difference with the All India line of progress. It has a lower female WPR than the national average (18.3 percent compared to 25.6 percent), contrarily though the male WPR in West Bengal (54 percent) is higher than that of the national WPR for the men (51.7 percent). However, there has been a remarkable and steady improvement in the situation in the past decades. The proportion of female non-worker rose to an alarmingly high figure of 95.6 percent in 1971 from 90.6 percent in 1961. At this time, however, the national figure of the female WPR had actually worsened. It rose to 88 percent in 1971 from 72 percent in 1961. Since 1981, both the national and West Bengal figures of female WPR have been gradually improving, though West Bengal is still 7 percent point behind the national average.

Nevertheless, there has been a change in the trend in the female work participation in West Bengal. When at the all India level the proportion of other workers to main workers has increased by only 5 percent point (23.2 in 1951 to 28.2 in 2001), in West Bengal the improvement in this figure has been quite remarkable. It has risen by 17 percent point (from 50.4 in 1951 to 67.4 in 2001). This change has actually been the result of diversification of work opportunities. There has been a major switch from agricultural sector to other work. While at the all India level the proportion of the women main workers as agricultural labourers, in 2001, is nearly 40 percent, it is only 22 percent in West Bengal. The reduction in the proportion of women workers as agricultural labourers in West Bengal has been much sharper (from 37 percent in 1991 to 22 percent in 2001) than the All India rate (from 44 in 1991 to 40 in 2001).

The major replacement of women workers of West Bengal from agricultural sector has seemingly been made to the Household Industries. While the proportion of female workers in Household Industries has risen to 6.5 percent in 2001 from 4.6 percent in 1981 at the national level, the state level figures for West Bengal show an ampler increase in this proportion.

Table 8. Status of women's health among different social groups in West Bengal

	Ever married women of (15-49) not exposed to any media	IMR	<5MR	Mothers receiving at least one anti-natal check up	Mothers receiving two or more IT injection	Mothers receiving Iron and F-acid	Deliveries at medical Institution	Deliveries assisted by a health professional	Women with BMI < 18.5kg/m ² in%	Women (15-49) with any anaemia
SC	44.4	55.4	81.5	94.3	81.6	75.7	43.5	46.2	49.4	67.1
ST	63.6	85.1	100.1	88.4	73.9	73.9	20.2	24.5	64.2	80.6
Muslim	56.8	51.9	77.0	85.2	77.4	54.6	15.9	20.2	47.6	59.2
Total	38.6	48.7	67.6	90	82.4	71.6	40.1	44.2	43.7	62.7

Table 9. Gender differentials in Work Participation Rate in India and West Bengal - 1951-2001 (Percentage figures. Columns 6-14 are based on Main Workers)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
		WPR-P	WPR-M	WPR-F	Cult-P	Cult-M	Cult-F	Ag-P	Ag-M	Ag-F	Oth-P	Oth-M	Oth-F	NW-P	NW-M	NW-F
1951	Ind	39.1	54.0	23.3	50.0	51.9	45.4	19.7	15	31.4	30.3	33.1	23.2	60.9	46.0	76.7
	WB	34.5	54.2	11.6	35.5	36.3	31	15.3	14.7	18.6	49.2	49.0	50.4	65.5	45.8	88.4
1961	Ind	43.0	57.1	28.0	52.8	51.5	55.7	16.7	13.4	23.9	30.5	35.1	20.4	57.0	42.9	72.0
	WB	33.2	54	9.4	38.5	38.8	36.8	15.3	14.4	21.1	46.2	46.8	42.1	66.8	46	90.6
1971	Ind	32.9	52.5	11.9	43.3	46.2	39.6	26.3	21.3	50.5	30.3	32.5	19.9	67.1	47.5	88.1
	WB	27.9	48.8	4.4	33	33.6	12.12	26.6	25	44.5	41.6	41.4	43.4	72.1	51.2	95.6
1981	Ind	36.8	52.7	19.8	41.6	43.7	33.2	24.9	19.6	46.2	33.5	36.7	20.6	63.2	47.3	80.2
	WB	31	51.1	8.9	30.6	32.4	14.82	24.8	23.3	38.3	44.5	44.3	46.9	69	48.9	91.1
1991	Ind	37.5	51.6	22.3	38.7	39.9	34.6	26.1	20.8	44.2	35.2	39.3	21.2	62.5	48.4	77.7
	WB	32.2	51.4	11.3	28.4	30.2	16.53	24.5	22.6	37.5	47.1	47.2	46.0	67.8	48.6	88.8
2001	Ind	39.1	51.7	25.6	31.7	31.1	32.9	26.5	20.8	38.9	41.8	48.1	28.2	60.9	48.3	74.4
	WB	36.8	54	18.3	19.8	21.5	10.57	19.6	19.2	22	60.6	59.3	67.4	63.2	46	81.7

Source : upto 1961 - Census of India 1961, pp 396

Source : for 1971 & 1981 - Census of India 1981, series 23, West Bengal, pp 34

Table 10. Trend in engagement in Household Industries in India and West Bengal (1981-2001)

(Based on main workers)

	India -P	WB -P	India -M	WB -M	India -F	WB -F
1981	3.5	4.1	3.2	3.8	4.6	8.2
1991	2.4	5	2.1	3.9	3.5	12.2
2001	4.2	6.2	3.2	4	6.5	18.7

However, this switch from agricultural work to other work has not seemingly had an uniform impact on the women as a whole. Women of the socially backward communities, who have much less access to the social opportunities like education and health, are mainly engaged as agricultural labourers. Female agricultural labourers (main and marginal together) constitute 31 percent of the total agricultural labourers in West Bengal. Again, the SC and ST female agricultural labourers constitute two third of the total female agricultural labourers. This is in complete disagreement with the composition of the population of the state. SCs and STs constitute about 29 percent of the total population of West Bengal (SC -23.2 percent, and ST 5.5 percent). In fact, the SC and ST female agricultural labourers constitute more than 20 percent of the total agricultural labourers.

Table 11. Female workers in West Bengal – SC, ST and Total (Based on total workers –main and marginal)

% of FW to total W	%of SCFW to total F-W	%of ST FW to total FW	%FMW to total MW	% of SCFMW to FMW	% of STFMW to FMW	% of FCUL to total CULT	% of SCFCUL To FCUL	% of STFCUL To FCUL	% to to TAL	% of SCFAL To FAL	% of STFAL To FCUL
24.1	28.3	13.4	15.3	26.3	13.5	17.7	25.9	12	31.0	40.2	25.9

In general the work participation rate among the SC and ST communities is seen to be much better than the state average. But this position has been achieved only at the cost of the SC and ST women’s working in the more labour intensive fields. The greater scope of diversification of work has not yet benefited the socially backward women significantly. Despite having a much higher work participation rate than their other counterparts, the SC and ST women are largely confined to lowly paid manual works.

Among the women engaged in lower income activities Muslims form a considerable part of it. Because of different socio-economic reasons we find a lower work participation rate among the Muslim women. This is true for the Muslim men as well. And unlike in the case of SC and ST women the Muslim women’s employment in agricultural sector, as cultivators (11 percent as against the state average of 14 percent) and wage earners (19 percent as against the state average of 32 percent) is much lower. But their engagement in household industries (39 percent) is much higher than the

state average (18 percent). Again, their participation in other works (31 percent) is lower than the state average (36 percent).

The pattern of female work participation clearly indicates that, in tandem with the larger social framework, the SC, ST and Muslim women, who are also much less privileged in terms of education and health, form the majority of the female manual workers.

Table 12. Muslim Female Work Participation Rate in West Bengal : 2001(Based on total -main and marginal-workers

Indicators	India			West Bengal		
	T	M	F	T	M	F
Work Participation Rate						
All	39.1	51.7	25.6	36.8	54	18.3
Muslims	31.3	47.5	14.1	32.9	50.5	14.0
Cultivators						
All	31.7	31.1	32.9	19.2	20.8	14.1
Muslims	20.7	20.4	22	20.3	22.7	11
Agricultural labourers						
All	26.5	20.8	38.9	25	22.7	32.2
Muslims	22	19.6	30.8	26.6	28.5	19.2
Household industries						
All	4.2	3.2	6.5	7.4	4.1	17.7
Muslims	8.1	5.0	19.3	12.6	5.8	38.9
Other works						
All	37.6	44.9	21.7	48.5	52.4	36.1
Muslims	49.1	55	27.9	40.5	43	30.8

Conclusion

As this brief entourage suggests, while women in general are subject to various discriminations, there has been substantial variation in the nature of deprivations among different social groups. And the subject of gender equality itself becomes a complex issue that involves both private and public sphere of life. Girl children in the *Adivasi* and *Dalit* societies, as opposed to the *Varna Hindus*, face lesser discrimination in terms of childcare at the household level. Also women in general in the *Adivasi* and *Dalit* societies enjoy higher level of equality in many regards. However, there are other forms of gender inequality at the private sphere amongst the *Adivasis* and *Dalits*. For example, in most of the cases *Adivasi* women are deprived of the right to inherit their parental properties. The issue of witch hunting in the *Adivasi* frequently hits the headline.

However, the issues of inequalities at the private sphere are not unrelated to public sphere. Rather, the failure of public intervention on the urgent issues of literacy, healthcare, and other basic facilities have perhaps made things more problematic. The issue of inheritance, or of witch hunting cannot be addressed without addressing the issues of lack of educational and healthcare facilities. The handicaps in terms of basic human empowerment acts as the biggest hindrance before the *Adivasi* women to take forward the agendas at the private as well as the public sphere. The very poor rate of literacy among the *Adivasi* and *Dalit* women and the high percentage of their working as labourer is an appallingly conspicuous correlation. Further, at the one hand, the *Adivasi* and *Dalit* women encounter a routinely strenuous life, at and outside home. On the other hand their extremely poor status of health makes their lives terribly vulnerable. Their disadvantages and vulnerability become manifold.

At the same time the general condition of the *Adivasis* and *Dalits* as a whole - the denial to an equitable position at the social, economical and political arena –has a much larger consequence on the women question in those societies, as this condition makes the larger social identities (*Dalit*, *Adivasi*, etc.) more important for all the members of the respective societies while interacting at the public sphere. This, however, is not to deny the existence of the gender deprivation in the respective societies. It very much exists. The question is to address the issue in a comprehensive manner.

The case of the Muslim women have also to be seen in a more integrated way, than seeing it to be resulting exclusively from the Muslim societies. The question is more related to the general field of development than being isolated. Any attempt to address the question of gender equality among the Muslims needs to incorporate the general deprivation of the Muslims, in terms of education, health, employment, political representation and so on.

In short, the question of gender equality has to be seen as a larger democratic question. While it needs a very special attention to improve the status of women in terms of education, health, employment, representation, etc. the issue of equality among different segments of the society cannot be neglected.

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Strategies to Double Farmer's Income

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Introduction

The “Green Revolution” technologies are often associated with environmental harm. Such damage is caused by the excessive use of mineral fertilizers and chemical pesticides as well as enhanced vulnerability to pests and diseases as a result of genetic homogeneity in the high yielding hybrid crop varieties cultivated over large contiguous areas. With increasing population there is a steady decline in the per capita availability of land and water. This makes higher productivity per unit of land and water imperative. Because of the environmental problems linked with traditional Green revolution technologies, higher productivity per unit of land and water must come from somewhat different production pathways. We have to produce more, but will have to do it differently. Inadequate purchasing power of large sections of people is due to lack of productive employment, modern industry is often not labour intensive and new jobs have to be found in the farm and non-farm sectors in rural areas. Productivity employment is an economic necessity because under conditions of smallholdings, income of family can be enhanced only through greater marketable surplus and multiple sources of income. Productivity improvement is also an ecological necessity since otherwise the remaining forests may be cleared for crop cultivation.

Indian agribusiness goes through various difficulties. It faces diverse perilous circumstances or climatic issues, the provincial territories in these parts are confronting nourishment and business emergency, all the more particularly the lack of grub and drinking water. Government needs to proactively address the circumstance and make all the more long haul ranchers driven strategies identified with water system, cultivate expansion, cultivate gainfulness and group bolster programs in order to socially and monetarily enable agriculturists. Market varies because of vulnerability of storm in this way putting cultivating area in emergency. Environmental change issues are

likewise included prompting extraordinary occasions which are hard to foresee. He likewise talked about market unpredictability which is additionally influencing most astounding creation part like elastic. The misery is multidimensional including social, monetary, mechanical, sex and biological angles and in this manner approach changes should be fused and agribusiness advance can occur by cooperative energy amongst strategy and innovation.

P. M Narendra Modi disclosed a seven-direct strategies toward twofold the pay of agriculturists in six years with measures to venture up water system, give better quality seeds and counteract post-collect misfortunes.

“Before, the accentuation has been on agrarian yield, as opposed to on agriculturists’ livelihoods. I’ve set the target of multiplying the agriculturists’ income by 2022,” the head administrator told the Bloomberg India Economic Forum.

“I have laid this out as a test. Yet, it isn’t just a test. With a decent methodology, all around composed projects, satisfactory assets and great administration in execution, this objective are achievable.”

He additionally recorded his seven procedures:

- Big spotlight on water system with extensive spending plans, with the point of “per drop, more harvest”
- Provision of value seeds and supplements in light of soil soundness of each field
- Large interests in warehousing and cool chains to anticipate post-gather edit misfortunes
- Promotion of significant worth expansion through nourishment preparing
- Creation of a national homestead showcase, expelling bends and e-stage crosswise over 585 stations
- Introduction of another harvest protection plan to relieve dangers at reasonable cost
- Promotion of subordinate exercises like poultry, beekeeping and fisheries.

“I am certain we will accomplish the focused on multiplying of ranchers’ pay,” he stated, including the doyen of Indian agribusiness, M.S. Swaminathan, had himself kept in touch with him, saying the approaches received by his administration were agriculturist driven with another wage introduction in cultivating.

Niti Aayog

The economic think-tank at Niti Aayog has put forth a four-point action plan to double the incomes of India’s farmers. The four point action plan includes the following measures: 1) Remunerative prices for farmers by reforming the existing marketing structure; 2) Raising productivity; 3) Reforming agriculture land policy; and 4) Relief measures. It is important to see how these actions will double the income of the farmers’ and to what extent the government is serious about it.

Remunerative prices

Niti Aayog has suggested reforms in two areas: marketing reforms and minimum support price (MSP) reform. However it must be noted here that since agriculture is a state subject, the central government cannot do much here apart from facilitating the reform process.

Under marketing reforms, the think-tank has highlighted as to how currently existing agricultural marketing – under the Agricultural Produce Market Committees (APMC) acts in various states – has led to policy distortions and fragmentation, largely as a result of a huge number of intermediaries and poor infrastructure. The plan highlights that because of the APMC acts, farmers are required to sell a large number of commodities in local *mandis* where different layers of intermediaries often manipulate the price, thus depriving them of their fair share.

In order to address the shortcomings of the APMC acts, the central government circulated a model Agricultural Produce Marketing Committees (Development and Regulation) Act of 2003. However, as the Economic Survey of 2013-14 observes that despite this, states have failed to address monopolistic and uncompetitive practices in the inter-state trading of agricultural products. Further, the Committee on Agricultural Reforms (2013) noted that, “By and large, the APMCs have emerged as some sort of Government sponsored monopolies in supply of marketing services/ facilities, with all drawbacks and inefficiency associated with a monopoly”.

In this background, it will be interesting to see how new reforms – with regard to empowering farmers to sell their produce to whomever they wish and allowing actors other than APMC mandis to buy produce – are embraced by India's states.

If one goes by past experience, it is not a rosy picture. For example as of February 2, 2016, only 21 states and union territories have allowed the establishment of private market yards/ private markets managed by a person other than a market committee and this is only one of the numerous proposed reforms. On other reforms the number of states which have reformed the act is much less.

MSP reform

The MSP regime in India has been a subject of heated debate in recent years. MSP is not only increasing year by year but since the mid-1990s the rise in the MSP has been sharper than the rise in consumer and wholesale price indices. The major disadvantage of MSP regime is that it totally ignores the demand dimension, thereby resulting in not only an inefficient use of resources but also accumulation of unwarranted stocks of cereals. Since resources for agriculture – water and land – are scarce, it is very important to use the resources efficiently if our aim is to double the income of the farmers.

The Niti Aayog has aptly highlighted the distortion in cropping patterns caused by MSP regime. Since the MSP regime favours cultivation of wheat, rice and sugarcane,

not only has it led to reduction in the area under acreage of other crops like pulses, oil seed and coarse grains but it has also led to, as highlighted above, accumulation of unwarranted stocks of cereals. While the Economic Survey of 2015-16 pitched for replacement of SP/procurement based PDS with DBT and freeing the market control on domestic movement and imports, the Niti Aayog, on the other hand, has suggested a system of “price deficiency payments” to cure the distortion caused by the MSP regime.

Under this system a subsidy would be provided on targeted produce in case the price falls below MSP-linked threshold. One advantage of this, as highlighted by the action plan, is that it would spread price incentives to producers in all the regions and all the crops considered important for providing price support.

Raising productivity

As per the Agriculture Census 2010-11, 67.10% of India’s total farmers are marginal farmers (below 1 ha.) followed by small farmers (1-2 ha.) at 17.91%. Since Indian agriculture is dominated by marginal farmers who have small holdings, raising productivity is likely the single most important factor if incomes of this group are to be doubled. But here also there are many challenges. First of all, on the one side resources like water and land are limited and on the other hand land holding is getting fragmented. The problem is further compounded by rising input costs.

The Niti Aayog has also called for substantive investment in irrigation, seeds & fertilisers and new technology coupled with a shift into high-value commodities such as horticulture, poultry and dairying to double incomes. However, what must be noted here is that public investment required for all this is on the more or less continuous decline. Economist Ashok Gulati attributes the decline in public investment to the expanding subsidies on agriculture. However, this trend has been reversed to some extent since the 9th five year plan. Gross capital formation in the agriculture sector has gone up from 13.9% during the 10th plan to 19% during the 11th plan period.

The three major input subsidies are our fertiliser subsidy, the irrigation subsidy, the power subsidy. A fourth indirect subsidy is the credit subsidy; an interest subsidy on credit obtained from various financial institutions.

A major portion of these subsidies is accounted by India’s fertiliser subsidy which has increased by around five times in the last ten years from Rs 12, 595 crore in 2001-02 to Rs 67, 971 crore in 2012-14 at current prices. In 2015-16, the government budgeted Rs 73,000 crore (about 0.5% of GDP) on fertiliser subsidy. While the Niti Aayog has called for the application of soil cards for customising fertiliser use, the Economic Survey of 2015-16 pitched for reforms to increase domestic availability via less restrictive imports and to provide benefits directly to farmers using ‘JAM’ (Jan Dhan, Aadhaar, mobile).

As is it is clear that subsidies crowd-out public investment in agriculture, this makes a strong case for an expiry date for these subsidies. Though the Niti Aayog is

curiously silent on this, this reform is highly political sensitive and it needs strong political will to bring in this reform as farmers' lobby will strongly protest any attempt to cut subsidies.

Further, massive investment is needed in irrigation if productivity of India's farms are to be increased. But if we look at the budgetary allocation for the same, one is filled with a sense of sheer disappointment. For example, as Gulati and Jain note, at the beginning of the twelfth Plan, there were 337 major and medium irrigation projects requiring an indicative budget of more than Rs 4,22,012 crore. Against this need, the annual allocation for irrigation was less than Rs. 20,000 crore.

The Niti Aayog has also mooted the modernisation of farms and adoption of new technologies like adopting GM crops and using new farm equipment. However, this is not as easy as it seems. For example as per Agriculture Machinery and Manufacture Association in India, tractor penetration is 38% for large farmers, 18% for medium farmers and just around 1% for marginal farmers. Since the majority of the farmers in India are marginal, the almost negligible penetration of tractors tells us as to how difficult it is to mechanise these farms. One idea mooted by the Economic Survey of 2015-16 is to develop a rental market for farm equipments. This is a good suggestion but again the hurdle is how to connect the various stakeholders involved in constructing such a market?

Given the political sensitive nature of reforms which will increase the productivity of farms, it is submitted that this poses a very big challenge before the government if it is serious about doubling the farmers' income.

Agriculture land policy and relief to farmers

Lastly the Niti Aayog has suggested bringing in far-fetched amendments in tenancy and leasing law so that small farmers who wish to lease their land do not face any hurdle. In this regard the think-tank has prepared a model Land Leasing Law. But again, since land is a state subject, response from the states has not been encouraging in this regard. On relief measures, the Niti Aayog has suggested many modifications in the existing Pradhan Mantri Fasal Bima Yojana. The action plan has suggested that the scheme should have a capped subsidy amount per farm household and any farmer desiring to insure larger sums should pay full premium for the difference. Secondly, the plan has also suggested extending the time period of coverage under the scheme for three to five years so as that coverage extends to both good and bad years. Both suggestions are good suggestions and there does not seem to be any problem to accept the same.

Multiplying agricultural income by 2022 is a mammoth undertaking. It is additionally one that is the need of great importance. With larger part of the nation's populace dependant on horticultural exercises, no evident advancement can be said to be important unless it joins the requirements of this area. Expanding rancher suicide rates and progressively unpredictable climate designs additionally add to the issue.

There are, obviously extraordinary complexities. In any case, the focal point of the administration on this part is truly necessary. The stroll to multiplying wage is a long, monotonous one. However, no less than a stage has been taken toward that path. We now need to guarantee that the usage by all partners is uniform, successful and done entire heartedly. Chand (2017) have provided estimates of the total income and per cultivator farm income (not farmer's income) for the period 1983-84 to 2011-12. According to them, the farm income was reported to be inadequate for 53% of the farm households who operated on less than 0.63 ha of landholdings to escape poverty. As per estimates, between 1993-94 and 2015-16 (almost 20 years), the real farm income had just doubled (Table 1) and farm income per cultivator received slightly higher increase mainly due to a decline in the number of cultivators after 2004-05, since the young generation seemed to have opted out of agriculture and shifted for the employment to urban areas.

Table: 1. Trend of farmers' income in India (1993-94 to 2015-16) Year

Year	Total real farm income of all farmers (INR crores)	Real farm income per cultivator (INR)
1993-94	3,03,814	21,110
1999-00	3,72,923	26,875
2004-05	4,34,160	26,146
2011-12	6,32,514	43,258
2012-13	5,96,695	41,553
2013-14	6,02,922	42,760
2014-15	5,97,020	43,106
2015-16	5,98,764	44,027

(Source: Chand et al., 2015)

Government trusts, that agriculturists welfare will enhance if there is increment in net pay from the homesteads. With this end in see, the approach is to decrease cost of development, empower higher yield per unit and acknowledge gainful costs of homestead deliver. A portion of the critical new activities in this specific situation and the objectives accomplished are as per the following:

Scheme to rationalize input management:-

(I) Soil Health Card (SHC) conspire by which the ranchers can know the major and minor supplements accessible in their dirts which will guarantee sensible utilization of manure application and along these lines spare cash of agriculturists. The adjusted utilization of compost will likewise upgrade profitability and guarantee higher comes back to the agriculturists. Against an objective of 253 lakh tests, 184.75 lakh soil tests gathered, 87.90 lakh soil tests tried and against focus of 1400 lakh Soil Health Cards, 226.99 lac Soil Health Cards disseminated as on 28.06.2016.

Neem Coated Urea is likewise being elevated to direct urea utilize, improve its accessibility to the product and diminish cost of compost application. The whole amount of locally produced urea is currently neem covered. From the present year (i.e. 2016), the urea that is transported in would likewise be neem covered.

Paramparagat Krishi Vikas Yojana (PKVY) is being actualized with a view to advancing natural cultivating in the nation. This will enhance soil wellbeing and natural issue substance and increment net wage of the agriculturist in order to acknowledge premium costs. The objective is to cover 2 lakh ha in 3 years. Each bunch will be 20 ha each and add up to groups 10,000. In 2015-16, 7186 bunches were endorsed and Rs. 226.19 crore discharged to State Governments out of endorsed expense of Rs. 511.67 crore. (GOI share is 335.05 crore). In 2016-17, staying 2814 groups have been authorized.

The Pradhan Mantri Krishi Sinchai Yojana (PMKSY) is being actualized to extend developed territory with guaranteed water system, diminish wastage of water and enhance water utilize effectiveness. In 2015-16, against an objective of 5 lac ha., 5.6 lac ha has been brought under small scale water system.

Plan to cover nature related dangers:-

Government has additionally as of late affirmed another product Insurance plot in particular Pradhan Mantri Fasal Bima Yojana (PMFBY) to supplant National Agricultural Insurance Scheme (NAIS) and Modified NAIS (MNAIS) from Kharif 2016 season. PMFBY has tended to every one of the weaknesses in the prior plans and would be accessible to the agriculturists at low rates of premium. The agriculturists will get full protection cover as there will be no topping of aggregate safeguarded and thusly the claim sum won't be cut or decreased. This plan would give protection cover to all phases of the product cycle incorporating post-gather chances in determined occurrences. The territory scope would be expanded from 23% by and by to half in two years.

Plan to exchange gainful costs to ranchers:-

A Market Intervention Scheme, in particular e-NAM was endorsed on 1-7-2015 with a spending designation of Rs. 200 crore to be executed amid 2015-16 to 2017-18. The arrivals of awards under the plan are made based on fulfillment of 3 change pre-imperatives i.e. Single Trading License, Single License Fee and Creation of e-Platform for Trading. The plan was propelled on 14.04.2016 of every 8 States viz. Gujarat, Telangana, Rajasthan, Madhya Pradesh, Uttar Pradesh, Haryana, Himachal Pradesh and Jharkhand covering 21 markets. Starting at now 23 markets incorporated.

Plan to build efficiency:-

National Food Security Mission (NFSM) beats: Out of an aggregate assignment Rs. 1700 crore, a measure of Rs. 1100 crore is designated for beats as focus share. The objective set for beats creation amid the year 2016-17 is 20.75 million tons and the territory scope target is 26 million hectares amid this year.

Moreover, the Government is executing a few Centrally Sponsored Schemes viz. Mission for Integrated Development of Horticulture (MIDH); National Mission on Oilseeds and Oilpalm (NMOOP); National Mission for Sustainable Agriculture (NMSA); National Mission on Agricultural Extension and Technology (NMAET); and Rashtriya Krishi Vikas Yojana (RKVY).

Assist the Government embraces acquisition of wheat and paddy under its 'MSP activities'. Likewise, Government actualizes Market Intervention Scheme (MIS) for acquisition of farming and green products not secured under the Minimum Price Support Scheme on the demand of State/UT Government. The MIS is executed with a specific end goal to shield the cultivators of these wares from making trouble deal in case of guard trim when the costs tend to fall beneath the monetary level/cost of generation.

Significant issues in Indian Agriculture:

- 1 Climatic factor: Indian agribusiness offers occupation to around 60.32 for every penny of the populace, comprising of the two cultivators and also day by day wage workers. Because of natural issue, uncertainly of climate and a dangerous atmospheric deviation, soil disintegration, unsafe impacts diminish the yield and efficiency.
- 2 Growth rate of horticulture area declined step by step
- 3 Net sown area, gross cropped area, gross irrigated area is partitioned into monetarily unviable little and scattered possessions.
4. The situation of ranchers would be clear from the way that the Punjab agriculturists with a normal homestead size of 3.79 ha, developing wheat and rice can gain a wage which is not as much as the beginning pay of a class IV government worker
- 5 The Economic Survey 2016 revealed that there is an enduring decrease in the commitment of farming to GDP. The quantity of people utilized in agribusiness is, in any case, not running down with the outcome that the normal salary of the rancher is relentlessly declining.
- 6 Good quality information sources are far from the dominant part of ranchers, particularly little and peripheral agriculturists chiefly in view of extravagant costs of better seeds.
- 7 Increase uses of pesticide and inorganic manures, which can fall apart the dirt heath and at last reduction the yield.
- 8 Lack of appropriate water use efficiency is a standout amongst the most critical elements for unstained advance in agribusiness unless and until the point that the greater part of the trimmed region is brought under guaranteed water system.
- 9 *Inadequate infrastructural offices: shortage of labor, absence of linkages between ranchers researcher, absence of innovative work office and dispersal of innovation to agriculturists and appropriate execution of information, expertise hampered the development rate of Indian agribusiness.*

Possibilities of doubling farmer's income:

1. Enhance little homestead efficiency and soundness of generation. This should be possible if the administration should bolster the agriculturists in the regions of soil, water system, fitting innovation and information sources, credit and protection lastly open doors for gainful and guaranteed promoting. On the off chance that help is given in these five territories, little ranch efficiency can be dramatically increased.
2. Should focus on the information, expertise of the ranchers about the employments of advancements for the homestead tasks.
3. Scheme/Programs should actualized legitimately and auspicious at in reverse locale and where required.
4. Use of reasonable logical sources of info and mechanical help is actualized legitimately wherever is important.
5. Combination of rice, beat, kharif and rabi vegetables on a similar field amid a similar timeframe, contributing towards healthful security and guarantee soil maintainability over the long haul.
6. The incorporated cultivating framework approach presents an adjustment in the cultivating strategies for most extreme generation in the trimming example and deals with ideal use of assets.

Conclusion

Doubling agricultural income by 2022 is a mammoth task. It is also one that is the need of the hour. With majority of the country's population dependant on agricultural activities, no true development can be said to be meaningful unless it incorporates the needs of this sector. To accomplish multiplying agriculturist's income may require novel systems and some adjustment in the arrangement position. The pay upgrade of rancher would come for the most part from seven sources like increment in profitability of products, increment underway of animals, change in productivity of info utilize that would spare cost, increment in editing power at ranchers' field, broadening towards high esteem items, better gainful cost acknowledged by ranchers, and moving way surplus work (ineffective) from agribusiness to nom-cultivate exercises. This must be conceivable through government improvement activities, innovation age and scattering other than approaches and changes in horticulture part.

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