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Contents

Cultural Imprisonment of Women in India

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Abstract

An enquiry into the feminist issues involves multiple prognosis and deliberations. Theories are involved in a continuous effort to analyze and understand the intricacies of issues pertaining to women. Cultural norms and preferences revolve round a woman. Ideologies centering gender and sexist reasoning emanate from perceived biological differences between the sexes substantiated by dualistic paradigms that have dominated political thought from the philosopher of Greece to the Enlightenment and still continuing. Judith Butler argues that gender distinctions are valid only if we accept a social system based on binary oppositions i.e. seeing woman as opposed to man; "feminine" as the opposite of "masculine". My paper, throughout, will delve into the issues of women in India. How the state, polity and democratic norms visualize and address the situational realities and confront orthodox and traditional predicaments are the themes that will be undertaken in my discussion.

Keywords: *Gender, Violence, Culture, Democracy, State*

Introduction

'Man' is the 'general'; 'woman' is the 'particular'. 'Man' is the norm (normal); woman is the 'perversion' (deviation). Man is the universal, woman is the local. Precedence reflected that the category woman has been perceived and judged, measured as something of 'victims of pathological physiology' or as 'misgotten male', or as the 'other half of the necessary evils of reproduction. 'Man' has been the 'regular' term that has been used since the evolution of human existence to connote both genders. Man as the 'creator' formulated disciplinary modes of thinking, innovated ideologies and ethical and moral doctrine whereby he was able to establish his undaunted authority not only over woman but also over those on whom controlled manipulation can be authenticated and maneuvered for example the 'shudra' category. Thus, those 'constructions', permutations and modus operandi- all involved to operationalize one system of rule- the rule of the patriarch. 'Woman' became the derivation of 'man', 'female' became the derivation of 'male'. The 'whole' created and devised means to regulate and discipline the thoughts, actions and desires of the 'part'. Compartmentalization between 'mind' and 'body', segregation between the 'intellectual' and the 'crude' leads to loss of 'personhood', loss of control and autonomy over their bodies and of course, eradication of bodily integrity (Mathur 2008:54). The cultural insistence on a female-male dichotomy reduces the female body in relation to the male that automatically leads to more rigorous policing of women's (docile) bodies and specific apparatuses of control.

Objectives and methodology

The primary objectives of the study are to:

1. Explore the process through which a clear segregation of the 'biological sex' could be deciphered.
2. Study how far subtle nuance was utilized to authenticate the patriarchal norm by subverting the gender-neutral paradigmatic discourse.
3. Examine the social reality that emanates from mythic 'construction' of binary world.

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The present work is based on historical approach which is explanatory in nature. Journals, newspapers and books have been my secondary source of information while reports and government documents were my primary source of data.

The Dichotomy- Myth or Reality

Woman as 'the other' is 'inferior' became the 'unknowable', 'enigmatic' and 'disquieting' creatures as well. Every aspect of the female body is controlled, contained, formulated and maimed in accordance with the patriarchal disposition. Meanings of womanhood and articulations of her body continues to be the domain of an undaunted male gaze that results in clarification, imposition and sometimes causes grave humiliation. Due to cultural imposition of women as 'docile bodies' women are more vulnerable than men. And this vulnerability increases with the establishment of his control over her body in order to ensure her absolute subordination as per his wish. Sexual violence has had its origin in the formulation of this subjugation-domination syndrome. And this authoritative deliberation led to manufacturing of myths and legends about virgin-virginity-chastity. Chastity in women was mystified as having Godly attributes. Thus, in Indian context, *Sita, Nalayani, Savitri, Damayanti* are women of virtues whereas *Draupadi*-the revolting princess became an apparition against male subjugation, remained a deviated category- a woman with five husbands. Chastity and virginity in women remained unassailable attribute of women and any deviation from this invites tremendous amount of punitive measures against her. There, violence and assault became the naturalized and normalized mode of action against women which is sanctioned, supported and ratified by custom, tradition and 'morality'.

The myth of *pativrata*, loyal, submissive women remains a recurrent ideology that characterizes women of India. The myth of *pativrata* continues to enduringly govern Indian womanhood (Chakravarti 1985: 48-49). It authenticates the "popular sexist attitude that 'good women' stay at home. Elaborating the argument women who chose to step out from the safety of their homes are "molestable" as they provoke uncontrollable male lust…" (Agnes 2008). Morally, dualistic minded women who step outside the ambit of 'domestic' invites punishment sanctioned by religion. Manu, the law giver maintains that wives have to be controlled through domestic regimentation, rather than violence (Doniger and Smith 1991: Chapter 9: 10-17). Manu categorized women as one of the things of possession (*Manusmriti*, II.240). Yajnavalkya, another lawgiver addressed never to entrust three things to the control of others, that is riches, books and women, for they are spoiled and defiled by them (III.205). In the *Atharva Veda*, the husband claims that his wife has been given to him by God to 'serve' him and to secure progeny. He further calls her as his *poshya*, or dependent (XIV.1.52). The *Upanishads* consider women to have been born for appeasing man's instinct of pleasure. It is mythologized that man, being alone in the beginning of the universe, did not find any joy in his life and ached for a companion. He got one in the shape of his wife, who satiated all his desires and secured for him all pleasures (*Brihadaranyaka Upanishad,* 1.4).

In *Manusmriti*, it is stated: "Through their passion for men, through their mutable temper, through their natural heartlessness, they become disloyal towards their husbands, however carefully they may be guarded in this world…

"(When creating them" Manu allotted to women (a love of their) bed, (of their) seat and (of) ornament, impure desires, wrath, dishonesty, malice, and bad conduct" (9.15-17) (Raju 2016: 14). Pintchman (1993:148-50) highlights the tenebrous mythological nuance of chastity (or purity) and pollution to Hindu goddesses who personify the theory of *sakti* and *prakriti* – the prerequisite for reproduction (creation). *Sakti* denotes the power that makes creation possible and also pervades it whereas *prakriti* is creation itself; and both can have useful and devastating denouement depending upon whether they can be constrained and domesticated. This ambiguity is reflected in the empowerment of *pativrata* who is regulated, in contrast to the disempowered loose woman. Female figures reflect the space between nature and the culture occupied by women. They are disorderly in expressing nature at work and simultaneously orderly in their cultural capacity as

units who reproduce social order. Hence, women are also referred to as fertile field (*Khsetra*). The woman as matter has to be ordered so that she does not pollute; this is only possible when her husband own her, any other relation is tantamount to her as pollution (Mahadevan 2008: 46).

Naturalization of the dichotomy through socialization of the cultural norm

By crafting a certain kind of imagination for the female body, and its sexual desires, the woman is absorbed into the normative structure of society that is defined by patriarchy. Patriarchy is an endemic historical and cultural practice that imposes an all-encompassing hegemony. It assumes the male as the norm and female as the other.

The process of socialization imposes iron-shackle on the lives of women that fastens her from birth to her last. From the very childhood, the girl child is made to 'strictly' follow certain norms of behavior, for example, how to speak, whom to speak, how to dress and for whom to dress, how to sit and how to behave in the presence of males are all prescribed. It is in this way that her mobility is constrained and confused. In India, early age at marriage is a norm and there are places where nearly half of the girls between the age of 10 and 14 are married. There exists immense pressure on women to prove their fertility by conceiving at the earliest after marriage. Infertility is considered to be a curse. And there remained a practice of getting the husband married to another woman who can bear him children. Women's body is persistently made to adopt and accustomed to mould into the societal expectations. Girls and women possess limited choice with regard to chasing their partners. In India, child marriage is still prevalent. According to some sociologists, the ancient erotic text the *Kama Sutra* mentions this practice when it says that a girl who has "fully arrived at puberty" should be avoided as wife. Many suggested that this practice of child marriage gained momentum during the foreign invasive period in particular where invaders were said to have carried away young girls as war booty, compelled the local communities to marry off their daughters very young. Therefore, to ensure 'protection' from being sexually exploited and to preserve their chastity, pre-puberty marriages began to be considered the best possible available means. However, in due course of time, it became a custom; the negation of this practice often invited social disapproval, disgrace and ostracization. "What people will say" is still the dominating pronouncement in majority of the societies. It is even considered a 'sin' to keep a girl in her patriarchal home after she had attained puberty.

However, other than this patriarchal fabricated concoction, other reasons cited for the continuance and prevalence of this practice were tradition, family and social pressure, feudal set up and poverty. Founded on the premise of 'virginity' of the bride, girls are married off at the very young age, sometimes beginning at five years. These girls at the age of playing with games, themselves become objects on which amorous games are played out. These girls become traumatized by physical assault on their bodies. Many parents unequivocally say that they are scared to keep their daughters unmarried after puberty as they have a big responsibility of protecting them.

The factual scenario

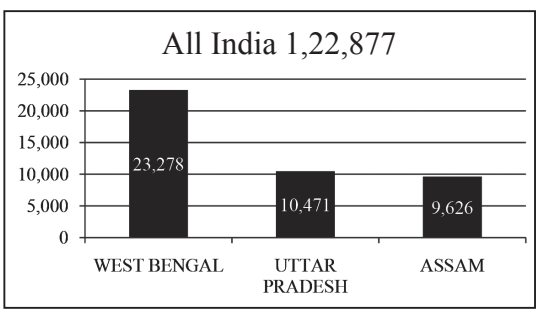
The United Nations Children's Fund (UNICEF) observes that poor families regard a young girl as an economic burden and her marriage as a necessary survival strategy for her family. UNICEF is of the opinion that there may be several reasons why parents get their daughters married off so early. They think that the early marriage guarantees protection from the dangers of sexual assault or more particularly, offers the umbrella of a male guardian.

India is one of the many countries characterized by higher human sex ratio which is assumed to be the cause of female foeticide. The normal ratio is assumed to be between 103 to 107 and any number above it is considered as prevalence of female foeticide in the state. The sex ratio in the 0-6 age group in India has risen from 102.4 males per 100 females in 1961, to 104.1 in 1981, to 107.8 in 2001, to 108.8 in 2011. Child sex ratio is within the normal range in all the eastern and southern states of India, but significantly higher in some western and northwestern states such as Punjab (118), Haryana (120) and Jammu & Kashmir (116).

The recently published annual Global Gender Gap Report of the World Economic Forum (WEF) ranks India 114 in a list of 142 countries. The significant variable that dragged India down to 114 is its sex ratio at birth which is 0.89.

India has a tradition of killing female babies (custom of 'Dudhapati') by putting opium on the mother's nipple and feeding the baby, by suffocating her in a rug, by feeding them with poisonous oleander berries (Kellar community in Tamil Nadu) or simply by ill-treating daughters.

Cultural preference for male babies arises from the fact that they would provide manual labour and success to the family and continue the patrilineal and patriarchal lineage. A son is generally viewed as an "asset" as he becomes the earning member of the family while a daughter is considered a "liability" as she will be married off to a different family and also with the payment of a huge amount of dowry both in kind and in cash. Female infanticide also takes place when postnatal health care for baby girls are withheld in regard to access to food care, healthcare, immunization between male and female babies. Thus, the primary cause for female foeticide lies within the cultural norms as well as socio-economic policies. Family line is maintained when a boy is born. Moreover, a girl is not preferred as compared to a boy for the simple reason that man will be the earning member for the family and also look after parents in their old age. Once married, woman like a cargo baggage is ready to be shipped off to another household where she will dedicate and devote her body, soul, mind, labour and if employed, her hard earned income as well. Thus, she is bought in totality.



Cruelty by husband or his relatives

Source: NCRB (2014)

Data under the category of 'Cruelty by husband or his relatives' portrays a terrifying picture of the condition of women in their matrimonial homes. The moment a girl child is born, calculations associated with marriage expenses start in right earnest. There is hardly any doubt that dowry has been the driving factor behind many heinous crimes against women and the girl child. Indian marriages have become economic transactions between families. There are in fact, certain communities, where there prevails "open auction". There exists fixed "rates" for prospective grooms depending on the area, family and profession.

Table 1: Crimes against Women in 2014

Uttar Pradesh	38,467
West Bengal	38,299
Rajasthan	31,151
Andhra Pradesh	30,648
Madhya Pradesh	28,678
Maharashtra	26,693
Assam	19,139
Bihar	15,383
Delhi	15,265
Odisha	14,606

Source:NCRB

The dowry system in India is one of the prime reasons for female infanticide. India discredits herself of being the country with the highest number of dowry related deaths in the world according to the Indian National Crime Records Bureau. In 2012, 8233 dowry deaths were reported across India i.e. a bride was burned every 90 minutes. According to a 1996 report by Indian police, every year, it receives over 2500 reports of bride burning. The Indian National Crime Records Bureau (NCRB) reports that there were about 8331 dowry death cases registered in India in 2011. Incidents of dowry deaths during the year 2008 (8172) have increased by 14.4 per cent over 1998 level (7146). This is nothing short of *gendercide* that refers to the systematic killing of members of a specific sex. The term coined by Mary

Anne Warren in 1985, is an analogy that referred to "the deliberate extermination of persons of a particular sex (or gender)". In 1995, Time Magazine reported that dowry deaths in India increased from around 400 a year in the early 1980s to around 5800 a year by the middle of the 1990s.

Table 2: Crime Head-wise incidents of crimes against women during 2010-2014 and percentage variation in 2014 over 2013

Crime Head	*2010*	*2011*	*2012*	*2013*	*2014*	*Percentage Variation In 2014 Over 2013*
Rape	22,172	24,206	24,923	33,707	36,735	9.0
Attempt to commit rape*					4,234	-
Kidnapping & Abduction of women	29,795	35,565	38,262	51,881	57,311	10.5
Dowry Deaths	8,391	8,618	8,233	8,083	8,455	4.6
Assault on women with intent to outrage her/their modesty	40,613	42,968	45,351	70,739	82,235	16.3
Insult to the modesty of women	9,961	8,570	9,173	12,589	9,735	-22.7
Cruelty by husband or his relatives	94,041	99,135	1,06,527	1,18,866	1,22,877	3.4
Importation of girls from foreign countries	36	80	59	31	13	-58.1
Abetment of suicide of women					3,734	-
Total IPC crimes against women	2,05,009	2,19,142	2,32,528	2,95,896	3,25,329	9.9
Commission of Sati prevention Acts	0	0	0	0	0	
Indecent representation of women (P) Act	895	453	141	362	47	-87.0
Dowry Prohibition Act	5,182	6,619	9,038	10,709	10,050	-6.2
Protection of Women from Domestic Violence Act*					426	-
Immoral Traffic (Prevention) Act#	2,499	2,436	2,563	2,579	2,070#	-
Total SLL crimes against women	8,576	9,508	11,742	13,650	12,593	-7.7
Total (A+B)	2,13,585	2,28,650	2,44,270	3,09,546	3,37,922	9.2

(*) Newly included crime head; (#) Modification in data in 2014, as figures refer to women related crimes only

IPC : Indian Penal Code ; SLL : Special and Local Laws

Source: National Crimes Records Bureau

Concluding observation

Undoubtedly, gender-based violence, despite being a pervasive phenomenon, is one of the most ignored and normalized form of abuse, affecting lives of millions of women and girls (Bhatla 2012). Feminist theory is the prevailing paradigmatic explanation of gender-based violence (Gelles 1993). The theory clearly portrays that gender-based violence is rooted in gender inequality at the societal level (Bograd 1988). Ameliorative hypothesis states that gender-based violence meted out against women can be scaled down by eradicating patriarchy, augmenting women's socio-economic status and strengthening gender equality. Therefore, women education, their accessibility to education, employment, income and legal help may result in curtailment of female victimization. However the backlash hypothesis argues that enhanced female socio-economic and gender equality statuses escalate violence.

For a woman, loosing chastity 'burns' the face of the family, society and community. Marriage too is no more a heavenly affair. It has become simply an institution of dominance, perversion, authority, control and subjugation. There she is burnt, dead or alive. Dreams, prospects, life- all are burnt. Either way, it is the choice between the devil and the deep blue sea.

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Causes and Consequences of Land Disputes in the Coastal Area of Bangladesh

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Abstract

Most of the legal disputes are land cantered in Bangladesh. This study aims to assess the causes and impacts of land disputes in the study area. It has been directed based on primary and secondary data and information. This study revealed that on an average each surveyed household occupies about 155 decimal lands including about 41 decimal with some sorts of disputes. Succession problem, false document and missing information in record are identified along with others as the main causes of land disputes. About 97 percent families are found unable to solve their disputes because of dissatisfaction of plaintiff/defendant, lack of man power in civil court, corruption etc. It is also explored that such conflicts made monetary loss, hampered social status, broke relationship between plaintiff and defendant etc. Hence, corruption should be controlled and shortening argumentation time should be ensured by the government for better land management in the country.

Keywords: *Land dispute, record, corruption, inheritance*

Introduction

Land directly and indirectly affects human activities. It is used to provide humanitarian assistance e.g. shelter or infrastructure, to facilitate livelihood activities and considered as the source of culture. These assistances may be disturbed due to arising land disputes which have many dimensions (UN-HABITAT, 2009; Scalise, 2009). Land dispute includes conflicting claims to rights in land by plaintiff and defendant in order to possess a particular piece of land (Bruce and Holt, 2011; Bruce, 2013). Bangladesh is a low-laying deltaic country of South Asia. Although the country consists of 147,570 sq. km. area and considered as 94th country of the world by total area but it is the 8th largest country in terms of population with 157.85 million people. The population is increasing at high growth rate of 1.2 percent. The population density is about 1,015 inhabitants per sq. km. as of 2011 (GED, 2015). Because of small area and high population growth per capita land is only about 0.06 hectares (ha) per person which makes the country lowest land-man ratio in the world (FAO, 2013). As in many other countries, land is closely connected with our livelihood, social norms and economic activities. Article 42 (1) of the Constitution of Bangladesh give the rights to every citizen to acquire, possess and transfer of properties (CARE, 2003; Ahmed, 2012; Hossain, 2015). In rural Bangladesh, land is considered as the key possession a person can have (Scalise, 2009; Deininger et al., 2010; Marbourg, 2015). About 65 percent of the total population of the country was somehow dependent on agriculture in 2009-2010. It is also need to mention that there is a nexus between land holdings and poverty. In Bangladesh, poverty rate of the landless households was about 80 percent in 2010 whereas overall poverty rate was about 41 percent in that year (Ahmed, 2012; Marbourg, 2015). The history of land administration

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and management is quite old. Over the decades, the government has taken numerous policy measures to reform and streamline land administration and its services; so that land would be managed properly and services would be delivered in efficient manner. However, different studies have shown that still there are lope-wholes and governance deficits in different areas of land administration (CARE, 2003; Jinnah, 2013; Hossain, 2015). Land distribution system is often supposed to foster inequality in Bangladesh which hampered fundamental rights of the people and fundamental principles of the country (Hasan, 2017). It is the source of almost 60 percent of all legal disputes in Bangladesh. Total pending cases related to land as of December 2014 was 1.7 million (TIB, 2015).

Numerous researchers have tried to work on the land conflicts in Bangladesh and all over the world i.e. Transparency International (TIB, 2015) carried out their research focusing the land crime issues in Bangladesh and other countries. Few researches focused on the governance deficits in different areas of land administration and service provisions (CARE, 2003; Hossain, 2015). Shapan and Dastidar (2011) had work on land ownership and ethnicity unrest in the Chittagong Hill Tracts (CHT) in Bangladesh. In addition, some studies focus on the inheritance rightsto land (Marbourg, 2015; Scalise, 2009; Uddin, 2011; Jinnah, 2013; Sourav, 2015). But, the researchers have rarely found any research works those are directly related to land disputes in Bangladesh. Given the paramount importance of land sector in the economy of the country, this research might help to understand the causes and consequences of land related disputes of the study area. The aim of the research is to analyse the causes and impacts of land disputes in the study area.

Methodology

Dumki Upazila (sub-district) was formed in 2000. The Upazila occupies an area of 95.81 sq. km. It is bounded on the north by Bakerganj Upazila of Barisal District, on the south by Patuakhali Sadar Upazila, on the east by Bauphal Upazila and on the west by Mirzaganj Upazila. The Upazila comprises total 15,542 households and 70,655 populations with density 737 per sq. km. (BBS, 2012). Table 1 shows Union wise distribution of area, household and population of Dumki Upazila.

Table 1: Distribution of area, household and population in the study area

Union	*Area (acre)*	*Sq. Km.*	*Households*	*Population*			*Population Density [sq. km.]*
				Total	*Male*	*Female*	
Angaria	4,044	16.37	2,840	12,953	6,083	6,870	791
Lebukhali	7,215	29.20	2,607	11,881	5,756	6,125	407
Muradia	6,840	27.68	3,398	15,162	7,138	8,024	548
Pangashia	4,738	19.17	2,831	12,432	5,891	6,541	648
Sreerampur	838	3.39	3,866	18,227	8,934	9,293	5,375
Upazila total	23,675	95.81	15,542	70,655	33,802	36,853	737

Source: BBS, 2012

There are five Unions in the Upazila. Amongst them, three Unions namely Sreerampur, Pangashia, and Lebukhali were purposively selected for the survey (Figure 1).

Both primary and secondary data and information were used in this study. Secondary sources were journal articles, published and un-published research reports. On the other hand, primary data

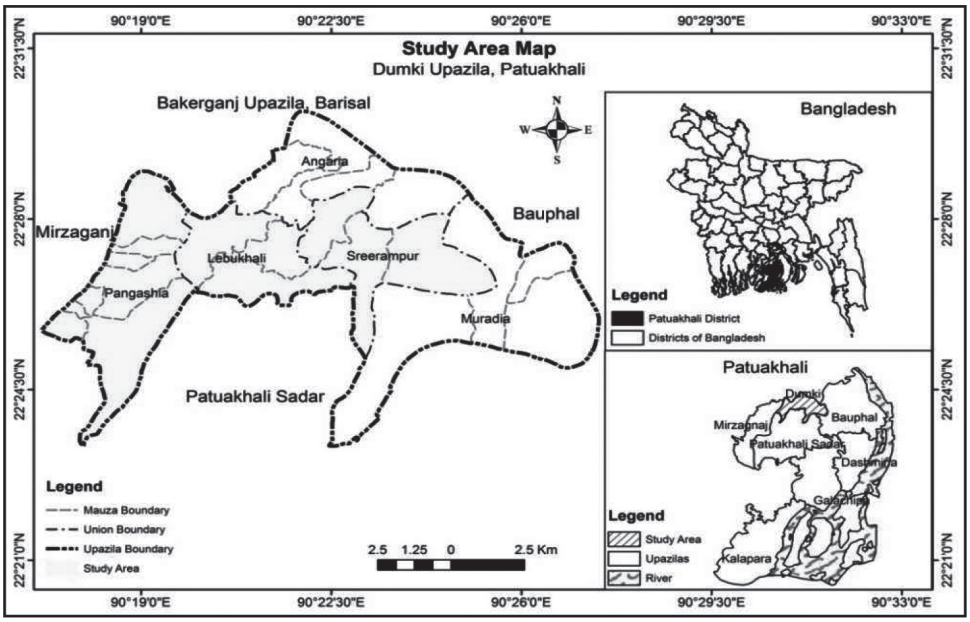
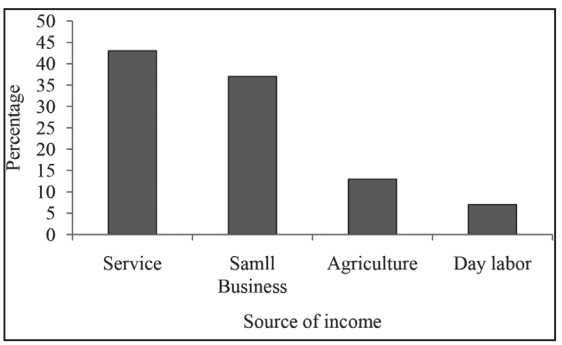


Figure 1: Study area

were collected through household questionnaire survey. A total of 100 households were purposively identified and surveyed in the selected three Unions after consultation with the members of the local government institutions (LGIs) and other stakeholders. Data are presented in both tabular and graphical format.

Results and Discussion

Socio-economic Profile of the Households: This study has been conducted among the households having land related disputes. Results show that among the surveyed households, service (mostly lower grade) is quite higher and dominant profession in the study area. About 43 percent household's main income source is service followed by 37 percent small scale business. On the other hand, only 13 percent household's income source is agriculture and day labour comprises a very negligible portion (Figure 2).



Source: Field survey, 2018

Figure 2. Main source of family income

Income of a family mainly depends on the nature of the profession of household head. As found earlier lower grade service and small scale business are the dominant sources of income among the surveyed households which make a nominal level of money for the life survival. The mean monthly income of the surveyed households is about 25.5 Thousand

BDT (Bangladeshi Taka), where the minimum is about 6 thousands BDT and maximum is about 100 thousands BDT. Family income is considered as the total income of all earning person in a family. It is found that total number of family members in the surveyed households is 530 including 52.5 percent male and 47.5 percent female. Average family member is about 5 persons including minimum 2 and maximum 16 persons. Types of building used by the households mostly depend on the socio-economic and cultural status of the dwellers. Living room (family shelter) is considered as the study indicator. As like lower economic class, most of family shelters (62 percent) are *Katcha* made of Coagulated Iron (CI) Sheet. On the other hand, 19 percent family shelter is *Pucca* (concrete wall and roof) and rest of *Semi-pucca* (concrete wall and C.I. sheet roof).

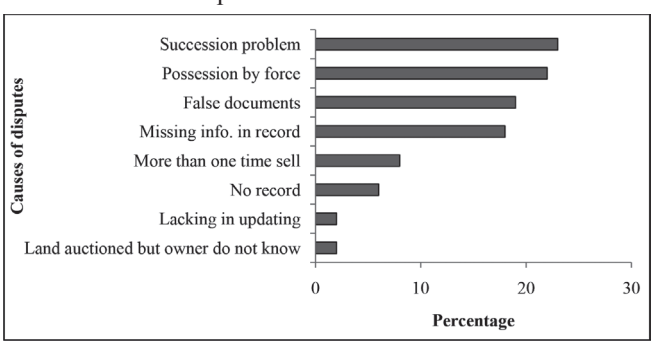
Amount of Land Having Disputes: It is found from the study that total land of the surveyed households is about 154.84 acres (average 1.54 acres) and approximately 26.2 percent of them have some disputes. Amount of mean land having some varieties of disputes is about 40.6 decimal including minimum one decimal to maximum 520 decimal (Table 2).

Table 2. Amount of land having disputes

Statistics	*Total Family Land (Decimal)*	*Land Having Disputes (Decimal)*
N	100	100
Mean	154.8	40.6
Minimum	10	1
Maximum	800	520
Std. Dev	144.3	64.8
Sum	15484	4061

Source: Field survey, 2018

Causes of Land Disputes: Land is considered as an important asset and also called as the key source of civil cases in Bangladesh. Different types of causes such as succession problem, possession by force, false documents, miss information in record, selling more than one times, unavailable record documents to the possessor, lack of updated record or documents etc. are found as the causes of land disputes in the study. It is revealed that about 23 percent of the disputes have occurred because of succession problems and 22 percent due to possession by force. On the other hand, false documents have contributed 19 percent in the causes and missing information in record accounts 18 percent causes. Figure 3 shows detail about the causes of land disputes in the study area.



Source: Field survey, 2018

Figure 3. Causes of land related disputes in the study area

Mode of Efforts Solving the Disputes: Generally, in village area, the victim wants to solve their disputes through village *shalish* (judgment moderated by community leader). If the problem is complex, then they are forced to take the action of civil court. But, in many case the problems are solved after the discussion among the plaintiff and defendant in village *shalish*. Among the surveyed households, about 63 percent replied that they were tried to solve the problem in village *shalish*, whereas 47 percent people faced to civil court for resolving the land disputes. Among those people who went to civil court, about 20 percent firstly had tried to resolve their problems in village *shalish*. Table 3 shows detail about the methods of efforts in order to resolve the problems.

Table 3. Way of solving the disputes

Mode of Efforts	*Responses (%)*
N	100
Village shalish	63.0
Civil case	47.0
Family discussion	6.0
Application in settlement/land office	2.0
Application in police station	1.0
Not tried yet	3.0

Source: Field survey, 2018

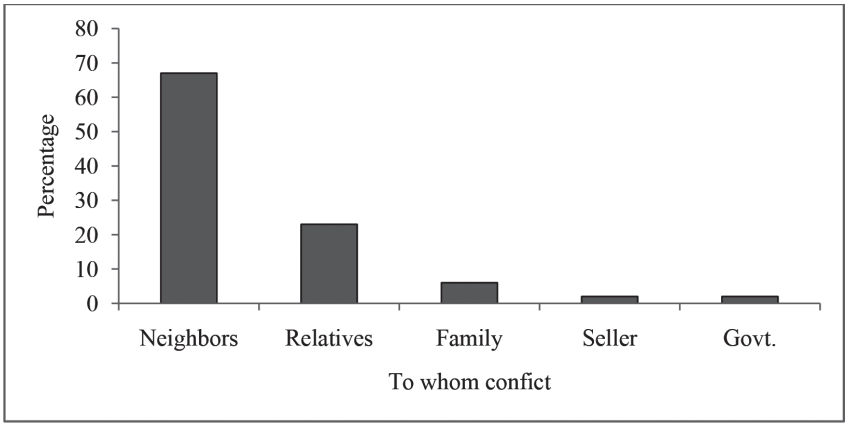
Causes of Not Solving the Disputes: The study was conducted among the households having land related disputes. Therefore, a question 'why such disputes are not solved?' was asked to the respondents. Although 24 percent of the respondents did not give their opinion but noticeable information was found regarding the causes of not solving the disputes. About 32 percent of the respondents opined that either plaintiff or defendant is not satisfied about the judgment made by the community leaders in village *shalish* that's why the case is pending. Moreover, about 22 percent and 14 percent respondents claimed that the case is pending because of corruption and lack of man power in court respectively. On the other hand, succession problem, lack of coordination among the land offices, opposition has submitted case in the court was also identified as the reasons (Table 4).

Table 4. Causes of not solving the disputes

Causes	*Response (%)*
N	100
Didn't give opinion	24
Not satisfied	32
Corruption of LGI/land related officials	22
Lack of man power in court	14
Succession problem	3
Lack of coordination among land related offices	2
Not strongly tried	2
Opposition submit case	1

Source: Field survey, 2018

Impacts of Land Disputes: Considering socio-economic status, land is one of most valuable assets in our society and also key source of conflicts. Figure 4 shows most of such conflicts happened among the neighbours, relatives, family members, between buyer and seller, and between government and dwellers in the study area.



Source: Field survey, 2018

Figure 4. Conflict happened to whom

It is found that about 67 percent disputes happened among the neighbours while only 2 percent occurred between seller and buyer as well as between government and dwellers. After the incident, about 97 percent victims have been trying to solve their disputes. Each household tried more than four times but still their disputes are continuing. Hence, such conflicts make a huge amount of direct and indirect monetary loss. The direct loss includes the expenses in managing the community leaders during *shalish*, operating the case in court, collecting documents from local land offices etc. On the other hand, indirect loss comprises the payment for or loss of house rent, loss of crop profit etc. Indirect loss is found about three times more than direct loss. On an average, each household spent about 56,600 BDT as direct loss whereas average indirect loss is about 149,339 BDT. Further, land conflict is found as the reason of hampering social bonding, wasting time and weakening relationship between plaintiff and defendant. Table 5 shows that one third of the respondent social status has hampered (high to moderate) because of land disputes. On the other hand, about 38 percent of the dwellers argued their high to moderate degree of time has wasted. In addition, about 44 percent respondents said that such conflict has worked as the key agent of loss of relationship in between the plaintiff and defendant.

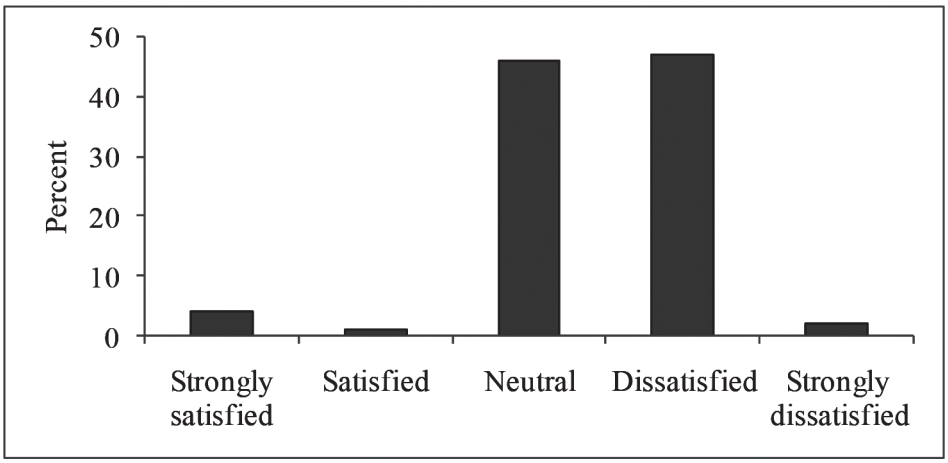
Table 5. Social impacts of disputes

Impacts	*Social status*	*Time waste*	*Loss relationship (plaintiff-defendant)*
Highly hampered	4	12	14
Hampered	26	26	30
Neutral	20	16	32
Not hampered	38	43	17
Not at all	12	3	7

Source: Field survey, 2018

Recommendations for Improving Present Land Management System: Before taking suggestions for improving the land management system, a question was asked to know about the opinion regarding existing land management and administration system. Among the respondents about 47 percent opined that they are dissatisfied with the present system, while only 4 percent was found as strongly satisfied. Besides, about 46 percent respondents are found neither satisfied nor dissatisfied. Figure 5 shows detail about the opinions.

After accumulating opinions regarding existing land management and administration system the respondents were asked to give some suggestions to

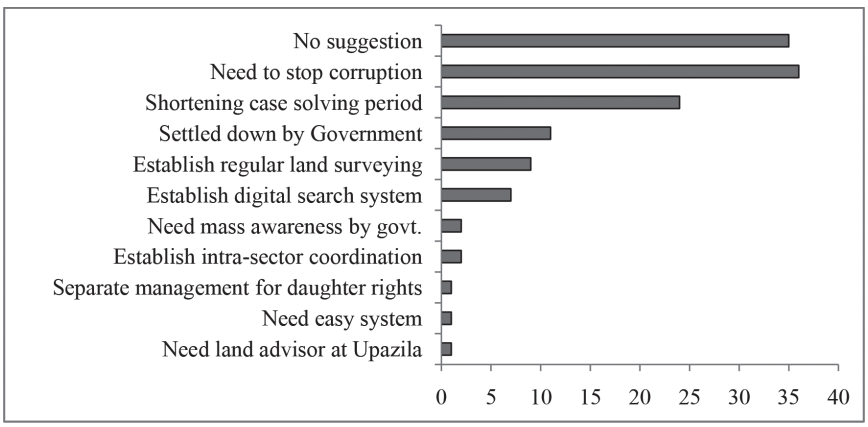


Source: Field survey, 2018

Figure 5. Opinion regarding existing land management and administration system

improve the present system as well as to solve the above discussed disputes in the study area. Figure 6 shows recommendations given by the respondents.

More than one third of the respondents suggested that corruption should be stopped in order to solving such conflicts. Following prior, the other suggestions were shortening the period of argument especially in civil court case, settled down by the government after buying or mutating any land, surveying the land in regular basis, establishing the digital land record



Source: Field survey, 2018

Figure 6. Respondent's recommendations regarding present land system

system etc. A noteworthy portion (35 percent) of the respondents didn't give any suggestions.

Conclusions and Recommendations

Land is the most valuable asset among all the physical things in socio-economic life. Most of the civil cases are originated from land disputes over the country. The study has conducted intents to identify the reasons of land related disputes in the study area as well as the impacts of such disputes in daily life. The households having land disputes were purposively selected for data collection. It is found that about 41 decimal land of each household have some disputes. Approximately 80 percent problems are related to inheritance, forcefully possession, false record or deed, and absent information in record. The impacts of the disputes are identified as the wastage of time, weakening of social and family bonding. Moreover, considerable amounts of money are lost due to direct and indirect impacts of such land disputes. As direct, money is expensed as cost of conducting *shalish*, application in police station and continuing civil case at the court. The indirect impacts are the loss of money can be earned from agricultural crops and expense of money for renting house during dispute tenure. This study revealed most of the households are dissatisfied with the existing land management and administrative system because of above mentioned direct and indirect impacts of land disputes. This study suggests necessary steps should be taken by the government in order to:

1. Stopping corruption of the actors involved with land sector;
2. Shortening the period of argument should be ensured especially in civil court case;
3. Developing intra-sector coordination among the land related offices;
4. Surveying the land in regular basis;
5. Appointing a land advisor dealing with land related problems and advocacy; and
6. Establishing the digital record system.

Acknowledgment

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Mass Education as Stimuli for Social Sustainability

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Abstract

Sustainability is a balancing act. It is the ability to be maintained at a certain rate or level. It means renewing resources at a rate equal to or greater than the rate at which they are consumed thus living within the resources of the planet without damaging the environment now or in the future. There is nothing beyond people, they know how to socialite, what is economically viable for them and social sustainability revolves around the domain of social life of people and the way they sustain them. Education evokes and provokes numerous ways to promote awareness within people to maintain the balancing act for future needs and thus make them mentally and socially sound to understand the real logic behind sustainability and finding answers to questions viz. 'why to sustain', 'how to sustain' and 'what to sustain'.

Keywords: *Social sustainability, process of awareness, mass education*

Introduction

Well goes the Native American Proverb, "We do not inherit the Earth from our ancestors; we borrow it from our children." Do we ever sense this feeling as a part of our living or do we ever develop these senses within us that how acutely it is important to save 'something' for the future generations in today's world when we are actually voluptuously gorging upon our costliest treasure i.e 'Resource'. No we don't, least to say in the meanest way that we are pathetic in conserving. There thus arises the concept of sustainability revolving around the 'trio' of social, environment and economic.

To learn new, it is necessary that first we acknowledge it. This is because while we speak of society; voice of the mass, their perception and their approach towards anything is the priority. Then their knowledge, education and thinking about the matter are evolved, the path leading to acknowledgement.

Domain of Social Sustainability

To measure sustainability we need to know the three basic tools walking hand in hand viz. 'Social' 'Environment' and 'Economic'. They connect to one another which sums upon as bearable, equitable and viable. One of the definite and qualitative method for understanding and assessing sustainability is-Circles of Sustainability, an approach used by the United Nations.

This approach revolves around four domain of social sustainability i.e. Economics, Ecology, Politics and Culture. This domain encompasses those factors which highlight the basics of sustainability. For instance, social sustainability combines the design of the physical realm with the design of the social world-infrastructure to support social and cultural life, social amenities, systems of citizen engagement

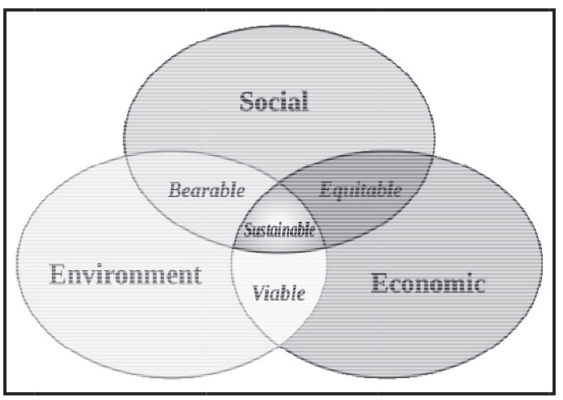

Fig 1: Trio of Sustainability

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and space for people and places to evolve. While Economics caters to production, consumption, wealth, distribution, use etc. on one hand, Politics on the other is about law, governance, representation. Ecology is surrounded by habitat, materials and energy, flora–fauna and identity, creativity, belief, learning, well-being are the realms of Culture. Speaking of society we know that people and their inter-relationships to nature and society are its basic components, thus when we look back, we must know

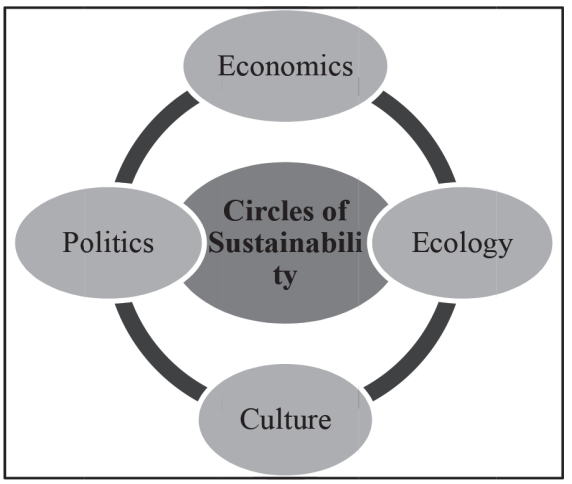

Fig 2: Circles of Sustainability

that these relationships can be continued only when we know how to be sustainable with the use of resources. It is at this juncture the need to be aware arises specifically.

Why the Need for Sustainability?

According to Brundtland Commission, 1987, "Sustainable Development is development that meets the needs of the present without compromising the needs of the future generations to meet their own needs." So for a better future it is a wise decision that we must save 'something' for the posterity and think holistically.

Social Sustainability: Components and Inter-linkages

Once we know about the domain we can now discuss about the components of social sustainability. There are too many components to study about but our perception must adhere to those which act as a pool bridge between each of them and help find out the relationships and linkages. This in turn makes us learn about the need of awareness and the extent to which it can be spread over to the masses. The components can be summed up as social and health equity, livability, community development, social

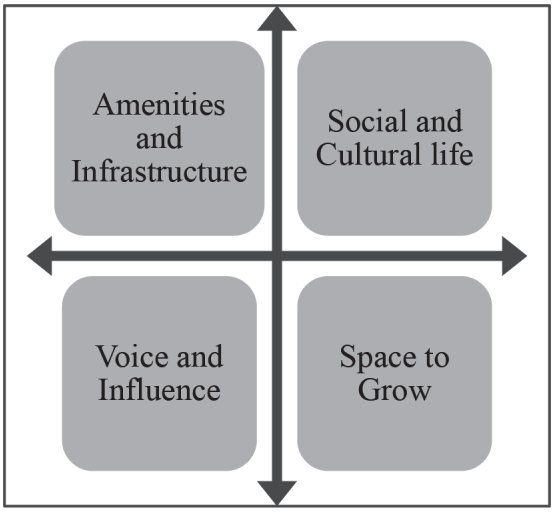

Fig 3: Dimensions of Social Sustainability

capital, social support, human rights, labour rights, place making, social responsibility, social justice, cultural competence and human adaptation.

Truly speaking these components actually work on the behalf of these three pillars of Sustainability. This saying is very much established because in true sense Economy is embedded in Society, which in turn is embedded in the Environment. For instance, if we speak of community development there must be social equity, livability and health equity. Similarly social justice goes with human rights and labour rights. Human adapts culture and in time gains the ability to interact effectively with people of different cultures, thus concept of cultural competence is very much in action.

Education: Backbone and Backdrop of Awareness

It seems learning and gaining knowledge has no such limitations. Mathematically there's a saying- limit tends to zero '0' or limit tends to 'infinity'. Since zero is a circle, assuming it to be in constant cyclic motion makes sense; cyclic motion do not ever

diminish nor does education, because we are prone to learning newer aspects upon broad canvases. It is at this point we can consider that education is like that cyclic motion which develops and nurtures our perception over time, a perfect backdrop to arouse awareness. It is also the most important pillar of strength in society, acts as a weapon to fight against all odds of the society and manipulates the venomous narrow-mindedness mentality wherein acting as the backbone for awareness in the society.

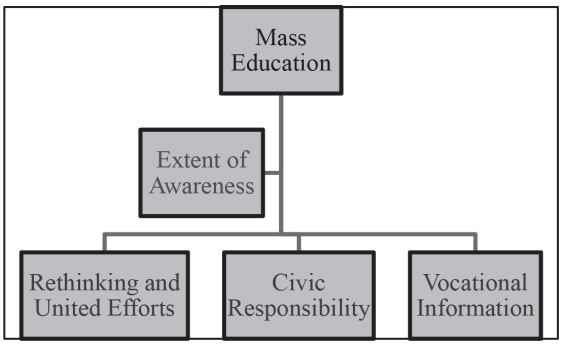

Fig 4: Extent of Awareness

The role played by education can be explained most effectively with the help of Mass Media because it sets perception in the most accurate fashion. Also it is one of the most revolutionary devices tending people to believe in the most successful manner. Benefits of awareness programme are based upon the fact that it involves innumerable amount of people who are rather actively or passively involved with these mediums.

Mass Education: Awareness for Social Sustainability

When one speaks of awareness, responsibility, challenges etc. setting our mind to train into new avenues is pondered upon the shoulder of agents of mass education. More specifically Newspapers, TV, Radio, Magazines, Journals and Films since they all set new perception within people in creating awareness.

1. Newspapers – up-to-dates the mass with various incidences
2. TV – audio-visualizes the mass more effectively
3. Radio/F.M. – connects the mass on a broader platform
4. Magazines/ Journals – helps to explore mass idea
5. Films – opens up mental gateway for innovations and creativity

Apart from these there are three other tools to promote awareness viz. Print media, Broadcast media and Internet media. Needless to say television has been always a successful media but with the leap of time Internet has consumed most of the 'media butter!' It has even provided multi-channel and network services throughout the country and worldwide, vividly gaining huge response. Thus we can say social sustainability is the ability of a community to develop and processes structures from varied fields and finally leading to the answer of the question **'how'** to sustain.

How Social Sustainability can be attained?

Once we get to know the processes for awareness it is no more a very difficult task to attain social sustainability. The media for educating the mass plays its part while it is our duty to manage and maintain the balance between consciousness and awareness. This is a very detailed process where mass involvement is very much necessary and

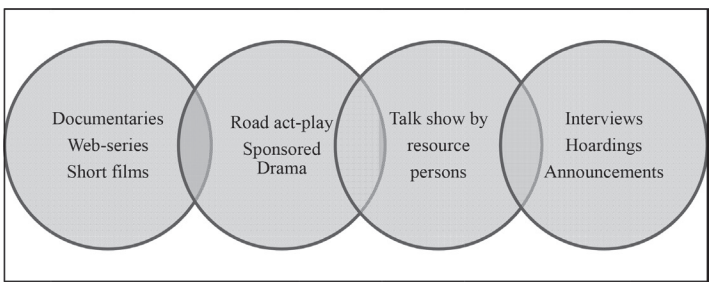

Fig 5: Various processes of Awareness through Mass Education

the factors for attaining the sustainability are both internal and external in nature. The internal factors include eagerness of the people, assumptions based on perceptions, knowledge about sustainability, mass mobility etc. Versatility of the media, political connections, viability of broadcasting etc. can be considered as external factors. The following ways defines that awareness for social sustainability can be attained in multi-faceted fashion.

Social Sustainability: A Public Dialogue

Until now the paper has discussed about 'what' and 'how' to sustain. With the subject matter proceeding further the question of 'what' to sustain becomes more critical. As of now it is clear that mass education is not only necessary but mandatory too in order to have a transparent view about the concept. So 'what' to sustain not only involves people but also all those aspects which encircle them, the most important of which is 'Quality of Life'. It includes parameters viz. health, housing, education, empowerment, safety and security etc. Sustaining the quality of life should be the utmost priority since it is hard and critical to attain and achieve. The mass wants their demands to be fulfilled and provision of equitable distribution of benefits. A two-way measure can be taken into account-

- Distribution of resources in true proportion and;
- Optimum distribution of resources

Here resources do not merely mean the natural ones but socio-economic relating to better way and standard of living i.e quality of life. Another aspect to discuss about providing equitable opportunities actually gears up the concept of 'Equity' which promotes sharing holistically, optimally and sustainably. Re-thinking about the poorest and vulnerable sections/members of the society for a better living can be fulfilled through mass education if the balancing act can be maintained. Finally it can be inferred that various processes of awareness through mass education discussed above is very much advantageous and will bring forth benefits after obvious actions since-

1. Documentaries, web-series and short films are more mass friendly and quick to handle;
2. Drama and plays are always accepted by sections of society who think innovatively;
3. Talk shows have a widespread global acceptance, more with eminent personalities;
4. Interviews makes the mass more amicable and develops the habit of questioning;
5. Hoardings and Announcements are very much visual and sound respectively.

In general the voice of the public remains unheard unless there's a platform for them to convey their messages. Mass Education paves a way out for it

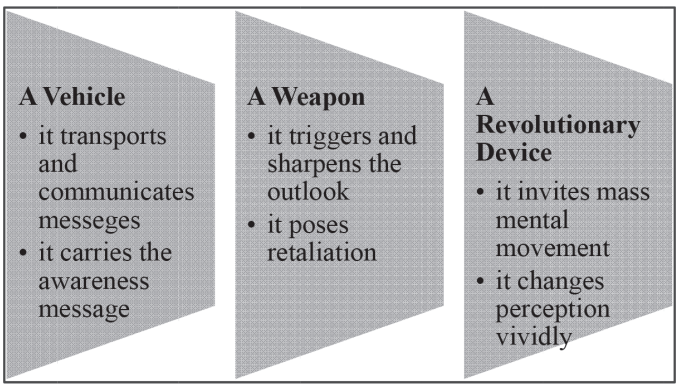

Fig 6: Mass Education- A triplet force

and in turn people become more frequent and vocal thereafter.

As for their protection United Nations Principles on Business and Human Rights, it is an obligation

to respect, protect and fulfill human rights and fundamental freedoms.

Sustainability and Awareness- A SWOT Analysis

Awareness through mass education for social sustainability is a very successful venture.

Analysis of social sustainability is immensely qualitative in nature, thus it is not quantifiable. But once we know the basics of the concept, quality measurement pertaining to the extent of sustainability and the ways of attaining it can be analyzed. Though it seem desperate to measure something which is based on abstract and perceptions, the processes can be explained with certain evaluation to some extent. A generous attempt can be helpful in this context.

Table 1 : SWOT Analysis

Strength	*Weakness*	*Opportunity*	*Threat*
Mass education usually has some positive effect upon the society. It encourages being more vocal and sound regarding rights relating to quality of life. Enhances behavioural changes and facilitates self-evaluation. Development, success, creativity, innovations etc. opens up new dimensions for people.	Weaker and poorer sections of society are not always feasible as to the happenings of the society. Ignorance, Poverty and Illiteracy may deviate them from re-thinking.	With the concept of 'Digital India' and mobile schools, mass education is slowly and steadily knocking the doorsteps of innumerable mass.	Political agitation is a major threat since media usually don't rely upon any party. People may turn fierceful and full of rage if their demands to be fulfilled are delayed.

Conclusions

Social Sustainability acts as a package for rejuvenating Quality of Life. The paper has tried to focus upon all those underlying factors which favour mass welfare. Social well-being do not come easily, it is to be achieved rather. A little consciousness, competence, effective effort, proper knowledge and awareness are the road to Social Sustainability. The media being a key factor, mass education is progressive and helps people to learn about the right decision making, self-evaluation, human rights, equitable distribution of opportunities, innovations. Human beings are a resource in themselves. It is their knowledge, skill, value, attitude and behaviour which speak up in favour of their quality. We all pose quality; all we need is just to retain it sustainably by optimum utilization because in the words of Erik Brynjolfsson, "The future is not pre-ordained by machines. It's created by humans."

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The Tribal Origin of the Cult of Lord Jagannath : An Amalgamation of Environmentalism with Religion

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Dr. Doyel De

Abstract

The origin of the cult of Lord Jagannatha is shrouded in myths and legends. Though the deity is accepted in almost all the sects of Hindu Pantheon i.e. Vaishnavism, Shaivism, Brahmanism and also in Jainism and Buddhism. But many scholars believe that the cult of Jagannatha had a Tribal origin. According to them Jagannatha had an association with a class of aborigines, called Sabaras. The wooden icon of the deity with his associates Balabhadra and Subhadra and also a class of non-Brahmin priests with tribal origin, called Daita, proved the theory of Jagannatha's tribal origin.

The Daru (Wood) worship of the Savaras can be traced back since pre-historic times, which was prevalent among the Proto-Australoids and then the concept of tree worship entered to other religions. It is a fact that since the earliest time of civilization tree had been regarded as the best gift of Mother Earth. Therefore the worship of tree was nothing but the worship of Nature. So it can be said that the cult of Jagannatha is a proof of amalgamation of environment with religion.

Keywords : *Tribal, Nature, Cult, Sabara, Jagannath*

Introduction

Lord Jagannath, the chief deity of Puri is the centre of the socio-cultural life of Orissa. The origin of the cult of Lord Jagannath is shrouded in the mist of antiquity and legends. This is largely because the sources which provide informations regarding the origin of the deity are either mythical or fragmentary in nature. These sources include religious texts and inscriptions. While on one hand the inscriptions do not give proper chronological pictures; the historical texts on the other hand lack historical consciousness in the true sense of the term. Therefore it is very difficult to locate the origin of Lord Jagannath.

The deity is accepted in almost all the sects of the Hindu Pantheon, i.e. Vedic Religion, Vaishnavism, Saivisn, Tantricism and Brahamanism in His abode. In addition to these, even Jainism and Buddhism also claim the existence of Jagannath triad to their religion. Each of these sects have different thought regarding the origin of this deity. But inspite of all these, many scholars stressed on the fact that the origin of Lord Jagannath along with His associates is absolutely tribal. In other words based on circumstantial evidence and inferences they believed the on the aboriginal origin of the Jagannath triad.

Objectives

The chief objectives for the present article are: i) to study the tribal life of Orissa and its attachment with Nature; ii) to examine the legendary view regarding the origin of Lord Jagannath; iii) to examine the relation of the Jagannath triad with the tribes through several documents and proofs; iv) to analyse the temple rituals to prove the hypothesis; v) to formulate the conclusion supporting the hypothesis.

Data source and Methodology

The research on this particular topic has not been followed any chronological line. It has absolutely been done on the basis of subjectivity. The primary source used for this article is Orissa District Gazetteers and secondary sources are several books which were collected from The National Library, Kolkata; The Ramakrishna Mission Institute of Culture Library, Kolkata etc.

The Tribal People and the Worship of Nature

From ancient period, the primitive aboriginal people

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are closely connected with Mother Earth and in course of time their attachment with nature turned into religious worship. They worshipped nature not only because of fear, and protection but also with love, faiths and gratitude. The rites and rituals performed by the tribal people are continued for generations and in course of time nature worship has been changed in to different perspective. Here in this context we can assess the tribal origin of Lord Jagannath, the most ancient natural heritage of India.

Physical Appearance of Jagannath Triad

Unlike other deities of the Hindu Pantheon, there is no anthropomorphic or artistic aspect of the idol of Jagannath triad. The idols have not been designed to represent the image of a human being. The image of Jagannath has a massive square head and with the chest merging in to one piece of wooden stump without any demarcation of the neck and also no identifiable limbs like hands, legs etc. and as a whole the shape of the idols are like serpent. The idol of Jagannath is about six feet tall. The colour is predominantly black and the eyes are round and large. There is no eyelash in eyes. The eyes have three concentric circles – red on the outer border, white in the middle and black in the center. The image of Balabhadra is also six feet tall in the temple. His face is white and eyes are oval shaped and his stump like arms are at eye level. Devi Subhadra's statue is about five feet tall and yellow in colour. Her eyes are also oval.

Tribal Deity : Legendary view

Although scholars differ on the origin and evolution of Jagannath, but most of them agree that Jagannath is basically a tribal deity. If we go through the *Musali parva* and *Vana parba* of Sarala Dasa's *Mahabharata, Deulatola* of Sisukrishna Dasa and Nilmadhab Dasa, all refer the tribal origin of Jagannath by mentioning the story of legendary king Indradyumno and Sabara king Visvabasu, although in different manner. The Indradyumno legend tells us how the deity originally worshipped by the tribal king Visvabasu who was migrated to Puri. As a matter of fact, the Saora or Savara group of tribals exists even today with their unique traditions and practices.

Tribal origin : Anthropological View

The modern Jagannath deity is a result of a prolong evolution that had started with the appearance of the primitive man. Almost all anthropologists agree on one point that Vindhya region constituted the habitat of the *Savaras* who spoke Mundari dialect which is the primitive form of modern Oriya. Though the Mundari speaking people were divided into different tribes like *Savaras, Khandas, Munda* and *Gonda* etc ; they primarily belonged to a larger community. Apart from this linguistic similarity, there is also a close resemblance with their religious thought and worship, i.e. the Mundari speaking people, specially the *Savaras* used to worship tree or *khamba* (pillar or post) since earliest time and performed their rituals before *'Kitung'* or *'Jaganata'* or God. Actually the *Savaras* came to India after the Negritos and brought with them the cult of totem worship which was probably the beginning of their tree worship. It is a fact that tree worship is a very common ritual among the tribes of India as they thought that trees are the best gift of *Mother Earth*. So that they worshipped it as the replica of *Mother Earth.* Therefore it can be said that religion here is amalgamated closely with nature.

Therefore it can be said that the origin of Jagannath may be traced from the Daru (Wood) worship of the *Savaras* from the pre- historic times. As the cult of tree worship was very common among the Proto-Australoids and from them later the concept of tree worship entered to other religions. Moreover, the *Savaras* of the Ganjam and Koraput districts worship tree as their *Kitung* (God). To them their God (*Kitung*) lives on a tree, so they never cut a tree .So that it can be said that Jagannath is neither a Sanskrit word nor a Pali word but an Austric word.

The Blue Mountain (Nila-achal / Niladri)

The abode of Jagannath is known as the Nilachal or Niladri, and the Nilachal is a strong motif in the Jagannath cult. Though there is no such geographic structure at Puri, the township being located at the coastal plains of Eastern Orissa. Such a reference to a seemingly non-existant mountain is absolutely a matter of debate regarding the origin of the deity. Actually Puri, known as Niladri (the Blue Mountain) was once a wooded hill inhabited by *Savaras*, a

pre- Aryan and pre- Dravidian tribe of the Austric linguistic family. They worshipped their tribal deity on the Blue Hill which was probably a tree, a log of wood or some wooden image. In later period this tribal deity came to be worshipped as Lord Jagannath through enormous evolution. According to British historian W. W. Hunter, the aboriginal people worshipped a Blue Stone inside dense forest secretly as *Nil Madhava.* Hunter ascribed that the blue colour stone is actually common chlorite schist stone of Orissa hills in which all the ancient images of Orissa were being made. But with the Aryan migration to this area the rude blue stone disappears and gives places to a carved image. Actually the Aryans adopted the tribal tradition of *'Jaganate'*(God) worship by transforming the wooden pillar *'Jaganata'* to Aryanized *'Jagannath'*. That is the reason the very origin of Jagannath can easily be rooted from the low castes aboriginal races rather than the Brahmins.

The Shape and Shapelessness of the Deity

In trying to give a human shape to the deity or tree or *Khamba* (Post), the tribes gave it a strange shape. Perhaps that might have originated the present shape of lord Jagannath. This shape and shapeless structure is absolutely their own original creation. Here in this context we can highlight the *Madalpanji* records where there is the mention of the recovery of the wooden image of Jagannath from the Sonepur region. But after 144 years the image was completely damaged and new image were made out of the trees brought from Sonepur. Even in present times in the forest of Kakdein and Kotsamalai of Sonepur there still lives a group of *Savara* people who know the technique and art of making Jagannath image out of Neem wood (Azadirachta indica). In contrast with this peculiar shape of the wooden deity it should be mentioned that in Vedic as well as Buddhist and even Jaina religious traditions most of the deities are made by either stone or metal and shaped like human. But the image of Jagannath triad which are made out of Neem wood rather than stone or metal is a further indication of the close attachment of this deity with nature through the aboriginal people.

The Temple Rituals : Presence of the *Daitas*

From the very beginning Jagannath is served by a group of non-Brahmin priests, called *Daita*, who are presumed to be of tribal origin, the *Savaras* . They have many important functions in the ritualistic services of Jagannath. They have the special privileges to be the first to view the *Navakalebara* (replacement of old wooden structure of the Jagannath triad with new ones after almost every twelve years).Though the worship of Jagannath is chiefly conducted by the *Pujapandas,* but from the bathing festival (*Snan Yatra*) till the conclusion of the Car Festival (Ratha Yatra), Jagannath is worshipped exclusively by the Daitas, the successor of the aboriginal *Savara* people. The '*Snan Yatra'* is an important religious tradition of Jagannath, when each of the idol is offered sacred bath with special 108 large pots of water. This is explained by the devoted people as the Gods indulgence in water to ward off excessive summer heat. But from another point of view, this bathing is actually an attempt to wash away the non-autochthonous traits of Jagannath and soon after the Festival Lord Jagannath along with His associates come back to *Anasara Tati* , a thatched construction erected in an impromptu manner, for the occasion, inside the temple, for the temporary dwelling of the images till the Car Festival.

Anasara is an ancient Odia word, means close relations and *Tati* means a hut. Thus *Anasara Tati* means the hut of the close relations, which resembles the hutments of the tribal people. This strange practice is an annual enactment of the drama of the return of Jagannath to His kinsmen. During this *Anasara* period the Brahmin priests are not allowed to serve Jagannath, even not to enter the *Tati.* The rituals conducted only by the *Daitas* inside the *Anasara Tati* is kept secret as no one can enter the *Tati* or hut during the period except the *Daitas* . During this Anasara period which lasts for about a fortnight, Jagannath is offered only such foods which are only available in jungles instead of *Mahaprasada* or the cooked rice. This custom indicated close attachment of Lord Jagannath with Nature. Thus the tribal strands of Jagannath cult is existing even today in practice and rituals along with the sophisticated Brahamanical elements.

Moreover, the tribal practice of communal eating

is very much prevalent in Jagannath temple even today; as the Hindu devotees of present day eat *Mahaprasada* together irrespective of caste.

The Navakalevar Ritual : Tribal Narsimha Origin

The *Navakalevar* ritual is also a tribal custom. Such practices of renewal of wooden deity are to be found among the primitive tribes like *Saoras* and *Khonds*. It is a fact that Jagannath was also known as *Narasimha,* the human-lion incarnation of Vishnu, in his earliest form and in course of time this tribal wooden deity was become present Lord Jagannath. The *Navakalevara* ritual considers the Jagannath figure to be *Narasimha. Narasimha* is that iconological aspect of Jagannath which can easily be associated with aboriginal cults and was probably instrumental for the development of the Jagannath iconography. It is observed that the existence of the square head with round eyes of the image would bear testimony to the *Narasimha* iconography because there is striking resemblance to the head of lion with round eyes betraying the furious countenance of *Narasimha.*

Alternative Savara Legend

There is an alternative *Savara* legend, according to which there are three most important and prominent *Kittungs* (Gods) – two brothers and a sister, Ramma, Bhimma and Sitabai. Ramma is always coupled with the brother Bhimma. The legend maintains that it was from then that the *Savara* tribe was born. Such a setup has significant resemblance to the Jagannath triad.

Conclusion

Thus the peculiar shape as a pillar and typical nature of the wooden icon deity and the legendary association of Jagannath with a class of aborigines indicates that Jagannath has originally been a tribal deity of *Savara* origin.

The tribal origin of the Jagannath cult is further explained by the German Orissa Research Project (1970-1976) which through interdisciplinary approach, field study and anthropological investigations have shown that Jagannath is primarily a tribal deity.

To conclude we can recapitulate the facts that strengthened the tribal origin of Lord Jagannath along with its close attachment with Nature.

1. The Jagannath figures along with their respective morphological features give the impression of an unfinished, premature, aboriginal , savage and exotic look.

2. The unfinished wooden deity suggests the primitive or tribal mindset of the designer or the craftsmen.

3. Culinary practices and cuisine within the Jagannath Temple at Puri has close resemblance with tribal tradition of simply boiling cereals, pulses and vegetables in earthen pots without frying in oil or mixing any spices.

4. The painting and sculptures of the temple wall represent the tribal traditions to a great extent.

5. The festival of *Ratha Yatra* and *Navakalevara* is compared with the commemoration ritual for the dead and ancestor worship among the tribes. It can be said to be analogous with those of secondary burial ritual practices prevalent among the Munda tribal communities.

6. The kin relationship of the Jagannath triad represents the tribal social system.

7. In the tribal tradition each clan and lineage has its own deity along with its own priest and symbol. In the Jagannath temple the same things are still present. Here also each of the triad has its own priest and symbol that clearly distinguished them from each other in terms of colour, texture and other features including the decoration of the wooden chariot during *Ratha Yatra*.

8. The cultural performances and traditions i.e. dance songs etc. are petty old and exotic and can be compared with that of the tribal world.

9. Women occupy a very important role in tribal society. Subhadra, the sister occupying a central position between Jagannath and Balabhadra, the two brothers highlighted the practical tradition of the tribal society even today.

Jagannath embodies the metamorphosis of tribal

God into a pre- eminent deity of the classical Hindu Pantheon. The tribes whose rituals and traditions were woven into his worship are still living as tribal and semi-tribal communities in the region. All these indicate a fantastic amalgamation of Environmentalism with Religion as the aboriginal people live closer with nature than the Aryanized people. So their every ritualistic activities reflects their respect to nature in the guise of religion. Therefore the tribal origin of Jagannath though is not beyond doubt indicates a close attachment of Religion with Nature.

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SWOT Analysis of Eco Park of New Town Kolkata

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Abstract

SWOT is the acronym of strength, weakness, opportunity and threat. It is a study undertaken to identify the internal strength, weakness and external opportunities and threats of any place or organization. Tourism is a major activity of people to break the regular monotony of life. Eco Park of New Town in Kolkata is one such worth seeing place established by the West Bengal Government to entertain the people keeping in mind the ecological aspects attracting tourists from different parts of the state. But it has got some internal strengths and weaknesses that either enhances or diminishes its ability to attract tourists. At the same time, it also has some external opportunities and threats. An attempt has been made in this paper to look into the strengths, weaknesses, opportunities and threats of the Eco Park so that same can be used for the development of the park in the future.

Keywords: *Eco Park, Tourism, Ecology, SWOT analysis.*

Introduction

Since time immemorial man had a close relation with nature. But in modern times, this close intimacy between man and nature is under threat. Man has indiscriminately destroyed nature for the fulfilment of his needs through his activities. Besides, rapid population growth and increasing growth of urbanisation and industrialisation have aggravated the problem. As a result of all these problems, the bond between man and nature has become very weak. Eco Park at New Town of Kolkata was set up by keeping this problem in mind to increase the contact between nature and highly urbanised man. It embraces a holistic, systems approach to sustainability that tends to balance between man and environment [2]. This site turned out to be a place for attraction of people not only from the city of Kolkata and its outskirts but also from different parts of West Bengal. In this paper, the various positive and negative aspects of this tourist spot has been highlighted by performing SWOT Analysis [1] [2] and some opportunities have also been pointed out for its bright future prospects. SWOT stands for Strength, Weakness, Opportunity and Threat. It is a tried and true tool for strategic analysis. Strength lays emphasis on those aspects and characteristics that puts Eco Park in an advantageous position in relation to others. Weakness lays emphasis on those aspects and characteristics that puts Eco Park in a disadvantageous position in relation to others. Opportunities lay emphasis on those aspects that can act as indispensable tool for development of Eco Park in the future. Threats lays emphasis on those aspects that can cause trouble or turn out to be a major obstacle for the development of the Eco Park.

Selection of the study area

Eco Park of New Town has been selected as the study area because it is an amusement park that has been set up by keeping in mind the ecological perspective. It is an ideal site where highly urbanised man comes in close contact with the nature. Due to its immense popularity, it has attracted visitors not only from within the city but also from different parts of the state. Performing SWOT analysis [1][2] will highlight the points of strength, weakness, opportunity and threat of the spot and further developmental strategies can be suggested by keeping in mind the above mentioned parameters.

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Objectives and Methodology

The main objective of this research work are as follows:-

1. To estimate its strengths, weakness, opportunity and threats.
2. To suggest developmental strategies.

Weights were given by the experts working in the study domain. Score was given after interaction with the tourists. Weighted score was calculated. Charts were prepared and analysed on the basis of the weighted score.

A brief idea about the study area

Eco Park in New Town is an urban park located in Rajarhat, Kolkata and it is the biggest urban park in India. Popularly known as "PrakritiTirtha" [3], it covers a total area of about 480 acres with its latitudinal location of 22.6031°N and longitudinal location of 88.4671° E. It is the product of the vision of Sustainable Development of the honourable Chief Minister of West Bengal, Smt Mamata Banerjee. On the basis of her thoughts, it was decided that the 480 acres [3][4][5] of land along with its surrounding water-body would be converted into an ecological garden. Subsequently, the master plan of Eco Park was commissioned by West Bengal Housing and Infrastructure Development Corporation (WBHIDCO) and it was prepared by Bengal Urban Infrastructure Development Limited (BUIDL) and Pradeep Sachdeva Design Associates (PSDA). Finally, it was inaugurated by the honourable Chief Minister of West Bengal, Smt. Mamata Banerjee on 29th December 2012. It was opened for general public from 1st January 2013 [3] onwards.

Table 1 : A brief overview of Study area

Days	*Summer Timing*	*Winter Timing*
	1st March- 31st October	1st November- 28th February
Tuesday to Saturday	2:30 pm to 8:30 pm	12:00 pm to 7:30 pm
Sunday and public holidays	12:00 pm to 8:30 pm	11:00 am to 7:30 pm
Monday	Closed	Closed

Source: Eco park official website

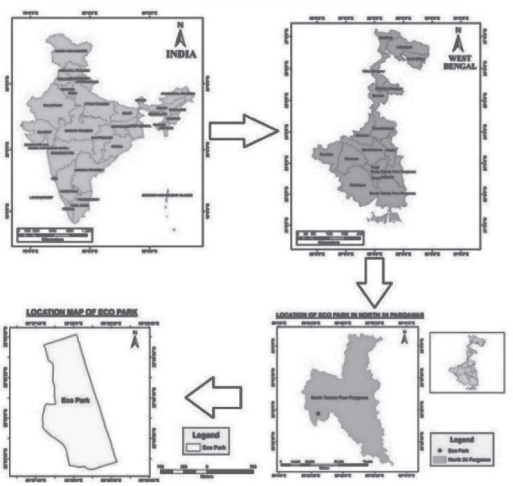

Fig 1 : Location of the Study area

Parameters decided for SWOT Analysis

Strength	1. Frequency of app based Cabs like Ola and Uber. 2. Low traffic congestion. 3. High frequency of public transport 4. Entertainment Facilities. 5. Proper maintenance.
Weakness	1. Availability of public vehicles after 8 pm. 2. Security. 3. High taxi fare after 8 pm and during calamities. 4. Direct transport to Bidhannagar Station and others. 5. Waste Disposal.
Opportunities	1. Expansion of Park area. 2. Restaurants and food plazas in the park. 3. Government Buses. 4. Direct transport from Bidhannagar Station 5. More entertainment facilities.
Threats	1. Pressure of tourists. 2. Degradation of ecological and aesthetic values. 3. Urban agglomeration. 4. Traffic Congestion. 5. Lack of public awareness. 6. Unscientific and unplanned urban expansion.

Discussion

Analysis of Strengths of Eco Park

1. Frequency of app based cabs-- Frequency of app based cab services like Ola and Uber is having the highest weighted score of 1 which means that ola and uber services are available that can take tourists to their desired places from Eco Park. Although many visitors come to Eco park with their own vehicles. High frequency of app based cab services have increased the accessibility of the study area.

2. Low traffic congestion- As the newly developing New Town area is a very planned city, the road networks are wide and spacious. So the traffic flow is quite good. Biswa Bangla Sarani (beside which Eco Park is located) allows smooth flow of traffic. Tourists visiting the Park are of the opinion that this smooth flow often gets disturbed at the office hours in morning and evening. Disturbance in traffic flow also occurs due to the construction of East-West Metro. This often hinders the tourist inflow in Eco Park So this parameter has got a moderate weighted score of 0.2

3. High frequency of public transport—Public transport facilities are available till 8:30 pm from Eco Park that can take tourists to nearby Dumdum or Bidhannagar rail station. But very often they charge high fare which is above the normal rate and create problem for tourists. So this parameter has got lowest weighted score of 0.05

4. Entertainment facilities—Tourists are satisfied with the entertainment facilities provided to them by Eco Park like Gaming zones [3], Eco carts[3], toy trains [3], duo cycles [3], mask garden[3], paddle boats [3], bicycles [3], ice skating [3], archery [3], kayaking [3], rifle shooting [3], family shikara [3] and many more. Children can also have great

time in butterfly garden [3][4][5], gaming zones and Children Park. Recently, the newly constructed 7 wonders [3][4][5] and Gramin Bangla [3] (a village model of Bengal where tourists of urban areas can enjoy the ambience of village life of Bengal) have gained more popularity. Besides, entry fees to the park is Rs 30 per head [3] which is also within the reach of people of all sections of economy. But ticket charges for toy train of Rs 150 per head[3] is quite high. Cycles are available to those tourists having Paytm. So this parameter also gets the second highest weighted score of 0.24.

5. Proper maintenance—Eco Park is well maintained. It is kept closed on every Monday for maintenance. Workers are also aware to keep the park clean. Different parts of the park are maintained by different authorities. However, number of workers is comparatively small if compared to the total area of the park. Often it becomes difficult for this small workforce to maintain the huge park area. So it is given the moderate weighted score of 0.12.

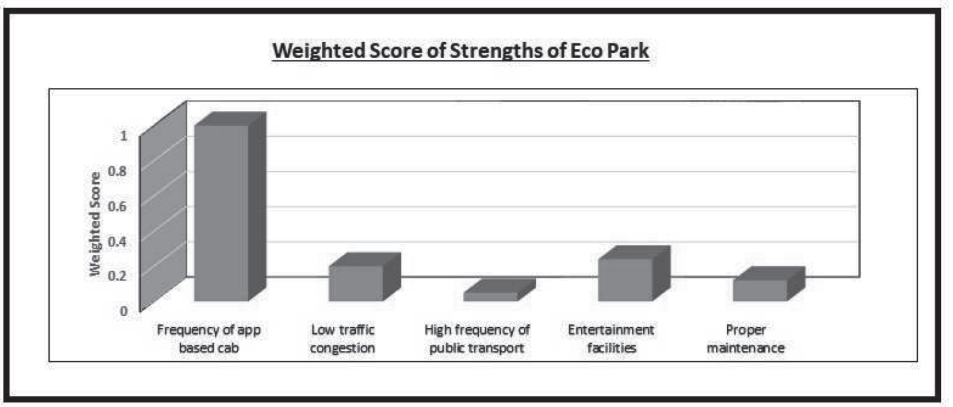

Fig 2 : Weighted score of strengths of Eco Park

Analysis of Weaknesses of Eco Park

1. Availability of public vehicles after 8 pm- Tourists are of the opinion that they hardly get public transport services after 8 pm to go to home. Number of buses and taxis decrease creating problem for people. So most of the tourists leave the park by 7 to 7:30 pm unwillingly. Only those who have their personal vehicles stay back. It turns out to be a major weakness and gets the highest weighted score of 0.8.
2. Security—Tourists are of the opinion that the Park is secured. But they demand more security as this facility is not available in the peripheral areas. Demand for security is high among the girl tourists especially as they feel insecure to visit some isolated areas in the park even in early hours of the day. It turns out to be a weakness and gets moderate weighted score of 0.09.
3. High taxi fare after 8 pm and during calamities—Tourists opine that even if taxis are available after 8 pm, they often charge a very high fare than the normal rate which is quite high. Similar problem is faced by the tourists during calamities like heavy rain and storms. It gets a high weighted score of 0.28.
4. Direct transport to Bidhannagar Station and others- Most of the tourists being interacted who have come to the Eco Park by public vehicles are of the opinion that there is an urgent need to start bus services from Eco Park to Bidhannagar rail station directly for their benefits. They also claim bus services from Eco Park to Shyambazar directly and increase number of buses running between Eco Park and Dumdum rail station. This weakness gets second highest weighted score of 0.3.
5. Waste Disposal—Waste disposal facility should be more frequent. Within the park area, mouth of dustbins are often kept open. Packets of

food, chips, popcorns make the park dirty. It is impossible to maintain the cleanliness of the big park by the small number of workforce. However, authorities are trying to keep the park clean as much as they can. It gets lowest weighted score of 0.08

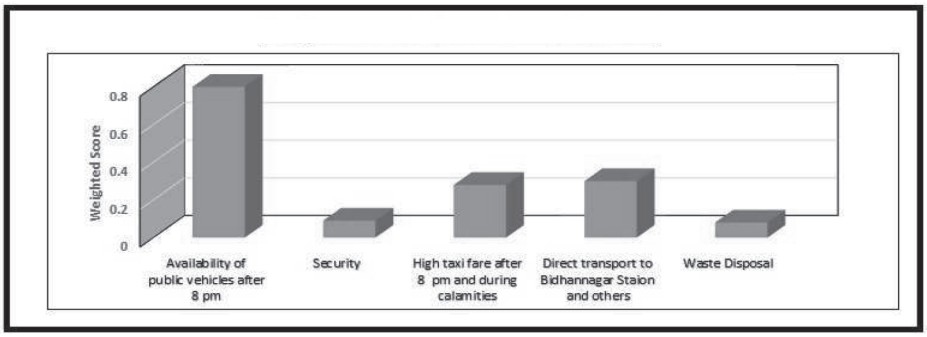

Fig 3 : Weighted score of weakness of Eco Park

Analysis of Opportunities of Eco Park

1. Expansion of the park area—Tourists are of the opinion that the park area should be expanded with more entertainment facilities. Taking into consideration this fact, the park authority is also expanding the park area. Construction works are still in progress [3]. This will enhance the development of the park and has been given a weighted score of 0.1.
2. Restaurants and food plazas in the park- Although there are sufficient restaurants and food plazas within the park area, tourists belonging to the moderate section of the society opine that with expansion of the park area, more restaurants offering food within reasonable price rates should be started as the existing stalls have food prices quite high. This will be beneficial for the visitors. This opportunity was given the weighted score of 0.12.
3. Government Buses- Tourists will be benefited if more Government buses are provided to them. This opportunity was given the second highest weighted score of 0.4.
4. Direct transport from Bidhannagar Station—There is an urgent need to start direct bus services from Bidhannagar station to Eco Park. Besides direct bus services from Shyambazar must also be started. This opportunity has been given the highest weighted score of 1.
5. More entertainment facilities- Tourists have demanded more entertainment facilities with expansion of park area. It is given the moderate score of 0.14.

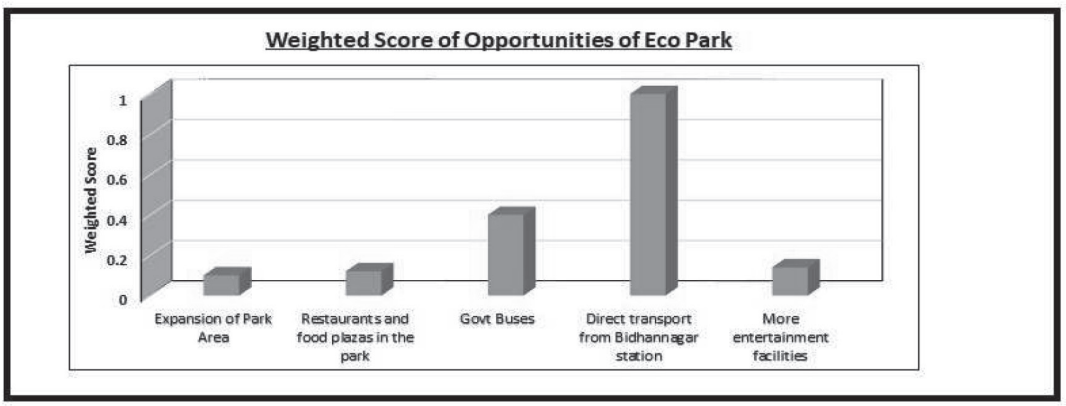

Fig 4 : Weighted score of opportunities of Eco Park

Analysis of Threats of Eco Park

1. Pressure of tourists—Eco Park has become very popular among the tourists. Everyday many tourists visit the park. With the development of New Town, more people will come to the park. On completion of East-West Metro, it will become more accessible drawing a huge number of tourists. This may have a negative impact on the serenity of the park and its resources. Tourist pressure is expected to soon exceed the Eco Park's resource capability. So this threat has been given the second highest weighted score of 0.36.
2. Degradation of ecological and aesthetic values—With increasing pressure of tourists, high rate of urbanisation of the surrounding areas, there is a threat of degradation of ecological and aesthetic values of the Eco Park. So this threat has been given the highest weighted score of 0.8.
3. Urban agglomeration—With the development of New Town area, the problem of urban agglomeration is going to be a main threat of the Eco Park. So this threat has been given the weighted score of 0.12.
4. Traffic Congestion- With increasing urbanization, the number of vehicles will also increase that will aggravate the problem of traffic congestion. Fumes released by these vehicles will increase environmental pollution and will have a negative impact on the Park.So this threat has been given the weighted score of 0.12.
5. Lack of public awareness- Some visitors who are not at all environmentally aware treat Eco Park in the same way as that of the other parks. They indiscriminately throw food packets, water bottles in the park area in spite of presence of dustbins. Due to illiteracy, some people are not at all aware of the ecological aspect of the park. This may degrade the ecological value of the park and has turned out to be a threat. But the park authority has kept a vigilant watch. Workers roam around the park in cycles and scooty warning people to maintain rules in the park. This has considerably reduced the problem. Besides, literate people are now more environmentally concerned and they also maintain the rules. This threat is under check partially and has been given the weighted score of 0.06.
6. Unscientific Urban expansion- New Town expansion is taking place in a very planned way. Threat from this factor to Eco Park is not so high in current scenario. However in the long run if there is any unscientific urban expansion, it may have an adverse impact on the study area. Considering the current situation, it is given lowest weighted score of 0.03.

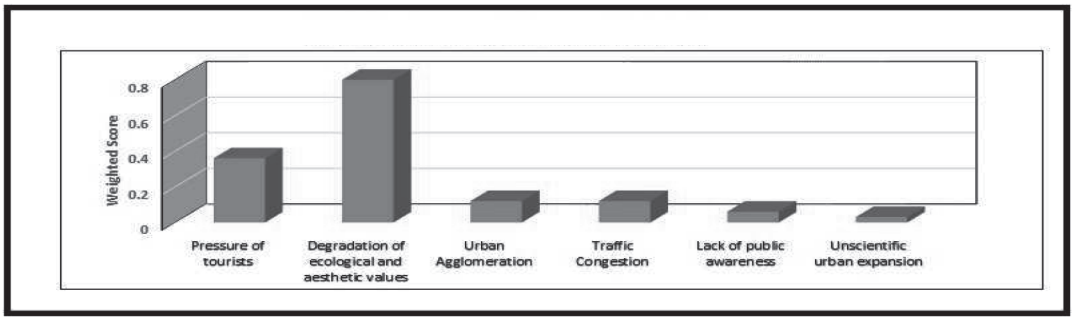

Fig 5 : Weighted score of threats of Eco Park

Conclusion and Suggestions

It can be concluded that Eco Park is a very important tourist site of Kolkata. Proper management and planning is needed so that the weaknesses can be removed and opportunities can be implemented. Planning should be done by keeping in mind the threats.Transport system has to be developed. Direct bus services to Bidhannagar Rail Station must be started. Number of buses and taxi in late hours should be increased.Urban expansion and development of

New Town area should be done keeping in mind the ecological aspects of the Eco Park.The tourists belonging to all section of the economy must develop a sense of environmental awareness. It is the responsibility of both the park authority as well as the tourists to uphold the ecological value of the park.Tourists should not dump wastes in the water body which is the home of a large number of fishes. Food stalls and plazas within reasonable price rates should be started. Cycle facilities should be provided to all tourists irrespective of the fact that whether they own a paytm account or not. It is expected that the study in general will assist the policy makers, urban planners for the overall development of the Eco Park.

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A Glance through the Lens of a Bawor: A Socio-Economic and Demographic Analysis: A Case Study of Tepul Village, Swarupnagar Block, North Twenty-Four Paraganas, West Bengal, India

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& Dr. Panchali Majumdar

Abstract

India till date is a country whose economy is primarily dependent upon agriculture and the majority of the Indian population resides in rural areas. It is a tragedy that even after 69 years of independence, majority of the people in India lives below the poverty line. This paper is an attempt to study the changing phase of Socio economic and demographic condition of a particularly special geographical area namely a Bawor. The study area is Tepul village of Kankana Bawor under Swarupnagar Block in North Twenty-Four Paraganas District of West Bengal, India. The paper also focuses on certain other important aspects of this area. The prime importance of this paper lies on the choice of the area Kankana Bawor. Situated in North 24 Parganas, Kankana Bawor is a Gangetic plain region fertile due to presence of alluvial soil. Earlier Kankona Bawor was a long Oxbow shaped lake with the presence of varied kind of flora and fauna. However over the years with change in demographic pattern, change in socio economic situation there has been a change in the characteristic of this region. The paper attempts to make a brief analysis of these changes and the effect it has had on various aspects. The methodology adopted for this work is collection of data on random sampling method from primary source i.e. through household survey and also collection of data from secondary sources. The collected data was tabulated and analyzed. The findings of the study focuses on the sources of income and the various problems associated in this area and suggest remedies for them.

Keywords: *Poverty, Development, Bawor, Resource, local Governance*

Introduction

The key factors that have caused ecological deterioration and consequent large –scale poverty are the resilience of natural resource, initial institution conditions and the rate of population growth. In the developing country where environment is fragile, institutions do not evolve so fast, the rapid growth of population often cause ecological disaster and massive poverty. In a country like India, the poverty though noticeable in urban areas it is rampant in rural areas and there is a strong need for development in all aspects. The term rural development according to World Bank,"…..a strategy designed to improve the economic and social life of a specific group of people the rural poor".The study area is Tepul village of Kankana Bawor under Swarupnagar Block in North Twenty-Four Paraganas District of West Bengal, Indiaover the years has change in demographic pattern, change in socio economic situation. Tepul village belongs to Presidency Division. It is located 42 KM towards East from District head quarters Barasat, 11 KM from Swarupnagar Banglani and 64 KM from State capital Kolkata. Kankana Bawor is the Gangetic Plain region. Soil of this area is more fertile and alluvial soil. Also sand and mud was seen in the soil. Earlier, the depth of this area was 20-25 feet .In the early days Kankana Bawor was a long Oxbow shape lake. Southern side of this lake was joining with Yamuna River. This Yamuna River fell in Ichhamati River. Earlier, the brackish water of the sea used to come through the river Yamuna. Long time ago, there were variations of various organisms and notable among them was different kind of fish, tortoise, crocodile and fixed bird. In the old days there was different kind of plant such as palm trees,

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tall trees, limber trees etc. But also this Bawor was filled with spinach.

Objectives

The main objective of the field study area is to analysis socio economic scenario within this physical surrounding. The specific objectives are as follows-

1. To analyze the socio-economic condition of the study area.
2. To analyze the demographic condition of the study area.
3. To evaluate the role of panchayat in the possibilities of present socio-economic settings in the study area.
4. To have knowledge of the infrastructure facilities available in the area.
5. To evaluate the level of environmental consciousness of local people.

Methodology:

The methodology adopted for this work is collection of data on random sampling method from primary source i.e. through household survey and also collection of data from secondary sources. The collected data was tabulated and analyzed. All these data are being represented through different cartographic techniques.

The Study Area

The study area is located under Tepul Mirjapur Panchayat of Swarupnagar Block. Latitudinal extension of this area is 22.52'35''N to 22.52'36''N and longitudinal extension is 88.46'29''E to 88.46'30"E. It has an average elevation of 6 meters (20 feet) from mean see level. This is an oxbow lake and Mediya main road is passing beside the lake. This lake supply water to the Sarkar Para of Gobardanga Municipality, which is under Habra police station of Barasat Sadar Subdivision in North 24 Parganas district is one of the oldest municipality of West Bengal. It is located 42 KM towards East from District head quarters Barasat, 11 KM from Swarupnagar Banglani and 64 KM from State capital Kolkata.

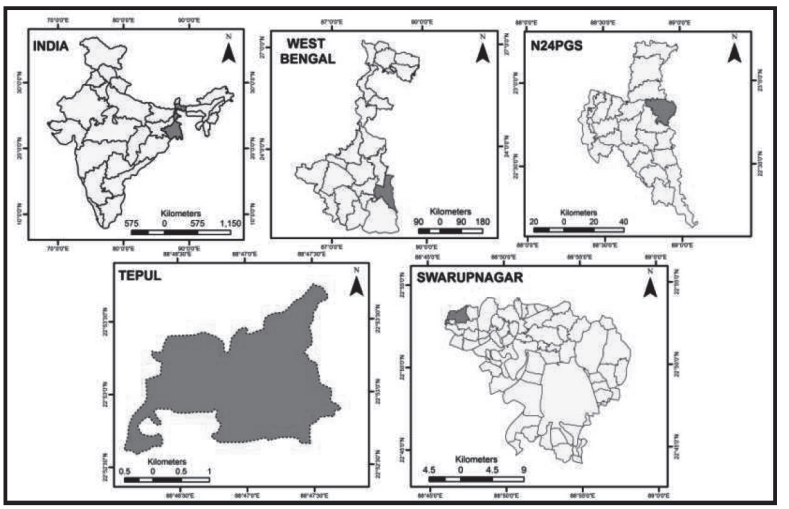

Fig 1 : Location of the Study area

Land Use- Land Cover

The study area is actually situated on the bank of MediyaBower. The channel is meandering, which is responsible for bank erosion and channel shifting due to discharge during the heavy rainy season. According to the LANDSAT III image of 1991, the meandering scroll area was 11.03% which was same in 2001 but the percentage decreased to 6.99% in 2011 which includes the bawor area. On the basis of LANDSAT III image of 1991, area of water body was 1.29% but it does not show any data in 2001 and 2011. On the above years, area of

the natural vegetation was 35.86%, 24.60% and 25.59% respectively. The percentage of vegetation is decreased year to year due to increasing settlement. The name of the trees are Bamboo, Gamari, Mango, Lamboo, areca nut, coconut etc. These trees are used in manufacturing of house and wooden furniture. In Tepul village, land is mainly used for agricultural purpose. The percentage of crop land was 22.91% in 1991 and it's gradually increased to 30.39% and 39.33% in the year 2001 and 2011 respectively. The percentage of moisture land was 27.23%, 28.40% and 21.31% on the above mentioned years. In 1991, 1.65% area was under settlement which was 5.55% in the year 2001 and 6.76% in the year 2011 of this village.

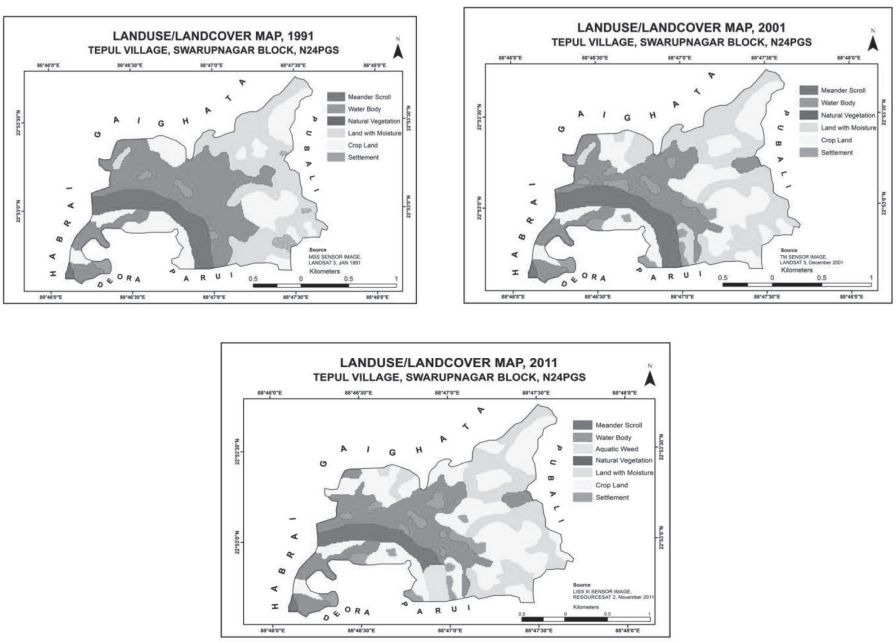

Fig 2 : Decadal changes of Landuse and Landcover of Tepul Villege (1991-2011)

Demographic Condition: Population Structure

According to census 2011, the total area of Tepul village is 284.90 hectors; the total number of household is 932. The total population of this village is 3762 where males are 1916 and females are 1846. Total number of population in the age group of 0-6 is 291 where males are 152 and females are 139.

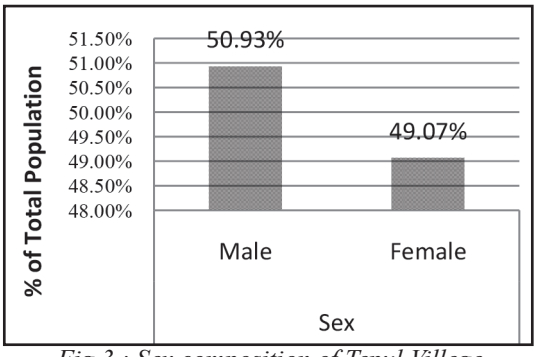

Fig 3 : Sex composition of Tepul Villege

Source: Census of India 2011

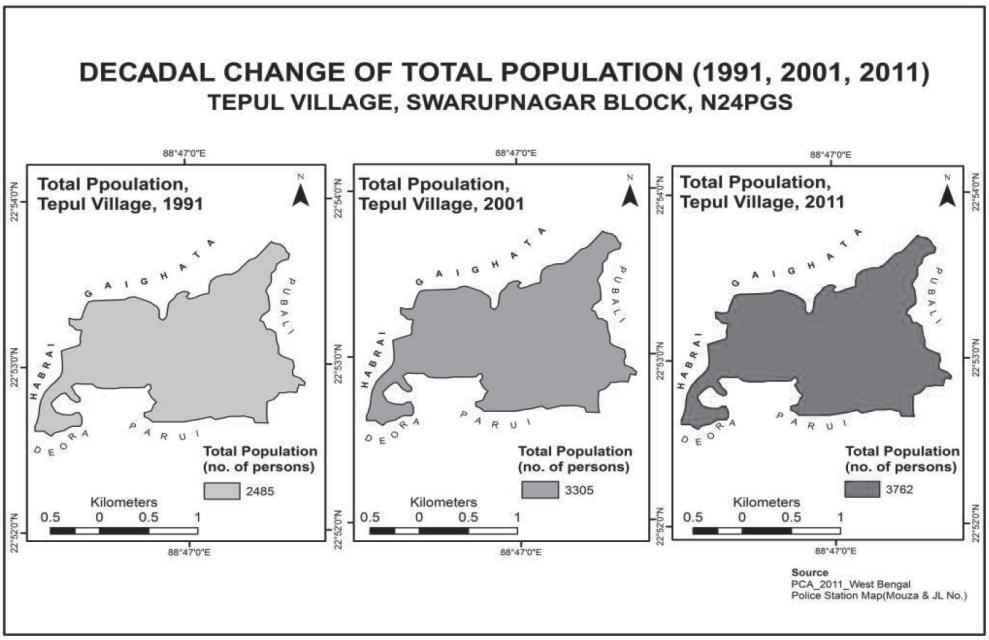

Fig 4 : Decadal change of population in Tepul Village (1991-2011)

To study of the demographic condition of Tepul village of Swarupnagar Block, we have surveyed 40 households consisting of 165 populations from the village Tepul.We found 86 (52.12%) male and 79 (47.87%) female of the study area.

Age Sex Composition

40 families containing 165 people at Tepul village, Mediya Bawor have been surveyed. On the basis of age sex composition, Male population of young age is still high, which indicates that the female are still lagging behind. Male age composition of less than 6 years is 3.63%, 6 to 15 years is 9.09%, 16 to 30 years is 13.93%, 31 to 45 years is 9.09%, 46 to 60 years is 11.51% and greater than 60 years is 4.24% whereas female age composition of less than 6 years is 3.03%, 6 to 15 years is 4.84%, 16 to 30 years is 12.72%, 31 to 45 years is 15.15%, 46 to 60 years is 6.71% and greater than 60 years is 6.06%.

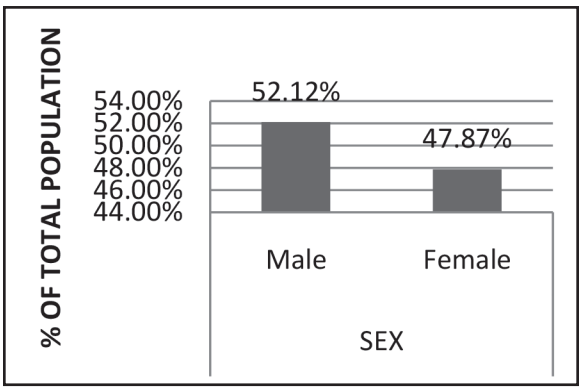

Fig 5 : Sex composition of Tepul Village

Source: Primary Data 2018

Family Type

In this village 35% families are joint family and 65% families are nuclear. So it is clear that, here maximum families are nuclear category.

Size of Family

Among the surveyed 40 families of Tepul village , Mediya Bawor total population of surveyed families is 165. Here, family size can be divided into 3 classes such as less than 4 members, 5 to 8 members and greater than 8 members. Less than 4 member size families are 70%, 30% families are 5 to 8 member category. It has been found that more than 8 member size families are not present here.

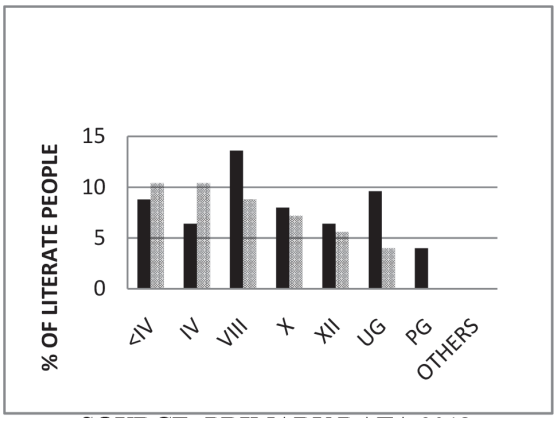

Fig 5 : Level of education in Tepul Village

Source: Primary Data 2018

Level of Education: Literacy is essential not only for mental development but also for cultivating peaceful and friendly international relation and permitting the free play of demographic process as well. Among the surveyed people 40.75% male and 35.31% female are literate and rest 12.28% male and 11.66% female are illiterate. Education is one of the main parameter of socio- economic condition in any area. In this region among the surveyed people (40 families) 8.8% male and 10.4% female have lower primary education. 20% male and 19.2% female have primary education on the other hand 8% male people & 7.2% female people have crossed the boundary of Madhyamik level. Higher secondary level of education has been adopted by 6.4% male and 5.6% female. College level of education has been completed by 9.6% male & 4% female respectively. Very few percent of male population has completed post graduate level and that is 0.8%. Post graduate level of education is viewed as few due to low family income and lack of facilities.

Occupation Type

Among the surveyed 40 families (40 families) 29.70% people are worker and 70.30% people are non-worker. Fishing is the main occupation here. 30.61% male are engaged with fishing. 24.48% male are engaged in business. The percentage of agricultural labour is 6.12% male and 2.04% female. 26.53% male and 6.12% female of the total working population are engaged in other works. About 4.08% people are involved in both central and state government service. This data shows that working population is less than non working population that means dependency ratio is greater in this area.

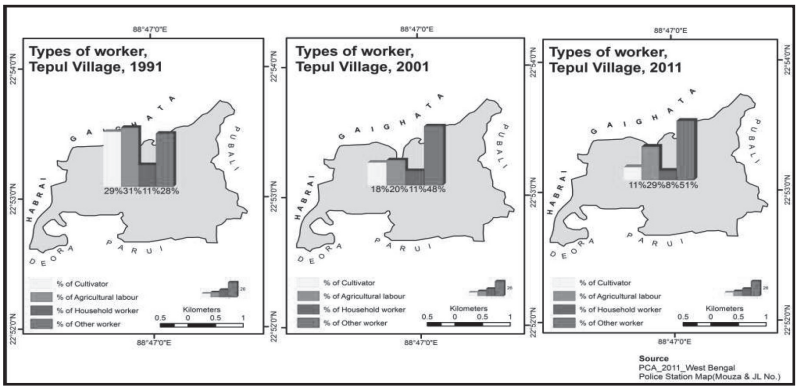

Fig 6 : Types of workers in Tepul Village

Family Income

Among the surveyed families of Tepul viilage (Kankana Bawor), we notice different level of monthly of working people. Around 25% people have to live within the boundary of less than 3000 monthly income. 45% people's monthly income is 3000 to 6000 and 22.5% people's monthly income is 6000-8000 and 7.5% people live with greater than 8000 monthly family income. So here low level of monthly income indicates that low standard of living.

Size of Land Holding

Among the surveyed people, 7.5% are landless people and 92.5% are land holding people which have less than 1 bigha land.

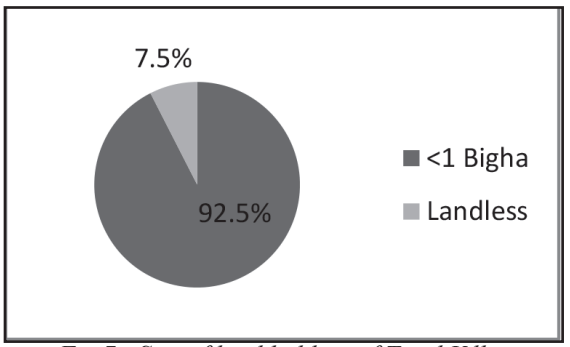

Fig 7 : Size of land holding of Tepul Village

Source: Primary Data 2018

Land Use: Among the surveyed people 75% family use their land for residential purpose and rest 25% family use their land for commercial purpose.

House Type: In the study area, surveyed people are lived in Kanccha, Pucca and semi- pucca house due to low level of economic condition. Among the surveying data 22.5% people lived in a Kanccha house, 70% people lived in Pucca house and 7.5% people lived in semi- pucca house.

Source of Drinking Water: The source of drinking water in Tepul village is mainly tube- wells. 82.5% houses having tube- well. 12.5% houses having public place for collect drinking water and rest 5% houses having other source for collecting drinking water.

Source of Fuel: Wood is used as the main type of fuel. 50% residents use wood as the fuel. 42.5% residents use LPG and very few percent such as 7.5% residents use cow dang for fuel purpose. We notice that, use of cow dung as the fuel is less in this area.

Electricity Facility: In the Bawor area most of the people are poor but now a day's electricity is essential for living. Here 87.5% families are under electric facility and rest of the families (12.5%) has no electric facility.

Fishing Activities: Maximum people of KankanaBawor (Tepul village) involved in fishing activities. 60% people are involved in fishing activities and rest 40% people are engaged in other activities. The fishing ground is located almost 200 meter from their house. Among the surveyed data it has been noticed that 75% fishing activities people catch fish from Bawor and rest 25% catch fish from pond.

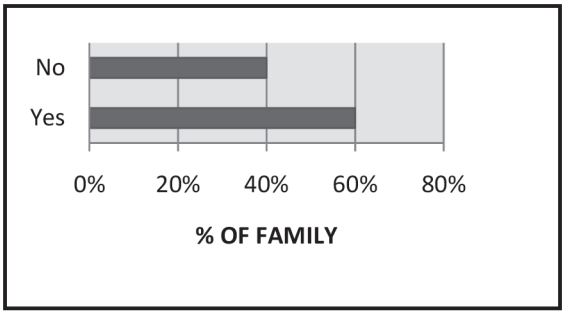

Fig 8 : Families involving in fishing

Source: Primary Data 2018

Use of Pumping Machine: Among the fisheries 75% people use pumping machine for fishing purpose but rests 25% not use it. Collected fish has been used for both personal and commercial purpose. 66.66% of collected fish is being used for commercial purpose.

Government Activities: Among the surveyed people, 62.5% people have the perception that Government should take initiative for improving their life style but 37.5% people differ from that.

Role of Panchayat: As a local administrative body, Panchayat has an important role of this area. At the time of rainy season, water from lake enters in some

house of the village area and Panchayat helps those affected families. According to local people of Tepul Village, the perception of maximum people is that the role of Panchayat is satisfactory and Panchayat takes more steps to develop this Bawor. According to the local people there are initiatives for construction of building and donation for fish food so that it can act as appositive tool for the development of fisherman in that village.

Problem of the study area: The villagers are mostly engaged in primary sector. The income of the people is very low. The type of agriculture is mainly subsistence.There are problems with regard to access to fishing facilities. Hence local people cannot catch fish at very large scale.Communication system is very poor. People have to depend on Van, Toto as mode of communication. Many government schemes have not implemented here. MGNREGA have not been fully implemented regarding 100 days paid work.Here people suffer from many health problems such as malaria, dengue etc.In the village regarding sanitation it needs attention as some of the families use open privy which is unhygienic. The people are lagging behind regarding the awareness of banking system.

Suggestions: There are no high schools in the study area. A high school is very essential for local people to improve their education level. There is no hospital in this area. So it is very urgent for the villagers to have a health facility nearby. More initiatives needed to provide all the facilities for the development of fishing resources. Government should give the training for the betterment of the fishing and also develop the infrastructure. The communication system is not at all satisfactory in the locality. So the communication system must be improved as soon as possible.Different types of government projects are necessary to develop the local people status in this region.Initiation of self- help group is necessary.

Conclusion: The village under study is actually situated on the bank ok Kankana Bawor. Kankana Bawor is located under Tepul Mirjapur Panchayat in Swarupnagar Block of North 24 Parganas district of West Bengal. These Bawor is situated at the north side of Yamuna River. The shape of the lake is Oxbow type. The analysis reveals the differences in life style, social and culture of the people. There is only one primary school in this region. There are no high schools in that place. Children are getting some facilities, benefits & entertainment from primary school. They also get mid day meal from school. 28.8% male and 29.6 female of Tepul village (KankanaBawor) are haveprimary education. There are 26.4% people have higher education. So it is found that, the level of education in our study area is very low. Occupation level is very low in this area. There is 29.7% worker in this village. So dependency ratio is very high. This is an economically backward area. 38.77% people of Tepul village are engaged with primary activities such as fishing, agricultural labour etc. 4.08% people are also engaged in Government service but this percentage is very low. Every initiative through different rural development programmes will enhance the condition of the people of this area.

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Quality of Life of the Slum Dwellers of Bankura Municipality

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Nabanita Mukhopadhyay

Abstract

Although cities were present even in the ancient civilizations, the ushering of industrial age has dramatically increased the rate of urbanization. Currently the world is going through the largest growth in urban population in history, which is rapidly changing the socio- economic balance. Urbanization has the potential to usher a new era of development and prosperity in our society. But the lack of proper distribution of wealth has resulted in a glaring inequality. So we find gigantic multistoried building next to mushrooms of slums in almost every city. The conditions of the urban poor are often as bad as their rural counterparts, if not worse. The same problems exist even in the smaller towns, although the signs are less obvious at the first glance. The main objective of this paper is to study and highlight the social and economic condition and overall quality of life of the slum dwellers of a small district town. Here we present a comparison of the quality of life in different slums in Bankura municipality in West Bengal. The data was collected using structured question and focused interview through judgment sampling and systematic random sampling and analyzed using various statistical technique for visual clarity and comparative study. The results show an overall poor living- condition in all the slums, with some slum-specific problems due to the occupation of the inhabitants. Religious orthodoxy acts as a barrier for female work participation. We also noticed rampant substance abuse among most of respondents. Furthermore Bankura being a dry district, the living condition worsens significantly due to a dire need of drinking water. After analyzing the issues, the paper also discusses ways to overcome the problems and upgrade the overall quality of life.

Keywords : *Slunes, living standants Bankura District.*

Introduction

Throughout the history of civilization, urbanization and development have naturally complemented each other. But the real picture is not so smooth. Due to the lack of proper distribution of wealth, we find gigantic skyscrapers next to mushroom of slums. Although the contrast is not as prominent as in the large cities, slums are quite prevalent in smaller towns too. In this work we explore the quality of life of several slums in one such small town in West Bengal, India.

In brief slum indicates over-congested urban residential area with social and economic deterioration, limitless poverty and lack of all amenities to live a sound life. These areas are deprived of basic social amenities, functional skills, proper education, opportunity of income, hygiene and health resources. Quality of life indicates an outcome of negative and positive features of individual's or society's life.

Study Area

The study has been conducted in Bankura one of the historic as well as backward districts of west Bengal in India. Bankura district is surrounded by the district of Midnapur, Hooghly in the east and Purulia in the west and south. It lies between 22°38' to 23°38' north and 86°36' to 87°46' east. The district town is surrounded by two rivers - Darkeshwar and Gandheswari from two sides. Seasonal inadequate rainfall and a lack of industrial development make it harder for people to get regular work. The condition worsens significantly in the slums.

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Table No 1 Slum Population of Bankura Municipality

Total Population of Bankura Municipality (2011 Census)	*Total Slum population in Bankura Municipality (USHA survey,2011)*	*Percentage of Slum population*
137386	43113	31.38%

Source: Census of India, 2011, USHA Survey, 2011

Objective:

The study has taken following objectives into consideration

1. To study the social condition of slum dwellers under Bankura municipality.
2. To highlight the economic status of different slums in the selected slums.
3. To examine and compare the quality of life of slum dwellers in the study area.
4. To suggest some measures regarding socio-economic problems in the sampled slums.

Data Source and Methodology: The entire work is based on mainly primary data. Primary data was collected from household survey. Secondary data was collected from Bankura municipality, USHA survey on Bankura, and websites such as www.bankuramunicipality.org, www.bankura.gov.in, www.census2011.co.in, https://www.wbdma.gov.in.

The samples slums are selected under Bankura municipality through judgment-sampling based on the number of household. Therefore, preference is given to the larger slums. Systematic random sampling is taken to select household from each slum. Various statistical methods, like- Mean, Mean Deviation, Standard Deviation, Room Density, Dependency Ratio, Literacy Rate, Correlation and Composite Index are used to analyse the data.

Results: The overall quality of life is measured through various social, economic indicators and variables for housing and household amenities like health problem, domestic violence, substance abuse, occupational structure, female work participation ratio, dependency ratio, drinking water availability, latrine and bathroom availability, housing condition, land ownership, education and monthly family income. First we present the comparative study of the slums under survey for this work. The comparison is made based on a composite scoring system, calculated in terms of a weighted average of individual scores of ten different selected criteria. Higher weightage value is given to better condition. As a result, slums with higher composite (X) score represent better living condition. Finally, we calculate the average composite score of all the slums ($\bar{X}$), and plot ($x-\bar{x}$) for all slums in figure. It shows the relative living condition of different slums according to the analysis. The selected criteria are housing condition, latrine & bathroom facility, drinking water source in summer, female work participation, type of land, available assets, monthly family income, education, substance abuse and domestic violence. At first I present the comparative study of the slums

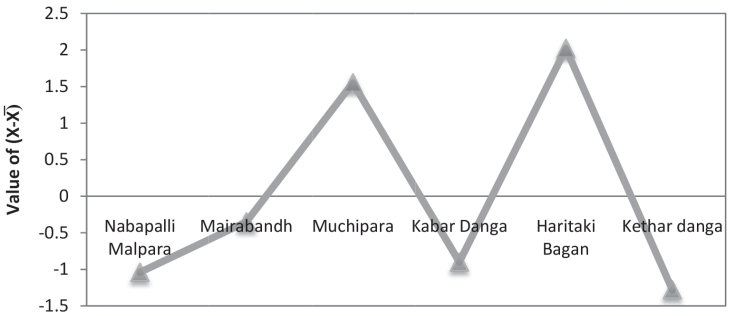

Fig 1 : Comparative Study on Quality of various Slums

under survey for this work.

From the above diagram we may conclude that overall quality of life of Kabbar danga and Kethar danga and Nabapalli Malpara slums are in worst from all aspect. On the other hand, Haritakibagan and Muchipara slums are comparatively developed among all. The major findings of the study are:

Occupational Health Hazards: In Muchipara and Mayrabandh, many household are affected in Asthma and backbone problem. These problems show significant correlation with their occupation. They are compelled to work as a Biri worker which may bring these problems. In Kethardanga, 43 percent people are affected in TB. Addiction to Tobacco, unhealthy environment might be responsible for that.

Table No 4: Health Issues among slum dwellers

Name of the Slums	*Health Problem among the Slum dwellers (%)*				
	TB	*Asthma*	*Problem related to backbone*	*Skin disease*	*Other minor disease*
Nabapalli, Malpara				22	34
Mairabandh		19	31		18
Muchipara		61	82		19
Kabar Danga					22
Haritaki Bagan					13
Kethar Danga	43				34

Source: Primary Survey, January, 2018

Female Work Participation and Dependency Ratio: The socio-economic condition and the dependency ratio of a society can be estimated from the number of female members participating to support the household. Female work participation is quite low in Kabbar danga and Ketharvdanga, with less than 20% women being employed. This results in a comparatively lower per capita income and higher dependency ratio. Religious orthodoxy seems to be the primary reason for the reduced female workforce in the two aforementioned slums, where the inhabitants are Muslim. Women in the other slums mainly work as domestic helps in well-off families in the town, who are mostly Hindu. As both the helps and the host families want the other one to be of their own religion, an imbalance is created in the female workforce of different slums.

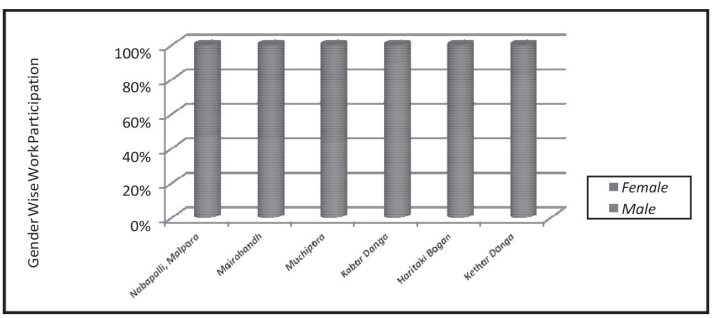

Fig 2 : Gender wise work participation among working members of Slum Dwellers

Source: Primary Survey, January, 2018

Substance Abuse: It is beyond our imagination that in the sampled Slums on an average 80% female and 95% male people are victims of some kind of substance abuse. There seems to be some correlation alcohol abuse in men and domestic violence in households. Muchipara and Kethardanga slums show this correlation clearly.

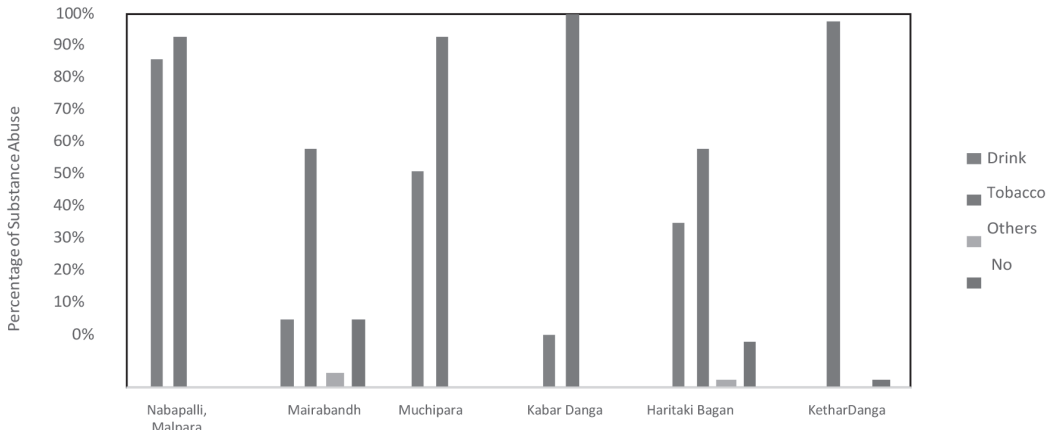

Fig 3: Substance abuse among Male Slum Dwellers

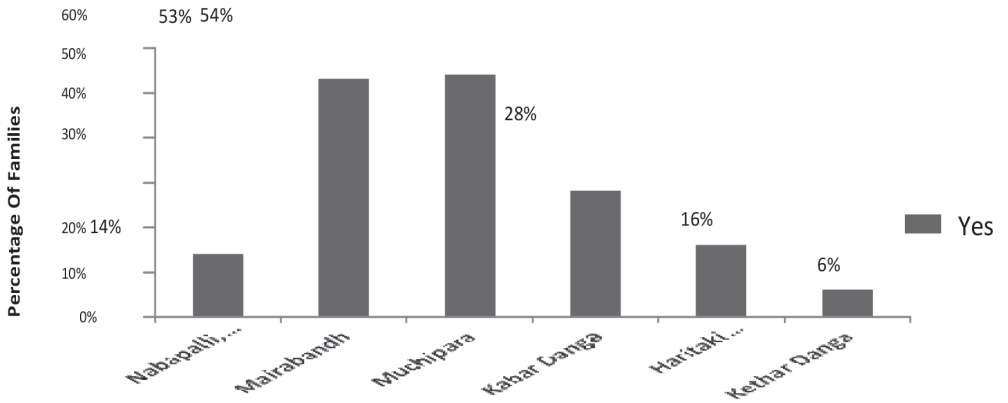

Fig 4: Domestic Violence In Different Slums

Source: Primary Survey, January, 2018

Drinking water availability: Although on paper most of the slum dwellers have access to municipality taps, the actual scenario is quite different. Due to the lack of water taps a lot of people are dependent on a single tap. In summer the situation worsens dramatically as many of these taps don't work regularly. Owing to the lack of rainfall, many other water bodies get dried up during this time. As a result, the slum dwellers have to borrow water from neighbor or to collect from around 1.5 km distant river in case of Muchipara and Nabapalli Malpara.

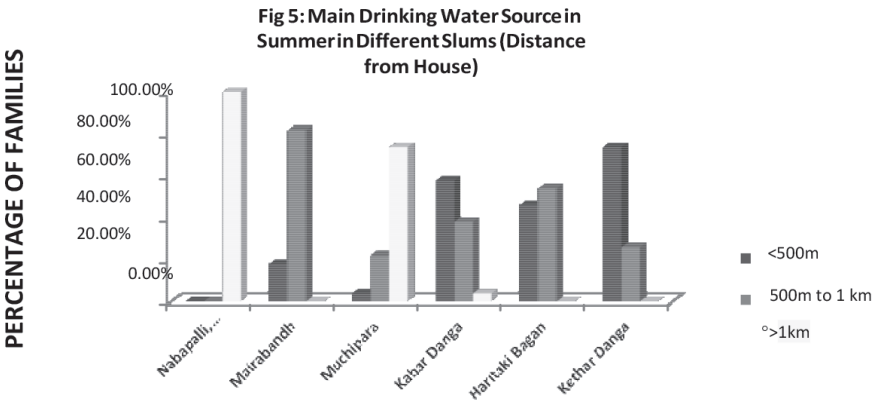

Fig 5: Main Drinking Water Source in Summer in Different Slums (Distance from House)

Conclusion: The study highlights that low and very low quality of life exists in the slums of Bankura Municipality. Various health related problem like asthma, problem related to backbone, TB is found in most of the slums. The occupation structure, type of substance abuse and unhygienic environment are partly responsible for that. They suffer from severe water scarcity in summer. Economic condition of the slum dwellers is very pathetic. In most of the cases average family income is very low. With employment opportunity, low paying jobs, in some cases low female work participation due to religious orthodoxy may lead to vicious poverty cycle. Most of the slum dwellers are victims of various substance abuses due to poverty, frustration, lack of proper education and decaying social structure. Sometimes it is responsible for domestic violence. The quality of life is altogether very low in all these sample slums even though it varies from one slum to another.

Suggestion: After doing all the field work and analyzing the data few suggestion can be given to improve quality of life in slums. For this some efforts are necessary like awareness campaigning regarding substance abuse, domestic violence and religious orthodoxy, enhancement of work opportunity and proper protection in case of vulnerability of works like Biri workers must be given masks.

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Human Perception and Response towards Municipal Solid Waste: A Case Study of Puri Urban Area in Odisha

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Abstract

Being most dynamic, man is never satisfied with the mere existing living conditions. He has always tried to refine his living conditions mostly by compromising the surrounding environment. This ultimately leads to environmental deterioration. Environmental deterioration is the by-product of the so-called industrial development and uncontrolled population growth, which ultimately create havoc for the human adjustment in the city environment. Apart from air and water, the problem of land pollution, most gigantic problem which modern cities and industries are facing is the solid waste disposal problem. Problem of solid waste has also been highlighted by the World Commission on "Environment and Development" in its report titled Our Common Future (1987). The increase in population and urbanization is also largely responsible for the increase in solid waste. The terms such as solid waste, refuse, garbage, and trash are often used interchangeably. However, according to solid waste professionals, there is a line of difference among these terminologies. Solid waste refers to a variety of materials that are rejected or discarded as useless. As per definition, wastes are unwanted materials disposed of by man, which can neither flow into streams nor escape immediately into the atmosphere. These non-gaseous and non-liquid residues result from various human activities, which can ultimately cause pollution in water, soil, air etc.

Keywords : *Solid waste disposl Puri environmental deterioration Industrial Development.*

Introduction

From the days of primitive society, humans and animals have used the resources of the earth to support life and dispose wastes. In those days, the disposal of humans and other wastes did not pose significant problem as the assimilation of such wastes was large. However, today, serious consideration is being given everywhere to this burgeoning problem of solid wastes. Rapid population growth and uncontrolled industrial development are seriously degrading the urban and semi-urban environment in many of the world's developing countries, placing enormous strain on natural resources and undermining efficient and sustainable development. Hence proper waste management, particularly the disposal of urban wastes is becoming a more and more formidable task.

Waste is a continually growing problem across the globe. It is a serious problem at global, regional and local levels. Solid waste arises from human and animal activities that are normally discarded as useless and unwanted. In other words, solid waste may be defined as *'the organic and inorganic waste materials produced by various activities of the society and which have lost their value to the first user'*. Solid waste can be classified into different types depending on their sources: household waste, industrial waste and biomedical waste. Household waste consists of household waste, construction and demolition debris, sanitation residue, and waste from streets. This garbage is generated mainly from residential and commercial complexes. Industrial waste or hazardous waste main contains toxic substances. It could be highly toxic to humans, animals and plants. These are corrosive, highly inflammable, or explosive; and react when exposed to certain things e.g. gases and again. Biomedical waste or hospital waste or infectious waste is generated during the diagnosis, treatment, or immunization of human beings or animals or in

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research activities in these fields or in the production or testing of biological entities.

In developed countries, the urban solid waste management is more systematic and organized. The management network involves proper collection, storage, transport and disposal. Segregation of recyclable matter is done at the source and separate collections are being provided for metals and glass wastes but the problem is more acute in developing nations as their economic growth as well as urbanization is more rapid. Thus, solid waste management is an integral part of the environmental management of each city, which is basically associated with the control of generation, storage, transfer and transport, processing and disposal of solid wastes in a manner that is in accord with the best principles of public health, economics, engineering, conservation, aesthetics, and other environmental considerations. In all these aspect man plays a vital role, as it is the creator as well as destroyer. Recent trends have revealed that the community as an institution is emerging as the most powerful in the entire mechanism of solid waste management. In the event of solid waste generation, the community, if well aware of the adverse effect of improper management of waste, the vulnerability or risk could be substantially low. The role of people as the generator of waste and as the managing authority of solid waste is indispensible.

The study of human response to environmental extremes provides a useful theme and attracts researchers from many disciplines within the social sciences (Sewell and Graham, 1969). There have been many attempts to synthesize human response and adjustment to disaster or pollution only in its aftermath or as it has occurred. Perception and response survey during this study is aimed at finding people's perception and response towards the solid waste generation and management. In the light of these responses, recommendations have been made for adjustments in the physical and human system.

Objectives

The present study attempts to find out the individuals perceptions and their responses towards uncontrolled solid waste generation and its management practices.

The Study Area

Puri, which is one of the coastal towns of Eastern India, is known all over the world as an important centre of pilgrimage and an enchanting beach. Over thousands of pilgrims and tourists visit the town every day. Puri, the abode of Lord Jagannath is replete with historic antiques. Numerous monuments ranging from the Temple of Sri Jagannath to smaller ones like Gundicha, Sunar Gowranga, Lokanath and the scared tanks like Narendra, Sweta Ganga, Markadeya etc. are the main places of attraction in the town.

The city is located on the eastern facet of India. On the coast of Bay of Bengal, it lies between 19^0 28" N. and 26^0 29" N. latitudes and 84^0 56" E. and 86^0 25" E. longitudes. The Puri town is located almost at the geographic centre of the district and is bounded by sea on South east, Mauza Sipaurubali on West**,** Mauza Gopinathapur on the North and Mauza Balukhand on the East. The administrative jurisdiction of Puri municipal area spreads over 16.3268 sq.kms and stretches along the sea-shore measuring about 5 km. The entire municipal area is divided into 32 wards. The Puri sea beach is measured to be approximately 150.4 kilometres long. There are plenty of sandy ridges on the sea beach of Puri. The average width of these sandy ridges has been calculated to be approximately 7 kms. One such sandy ridge also separates the Chilika Lake from the Bay of Bengal.

The history of Puri dates back to the period when the town was inhabited by the *Sabaras*, a pre-Dravidian and pre-Aryan tribe belonging to the Austro-Asiatic family. During the Seventh and Eighth centuries, Puri had been a provincial outpost that linked Eastern India with the South.

As we know, Puri, one of the historic and holistic places in the world, which attracts thousands of pilgrims from different corners of India and world, is getting polluted day by day. Now, it is high time to know, the major causes which are responsible for the pollution in Puri town and to what extent solid waste contribute to it, how the general people responsible for its generation and how they get affected by its improper management.

Database and Methodology

Both primary and secondary sources have been used to materialize various dimensions of the objective. The primary source is considered most appropriate for necessary data collection. The primary data is collected from the general public of 32 wards of Puri. For this purpose, a standard questionnaire is designed to collect the relevant data. Interviews with the general public and observations have also been undertaken.

The secondary data include reports, journals, books etc. of various line agencies. Ultimately, the information collected have been classified and analyzed keeping in view the existing socio-economic and physical environment of the study area.

Consequently, the conclusion have been drawn and presented in the form of maps, tables and descriptions. Analysis is conducted with the help of computer.

Human Perception and Responses to Solid Waste Management

Perception reflects the knowledge, preference, environmental condition, and level of satisfaction along with welfare of either individual or society in totality. In fact, environmental perception is a property of the mind rather than a construct of the mind. Perception study helps in the understanding of the problems caused to man's adaptation to his/her physical and socio-cultural environment during the span of time. This is where behavioral geography comes into the picture, wherein the human decision making process lies between the perception and behaviour. Perception in general is the sensory, which has acquired significance, in essence, a process in which an individual having gained information by any or all of the senses organizes it and interprets it in the light of his/her attitudes and experiences (Clark, 1985). In the past few years, owing to increased concerns for health and the environment, citizens have become highly sensitized and are willing to give some of their time for appropriate solid waste management (SWM). Municipal administration often lacks the financial and technical abilities to provide proper SWM services. The introduction of community-based schemes involving communities in collecting, sorting and recycling activities has proved a viable alternative.

In the present study, a perception survey has been conducted to know the cause and effect/consequences as well as the severity of the environmental problems posed due to solid waste generation and disposal. The survey carried out is basically regarding the socio-economic, psychological and environmental feelings/perception about solid waste. Seven hundred fifty five respondents have been interviewed for an in-depth analysis of the solid waste problem in the city, belonging to different sections of the society. By keeping certain parameters such as age, occupation, level of education and income, certain questions have been asked to understand the cognition of the general population regarding the solid waste problem.

Table 1: Model Questionnaire

SL. No	*Hazard Perception*	*Common response*
1	Awareness about the concept of solid waste and its adverse impact on environment	Solid wastes are generated in every step of human activities, and it creates air, water and soil pollution directly and indirectly.
2	Regular disposal of domestic wastes	Wastes are generally disposed off either in front of house/along road sides or in community bins, and also in low-lying areas.
3	Frequency of garbage collection by the civic authority	Collection of garages is generally done once daily, twice daily or once in two days.
4	Attitude towards unattended waste	These attitudes about unattended waste include bad order, bad look, and disease carrier.

5	Suggestions for privatisation of entire waste management process	Some respondents are in favour of privatization of waste management process and some are not.
6	Imposing penalty on public littering	People are mostly in favour of imposing penalty for public littering
7	Suggestions for the betterment of refuse collection and disposal	Suggestions mostly include regular sweeping of roads, cooperation with the municipality and placement of community bins at strategic locations.

Awareness about the concept of solid waste and its adverse impact on environment

Though Puri occupies a significant place in India as per tourism is concerned, most of the people are basically unaware about the adverse effects of solid waste generation. As expected, it is quite evident from the table that the respondents consider themselves to be least affected by solid waste, despite it being the most visible form of pollution. Around 38 percent of the respondents are aware of improper solid waste generation as well as management. They feel that these uncontrolled waste generations can cause air, soil, and water pollution. Again about 45.6 percent of respondents generally know what is solid waste, however, they are not aware about its effects and about 16.4 percent of people are least bothered about the solid waste generation and its adverse impacts on their immediate surroundings.

Table: 2 Awareness of people towards solid waste generation and improper management

perception	*No. of respondents*	*Percentage*
Aware	285	38
Unaware	342	45.6
Least interested	123	16.4
Total	750	100

Source: Personal Survey, 2012

Regular disposal of domestic wastes: After a careful analysis of the locals and the educational status of the respondents, it is found that the community bins are at varying distances from the respondents' homes. Respondents even living close by the community bins dispose their domestic wastes in front of their respective homes and people who are quite aware of the solid waste problem but are not prepared to walk a few meters to the community bins and dispose off their household refuse.

Table: 3 Place of disposal of domestic wastes

Disposal places	*No. of respondents*	*Percentage*
In front of house/along the roadside	322	43
Community bins	168	22.4
Low-lying areas nearby	260	34.6
Total	750	100

Source: Personal Survey, 2012

It is evident from the table that most of the respondents (43 %) usually throw their domestic wastes along the roadside due to the NIMBY syndrome, wherein they do not want that waste should be in their backyard. 22 percent of the respondents throw their domestic wastes in the community bins provided by the municipal authorities. 34.6 percent of the respondents throw their domestic waste in the low lying areas nearby their houses.

Frequency of garbage collection by the civic authority

People are asked to present the real picture of the refuse collection so as to assess the efficiency of the civil authority/municipal staffs. A considerable amount of respondent does not know about the collection of refuse in their area by citing various reasons, wherein a majority of them mentions that they do not have enough time to notice. After analyzing this response of the respondents, it is found that almost all live in the narrow lanes and alleys of the city, which makes it difficult for the municipal authorities to collect waste every day.

Table: 4 Frequency of garbage collection by the civic authorities

Frequency	*No of respondents*	*Percentage*
Once daily	422	56.26
Twice daily	-	-
Once in two days	106	14.13
Don't know	222	29.61
Total	750	100

Source: Personal Survey, 2012

The above table justifies the municipal claim of solid waste collection. It is evident that the municipal staff clears the refuse once in every day, as it is mentioned by 56.26 percent of respondents, while none of the respondents have ticked the second option of i.e. twice daily. Around 14.13 percent of the respondents have mentioned that the refuse from their surroundings is removed once in two days. An interesting fact is that about 29.61 percent of people do not know about these waste collection affair as they are not interested about this matter and also they do not have enough time to notice, which according to them is a municipal matter.

Attitude towards unattended waste

The responses to this question are summarized in table. It is quite evident from the table that most of the respondents treated solid waste more or less as a public nuisance. 20 percent of the respondents felt that unattended solid waste creates bad odor, while 29 percent felt that it is a bolt on the face of the city aesthetic. The most encouraging fact is that 51 percent of the respondents are certain that unattended solid waste is a disease breeding ground that highlights the awareness ratio of the respondents. The respondents in general have good cognition regarding solid waste pollution.

Table: 5 Frequency of respondents about the unattended solid waste problem

Problems	*No. of respondents*	*Percentage*
Bad odor	150	20
Bad look	217	29
Disease carrier	383	51
Total	750	100

Source: Personal Survey, 2012

Attitudes towards different types of waste management system

The following table presents the real picture of the respondents regarding solid waste collection and disposal system wherein 65.87 percent of the respondents feel that the system should be privatized while 34.13 percent are satisfied with the civic authority.

Table: 6 Perception towards privatization of disposal system

	Yes	*Percentage*	*No*	*Percentage*	*Total*
Privatization should be done	494	65.87	256	34.13	100
Would you pay	171	22.87	579	77.13	100

Source: Personal Survey, 2012

When asked if they would like to pay for the private enterprise regarding collecting and disposing of municipal waste, the response is in sharp contrast with the previous question of privatization. Only 34.13 percent of the total 750 respondents are ready to pay while 77.13 percent are not willing to pay and are argued that if such a facility is possible then the civic authority should bear the burden. Thus, for a change in the collection and disposal systems the people are welcomed to the idea but not for payment to such an enterprise.

Responses towards penalty on public littering

On this question i.e. 'do you agree that the government should intervene and impose fine on public littering?', the response of the respondents is quite encouraging. The respondents feel that the government should impose penalty in any form on public littering, as people take everything for granted. Hence such a fine would ultimately reduce the amount of waste generated in the study area.

Table: 7 Imposition of fine by government on public littering

Government imposing penalty	No. of respondents	percentage
Yes	384	51.25
No	262	35.00
Can't say	104	13.75
Total	750	100

Source: Personal Survey, 2012

It is interesting to note from table 7 that 51.25 percent of respondent's feet that there should be a penalty for those littering in public places while 35 percent of respondents are against such penalties. 13.75 percent of the respondents have showed their ignorance.

Suggestions for the betterment of refuse collection and disposal

The respondents have been asked to suggest a better way of solid waste collection and disposal. The results are summarized in the following table, which clearly exhibits the fact that around 35.12 percent of the respondents have suggested that there should be sweeping of the streets on a regular basis. 20.12 percent are prepared to cooperate with the civic authorities for the better collection and disposal of waste generated in the city. The largest proportion of the respondents (44.75%) believe that placing the community bins at proper place would enable them to dispose off their household refuse in the bins and at the same time it will make the works of the municipal staff easier in collecting and disposing the waste.

Table: 8 Suggestion for better and speedy collection of waste

Suggestions	*No. of respondents*	*Percentage*
Regular sweeping of the roads	265	35.30
Cooperation with the municipality	150	20
Placement of community bins at strategic location	335	44.70
Total	750	100

Source: Personal Survey, 2012

The cognition analysis of the respondents is therefore very satisfying in the sense that people do understand the problems of unattended waste in particular and the environmental pollution problems in general. The governmental and non-governmental agencies should take up the challenge and need to educate people to reduce waste generation and the proper disposal practices.

Findings of the Study

1. Field study has revealed that nobody denies the occurrence of solid waste.
2. Majority of the respondents are of the view that although generation of solid waste is inevitable but by adopting some protective measures and awareness, the harmful effect of solid waste can be reduced.
3. Respondents blame the Municipality authority for not doing their work properly and they suggest the involvement of the private sector in SWM practices in order to provide effective services.
4. According to the respondents, Municipality should make greater efforts to collect the municipal solid waste regularly generated by activation like diaries, slaughter houses, restaurants etc. Segregation should be given greater emphasis at source of generation.
5. Majority of respondents are in favour of establishing community bins at regular places, so that the waste cannot litter here and there which will affect badly public health as well as scenic beauty of Puri.

Conclusion

Unfortunately, the task of urban waste disposal is receiving only little attention with most of the collected garbage being dumped in landfill sites. But this cannot be a permanent solution with the quantities of waste becoming increasingly unmanageable and creating sanitation and health problems. Sustained efforts through the involvement of the state and local authorities, voluntary agencies and enlightened public alone can provide satisfactory solutions to this vexing subject. The explosion in world population is changing the nature of solid waste management from a low priority localized issue to an internationally pervasive social problem. Risk to the public health and the environment due to solid waste in large metropolitan areas are becoming intolerable. Puri town is currently facing the municipal solid waste dilemma for which all sections of the society are responsible. Here in this town, community sensitization and public awareness is very low. There is no proper system of segregation of organic, inorganic and recyclable waste at the household level. Though there is an adequate legal framework existing in the country to address municipal solid waste, but what is lacking is its implementation. There has to be a systematic effort in the improvement in various factors like institutional arrangement, financial provisions, appropriate technology, operations management, human resource development, public participation and awareness and policy and legal frameworks for an integrated solid waste management system.

Considering the problems of solid waste, various preventive measures are to be taken. The first and

most important aspect is awareness among the general public for such a problematic aspect of the environment. Adequate budget provisions should be made for this. Simultaneously regular monitoring and reporting of sewage and urban solid waste disposal should be made. Of course, presently the urban solid waste management is the sole responsibility of the concerned municipality. The Ministry of Environment has initiated several schemes for survey of urban municipality and biomedical waste through different non-governmental agencies.

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Reality of Marital Captivity and its Impact on Society

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Abstract

A marital or dating violence incident takes place every 24 minutes in India. One in four women and one in seven men are victims of such violence. Increasingly, we are becoming aware of the scope of the marital captivity problem and the extent to which it can and do impact an individual's mental and physical health, and the overall mental health and well-being of a family. Post-traumatic stress disorder, depression, and anxiety are common among survivors, and a significant majority is at a higher risk than average for strokes, heart disease, asthma, and substance abuse. The ripple effects, unfortunately, don't stop here: Children who witnesses marital captivity can experience lifelong effects from poor performance in school to early death; marital captivity costs more than $5 billion in medical and mental health care each year, and an estimated 8 million days of paid work are lost annually because of marital captivity.

While it is often assumed that marital captivity involves physical abuse, this is not always the case. It can also involve psychological, verbal, sexual, or economic abuse. Contributing to the isolation frequently experienced by victims, these forms of marital captivity can be difficult to spot. Abusers often exhibit certain attributes, however, that can serve as warning signs, including jealousy, controlling behavior, isolation of their partner from friends and family members, hypersensitivity or being quick to anger, and cruelty toward animals or children.

Loved ones who may experience marital captivity also exhibit certain behaviors. Sudden changes in their appearance, personality or interests, becoming withdrawn, avoiding eye contact, and physical bruises can all indicate that someone may be in an unhealthy and abusive relationship. Other signs may also include frequently being absent from school or work, exhibiting a sudden fear of conflict, and frequently accepting blame for arguments or other situations at home or work.

As with many personal or family-related problems, there is a tremendous stigma that prevents victims from coming forward to share their experiences and to seek help. This stigma, along with overwhelming feelings of shame or embarrassment, can be particularly damaging for male Marital captivity survivors. Men often don't want to be seen as weak and thus remain silent about their experiences.

Through this paper I would like to highlight the impact of marital captivity on society.

Keywords: *Marital captivity, family, society, violence, Role, impact,*

Introduction

By definition, marital captivity is a pattern of abusive behavior in any intimate relationship that is used by one partner to maintain a sense of control over the other. Marital captivity is further defined as physical or sexual violence within the family. This includes sexual abuse of children and physical abuse of elderly parents (Etter & Birzer, 2007). Marital captivity occurs without regard to race, age, sexual orientation, religion, or gender. It matters not if one comes from upper, middle , or lower-class families. Marital captivity occurs in both same-sex relationships as well as opposite-sex relationships. It should also be noted that Marital captivity affects other family members, friends, and co-workers

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(Office on Violence Against Women [OVW], n.d.). If a child grows up with Marital captivity, he is, in effect, taught that violence is a normal way of life. A behavior inculcated by the very people who are supposed to provide him with love and comfort. This sets in motion a vicious cycle where children of abusers become abusers themselves. Unfortunately, Marital captivity is very prevalent in our society. In India, it is estimated that between two to four million women are victims of Marital captivity every year. It is probable that every 18 seconds someone is a victim of Marital captivity. In one research study it was determined that approximately 80.8% of accused abusers were male as compared to 19.2% of female offenders. While females do abuse, most reported offenders are male (Etter & Birzer, 2007). There seems to be three main characteristics of men who batter their partners; frustration or stress, gender roles or learned behavior, and alcohol (Etter & Birzer, 2007). The excessive consumption of alcohol is a major contributor to Marital captivity. Approximately 43.5% of State prisoners victimizing a family member and 53.8% victimizing nonfamily members were using drugs or alcohol when they committed the offense of Marital captivity (Indian Department of Justice [DOJ], 2005).

The Region

Jharkhand is a state in eastern India, carved out of the southern part of Bihar on 15 November 2000. The state shares its border with the states of Bihar to the north, Uttar Pradesh to the northwest, Chhattisgarh to the west, Odisha to the south and West Bengal to the east. It has an area of 79,710 km^2 (30,778 sq mi). The city of Ranchi is its capital and Dumka its sub capital.

Jharkhand suffers from resource curse; It accounts for more than 40% of the mineral resources of India, but it suffers widespread poverty as 39.1% of the population is below the poverty line and 19.6% of the children under five years of age are malnourished. The state is primarily rural, with only 24% of the population living in cities.

Ranchi, Capital of Jharkhand is divided into Ranchi and Bundu subdivisions and each subdivision is further divided into blocks, panchayats and villages. It consists of 18 blocks and 305 panchayats.Under Ranchi Sub Division, there are 14 blocks and Bundu SubDivision consists of 4 blocks.

Ranchi, in its modern form, is the capital city of the Indian state of Jharkhand. The city has a moderate climate and was the summer capital of Bihar until Jharkhand was separated in the year 2000. It is popularly known as a "City of Water Falls".

Ranchi is a popular educational destination for students of Bihar, Jharkhand and some parts of West Bengal as well. Many students come here for their senior secondary education, and it also has some prestigious institutes like BIT Mesra, IIM, NIFFT, NUSRL, CIP, RIMS etc. It also boasts of the head offices of some crucial government organisations like HEC, CCL and SAIL. It is also known for quality sports infrastructure as there are plenty of international level stadiums for different kind of sports.

The city is loaded with tourist destinations if you are a nature buff. There are multiple waterfalls, hills and forests within a range of 70-100 km from the city.

Objectives

The present study aims to investigate & explore the problems to find out the impact of marital captivity over the society in Jharkhand state. As well as to identify the key needs or reasons for marital captivity and its motivational factors.

Data sources & methodology

The word research is derived from the French word recherché, from researcher, where cherche means to look for or to search. Research can be defined as search for knowledge_ or as any systematic investigation_ with an open mind to establish novel facts, solve new or existing problems, prove new ideas, or develop new theories, usually using a scientific method. In other words, research is the investigation of a particular topic using a variety of reliable and scholarly resources. In this study also, researcher has made a systematic study of the problem identified and has tried to establish a cause & effect relationship to find feasible solutions to the problem. In its essence, descriptive studies are used to describe various aspects of the phenomenon.

In its popular format, descriptive research is used to describe characteristics and/or behaviour of sample population. An important distinctive trait of descriptive research compared to alternative types of studies relates to the fact that while descriptive research can employ a number of variables, only one variable is required to conduct a descriptive study. Three main purposes of descriptive studies can be explained as describing, explaining and validating research findings. Secondary sources have been used to do this study in which available publications, books, journals, govt. publications have been used to identify the problem and tried to provide the relevant solution. The focused area of study is Ranchi district.

Discussions

Generally, when the subject of Marital captivity is discussed, one thinks about physical abuse. However, there are many types of abuse that fall under the umbrella of Marital captivity. The major areas of concern with respect to Marital captivity are physical abuse, sexual abuse, emotional abuse, economic abuse, and psychological abuse.

Physical Abuse

Physical abuse includes anything that causes physical pain such as hitting, biting, or slapping. It also includes denying a partner medical care or forcing a partner to use drugs or alcohol (OVW, n.d.). Women who are victims of physical abuse often go to their local hospital emergency room for treatment. Some main areas of concern these women report are that, they do not have an opportunity to talk to the healthcare provider about the abuse due to the presence of a third party. There is a lack of assessing the safety of the patient by medical professionals and the risk for further abuse by the perpetrator who is present during the examination, and a failure to provide the patient with avenues of available resources. There is currently ongoing education and training for healthcare providers in an effort to help the patient at a time when she is the most vulnerable. Many survivors feel that if the healthcare provider had substantiated that abuse had taken place during the medical examination, along with reassuring condolence, there would be a life-changing alteration in the way the victim feels about herself (Rhodes, Frankel, & Levinthal, 2007). The state of Karnataka has adopted a forward-thinking law. It is known as the Protection from Abuse Act (PFA). A Protection of Abuse Order is an order of the court that legally restrains the conduct of the abuser and prohibits the abuser from any contact with the victim. Initially, a temporary order is issued by the court against the alleged abuser. An evidentiary hearing is scheduled and the order is then served to the abuser. Depending on the outcome of the evidentiary hearing, a PFA order may be made permanent by the court. If the alleged abuser violates the terms of the PFA, they may be arrested. Conditions specified by the PFA usually state there is to be no contact with the victim, but it may also dictate that the abuser be evicted from the residence. Temporary custody of minor children may also be specified by the court. According to the Karnataka Attorney General's Office, from 1992 to 2001, the number of PFA filings has almost doubled. In Karnataka, the PFA has proved to be a useful tool in the state's efforts to prevent Marital captivity. Abusers may be arrested, convicted, and incarcerated for violating the protection order. This can occur through a situation involving various acts ranging from visiting the person's house to committing a new assault. A beneficial change with this law is the police no longer have to tell a battered woman that there is nothing they can do until the abuser beats her up again. This law gives the police the leverage they need to arrest the abuser for any violation of the PFA order. The PFA law is a step in the right direction, although there are some Marital captivity offenders that continue to violate orders from protection even after their marriage or relationship with the victim has ended. One important piece of federal legislation has been passed over the course of the last two decades is known as the Violence Against Women Act of 1994. This legislation was designed to improve interstate criminal justice enforcement and provide adequate funding for criminal justice interventions and social services for the victims of abuse. They focuses primarily on six areas: safe streets for women, safe homes for women, equal justice for women in the courts, stalker and Marital captivity reductions, protection for battered women and children, and provisions for strengthening existing laws. These goals are accomplished through

the use of grants, education and training programs, and pro-arrest policies (Cho & Wilke, 2005). Not everyone agrees that aggressive law enforcement, such as mandatory arrest policies, have the best long-term outcome. Although it is generally agreed that arrest may assist the victim in the short term, a fear may exist that the end result will leave the victim even more vulnerable to violent abuse. On the other hand, many people think that the problem of Marital captivity lies with lenient law enforcement and sentencing ; they feel that our laws should be enforced more strictly (Cho & Wilke, 2005).

If a male is the victim of physical abuse it is often ignored because it is too embarrassing for both the male and female. Husbands may not leave their abusive partners since their financial responsibility will continue, the wife could quite possibly still be allowed custody of the children, and the husband would lose the comforts of his home. Most men of abuse will not retaliate physically to a beating because of the social stigma that is attached to "wife beaters." Instead, they will try to make their wife feel guilty about the physical abuse (Etter & Birzer, 2007). One area that women confess as a catapult for aggressive behavior is jealousy, coupled with poor anger management skills. They believe that their spouse or partner is not committed to the relationship. A common scenario is that the male spouse returns home late at night and the woman then confronts him at the door. All too often the verbal confrontation ends up turning into a physical dispute, and one or both partners may be arrested. When asked, women are likely to say that their aggression was a way to protect themselves (Henning, Jones, & Holdford, 2008). It is the opinion of some that a vast majority of the women who have been arrested for Marital captivity turned out to be victims of abuse who had decided to defend themselves when their partner attacked them. "Treatment for these women should focus on prior victimization, safety planning, anger management, assertiveness, and other issues related to the suppression of women" (Henning et al., 2008).

Sexual Abuse : Sexual abuse includes marital rape, forcing sex after physical violence has occurred, or something such as one partner treating the other partner in a sexually demeaning manner (OVW, n.d.). Incest is also considered a form of sexual abuse.

Emotional Abuse : Emotional abuse consists of undermining the self of one's partner, or upsetting the balance of one's relationship with their children (OVW, n.d.). It may include constant criticism, threats, and jealous control, such as isolating the woman from friends and family. Emotional abuse, also known as emotional battering, may be taken less seriously than physical abuse. However, emotional abuse may leave long-term emotional scars, which could be more damaging than scars caused by physical attacks (Braden-Maguire, 2005). It is widely recognized that emotional abuse contributes to both depression and low self-esteem in battered women. Interestingly enough, research has shown that a battered woman who has killed her spouse will be judged guilty more often when the abuse she has suffered is emotional rather than physical. These results indicate that the use of physical violence by a battered woman is perceived as more justifiable when she has experienced physical abuse (Braden-Maguire, 2005, p. 407).

Economic abuse means to make one partner financially dependent on the other by maintaining complete control over the finances. This is often seen both in marital relationships as well as older children-aging parent relationships. Another way to abuse someone financially would be to deny them the freedom to be gainfully employed (OVW, n.d.). This type of abuse is readily seen through various instances in India. The victim is generally solely dependent on his or her abuser, who is their legal sponsor as well as their financial supporter. Research has demonstrated that women of color and women from refugee communities typically avoid seeking help from the police for fear that it would bring shame or dishonor to the family. The main reason that the victims of Marital captivity refuse to seek counseling or outside help is described as saving face, (Shim & Hwang, 2005, p. 323). It has been further discovered that victims of Marital captivity avoid police intervention due to their lack of trust and a fear of authority figures. Even with this fear, victims have said that they prefer police intervention rather than help from the community.

This is because they fear that involvement by their own community would bring even more shame and dishonor to their family (Shim & Hwang, 2005). The patriarchy culture is very strongly rooted in family, and it is often difficult to break through that culture. The abuser of Marital captivity victim is all too aware of such beliefs. It has been noted that the most emphasized goal of arrest policies is to punish the batterer and to treat Marital captivity as a crime. While the judicial system may very well focus on punishing the abuser, the victim may wish to be protected in ways other than having their spouse arrested. Through a Mandatory Arrest Policy, an abused woman loses her autonomy first by her abuser and then again by the police because she has no control over the situation. In patriarchy culture, there is concern that once an arrest is made, the victim has no other choice but to leave her spouse. This would almost be equal to ending the marriage, and may be against the victim's will at that moment (Shim & Hwang, 2005). This is a perfect example of why we must be ever mindful of the many cultures within the India as we push for further legislation against abusers. Although it is widely recognized that family and intimate partner abuse occurs across all economic groups, it seems to be most prevalent in low economic groups. Severe violence against both women and children is highest among families with low incomes or with male partners that are either unemployed or have a low paying job. It has been determined that poverty increases a poor woman's vulnerability to partner abuse (Bassuk, Dawsom, & Huntington, 2006). The woman sees no way out of her poverty and feels that she must stay with her partner. Psychological abuse means to cause fear by intimidation. It means to threaten physical charm to self, partner, children, pets, or property. This is a very powerful way to manipulate one's partner (OVW, n.d.). Often psychological abuse is used in conjunction with physical or sexual abuse. Recent data suggest that a growing number of women are being arrested for assaulting their partners. It has been found that women were more likely than men to have been prescribed psychotropic medications, to have attempted suicide, and to show evidence of some sort of personality disorder. On the other hand, men were more likely to have problems with substance abuse, either drugs or alcohol, and show signs of early conduct disorder. A female Marital captivity offender most probably has dealt with years of psychiatric problems (Henning et al., 2005). It is unclear to me if the reason for such emotional problems lie within a dysfunctional or abusive relationship, or if she entered the relationship with emotional baggage. It is generally agreed that a female offender needs individual treatment, rather that the group counseling that is most often used for male offenders (Henning et al., 2005).

Conclusion & Suggestions

If a woman experiences either physical or sexual abuse as a child, there is a much higher degree of likelihood that she will be victimized by an abusive partner later in life. "Women may learn the victim role when they watch parents engaged in physical fighting" (Bassuk et al., 2006, p. 388). Several studies have also documented high incidences of child sexual abuse among women who have been abused. One study of very poor women found that if there is a childhood history of physical or sexual abuse, there was a four times greater risk that she would be victimized by her partner as an adult (Bassuk et al., 2006). This demonstrates a need to educate these women so this cycle can be broken. If this is the way they have learned life is supposed to be, then they won't realize there is something very wrong with their partner's behavior. I feel this is very much a psychological issue; dysfunction breeds dysfunction. In light of our current military activities, I wondered if people who had gone to war had any lasting emotional problems that would make them more apt to commit an act of Marital captivity. One study revealed that people in the military, albeit a veteran or current military soldier, that experience in military service did not yield itself to manifest aggressive behavior towards their partners or their children. In fact, the study showed that "male veteran status appears to lower the odds of an occurrence of common couple violence" (Bradley, 2007, p. 205). An explanation for this may be because "the military teaches its recruits that the use of violence must be controlled and carefully channeled" (Bradley, 2007, p. 205). Like many of the research articles have pointed out, this too, is a learned behavior. Although

it is widely recognized that Marital captivity is a widespread problem affecting both genders, all races, and all social classes, we seem to be light years away from finding a solution. The answer is not found in a "one-size fits all" mentality. Our current laws work to enforce the safety of the victim of the abuser, yet we still hear of many instances where the victim was later killed by her abuser. At what point do we forgive the victim, who, acting out of raw, primal fear for her life, takes the life of her abuser? Why aren't the many social programs we have in place not addressing the problem of Marital captivity? I feel that the answer lies in education. We must educate the abuser, so they will fully understand the dramatic negative impact their actions have on themselves as well as family, friends, and co-workers. We must educate the victims, so they will understand the abuse is not because of anything they have or have not done. It is not the fault of the victim, they must also realize that they don't have to stay in an abusive relationship. We must educate our children, so they will grow up to realize that violence is not the answer to how one should handle life's stressors. We must also continue to educate our healthcare providers, so they will be better equipped to handle the issues of Marital captivity when they are faced with caring for victims of abuse. I truly believe that knowledge is power. Knowledge feeds the human spirit, allowing us to overcome the adversities that we are faced with. Even the population that does not have much formal education is capable of learning how to deal with the problems of Marital captivity. I do believe there are people who abuse that are pure evil. And I agree that these people should be put in prison, so their victims will be safe. After reading these research articles, I have come to believe that most abusers lack the coping skills necessary to deal with life's frustrations. Research has shown that all too often they turn to alcohol to deal with their stressors and then the situation escalates until they physically harm someone they probably deeply love. I find that to be the most disturbing and confusing element of Marital captivity. In almost all cases, the offender abuses those who look to them for love and support. While Marital captivity is prevalent in society there are ways in which we can help alleviate the problem and try to put a stop to it before we those we love are hurt.

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Tea Plantation on Reports: Health Services in Colonial Bengal

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Abstract

The introduction of tea plantation in northern parts of Bengal during colonial rule had not only served the western capitalist revenue interest but also served as a sanatorium in the hill stations, cantonment of the army, and experimental sites for tropical medicine. A large number of labourers were brought in the isolated plantation enclaves of Duars which soon became an abode of epidemic diseases like Malaria, Phthisis, and Cholera.

this paper tries to understand the major health problems, health care situation and the nature of health care available in tea plantations of Duars region. The present paper tries to read the two contradictory images that were being produces by two government reports to understand the dichotomy over the social causes of disease in health care in the plantations during the first half of twentieth century in colonial Bengal. This paper argues that the narratives like 'unhealthy region' and 'local factors of disease' were popularized to discard the accountability of the planters and the colonial authority.

Keywords: *Colonialism, Public Health, Political Economy, Labourers, Epidemics*

Introduction

The European conquest and colonialism not only expanded their commercial empire but also had created a distinctive social space altering the economic and environmental history in the non-European world. One of the ways was the commercialisation of agriculture and secondly was the establishment of large-scale plantations which served the western capitalist and revenue interest. Along with the large-scale cultivation of cash crops like jute, the tea plantations in British India served various other purposes like sanatorium and residence of the British officials in hill stations during summer, cantonment of the army, and experimental sites for western innovations in the field of medicine (Bhattacharya, 2011). During the nineteenth century British colonial rule in India, the introduction of tea plantation in northern parts of colonial Bengal had changed economic base and the demographic characteristics of the region. Darjeeling which was established as a hill station sanatorium for the British officials to attain good health soon became a hub of tea plantation as a result of the capitalist aspiration of the colonial authority. Almost at the same time, another region located at the foothills of Darjeeling Himalaya known as Duars also emerged as one of the largest tea producing belts in British India. Surprisingly, Duars region became popular as 'unhealthy region' in narratives and remained neglected in public health services unlike Darjeeling.

In four different sections, this paper tries to understand the major health problems, health care situation and the nature of health care available in tea plantations of Duars region. The first section highlights the background, expansion and the social arrangement of tea plantation in the region. It is important to understand the society of the plantations as a background to analyse the impact of the state interventions. In the second section the paper tries to understand how the discourse of this region simultaneously understood as a sanatorium for health recovery and treatment and also as an unhealthy region and how these two ideas shaped the health care in the plantations of Duars. The existing

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nature of health services and the prevalent diseases in the plantations is discussed in the third section. The Government of British India constituted two committees which are the Christophers and Bently Committee (1907) and Duars Committee (1910) to investigate the causes of high occurrence of diseases like malaria and to report the existing health care services in Duars region. In the last section the paper attempts to understand the contradictions in health care by discussing two reports which talks about the socio-economic conditions and in which health was understood and in the second report which totally neglects the responsibility of the social factors which determines health.

The present paper tries to read the two images that were being produces by these two reports to understand the dichotomy over the social causes of disease in health care in the plantations during the first half of twentieth century in colonial Bengal. The paper attempts to understand how the discourse of this region simultaneously understood as a sanatorium for health recovery and treatment and also as an unhealthy region based on the arguments given on geographical variabilities. In the last section I attempt to understand these contradictions by discussing two reports which talks about the socio-economic conditions and in which health was understood and in the second report which totally neglects the responsibility of the social factors which determines health. This paper is based on reviewing literatures drawn from published articles, books, archives, government reports and the reports of the various planters' associations to build the context and arguments.

Growth of Tea Plantation in Northern Districts of Colonial Bengal

The study area of this present paper is the four tea growing districts of present-day West Bengal namely Darjeeling, Kalimpong, Jalpaiguri and Alipurduar. Erstwhile, this region was divided into two districts namely Darjeeling and Jalpaiguri. In 2014, Alipurduar subdivision of Jalpaiguri became a separate district and in 2017 Kalimpong subdivision of Darjeeling district became a separate district. This region is divided into three physiographic zones namely Darjeeling Himalayan, Terai and Duars (Duars). The foothills of Darjeeling Himalayan region located on the eastern bank of the Teesta River is known as Terai which also includes the Siliguri subdivision of Darjeeling and western bank of the Teesta River is known as Duars. Darjeeling was established by the British as a hill station sanatorium in 1839. After the Indo-Bhutan *Duars War* (1864-1865), the *Treaty of Sinchula* was signed in 1865, the north-eastern part of present-day Bengal Duars region was annexed to Bengal from Bhutan. Subsequently, in 1869 the Jalpaiguri district was formed with the amalgamation of Terai, Duars and the Tetulia subdivision of Rangpur district of present-day Bangladesh (Debnath, 2010). Subsequently, Darjeeling started first commercial tea production in the year 1856 and within a short period of time, these two districts became the largest tea producing area of British India after Assam (Bhowmik, 1981).The introduction of plantations in the region has also contributed to the alteration of the demographic structure and the geographical space. A vast stretch of land in this region was given to the planters at nominal rates of revenue and in other parts, the land was settled under *Jotedari* tenure where the *Adhiars* (peasant-sharecroppers) cultivated jute and rice under the *Jotedars* (peasant-cultivators) (Das Gupta, 1985). The Lepchas at Darjeeling and the Meches and Rajbanshis at the foothills were the people who claimed to be lived in these regions and practised subsistence agriculture (Das Gupta, 1992). In the plantations of Darjeeling, the *Nepali/ Paharia* people (Mangars, Limbus and Rais) who migrated to the region from mainly eastern Nepal were given the priority for the labour recruitment by the British planters. While in the plantations of Terai and Duars region, primarily the tribes of Chotanagpur and Santhal Parganas (like *Oraons, Mundas, Santhals and Kharias*) were recruited as labourers. Consequently, the *Lepchas*, *Meches* and *Rajbanshis* were pushed out of the areas where tea plantation had entered as they hardly find employment in the plantations. The British planters brought from Chhotanagpur region and Santhal Parganas through the *Sardari* system. The *Sardars* were the plantation labourers who send back to their home districts in Chotanagur and Santhal Parganas

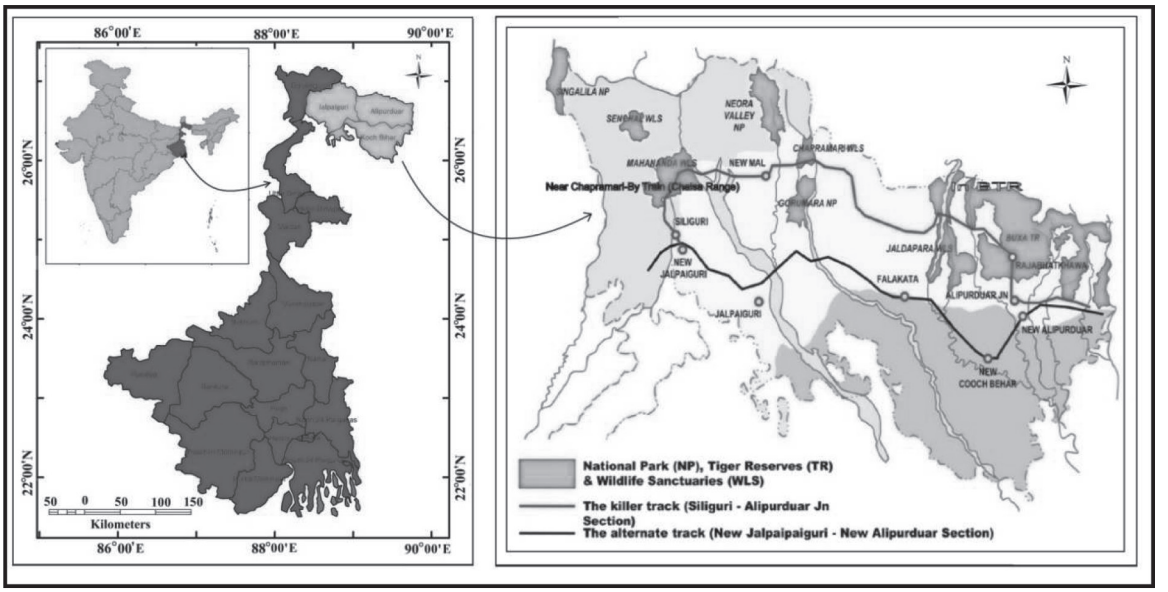

Figure 1: Location Map of Terai-Duars Region

with an authorisation certificate from the garden managers to recruit labourers. The *Sardars* used to get commission for labour recruitment which varied from Rs. 2 to Rs. 8 per person. The *Sardari* system was given sanction in the year 1870 (Xaxa,1997).

According to Christophers, & Bently (1911) between 1881 to 1911, around 1,50,000 persons migrated to the plantation of Duars from the districts of Chotanagpur and Santhal Parganas. According to Grunig (1911) between 1881 and 1891 the population of Darjeeling, Duars and Terai region increased by almost 50 per cent. In the year 1911, there was 191 gardens in Duars region covering an area of 90859 acres which increased to 132074 acres in 1931 (Das Gupta, 1992). While in the district of Darjeeling, there was 113 gardens which covered an area of 18,888 acres in the year 1874 (Hunter, 1876).

The housing condition of the labourers were in a very poor state, they lived with their families in the congested settlements known as labour colonies or coolie lines along the boundary lines of the plantations with hundreds of other labourers. They lived in dilapidated quarters made of bamboo with thatched roofs which did not have enough doors and windows for air ventilation and the unhygienic living atmosphere resulted in the outbreak of several diseases among the labourers (Ghosh, 2011).

The drainage and sanitation facilities in all the labour settlements were also in equally poor condition. The narrow mud drains in the congested settlements with filled garbage and stagnant water served as a breeding place for mosquitoes and germs (Ghosh, 2011).

The actual average monthly wage of a plantation labour in Duars was Rs.4-9 for a man, Rs. 3-7 for a woman and Rs. 1-5 for a child against the officially reported figures of Rs.6, Rs. 4-8 and Rs.2-8 (Ray, 2013).

Plantation, Health Services and the Popular Narratives

The plantation enclaves were the experimental sites for tropical medicine which is defined a western innovation in the field of medical knowledge that deals with health issues that occur uniquely, are more widespread, or are more difficult to control in tropical and subtropical regions. Plantations were ideal and favourable sites for experiments of tropical medicine as they were the segregated and isolated sites with minimum intervention from the Government. The colonial Government had an indirect control over the plantation enclaves where

Government administration and the state of affairs were largely absent and the planters enjoyed the autonomy of the day to day administration.

The relatively isolated enclaves provided the space to carry out experiments of western medicine and advancement in medical innovations. The segregated settlement was made to identify the origin and spread of a particular disease and epidemics (Bhattacharya, 2012). Arnold (1994) has pointed out that the colonizers were conscious about the importance of India as a medical laboratory even long before the Tropical medicine was established.

The region as a whole encompassed a peculiar duality. While Darjeeling was established as a sanatorium for British officials which became a favourite destination to attain good health and recover from illness. While at the same time, Duars located at the Darjeeling Himalayan foothills was regarded a hub of epidemic diseases in popular narratives. The Duars region is the foothills of Darjeeling Himalaya characterised by the long stretch of floodplains and marshy lands created by enormous river networks, dense forest and moist climate with heavy rainfall and humidity, and relatively high seasonal climatic variation. The geographical characteristics of the region were given as an argument that it favoured the origin and spread of epidemics like malaria. The narrative of Duars as an unhealthy region became popular especially after the death of Lady Canning, the first Vicereine of India who suffered from malaria during her visit to Duars in 1861 (Herbert, 2012). Even tourism advertisements advised crossing the Duars and Terai region as fast as possible to avoid its unhealthy miasma (Bhattacharya, 2012).

The racial understanding of immunity was theorised by the British officials and was promoted as a narrative among the population lived in plantations. In a number of official letters and reports, it has been stated that the Santhals, Oraons and Mundas who came from Chhotanagpur plateau have better immunity towards diseases like malaria than the Nepali people in the plantations of Duars. The notion of temporal adaptation of climate and immunity was prevalent in the medical understanding which meant that the labourers who migrated to plantations recently are more vulnerable to diseases like malaria than the labourers who settled in the plantations at least five to six years before.

> "Race appears to play but little part in influencing the prevalence of infection, though some races appear to be more profoundly affected by the disease than other. In several instances where we have examined the children of hill and plains people living on the same garden under similar conditions, but with the two races widely separated, we have found the rate of infection and of enlarged spleen to be practically the same in each case." (Christophers, & Bently, 1911. p. 23)

The labourers in plantations lived in dilapidated houses located at the boundary areas within the plantations known as *labour colonies*. The settlement morphology of labour colonies was segregated according to race and community of the labourers. There were separate colonies for each community. The British officials, native managers, and the native doctor babus lived in the centre of the gardens in designated bungalows and quarters according to social hierarchy. The native peasants lived in the villages adjacent to the plantations known as *Bastis*. Along with the racial and temporal understanding of the spread of diseases, the locational or spatial cause occurrence of disease has also existed. The spread of disease from the *Bastis* onto the plantation enclaves and the Bazaars were the common fields of interact.

Diseases and the Doctor Babus: The Nature of Health Care Services

> "There have been a good many cholera cases on this garden amongst the Coolies and a good many have died but it is dying out now." (a)
>
> "a slight dose of fever and like all these natives thought he was going to die at once- he refused to take any medicine and ran away." (b)
>
> "Last week the rain began again and brought a lot of sickness with it though it was much wanted…" (c)
>
> -Arthur Story (1891)

These quotes are from the letters of Arthur Story, a young medical graduate from Edinburgh, appointed as a medical officer in Duars written to his mother portrays the life and healthcare situation in plantations. The plantation enclaves were very prone to frequent occurrence of epidemic diseases

like Malaria, Phthisis, Cholera, Smallpox, Leprosy, Dysentery and Diarrhoea. Due to the high prevalence of diseases like Malaria, Diarrhoea and Phthisis the mortality rate among the plantation labourers was very high in Duars. While on the other hand, there was no access to medical care to the labourers and public health services was completely not existent (Ghosh, 2011).

Initially, in India, the colonial intervention in medical services was the formation of the *Royal Commission on the Sanitary of the Army in India* in 1859 and the targeted beneficiaries was primarily the British officials and the European army. Later on, a few initiatives were taken to improve the sanitary conditions in the municipal areas where mass native population lived to protect the British army, with the fear that various epidemics might spread from the native population among the European soldiers (Ray, 1998). The colonial government policies attempted to improve the sanitary situation as a part of public health services. The sanitary and public health improvement initiatives were only confined in the urban centres and were largely absent for the vast section in the rural settlements.

In the year 1881, Sir Ashley Eden, Governor of Bengal, proposed to set up a hospital in Darjeeling which can serve the planters and the British officials of Darjeeling as well as Terai and Duars region. Consequently, the Eden Sanatorium and Hospital were established in 1882 (Bhattacharya, 2012). Although in the Duars, the sanitary initiatives and institutionalised medical care for the plantation labourers remained absent from government discourse.

The health care situation in the plantation enclaves in Duars was such in a state that almost every year the diseases like fever, diarrhoea and phthisis caused the death of hundreds of peoples. The fact is all the diseases which became a mass killer in the tea plantations of these region was actually the diseases that originates from consequences of poverty, hunger and the poor state of housing, sanitation and drinking water (Ghosh, 2011).

The healthcare provision for the plantation labourers remained completely unaddressed for the next few decades after formation of plantations in Duars. The plantations managers used to give some common medicine enlisted in their *Garden Manual* to the labourers in an emergency case, which was also entirely based on the willingness of the managers.

With the introduction of Village Chaukidari Act (1870), the responsibility of collection and reporting of vital statistics like birth and death were given to the Chaukiders (watchman), who were very reluctant to the additional duty that they were assigned to (Ray, 1998). The collection of vital statistics in tea plantations was a matter of political interest of the planters. Several planters' organisations of Darjeeling, Terai and Duars protested strongly against the interruption of village Chaukidars within the tea estates which resulted in the exclusion of tea plantations from the act. Instead, the provision was made that the plantation managers will provide the vital statistics within the plantations to the local police station.

In 1900's few plantations of Duars had recruited residential native doctors popularly known as *Doctor Babus* who were mainly English-speaking Bengalis (Christopher and Bently, 1911). The doctor babus were supposed to live within the tea plantations to handle and report the medical situations in the plantations. The doctor babus did not have any medical degrees or professional trainings to handle daily cases. They were trained as compounders to work under the supervision of a qualified European doctor, who occasionally used to visit the plantation primarily to serve the British officials. These apprentice doctors with their limited knowledge and inadequate available resources served the medical needs of the labourers.

> "Arrangements for medical supervision are; as we shall see, hopelessly inadequate; and the doctor babus to whom the treatment of many hundreds or thousands of coolies on a garden is relegated are in the great majority of cases uniquified, ignorant and incompetent." (Christophers & Bently, 1911, p. 44)

They were not only confined with health-related works, but they also had to perform other duties like as clerks whenever asked or needed, because "it was taken for granted" that their service only as a whole-time doctor was not enough. The responsibility of

collecting and recording of the vital statistics like birth and death rate in plantation enclaves were given to the Doctor Babus who primarily served the interest of the planters. The doctor babus were directed not to report more deaths than births to maintain the 'image' of the plantations (Bhattacharya, 2012). The status of the Doctor Babus also appeared to be marginal within the colonial framework of administration and medical discourse within the plantation enclaves (Christopher and Bently, 1911).

The qualified European doctors in Northern Bengal were very few in number. Their work in plantation was of a supervisory nature, except in the case of the illness of Europeans and were not directly available for the labourers (Bhattacharya, 2012). A single European doctor was given a contract for several plantations and was responsible to look after the health care system in those plantations and at the same time, they were also engaged in private practice. In 1920, there were a total of 9 European medical officers for hundred-odd European plantations with thousands of workers (Bhattacharya, 2012). In 1938, for a total of 155 tea gardens of Duars region, there were 87 qualified resident doctors and in 1944 there were still 44 tea gardens in the Duars that had no qualified resident doctor (Rege, 1946). The western educated Bengali doctors were not ready to serve the tribal labourers who dominated plantations located in the remote parts of Duars and due to the Brahminical notions of ritual purity (Bhattacharya, 2012).

The labourers were dependent on the Ojhas, Kabirajes, Hakims and other traditional practitioners who had played significant role in addressing the health needs of the people in plantations

In 1906, a number of European planters in Duars suffered from black water fever and malaria and died which accounts for almost ten percent of the Europeans who lived in this region that time (Bhattacharya, 2012). In his report J.A. Milligan (1919) argued that this was the turning point when the planters realized that they needed expert medical advice to counter malaria and other fevers in to survive in this region. In 1897, Roland Ross discovered that the mosquitos are the discovery of malaria and own a Nobel Prize in 1902 for the same.

In 1898, the Colonial Office and the Royal Society acknowledged that the malarial mosquito was a removable barrier to the spread of 'civilization', the argument by Patrick Manson and Ronald Ross and formed a joint malaria commission (Watts, 1999). Consequently, two specialists S.R. Christophers and J.W. Stephens sent to West Africa to study the disease in the endemic regions. In this context, the planter's organisations petitioned the government for a thorough assessment of malaria and blackwater fever in the Duars.

> "Duars Planters' Association approached the Government of Eastern Bengal and Assam with a memorial, requesting that Government should procure the services of experts from the Liverpool School of Tropical Medicine to inquire into the nature and causes of blackwater and other fevers, and to suggest remedial measures." (Duars Committee Report, 1910, p. 2)

As a consequence, in the year 1907, the government of India appointed two medical experts Captain S.R. Christophers, M.B., I.M.S., and Dr. C.A. Bently, D.PH to investigate malaria and black water fever in Duars. They surveyed the plantations in Duars and submitted the detailed report named *Malaria in the Duars* to the colonial government in 1909.

The report critically examined the social and economic structure and the health care of the plantation enclaves in North Bengal. The report condemned the nature of healthcare infrastructure and services available for the labourers in the plantations and challenged the ideological framework of the plantation enclave in northern Bengal. It challenged the very foundations of the political economy of the plantations in northern Bengal and dismissed the Miasmatic theories of local disease and instead it declared that the wage of the workers was inadequate and the system of disbursing it through the *Sardari* system had kept the workers vulnerable, malnourished and indebted.

> "The explanation of the special intensity of malaria in the Duars is to be found in the fact that it is an example on a large Scale of the tropical aggregation of labour, a condition which plays an important role.... What largely determines existing conditions in the Duars is its labour system.... One of the chief causes leading to increased intensity of malaria in the Duars is the fact that at the commencement of their

> life in the district all new coolies are placed under the disadvantages imposed by the present labour system." (Christophers & Bently, 1911, p. 88)

Christophers and Bentley argued for greater direct intervention by the state to reinforce indentured labour system in plantations and aimed for a dilution of the planters' autonomy through increased government intervention and recommended for professionalization, regulation and registration of local medical practitioners to control disease within the plantations (Bhattacharya, 2012).

As the report criticised the available healthcare facilities for the labourers and blamed the socio-economic conditions of the labourers as the main cause of diseases and argued for direct state intervention over the planter's autonomy, the planter's organisations felt threatened.

State Interventions & the Planters Associations: Negotiations over Health Services

The Christophers-Bentley report was strongly contested by the planters' associations, the medical authorities as well as the administration as it exposed the realities. The planter's organisation raised their voice against the report.

The plantations of Duars was primarily established and owned by the Europeans. In 1878 the European planters established the 'Dooars Planters Association' (DPA) which included the big agency houses like Duncan Brothers and Octavius as well as the small European tea planters of Darjeeling, Terai and the Duars.

A few Bengali lawyers and clerks based in Jalpaiguri started a joint stock company named Jalpaiguri Tea Company in 1879 and Mogalkata tea estate, the first Indian owned tea estate was established in the same year. The Indian Tea Planters' Association (ITPA), the organisation of Indian planters came in existence in 1915. By 1930, there was 47 tea plantations owned by the Indian planters (Ghosh, 2011). Although rivalry existed among these groups over the issues of race, humiliation, and economic interest but all the planter's associations came together several times especially if there was a possibility of state interventions within the gardens.

The strong tea lobby exerted pressure on the government of India not to publish the Christophers and Bentley report and the DPA demanded another survey to reinvestigate judgements made in the previous report. In addition, it had also created a concern among the administration, if it was published, may also rise a protest from the nationalists and labourers (Bhattacharya, 2012).

In these circumstances, the government of India commissioned another inquiry committee chaired by F.J. Monahan, the deputy commissioner of Jalpaiguri, which is known as the Duars Committee. The committee members included medical officials and planters from Assam. The Duars Committee was supposed to inquire the 'assumptions' given in the Christophers-Bentley report and to undertake a 'reliable' survey in the plantations of Duars.

> "In view of opinions and conclusions expressed in this report (Christophers & Bently report), our Committee was appointed by the Government March 1910, to enquire into the sanitary and economic conditions under which tea-garden coolies live. Detailed instructions regarding the enquiry were communicated… in which it was made clear that the Committee was not expected to examine the scientific theory of the tropical aggregation of labour." (Duars Committee Report, 1910, p. 2)

The Duars Committee surveyed the plantations and published the report in 1910 within after few months of its formation. The report "Malaria in Duars" submitted by Christophers and Bentley was published one year later in 1911 after the publication of the Duars committee report. The Duars committee had collected the information only from the managers of the plantations and did not interviewe the labourers.

> "The Committee thought that no useful object would be served by recording formally the statements of coolies." (Duars Committee Report, 1910, p. 2)

The Duars Committee started with constructing an image of satisfactory and well-functioning health care services in the plantations of Duars which was condemned in the earlier report by Christophers and Bentley.

> "The resident doctor has to see all the sick that come to the dispensary, and prescribe, and, in nearly all cases, compound the medicines; he then has to go

> round the line, searching for sick persons who cannot or will not come to the dispensary. On some gardens the Doctor Babu is expected to go round daily, on others in two days, doing half the lines each day: he is accompanied by a coolie who carries a few useful medicines and dressings in a box….. Altogether 94 resident doctors are employed by 87 gardens with a population of 149,563 or one, roughly, to each 1,500 of population." (Report of the Duars Committe, 2010, p. 27)

One of the strongest arguments that Christophers & Bently made was about absence and dysfunctional health care in the tea plantations of Duars region. It pointed out that the access to health care for the labourers was completely absent.

> "A considerable proportion of the gardens have made large purchases of quinine in tabloid form for the purpose of instituting quinine prophylaxis among their coolies.... At present we know of no garden in which quinine prophylaxis has been carried out in such a manner as to reach the portion of the population whom it is most desirable to reach, and among whom its effects are likely to produce the greatest benefit." (Christophers & Bently, 1911, p. 81)

Again, the Duars committee rejected this argument about the access to health services and said-

> "Of the gardens that issue quinine, some issue it daily, some twice weekly, and some on alternate days.... The doses are usually administered to the women at the time of leaf-weighing, and to men when they are out at work. The Doctor Babu is supposed to issue a prophylactic dose to all those in the lines who have not gone to work, including the children.... On many gardens bottles of tabloids are given to sardars for issue to their pattis; and in some gardens selected men help the Doctor Babu in issuing tabloids. BURROUGHS and WELLCOME'S tabloids are mostly used. (Duars Committee Report, 1910, p. 36)

The Duars committee report contradicted the Christophers & Bently report in every possible way from the socio-economic conditions of the labourers to the access, from health care services to administration. The report attempted to portray an 'cheerful' image of the labourers who possessed 'good physique' to justify the argument that the labourers were in satisfactory economic and living conditions.

> "we need only say here that we think that no one visiting the gardens for the first time could fail to be struck by the good physique and cheerful bearing of the coolies, especially those from Chota Nagpur and the Santhal Parganas." (Duars Committee Report, 1910, p. 25)

The Duars Committee report categorically rejected the arguments given by Christophers and Bentley on the economic structure of plantations and living conditions of the labourers as social cause of the diseases in plantations. Instead, they portrayed a decent image of plantation enclaves in Duars and argued that the socio-economic conditions of the labourers were in a healthy state as they possessed 'good physique' and not involved into beggary on the streets.

> "if the general condition of the coolies were one of physiological misery, as depicted in the Second report (Christophers & Bently report on Black Water Fever), numbers of them would inevitably be found wandering as beggars in the district, and many would drift into the headquarter stations, and seek relief at the dispensaries." (Duars Committee Report, 1910, P. 25)

The fact that the report ignored, is it was impossible for the landless labourers to move out from the plantation enclaves to find other means of livelihood as they were under the subordination agreement of *Sardari* system.

The picture that the Duars committee was trying to build and put forward, that the plantations of Duars were well administered with excellent health facilities and labour friendly which could maintain the image of the British planters as well as colonial state. In concluding remarks, the Duars Committee strongly argued against of legislation which would bind the labourer in a penal contract and simultaneously make the management responsible for the health care of its labourers, the proposal made in Christophers & Bently report. (Bhattacharya, 2012).

The negotiations on state interventions over health services among the state and various planters' associations sustained as it was a never-ending process. Later on, the Bengal Medical Registration Act, 1914 was passed to standardise the medical education in Bengal in the Western model, which was distinct from the traditional methods pursued by the indigenous practitioners and healers. This act legitimized the superiority of the 'qualified doctors'

who passed from a government-endorsed medical college and also had restricted the use of the prefix 'Doctor' among others. In addition, the doctors who studied medicine in several other independent medical institutions became ineligible to apply for positions in government or semi-government institutions and also restricted those 'unqualified doctors' from doing private practice (Ray, 1998). Again, the protest from several planters' organisations resulted in the exemption in the implementation of the act in the plantation enclaves located in North Bengal.

Similarly, in 1923 when government proposed the Bengal Tea Gardens Public Health Bill, and in the year 1928 government initiated appoint a committee to investigate the locations, causes and spread of diseases, and to do a survey for necessary sanitary reforms within the plantation enclaves, both the Duars Planters Association (DPA) and the Indian Tea Planters' Association (ITPA) opposed and argued that the initiatives are unnecessary as there was no public demand for the same. Consequently, the government withdrawal the idea of appointing the committee.

Conclusion

The British planters created the plantation as isolated enclaves within the peasant society of Duars and ensured to have limited direct intervention from the colonial government. Consequently, the native doctor babus who did not have any medical degree or background were recruited to bypass the acts and laws and to address the medical needs of the labourers. The western intervention in medical science was being experimented in the plantations and these doctor babus played an important role on the ground.

The construction of the image of Duars as an unhealthy region and a hub of disease was a part of the conscious colonial ideological framework. Life and society in plantation enclaves became the abode of poverty, class struggle and exploitation where the access to public health and other basic amenities for the population dependent on plantations were being neglected. The social and economic causes of the disease like poverty, housing condition, hygiene and sanitation were looked over in understanding the occurrence and spread of epidemics. In public health discourse, it is a well-known fact that most of the diseases like Malaria, Cholera, Phthisis and diarrhoea which had turned into epidemics killed hundreds of lives in plantations was due to poverty, malnutrition and the poor state of housing, sanitation and hygiene in the labour colonies. The planters had secured their hegemony over the government interventions to overlook the social cause of diseases. The planters and the colonial authority by constructing the narratives like 'locational factors', 'unhealthy region' and 'racial and temporal immunity' and denied to acknowledge the social causes of diseases which would make the management responsible for the health care of its labourers. These colonial understanding of occurrence and spread of epidemics helped the planters to get away from their responsibilities of providing public health infrastructure and services for labour welfare. Although the planters were very concerned about the relationship of health and labour productivity, still when it comes to the public health provisions in plantation enclaves, the entire system was dependent on the apprentice doctor babus.

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(a) Letter of Arthur Story to his mother, from Bhogotpore Tea Estate, 9 May 1891. (b) Letter of Arthur Story to his mother from Bhogotpore Tea Estate, Bengal, 20 Oct. 1891, Mss Photo Eur 275, p. 305 of typescript. (c) Letter of Arthur Story to his mother, from Bhogotpore Tea Estate, 20 August 1891, Mss Photo Eur 275 (APAC). Accessed from Bhattacharya. Nandita. (2012). *Contagion and Enclaves: Tropical Medicine in Colonial India.* Liverpool: Liverpool University Press.

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Scope of Convergence of Self-Help Group Programmes for Advancement of Rural Livelihood in India

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Abstract

As defined in Sustainable Development Goal released by United Nations Development Programme, the first goal is "No Poverty" which implies to eradicate poverty from it's in all its forms which can be achieved through "Global Partnership for Sustainable Development". This point refers to convergence or integration of different stakeholders to come together for the betterment of the implementation of the Sustainable Development Goal. In India various rural development programmes are functional from very early ages of its independence and even before independence. in India Several strategies have been framed aiming to improve the lives of rural population but the convergence among the activities of the programmes always remained one of the unmet goals for all of them. Since last three decades Self-Help Groups have emerged as a major institution of rural development in India. To promote Self-Help Groups as informal institutions various agencies such as Government, Semi-Government, Community Based Organisations (CBOs), Non-Government Organisations (NGOs) and others are working as stakeholders. All of them have certain philosophy, ideology, principles, rules and regulations which need enough level of convergence for the holistic development. Whereas, it is required at all levels and remain a distant mirage which couldn't be achieved till date.

This paper aims to understand the scope and role of convergence among various types of Self-Help Groups for the betterment of overall rural development in India; also, the study aims at major facts which act as bottlenecks towards convergence. The study has been done on secondary data gathered from various authentic sources.

Keywords: *Self-Help Groups, Poverty Alleviation, Convergence, Rural Livelihood.*

Introduction

India is one of the fastest growing nations in the world. The development of a country is determined through various parameters of which one of the most important parameters is development of its citizens' quality of life. In India more than two-third of its population lives in the rural areas; also, the majority of the poor population of India lives in the rural areas of the country. It also true that India is battling with poverty from long back. The issue of poverty remained one of the biggest thrust areas for the planning commission in the post-colonial era. Alleviation of poverty and structured rural development programmes remained in the core of India's development strategy from way back 1947. Due to the present scenario it is widely accepted that the major population vulnerable to the poverty are women, children and elderly persons. In the current situation another global quandary is empowering the rural women of the developing countries. To counter the said problem various measures have been taken by the Government of India from inception. Currently majority of the poverty alleviation programmes run by the government and Non-Government Organisations are based on microfinance led Self-Help Group model. These multiplicity of programmes leads to a very pragmatic problem of resource loss and confusion between the

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programmes as for majority of the programmes the target group remains the same. At this very point the need of convergence starts to creep up for a holistic development of the rural population.

Background of the Study

One of the Brobdingnagian obstacles for Government of India was the credit system of the rural areas of India as the need of credit in rural areas has been mainly consummated by the unorganized money lenders. To counter this situation institutional credit was believed to be the golden formula for poverty eradication and production enhancer. The nationalisation of the banks in the year 1969 and 1980 also setting up of Regional Rural Banks in the year 1975 acted towards meeting up the need of banking facilities for the rural poor. Many government programmes were launched at this outset yet failed to incur the desired results. The major reason behind the failure was due to it did not reached the desired poor people instead of that the regional rural banks served more to the comparatively rich people (Basu and Srivastava, 2004). The formal institutionalised banks were more concerned with the more powerful members of the society where the need of finance system for the smaller players remained a thrust. This thrust area could have been only addressed by micro finance system. The lower income group people needed a comprehensive solution for their credit need as the banking system was not at all pro poor at that time. According to Sinha (1998) "Microcredit refers to small loans, whereas microfinance is appropriate where Non-Governmental Organisations (NGOs) and Micro Finance Institutions (MFIs) supplement the loans with other financial services (savings, insurance, etc)".

The Community Development Programme was launched in 1952, which was unable to bring expected change in improving the conditions of rural masses. The apparent failure of the CDP was the main reason for the evolution of the Integrated Rural Development Programme (IRDP) in 1980 followed by a number of programmes Rural Landless Employment Guarantee Programme (RLEGP), Minimum Needs Programme (MNP), and Self-Employment for Educated Unemployed Youth (SEEUY), Development of Women and Children in Rural Areas (DWCRA), etc. Both CDP and IRDP was closely concerned on poverty alleviation and socio-economic transformation of village life; but the mode of operation was based on people's participation individually. Self-Help Group dynamics was not present in those programmes. Alongside these programmes the NABARD in 1992 launched a scheme through Self-Help Groups and linking the SHGs to the bank. The need of converging all these programmes were felt by the government as there were scope of holistic development.

In the year 1999 Swarna Jayanti Gram Swarozgar Yojana was launched by subsuming previous six programmes. The merge up of all these programmes was due to the need of convergence and holistic development for the rural poor. The programme was aimed to create women Self-Help Groups and institutionalise the groups through microcredit system. Later also the programme has been remodelled to form National Rural Livelihood Mission (2011) thereby plugging the shortfalls of SGSY programme. This scheme was launched in 2011 with a budget of $ 5.1 billion and is one of the flagship programmes of Ministry of Rural Development. This is one of the world's single largest initiatives to ameliorate the livelihood of poor.

Also, in India the growth of various Non-Governmental Organisations and Community Based Organisations took place from way back, even sometimes before independence. The term NGO became popular in India from 1980s. The NGOs and CBOs also took Rural Development as their primary goal. After that the NGOs also created numerous SHGs for upliftment of rural livelihood.

According to report published by Planning Commission (2011), alleviation of poverty was the biggest challenge before the Government after independence; for that reason Indian Government had launched numerous poverty alleviation programmes throughout the post-independence era such as Integrated Rural Development Programme (IRDP) followed by National Rural Landless Employment Programme, Rural Landless Employment Guarantee

Programmes (RLEGP), Jawahar Rozgar Yojana/ Jawahar Gram Samriddhi Yojana, Food for Work Programme, Sampoorna Gramin Rozgar Yojana (SGRY), Employment Assurance Scheme, Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Indira Awaas Yojana (IAY), Pradhan Mantri Awaas Yojana (PMAY), Swarna Jayanti Gram Swarozgar Yojana (SGSY), National Rural Livelihood Mission (NRLM) etc.

In 1988-89, NABARD and Asia Pacific Rural and Agricultural Credit Association (APRACA) surveyed in 11 states of India the functioning of SHGs in microfinance activities and the collaboration feasibility with the formal financial institutions. The research projects divulged result about the SHG bank linkage as a part of microfinance programme and NABARD initiated a pilot project naming the SHG-bank linkage project in 1992 (NABARD, 1991; Satish, 2005).

National Rural Livelihood Mission was launched in 2011 with a budget of $5.1 billion and is one of the flagship programmes of Ministry of Rural Development. This is one of the world's largest initiatives to improve the livelihood of poor. This programme is supported by World Bank with a credit of $1 Billion. The scheme was succeeded by Deendayal Antyodaya Yojana on 25 September 2015 (Mohan, 2017).

Stephen and Seilan (2005) have pointed out that NGOs play a vital part in microfinance through monthly saving of SHG members. The guidance and the motivation pushed by the NGOs acts as a pivotal factor towards formation of an SHG and making the group members save regularly and deposit it to the bank.

According to Sustainable Development Goal released by UNDP, the final Goal is to strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development. This point refers to the convergence of different stakeholders to come together for the betterment of the society towards a sustainable future.

Poverty alleviation cannot be accomplished by the government alone. There are many areas where government needs collaboration and cooperation from NGOs and CBOs particularly in creating opportunity facilitating empowerment and providing social security to the poor. The convergent mode of operation by government to work through NGOs in development programme is also a pushful factor in increasing the role of NGOs to fight against poverty. (Ghosh, 2001)

Objectives of the Study

1. To know about the present status of SHGs under Deendayal Antyodaya Yojana- National Rural Livelihoods Mission (DAY-NRLM)
2. To assess the scope of convergence between various Self-Help Group programmes in India with Deendayal Antyodaya Yojana- National Rural Livelihoods Mission (DAY-NRLM)

Methodology

The study has been done purely on secondary data. The secondary data has been collected from various authentic sources such as research papers, government reports, government database etc. The secondary records and database were examined closely to review the scope and status convergence of Self-Help Groups.

Results and Discussion

Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM) is the apex rural development programme dealing with SHGs and micro-finance in India at the moment. The programme runs in Self-Help Group model aiming at poverty alleviation and women empowerment. The groups are formed with one female member chosen from each household as they will be representing the household. Another major component of the programme is financial inclusion of its members and to make them bankable. A total of 5033 number of blocks are being covered under the programme at the moment. 349397 number of villages in which intensive implementation has started in the programme. According to the project report 227127.2 lakh rupees of Revolving Fund disbursed to SHGs.

The programme targeted to incorporate the SHGs which were created at the time of SGSY. In terms

of total members involved in the programme Andhra Pradesh leads way followed by Bihar, West Bengal and Telangana. Also, Andhra Pradesh tops in the segment of number of groups operational followed by West Bengal and Bihar.

Total Groups and Members under Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM)

State Name	*SHGs Type*				*Total Members*
	New	*Revived*	*Pre-NRLM*	*Sub Total*	
Andhra Pradesh	8393	0	694905	703298	7159241
Assam	71851	100002	29858	201711	2124139
Bihar	499222	0	48109	547331	6382866
Chhattisgarh	92097	27482	16264	135843	1443390
Gujarat	88466	39362	106345	234173	2418459
Jharkhand	100126	6992	13234	120352	1254086
Karnataka	18911	4212	236597	259720	3279359
Kerala	71982	580	166113	238675	3370209
Madhya Pradesh	190783	20267	16823	227873	2523055
Maharashtra	189083	41844	113336	344263	3712679
Odisha	104452	38916	200900	344268	3770539
Rajasthan	74185	2	4916	79103	900228
Tamil Nadu	86816	12505	202671	301992	3559593
Telangana	105925	0	320345	426270	4446090
Uttar Pradesh	188224	11235	35005	234464	2515246
West Bengal	308025	42920	288418	639363	6289803
Haryana	18643	882	5092	24617	263897
Himachal Pradesh	10580	920	3259	14759	115450
Jammu and Kashmir	28710	7	2	28719	256408
Punjab	7456	139	18	7613	81621
Uttarakhand	14405	2560	2574	19539	154741
Arunachal Pradesh	1567	24	85	1676	14714
Manipur	1617	21	6	1644	18759
Meghalaya	6982	916	74	7972	82036
Mizoram	3794	54	98	3946	36432
Nagaland	3083	228	1084	4395	39609
Sikkim	1322	260	170	1752	17064
Tripura	5757	249	58	6064	57641
Andaman and Nicobar	177	6	4	187	1883
Dadra and Nagar Haveli	27	0	0	27	237
Daman and Diu	93	0	0	93	972
Goa	151	1032	8	1191	14270
Lakshadweep	148	0	2	150	1427
Puducherry	1152	467	933	2552	33366
Grand Total	2304205	354084	2507306	5165595	56339509

Source: https://nrlm.gov.in

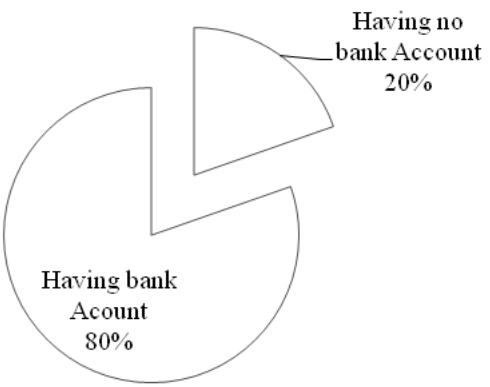

Fig 1 : Status of Bank Linkage NRLM

Source: https://nrlm.gov.in

Another major aspect of the programme is Bank linkage almost 80% of the present groups are linked with formal banking institutions. Telangana is leading in this segment with more than 99% of groups are linked with the banks and Rajasthan takes the last place with almost 70% of groups having no bank accounts. In West Bengal more than 80% of its SHGs have bank accounts and is at per with the national rankings.

From the above two indicators it can be stated that the programme is moving towards the right direction though no qualitative assessment of the programme has been made in the study.

Now by looking at the second objective it is evident that there are various models if Self-Help Group movements presently run in India. Various agencies such as Government, Semi-Government, Community Based Organisations (CBOs), Non-Government Organisations (NGOs) and others are working as stakeholders for promotion of Self-Help Groups as informal institutions. All of them have certain philosophy, ideology, principles, rules and regulations which need enough level of convergence for the holistic development. There are various projects run by NGOs with almost the same goal and sometimes with same beneficiaries in very small scale throughout India. The micro-finance institutes run the SHGs for credit lending purpose to promote livelihood in India. Bhat (2002) opined that the greatest of all the deficiencies of government were the lack of emotional attachment between the training institution. There were a large number of small NGOs spread across many states which were mobilizing and organizing SHGs with little or even no funds. Henceforth, the question is convergence as numerous of same portfolio programmes running with same objectives and goals.

The non-convergence of such sustainable livelihood promoting programmes leading to resource loss. Also, in many cases some beneficiaries enjoy double or triple benefit by enrolling their selves with multiple programmes. This huge resource loss ultimately leads to failure of both programmes. The resource loss may happen in terms of financial resources, human resources and also with infrastructure resources. With proper management of those resources more needy or poorest of the poor groups could have been reached out. Still now the situation of convergence between Government programmes and Non-Government agents has remained a distant dream.

In India government emphasised the SHG model not only for livelihood development through microfinance also some programmes are only aimed to provide sensitisation through the Self-Help Group model. There are various other programmes establishing SHGs for livelihood development. The core value remains the same as the groups get a revolving fund at the inception period for betterment of their livelihood. According to Common Guidelines for Watershed Development Projects there is scope of SHG creation by the Watershed Committee. Also, there is scope of SHG creation in various other government programmes such as Joint Forest Management, SABLA etc. In Joint Forest Management programme, the livelihood generation through sales of Non-Timber Forest Products (NTFP) is being done in SHG model. These various types of Self-Help Groups up thrust another field of integration. The integration between these government programmes could lead to more holistic livelihood development of rural poor. The sensitisation programmes which run through SHG model may be collaborated with each other's so that the members do not feel that they have been involved in too many groups created by various agencies.

Conclusion

Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM) has done a prodigious job on converging the previously developed Self-Help Groups made through SGSY but it is unable to converge with the other SHGs prepared by other Government and Non-Government Agents with the same goal. The need of the integration between these programmes aiming the same people resulting towards a single member being involved with more than one group, which is eventually exploiting the resources.

In the convergence module of NRLM, it states that "the learning from the rich grassroots experience and demonstrations of NGOs and other CBOs has influenced MoRD and the state departments to formulate new strategies and fine tune existing strategies for improving livelihoods and reducing poverty. The partnerships with them would be critical and within the ambit of the national framework for partnership with NGOs and other CSOs, guided by NRLM core beliefs and values."

The proper convergence may only come if there is any governing body monitoring all the non-government players at the development sector so that a constructive Public Private Partnership (PPP) model workflow generates for the betterment of the needy poor rural women for a better livelihood option. Also, there is need of integration between various government built SHGs which are working for betterment of rural livelihood in many other models. These convergences will also lead towards optimum resource utilisation and fluid transfer of knowledge and technology towards the intended group of people.

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Development through Self Help Groups – A Study of Some Tribal Villages from Ausgram – II Block, East Burdwan District, West Bengal

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Abstract

Development through SHG (Self Help Group) formation has now become very popular in rural India particularly in tribal areas. SHG is a group with common goal of activities. Tribal women of Ausgram – II block are now adopting themselves with this situation. In this paper the impact of SHG formation over tribal livelihood pattern along with some socio-economic parameters have been assessed by some simple cartographic and statistical techniques like – Gini concentration ratio. Extensive field survey was also done to understand the present position. After the analysis of each parameters we find that SHG projects have positive impact on income generation, savings, women empowerment, health consciousness, educational improvement and improvement of other amenities of modern life.

Keywords : *Self Help Group, Tribes, Women Empowerment, Gini co-efficient, Savings.*

Introduction

Development is the process of upliftment. Tribes are the social groups with a social area, dialect and cultural homogeneity. For tribal development Self Help Group (SHG) has a vital role in a country like India. Self Help Group (SHG) is a group of individuals who come together and form an association to achieve a common goal (Singh, Katar, 1986). Generally the members are from the same village and community. SHGs are small in size like – 10 to 15 members who are homogeneous in nature. For proper development of a nation, there need to develop the women at first. SHG is an organized structure for poor families or, women to disburse micro credit to them for their self-dependency. These programmes empowering the rural women financially, socially and politically (Sarkar, Pinaki, 2011). Self Help Groups are important to check exploitation, create confidence for economic self-reliance of rural poor women. SHGs establish equality of status of women in democratic, economic, social and cultural spheres of life (Sharma, Dr. Sanjeev Kumar, 2005). SHG helps man to understand their problems properly, to solve their problems, to form a collective fund, to conserve village environment, to take money lend at the time of crisis, to collect immediate fund support to sustain livelihood, to understand various Govt. schemes & facilities to make people mobilize with bank & post offices, to do village common works jointly, to make the mentality of co-operation to each other. Women's empowerment is a dynamic process which enhances women's ability to change the ideologies of subordination. It helps them to gain more access and control over resources and decision making to get autonomy. It also gives them self-respect and dignity in society (Bhasin, Kamla, 2016). Empowerment is a political process which gives power to women. Now a days rural women are facing some challenges like – poor education, digital illiteracy, poor access to technologies, poor livelihood opportunities, social negligence, lack of skills, lack of convergence between various Govt. programmes, climatic vulnerability etc. (Srivastava, Rakesh, 2018). All such problems could be solved by self-help group formation. Then they will also get economic empowerment.

Rationale behind the selection of the study area

For this study Ausgram – II block of East Burdwan district has been selected. Investigation has been done in some santal tribal villages of Bhalki

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Panchayet area. It is a tribal dominated block. Bhalki Panchayet has a significant amount of poor tribal population. Besides the study area is characterized by forest cover, lateritic & red soil, water crisis during summer, drought condition, lower agricultural productivity, lack of irrigation facilities, infertility of soil, soil erosion, lack of cultural and educational development among tribals, lack of women empowerment etc. So to improve living condition of tribal people through SHG formation has now become essential specially for tribal women. It will also give them social-political upliftment along with economic empowerment. Thus the study area has been selected for this work.

Objectives of the study

1. To get an idea about the SHG pattern of the tribal villages.
2. To know the impact of SHG over the tribal livelihood pattern.
3. To study the impact of SHG over income and savings.
4. To investigate the nature of women empowerment through SHG formation in the region.
5. To evaluate the impact of SHG on infrastructural and social development.
6. To suggest some further recommendations for the development of tribal life through SHG.

Database & methodology

The present paper in mainly based on primary data collected through household survey in some santal villages. Besides some secondary data, books, journals, maps, magazines, etc. have been also consulted to prepare this paper. Various simple statistical calculations and techniques like – table, charts, percentage analysis etc. have been applied. Some cartographic techniques have been also used to present socio-economic impacts.

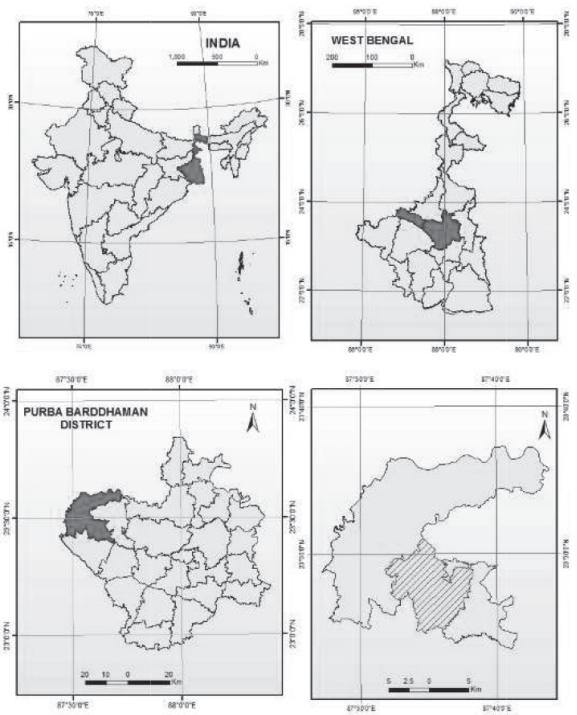

Fig – 1: Location of the Study Area

Location of the study area & about it.

Ausgram – II (C.D. Block) is an administrative division of Barddhaman Sadar North subdivision. It is located approximately within the graticules of $87^0 27' 30''$ E to $87^0 44' 00''$ E longitudes and $23^0 24' 00''$ N to $23^0 37' 30''$ N latitudes. There are 106 mouzas which are located in seven panchayets like – Eral, Bhalki, Debsala, Amarpur, Ramnagar and Bedia. This block is the part of 'Rarh' region of Bengal. River Kunur bifurcates this block at middle portion. Soil of this block is mainly laterite, red and alluvial type. Some where there is sal forest. Land productivity is moderate type. The studying Panchayet – Bhalki is situated in the southern part of this block with similar geographic characteristics as like the whole block area. There are about twenty five santal tribal villages. The condition of such villages were not so suitable for living because of their remoteness and inaccessible forest based location. Now almost in every tribal village SHGs are running successfully. Here an attempt have been made to investigate the nature and impact of SHGs over the tribal life.

SHG profile of the Block and tribal villages

Self Help Group programmes in this block was started in 1999 under SGSY (Swarna Jayanti Gram Swarojgar Yojana) scheme and it was sustained up to 2012. This scheme was for both male and female. From 2013 SGSY scheme was converted in to NRLM (National Rural Livelihood Mission) scheme which is still now operating for the self-dependency of women only. It lends money to the rural poor women through nearby nationalized banks. Each group has 10 – 12 members including group leader assistant group leader and accountant. According to Block Women Development Office, there are total 980 SHGs in this block. Bhalki Panchayet has 201 (20.51%), Debsala has 127 (12.96%), Amarpur has 123 (12.55%), Eral has 95 (9.69%), Ramnagar has 154 (15.71%), Kota has 136 (13.88%) and Bhedia Panchayet has 144 (14.69%) SHGs. Important activities of all such groups includes agricultural activities, animal rearing, fishery, weaving, (Kantha Stitch), tailoring, plate making by sal leaves, paddy & rice purchasing, midday meal cooking etc. DRDC (District Rural Development Cell) sometimes arranges need based training for SHG women. The possible cause behind the higher concentration of SHGs in Bhalki panchayet are maximum tribal population, tribal villages and consciousness campaigning from administration and lowest percentage of SHGs in Eral Panchayet is due to political disturbances.

SHG profile of the Tribal villages of Bhalki Panchayet area

There are about twenty five santal tribal villages in Bhalki panchayet. Total number of tribal families are 1326 and there are about 97 SHGs. Out of 1326 families, 1006 families are engaged with SHG activities. It is 75.87% of the total families. Dombandi Adibasipara, Babuisol Adibasipara and Sapmaradanga have 100% family involvement relating with SHG. Above 80% involvement villages are – Dhirupara, Sibakshadanga, Garherdanga, Jamtara Adibasipara, Buribandh, Kuchidanga, Sahebdanga, and Fakirdanga. These eight villages i.e. 32% villages have better position in case of SHG participation of women. Basically these are larger villages, near to panchayet office, with good literacy rate, having good communication system, seriousness, and consciousness of women. Worst conditions are found in Dhondanga (40%), Bathanpara (44%), Ramnagar Adibasipara (50%), Keshabdanga (50%) and in Shyampur Adibasipara (55.38%) in case of SHG involvement. Their inaccessibility remoteness and lack of consciousness of women are the main causes behind this situation.

Impacts of SHGs over tribal development

Tribal development is the process of change plus growth of tribal people in terms of life style, living condition and infrastructure. Through SHG formation some sort of changes have been created among the tribal people.

1. Impact on Income Level

The income disparity among beneficiary and non-beneficiary is calculated by Gini co-efficient. It measures inequality of a distribution. It is shown by Lorenz Curve. To show income disparity, 250 families from beneficiary and 250 families non-beneficiary families have been randomly selected for interview.

Table – 1: Income analysis of non-beneficiary families (n = 250)

Income level per month Rs. (X)	*Mid value of income*	*No. of families (Y)*	*Percentage of families*	*Cumulative Percentage of families (yi)*	*Percentage of income*	*Cumulative Percentage of income (xi)*	*Xi . yi+1*	*Xi+1 . yi*
2000 – 3000	2500	50	20	20	5.21	5.21	260.5	250.0
3000 – 4000	3500	75	30	50	7.29	12.5	925.0	1093.0
4000 – 5000	4500	60	24	74	9.36	21.86	1964.4	2465.68
5000 – 6000	5500	40	16	90	11.46	33.32	3132.08	4217.4
6000 – 7000	6500	10	4	94	13.54	46.86	4554.79	5874.06
7000 – 8000	7500	8	3.2	97.2	15.63	62.49	6199.01	7795.44
8000 – 9000	8500	5	2	99.2	17.71	80.2	8020.0	9920.0
9000 – 10000	9500	2	0.8	100.0	19.79	100.0		
Total	48000	250	100		100		25058.78	31615.58

(Field survey)

Gini Co-efficient (G) for Non-Beneficiary SHG families

$$G = \frac{1}{100 \times 100} \left| (\sum_{i=1}^{n} xi \ .\ yi + 1) - (\sum_{i=1}^{n} xi + 1 \ .\ yi) \right|$$

$$= \frac{1}{100 \times 100} \left| 25058.78 - 31615.58 \right|$$

$$= \frac{6556.8}{10000}$$

$$= 0.66$$

Gini co-efficient ranges normally between 1.00 & 0. '0' means absolute redistribution or uniform distribution. '1' means high / absolute concentration. '0.5' means moderate concentration. 'G' value 0.66 indicates considerable inequality in case of income distribution among non SHG groups.

Table – 2: Income analysis for beneficiary families *(n = 250)*

Income level per month Rs. (X)	*Mid value of income*	*Percent-age of income*	*No. of families (y)*	*Percent-age of families*	*Cumula-tive Per-centage of families (yi)*	*Cumulative Percentage of income (xi)*	*Xi . yi+1*	*Xi+1 . yi*
2000 – 3000	2500	5.21	10	4	4	5.21	56.27	50
3000 – 4000	3500	7.29	17	6.8	10.8	12.5	310	236.09
4000 – 5000	4500	9.36	35	14	24.8	21.86	935.61	826.34
5000 – 6000	5500	11.46	45	18	42.8	33.32	2225.78	2005.61
6000 – 7000	6500	13.54	60	24	66.8	46.86	4086.19	4174.33
7000 – 8000	7500	15.63	51	20.4	87.2	62.49	5999.04	6993.44
8000 – 9000	8500	17.71	22	8.8	96	80.2	8020.0	9600
9000 – 10000	9500	19.79	10	4	100.0	100.0		
Total	48000	100	250	100			21632.89	23885.81

(Field survey)

Gini Co-efficient (G) for Beneficiary SHG families

$$G = \frac{1}{100 \times 100} \left| (\sum_{i=1}^{n} xi \ .\ \text{yi} + 1) - (\sum_{i=1}^{n} xi + 1 \ .\ \text{yi}) \right|$$

$$= \frac{1}{100 \times 100} \left| 21632.89 - 23885.81 \right|$$

$$= \frac{2252.92}{10000} = 0.23$$

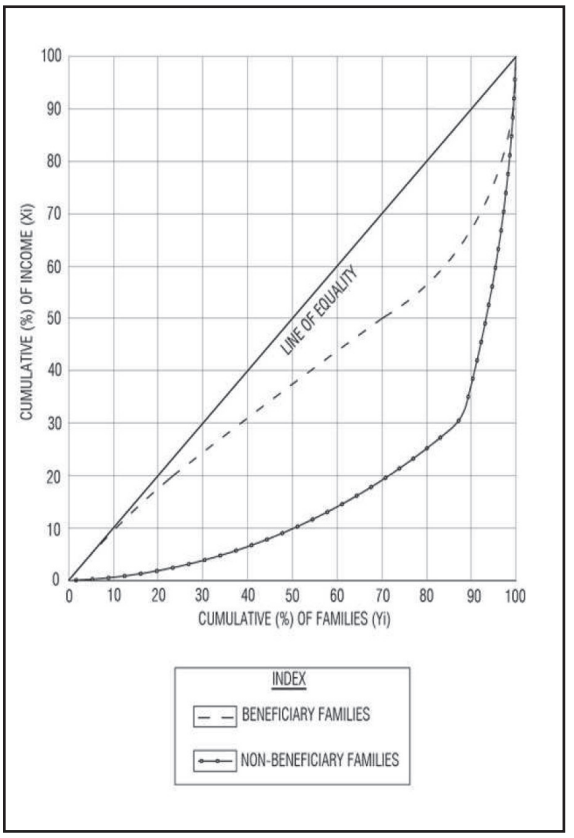

Fig 2: Income inequality among beneficiary and non beneficiary SHG families

Gini concentration ratio for beneficiary for SHG families are lower. It indicates that the income is evenly distributed in beneficiary families compared to non-beneficiary families. So it is said that beneficiary families are more or less homogeneous in income. We can say that the income disparity among beneficiary families have been reduced due to SHG formation. From income level point of view, it is stated that about 75% families of non-beneficiary group have an average income between Rs. 2500 – 4500. But in case of beneficiary groups about 75% families have an average income between Rs. 5500 – 9500. The scenario has been changed after SHG formation. After SHG formation maximum families enjoy more income level. Now only 25% families are found in Rs. 2500 – 4500 income level.

2. Impact on savings

SHG has a significant impact on the income, expenditure and savings. Generally it has positive impact on economic conditions of participants (Sain & Mondal, 2017). To investigate nature of savings, 250 SHG families have been selected for interview.

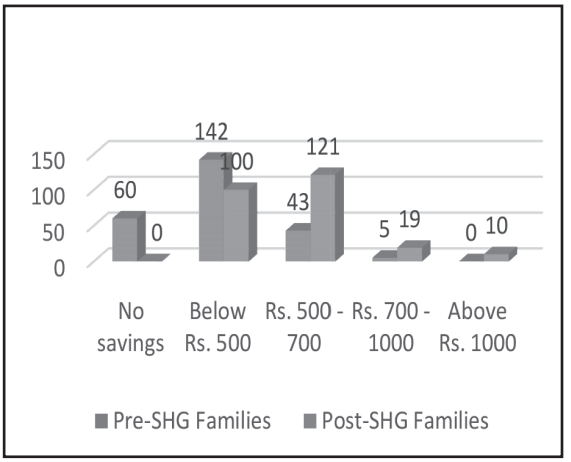

Fig 3 : Impact of SHG Program

In case of monthly savings SHG project have greater influence. Before SHG projects 24% (60) families had no savings but now this picture has been vanished. Now every families have savings. Previously 56.8% (142) families had below Rs. 500 savings per month. But now 48.4% (121) families nearly half of the total families have total Rs. 500 -700 per month savings which was 17.2% (43) at pre SHG Stage. At pre SHG stage no families have above Rs. 10000 per month savings which is now 4% (10) of the total families. After SHG formation about 88% (100 + 121 = 221) families have savings up to Rs. 700 per month. It is a good mark of income improvement though SHG programmes.

3. Impact on Education

Number of school going children has been increased. It is due to economic improvement and consciousness of the SHG women to educate their child specially the girl child. Education has also increased the empowerment of the SHG members.

Table – 3: Situation of Education (total enrollment of students)

Level of Education	*Before Project*		*Total*	*After Project*		*Total*
	Boys	*Girls*		*Boys*	*Girls*	
Pre primary	44	37	81 (14.04)	111	103	214 (18.01)
Primary	157	139	296 (51.30)	323	279	602 (50.67)
High & Higher secondary	102	85	187 (32.41)	128	195	323 (27.19)
Higher Education	10	03	13 (2.25)	30	19	49 (4.12)
total	313 (54.25)	264 (45.75)	577 (100)	592 (49.83)	596 (50.17)	1188 (100)

(Field Survey)

Overall educational enrollment have been increased to about double in amount. After SHG programme, the number of girl students have been increased 129.4% in case of high & higher secondary level. Both boys and girls enrollment in higher education has been also increased up to about four times of the amount. In pre-primary the rate of enrollment was 14.04% which is now increased up to 18.01% after SHG formation. After SHG formation, child labour has been reduced as income and employment level have been increased. Thus the education situation has been improved.

4. Impact on health care facilities and food habit

To evaluate the health care facilities some components have been selected and interviewed among 250 families. Then percentage of each components have been worked out with respect to total 250 families.

Table – 4: Health care facilities and food habit (n = 250)

Components	*Before project*	*After project*
Going to doctor	70 (28%)	240 (96%)
Go to magical man (Ojha)	170 (68%)	33 (1.2%)
Use latrine	33 (13.2%)	184 (73.6%)
Taking safe drinking water	115 (46%)	233 (93.2%)
Taking two meals only	152 (60.8%)	NIL
Taking two meals & one tiffin	85 (34%)	37 (14.8%)
Taking two meals & two tiffin daily	13 (5.2%)	213 (85.2%)

(Field Survey)

From the health care analysis, it is stated that there has been about three times increase in case of going to doctor house in any physical problem. Besides taking of safe drinking water has now become double than the previous amount. They now take water from tube well, submersible, instead of well and pond. Before project 68% families go to 'magical man' (ojha) to solve physical problems. But now this problem has been solved. Now only 1.2% people go to 'Janguru' for treatment. To solve health problem,

people go to Jamtara Hospital, Abhirampur health center, Mankar Hospital, and other private doctors. Increased income of SHG women has made them health conscious. Previously only 13.2% families had toilet and latrine but it is now 73.6%. This increasing habit will make them more hygienic in case of living. Before SHG formation 60.8% families had two major meals per day. There was no tiffin. But now this situation has been solved. Now 85% families take two meals and two tiffin per day. This has increased food value intake and has made them more energetic and efficient to do any work.

Estimated food value of two meals system –

1. Carbohydrate (rice / wheat / vegetable) – 150 gm X 4 kcal = 600 kcal X 2 times = 1200 kcal
2. Protein (pulses / egg / fish) – 50 gm X 4.1 kcal = 205 kcal X 2 = 410 kcal
3. Fat (milk / oil / nut etc.) – 50 gm X 9.3 kcal = 465 kcal X 2 = 930 kcal

Total = 2540 kcal

Estimated food value of two meals and one tiffin system –

1. Carbohydrate (rice / bread / vegetable) – 150 gm X 4 kcal = 600 kcal X 2 times = 1200 kcal
2. One tiffin by carbohydrate (puff rice / bread) – 50 gm X 4 kcal = 200 kcal X 1 = 200 kcal
3. Protein (pulses / egg / fish) – 50 gm X 4.1 kcal = 205 kcal X 2 = 410 kcal
4. Fat (milk / oil / nut etc.) – 50 gm X 9.3 kcal = 465 kcal X 2 = 930 kcal

Total = 2740 kcal

Estimated food value of two meals and two tiffin system –

1. Carbohydrate (rice / bread / vegetable) – 150 gm X 4 kcal = 600 kcal X 2 times = 1200 kcal
2. Two tiffin by carbohydrate (puff rice / bread etc.) – 50 gm X 4 kcal = 200 kcal X 2 = 400 kcal
3. Protein (pulses / egg / fish) – 50 gm X 4.1 kcal = 205 kcal X 2 = 410 kcal
4. Fat (milk / oil / nut etc.) – 50 gm X 9.3 kcal = 465 kcal X 2 = 930 kcal

Total = 2940 kcal

(Field Survey & Author's Own Calculation)

It is seen that the food value or calorie is increasing from only two meals system (i.e. 2540 kcal) to two meals & one tiffin system (i.e. 2740 kcal). Now it has been further improved by two meals & two tiffin system (i.e. 2940 kcal). This situation is far better than the previous one. It is near to the balanced diet. As tribal people do much hard working, so they need much energy. Through SHG formation, economic condition and life style of tribals have been improved which ultimately make them able to protect against malnutrition, starvation etc.

5. Women Empowerment.

Through empowerment, women get power to control their living both inside and outside the home. Empowerment is followed by self-reliance, self-awareness, mobilization, capacity building, and external interaction (Bandyopadhyay, Chandan, 2014). Women empowerment gives power to change under lying inequalities in economic, social and political spheres of life at individual, household and community level (Das, Rabin, 2015). To judge the level of women empowerment in the region 10 SHG women of different families from 25 villages have been interviewed.

Table – 5: Nature of the Women Empowerment through SHG formation (n = 250)

Sl. No	*Parameters of Empowerment*	*After Project (respondents values)*			*Total scores*	*Ranks*
		High	*Moderate*	*Low*		
1.	Free decision making & opinion giving power in family & society	120 X 3 = 360	113 X 2 = 226	17 X 1 = 17	603	6
2.	Skill development	185 X 3 = 555	50 X 2 = 100	15 X 1 = 15	670	3
3.	Leadership development power	105 X 3 = 315	100 X 2 = 200	45 X 1 = 45	560	8
4.	Health & educational awareness	190 X 3 = 570	42 X 2 = 84	18 X 1 = 18	672	2
5.	Support in family income & savings	200 X 3 = 600	25 X 2 = 50	25 X 1 = 25	675	1
6.	Protest against her husband's decision	100 X 3 = 300	100 X 2 = 200	50 X 1 = 50	550	9
7.	Political autonomy through the power to contest in election	90 X 3 = 270	142 X 2 = 284	18 X 1 = 18	572	7
8.	Social mobility through gaining respect in family	132 X 3 = 396	100 X 2 = 200	18 X 1 = 18	614	5
9.	Participation in village programmes	65 X 3 = 195	115 X 2 = 230	60 X 1 = 60	485	10
10.	Protest against alcoholism	165 X 3 = 495	35 X 2 = 70	50 X 1 = 50	615	4

(Values for high – 3, moderate – 2, low – 1) (Field survey and authors own method)

Overall total scores for Women Empowerment → 6016

Average score is $\frac{6016}{10}$ = 601.6

After giving weightage for different values to different components, we get different scores for different parameters of women empowerment. Average score value for women empowerment in the region is 601.6. 'Support in family income & savings' ranks 1st , then 'Health & Educational awareness' ranks 2nd and 3rd position has 'Skill development'. 'Participation in village programmes' has last position. Below average score are found in case of four parameters like – 'leadership development', 'protest against her husband's decision', 'political autonomy through the power to contest in election' and 'participation in village programmes'. As six parameters has the above average ranks so we can say that there is increasing trend of women empowerment through SHG formation.

6. Mode of entertainment

SHG formation has made a positive impact over the tribal life in case of entertainment through modern amenities. The use of mobile has maximum hike i.e. 214.33 times of the before SHG situation. Now a days almost every families have at least one mobile set to make communication system easy. Besides it

acts as means to hair songs and to play games. Then came cycle use. It has increase to 7.54 time and motor cycle has 4.77 times increase. Tendency towards the watching of T.V. has 2.66 times increases. As income and savings has been increased so the purchasing capacity of people has also been increased.

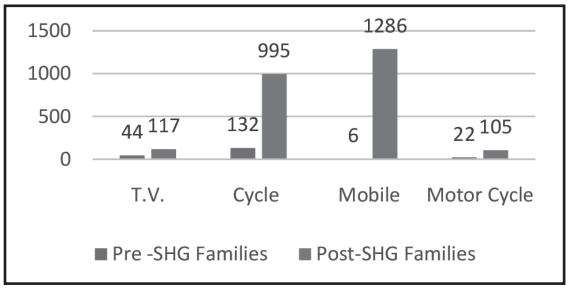

Fig 4. Mode of Entertainment

Major findings

1. The SHGs are mainly female dominated. 2. About 75.87% of the total families are engaged with SHG activities. 3. SHG formation has a positive impact in case of use of modern amenities. 4. Women have been empowered through SHG formation. 5. Rate of savings have been increased due to SHG activities. 6. Enrollment of the girl child education has been increased after SHG projects. 7. Health conscious and food security have been increased by SHG activities. 8. Income level of SHG beneficiary families have been increased and income is evenly distributed among them than non-beneficiary families.

Problems

1. Some tribal villages have no SHG like – Chatimdanga Adibasipara and some villages have lack of groups as per proper demand. 2. Some villages have just formed SHG officially but they are not practical now. 3. Some SHGs take loan but it is expended in other family activities instead of SHG activity. 4. Some SHGs do not repayment bank loan so they do not get further loan. 5. Illiteracy of women is another drawback to understand the project. 6. Lack of training about project of SHG women is another problem. 7. Due to fund lacking, SHGs do not purchase modern machines like – plate making machine. 8. Conflict and misunderstanding among group members. 9. Lack of store house, community hall for SHG related products and activities. 10. Meetings are called at a longer duration which hamper the problem solving process. 11. Group leader, assistant group leader do not give equal weightage to every members. 12. Sometimes marketing of SHG products create problems. 13. Problem of timely getting of loan. 14. Superstition also hamper SHG formation.

Suggestions

1. Arrangement of different awareness programmes from administration level to involve more women with SHG programme. 2. SHG women should to be properly educated. 3. Arrangement of skill development training by NGO, Block office and District level authorities. 4. NGOs should be active to operate SHGs. 5. SHG programmes should be kept beyond political influences. 6. There need frequent checking of cash book, repayment of loan interest and proper auditing. 7. SHG women should form a deposit fund on co-operative basis by their money for their future help. 8. Arrangement of modern machineries for production system. 9. For marketing of SHG products, there need proper campaigning and advertisement. 10. Conflict among SHG women should be solved by proper understanding through frequent group meeting.

Conclusion

Development through SHG has now become a new dimension in rural India. Tribal women of Bhalki Panchayet are now involving more and more with this circumstance for their own and family improvement. SHG projects have greater impact in case of monthly income improvement, increase of savings, daily livelihood pattern improvement, health consciousness, education development and other infrastructural improvements. Though skill some problems are found but all such problems could be solved by better understanding of SHG members, NGOs and Government authority.

Acknowledgement

I would like to express my heartfelt gratitude to Prof. N.C. Jana of Department of Geography, Burdwan

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Imposition of Landuse Change in Lower Kasai Flood-plain, Purba Medinipur, West Bengal.

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Abstract:

The physiographic set up and growing inhabitants of an area consequently the dyanomic human demands demark the pattern of landuse. Landuse change for various purposes in flood-plain area impacts the local and expected future economy. This change characterized by the positive and negative effects. The study of landuse is a very urgent for a flood-plain area because it is very hazardous zone. The present study attempts to identify the spatio-temporal change of landuse and land cover in two villages in New Kasai flood-plain over the time span of 16 years. The study reveals those agricultural paddy fields have been used for the establishments of fisheries and brick industry. The immediate outcome of such type of transformation is economically very gainful but environmentally it can be threats to fertility of agricultural land, air pollution, sanitation, child labors and change of socio-cultural aspects by migrated labors.

Keywords: *Land use, Land cover, Spatio-temporal change, Socio-economic advancement, Resource planning.*

Introduction

The habitat activities and demand changed the natural landscape considerably with the passage of time. A change in landuse and land cover is being gradually more acknowledged as critical factors influencing the global change. On the other hand, we must keep in mind that though the term landuse and land cover are often casually assumed as identical to each other but there is basic differences between these two. Land use is the functional dimensions of land for different human purposes and economic activities and is often shaped by human, socio-economic and political influences (Sharma et al 2008) while land cover may be defined as the bio-physical coverage of the earth surface. Study of land use land cover change provides better understanding of previous practices, current land use pattern and also the future resource planning over land. Human impact on global land cover change, particularly in terms of change from agricultural land cover to industrial land cover, has been one of the significant issues. Growth of population in India affects the environment mainly through changes in land use and industrial metabolism (Meyer,W.B. and Turner M., 1994). The brick industries as one of the ceramic industries had been started in West Bengal in 1874 (Memoria C. B.) and at present these industries have become the major earning source for the owner as well as the workers engaged in these industries. The growth of these industries has been changing the land use pattern, land cover scenario and the socio economic conditions of the inhabitants of a particular locality. India has had a traditional practice of fish culture in small ponds in Eastern India. Significant advances in productivity were made in the state of West Bengal in the early nineteenth century with the controlled breeding of carp in *Bundhs* (tanks or impoundments where river conditions are simulated) (Kiran B.R. et. al, 2014). The country has to develop inland water resources, especially the reservoirs and the floodplain lakes to meet the growing demands of food fish in future (FAO). The river front embankments in a floodplain have encouraged the inland fisheries by protecting them from floods (Sahu A.S, 2012). The main purpose of this paper is to highlight the changing land use pattern from agricultural to brick industry and fisheries and its impacts on socio-economic environment.

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Study Area

The Bhuniyakhali and Manuakhali villages are under Naichhanpur-ii anchal in Moyna block of Purba Medinipur district under Tamluk Sub-division of the state West Bengal. Geographical location of this village is between 22°10′17″ to 22°12′23″ North latitude and 87°48′०६″to 87°50′09″ East longitude (Fig.1).Towards the northeast of the study area lies the town Tamluk. Tamluk is Headquarter of the district Purba Medinipur. Study area is located on the bank of river New Kasai. In general, this region occupies a monotonous low lying tract has been lesser elevation above sea level, average altitude of the plain is 6 meter above sea level. The constructional slope of this area is from east to west as indicated by the direction of flow of river New Kasai, river. Naturally, the entire geological structure is marked by alluvial deposits of river New Kasai. The study area has a tropical monsoon climate with hot summer and well distributed normal rainfall. There are mainly four seasons found in the study area. The maximum temperature varies between 37^0 c to 43^0 c and minimum temperature varies between 10^0 c to 17^0 c the humidity range from 60% to 90% due to the existence of the Bay of Bengal in the south of the Purba Medinipur district.The suitable physical and climatic conditions allow enough dynamicity in land use and land cover of the region.

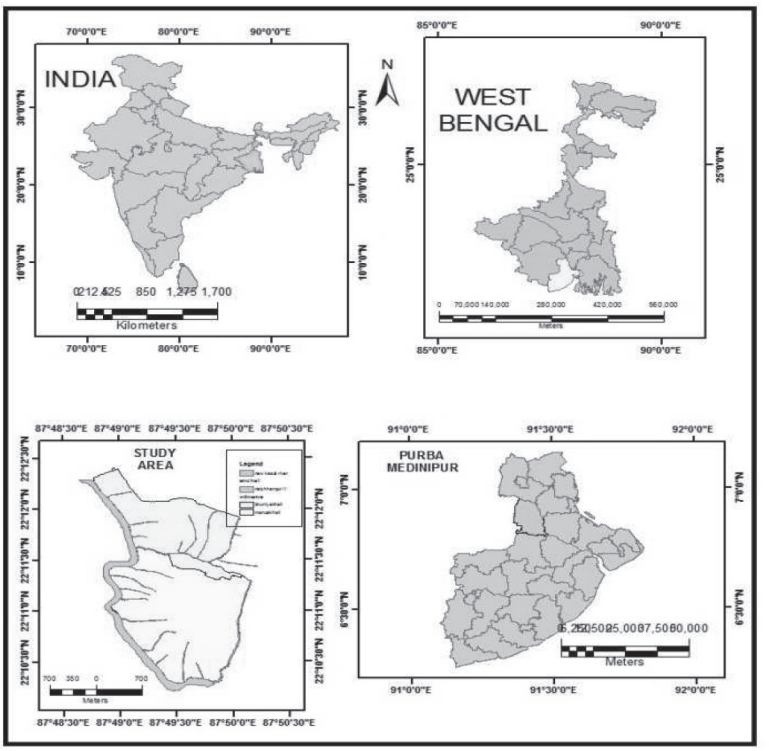

Fig1: Study area

Objectives of the Study Area

The key purpose of the present study is to examine landuse and land cover change and create probable information about the site which might be useful for taking fundamental decision, planning and environmental management of the flood-plain region. The present study also try to find out the factors which are responsible for changing land use land cover of the study area. Also evaluate the socio-economic aspects of the population section engaged in the brick industries of the study area.

Materials and Methods

The study on the dynamic phenomena such as land use change is based on the field survey and also on the secondary data. The population census data for the study area for the years 2001 and 2011 have been collected from the Census of India website. ArcGIS software (ESRI) have been used to generate various thematic layers like boundary map, roads, rivers, settlements and administrative boundary map using the toposheets (73N/16) and other available maps. Land use map have been prepared using different layers. The required information of the brick industrial belt and fisheries has been collected by field visit and using schedule & GPS.

Landuse and Land Cover of Study Area

Bhuniyakhali and Mauakhali villages are predominantly an agricultural area. Here mainly produced paddy, betel leaf and now here produced fish, prawn and brick. So, here the land use and land cover pattern is very dynamic in nature. Thus for studying the dynamicity of land use and land cover of the concerned region. I classify land cover for proper harmonization and validation (De D. et al, 2014).

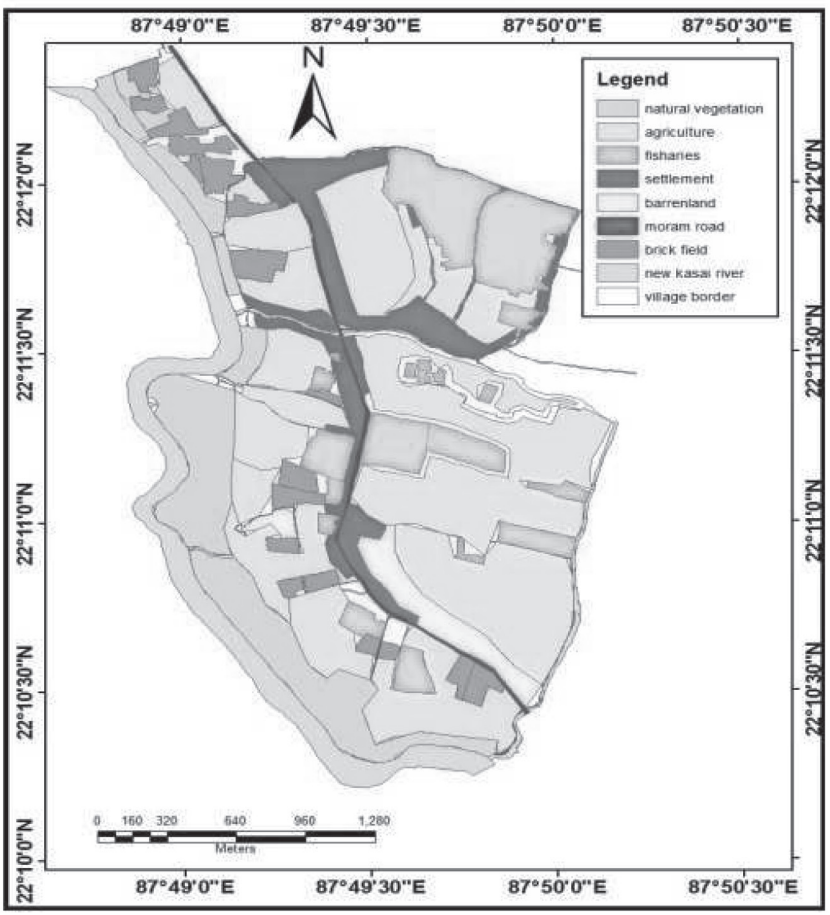

Fig: 2 Landuse pattern of the study area.

Agricultural Landuse

Agricultural land denotes the land suitable for agricultural production, both crops and livestock. The standard classification (used by FAO) divides agricultural land into the following components which are arable land, orchards and

pastures. To identify agricultural land, we have taken help from Survey India Topographical map; cadastral map and also plot to plot land use survey have been adopted. The utilization of land depend on physical factors like, topography, soil, climate as well as upon human factors such as density of population, duration of occupation, land tenure, profit and so on. In the study area most of the agricultural lands are devoted for orchard farming.

Natural Vegetation Cover

Vegetation is a general term use to refer the plant life of a region. In the present work here main natural vegetation is bamboo groves and some woody trees. Mainly temperate deciduous types of trees are found in the study area. It has been observed that there is no remarkable forested part in the study area and the primary vegetation type is deciduous and shrubs which have severely degraded from the region for increasing demand of agricultural land and population pressure and brick industries.

Built up Area

We can defined built up areas as land are occupied for residential, commercial, educational and any other infrastructural purposes including both built up areas and associated vegetated areas. In the present study is consider settled areas, areas under transportation network, greeneries and orchards with households, any other commercial and industrial buildings as built up areas.

Water Bodies

A body of water accumulated over the land and covered the topographically depressed areas. It includes large accumulation of water such as oceans, seas, rivers and lakes etc and small body of water like ponds, bills etc. They also vary in nature, some of them are flowing in nature but some are stationary. Sometimes they are manmade, though in most cases have found natural water bodies.

Brick field

Rapid growth of brick industries in the study area has totally changed the land use pattern of the area. Field survey in the study area shows decline of agricultural land cover due to increasing number of brick industries in the study area. The comparison of the land use pattern of the study area in 2017 with 2000 in terms of brick industries then it becomes clear that there was only one brick industry in the area which increases to 19 in 2017. This shows that suitable environmental conditions, proper market and the nearness to the urban centers results in rapid growth of brick industry in the study area. The figure highlights the land use pattern of the study area indicating the change in the total number of brick industries.

Fisheries

Fishing has been an important occupation of the people in this study area. Fisheries are of two types (i) the inland and (ii) the open sea. The inland fishing is done in rivers, tanks, ponds and canals. The major rivers like Brahmaputra, Ganga, Satluj, Narmada, Mahanadi and Godavari; and numerous tanks and ponds are tapped for fishing. Inland fish production is accounted for two fifths or 40 percent of total fish production in India during 1995-96. India has vast inland water resources in the form of rivers and canals (0.2 million km), reservoirs (3.1 m ha) and tanks and ponds (2.2 m ha) offering tremendous scope for fish production. India ranks second to China in inland capture fisheries (Kiran B.R. et al, 2014).

Results and Discussion

Land use land cover study and maps over present two village have identified six general categories of land use and land cover types for the year 2000 to 2017(Fig. 2). The study area is agriculturally developed enough in Purba Medinipur district. So, it is quite common that agriculture dominates all other land use and land cover categories. But now agricultural land and natural vegitation decreases by tremendously increases of fisheries and brick industries. I can extend this study to category wise land use land cover analysis just to identify and explore the reality.

Table: 1 Comparative Analysis of the Distribution of Land Use and Land Cover

Land Use & Land Cover Categories	*2000*		*2016*		*Positive/ Negative Change in hectare(2000-2014)*	*Positive/ Negative Change in % (2000-2014)*
	Area in Hectare	*Area in %*	*Area in Hectare*	*Area in %*		
Agricultural Land	274.46	50.99	157.75	29.32	-116.71	-21.67
Built up Area	45.09	8.38	61.69	11.46	16.6	3.08
Natural Vegetation	71.96	13.37	29.50	5.48	-42.46	-7.89
Fisheries	9.43	1.75	76.32	14.18	66.89	12.43
Brick field	2.34	0.43	33.88	6.29	31.54	5.86
Others	134.95	25.08	179.09	33.27	44.14	8.19
Total	538.23	100	538.23	100	----	-----

Change in agricultural land use

There is a steady increase in the fisheries, brick field, built up area and other like roads, water body, pond and fellow land. Mainly, the agricultural land cover is occupied to increase the fisheries and brick industry. In the year 2000 agricultural land consist 50.99 percent area of the region which decreases down to 21.67 percent of the total area during the temporal analysis extended from 2000 to 2017 (Table 1). A significant nagetive change has been observed in agricultural practices over the last 16 years. Previously, only agriculture was the dominant land use pattern of the study area but in recent times, this is transformed to fisheries and brick field. Here a cause find out from farmers by field survey that is agricultural damages due to flood.

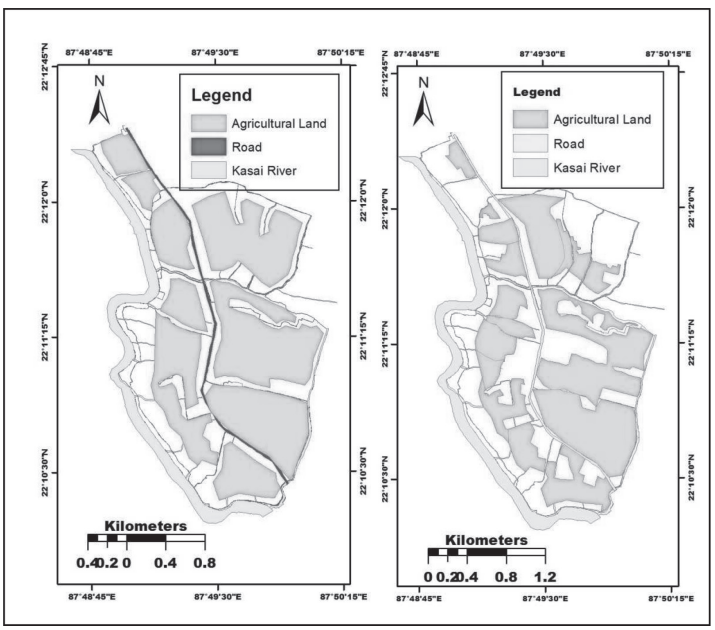

Fig:3 Agricultural Landuse in 2000 and Agricultural Landuse in 2017

Built up area and land use change:

Present study reveals that the important landuse class is the built up area. The built up land have increased from 8.38% in 2000 to 11.46% in 2017 showing that the region is affected by population pressure. Though this area has a rural base but economically very developed. The village settlement are built along the pre defined lines, ranging from straight, curved and parabolic alignment along the road or transport route, active river channels and flood plain rises, especially along the levees. The size of the settlement also varies from small nucleated to cluster. No doubt, increasing population pressure is an important factor to expand the share of built up area but there is another specific cause behind the expansion of built up area. This area is fertile flood-plain. Still now, the transport system of the study area is not well developed but there is a sign of progress. In2000, the total roads are non- metalled. But the development in transport scenario is very poor but few roads are transformed from non-metalled to metalled one.

Natural vegetation and land cover change:

Natural vegetation is one of the major components of the environmental system and plays an important role on direct and in direct ways to maintain the ecological stability. But with increasing population and unconscious human desires the natural vegetation of the major flood plains of the world are under massive destruction which not only threatens the plant diversity but also leaves a negative impression on the regional ecological community. Here the natural vegetation is destroyed by mainly growth of brick industry. The area under study situated on the bank of the river New Kasai has tropical and sub-tropical deciduous type of vegetation is now in severely degraded condition. Maximum natural vegetation is vanished due to anthrop genetic activities. Our analysis reveals that 7.89% area (Table 1) under natural vegetation is engulfed by the tempo of development from 2000-2017. But this is not a healthy trend and must be checked at any costs.

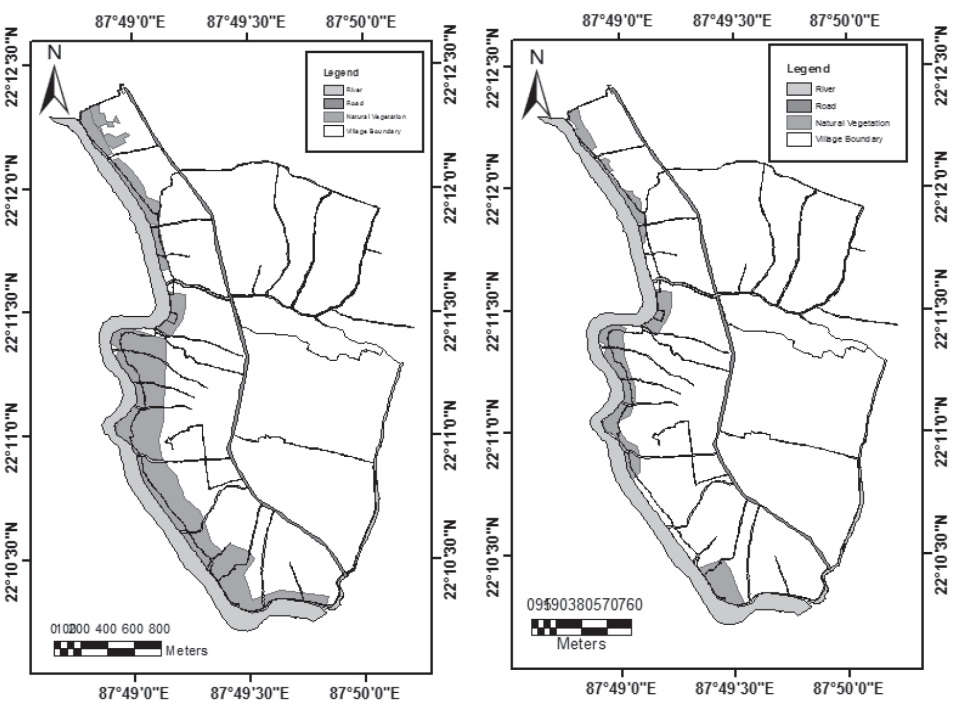

Fig 4: Natural Vegetation landuse in 2000 and 2017

Change in fishery landuse:

Fisheries are very important and progressive landuse pattern in this flood-plain. The income level of the owner is very high. Here the inland fishing is done in tanks and ponds. Mainly two type of fishing are observed here 1) fresh water fishing, 2) brackishwater shrimps fishing. The seasonal income of the owner is not less than3 Lakhs in fresh water fishing and 5 lakhs in brackish water shrimps fishing in one tank. Farmers are lease there land for fresh water fishing to get rent average 50 thousands per acre in one year and brackish water fishing to get rent average 60 thousands per acre in one year. Therefore agricultural farmers to get another job for extend their income level. Fishery landuse have increased from 1.75% in 2000 to 12.43% in 2017.

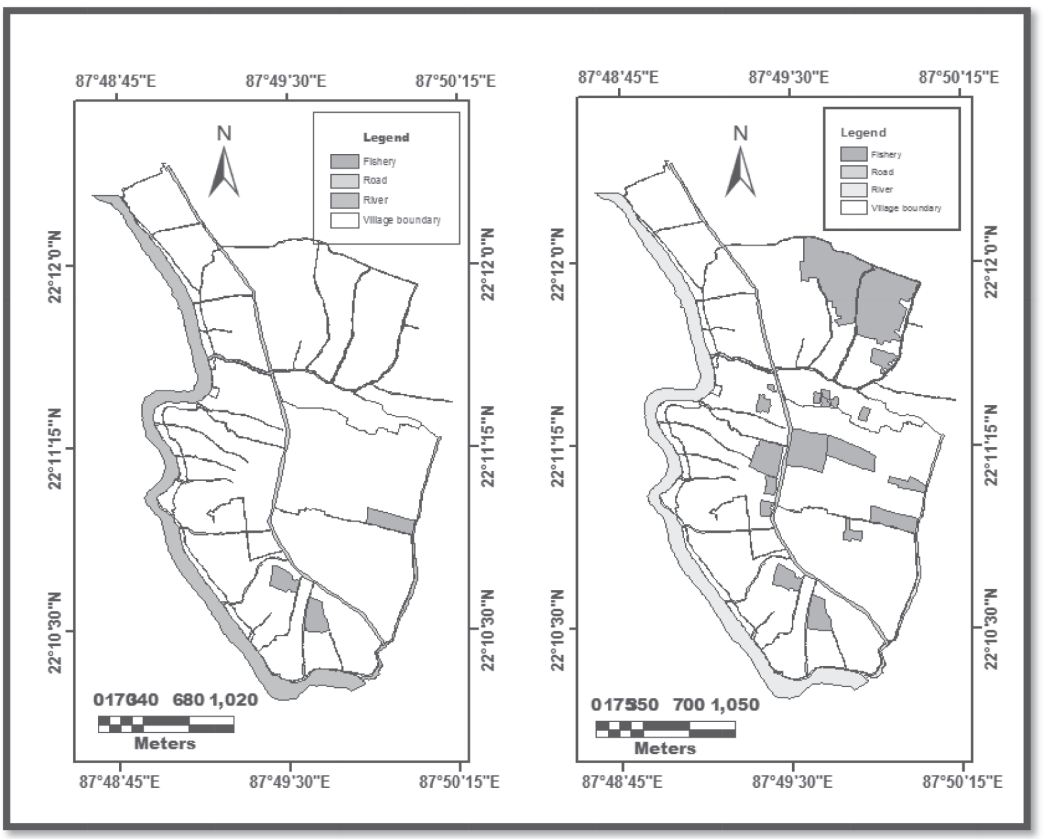

Fig 5: Fisheries Development 2000 and 2017

Brick Industrial landuse

In 2000, there was only one brick industry in the study area, which increases to 19 numbers in 2017. The production from the brick industries is about 6 rounds in one year. The numbers of bricks produced in each round is about 6, 00,000, i.e., 36, 00,000 bricks in a season. The production of the bricks of different quality is totally dependent on the weather condition i.e. rain free season of the year. The seasonal income of the owner is not less than10 Lakhs, and in the rainy season the income becomes less as the study area is an occasional flood prone area. Local farmer lease there land for brick industry to get rent approx 50 thousands per acre in per year. The laborers in the brick industries of the study area are indigenous as well as migrants from Jhargram, Bankura, Paschim Medinipur Bihar local people. The maximum numbers of workers are belonged to the age group of 15-60 years. As per the field observation of the

study area, the workers get their wages on the basis of their duration of working hours. The minimum range of wage is 400/- per day. No worker has settled permanently in the study area through inter caste marriage with local people or other way. They use to come in the season along with their family and leave the area during the rainy season. The rapid growth of brick industry in the study area results in decrease in the soil quality and number of plots for agricultural purposes, besides air

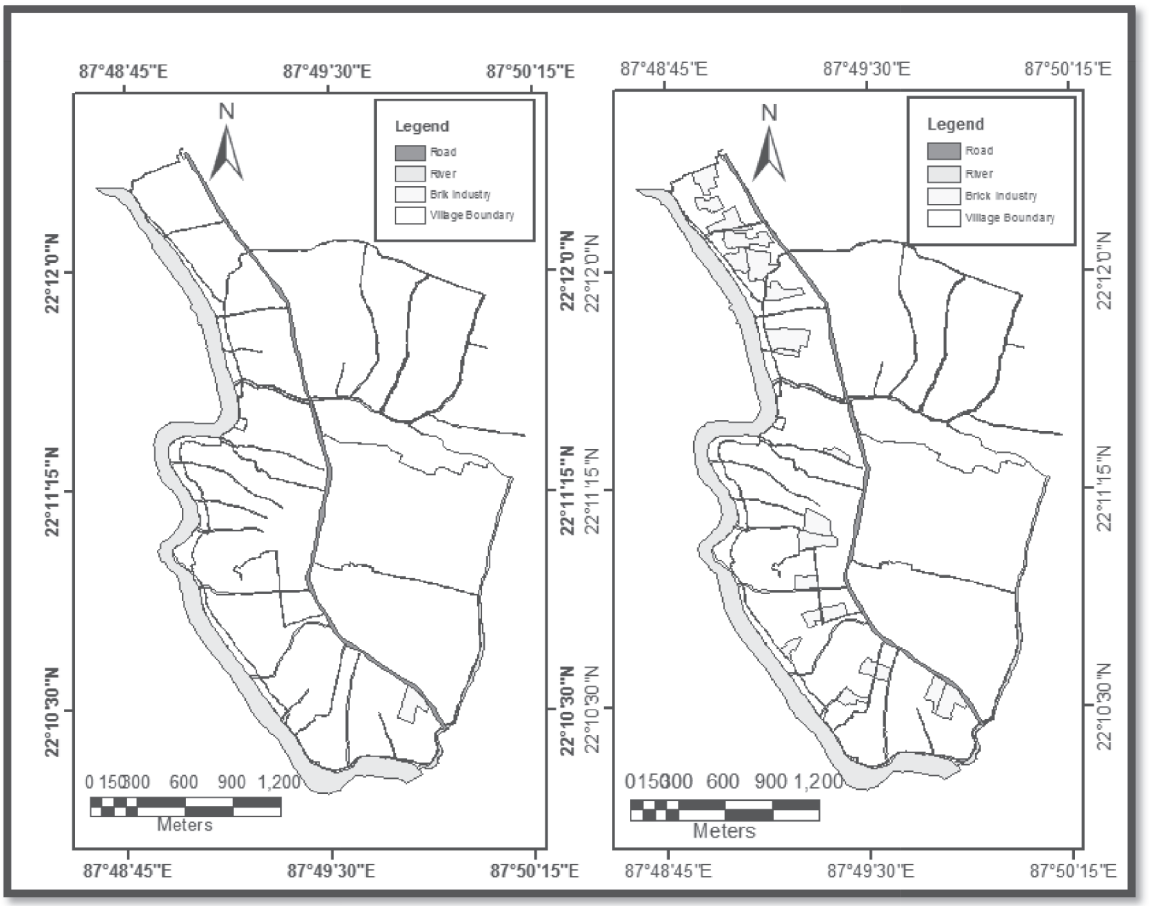

Fig 6 : Brick Industrial landuse 2000 and 2017

Pollution from the chimneys. The issuing authority of permission certificate, pollution certificate and also the local people must be aware of the probable hazardous situation of the area due to the ongoing growth of brick industries in the study area.

Conclusion:

The result of present work indicates there have been important land use land cover changes in between 2000 to 2017 time periods in the study area. The statistical analysis shows that the positive changes have been occurred in built up area, fisheries and brick industry categories. Both agriculture cover and natural vegetation cover decreased shows the negative changes of landuse pattern. The study shows that natural landscape covered with vegetation are destructed and used for brick industry and building roads, homestead and many other new set-ups. The growth of the brick industries in the study area has modified the land use pattern, socio-economic

condition, ecological set up and demographic structure of the industrial belts. The ongoing increase in the number of brick industries in the study area has been reducing the area under agricultural land and alternatively has been increasing the area under brick industrial activity. The owners of the different brick industries of the area are economically benefitted by utilizing the favorable ecological condition of the study area. The precise representation of different aspects of the fishing brick industrial belt of the study area as mentioned in different sections of the paper will be useful to the environmentalists, land use planners as well as research workers.

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Rural Transformation and Mobility : A Study of Selected Villages of Himachal Pradesh

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Abstract

Rural Transformation generally means a comprehensive social change where rural societies tend to become more like urban. In our contemporary development paradigm, shifts from rural to urban usually translate into an overall betterment of life. The present paper analyses mobility as one of the major component of rural transformation and an attempt is made to distinguish the nature and types of mobility and link it with the developmental situation. It is believed that whether mobility can be associated with development or not depends on the agents and motives of mobility. This work is based on a detailed primary survey. The survey covered 442 samples over four villages of Kangra District, Himachal Pradesh, which were selected primarily based on their varied levels of development. Consumer mobility or educational mobility is found to be a better indicator of rural transformation than employment mobility. State activity is also identified as a determining aspect.

Keywords: *Rural Transformation, Rural Development, Mobility, Migration*

Acknowledgement

Survey data used in this paper has been collected as part of M.A. 3rd semester field work of Centre for the Study of Regional Development, School of Social Sciences, Jawaharlal Nehru University. The entire endeavour was planned and supervised by Prof. B. S. Butola and B. K. Chowdhury and this paper is being submitted with their due permission. I would like to thank the aforementioned course in charges and all of my classmates who were part of the field work as the data collection procedure were a collective effort.

Introduction

Rural transformation is generally defined "as a process of comprehensive societal change whereby rural societies diversify their economies and reduce their reliance on agriculture; become dependent on distant places to trade and to acquire goods, services, and ideas; move from dispersed villages to towns and small and medium cities; and become culturally more similar to large urban agglomerations." (Berdegue 2014). As is apparent from the above definition, the idea of mobility, reduction of distances and compression of space is integral to the idea. For a detailed analysis on the role movement plays in development, one must look no further than the World Development Report of 2009, "Reshaping Economic Geography'. It gives heavy importance on reducing the distance, or in other words, facilitating migration. One might not agree with their idea of how rural to urban migration will increase density and help economies to 'grow', but the association of mobility with development can never be ignored.

Although traditional migration theorists says that rural population has a greater propensity to migration (which standing on 19th century Britain might be correct), today it is well known fact that urban population is more mobile than the rural one. Thus increased mobility is usually considered an urban phenomenon.

However, there are different facets of mobility; need for mobility or assisting infrastructure is equally important as psychology of the population. In a utopian society, there is minimum need to mobility. Everyone would get employment, goods and amenities close to their residents only. But that has not happened in a practical world. So in the

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present development paradigm, rather than bringing services to people, increasing attempt has been made in taking people to amenities. So one would say that rural population would have to be more mobile than the urban population as reduction in settlement size means a reduction in services provided. But this is not always the case.

Two major reasons are behind that fact. One is the lack of assisting infrastructure, more specifically road and transport. Rural transport linkages are always poorer than the urban areas; in India more so, as still a large number of villages are not connected with any road and even a much smaller number is connected with metal roads. Even today, walking and cycling remains the main transport of rural people while cars and motor cycles remain in the hands of few. A severe lack of public transport highlights the deficiency of the rural areas in assisting infrastructure of mobility.

The psychological issue is probably more important in case of Indian scenario. Rural population traditionally had a strong tie with the land and has fewer propensities to move away from it. In spite of having little amenities in villages, they are more likely to make do with whatever they have rather than going outside. This fact is somewhat because of shortage of knowledge about the outside lands and traditional prejudices against it. The isolation of Indian villages is all encompassing of economic, social and cultural realm, as Mendelbaum (1970) terms them 'little republics isolated from outer worlds'.

As far as India case is considered, a fight between these three factors is usually won by stagnancy rather than mobility. Thus increasing mobility has been associated with development. But care should be given both to the motive and agent of the mobility. A low caste person going to city for unskilled jobs or a student going to neighbouring village to get primary education is also mobility, but they should not be equated with the landlady going to the city for shopping or someone going to the nearby small town for a graduation degree.

Migration has been one of the fundamental points of enquiry geography, population studies and regional development throughout history. From the earliest treaties of Ravenstein (1885), through the likes of Lee (1966) and Harris and Todaro (1970), volumes of literature has been created in studying migration and its role in the rural-urban dynamics of a region. Non-migrational mobility, on the other hand, received far less attention barring perhaps studies on transhumance and rural-urban commuting. Van Dijk (2003) has preferred the term mobility over migration because of its wider scope. He pointed out the problem of definition in case of migration and cited a series of case studies which will challenge the traditional definition of migration. Although his discussion on refuge or epidemic driven migration is rather irrelevant here, the idea behind is the difference between mobility and migration and other definitional issues.

While defining mobility may be difficult, their importance is never questioned. To cite an example, seminal scholar Paul Starkey (2002a) has commented on the policy requirements to increase rural mobility. He said, "*Lack of mobility restricts income generation and economic demand"* and thus according to him a vicious cycle starts, which not only reduce income, but also reduce the scope of further income by restricting mobility. In his discussion he stressed on the role of government and alternate transport system to develop the mobility scenario in rural areas. But one thing is clear; he feels that mobility should be the main consideration for poverty alleviation. While he did mention about the variation of mobility across population groups, he didn't dwell on the matter further (Starkey 2002b).

In their study of sub Saharan African countries of Nigeria, Tanzania and Mali, Tacoli and Mabala (2012) have put greater emphasis on the composition of the migrants. They say that young men are more likely to move away from home than older ones. This they think because of inequalities within the family and age based inheritance; as young men have less control over land they tend to migrate more. They also found that women tend to migrate longer and more permanently than men (whose migration is many times seasonal in nature). They are being increasingly incorporated in the international export industries as well as domestic helps. Female migrants

also tend to send more remittances than their male counterpart.

Barbieri (2009), while working on the equatorial Amazon, have observed two distinct causes of migration. His work was focussed into studying the migration stream from long settled regions. He said that migration is due to a reducing productivity of agriculture in those regions as well as a large pull of booming urban export based industrial sector. The dominance of female migration in urban areas is also been noted. Haberkorn (1992) have also supported the importance given to urban areas to migration studies. Also, he stated the differing nature of migration with globalization; from a seasonal type of migration to a full scale abandonment of agricultural activity in search for urban jobs is noted in his work.

Research Design

With the previous literature in mind, some major focal point of study has been identified. While the migration as a part of mobility have been extensively studied, attempt has been made in this paper to improve understanding about the non migrational mobility, and how they can be used as indicators of level of development and rural transformation. Present work primarily focuses on the migration and mobility pattern across the selected villages in an attempt to unearth its linkages to rural transformation. Socio-economic as well as intergenerational variations will also be studied to shed further light on the topic.

The work is done with the primary survey in the selected villages of Kangra district, Himachal Pradesh. The data is collected with a questionnaire survey of selected sample in all four villages. Survey is carried out by a group of 40 MA students of the Centre for Study of Regional Development, Jawaharlal Nehru University during the period 6th December to 18th December, 2013. Four villages in varied levels of development and socio-economic status have been purposively selected for the study so as to peep into the phenomenon of rural transformation without a temporal or longitudinal analysis. Khanyara, once dubbed as the richest village in Asia, long since fed of its slate mines before it was banned due to environmental reasons. Even after leaving its glory days behind, signs of economic prosperity are clear in every bent of Khanyara. Juhal is a small agricultural village which is moderately connected to main road in the area and can be considered as being moderately developed. Third and the poorest village to be selected is that of Bangotu, a traditional Gaddi village high up in the mountain with very little connectivity to the nearby urban areas. Lastly, Dharamkot is a special case; being in close proximity to Mcleodganj, it has little economic opportunities within the village, but a prosperous community and well developed infrastructure due to its proximity to the well-known commercial and tourism hub in Dalai Lama's abode. Sampling of households within the village is done as judgmental and by availability; but with the 12 groups applying their own judgement and having their own availability; it is believed to have become considerably random. Taking differential samples in proportion to their population from the four selected villages, a total of four hundred and twenty one households have been surveyed for the present endeavour.

Data has been analysed and represented with simple statistical tools using the softwares 'SPSS' and 'Microsoft Excel'. No particularly sophisticated statistical technique has been used that might require further elaboration. In the overall explanation, less emphasis is given to the structured questionnaire responses and more toward the experiences in the village and less structured interviews and discussions with village personnel during the survey.

Results and Discussion

Migration: According to 2001 census data, around 37 per cent of inhabitants in Kangra district of Himachal Pradesh have been reported as lifetime migrants. Among them, 76 per cent were intra district migrants, while inter district, interstate and international migrants are 10 per cent, 12 per cent and 2 per cent respectively. This shows that Kangra region is an attractive location for immigration. But how many people move away from the district, census provides no direct data for that. But during the survey, this is exactly the aspect that was enquired about. Present paper is exclusively interested in

emigration except marriages.

Covering all Four villages it was found that 23.4 per cent families have at least one migrant living outside the house, which is a considerably high percentage excluding the reason of marriage. Also, as expected leaving out marriage has resulted in a heavy fall in the intra district migrants, this is only 24 per cent of the total migrants. Inter district, interstate and international out migration is reported to be 26 per cent, 45 per cent and 5 per cent respectively.

However, this is a very broad categories and large differential on the basis of reason for migration exists among these migrants. However, if one focuses on the village wise differential of migration and their destination region, some facts come up. It is quite obvious that majority of the migration will take place within Himachal Pradesh itself as it has been observed that migration link in general reduce with distance. But after the apparent dominance of within state migration, a large attraction is generated from Chandigarh, and a lot of people go there. Apart from that nearby state of Jammu and Kashmir also attracts some migrants, large part of which is for military reasons. But beyond these nearby region of Jammu and Kashmir, Chandigarh and somewhat Punjab and Delhi, people from these four villages does tend to migrate a large distance, some time up to Tamilnadu or Arunachal Pradesh. But any dominant stream of migration from any of the villages has been found.

Quite in contrast with 23 per cent out migration, only 8.5 per cent of the household have reported their main source of income as remittance. This points out to several facts. One reason behind this could be high proportion of educational migrants, while it is also possible that there is not enough resource to sustain the entire family, but for those that lived, income from within is enough for them. The last point holds partially true, as of the 23.4 per cent families which have out migration, some 18 per cent receive remittances, but for only 8.5 per cent it is the chief source of income. For others, agriculture and business dominates the family income. This means that someone of the family works out side, but the amount he/she sends is subsidiary to other incomes of the household, coming mostly from agriculture or business.

Going away from the migration to another aspect of it, we can make some comments about remittances received from the migrants. It was already noted that although there is considerable out migration, role of remittances in the local economy is at best, questionable. But how much remittance does the migrants send home, and how often, remains an open quarry. If the frequency of remittances is considered, there is gradual decrease of frequency with increasing time laps. In the sense that most of the migrants send their remittances weekly (46.2 per cent) followed by monthly (36.4 per cent), twice a year (13.5 per cent) and then yearly (3.8 per cent).

It is curious to see such high proportions of remittances are sent in weekly basis, which is the payment frequency for most workers on informal sector. But migrants sending money at so short frequencies had to point out toward the fact that they must have a bank account which they regularly operate. Especially considering that most of the migrants live outside the district and weekly movement might not be possible. This fact can be supported by the fact that there is an existing bank in Khanyara village for a long time, but our field experience suggests that there is very little use of that Punjab National Bank branch; also doubtful is the use of bank account in other villages. So, this remains a rather anomalous outcome and demands further enquiry on the financial side.

It can be seen that nearly 20 per cent of the migrants send no remittances at home, further supporting the fact that they migrate because there is not enough job at the source region, not because there is no source of sustenance at all. Usually, the average level of remittances sent is around 6,500 Rupees per month, but there is great variation and up to 25,000 Rupees was recorded as remittances sent per month. This is a highly diverse situation depending on the occupation at the destination region, and not much fruitful study can be carried out by studying just the amount of remittances sent.

A village wise share of migrants does not reveal much. One simple fact is that interntional migrants are present only in Khanyara and Dharamkot,

which are the two prosperous villages. But as long as the migrant proportion matters or the distance distribution of migrants, there is really not much to say and the data has no distinguishable pattern. Juhal has the maximum proportion of migrants followed by Khanyara; while Dharamkot has least migrants. But from this study, it is extremely difficult to say whether need to migrate is more important in this case or the propensity to migrate. A study on remittances would have given a much better results, but as most of the people in the village Juhal opted not to disclose the received remittances, that study becomes difficult to perform.

But apart from the permanent change of residence, there is considerable non migrational mobility to be considered. They occur for various reasons such as commuting for education or employment as well as irregular trips to visit a place. Three aspect of non migrational mobility is discussed in detail.

Educational Mobility: Educational Mobility was something that was traditionally absent from the village. But with the rise of wealthy rural community, a tendency of sending the children to private schools even at some distance that require considerable daily commuting, is coming up. Also, there is some household which send their children to study at faraway places such as Jammu and Chandigarh. In the study, the researchers have asked about the location of the school in the context of own house, within village, neighbouring village, small town and city. Although most of the village now have school, two small villages among the selected villages does not have higher schools, so children are likely to go to neighbouring villages. Nearby towns are usually marked as small towns in most cases irrespective of their size; so both Upper Dari and Dharmasala became small towns. Long distance towns such as Chandigarh or Delhi are considered as city.

It can be observed that among all the people that reported to be studying to a city outside, almost everyone comes from either Khanyara or Dharamkot. One person out of 188 persons (0.53 per cent) surveyed in Juhl has reported to be studying outside. Even proportionately, 11 out of 739 (1.49 per cent) in Khanyara and 11 out of 254 persons (4.33 per cent) in Dharamkot is considerably higher. By considering the changing nature of the villages one can very well see the increasing transformation in mobility pattern. While the more traditional Juhl and Bangotu have very little long distance mobility for education, it is considerably high for Dharamkot. Also to note that, Khanyara although is an economically well developed village, in social parameter it may not have been transformed at all. In case of educational mobility, this fact becomes very clear, as Khanyara shows a statistics much the same as Juhl or Bangotu.

A better insight into the varying mobility pattern and some interpretation about the rural transformation can be found from the village wise study of educational mobility. It is theoretically assumed that if there is absence of an amenity in the village, inhabitants will go outside to avail it; but the question is how far and which are the amenities that satisfy this kind of a relationship. It is expected that a child will go the primary school and even to the secondary school to the neighbouring village and may up to the small town higher secondary school. But when does that stop, the same might not be true for going to the university at the nearby city. That is where the role of transformation comes in. When does a village community think higher education as important as to go and live in a nearby city? Thus, mobility for educational purpose gives a better understanding about the rural transformation process than the occupational mobility, which is many times forced, while the former is always voluntary.

As Khanyara has considerable provision of primary, secondary and even higher secondary schools, within village students are considerably higher. But the same shifts to neighbouring village in case of Juhal and Bangotu. While as one moves upward, it can be seen that moving to small towns, mainly for higher secondary education increases in Dharamkot, while the presence of a higher secondary school at Khanyara stops even this mobility. But moving to cities for university education is present largely in case of Khanyara and Dharamkot. It typically shows the level of development in the villages. While Bangotu and Juhl remains close to the traditional picture, a transformation can surely be said to have taken place in Khanyara and more so in Dharamkot.

Occupational Mobility Occupation and employment is the most obvious need for mobility and especially migration in most parts of the world. Doxiadis (year) said a settlement must have provision of employment for its inhabitants, then only it can be said a settlement. But future theorists, mainly urban planners have planned to separate residential zones from working zones. In rural areas of India however, this separation is still minimal. And different government schemes like MGNREGA are typically focussed on providing employment inside the village in an attempt to check rural-urban migration. However, the traditional isolated republic concept of Indian villages, where separated on caste lines all inhabitants have employment within the village, is diminishing. Especially for a community like the Gaddis who have traditionally been transhumance pastorals, tendency to be mobile is higher than many sedentary village communities of Indian plains. But mobility for employment, although omnipresent, should be studied with caution. A simple 'proportion of population working outside village' tells very little about the developmental scenario of the village. But a more detailed study on the major occupation as well as the distance of mobility should be carefully studied.

First, an overall analysis of the study region is done with comparing the mobility of a worker and the type of job. Agriculture related jobs are found only in own house and own village, which is expected in the sense that majority of land is kitchen garden type and some are located in other parts of the villages. Many of the houses still holds some land and some of them still cultivate them; and some member of the house works on the land (mostly the old and the women, who don't go outside). But the economic contribution of the agriculture is minimal and households many a time has to buy even what they are growing. In fact, mean age of person employed in agriculture is 46 years while that of Services is 37 years, and small and big businesses are 38 and 35 years respectively. So an overall shift in the occupational structure itself can be seen. People employed under MGNREGA also, by definition, works inside the village. Their average age also comes as 43 years confirming that MGNREGA is not catering to the most able bodied and enterprising population group.

For big businesses people tend to be very immobile and reported their place of work as within home, but that might be misleading because it is only the office location and not the amount of movement he/she carries out in order to run the business. Services and petty businesses have the maximum mobile population. Services are considerably clustered in the small towns and cities category while the higher proportion of petty businesses in the own village category is mainly because of the Khanyara experience. However, one should note that services are mostly of low end jobs related to tourism industry and the likes of driver, shop worker etc. dominates the sector.

Some shift in the occupational mobility is also apparent in a more inter-generational analysis. With increasing age, as one might expect, mobility reduces. Even if the within house category is left out, where many of house wifes and older agriculture related population is found, this shift is quite clear. New generation is more prone to moving outside for jobs especially in service sector and othe commercial employments. So a generational shift in mobility can easily be found here, with younger generation being more mobile than the older ones. Also this might be because of the closure of mines in the late 90s, which force people to go farther in the towns for the search of employment.

A study of mobility pattern across the four different villages will naturally give some idea about the nature of transformation in the villages than a standard overall enquiry. There is, however, only minimum variation in the village wise mobility pattern, apart from the fact that city mobility is considerably higher in case of Khanyara and Dharamkot, the two considerably prosperous villages. This may be a hint at the increasing information and a propensity to migrate long distance in economically well of families.

Apart from that two other facts requires some attention. First is the higher number of persons working in their own house in Dharamkot and having no occupational mobility. This is because of the booming hotel business and other related

activities and shops coming up in the village. First Bangotu and then Juhal tend to send more people to neighbouring village (assumingly Khanyara or Dari) than other two. This points out to the fact that mobility is usually to the economically better region and excess population of Khanyara and Dharamkot goes to nearby small towns and cities than neighbouring villages. Only one reasonable conclusion can be drawn from this section of study. That is. As far as occupational mobility is concerned, shear amount of mobility can say nothing about the stage of development of the village and care should be given to further analysis.

Consumer Mobility: Consumer mobility is an essential component of mobility. Till now, the paper has only talked about services, but mobility is equally possible in the context of goods also. People go out of their house in the nearby shop to buy everyday necessity but for buying a onetime consumer durable like car, anyone willing to go farther has to go farther. It can be said that everyday things will have a lower range and threshold, i.e. less people is required for that shop to be built and people are willing to go less distance to buy that thing. So one would expect that population size will be a crucial criteria to set up a shop in a village. It is more likely that milk or basic vegetables and food grains will be consumed from the stock of the village, and some other shops might be in the village to sell the basic consumer durables like a watch. But to go and buy a car will definitely require mobility of some distance.

Eight goods are taken into account for analysis of rural transformation; four food items, and four consumer durables; with a range from rice to motorcycle. Quite expectedly food items are bought from within the village. And only Bangotu has considerable in house milk production to satisfy some need. Otherwise all the other goods are acquired from within the village, either commercially or from ration shops (in our case that is immaterial). For meat there is some variation and Bangotu show over 50 per cent people buying meat from outside the village, denoting the mobility to buy meat as sufficient supply is not present within the village.

As one go toward costlier products, the mobility increases. Since no shop is there, all the consumer durables (apart from some pressure cooker that might have came as dowry), all goods are bought from outside the village. Some cases from small towns and in some cases like buying TV, inhabitants go to cities. In case of both Khanyara and Dharamkot and especially for Khanyara the case is different. Some shops are present within the village and so it is seen that 20 per cent of the clock/watch user have bought the thing from within the village only. The proportion is much less in case of television and even lesser for motorcycle.

One should note that, consumers' mobility is almost exclusively for economic reasons, and both availability and demand drive this mobility. A clear transformation is seen from Bangotu to Khanyara and Dharamkot, how availability or unavailability of a good inside the village drives mobility. It can be considered from the variation in the outcomes,that this a good indicator of rural transformation. And indeed, theoretically too, this is a very good indicator because it is able to somewhat offset the effect of government intervention in the village service provision and modify mobility pattern.

Conclusion

After this exhaustive study of different kinds of mobility across four villages with different levels of development, some insights in rural transformation can be made.

1. Intergenerational mobility shift can be observed. Younger generation seems to be more mobile than their older counterpart. Whether this is a transformation in process or a general rule, cannot be commented from this study.

2. There exists a considerable variation between the villages in mobility scenario. Although some general trend can be found across different data set, results get modified in the use of mobility indicator and reason. All of it points to the fact that in spite of a general trend of development, there are different forms of transformation and one should keep in mind that social, economic, infrastructural transformation are distinct from one another and influence mobility pattern in their own way.

3. Some indicators are found to be more useful in studying mobility than others. Indicators such as consumer mobility or educational mobility tend to be logically a better indicator of rural transformation than employment mobility.
4. Government initiatives often mask the village character by dominating the mobility pattern. So if one is studying mobility as an indicator of village development, some factors to offset government development initiatives should be taken.

At the end, it can be said that as long as mobility pattern remains the indicator, some evidence of rural transformation can be found. If the two smaller villages of Juhal and Bangotu are assumed as the traditional picture, both Khanyara and Dharamkot have undergone severe transformation, but Khanyara has transformed economically while for Dharamkot, it is mostly cultural. The process of rural transformation is ever continuing, and although degree and type of transformation may vary, some form of transformation always continues in today's Indian scenario.

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Gender and Work Participation Disparity: A Study in Nadia District, West Bengal

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Abstract:

Gender disparity in work participation i.e. the lower participation of female in the work than the male is a burning issue. The present study has intended to assess the gender related disparity in work participation i.e. the difference in nature, dimension and perspectives of work participation of male and female and analysed the disparity from different socio cultural viewpoints in Nadia district of West Bengal. Using secondary data and suitable techniques (Disparity Index, Correlation etc.), the study revealed the fact that work participation of female is low than male both in district and block level and it is also the fact that the disparity value is different for different caste, religion, rural or urban sectors. This disparity value is low in scheduled tribe population and relatively higher for Muslim population. Correlation analysis depicts that variables with positive value indicate higher female work participation and low disparity and vice versa.

Keywords: *Disparity Index, Muslim population, Schedule tribe, Work participation*

Introduction:

Both men and women have significant imprint on development and progress of a country and active participation of them in work energies the economy of the country. But the participation rate of women as workforce is low as compared to men both in India and West Bengal as well as in Nadia district. Disparity means inequality and according to Shastri (2014) gender inequality may arise due to distinctive nature and character of male and female. 'Gender differences in labour productivity and earnings are primarily the result of differences in the economic activities of men and women' (World Development Report, 2012:198). Age, sex ratio, literacy, marital status, caste, religion, number of family member, household income, average wage rate and unemployment rate are the major determinants of labour force participation (Saha and Kolita 2015 and Srivastava and Srivastava, 2010). Sinha (2005) in her study has indicated demographic factors (i.e. age, literacy, marital status), social factors (i.e. caste, religion), household factors (i.e. household income and male earnings, landholding) and regional factors (i.e. availability of employment opportunities, cropping pattern) as determinants of participation of female in work. Occupational differences may also create gender differences in work participation. Wootton (1997) has explained different occupations of men and women and pointed out that the occupational differences has observed when women has entered into male dominated occupation tremendously but men has entered into female dominated occupation with a little amount. However 'the increasing participation levels of women in the paid labour market activities are viewed as a positive outcome for improving women's status'(Rustagi, 2005:331). The OECD report, (2016) has recommended that implementation of government policies, reducing gender gaps in education, increasing employment opportunities for women, introducing equal wage for equal work etc. can reduce the gender gap in labour market.

According to census of India, 2011, the male work participation rate in India is 53.26 percent and female work participation rate is 25.52 percent, for West Bengal, this figure is 57.07 percent and

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18.08 percent for male and female respectively and for Nadia district male work participation rate is 58.56 percent which is higher than national and state average but female work participation rate is only 11.48 percent which is fur low than national and state level. The male female gap in work participation is 27.74 in India, 38.99 in West Bengal and 47.08 in Nadia district.

Objectives:

1. To assess the nature and perspectives of disparity in work participation of male and female in Nadia district
2. To visualise the spatial pattern of the disparity in work participation in the district
3. To trace the factors induce work participation disparity of male and female in the study area

Study Area:

Nadia district lies between 22º00'53" N - 24º00'11" N latitude and 88º00'09" E - 88º00'48" E longitude in the state of West Bengal covering an area of 3927 sq.km. The district is bounded by Bangladesh in the East, North 24 Parganas in the South and South-East, Bardhaman and Hugli in South-West and Murshidabad in North and North-West. It has 17 Community Development (C.D) blocks securing 7th position in total population, 4th position in scheduled caste population and 13th position in scheduled tribe population among the different districts of West Bengal.

Total population of the district is 5167600, of which 51.35 % are male and 48.65 % female. In case of composition of population rural share is 72.16 % and urban is 27.84 %. In caste composition of population, 29.93% is schedule caste (SC), 2.72% schedule tribe (ST) and rest 67.35 % non-SC /ST and 72.15% is Hindu, 26.76% Muslim and 1.09% other than Hindu-Muslim have recorded for religious composition and literacy rate is 75.0% (Census of India, 2011).

Database and Methodology:

The study is mainly based on secondary data and data relating to the population, workforce is collected from Census of India of different years.

Work participation rate (WPR), male work participation rate (MWPR), female work participation rate (FWPR), literacy rate are computed as per the Indian census. Sopher's Disparity Index (1974) modified by Kundu and Rao (1986) is used to study the disparity i.e. DI= log(X2/X1)+log[(Q-X1)/(Q-X2)], Where, X2 >X1 and Q=200, DI= Disparity Index and Pearson product moment correlation coefficient is used to analyse the relationship between female work participation and male female disparity of work participation with different variables.

Results and Discussions

Male-female disparity in work participation:

In district level, total worker is1842607 out of which 84.34 % male and 15.66 % female and work participation rate is 58.56 % and 11.48 % for male and female respectively. Caste, religion age, education level, marital status have evident impact on disparity in work participation of male and female in the study area. In case of work participation of female in different caste groups, ST female shows the higher rate than other two castes. But in case of religious composition, Muslim female reveals lower work participation than Hindu and other religion groups. But both in caste and religion grouping for every section male work participation rate is higher than female. So, the gender disparity in work participation is prominent in the study area. For total population male female disparity in work participation is 0.832. Such disparity high for Muslim population (1.010) and low in ST population (0.416) in respect to other religious and caste groups (table-1). The table-1 also reveals that the age group below 15 shows low disparity (0.300) and the age group 15-59 and above 60 shows high disparity i.e. 0.880 and 1.002 respectively. It indicates that with increasing age, female work participation decrease gradually. High gender disparity in work participation is found among literate than illiterate and it's mean that work participation of illiterate women is more as labourers in main and marginal sector.

Table-1: Different perspectives of Male and Female Disparity in Work Participation, Nadia District, West Bengal (2011)

Parameter	*Sub group of parameter*	*MWPR (%)*	*FWPR (%)*	*Disparity Index*
Age Group	5-14	2.26	1.14	0.300
	15-59	80.16	16.22	0.880
	+60	54.07	7.11	1.002
Education Level	Literate	60.28	11.50	0.850
	Illiterate	54.40	11.44	0.790
Marital Status	Married	91.98	18.40	0.924
Caste Group	Scheduled Caste (SC)	58.46	13.34	0.762
	Scheduled Tribe (ST)	58.60	27.46	0.416
	Non SC and ST	58.61	10.00	0.896
Religious Group	Hindu	59.47	12.89	0.788
	Muslim	56.26	7.37	1.010
	Other than Hindu-Muslim	54.89	18.90	0.559

*Data source: Census of India, 2011; *Calculated by Author*

In the trend analysis of gender disparity of work participation from 1961 to 2011(table-2 and fig.-1), it is found that the highest disparity recorded in 1971 and lowest was found in 2001. Though the values of disparity fluctuate from one census year to another but the overall trend of gender disparity shows the declining rate (Fig.-1).

Table-2: Work participation of male and female, Nadia District (1961-2011)

Year	MWPR (%)	FWPR (%)
1961	49.47	3.63
1971	46.39	1.97
1981	49.84	3.83
1991	52.00	5.13
2001	54.96	14.07
2011	58.56	11.48

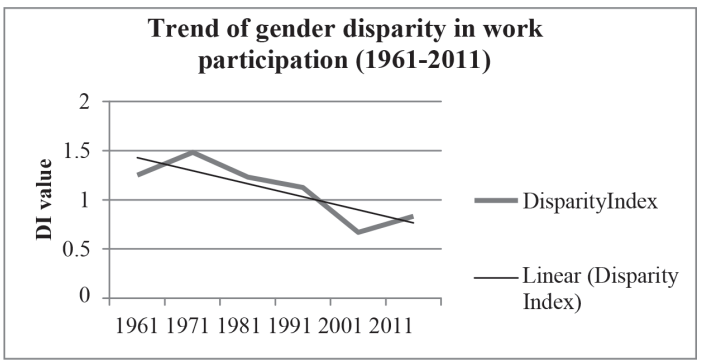


Fig.-1: Trend of gender disparity in work participation

*Data Source: Census of India, (1961-2011); *Calculated by Author*

In Case of main workers the percentage of male worker is greater than female worker while the marginal class shows the opposite scenario i.e. female workers are higher than male (fig.-2).

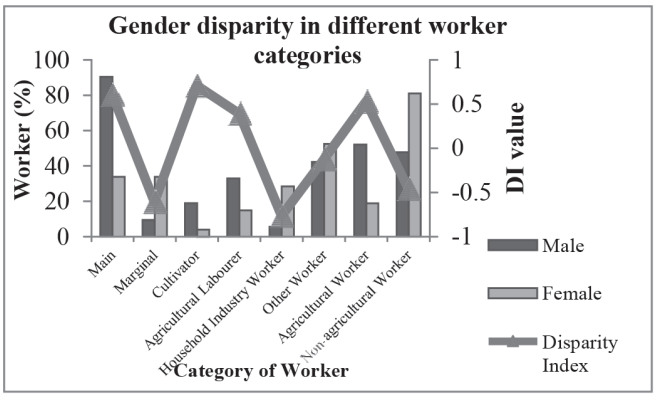


Fig.-2: Working category wise gender disparity

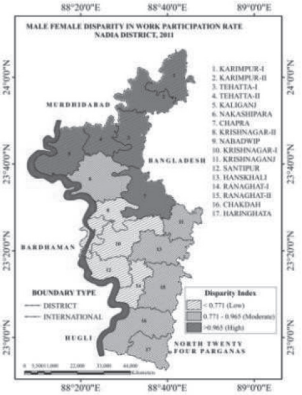


Fig.-3: Gender disparity in work participation

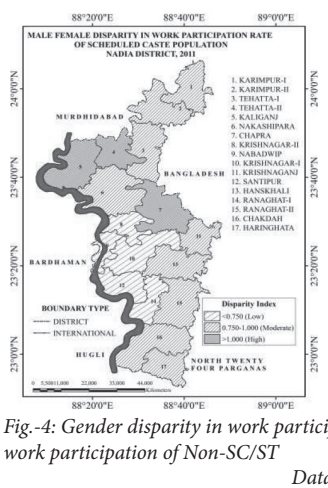
*Data Source: Census of India, 2011; *Calculated by Author*

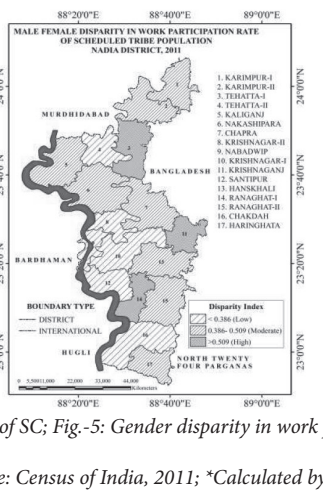
Spatial pattern of male- female disparity in work participation:

The block level data also reveal the disparity in work participation of male and female. In overall population distribution (fig.-3) it is found that the highest disparity is recorded in Tehatta-II (1.328) and lowest disparity in Santipur (0.577). Based on the disparity of male female in work participation, the blocks of the districts are grouped into three zones i.e. low (less than 0.711), moderate (0.711 to 0.965) and high (more than 0.965). Low disparity zone comprises fiveC.D.blocks namely Krishnagar-II, Nabadwip, Krishnagar-I, Santipur, Ranaghat-I where moderate disparity zone consists of six C.D.blocks i.e. Nakashipara, Krishnaganj, Hanskhali, Ranaghat-II, Chakdah, Haringhata and high disparity zone has six C.D.blocks i.e. Karimpur-I, Karimpur-II, Tehatta-I, Tehatta-II, Kaliganj, Chapra.

Male-female disparity in work participation in different caste groups:

Work participation disparity of male and female in different caste groups is classified into low, moderate and high categories for SC, ST and non-SC/ST population which is shown in fig.- 4, 5and 6 respectively. For SC population the highest disparity is found in Tehatta-II and lowest is found in Nabadwip and for this case low disparity (less than 0.750) is recorded in five C.D.blocks, moderate disparity (0.750-1.000) in nine C.D.blocks and high disparity (more than 1.000) in three C.D.blocks (Fig.-4).





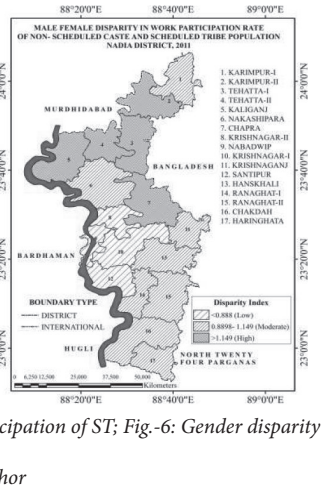


Fig.-4: Gender disparity in work participation of SC; Fig.-5: Gender disparity in work participation of ST; Fig.-6: Gender disparity in work participation of Non-SC/ST

*Data Source: Census of India, 2011; *Calculated by Author*

In case of ST population Ranaghat-I show the maximum value (0.632) of gender disparity in work participation while Krishnagar-I show the minimum value (0.263). For scheduled tribe population (fig.-5), six C.D. blocks reveals low disparity (less than 0.386), eight C.D. blocks moderate disparity (0.386-0.509) and three C.D.blocks high disparity (greater than 0.509). Similarly, for non-SC/ST population, four, eight and five C.D. blocks are enlisted as low (less than 0.888), moderate (0.888-1.149) and high (greater than 1.149) disparity zones respectively (Fig.6).Male-female disparity in work participation of religious groups:

In religion wise population distribution, the gender disparity of work participation is highest in Tehatta-II (1.231) and lowest in Santipur (0.575) for Hindu population and Tehatta-II and Santipur has recorded the highest (1.471) and lowest (0.656) disparity value for Muslim population and for other than Hindu-Muslim population, the maximum value (1.001) of disparity index is found in Tehatta–I and the minimum value (0.146) in Nabadwip. Male female disparity in work participation ranges from 0.785-0.995 for Hindu, 0.935-1.203 for Muslim and 0.430- 0.715 for other than Hindu-Muslim population. For all three religion groups, the disparity values are categorised into three zone separately, and it is found that Three blocks i.e. Nabadwip, Krishnagar-I and Santipur in low zone, four blocks i.e. Krishnaganj, Hanskhali, Ranaghat-I and Haringhata in moderate zone and two blocks i.e. Tehatta-II and Chapra in high zone of male female disparity in work participation are common for all religion groups (Fig-7, 8 and 9).

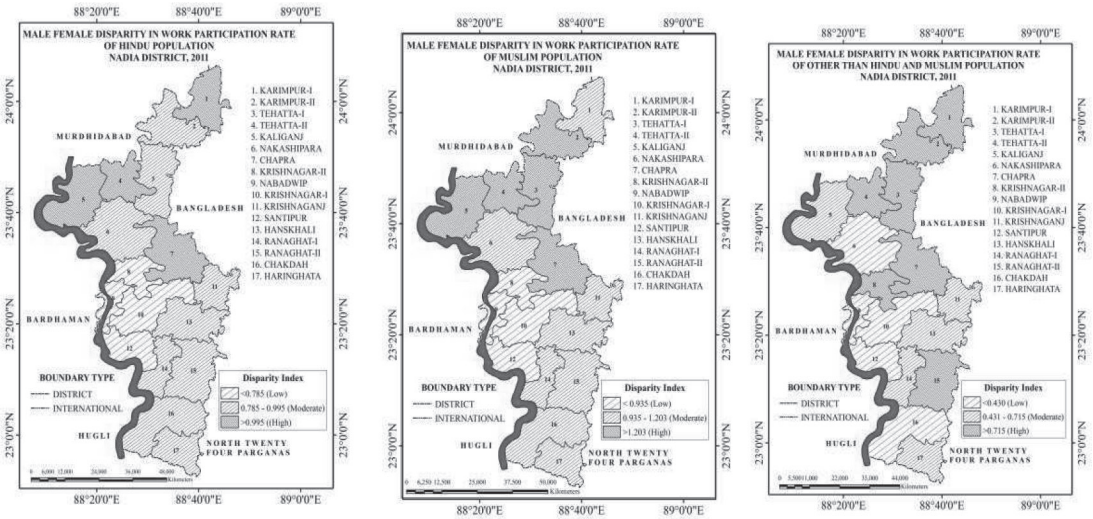


Fig.-7: Gender disparity in work participation of Hindu; Fig.-8: Gender disparity in work participation of Muslim; Fig.-9: Gender disparity in work participation of other than Hindu and Muslim

*Data Source: Census of India, 2011; *Calculated by Author*

From the study, it is also evident that blocks having lower value of male female disparity of work participation recorded higher percentage of main female workers who are mainly engaged in household industry work and female from higher disparity blocks mostly are cultivators and agricultural labourers. It is also the fact that for all the categories (SC, ST, non- SC/ST, Hindu, Muslim and other than Hindu and Muslim) three blocks namely Krishnagar-I, Santipur and Nabadwip involve into the zone of low disparity where FWPR is high. It is because of development of household industry i.e. hand loom and power loom industry in Santipur and Nabadwip block and potteries in krisnagar-I higher involvement of female in this industry.

Table-3: Correlation of FWPR and DI with different variables in Nadia District

Variables	*Correlation with FWPR (r=+/-)*	*Correlation with DI (r=+/-)*
Literacy rate (%)	0.274	-0.351
Female literacy rate (%)	-0.110	0.028
Urban population (%)	0.623**	-0.598*
Rural population (%)	-0.623**	0.598*
SC population (%)	0.312	-0.406
ST population (%)	0.320	-0.393
Hindu population (%)	0.523*	-0.584*
Muslim population (%)	-0.515*	0.578*
Main worker (%)	0.110	-0.081
Marginal worker (%)	-0.110	0.081
Cultivator (%)	-0.851**	0.836**
Agricultural labourer (%)	-0.807**	0.799**
Household industry worker (%)	0.853**	-0.747**
Other Worker (%)	0.603*	-0.673**
Agricultural worker (%)	-0.881**	0.869**
Non agricultural worker (%)	0.881**	-0.869**

**significant at the 0.01 level and * significant at 0.05 level

Data source: Census of India, 2011; Calculated by author

From correlations (Table-3) it is observed that there is positive relationship of female work participation with urban population, Hindu population, household industry worker, other worker and non agricultural worker which are significant at 0.01 and 0.05 level of significance and these variables shows significant negative correlation with disparity index. Such relation indicates that C.D. blocks having higher proportion of urban population, Hindu population, household industry worker, other worker and non agricultural worker reveal higher participation of female in work and lower disparity with male work participation. On the other hand, blocks having higher proportion of rural population, Muslim population, cultivator, agricultural labourer, agricultural worker have relatively lower female work participation and higher disparity value which is evident from the significant negative correlation of FWPR and significant positive correlation of DI with the aforesaid variables. So, it can be said that rural-urban composition, religious background and nature of work determine the working behaviour of the female in the study area.

Conclusion

From the study it is cleared that female work participation is low than male in all perspectives of population grouping i.e. age, caste, religion, nature of work etc. in the district. At block level nature of disparity connotes the same condition as the district level. Female work participation is higher in non-agricultural sector (household industry worker and other worker) than agricultural sector (Cultivator and agricultural labourer) but it is also the fact that female involvement is more in marginal sector than male involvement. Therefore, for increasing the female participation in skilled and regular work, care may be given to the improvement of facilities and opportunities for female education, skill development, motivation and facilities for better standard of living and implementation government policy for reducing the gender related gap in work and working environment.

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Dynamics of Domestic Workers of Kolkata Metropolitan Corporation(K.M.C.): Struggle for their Sustainance

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Poulami Chakraborty

Abstract

The unorganized sector is found throughout the globe, and mostly pronounced where the scope for employment in public, private, M.N.C. and other sectors are low, so, many people are getting involved in informal economies of different countries of the world. Similar picture is also seen in India and the prevalence of Informal sector is mainly found in the urban areas. In West Bengal, when the economy has been undergoing a substantial structural change in favour of non-farm activities and with the fall of employment in organized sector (since the early 1990s), the growth of employment in the informal sector started. The main objective of the present study is to find out the various socio-economic dynamics of domestic workers which are helping them to sustain themselves in the Kolkata Metropolitan Corporation(K.M.C.) areas on one hand while continuously helping most of the households in Kolkata for maintaining a proper living with their services on the other.

Keywords: *Informal Economy, Domestic Workers, Socio-Economic Conditions.*

Introduction

The informal sector or informal economy is the part of an economy that is neither taxed, nor monitored by any form of government. Unlike the formal economy, activities of the informal economy are not included in the gross national product (GNP) and gross domestic product (GDP) of a country, [NCEUS (2007)]. The informal sector is very widely observed in the big cities and mainly the metropolitans of India. The decrease in employment in the organized sector in the post-reform period has not been compensated fully by the growth of employment in the informal sector in West Bengal. Schurman and Eaton et.al. (2011) defined the concept of informal economy and suggest that informal economy works globally and workers of the economy are either not covered or insufficiently covered by national legal and regulatory frameworks and social protection schemes. Informal workers have been characterized as lacking seven essential securities: labor market security, employment security, job security, work security, skill reproduction security, income security and representation security. Trade unions and collective action have historically played a critical role redressing this last type of insecurity, although these redressing concepts have not been properly implemented in India and specifically in Kolkata.

Literature Review

The literature review has been classified on the basis of the various dimensions of the subject of study.

Nature of Employment

There is a difference between employment in the formal sector and the informal sector in terms of conditions of work, whether workers are subject to government taxes, have access to social security or insurance, casual or contract workers, whether they receive minimum wages or not, etc. The possibility of choice of informality amongst workers, (who prefer to remain as informal) is due to the fact that workers think they would get less income in the formal sector than they are getting in this informal economy, while there are certain workers who think that they will not get well paid because of their not so good qualification (Sinha, 2014). Indian Economy as a combination of both formal and informal sector is helping in the growth because of its working force in terms of size and dimension. It is also said that the

Poulami Chakraborty, Visva Bharati, Shantiniketan.

informal sector or the unorganized sector consists of enterprises owned by individual or households for production and sale of goods and services, without any employment benefit to the workers. The studies on informal sector are gaining momentum since recent years. It is said that this labour market needs to be segmented and studied about the background (caste, community, gender, education, etc.) which has bounded these people to get into the work type. The labourers are brought from marginalized sections while the higher caste people are engaged as skilled or managerial jobs, (Bhosale ,2014). Gill (2010) said that in Delhi, a clear distinction is seen between another groups of informal workers, i.e. between the kabaddi walas and the Panni dealers; the author refers to the relationship between waste pickers and their respective Panni dealers as a tied relationship. Both itinerant buyers as well as waste pickers maintain long-term relationships with the scrap traders over several years.

Gender Issues in Informal Economy

In the urban areas, the female workers are mainly engaged in home based work and some works as street vendors or fish dressers. From a study it has been seen that the domestic workers top the list of female informal workers. It is also seen that domestic work and constructional work shows highest values for female migrant share (according to 2007-08 data), which on the other hand accounts for their poor condition of work. The domestic helps do different tasks of urban households; the payment is depending on the work type they do. The caste dimension also plays an important role, because the higher paid are of higher caste as compared to the less paid workers. The income earning of these women mainly depends on the fact that male income is uncertain and irregular **(Neethe N, 2014)**. The women are worst affected with very low paid jobs **(Bhosale, 2014).**

Small families in the urban sectors with both the parents working have increased the inclination towards this informal economy. It is not very easy to define this group of workers because there is a confusion as to what type of workers are these informal domestic workers classified as, whether full time/part time, although it is better to classify them as 'live out workers'. (Raju, 2014). With the increase in the female workers in BPO and IT sectors, there is an urgent need to hire women domestic labour.

Education And Informality

Sinha, (2014) has shown a close relation between education and informality. She said that more the educational level is increased among Indian Folks the lesser will be the incidence towards Informal sector.

Objectives of Study

The domestic workers in Kolkata plays a very important role in helping the urban dwellers to maintain a comfortable life yet they are not paid properly neither do they get any help from government in form of loans, assistance, etc. so the different dynamics of these informal domestic workers in Kolkata needs to be found out to improve the sustainability condition of the population engaged in these enterprises.

So, the objective of this paper is to test the above mentioned aspect in different zones of K.M.C.

Methodology Used

Pre Field

Previous literature study and pilot survey has been conducted before the surveying procedure was done in different Boroughs of K.M.C., preparation of structured questionnaires.

Field Work

Various information and data from different secondary sources report of NSSO, Census reports, District handbook, and from the office of K.M.C. The studies related to Informal workers of Kolkata have been collected from Field survey with the help of structured questionnaires and purposive sampling technique has been used for conducting the survey

Post Field

The maps, tables and diagrams have been prepared using various software.

Informal Workers of Kolkata Metropolitan Corporation

In West Bengal, the total number of people engaged in informal economy is 832 in rural areas (53%)

and 724 in urban areas (47%). (NSSO, 68th Report, 2011-2012). In the informal economy of Kolkata, the domestic workers out numbers the other informal workers. They are the marginalized sections of society and a large number of them are migrant workers from surrounding villages and city fringes, serving the urban households.

Domestic Workers of K.M.C.-*The Draft National Policy on Domestic Workers (2015- 1016) as recommended by the Taskforce on Domestic Workers* provides a definition of a domestic worker as: "For the purpose of this policy, the "domestic worker" means, a person who is employed for remuneration whether in cash or kind, in any household through any agency or directly, either on a temporary or permanent, part time or full time basis to do the household work, but does not include any member of the family of an employer." Domestic Workers range from full-time to part-time workers, skilled and unskilled workers.

Types of Domesticworker

Based on the type of training obtained (if any), the domestic workers are categorized as-

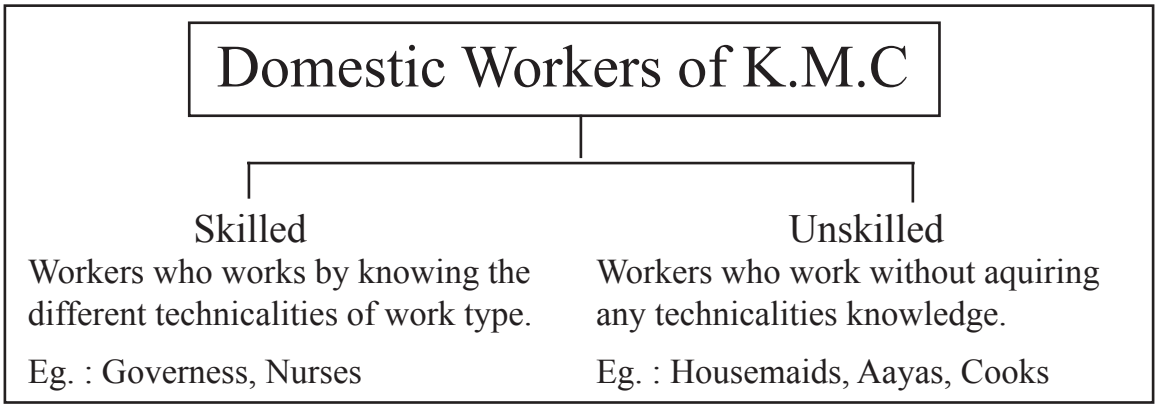

Figure No.1 Design of Study Area

Design of Study Area

The zones which are selected for study is based on the position of 15 Boroughs on the Map of Kolkata Metropolitan Corporation(K.M.C.). This position is categorized on the basis of compass direction which is illustrated alongside-

Table 1- Distribution of Boroughs of K.M.C.

Names of zones	*Boroughs included*
North	1,2
North-East	3
Central	4,5,6,7,8
West	9,15
South	10,11,12,13
South-West	14

Source-K.M.C., 2012

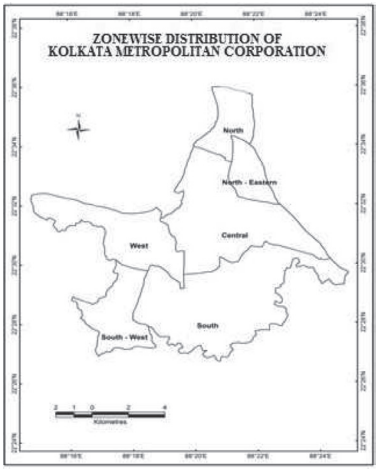

Fig 1 : Zone wise Distribution of Borough Map of K.M.C

Socio-Economic Condition Of Domestic Workers

For knowing about the struggle of domestic workers we have to know about some of the socio- economic condition of these informal labourers.

Social Condition of Domestic Workers

Age Group of Domestic Helps

Out of 135 domestic workers surveyed throughout K.M.C., it is seen that workers in the young age group of less than 15 years are least in share and concentrated in some zones. These young aged domestic helps are found in central zone, and in the south-western zone of K.M.C. This shows the incidence towards child labour amongst domestic helps is low in Kolkata, so small girls at this age are not working in this profession in most areas.

These workers are maximum, in the middle aged group of 15-30 years. Highest in this age group is found in northern zone and least in the North-eastern zone. Some helps between 30-45 years are found in the south-west (46%) and southern (23%) parts of K.M.C. The age group of above 60 years shows a less dominance of helps, is only in North-eastern zone (17%), and south-western zone (7%).

Marital Condition

The domestic helps mainly belong to poor families, so there is a tendency of their parents to get most of them married before attaining adulthood. Some of them could not get married due to family pressure, etc. which is seen in the following illustrations below-

AGE AT MARRIAGE -About, 16% of the domestic helps got married below 15 years of age in Northern zone. While 20% in central, 17% Southern and 8% in the South-western parts of Kolkata also shows a similar picture. The incidence towards child marriage is found in the surveyed sites but it is absent in the north-eastern zone of K.M.C.

Out of 135 surveyed individuals, 37%, in northern zone, 46% in North-eastern zone, 40% in Central zone, 41% in Southern zone and 49% in the South-western zone of the domestic workers got married between 15-30 years of age group, which is almost the legal age of marriage in India.

Marital Status

Throughout K.M.C. the domestic workers are mostly married, that is 61% in Northern, 44% in North-Eastern, 70% in Central,79% in Southern,68% in the south-western zones of Kolkata. Only some domestic workers in Northern, North-eastern, Central, Southern and South-western zones of K.M.C are unmarried. Other than that 9% domestic workers in North and 17% in North-eastern zones are divorced and 13% in Northern, 11% in North-eastern, 7% in southern and 15% in south-western are widows.

Educational Status

Education plays a very important role in the development of a society. Every girl child should be educated, so that the future generations can be motivated towards proper path of knowledge. This is also observed in this group of surveyed workers, i.e., amongst the domestic workers surveyed, most of them have studied beyond the primary level, which is 46% in North, 72% in North-east, 50% in Central, 38% in South and 53% in Southwestern part of K.M.C. 21%, 25%, 23% and 7% helps have studied up to class XI and XII in the North, Central, South and South-west zones respectively. Inspite of fact, that these people getting educated, they cannot continue their studies due to lack of income in their families and are forced to get into work, or get married at earlier ages. There are some helps who have got certain other training like- sewing, making baskets, incense sticks making etc. which are seen in South (8%) and South-western (27%) parts of K.M.C. helping in providing some extra income for the family members.

Economic Conditions

Monthly Wages:

The domestic helps who earn less than Rs. 1400 per month, are found only in the South-western zone, which is 33% of the total respondents.

The middle income group between Rs. 1400 and Rs. 3500 comprises of the maximum share of the domestic workers. Rs. 1400-2100 per month is earned by 42% domestic workers in northern zone, 17% in the North-eastern, 10% in central zone, 16% in southern and 30% in the south- western zones of

K.M.C. The monthly income of Rs. 2100-2800 is earned by a large percent of domestic workers, i.e., 33% in North, 55% in North-east, 20% in Central, 46% in South and 25% in the south-western parts of K.M.C. while Rs. 2800-3500 is earned by 30% domestic workers in Central, 23% in Southern and 12% in the south-western zones.

The higher income of above Rs. 3500 is mostly earned by domestic workers in the central zone,

i.e. 40% of the domestic workers while 25% workers in northern, 28% in the north-east and 15% in the southern zone constitutes this income group of domestic helps.

Although the income is not sufficient enough for survival still the domestic workers have to sustain their families because the family sizes are quite big in north-east, south-western and southern than the rest of the surveyed zones of K.M.C.

Money Management of The Respondents

Inspite of the fact that the income condition of the domestic helps is mostly low, still they have a propensity towards saving some amount of their monthly wage. This could be instinctive or it could be done for the awareness and infrastructural advantages generated by government and various NGOs.

Savings Per Month

In Northern zone, the helps earn between Rs, 1400-2800, so, 8% of the domestic workers, save less than Rs. 250,17% save between Rs. 250-300 and 21% more than Rs. 500 per month.

In the north-eastern zone, the family sizes are big; as a result, the helps cannot save much after sustaining their families. About 44% of these female workers are saving money which is less than Rs.250 and 11%, who earns above Rs. 3500, saves more than Rs. 500 per month.

Similarly, in the central zone, about 39% domestic workers also save above Rs. 500 per month. The income of domestic helps is between Rs. 2100-Rs, 2800 in Southern zone, so 38% of workers save above Rs. 500 and 8% between Rs. 250-500 in a month.

The respondents of South-western zone belong mainly to the middle and lower income group, so only 5% of the helps saves above Rs. 500/month, 40% saves between 250-500 and 27% saves less than Rs. 250.

Institutes For Saving Money

The money that the female workers manage to save, are deposited in various institutes like- 21% of domestic workers in Central zone and 13% in the South-western zone save in Post offices.

About 16%, 31% and 6% domestic workers in Northern, Southern and South-western zone saves in different nationalized banks while 45% of domestic workers in North-eastern and 7% in south- western zones save in Co-operative societies.

Some domestic workers save in Life Insurances on a monthly basis, which is 17% in Northern, 32% in central, 7% in South-western zones.

This shows the increasing awareness amongst the domestic workers regarding money management. The remaining percentages of workers were either not willing to answer to any question and some had no savings done.

Problems Faced by The Domestic Workers

Addiction Of Male Members of The Families

The addiction of male members affects their own lives as well as lives of other family members. In the northern zone, amongst all the male family members, i.e., 39% are addicted to smoking. The maximum smoking male members in the families of these respondents are in north-eastern zones, i.e., 50% and lowest percentage of males addicted to smoking is found in the south-western zone, i.e. 29% of the total members in their families.

Other than this a huge share of male members in the Northern zone are addicted to drinking, which is 44% and least in the central and south-western zone, i.e. 22% and 21% respectively. 17% of the male members are not addicted to any addiction in the northern zone. Similarly, 25% in the north-eastern, 33% in the central and south-western, 20% in the southern zones are not addicted to any sort of addictive things.

Some males who are addicted to other things like, chewing tobacco, Gutkha, Drugs, Cannabis, etc. and the share is 17% of the total male member in central and south-western zones of K.M.C.

Physical Abuse

After getting addicted to different addictions, there are number of males in the families of domestic workers, who physically abuse their wives, daughters, and other members of the family. This problem is faced by 30% families of the respondents in North, 40% in north-east, 62% in central, 25% in south and 17% in south-western zones.

50% families in North and southern zones, 60% in north-east, 33% in south-west and only 25% in Central zones, the male members don't create any problem.

Conclusion

Government should be concerned about large informal sectors because the informal workers are organizing and sustaining themselves on their own.

PROBLEMS

The domestic workers are not paid well and also not organized at all. Organizing domestic workers has been a huge challenge as the work place is inaccessible and multiple, marked by a high rate of instability. Better wages or working conditions with necessary leaves, paid holidays, etc. are required. Improvement in the levels of literacy is needed amongst the workers which will make them aware of the exploitation they are undergoing in their workplace.

Mitigational Measures

The problems need to be mitigated in the following ways- A strong and well organized work force for domestic workers is a prime need in ensuring better policy and legislation, while simultaneously enabling better enforcement of existing legislations. Domestic Maid Centre is formed in recent days that help the domestic workers to get a platform from where they can conduct their working process and receive proper remunerations. The informal workers should be made aware of the various policies taken up by the central and state government which will help in the betterment of their livelihoods.

So, governments should show concern for the development of this sector by considering the various dynamics of the economy, as it is a safety net for the poor.

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Flood Risk Zones of the Baitarani Basin in Odisha: A Mapping Exercise Using Remotesensing Data and GIS

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Abstract

The information about floods extend far back in the history of the world, more than any other event connected with man. Being by and large an agricultural country, India experiences recurring floods during the monsoon months. A good way to prevent and reduce damages that occur due to floods is to prepare flood zone maps using Remotesensing data and GIS. This exercise is an attempt to fulfill such a requirement by the use of GIS, to provide spatial information for analysis of floods vulnerability and management. An attempt has been made to prepare a map an area measuring about 10,982 km^2 showing flood risk zones with the help of remote sensing data.

Keywords : *Population Geography, Population density, Population growth, demegraphic characteristis environment human health, Baitarani Basin India*

Introduction

Floods are the most recurring, widespread and disastrous natural hazard, resulting in serious social, economic and environment losses in both developing and developed nations. With some of the world's most intense rainfalls, dynamic landforms, and high population density, developing countries in general and the countries of South Asia, in particular, are more vulnerable to flood hazards. In recent times, flooding has claimed more lives than any other natural disaster in these areas. India is one of such countries that have been seriously affected by floods on multiple occasions. On an average, about 32 million people are affected by floods every year in India. Although monsoon rains and floods are welcomed because they provide water for crops and other purposes, replenish nutrients in the soil, and recharge the aquifers, the heavy precipitation, however, and attendant large floods have a very detrimental effect on the population by destroying crops, property and in several cases by taking lives.

The bulk of India's population is concentrated in the riverine and coastal plains. Due to their topographic situation, these areas are often prone to floods. Consequently, very large number of people and their livelihoods are seriously affected. As a result of severe impact, several agencies at the state and national level have sought to reduce vulnerability to floods and to mitigate the adverse effect of floods by using multiple measures. However, to ensure that fewer people become victims of natural disasters, it is necessary to have a comprehensive understanding of the frequency, pattern and causes of floods.

Earlier, mapping was manually done and it involved great amount of man days and cost. With aerial photos coming in with a bang after the second world war, the job of mapping has become less time consuming (through costly in the final analysis); but, still, mapping with aerial photos couldn't be possible at short and regular intervals and whenever one wanted. In the present day world, the express need is to have information about not only of one's own backyard but also the entire world, almost on a

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real-time basis or at very short and regular intervals, And, Remotesensing is the only tool in the kit of present civilization to give a systematic coverage of parts of the earth at very short regular intervals and almost on a real-time basis. Further, Remotesensing coverage commands a greater view of the ground in a single picture than in the case of aerial photos which only give a smaller view of the ground. Remotesensing data is not explicit always and needs to be interpreted and there are certain disadvantages of using it directly. This is where GIS comes into picture. GIS is a very efficient tool to extract data and information from remote sensing data and to process, present (display), store and retrieve the same at a click or a few clicks of a mouse-button.

Leaving aside the hydrological aspects, geomorphology of flood plains has a strong relation with floods and flood zones and Kale's (2003) paper is one of the many to prove this relationship. The flood (and delta) plains though seem to be featureless contain many forms and features of micro-relief (levees and point bars) and some with no relief at all (abandoned/buried channels and certain manifestations of subsurface structures which are beautifully registered in remote sensing data (Prudhivi Raju, 1992). These forms and features form the basis for mapping of flood risk zones. A number of studies have been carried out by various workers on channel pattern changes (Pal and Bhattacharya, 1979), channel migrations (Jain and Ahmed, 1993) and buried channels (Gautam, 1993) in Ganga river plains. And, as so for flood hazard and potentially of remote sensing data in monitoring of floods Prasad et al., (2006) have summed up the flood problem in several states of India. Mohapatra and Singh (2003), Jain et al., (2005), Chandan et at., (2006) have highlighted in their papers, the use of remote sensing data in flood mapping and management in India.

Objectives

This study attempts to prepare a map showing flood risk zones with the help of remote sensing data of the Baitarani basin.

The study area

The river Baitarani is one of the important east-flowing rivers of peninsular India located in northern Odisha. The river is flashy in nature having a total length of 355 km. and an area of 10,982 km^2. The basin is situated approximately between of 85^0 10′ and 87^0 03′ East longitude and between 20^0 35′ and 22^0 15′ north latitude. The basin is surrounded by the Brahmani basin on the south and west and Subarnarekha basin on the north, the Budhabalanga and the Bay of Bengal on the east. It covers an area of 10,982 km^2 of which 10, 246 km^2 (93.3%) lies in Odisha and 736 km^2 (6.7%) in Jharkhand. The northern portion comprises of rugged hilly terrain. The basin perimeter measures 622.22 km.

The geological setting of the hill catchment of the basin mostly includes rocks of Pre-Cambrian formation. The plain part of the basin is characterized primarily by sands with admixture of cobble and boulder in its upper part and alluvial soils, mostly silt and clay formed of recent alluvium, in the lower part.

The Baitarani river receives a number of small tributaries along its course. The main tributaries of the river are the Kangira river, the Aradei river, the Khairi-bandhan river, the Deo river, the Kanjhari river, the Sita river, the Musal river, the Kusei river, the Salandi river which meet together and flow as Baitarani in Odisha. The tributaries have considerable contribution towards the discharge of the main stream, Out of which the tributaries, Salandi river and Khairi-bandhan river, are solely responsible for most of the sediment contribution to the Baitarani river.

Database and Methodology

A hard copy image of Remotesensing data of IRS- 1A of a resolution of 80 m in the format of a FCC with a band combination of 2, 3, and 4 and with a colour combination of BGR at a scale of 1:250,000 is used for mapping flood risk zones. One problem while mapping risk zones through Remotesensing data is absence of sufficient relief and presence of plant/ crop cover. That is why; it requires interpretative skill to delineate flood zones. Flood mapping has been done by many for various parts of the world. There can be no generalized scheme of flood zones as situations differ from plain to plain and place

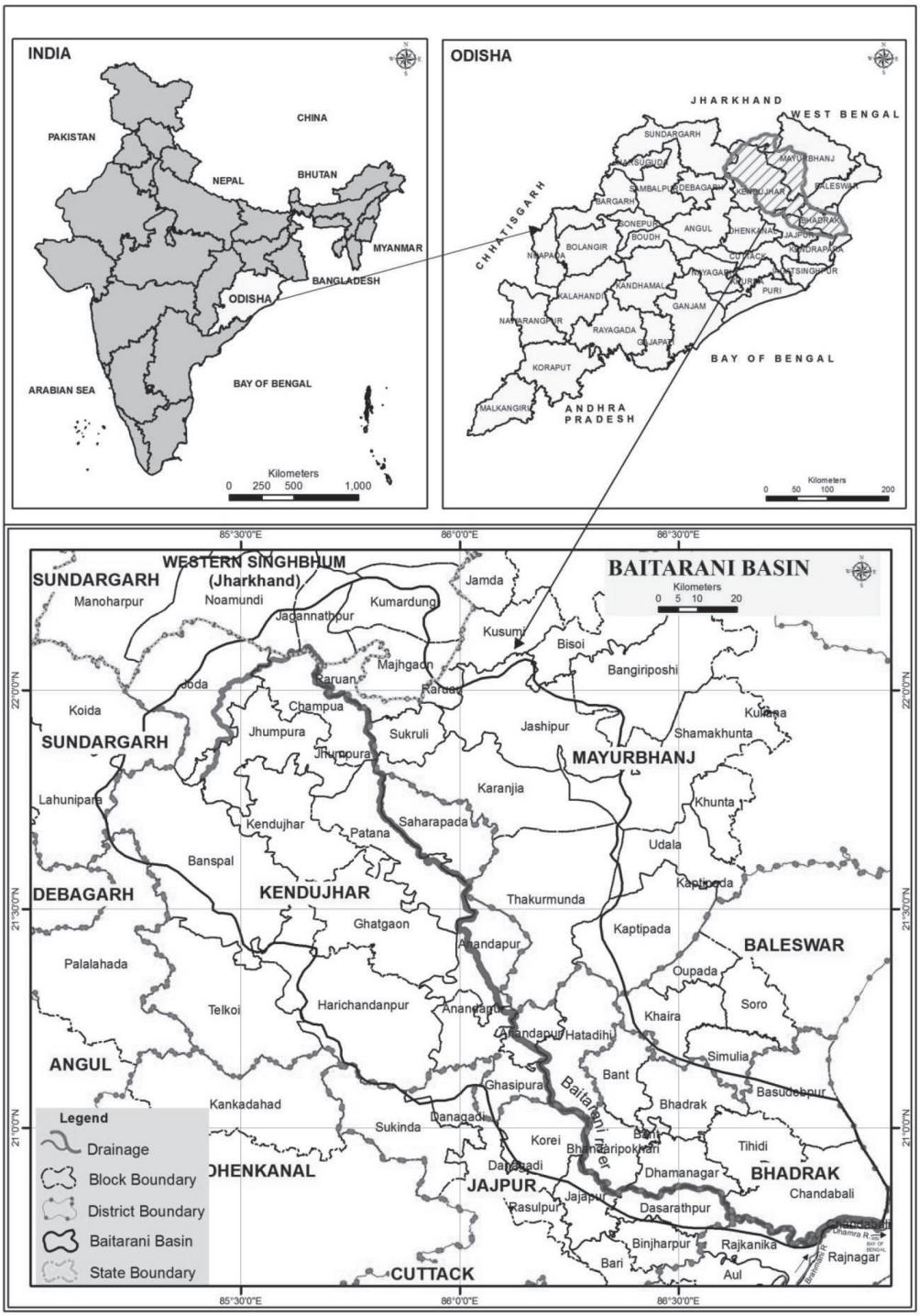

Fig.1 : Location of the Study Area

to place through the geomorphic features (natural levees, point bars, flood basin, flood plain etc.) that we find associated with flood plain are one and the same with the exception of dimensions and numbers in every flood plain.

With a transparent film placed over the data print, flood risk units were demarcated through visual appreciation/interpretation by hand and a overlay has been prepared. This transparent overlay has been scanned and imported into ERDAS image processing software program and was georeferenced (polyconic projection). The longitude and latitude crossing from the image itself were used as ground control points for geo-referencing. The geo-referenced image is added onto ArcGIS platform and was manually digitized and some attributes were added. Data available through table of ArcGIS shape file is used to generate some simple statistical information.

Results and Conclusion

In the map produced, a total of five flood risk zones are indicated in different colours. The extents of area of different risk zones are presented (Fig.2). The water courses/reservoirs/lakes in the image are quite at a contrast registered in light to dark blue colour and are easily discernible. So are the sand banks and temporary river islands (Very High Level Risk Zone) showing up in red colour. The stabilized river islands are occupied by vegetation/crops and are clear to identify in the satellite image with their location within their two banks of the river (High Level Risk Zone). The very level flood zone gets submerged every year during rainy season. The low level flood plain alongside rivers Genguti and Matai which is nothing but the meander belt which is clearly identifiable with numerous impressions of natural levees and point bars fall under the category of high level flood zone. Some higher natural levees in this zone can stand high and dry

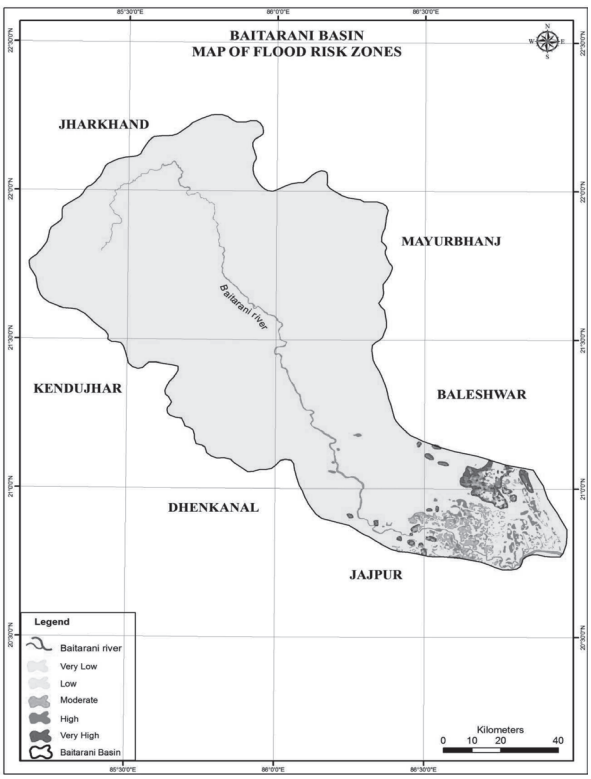

Fig.2 : Flood risk Zones of Baitarani basin

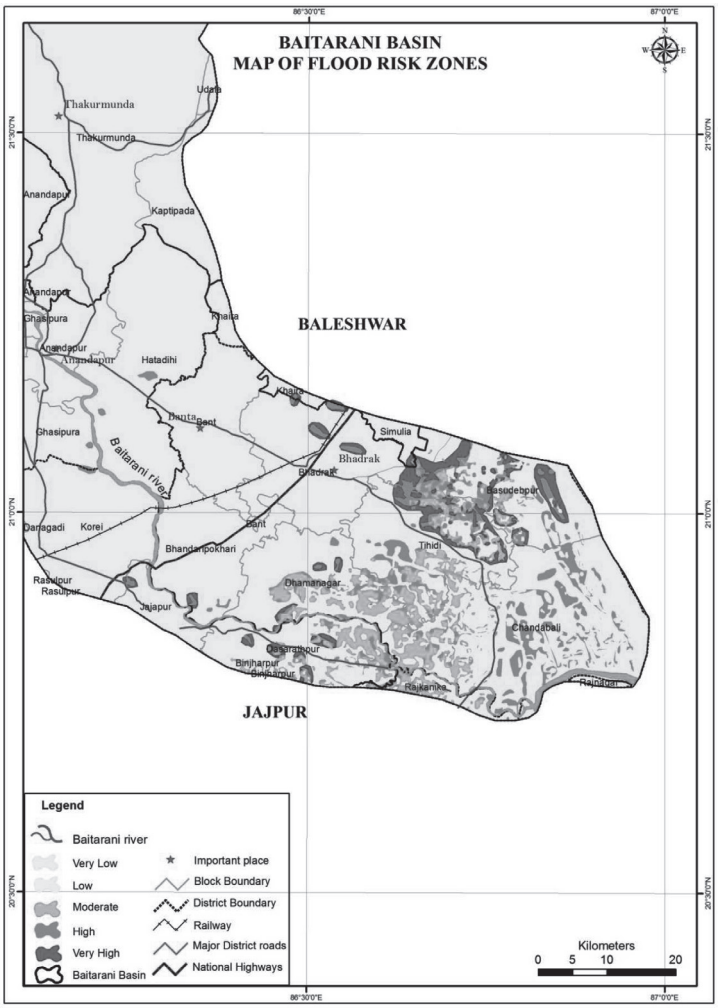

Fig. 3 : Flood risk Zones of Baitarani basin

Fig. 4 : Flood risk Zones

Sl. No.	*Flood Risk Zone*	*Area In Sq. Km.*	*Area In %*
1	Water Courses/Lakes/Reservoirs	254	2.31%
2	Very Low	6271	57.1%
3	Low	731	6.66%
4	Moderate	921	8.39%
5	High	1122	10.22%
6	Very High	1683	15.32%
	Total Area	10982	100

in moderate flooding. Medium Level Flood Zone is flooded during heavy rains of the season almost once in two years. Low Level Flood Zone gets flooded once in a decadal flood. The floodplain alongside river Baitarani is a little higher and flood risk is lesser as the gradient of this river is quite higher compared to the other rivers in Odisha. Very Low Level Flood Zone is also prone to flood quite often but not as often as the other zones lower down. Very Low Level Flood Zone is at higher elevation than other and get flooded only during once in a hundred year flood.

Remote sensing data offers a very good facility to demarcate flood risk zones. However, with the floodplains covered under crop/vegetation canopy almost throughout the year, the delineation of terrain units depends up on a good amount of interpretation.

Acknowledgment

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Spatio-Temporal Change Analysis of Land Use and Land Cover by Geospatial Techniques: A Study on Ganktok Municipality, Sikkim

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Abstract

The concept of urbanization is enveloped in the development of the urban area and its enriched surroundings at the recent time. Urbanisation in India, with respect to other developing countries, is growing widely. The present study deals with the analysis of spatio-temporal changes of land use and land cover of Gangtok municipality from 1990 to 2011 with the help of geospatial techniques. Gangtok municipality is the capital city of Sikkim where spatial changes are not only the ways of development; it is the consequence of the urban development. This work is based on the analysis of Landsat data of 1990, 2000 and 2011with the help of various GIS softwares and the results were validated by primary datasets. It is very explicit that some waste land have been converted into the settled area quickly and haphazardly. Even some vegetation or forest cover has been converted into the agricultural landscape for their livelihood. The change in land use and land cover is dynamic in its nature due to increase of human interference as well as their activities. It is very clear that the man-environment inducement has taken a place in this study.

Keywords: *Urbanization, land use and land cover, boosting stage, man-environment inducement*

Introduction:

Urbanization is an entity to measure the ratio or the proportion of people living in the urban areas. It is explicit or implicit that the spatial change of urbanization is not just a way of development, it is the consequences of development. Since last decade of 20th century it has exactly induced a great impact over the land use and land cover patterns. Urbanization is the only matter which boost a particular region with the increasing rate of population growth. People generally go to the vacant land within and outside the urban area and utilize those lands for their settlement. Even huge proportion of waste lands are now under processing for further settled areas. In some cases very few percentages of agricultural land and forest cover area has also been cleared and converted into settled areas.

Land cover means biophysical attributes of the earth's surface and land use defines application to these attributes for human purposes (Lambin. E.F. et al. 2001). Spatial extend of land use and land cover is the significant outputs of man-environment interaction through developmental policy. Land use basically transformed in the global scale in various forms like waste land to built-up area, forest cover to agricultural land, agricultural land to fallow land etc. In these way the land uses have cumulatively transformed into land cover at a worldwide scale (Turner B. L. 1994). Now a day, changes of land use and land cover dynamically due to rapid urbanisation (Deng et al. 2009).

Remote Sensing and GIS techniques have been used in several studies to map spatial patterns of land use land cover and to analyse the rate of spatio-temporal changes (Hall et al. 1991; Roughgarden et al.1991; Wood and Skole1998). Satellite image classification, net change (Armeteras et al. 2006; Mas et al. 2004) and change detection have attracted our attention towards change analysis (Singh 1989; Coppin et al.

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2004; Lu et al. 2004). Landsat images have been used vigorously in the field of geo-spatial techniques since last three decades (Masek et al. 2008; Huang et al. 2010; Thomas et al. 2011; Lu et al. 2013). Spatial trend of change analysis by geospatial techniques are now a common issue with the increase of availability and betterment of image quality and resolution as well as advance analytical techniques (Deng et al. 2009). However, many technical difficulties have been faced by the researchers in terms of accuracy assessment of land use and land cover change, urban expansion etc. A major challenge is that urban landscape is more heterogeneous and complex in sort of spatial and spectral characteristics (Deng et al. 2009).

The objective of this paper is to assess the spatio-temporal landuse and landcover changes of the Gangtok Municipality area, Sikkim from 1990 to2011 and to measure the changing pattern of gain or loss of different land classes with the help of geospatial techniques. It also aims at finding out the inherent causes of such changes and its future consequences in urban development.

Study Area

In this paper, the spatio-temporal landuse and landcover changes has been discussed and analysedon the Gangtok municipality, capital as well as largest city of Sikkim. Gangtok is one of the fastest growing city in the north-east India located at the Eastern Himalaya. It is the 22nd state capital in India inaugurated in 1975.Gangtok is connected to the rest of India by National Highway 10 (earlier National Highway 31A), which links Gangtok to Siliguri, located 114 km away in the neighbouring state of West Bengal. The study areacovers19.2km^2 with latitudinal extension from 2728´17°´´N to 2730´22°´´ N and longitudinal extension of 8802´35°´´E to 8830´38°´´E.Gangtok is located in the eastern Himalayan range, at an elevation of 1,650 m with steep road and the compact buildings have covered alongside the road. The city is bordered by two streams, namely Roro Chu and Ranikhola on east and west respectively. The Gangtok city enjoying a mild temperate climate throughout the year, is surrounded by densely forest, consisting of temperate, deciduous forests of poplar, birch, oak, and elm, as well as evergreen, coniferous trees of the wet alpine zone.

Basically, the study area is famous for its tourism and trade. So, it helps to increase the GDP rate 7.62% in 2011, that is much higher than the India's GDP (4.7%) rate at the same time population has been increases dramatically(Human Development Report, 2011). However, the landscape has been transformed with increasing trend of human population. Gangtok is the mostly populated area in Sikkim, with a total population of 1,00,286and the population density is 5,223/ km^2(Census, 2011). Hinduism is the major religion in Gangtok city with 58.81% population share followed by Buddhism (28.15%), Islam (3.14%), Christianity (9.07%), Jainism (0.14%) and Sikhism (0.16 %) (Gangtok Municipal Corporation website). Interesting thing is that many Buddhist Monasteries and Hindu Temples are developing throughout the entire Gangtok city. With increasing population in the areas as well as migration of various people like Nepalese, Lepcha, Bhutia, Tibetans, Marwari, Bihari and Bengalis, importance of this study area has been grown.Instead of being less developed state,uninterrupted power supply due to numerous hydroelectric power stations, location of various administrative headquarters, commercial officesalongwith superb utility of various services help to concentrate people inthis particular urban area resulting into significant change of land use and land cover in a large extent.

Database and Methodology

Land use Landcover change analysis

In the present study, the spatial pattern and conversion of land use and land cover from 1990 to 2011 has been shown. Here, Landsat TM (P/R: 139/41) for 1990 and 2000 and Landsat ETM+ (P/R: 139/41) for 2011 are collected from open source platform (Table 1). To avoid cloud cover images are taken from winter season. On the basis of these images, the map have been classified with the help of ERDAS Imagine 9.2 software and composition of maps has been done with the help of ArcGIS 10.1 software. The LULC maps are classified with maximum likelihood from three year of LANDSAT imageries

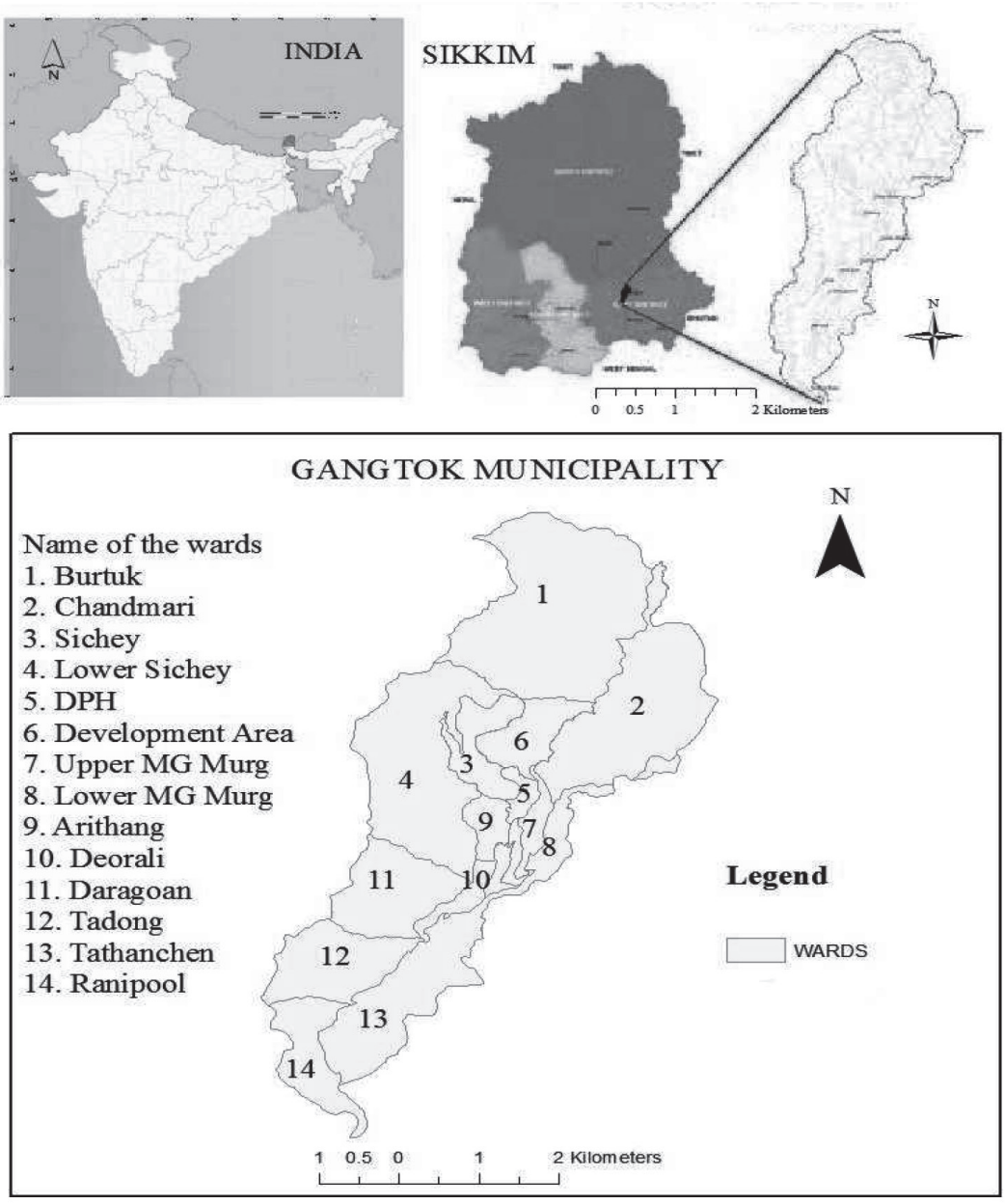

Fig. 1 Location Map of the Study Area

(1990, 2000 and 2011). After that, the raster data file are imported to IDRISI 17.0 selva edition to convert into ERSI format. In this way, the spatial trend of change has been shown in the form of gain and loss analysis into different land use categories.

Table 1: Detailsabout Data sources

Map types	*Date*	*Path/Row*	*Spatial resolution*
Landsat TM	1990	139/41	30m
Landsat TM	2000	139/41	30m
Landsat ETM+	2011	139/41	60m

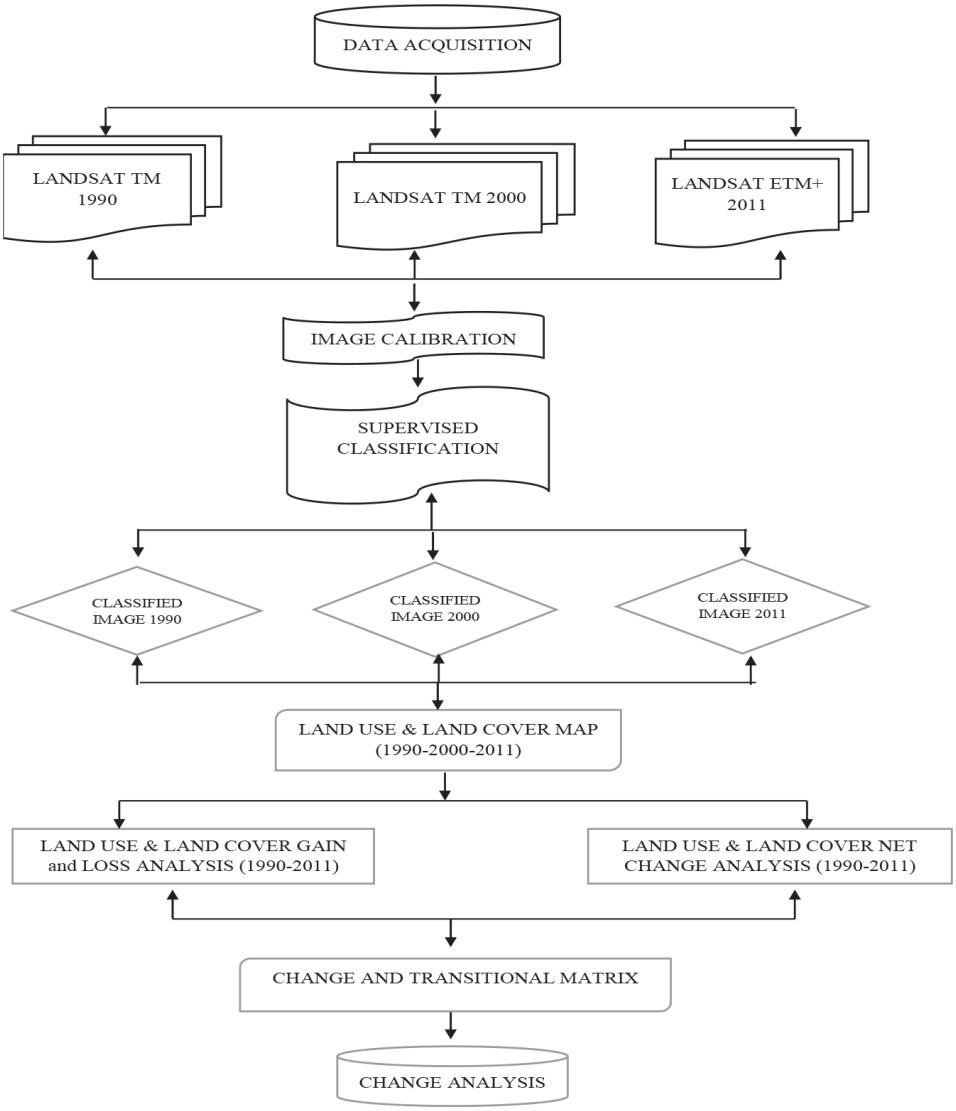

Fig. 2: Methodological flow diagram showing sequential change analysis of land use and land cover

Change analysis by Land Change Modeler (LCM)

The changing pattern of various land classes and their quantification have been analysed by Land Change Modeler (LCM) in IDRISI 17.0 Selva edition. This change analysis dealing with the gains and losses of land category means that how much amount of land is lost or disappeared from the past landscape to the present and quantify the net change of some specific category of land. There is also an analysis to represent the contribution of various land classes into net change of a particular land class.The area has been converted into sq. km and these have been shown in horizontal scale of the diagram.

Transitional Matrix Analysis (TMA)

Transitional matrix also known as stochastic matrix is basically a square matrix used to describe the transition of a Markov chain. Two types of stochastic matrix had been used i.e. a right stochastic matrix with each row summing or added up to 1 and a left stochastic matrix with each column summing or added up to 1. In this study, left stochastic matrix has been used to show a transitional change or to show the proportion of change of land use categories from various other categories.

If the probability moving from j to i in one time, the step is Pr (j/i) = $P_{i,j}$the stochastic matrix P is given by

$$P = \begin{pmatrix} P_{1,1} & P_{2,1} \cdots & P_{j,1} \cdots & P_{S,1} & P_{1,S} \\ P_{1,2} & P_{2,2} \cdots & P_{j,2} \cdots & P_{S,2} & \\ \vdots & \vdots \ddots & \vdots & \ddots & \vdots \\ P_{1,i} & P_{2,i} \cdots & P_{j,i} & \cdots & P_{S,i} \\ P_{1,S} & P_{2,S} \cdots & P_{j,S} & \cdots & P_{S,S} \end{pmatrix} = \begin{pmatrix} \\ P_{2,S} \\ \vdots \\ P_{j,S} \\ P_{S,S} \end{pmatrix}$$

$$\sum_{j=1}^{S} Pj, i = 1$$

using $P_{i,j}$ as the i^{th} row and j^{th} column element, e.g.

Each column of the transitional change matrix is added up and the values in each matrix element or transition state are divided by the sum of the column to compute the transition values. In each column, the probability values should be added up to 1 (Mukhopadhyay, et al. 2013).

Results and Discussions:

Spatio-temporal changes of land use and land cover from 1990 to 2011

Spatial change of land use and land cover means the changes of spatial extension of a specific type of land use and land cover. The Gangtok municipality area has been classified into five categories of land use on the basis of LANDSAT imageries i.e. Dense forest, Open forest, Agricultural land, Waste land and Settlement (Fig. 3).

It is explicit to quantify the actual area and percentage share by various land use pattern from past 21years of imageries as shown in the table 2.It is cleared from the images that agriculture land, open forest and settlement area has been extended relatively on the other hand waste landhas been reduced dramatically and dense forest has also been dwindled marginallydue to increasingtrend of population pressure and their requirements on the Gangtok municipality.

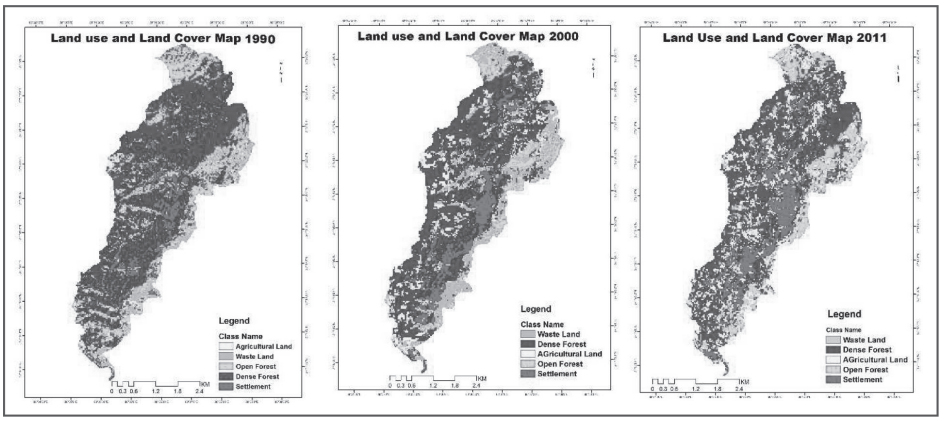

Fig. 3: Classification of land use and land cover from 1990 to 2011

Table 2: Percentage share of various land use classesfrom 1990 to 2011

Land Class	*1990*		*2000*		*2011*	
	Total Area (Sq. M)	*% Of Share*	*Total Area (Sq. M)*	*% Of Share*	*Total Area (Sq. M)*	*% Of Share*
Waste land	3266500	17.53	2628900	14.11	857700	4.60
Dense forest	8403500	45.10	8366800	44.91	8364600	44.89
Agriculture land	2106900	11.31	2575800	13.82	3897000	20.92
Open forest	1395300	7.49	1537600	8.25	1966500	10.55
Settlement	3459600	18.57	3522700	18.91	3546000	19.03
Total Area (sq. m)	18631800	100.00	18631800	100.00	18631800	100.00

It is evident from the fact that, waste landsor open lands are rapidly occupied by the city dwellers. As a result, it has now remained only 4.60% in 2011 whereas in 1990 it was shared by 17.53% of total land. On the other side, agriculture land has been increased positively from 11.31% to 20.92% andopen forest area has also been enhancedfrom 7.49% to 10.55% within the same span of time. Because dense forestareas have been opened up in some places and settlement areas took that places.

Spatial trend of major landscape changes

Conversion of landscape is inherent or natural in the global system (Burgi, 2004). Spatial trend of change of land use and land cover is controlled by some physical parameters like change of relief, soil character, climate etc. High altitude area with rugged topography is covered by forest land and dispersed settlement but plain region is used for agriculture as well as settlement. Several types of land use or landcover conversion have been identified like waste land to agriculture and settlement, dense forest to open forest and open forest to agriculture land.

Waste land to agricultural land

No land is wasteland in the world, every lands have some economic value and utilisation of these waste lands properly depends on economic development of the area. Due to rapid urbanisation,waste land or open land area has been convertedto agricultural land. Spatial trendof these conversion in the Gangtok municipality area is found mainly at DeisealPump House (DPH), Tatangchen, Upper Sichey, Chandmari, Tibet Road wards. But, least

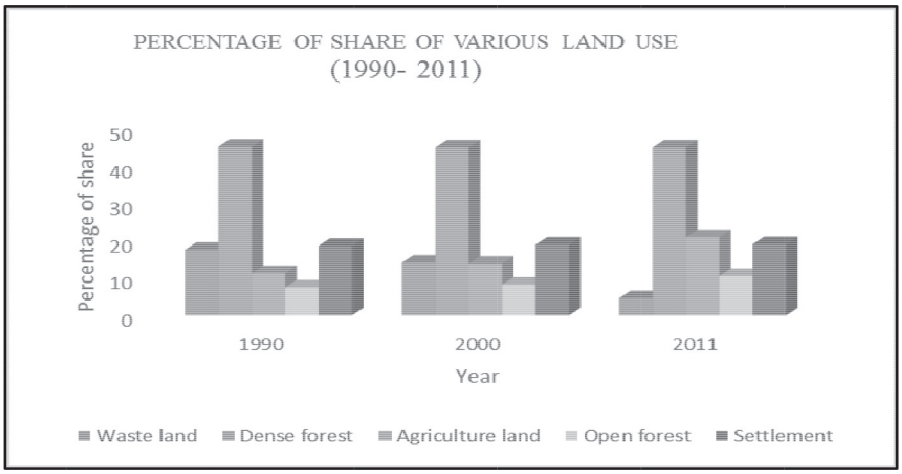

Fig. 4: Distribution of land use and land cover of Gangtok City (1990-2000- 2011)

amount of waste land is converted into agricultural land atLower Sichey, Bhurtuk, some part of Tadang and Ranipool ward.

Waste land to settlement

Another spatial trend of changes of landscape has been identified i.e., from waste land to settlement area. Most of the waste land of Sichey, Development Area, DPH, Arithang, Tibet Road ward is converted into settled areas. But the waste land conversion rate is very low due to low connectivity, high slope and highly landside-prone areas like Tadong, Ranipool and northern portion of Gangtok municipality.

Dense forest to open forest

Now a day, dense forest areas are much more sensitive due the rapid human intervention as well as developmental activities. The spatial trend of change of dense forest into the open forest is rarelyfound. Conversion of forest cover is high in Bhurtuk ward because of huge population pressureand moderate in Tadang, Ranipool, and Sichey wards. But, very less amount of conversion of dense forest is found in Chandmari, Tibet Road and Development Area.

Open forest to agricultural land

Spatial trend of changes of open forest into agricultural land in last 21 years over the study area clearly shows that most of the open forest of Bhurtuk and upper portion of Chandmari ward have been converted into agricultural land. These two places are consuming the natural forest areas mostly. But the conversion of open forest into the agricultural land is least atLower Sichey, Daragaon, Tadong and Ranipool wards.

Open forest to settlement

Open forest and open land are often converted by the developmental activities in the urban area. The spatial trend of changes of open forest into settlement areasis very commonly found in the developing countries but in case of Gangtok municipality that is found in some specific pockets like Burtuk, Chandmari, Tadong and Ranipool. In the middle portion of Bhurtuk ward under the Gangtok municipality,the open forest has been chopped by the local people for the extension of their habitat. The conversion of open forest to settlement is also found in the middle portion of Chandmari and Tadong and Ranipool. This type of conversion is moderate in nature in other portion of the study area.

Change analysis

Gains and Losses by different types of land use

In Fig. 4, the right side of the horizontal bar diagram comprises the amount of land gainsand the left side comprises the land lossesamount in km^2.Here, we can see that the area of a particular land use categories has been gained in some places as well

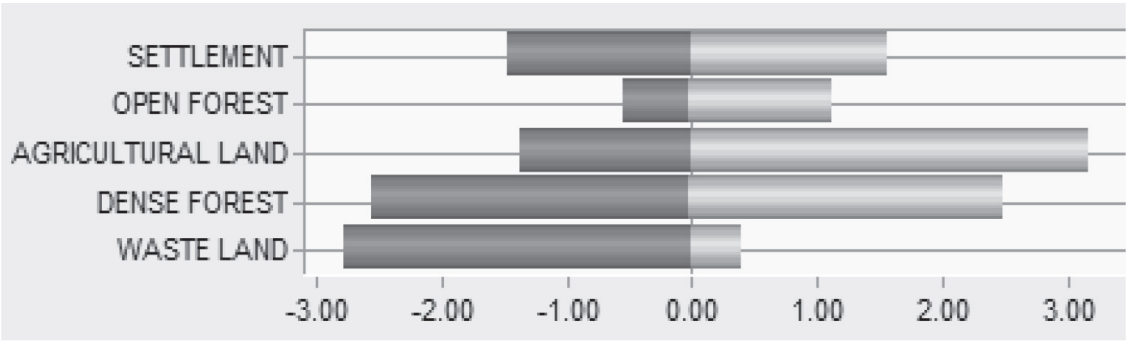

Fig. 4: Gains and Losses of different LULC from 1990 to 2011

asit has also lost in other places. The settlement area has been gained 1.60km^{2}and lost by 1.51km^2; open forest has been gained 1.07km^2 and lost by 0.50km^2; agricultural land has been gained 3.20km^2 and lost by 1.40km^2; dense forest has been gained 2.50km^2 and lost by 2.54km^2; waste land has been gained 0.44km^2 and lost by 2.84km^2.

Net changes by different types of landuse from 1990 to 2011

By analysing loss and gain in various places of a particular category of land use we find that within the 21 years some of them have increased their areas and some have decreased absolute areas. In the Fig. 5, right side and left side represent the gains and losses analysis of various land classes respectively from 1990 to 2011. This horizontal bar diagram depicts that net changes of various land classes like settlement, open forest and agricultural land have been gained 0.09km^2, 0.57km^2 and 1.80km^2 but,the dense forest is reduced by 0.04km^2(negative change) due to rapidhuman intervention. At the same time, waste land has also been reducedby 2.40km^{2}due to transformation of landscape into settlement and agriculture land.

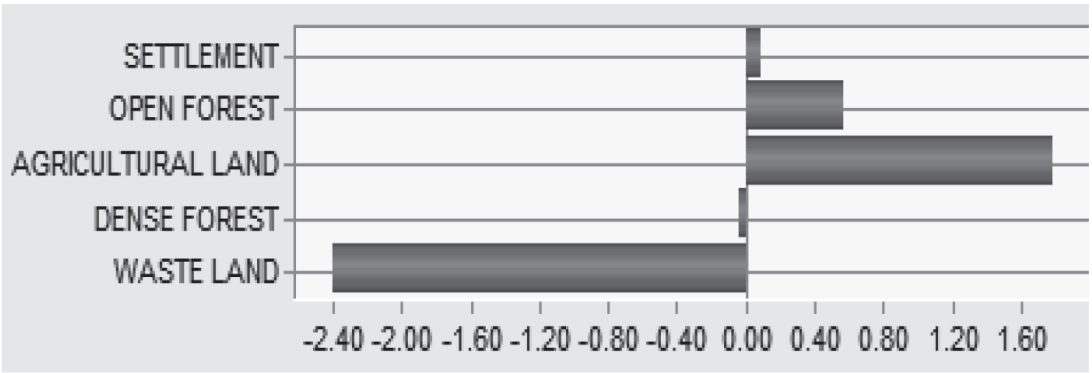

Fig. 5: Net change of different LULC from 1990 to 2011

Table 3 : Transitional Matrix Analysis (TMA)

Year	*1990*					
2011	*Land classes*	*Waste land*	*Dense forest*	*Agriculture land*	*Open forest*	*Settlement*
	Waste land	**0.26**	0	0	0	0
	Dense forest	0	**0.9**	0	0	0
	Agriculture land	0.54	0	**1**	0	0
	Open forest	0.15	0.1	0	**1**	0
	settlement	0.05	0	0	0	**1**

The Transitional Matrix Analysis (Table 3) clearly indicatesthat open forest, settlement area and agricultural land is the highest consistent land cover because the Transitional Matrix value is 1.0. All other classes are having the self-replacement probabilitieswhich signifies that dense forest and waste land have the high probability to convert into Open forest, agricultural land and settlement areas.

Table 3: Transitional Matrix Analysis (TMA) of different land classes from 1990-2011

Conclusions:

It is explicit that the spatial trend of various land classes has been converted over the years through either the process of urbanisation or the societal development. Most of the waste lands or open lands have been reduced and these are converted into the settlement areas and very few of them into agricultural lands. Even some dense forest have now been converted into open forest for the extension of agricultural activities day by day, because agriculture is now very important to fulfilthe basicneeds of the local people not only to combat their requirements but also to give them sustainability over their lifestyle.

Over the years, basically in recent decades, the changing pattern has been very dynamic in nature. So, various transformation of landuse and land cover pattern make some areas sensitive already because of the lithological structure as well as some other reasons and these areas are under conservation. Moreover, it may guess that lack of space and more population over time in the study area create a great impact on environment in the near future and make it fragile in terms of ecology, land etc.

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Spatio-Temporal Analysis of Snake Charmers Community of Padmakesharipur, Khordha District of Odisha

Eastern Geographer
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Alokya kanungo

Abstract:

Snake charmers used to be a fixture at Indian markets and festivals, beguiling crowds with their ability to control some of the world's most venomous reptiles. But one of India's iconic folk arts is fading away, animal-rights activists say it's an art based on cruelty. There is an immense demise of the indigenous culture. Though it's still prevalent in rural areas but there has been a steep decline in urban areas. The present paper titled "Spatio-Temporal Analysis of Snake Charmers Community of Padmakesharipur, Khordha District of Odisha" attempts to find the impact of occupational transition of the community and the effects of growing urbanisation leading to its decline. They are commonly known as "Sapua Kela" in Odisha, the community has been practicing this tradition since more than four generation. Stricter Law such as the Wildlife Protection Act 1972, electronic media, urbanisation, unavailability of snakes in their natural habitat led to the decline of the snake charmer community. In the present scenario it has been found that they have engaged themselves as daily wage labourer and other mundane jobs. Still, there are people who practise it by going to rural areas, as they are not proficient enough to choose any other means of livelihood other than their own tradition. The snake charmers should be given proper attention for their adaptation process in such a way that the community retains its heritage as well as conserve the wildlife.

Keywords: *Snake Charmer, Occupational Shift, Wildlife Protection Act 1972*

Introduction

Snake Charmer: someone who seems to control the movements of snakes by playing music, in order to entertain people. They are an ethnic group who play an instrument known as 'bin' also known as gourd flute and 'dumbroo' the tune they play is known as Padmotola song.In India the community are mostly found in West Bengal, Tamil Nadu, Rajasthan, Uttar Pradesh, Haryana, Maharashtra, Madhya Pradesh, and Odisha. They are also found in many Asian countries Pakistan, Bangladesh, Sri Lanka, Thailand, Malaysia and furthermore North African nations like Egypt, Morocco, and Tunisia. Wildlife Trust of India revealed that more than 40 percent of them have turned to alternative professions. Snake charming is an age old profession in India. They have also been mentioned in the Rig Veda. Maharajas used to keep snake charmers as it was quite popular and exciting means of amusement. In Odisha there are a few communities who pursue a semi-nomadic way of life and the snake charmers are one among them. As performing folk artists they enrich the cultural heritage of folk traditions of Odisha, they are locally known as "Sapua Kela".The Oriya lexicon, the *PurnachandraBhashakosa*traces the origin of the term "Kela" meaning sports. It also mentions that, Kela is "A wandering tribe living on begging, jugglery, snake charming and catching birds, the Indian gypsies".

Scope of the Study

The study area Padmakesharipur lies in the outskirt of the capital city of Bhubaneswar and nearby the industrial zone which has now a days become the Central Business District, as a result due to rapid infrastructural growth the habitat of snakes has been disturbed and they are not easily found in their old tract. Stringent actions are also taken against the

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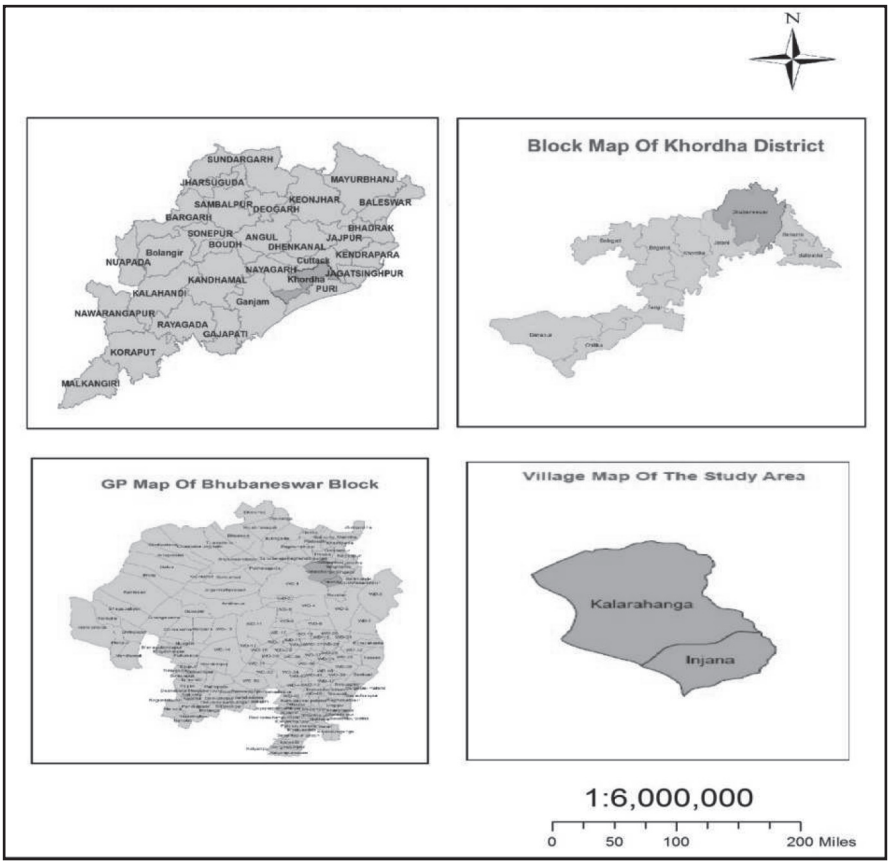

Figure 1: Study Area

person who doesn't abide by the Wildlife Protection Act, 1972 and the urbanised localite is not interested for these kinds of entertainment. Snake charmers have faced great difficulties coping up with this change and it has a negative impact on their source of income and livelihood.

The community is involuntarily forced to opt for other livelihood options. As a result the rich culture of the snake charmers is being wiped out slowly.

The people are not trained for any informal nor secondary sector job. Their source of income has declined which is equally proportional to the enthusiasm they have for their work and the skill to perform it.

Area under Study

The town Padmakesharipur in Bhubaneswar is situated between, 20° 14'0" N and 20" 15° S scopes and 85° 51' 31 "E 85° 50' 32" W longitudes in the beach front plain of

Odisha in Khordha region. The normal tallness of the place is 46 mts above mean ocean level. It is by and by in the Ward No. 77 of B.M.C. some portion of Injana town, Kalarahanga Panchayat in the edges of Patia. It is situated on an elevated land composed of laterite soil at a close proximity to the capital city. The atmosphere of the zone is sound as a result of the cooling ocean breeze, originating from Bay of Bengal. The region gets substantial precipitation

with extensive mugginess where precipitation differs from 101.6cm to 203.2cm and temperature changes between 18.15°C to 23.65°C. The fluctuation of precipitation is between 15 to 20 percent. The storm blasts between 5 June to 15 June on a normal, and pulls back between 1 October to 15 October.

Aims & Objective

This present study has some aims and objectives. At first this study seeks to explore the spatio-cultural relationship and occupational change of snake charmer and also try to find out the cause behind them.

This study also seeks to explore the way by which we can restore this community with their tradition and to create the opportunity to carry on their traditional eco-friendly occupation for the well-being of modern society.

Objective

1. To study the socio-cultural profile of the Sapua Kela (Snake Charmer)community.

2. To study the occupational shift of the snake charmer.

Database and Methodology

For this exploration work broad writing reviews in regards to snakes, legends, religion, socio-ecological esteem, and snake charmer network were made in herpetological and anthropological examinations. Auxiliary data with respect to the history and recorded confirmations of snake charmer network were followed from different books, online distributed articles. Then again the present employments of snakes and clashes of snake charmers were gathered

from various diaries, reports and daily papers and online sources. Optional information were gathered from concerned provincial Panchayats Offices, District Gazetteer, town level database of Census of India (2011), Census of India Economic Census, Statistical Abstract and Economic Survey of Odisha. Customary perception and cooperation was kept up with the snake charmers. Be that as it may, the real part of this work depended on the essential information and the information were gathered through serious field review and questionnaire survey by the researcher.

At first the collected secondary data from concerned Panchayats Offices, regarding population belong to focus group, are tabulated and systematically arranged. After that primary raw data are categorically and systematically tabulated on the basis of aim and objective of this research to convert the data into information. It is necessary to tally the result with the field observation in order to wipe out the discrepancies in the final outcome.

Analysis is completed after the computation of collected and tabulated data, statistically treated following descriptive

statistics and applying various cartographical representations and mapping tools and techniques. For statistical analysis MS EXCEL has been used. In spite of these details of family history, story of nomadic life, folk lore, saga, traditional knowledge and skills are documented additionally for qualitative description Not only that, information is also collected at the time of social functions like death ceremony, marriage, drawing of tattoo in the body of new member of their community, festivals such as “Nag-Panchami”, “Shivaratri” and “Shravan” for qualitative supportive background. Informal interviews of snake charmers are taken during temporary-migration in several areas close to the cities. In addition, snake charmers‟ views regarding alternative occupations are solicited. The material wealth of the snake charmers is gauged by assets in house, and also by asking about their probable daily earning (primary and secondary). During field investigation it is observed that in addition to the traditional snake charmers, certain individuals also pretended to have adopted livelihoods based on snake catching and healing snakebites and selling holy beads and herbs.

Findings

Population Structure

The total population of Padmakesharipur is 1381 (Census, 2011). It is constituted by 700 male and 681 female. The base year has been taken as 2011 as Padmakesharipur was a part of Injana village and recently has been considered as a Bhubaneswar

Municipal Corporation Ward.

The Census data of 2011 gives the data of this new ward which solely consist the Sapua Kela community. Sex ratio is a vital component to assess the demographicfeature of any target group of population.

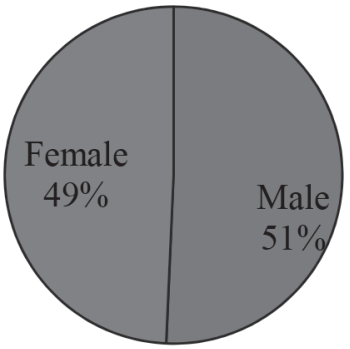

Figure 1.1: Male and Female Population Composition, Padmakesharipur
Source: Directorate of Economics and Statistics, Govt. of Odisha

Age and Sex Wise Population Composition:

It reveals population characteristics, ratio of different age group, birth rates, mortality rates and future trends of population growth. Each strata of pyramid constitute specific age-group—staring fromlowest age group; the volume of population in each age-group is represented horizontally, sometimes male and female population on each side. In natural conditions, the population structure will taper, pyramid-likeupwards with increasing age of the group. The shape and size of age-sex pyramid varies widely.

Socio-economic-political factors like health, fertility, mortality ratio, migration, famines,ethnic conflict, war, epidemics, population policies etc. affect considerably the ultimate pattern of population pyramid (Roy, 2000, p. 183).

It has been found that the working population is around 68.42 % and the dependent population 'Children' is 25.63% and 'Old People' is 5.93%. Therefore total dependent population is 31.56%.

Literacy Rate:

Literacy rate is very important to know about a community in order to analyze the educational status and the overall development of the community.

While the survey it was found that the population above didn't have any formal education as they usually migrate from place to place for performing in different place and to catch snakes and lead a nomadic life. In the present scenario it has been

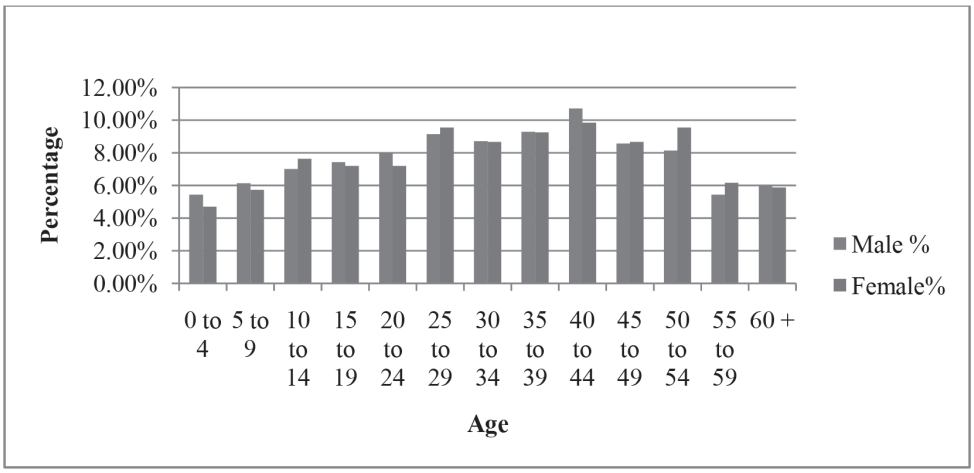

Figure 1.2: Age and Sex Wise Population Composition
Source: Directorate of Economics and Statistics, Govt. of Odisha

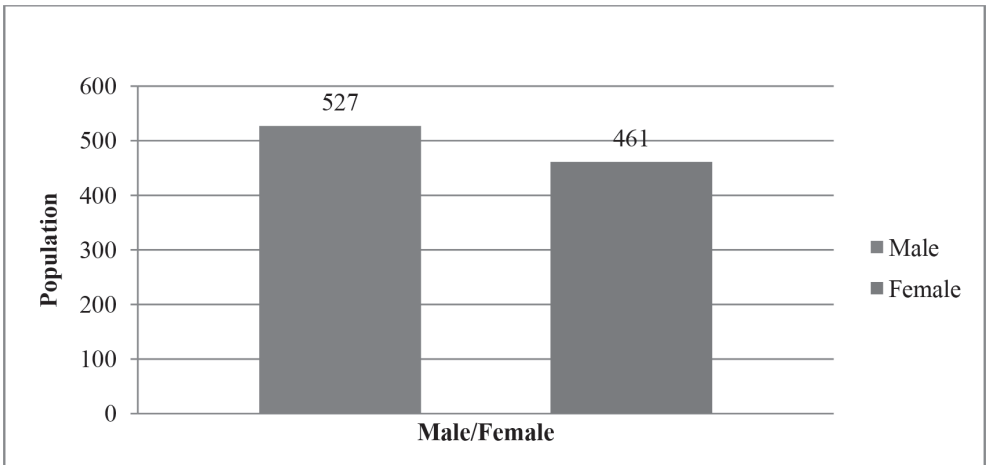

Figure 1.3: Literacy Rate of the SapuaKela Community
Source: Directorate of Economics and Statistics, Govt. of Odisha

found that the literacy rate is higher among the male population which is 527 and the female population is 461. It shows a clear dominance of male population.

Occupational Structure:

The occupational structure gives us an idea about the present means of livelihood and the overall economic scenario of the people belonging to the community. Figure 1.4 clearly shows those 74 % male members are engaged as wage laborer, mostly because it doesn't need any formal skills and an easy way to earn their bread and butter. 24 % of the male members practice snake charming and mostly they are engaged in selling indigenous medicine and they go to remote villages to perform as the rules and regulation are not that stringent out there. Rest 10% of the male members are engaged in government jobs, shopkeepers and other mundane jobs.

When it comes to female members of the community there is a drastic difference in comparison to their male counterpart. 56% of the female members are engaged as wage laborer and 44% work as household workers in nearby urban areas. During the survey an important information came into light, the women earn more income in comparison to the male members these days. But none of them practice snake charming due to their custom and not engaged in any government jobs due to level of education.

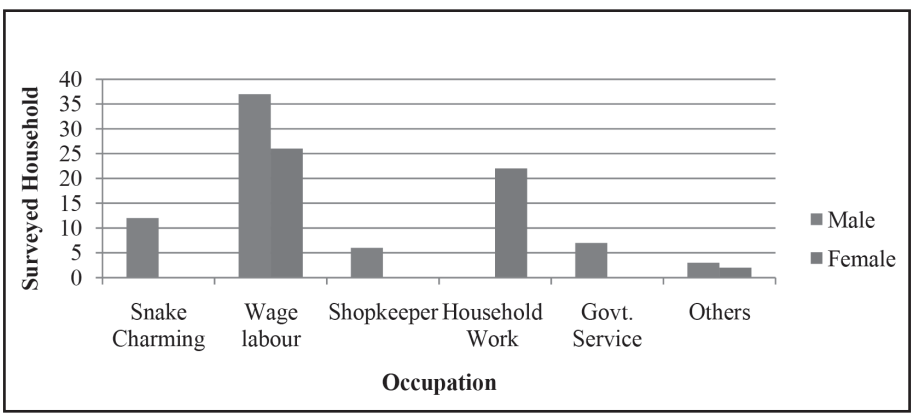

Figure 1.4: Occupational structure of the SapuaKela Community
Source: Questionnaire Survey,2018

Conclusion

From the above discussion it can be concluded that the snake charmer (Sapua Kela) community is mostly male dominated with 51% and also when it comes to literacy rate the males occupy a larger part of it. Before the females used to take care of the family and few of them used to make toys, but the scenario has completely changed now they are indirectly forced to go for household work in nearby places to sustain their family as their male counterpart cannot purse snake charming. Still 24% of them purse snake charming mostly in remote areas to earn their livelihood as they are not skilled to perform any other job. As a result 75% of the males are bound to work as wage laborer to sustain their family as the Wildlife Protection Act, 1972 has been imposed on them not to practice their traditional means of livelihood.

It's high time to start finding ways to preserve this traditional art of snake charming which forms an intriguing part of our Indian culture. This can be done by giving them knowledge about venom extraction, which can serve two purpose first use the skill of the snake charmers for catching the snake, they will earn their livelihood by it and second and most important India won't have shortage of anti-venom. Furthermore, these snake charmers can join the snake catching helpline agency and sustain their family.

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Impact of Climate Change on Coastal Geomorphology and Sea Coast Erosion : A Case Study of Swargadwar Beach of Odisha.

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& Dr. Uday Chatterjee

Abstract

Due to rapid erosion near the inhabited areas of Bay of Bengal coast, human population residing there miserly suffer from urban flood and soil erosion other problems such as frequent intrusion salty water towards the residential area, landward extension of sea, extension of river mouth over large area, deposition of eroded materials in the sea under the impact of backwash and resultant landform among from change of river course, rapid sea coast erosion and deposition has become a matter of grave concern for Geomorphologists. Under the influence of climate change sea level is rising and hence Mangala river of Odisha is facing difficulties, causes river course changes in the taking place and modification of sea current across the coast is responsible for rapid erosion near Swargadwar beach Odisha. This scientific paper is a study of coastal erosion near Swargadwar beach of Odisha and relation of course change of Mangala river in it under the impact of climate change.

Keywords: *sea coast erosion; Mangala River; river course; resultant landforms; Swargadwar beach*

Introduction

Climate change has a huge impact on coastal geomorphology, as a result of which coastal geomorphology and its associated landforms are constantly shaping in the form of deposition near the shore, but when the erosion takes place due to several factors such as high tide surge, owing to unstable nature of sea under the impact of landward extension of sea and it became a matter of grave concern for the residential area because due to rapid erosion and tidal surge which easily enter and denudate the coastal area at a rapid rate. The resulted landforms bear important for the Geomorphologists to squat out the consequence of raised problem. Moving water is the most important natural erosion agent. The coastal erosion is brought about mainly by the action of sea waves but also, in part, by the disintegration or degradation of sea cliffs by atmospheric agents such as rain, frost and tidal source. Sea wave erosion is accomplished primarily by the hydraulic pressure impact of waves striking the shore, and by the abrasion by sand, pebbles agitated incessantly by the water wave-cut platform. Wave impact and hydraulic action are usually most devastating to human-made coastal features such as breakwater moles. The impact and hydraulic action of storm waves are the most significant upon shores Swargadwar of Puri coastal district in Odisha has beard important for geomorphologists. Day by day Swargadwar coast of Puri facing toughest geological crises particularly in rainy season. According to the exports, the erosion near the Swargadwar of Puri coast has a close link to the course change of Mangala river which is merely 1000 meter away from the Swargadwar coast.

Literature review

Mukherjee and Chatterjee (1997) mentioned that Beach and dune erosion is the major thrust of this region due to increased anthropogenic activity, recreational exploitation and unplanned urbanization. Also, the lack of CRZ implementation has given rise to land use problems in the sensitive area.

Coasts are dynamic systems undergoing adjustments of form and process (morphodynamics) at a different time and space scales in response to landform such as salt marshes (Adam, 2002)

Mani Murali et al (2009) studied the shoreline changes along the Paradip, Odisha, and east coast of

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India spatially and temporally using remote sensing methods from 1998 to 2005. Changes in the pattern of sediment movement, wave action, dredging, etc were found to increase the pressure on the coastal zone and lead to coastal geomorphologic changes.

Mukhopadhyay et al (2012) studied the shoreline change due to erosion/accretion for the 142 km Puri coast, Odisha. Multi-temporal Landsat satellite imageries from 1972-2010 were used to calculate the shoreline change rate using 'End Point Rate' (EPR) a statistical method, to predict the future shoreline change. It revealed that erosion was identified in the vicinity of Kushabadra estuary and Chandrabhaga beach, north of Puri.

Results from statistical analysis of a shoreline change spanning 38 years reveal that about 40% of shoreline along the Indian mainland is affected by erosion. Andhra Pradesh experiences coastal erosion at Uppada, Visakhapatnam and Bhimunipatnam. Odisha coast experiences erosion at Gopalpur, Paradip, Pentha and Sathbaya while WestBengal coast has experienced erosion at Digha, Bankiput and Gangasagar regions (Rajawat et al. 2014).

Objectives of the study:

1. To analyze the effects of climate change (sea level rise, increased coastal erosion) on the study area.
2. To find out the influence of climate change on Mangla river and its impact on Swargdwar beach erosion of Puri coast.

Result and discussion

Impact of climate change on coastal geomorphology:

We have noticed and experienced that there is a sharp rise in global mean temperature. Due to the rise of temperature, the polar ice sheet is melting, the density of sea water is increasing and volume of sea water is increasing adding more water in the sea. Rising sea-level results in a spatial shift of coastal geomorphology,

Many dynamic coastal landforms formed by the sea agents' act as an active agent on the coast. Manifest through the redistribution of coastal landforms comprising sub tidal bed forms, intertidal flats, salt marshes, shingle banks, sand dunes, cliffs and coastal lowlands (Pethick & Crooks 2000). Coastal areas are resulted by the active agent such as tide which plays an important role in the formation of different landforms.

Increases in mean global temperature would stimulate speculation that change in coastal landform would also put inhabitants of coastal area at risk and concerns to the impact on coastal geomorphology and the likely changing balance-accounts of the form and function of coastal habitats (IPCC 2001). The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR4) predicts that the rise in global sea-level by 2100 will be in the range of 18–38 to 26–59 cm, depending on the emissions scenario (Meehl *et al*., 2007)

Results of climate change and coastal erosion and recession

Erosion and accretion are normal cyclical events on soft sediment coastlines. Where sea levels are rising, a threshold is reached where erosion outstrips accretion and the beach will erode more than it is replenished. Once this tipping point is reached, the shoreline will tend to retreat. Sea-level rise is a key factor in causing coastal erosion and concerns about erosion risk have mounted in light of increased rates of sea-level rise predicted due to climate change (Masselink G and Russell P, 2013)While impacts of climate change at the coast are often primarily viewed in terms of adjustments to rate of accelerated sea-level rise (e.g. Aagaard and Sørensen, 2012; Anderson et al., 2010; Ford, 2012; Jackson and McIlvenny, 2011; Kebede et al., 2012; Strauss et al., 2012). Coastal erosion is a common phenomenon than that of the recession on the Swargadwar coast of Puri coastal area. Although these erosion phenomena are seasonal in nature, particularly, it takes place in the rainy season but its, consequences last still the winter.

Erosion near Swargadwar coast of a Puri-An alarming issue for Geomorphologists:

Coastal erosion is the natural or anthropogenic process in which there occurs the loss of land or the removal of beach or dune sediments by wind, wave action, tidal currents, wave currents or drainage and various developmental activities along the coast. The

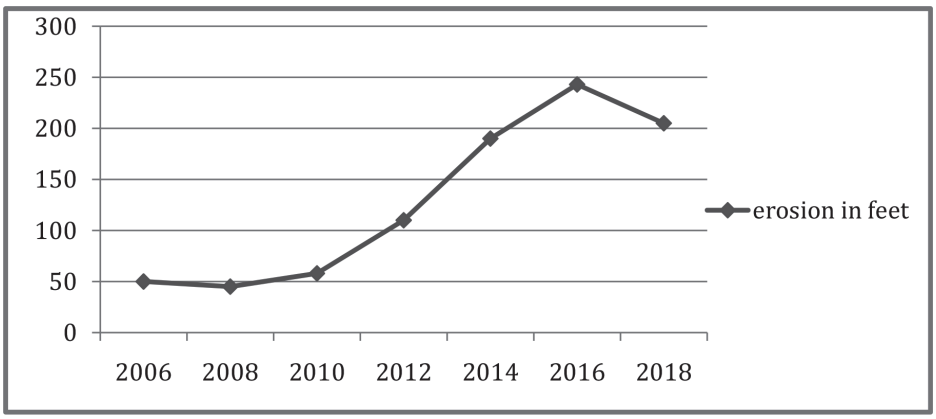
change of coastal landform would change livelihood of the coastal inhabitant, the speculation that has been predicted about the rise of mean sea level of the global sea under the influence of climate change at a large scale (IPCC 2001). Over two million people (5% of the population) live and half of the highest-grade agricultural belt is found on coastal regions across the globe. The coastal natural resources are suffering from a sustained net decline largely related to coastal squeeze of intertidal habitats (Carpenter & Pye 1996)

The study suggests that once upon a time Bay of Bengal was far away from the present occupied position, but gradually it submerging land ward. Now it has ingresses towards landward by 200 feet. Due to tide surge with a heavy volume of water eroding the maximum land limits and hence coast erosion near Swargadwar coast of Puri is common for all coastal inhabitants.

Source: Computed by authors

Fig.1: Puri Swargadwar beach erosion in 2018

During 2006 the ingression of the sea was 50 feet towards landward, subsequently, it upgraded to more than 250 feet within 14 years (Figure.1 and Figure.2).



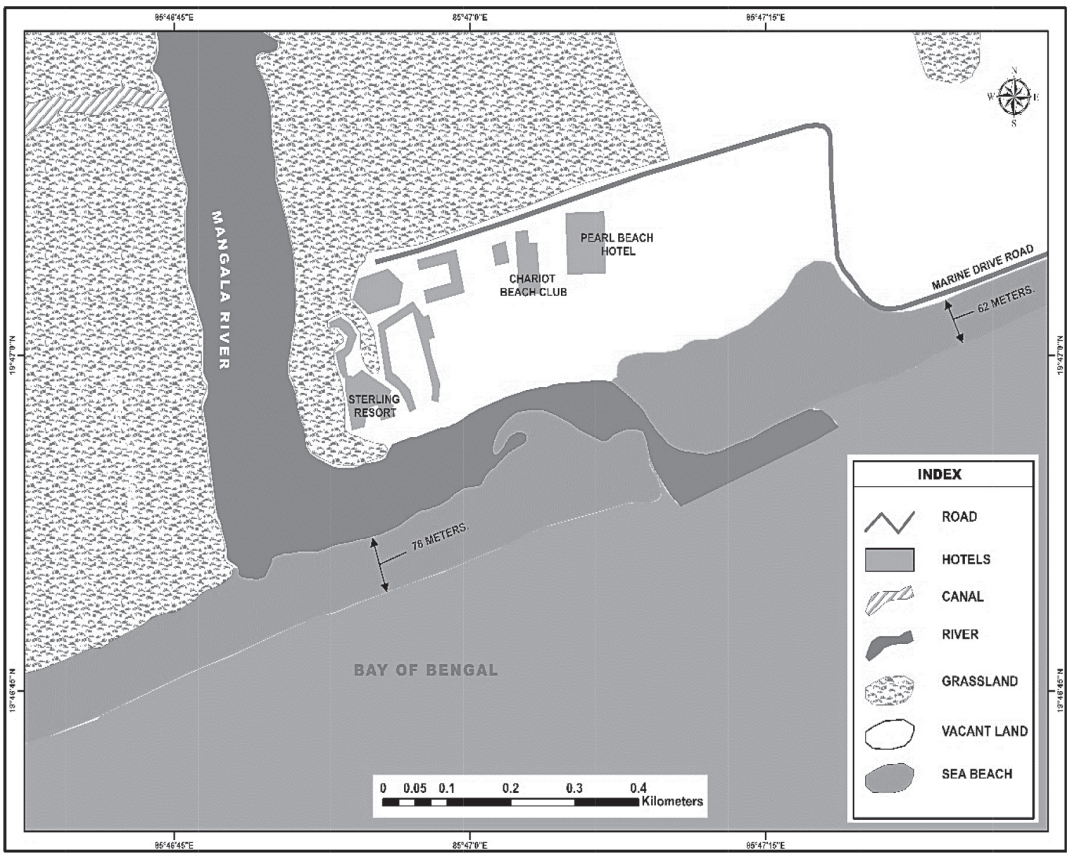
Source: Computed by authors

Fig.2: Shows the year wise erosion since 2006

Extensive field study suggests there are many causes behind the coastal erosion near the Puri Swargadwar coast, which are as follows:

Change of river course

Here we are talking about changing course of Mangala River which is a tributary of the Bhargavi River falls in the sea near Sterling resort about 2 km west of Swargadwar. The bulk of sediment deposited in the river mouth and these sediments helps in the shifting of natural mouth across the coast. The real natural mouth of Mangal River has shifted over time and it has noticed that this shifting of river mouth has had a serious problem associated with the sea coast erosion near Swargadwar coast of Puri, and hence there is a need to analyse river course change (Figure.3) and its shifting of natural mouth as a regular phenomenon.



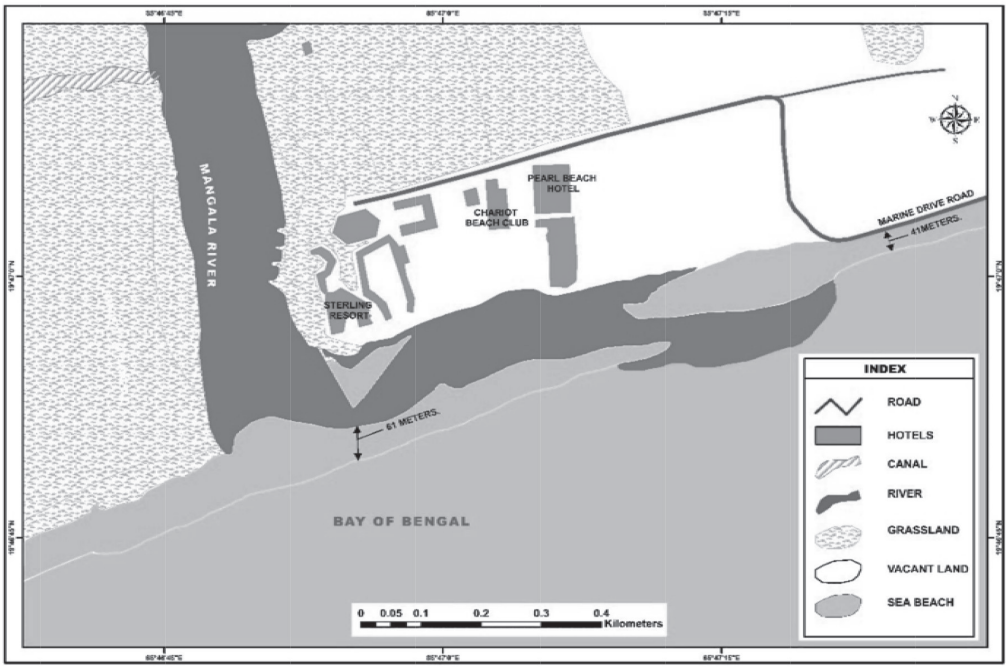
Source: Satellite Images 2017-2018

Fig: 3: Swargadwar beach erosion due to changes of river course of Mangla river

The shift of natural mouth

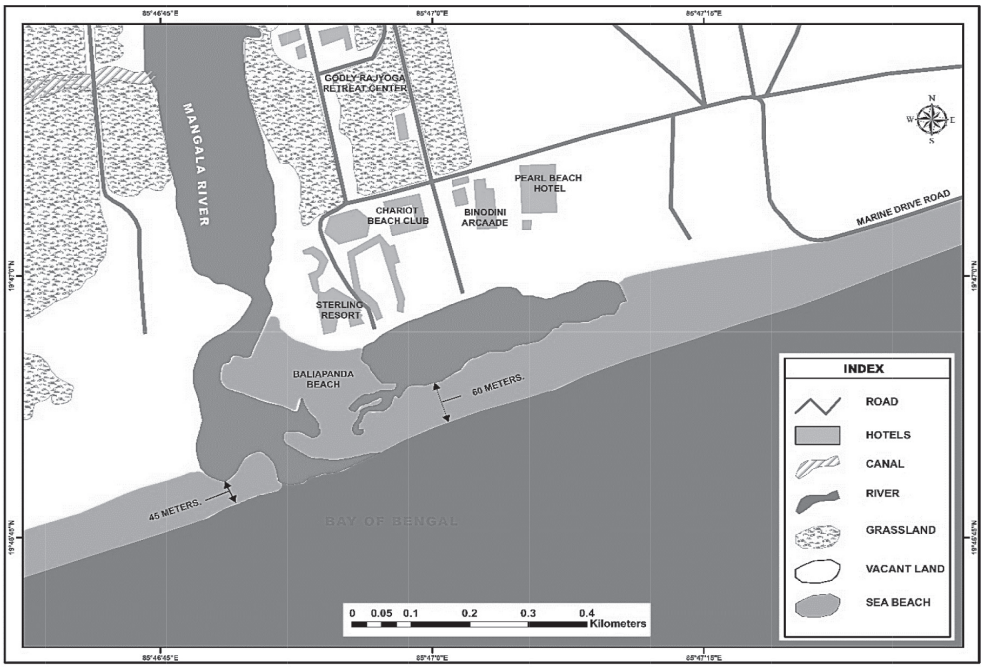
The opening of Mangala mouth will facilitate the tidal ingression into the river so that it may annul the local energetic waves and current (Figure.4). The beach along Puri town is infringed by infrastructure and a slightest tidal inundation and temporary erosion creates panic to people (Beur 2016)

The cause of floods is largely attributed to the amount of fine-grained loess carried by the river from the Loess Plateau, which is continuously deposited along the bottom of its channel (Figure.5). The sedimentation causes natural dams to slowly fill up as river Mangala, a distributary of Mahanadi River which is a prime river of coastal deltaic regions flows



Source: Satellite Images 2017-2018

Fig: 4: Swargadwar beach erosion due to changes of river course of Mangla river



Source: Satellite Images 2017-2018

Fig: 5: Swargadwar beach erosion due to the shift of natural mouth of Mangla river

in the coastal region of Odisha. The water volume of Mangala river is generally high in the monsoon season and the volume of its water is considered in other non-monsoonal seasons. As earlier we discussed that Mangala river is in the eastern coastal plain, this river carries a huge volume of sediments flows along with water. When the river reaches its old stage in the Puri district of Odisha the sediment deposition settles down on the coastal plain and this phenomenon is common in case of Mangala River.

High tide surge and coastal erosion near Puri Swargadwar coast

Coastal landforms are the results of dynamic actions of wave and tide. (Pethick 1996, Pethick & Crooks 2000). For instance, whereas beach morphology responds to seasonal wave climate, any adjacent dune complex may respond over longer (decadal) timescales to larger storm events (Richie & Penland 1990, Orford et al. 1999). High tide generally takes the form of the huge volume of water, as sea water level increases due to polar ice melt, and water volume expending and it became a positive factor for the formation of high tide. Location of Bay of Bengal in the tropical area also responsible for the formation of high tide. As this region comes under monsoonal climate, the coastal area receives more than 150 mm in a year, and rain-fed rivers run and discharged their volume of water into the Bay of Bengal.

New tectonic plate moment

According to some groups of geologists, the new tectonic movement caused by regular upwelling of magma beneath the earth crust under the sea water helps in the breaking of existed plate and formation of new plates. When Odisha Government reached out to geologist and IIT expert to find out the exact cause behind the massive soil erosion near Swargadwar coast of Puri, some geologist and IIT expert concluded that drifting of ocean plate towards the land helps in the formation of huge tide near the coast might be a cause of soil erosion near the Swargadwar coast of Puri. Because small oceanic plates those which are sliding towards the cost from the beneath of the ocean get stuck across the coasts and create immense pressure near the Swargadwar coast of Puri coastal profile and deposition on the upper part. Recent a model developed to find out the exact relationship between plate tectonic and coastal erosion model is applicable to estuaries, barriers and tidal flats to all the natural response of coastal systems to sea-level rise. This model examines the shifting rate of sea landward. (Masselink G and Russell P, 2013).Ocean current in the Bay of Bengal helps in the rapid ocean current toward landward as a result of which coastal erosion takes place at a rapid rate across sea coast in general and erosion near Swargadwar coast of Puri coastal area in particular.

Solution to take on massive soil erosion near the Swargadwar

This section provides information on the implications of climate change and sea level rise for managing the natural and built environment in coastal areas. Management of the coast and planning new infrastructure or development must take climate change and sea level rise into account. To do this requires an understanding of localized coastal and marine processes and assessing risks to coastal values and infrastructure.

As pointed out by Nicholls *et al*. (2011), it is of particular importance to developing long-term strategic adaptation plans for the full range of possible climate change outcomes, both in terms of changes in sea level, extreme water level, storminess and wave climate.

The coastal management strategy (e.g., hard coastal defences, beach nourishment, and managed realignment) is also a key aspect for determining the long-term response of the coast to climate change effects, including sea-level rise. Managed realignment is likely to increase in the future as a key management strategy and although this will result in increased local erosion rates, the enhanced erosion may benefit other sections of the coast by reducing erosion or even causing accretion (Masselink G and Russell P, 2013).

Risk management and responding to hazardous events, such as storms, are critical to coastal planning and management in light of climate change. In some areas, planning for the retreat will also be required the coastal zone management not only restore marine resources but also such infract rural development it will also be helpful to pay attention for coastal geomorphology at the government level (HOC 1998,

HOL 1999).

Digging of the natural old mouth of Mangala river

As Mangala river flows through Mahanadi deltas of East coastal plain, it routinely forms mender at youthful stage till its mouth in general and helps in the shifting of the natural mouth of Mangala River particular. This Mangala River flow in the Mahanadi delta and hence this river flow along with maximum sediments.

On behalf of Odisha government, an extensive research has been carried out by geologist and IIT expert independently to find out the exact cause behind the massive soil erosion near Swawgadwar coast. The experts say that shifting of river mouth might be a cause behind the formation of a huge tide near the coast of Puri. They suggested that there is a need of digging of the natural mouth of Mangala Rivers.

Geo-Synthetic tube:

The Integrated Coastal Zone Management Programme (ICZMP) has taken so many initiative to tackle the sea coast erosion across the Puri coast, Geo-synthetic tube is one of them which implemented the project with the help of IIT-Chennai, claimed they had gone for piloting geo-synthetic tube technology as hard engineering structure had many disadvantages including its high cost. Odisha has successfully deployed geo-synthetic tubes along its coast to tackle sea erosion. The tube has installed along the coast at Pentha in Brahmansahi Gram Panchayat in Kendrapara district. Although last year, geo-synthetic tube project had hit controversy when one structure had ruptured. Subsequently, IIT-Chennai rectified the problem with its technical input but it is eco-friendly.

It also faced a number of challenged such as Mooted in 2008; the project had faced different hindrances, including the issue of forest clearance, coastal regulatory zone regulations and transportation of material to the coast during past 8 years. It needs to be mentioned that the Odisha coast is fairly stable as only 10 per cent of the coast is highly erosion prone. So it provides a very good opportunity for sustainable planning and management of the coast. Executive Engineer of the saline embankment division of the project, Purna Chandra Ratha said the project envisaged a 505-metre-long wall consisting of 241 geo-tubes.

Odisha is the second state in the country to have undertaken such a project on a pilot basis after neighbouring Andhra Pradesh, the official said. Past studies indicated that more than 36 per cent of the coast in Kendrapara faced the threat of erosion, the problem is most acute near habitations such as Pentha and Satbhaya in Kendrapara.

Geotextiles

These are previous fabrics which are used in association with soil, have the ability to separate, filter, energize, protect, or drain. These are typically synthetic resin geotextile. As per the expectation of export this geotextile would be helpful in case of soil erosion near the Swargadwar coast of Puri.

Sand nourishment

Beach nourishment is the supply of sand to the shore to increase the recreational value and/or to secure the beach against shore erosion by feeding sand on the beach. The coastal management strategy (e.g., hard coastal defences, beach nourishment, and managed realignment) is also likely to help other aspects of coastal zones, the enhanced erosion may benefit other sections of the coast by reducing erosion or even causing accretion. (Masselink G and Russell P, 2013).

Recommendation and Conclusions

Coastal erosion due to heavy tidal surge under the impact of several factors such as high tide with huge volume of sea water in the rainy season, gravity motion, human interfaces on the coastal plain, modification coastal landform for human self-satisfaction are regarded as great cause behind the rapid coastal erosion in the climate change era, but have lots of knowledge to tackle these adverse satiations by the implication of scientific equipment's. However current population explosion pushed human being to make a settlement along the sea coast also has had a great impact on coastal geomorphology, there are so many economic activities take place near the coast that tend to modify the natural landforms of sea coast and hence integrated coastal zone management act as positive factors in the direction of prevention of sea coast erosion. A minimum buffer zone should be left

out for the abutting beach for the safe normal tidal activity of sea. Natural barriers such as mangroves and Casuarina forests should be planted along the beach the buffer zone may be more effective than the implant of geosynthetic tubes, gabion boxes mattress against beach erosion. sand nourishment should be along the beach. No structure should be constructed along the erosion-prone beach, as will affect the scenic beauty of the Puri coast. Rigging of the River Mangala's natural mouth should take place on a regular basis, as the shifting of the natural mouth of the River Mangala is treated as problems behind erosion near Swargadwar.

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Encountering Urban Development Against the Price of Ecological Sustenance: A Study on East Kolkata Wetlands.

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Abstract

Anthropogenic destruction in urban fringe is a global phenomenon. East Kolkata wetland, which has priceless beneficial role as both physical and socio-economic circumstances. Being a 'Ramsar Site', the fragile ecosystem provides highly productive agricultural zones and sewage fed fisheries. The community harmony with nature exists here which subsequently provide income opportunities for all the stakeholders via multifarious means. Painfully though, contemporary urban rejuvenation process creates several obstacles in agriculture and fish production regarding this ecological space. The Western fragment of East Kolkata wetland turned out to be the most vulnerable one as it is continuously facing the curse of urban modernization in terms of being highly degraded. If the so called modernization process is further sustained then the area may loss its socio-cultural importance as well as the people will lose the source of income whose occupations are depended on agriculture and pisciculture.

Keywords**:** *Urban fringe, Ramsar Site, urban rejuvenation, ecological space.*

Introduction

East Kolkata Wetlands is another imperative wetland of India. According to Ramsar Site Convention in 2002, the East Kolkata wetlands declared as a wetlands which has a great ecological value, various types of species are living there. It's formed as a spilt over basin of Bidyadhari river which is now inactive and don't have any catchment but perched aquifer are there at the depth of greater than 400 ft. Agricultural land of this area are comparatively fertile than other agricultural land of West Bengal. Production are also high even fisheries are also high productive, maximum fisheries are sewage fed at the wetlands.

Now-a-days population of Kolkata is being increased gradually and the demand of land is being also amplified as well so the urbanisation of the metropolitan city, Kolkata is in running progress. East Kolkata Wetlands which located along with eastern Kolkata are affected through this modernization process. The process affecting to agriculture and pisciculture which are the prime socio-cultural heritage of wetlands. Garia to airport metro line occupied some agricultural land from north-western part of wetland alongside of eastern metropolitan by-pass and those lands are very high fertile. Peasants who are working there as labour lost their work. Even the other labourer are also losing their enthu to cultivate as they are worried about to lose their work. Even the market which was wetlands oriented have been also taken for urbanization. Many buildings are constructed at the place of market of the wetlands. So to protect the ecological sustenance, maintain the environmental balance and intact the sustainability in future the wetland need to be protected.

Literature review

The literature reviewed helped to get the ecological important images of East Kolkata Wetlands. Both physical and socio-economic various pictures are shown through the literature review. Sen S, (May, 2005) divided the East Kolkata Wetlands into Core area, Inner buffer and Outer buffer and discussed about the status and impact of urbanisation, he also reported the major livelihood activities and evaluating the natural waste water treatment and management system. Guchhait S described about the socio economic importance and valuation of East Kolk-

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ata Wetlands, through this description he described about the income status of the people of wetlands, discussed about the signification and production of agriculture and pisciculture and also described about the biodiversity of the area. S.Raychaudhuri etal (2012) reported that in the wetlands the waste water fed fish ponds (bheris) are complex biological system, he also described about the wetland's microbial diversity and probable of commercial, the controversy and contamination of EKW as related to the issues in pisciculture and agriculture, occupational hazards created from the waste dumping, land encroachment and also the future prospects of wetland. D.P. Mukherjee (2011) focused on the chemical, physical, biological properties of waterbodies of the East Kolkata Wetlands.

Study area

This work has been done in that particular part of East Kolkata Wetland which is coincided with Eastern Kolkata (between 22°30' N to 22°33'N and 88°23'E to 88°28'E). The area covers some mouzas of western part of the EKW and some wards of Eastern Kolkata. The mouzas are Dhapa, Jagatipota, Bonchtala, Dhalenda, Paschim Chowbaga, Chowbaga, Nonadanga, Chakkolar Khal, Karimpur, Kalikapur, Mukundapur, Bhagbanpur, Deara and Kharki and the contiguous wards are 57, 58, 66, 107, 108, 106 and 109 (Fig. 1).

Fig.No.1: Kolkata Ward Map and East Kolkata Wetlands Mouza Map, Study Area of East Kolkata Wetland.

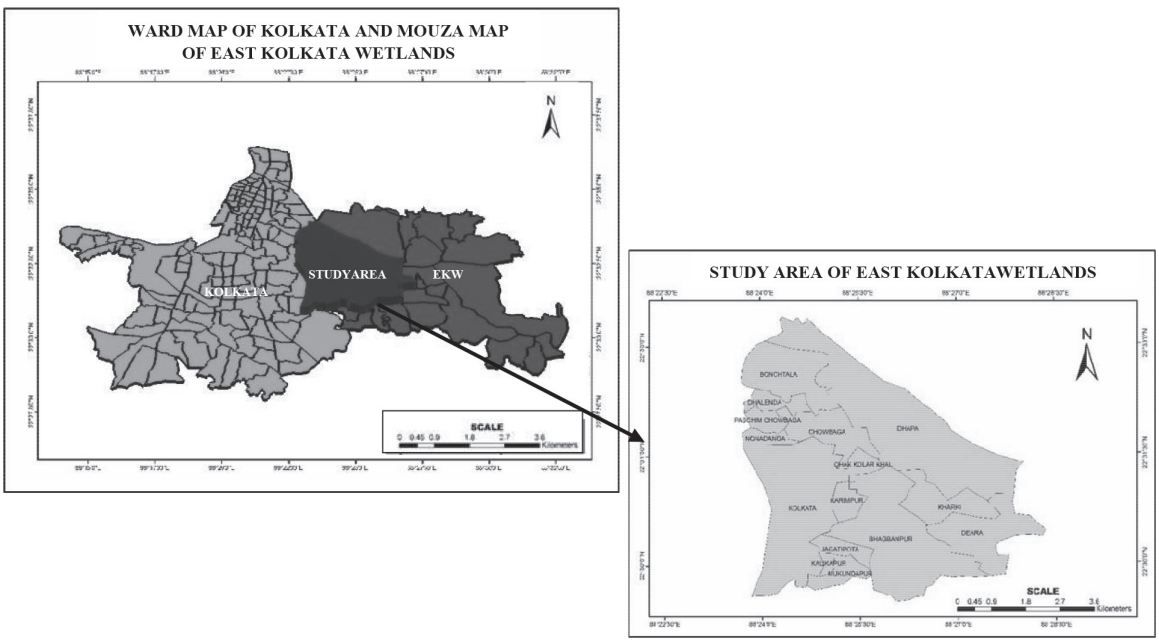


Fig.No.1: Kolkata Ward Map and East Kolkata Wetlands Mouza Map, Study Area of East Kolkata Wetland.

Aims and objectives

The aim of this paper is to analyse the significance of socio-cultural importance in a part of the East Kolkata Wetland along the eastern fringes of Kolkata and how it's being ruined due to anthropological interference. The objectives of this paper is to measure the relative changes of land use pattern of this area, reported about the spatio-temporal distribution of chemical properties of waterbodies and soil in pre-monsoon season, utilisation of and impact on waterbodies. The work shall also assess the present

status of agricultural and pisciculture, how they can be affected through anthropogenic activities has been also evaluated in this paper.

Methodology

To accomplish the above objectives, methodology has involved arduous field work to comprehend the contemporary urban rejuvenation process which creates the several obstacles in agriculture and fish production even how the waterbodies and soil are also being affected through this process. To understand the nature of waterbodies and soil samples were collected from waterbodies and land. Data were collected mainly following the stratified random sampling method. In the post-field work phase, the samples were tested in laboratory and henceforward represented in by thematic maps with the help of GIS and analysed the data.

Discussion and findings

Ramsar Site: Ramsar Convention is an international treaty (established by UNESCO, 1971.) for the conservation and sustainable use of wetlands which is also known as the convention on wetlands. It is named after the city of Ramsar in Iran, and the convention was first signed in 1971. Ramsar site is a wetland site designated by international importance under Ramsar Convention. The Ramsar Convention on wetlands (1971, Iran.) reported that there should be the particular nine criteria for identifying wetlands of international importance. India became part of this convention on 1st February, 1982 and now India has 26 Ramsar Sites. The East Kolkata wetlands full-filled the nine criteria and declared as a wetland and also were entitled a "wetland of international importance" under Ramsar Convention on 19th August 2002.

Present Physical and Socio-Cultural Scenario: The area is situated on the lower Ganges Delta of Eastern India originally formed as spilover Basin of Bidyadhari River. Which is now inactive. There is no catchment for these water bodies and perched aquifer is found to occur below these waterbodies at depth greater than 400 ft. Tropical, hot and humid climate covered this area. The annual mean temperature is 24.8°C and the annual rainfall is 1582 millimetres. There is also a good correlation between bio-chemical and phenotype behaviour and the molecular study using 16S RNA gen of the isolate even many useful products coming from soil micro-organism. A well composition of cultivable soil bacteria is there in this area. The physical environment is favourable for the occurrence of rich biodiversity zone. Approximately 100 plant species 20 mammals and 40 species of birds are found there in the wetlands. Agricultural production are so high comparatively than the others agricultural area of West Bengal. The fisheries of this area are sewage-fed. So the production of fish of the areas are also compatible with environment. 97% garbage of Kolkata is disposed in the garbage disposal zone, named Dhapa by Kolkata Municipal Corporation (KMC). And the garbage has been using as fertilizer which works better than normal fertilizer in agricultural land of the area.

Changes in Land-use Pattern: In the study area a major discrepancy has found in land use pattern. In 2002 the area which is covered by fallow land are totally converted into settlements in 2017 and the changes have been found mainly in the south- western and north western part of the study area. Some agricultural land of southern part and eastern part of this study area has been replaced by settlement . Except the major changes a few land use pattern changes are also found there .

Applications of Water bodies: Application of the waterbodies in this particular area of wetlands is very noteworthy. Waterbodies of the wetlands are used for various purposes Viz; fish production, irrigation, cultivation, control flood in rainy season through pumping station etc. In south-west and south-east part of the study area waterbodies are used most in agriculture land to cultivated the land mainly through irrigation process even some Spinach are also produced in waterbodies. Uses of waterbodies in fish

production is high in the south-western and north-western part of the study area including Kharki and Deara. The cannels which are located in this area help to control flood in rainy season and the Household and Religious activity are also found as waterbodies oriented in there mainly in the southern part of the study area.

Spatio-Temporal distribution of Chemical Properties in Waterbodies:

Spatio-temporal Distribution has been examined in that particular area. Mainly Pre- monsoon Chemical parameters have been measured and the Chemical Parameters are Nitrite, Nitrate, Ammonia, Chloride, Fluoride, Phosphate and pH scale have also been measured in there. With the help of Interpolation method the Spatio-Temporal Distribution of the Chemical Properties in the waterbodies of this area has been analysed. The colour Variations on the maps indicating the levels of estimated Chemical Properties in the Waterbodies of all over the study area.

Applications of Land: The land of this specific area is mainly used for cultivation. Several crops are cultivated in there throughout the year. Crop rotation is common phenomena of this area. The land is very high fertile. An another application of the study area is treated as dumping ground named Dhapa it contains the garbage from all over the Kolkata through Kolkata Municipal Corporation even Settlement are also found there at the land of this particular area.

Chemical Properties of Soil: Same as Waterbodies, Spatio-Temporal Distribution of soil in the lands of the study area arealso analysed through interpolation method. This numerical analysis helps to estimate the soil properties of all over land of the study area. Soil sample are collected for testing in Monsson or Pre-Kharif Season.

Pisciculture: A huge part of this area is covered by Waterbodies and the Pisciculture is another economic activities of this area. There are two types of farming, Extensive and Intensive (Fig No. 7). Extensive farming are mainly sewage fed. According to ownership the fisheries are divided into three categories (Fig No. 8). Those are 1) Owned 2) Leased and 3) Community based. North-Western part of the study area are conquered by extensive farming and the existing area mainly the southern part including Dhapa, Deara and Kharki Mouzas are subjugated by intensive farming. The community based fish production are mainly done at the eastern part of Kolkata, leased are mainly found in Bonchtala, Dhapa and Nonadanga Mouza and owned fisheries are found mainly in the waterbodies of Jagatipota, Mukundapur, Deara, Bhagbanpur, Dhalenda and Chowbaga mouzas in approximately same percentage . The average fish production is high mainly in Dhapa mouza having 600-800 kg production per hectare, north-western and southern part of this area having lowest production rate (average production 0-200 kg/hactare) and the moderate fish production is found in the fisheries of Kharki, Deara, Bhagbanpur, Chowbaga mouzas and the part of Eastern Kolkata, the production fluctuating from 200kg/ hectare to 600kg/hectare.

Agriculture: The agriculture of the study area is very popular at all over India. Various types of Vegetables and spinach are cultivated in there, paddy are an also important crops of the study area. Crop rotation are done there to cultivate the land properly and for maintain the soil fertility. The north-western part of the area is very high productive comparatively from the southern part of the area. The south-western part comes under the zone of low-productivity (Fig No. 9). As organic fertilizer had been using for cultivation, the soil fertility is very high of this area. The main source of organic fertilizer was the Dhapa Dumping ground. According to Weaver's method the area can be divided into Six Crop Combination Region (Fig No. 10). And the main crops are Cauliflower, Pumkin, Paddy, Radish, Spinach, Brinjal and Ridge Gourd.

Obstacles against the Price of Ecological Sustenance: The obstacles against the price of Ecological Sustenance of the study area mainly are being occurred from Urban Development. Human interference destructing the ecological balance of this area. The obstacles against the price of ecological sustenance can be categorised as following:-

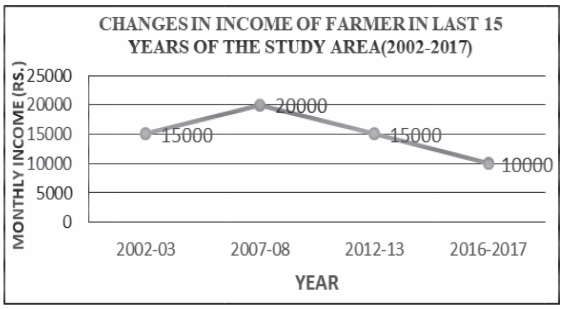
Urban Expansion: Population is being increased gradually at Metropolitan city, Kolkata. The demand of land for accommodation of increasing population affecting the fringe area of Kolkata and helps to expanded the metropolitan city. East Kolkata Wetland is located at the eastern-fringe of Kolkata which disturbing the ecological-environment of this area. In the eastern fringe of Kolkata metro project occupied some area from western part of EKW which affect-

ing the area of agriculture. Agriculture has stopped in the particular area.

Conversion of Dhapa Dumping Ground: once a time Dhapa Dumping ground was the main source of Organic fertilizer maintaining the standard of high fertility in Agricultural land of the study area. In present days a lot of pollutant material including plastic are disposed there from all over Kolkata by Kolkata Municipal Corporation. So the garbage cannot produce the organic fertilizer as those could yield before. Even the supply of garbage has been also stopped due to conversion of Dhapa Dumping Ground in Park. So they have to buy chemical fertilizer from market which is not profitable for them and also not well for soil texture. According to peasants opinions, as the organic fertilizer had been working the chemical fertilizer cannot work properly for cultivation.

Problems in Market: Market is nearly located from the study area. Once a time there was many proper market for selling the products from agricultural land and fisheries. But now some of them are replaced by Multi-stored building. Occurrence of some middle man between landowner and labourer interrupting to healthy prosperous of Marketization. So the labourer working hardly for cultivation don't get the proper income. That's why they may be lose their enthu to cultivate the land.

Lack of proper earning: Due to middle-man interference the labour can't maximize profit through market. In other side, now they have to buy high cost chemical fertilizer from market which also decreases their earning from last 10 years (Fig No. 2).

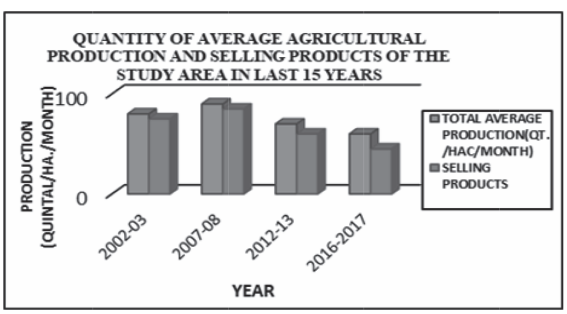


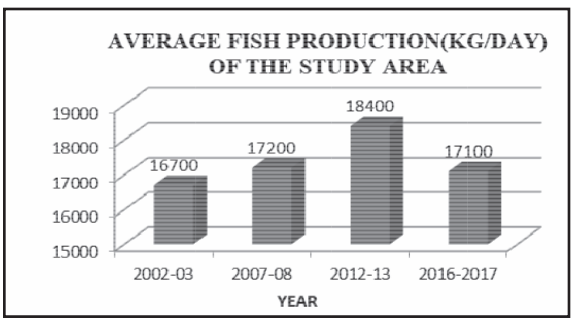
(Fig Nos. 2 : Changes in Income of Farmer in last 15 years.

Lack of proper Management: The wetland area need to be protected, maintained and well-managed. Many agricultural land and Fisheries are there and production are also high in both area. But lack of proper management thrust it towards destruction. **Pollution**: Water pollution and soil pollution of this area are another human-made cum Urban Development Phenomena. Pollution level of the area which is located at the eastern fringe of metropolitan city affected by urban developments. Several cause are the for the pollution occurred in waterbodies and soil, viz increasing settlements, high standard of living, Garbage Dispose in Soil, Household pollutants, sewage water and so on.

Decreasing Fertility: Due to Using of Chemical fertilizer instead of organic and the lack of proper maintenance the fertility of the agricultural land are being ruined gradually which is another problem of this study area.

Decreasing Production: It has been found that in last 15 years production of agriculture and Pisciculture has been declined due to the various obstacles. Which have to be recovery soon otherwise the so-





(Fig Nos. 3 and 4: Quantity of Average Agricultural Production and Selling products (last 15 years); Average Fish Production (last 15 years).

cio-culture heritage of this land will be declined (Fig Nos. 3 and 4).

Conclusion

Ecosystem of the Wetland had an intrinsic inimitable interplay of favourable factors for Agriculture and Pisciculture. Chemical Properties of soil and water-bodies are also maintain the level of standard. So the Management Department should keep the area properly under his Supervision and should pay the attention on traditional practices and protected it from fast and upregulating Urban Development. Peasants are worried about that when the Dhapa Dumping ground will be totally converted into a park, the surrounding agricultural areas and fisheries would be affected by this economic growth and they are also apprehensive to lose their occupation. So Wetland Management authority should also take some policies for the poor peasants. Markets prospects should be also enhancing to do the profit maximize. It should be maintained that the development process always be symmetrical with sustainability and it would not be encountered against the price of Ecological Sustenance.

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The Threats of Sexual Exploitation towards Girl Children- A Social Evil

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Abstract

In today's society sexual abuses to a girl child is one of the perilous forms of social evils. Legally below 18 years of age are referred as 'child'. They are sexually assaulted by father, family members, relatives, friends and strangers. Girl children are sexually abused in many forms such as sexual harassment, sexual assault, penetration, sexual molestation, child pornography and some other like these. Girl children are trafficked from several parts of all over India to use them child pornography, sex workers. Children those who belong to economically instable and insecure families are mainly trapped by frauds and forced them to do several abusive activities. All children are future citizens of our society. They are our national assets and nation's welfare progress depends on healthy, strengthened and potential citizens. The sexual abuses of girl children are an obstacle in front of a sustainable society. These kinds of social evils result into psychological traumas and mental disabilities of the abused children. So, at present we need to be more protective, moral and humanlike towards the children of our society.

Keywords: *Child abuses, Sexual assault, National assets, obstacles of sustainable development, morality and humanity towards children.*

Introduction

Legally the term 'child' refers to those who are below age of 18. In India culturally and legally parents get responsibility to look after their child. Every children get opportunities to develop their personality under the parents care and attention. Generally, under the parental nourishment they build up their mental, moral and spiritual ideologies and even it is the birth right of all children. The great poet Milton said "child shows the man as morning shows the day." The well being of a nation depends on a healthy, strong human resources. So, the welfare of children is a significant initiative for future wellbeing of a nation and its society.

They are neglected and abused by their parents, brother, relatives or care givers, teachers, upper class students, non- teaching staffs, security guards and strangers. Sexual abuses of child are burning issues at present time. Girls, boys, physically or mentally disable children are mainly targeted to abuse in our society. They are tortured in many forms as of physically, emotionally, sexually.

Definition of child sexual abuse

This paper emphasises on 'girl child sexual abuses' and focuses on its related issues. Girl child sexual abuse defines when girl child became subject to any kind of sexual activities. Mainly children are sexually molested, forced in child pornography, indecent exposing and child grooming. Child sexual abuse occurs in home, school, workplace, street, orphanage or any other public places. Children Around 30% are sexually abused by close relatives like father, brother, cousin, uncle. 60% children are abused by 'friends, neighbours and 10% incident occur by strangers. WHO defines child sexual abuse as "Child sexual abuse is the involvement of a child in sexual activity that he or she does not fully comprehend is unable to give informed consent to or for which the child is not developmentally prepared and cannot give or that violates the laws or social taboo of society. Child sexual abuse is evidenced by this activity between a child and adult or another child who by age or development is in a relationship

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of responsibility, trust or power, the activity being intended to gratify or satisfy the needs of the other persons. This may include but is not limited to. The inducement or coercion of a child to engage in any unlawful sexual activity. The exploitative use of children in pornographic performance and materials."

According to the World Health Organization 150 million girls and 73 millions boys have experienced forced sexual intercourse or other forms of sexual violence including physical contact.

Adults may sexually abuse children in many forms including penetration, intercourse, incest, rape, sodomy. Offenders may commit these acts in several manner such as fondling, violating of privacy, incest, showing pornography and by commercial exploitations.

Review of literature

To make proper concept about girl child sexual abuses and its present status in our society review of literature is one of the important parts in this paper. Children are national assets and they are young generation required to open up their personality and upgrade their status, physical, mental, spiritual character. Every child has rights to get justice world wide. Children are "supremely important national asset".

(Child Abuse: war against exploitation of children)

Children are affected for the sexual abuses in various forms including contact and non- contact abuse, grooming of children for abuse, child sexual exploitation Even survivor children are affected by society.

(The impacts of child sexual abuse: A rapid evidence assessment: Cate Fiser, Alexandra Goldsmith, Rachel Hurcumbe, Claire Soares, IICSA Research Team July 2017)

The definition of child abuse is provided by WHO that helps to make adequate concept about child sexual abuses.

(Child sexual abuse- CSA Definition and Issues- CHILDREN India Foundation)

The sexual abuse cases are filed under the POCSO Act that is enacted in 2012. In this act there has the definition of sexual abuse in different forms that those persons who are physically above 18 years old but mentally they are behaved as like below 18 years child they will also filed any forms sexual abuse case under this Act. There have several procedures to report and record any case and there have several remedial provisions.

(The Protection of children from Sexual Offences Act: Kerala Medico- legal Social websites)

In the Indian constitution there are several provisions to secure and preserve child rights as Fundamental Rights and legal rights.

(Article on National mechanisms for child protection and child rights in India)

The Convention on the Rights of the Child is another international instrument of the protection child and preserve and practices of child rights. This Convention was adopted in 1989 and came into force in 1990.

(1.Article of sexual violence laws under Indian Penal Code. 2. Child sexual abuse: Maharukh Adenwalla)

Methodology

The objective of this paper is to enlighten several forms of sexual exploitations occur towards girl child in Kolkata and its impacts to construct a sustainable society. The collected information has been shown by statistical method. The informations have been gathered verbally from headquarter of Lalbazar police in Kolkata.

Girl child sexual abuses in kolkata

Kolkata is one of the most populous metropolitan city. According to the 2011 census the total population of this city is 4,496,694. Every year this city is enlarging its area. Crime related issues are increasing here day by day. Child sexual abuse is one of most relevant issues at this present time. As per 2011 census the number of girl children from 0-6 years old is 563573 where boy children are 594970 in count. Around 90% Girl children are sexually abused here during adolescent period. They are sexually abused by father, uncle, brother,

cousin, neighbour, friend and strangers. They are abused in many forms such as verbal abuse, stranger assault, incest, drug- facilitate sexual assault, child pornography. Child sexual assault related cases are reported in police stations but many cases have not reported. 200 people have charge sheeted and 652 persons are arrested since 2016 for committing crimes against children in Kolkata, Children are sexually abused mainly between 6-16 years old.

Socio-economic factors

Economic status

Children who belong to 12- 16 years old group become interested to afford expensive accessories such as expensive mobile phone, expensive dresses and other accessories whatever would be there economic status. They force their parents to fulfil their demands and become desperate to achieve their demands anyhow.

Environmental approaches

Children are influenced by environmental approaches. Even they easily learn any new matter and have curiosity about everything. They hardly have ideas about the difference of good or bad activities. They try to copy or do or involve in all matters. For that reason many boys below 18 years old committed sexual abuse as they observed and follow adults but they dont have any adequate information. They think they can do everything whatever adults are doing.

Biological factors

Mainly girl children are sexually abused in between 12 -16 years old. In this adolescent period of girl child they experience several changes in their body but during this age boys do not experienced so. These physical changes influence to sexual abuses. People treated to a girl child as matured and elder while a boy in the same age does not treated as elder. So, girls are interested upon elder related issues and matters. Girls are sometimes are get married below 18 years old. Sometimes they are sexually abused by frauds.

Behavioural changes push to committed offensive activities

The period of adolescent several behavioural changes comes in their behaviour. In between this age period parents cannot understand the children's behaviours. The standard behavioural changes are-

Following and questioning the parental activities

Children below 10 years old may try to follow and understand the adults but in between 12- 16 years old children may question about adults or parental activities.

Charging the parental behaviour

Children may become disobedient, annoyed with their parents. They may commit several activities without permission of their parents.

Changes of demands

Several assaults, harassments are being commited When children became annoyed. They become out of control of their parents, could not give respect elders and become silence in manner. This is the final stage where children may commit crime and increase sexual demands.

Table 1 : Types of reported cases under kolkata police

stations

Types of Cases	*Percentage*
Verbal Abuse	2.22
Stranger Assault	4.44
Intemate Parenter Assault	17.78
Same Gender Assault	6.67
Sexual Harassment	8.89
Sexual Harassment By Professionals	11.11
Drug-Facilitated Sexual Assult	20.00
Indecent Exposure,Peeping,Hidden Cameras	15.56
Child Pornography	13.33

(Source: - Headquater of Kolkata Police, Lalbazar)

These above information have been taken from headquarter of Lalbazar verbally. The cases are reported highly in drug- facilitated sexual assault. Even, girl children are sexually assaulted as incest. Perpetrators are assaulted by consuming alcohol or liquid drugs. Girl children of mainly 6- 12 years old are experienced incest from mainly above 50 years old male such as uncle, father, home tutors. The cases are reported on indecent exposure, peeping, hidden cameras where children are monitoring by offenders. Hidden cameras are mainly kept in changing room such as bed rooms, trial rooms etc. After capturing photos perpetrators them use in pornographic purposes. Girl children are used mainly in pornographic purposes between 8- 12 years and 16- 18 years. Stranger assault cases and sexual harassment cases are reported very rare.

After reporting this cases perpetrators are confined and being trial under legal jurisdictions. After proving guilty they are confined. Perpetrators are got counselling, psychological treatment to make good personality.

Table 2 : Child sexual abuses (under pocso act)

Child Rape	*Age Group*	*Type*
Eveteasing	12 TO 14	High
Mosestation	6 TO 12	Moderate
Penetration	4 TO 6	Low

(Source: Headquarter of Kolkata Police, Lalbazar)

All child sexual abuse related cases are filed under Protection of Children from Sexual Offences Act (POCSO). This act has been enacted in 2012. Child eve- teasing, child molestation and child penetration- these kinds of cases are filed under this act. 12- 14 years old children are highly experienced eve teasing, 6-12 years children are abused by molestation and 4 to 6 years old children are abused by penetration but these kind of cases are reported very rare.

Spatial Differentiation of child sexual abuse between slum and cross

In Kolkata there are many slum areas. In these areas children are most vulnerable group. In slum areas most people are illiterate, living below poverty level. They dont have proper ideas about child nurturing. Girl child is abused there sexually, physically and mentally. Almost 90% child sexual cases are reported from slum area. Even they have been used as beggars, manual scavengers. Children are

not sent schools to study, they do get adequate nutrition and many frauds trapped them to provide well conditions of live and actually they are using as sex workers. These children could not return in the main stream of life.

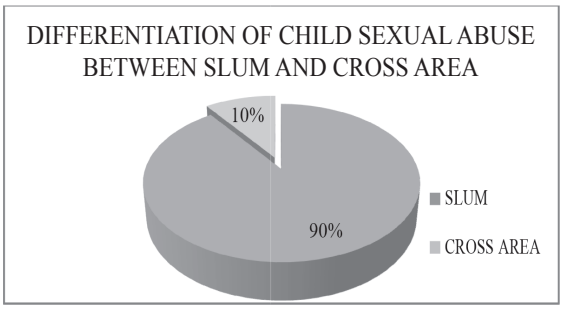
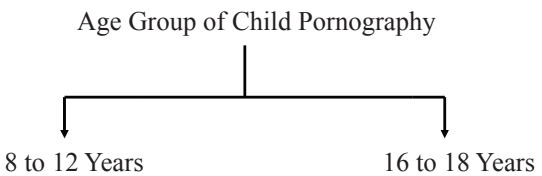


Fig 1 : Comparison of child sexual abuse cases

(Source: Headquarter of Kolkata Police, Lalbazar)

In the cross areas the children are sexually abused. They are continuously abused there but in slum areas mainly 16- 18 years old children are abused or getting married. Girls got married early. Child marriage also a type of sexual abuse where girls are abused physically, psychologically. Teenage pregnancy occurs most in this cases and legally breaks



Children are used for child pornography. They are abused most in between 8 to 12 years and 16 to 18 years. Children are generally purchased for using in pornographic purposes. Child pornographic videos, photos making are used for to entertainment purposes. Even shopping malls, toilets have hidden camera where children, women may have been snapped for child pornography. If people cover up the light during dress change then or does not necked their body then photos should not be used for pornography and must follow the signal of mobile phone whether signal down or not.

Preventive Initiatives To Protection Of Child Sexual Abuses By Kolkata Police

Psychological Treatment To The Prisoners

Kolkata police has taken several initiatives to protect child sexual abuses. Children who are committed crime they get psychological treatment to become good personality. Even below 18 years, children sent to the home and trial under Juvenile Justice Act.

Group Meeting

Kolkata Police arranged several counselling program, awareness programs in some slum areas. Bhawanipur, Giris Park, Bottala are some areas in Kolkata where Kolkata police arranged group meeting. Even they rescued some people and provide psychological treatment to overcome traumas. Even they are sending Sudhi rehabilitation home where they overcome and get healthy environment to overcome traumas and lead healthy life.

For prevention of child sexual abuses Kolkata police takes initiatives by psychological treatments. As children can explain their experience, lady police officers are asking questions in friendly manner. Among the 19 metro cities Kolkata is the safest city in India as per survey.

Governmental Policies For Child Rights

Rights ensure empowering of human beings who are vulnerable and marginalized to fight for injustices. As human being every person inherit rights such as right to life with honour and dignity; right to equality, right to equal justice. Children also have several inherent rights as being human.

In India, to protect of children and to reduce all kinds of sexual molestations government implemented several provisions. All child sexual abuse cases are filed the POCSO Act and cases are prosecuted according to the Indian Penal code. Even there are some International Instruments implements for monitoring and implementing child rights among State Parties.

The Protection Of Children Against Sexual Offences Act

The Protection of Children from Sexual Offences Act enacted for protection of children abuse and child exploitation in 2012. This law was passed by both houses of Parliament on May 22, 2012. This act

came into force on Children's Day, 14th November, 2012.

Salient Features Of Pocso Act

1. It is a gender neutral act. Below 18 years old girl, boys and transgender abused cases should be filed under this act.
2. Any child sexual abuse case is mandatory for reporting and recording.
3. All forms of sexual abuse cases that occurred towards the minors according to the definition should be filed.
4. Minors should be get the protection according to the judicial process.

Punisment Enlisted Under Pocso Act

Punishment should be given to the offenders who has committed penetrative sexual assaults, aggravated penetrative sexual assault, sexual assault by physical contact, making any sexual sound, gesture or exhibit any object or part of girl's body and even offender imprisoned for five years regarding using child in pornographic purposes.

Criminal Law (Amendment) Bill, 2018

According to the Criminal Law (Amendment) Bill, perpetrators should be punished for 20 years of life imprisonment or death sentence for committing rape below 12 years old girls. The minimum punishment should be increased from 10 to 20 years life imprisonment for committing rape below 16 years old girls.

Provisions Of Indian Constitutions To Secure Child Rights

Indian Constitution enforced on 26th January in 1950. As per Indian Constitution all children have specific rights as citizens of the country and administration has made some laws for them. Most of the child rights include Fundamental right and Directive principles of State Policy.

Constitutional Rights For Special Children

1. Article 21(A) the 6-14 years age group has right to free and compulsory elementary education.
2. Below the age of the 14 years children have rights to be protected from any employment under, article 24.
3. Children have right to protected from being abused and forced to enter unsuitable occupations under Article 39 (e).
4. Under the Article 39 (f) children have right equal opportunities and facilities to develop in a healthy manner in the conditions of freedom and dignity. State guaranteed through.
5. Children have right to early childhood and cared education until they complete the age of six years as per Article 45.

The Convention On The Rights Of The Child

A number of International instruments have covered by the Child right. This convention separately set up for removing all kind of discrimination of Children around the world. The existing international instrument has significant role as it established to protection from infant mortality providing of education facilities, require health for children etc.

On 20th November 1989, the Convention on the Rights of the child was adopted by the General Assembly of the United Nations. This Convention came in force on 2nd September 1990 and it ratified by 20 state parties. This convention is made for protection of children against neglect, abuses, exploitation, violation, tortured and guaranteed them their basic human rights, development as Universal standard. Only Somalia and United States have not ratified this convention, India ratified the convention on 11th December 1992. This International instrument is monitoring full participation in social, cultural, educational and other endeavours for their individual growth and well- being.

Effects on the child to sexual abuses

Children are affected physically, psychologically and socially for these kinds of sexual assaults. They are suffering with various traumas as results of sexual abuses discussing in following order-

Physical effects

Sexually abused children experience a wide range of adverse physical health conditions. If they have experienced such as rape, incest, sexual assault then they affected with internal injury, infections, chronic pelvic pain, menstrual problem, teenage pregnancy, HIV and poor health condition.

Psychological effects

Sexually abused children are affected with long term and short term psychopaths. They are suffering from depression, anxiety, loss of self- esteem, sleeping disturbances, eating disorder. They may self-infected harm themselves and sometimes victim attempt suicide. Long term psychopath may impact negatively rest of their life and may addict with drug.

Misconduct with others

Sexually abused children are suffered numerous psychological traumas. Several negative or misbehaviour approaches are came out towards others as an effect to sexual molestation. They cannot concentrate on study and sometime they leave school.

Affected by drug subsistances

Child sexual abuses associated with alcohol, drug. Generally girl child is abused in home or workplace by drug addicted people. Offenders are addicted with drug and other cannabis and abused sexually of children even they assault their own biological child also. Offenders misuse their power and victim became vulnerable. To prevent sexual exploitations, at first this society required to built up an anti drug addicted society

Sexual bihaviour

During adolescence and childhood period children may exhibit several sexual behaviour. These behaviours are influence sexual abuses. They may experience rape, incest. Even they experience by early pregnancy, sexual transmitted diseases with psychological disorder.

Impacts to build up sustainable society due to girl child sexual abuses

Obstacles of sustainable society

A sustainable society should constructed by healthy, potential citizens. In India one child in every two girl children is sexually abused. In future certain numbers of female citizens and children will be sexually abused who have physical and psychological disabilities, mental trauma. To consist a sustainable society, required to prevent child abuses, torture sexual molestation, trafficking, child sex worker and gender discrimination. These societal evils are stigmatized an unsustainable society.

Societal impacts

Isolation is one of high range behaviour that must be suffered abused children if society does not keep normal relationship as previous abusive incident. They use dirty words for abused children. Even they treated them as like unwanted person in the society. Children are stigmatized by societal people and they could not forget or overcome that trauma. It affects on their study and education. Even sometimes they are treated as worse students in their school. These stigmas affect their study, health, mentality. They isolated slowly by their peer groups, relatives, sometime by their parents.

For these reasons they are suffering with insecurity fear unfaithfulness, low self- esteem, self- harm, suicidal intention, identity crisis.

Identity crisis

Abuse children are suffering from identity crisis. If any abusive incident published through media then people come to know about the victim and stigmatize by society. They may not admit in any school or institution because many institutions do not want to admit any student who has any worse past.

Impact On Normal Development

A sexually abused child is growing up several physical stigmas, psychological trauma, disabilities. They cannot develop normally as other children. They cannot concentrated on their Education and other curriculum, become centralized. As consequently family members keep them in home if that incident disclose as anyhow. They cannot conduct with their friends and others. These all activities effected to normal development.

To develop a normal life they require leading a normal life, transparency in relationship of friends and other peer groups, happy life then they can be good, healthy and normal personality.

How to combat social evil and create human friendly society

At present situation in our society where children are not safe and secure in home, school and other public places. They are abused, tortured sexually, physically and psychologically. Even they are purchasing like goods, trafficked, kidnapped for abusive purposes.

They need supports from their family, institutions and need medical treatment. The supports of social people, counselling and healthy atmosphere are required to overcome brutal incident that occurred in their life. They are the future citizens, national assets. Moreover, they are child and human being and must not be object as any kind of abuse. These social evils are threats of present and future generation. These social evils are obstacles to constructive society and our administration has to require more protective, aware mainly towards children, woman and other citizens. To build a sustainable, constructive society people required human like behaviour, morality and social justice towards sexual abused girl children.

This society recognised multidimensional abuses of children. It has to reveal such a proportion that compiled law makers to formulated number of acts including latest POCSO Act, 2012 which is gender neutral law. Question may raised only laws can effectively represent some abuses of children. Answer is negative because implementation of anti abuse act meticulously being enforced an effectiveness of acts must be monitor. Strong continuous awareness campaign must be taken up at all level of the society as to reduce of changes of abuse.

As it is incontestable fact children are most vulnerable in society and family. Awareness campaign enhancement of sensibility among parents, relatives, neighbours. Rights of the child has enumerated in the child convention as ratified in India must be implemented by the Indian government the centre of states.

Sensitization program must be need among judges, public prosecutor, counselling on a regular basis. Certain aggressive violent film on child pornography has been eradicated and highly reregulate.

Co-operation of experience in regular basis between NGOs and working on the protection of the children and government that centre of the states as the case may be under result of which must be under result of which must be made public. Human trafficking including child has been must be prevented in possible wings.

Child abusers in general are found as the kind of disease that has to be recognised and effective treatment system to set up. Traumatize children must be taken care of by the states in collaboration of NGOs, medical experts and psychologist, role of the media must be sensible, responsible and authentic.

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