

STATUS OF AGRARIAN ECONOMY A CASE OF SOME SELECTED MOUZAS ADJACENT TO KANGSABATI RESERVOIR IN BANKURA AND PURULIYA DISTRICT OF WEST BENGAL

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Abstract

The dam constructed on the river Kumari and Kangsabati during 1960s flowing through the districts of Puruliya, Bankura, and Medinipur in West Bengal, may be considered as a divider on a natural ecosystem inviting much dissatisfaction of the local people. It has submerged at least 84 inhabited mouzas (173 by other estimates) settled mainly by tribal people. The dam has imposed afflictions to the people settling in the immediate upstream and immediate downstream areas where utilization of water in productive activities is impossible. Good results of irrigation are received by the people settling in the far downstream areas. At the same time they are also sufferers of regular floods. Thus, submergence of fertile lands and dense forests by the reservoir and unavailability of water has brought changes in resource utilization. This paper attempts to identify the changes brought about in the processes of utilization of the land once considered as common, and at the same time suggests some policies for optimum utilization and management of land and water resources aiming to maximum benefit from agriculture and other allied economic activities to the larger section of the people in sustainable way.

INTRODUCTION

The organic link between the rural people and the common property resources like land, water and forest was an established reality proved sustainable through the rational utilization of those resources with stewardship approaches followed for a long period of history. This sustainability has now been lost with wanton exploitation of the commons by recent technologies inviting the degradation of the local ecosystem for which responsibility goes to the techno-centric approaches of resource utilization in recent times. Construction of large dams over free flowing rivers for utilization of water resource in modern production sectors started in the 20th century (WCD Report,2000) creating the gap between water utilization and its

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management in some areas of India. Impedimentation of the free flow of river water invites not only the undesirable changes in the uniqueness of the ecosystem functioning in the downstream areas but also unavoidable social and economic problems for the human community living in the upstream parts nearer to the dam sites.

OBJECTIVES

The major objectives are to find out

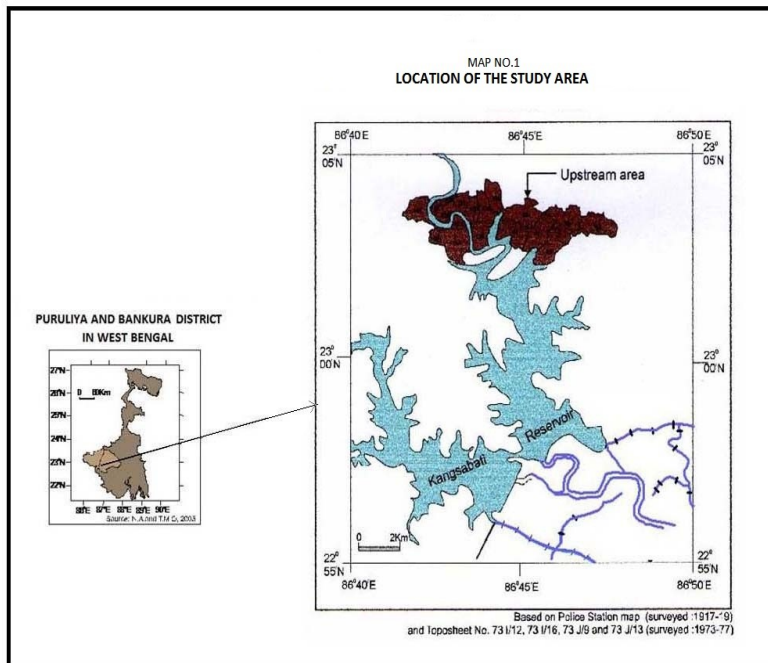
- the determinants of agricultural landuse of the study area,
- economic profile of villagers,
- the extent of influence of agriculture on economy of villagers, and
- proposals to mitigate the problems

DATABASE AND METHODS

The work is mainly done on primary data. Secondary data have been collected from both Government and non-government published and unpublished records and reports. The collected data have been computed before drawing of maps and diagrams. The analysis has been made with the help of interpretation of all those diagrams and maps.

STUDY AREA: A BRIEF PROFILE

The study area is located in the south-western part of the district Bankura and the southern part of the district Puruliya, West Bengal, along the left and the right bank of the river Kangsabati. It includes 18 selected mouzas, situated in the immediate upstream parts of the Kangsabati Dam and Reservoir (Map No. 1). The selected mouzas in the upstream parts of Kangsabati Dam and Reservoir extend from 23° 02' 14'' North to 23° 04' 22'' North latitude and 86° 41' 22'' East to 86° 47' 44'' East longitudes. In this part, out of 18 mouzas, 6 mouzas, namely, Soulponamara, Bamni, Kundurka, Paira, Simlabandh and Bhedua are located in Hirbandh Community Development (CD) Block of Bankura district. The other 12 mouzas – Bankati, Khayerbani, Maisamura, Bagsarka, Bauridiha, Gobarda, Koldiha, Dabar, Sushna - Parasigora, Udaypur, Bamandiha and Dhadkidi are located in Manbazar CD Block I of Puruliya district. Only 4 mouzas – Bamandiha, Dhadkidi, Udaypur and Sushna-Parasigora are situated along the right bank of the Kangsabati river and the other 14 mouzas are situated in the left bank of the Kangsabati river. Except the mouzas of Soulponamara and Bamni, all mouzas are more or less submerged in Kangsabati Dam and Reservoir during the rainy season.



LAND

Land is a product of nature, and a base of the origin and spread of human civilization. It is the carrier and supplier of daily necessities of human beings (Mather, 1986). The study area has four categories of land-----

- i. *Tanr* or *danga* land,
- ii. *Baid* land,
- iii. *Kanali* land, and
- iv. *Bahal* or *Sole* land. (District Gazetteers, Bankura, 1968)

Generally, the *Tanr* lands are the top most parts of the relatively high lands in an undulating terrain. The *dungris* (big hillocks) and *Patharchal* (small hillocks) are observed here and there on the *Tanr* lands. In a drought prone area like the concerned area under study, the *Tanr* lands remain fallow for most part of the year. Only small grasses grow during the arrival of monsoon rains and these lands are used as grazing fields for 2 or 3 months in a year. Farmers produce some unimportant crops like, *til*, *kodo*, *araha*, maize, *mesta*, jute etc. wherever ploughing is possible. *Eucalyptus* trees were planted with the help of Village *Panchayat* (local administration) but within 2 or 3 years these lands are abandoned because of mismanagement. Occasionally, farmers have converted the *Tanr* lands into small patches of agricultural lands removing huge quantity of regolith. Splash erosion, rill erosion, sheet erosion and micro-level gully erosion are the common processes

active upon the *Tanr* lands. Some kinds of *rabi* crops are produced on the *Baid* land if irrigation is provided. *Kanali* lands are suitable for the cultivation of wide variety of crops including High Yielding Variety (*H.Y.V.*) paddy and vegetables. *Bahal* or *Sole* lands are suitable for cultivation of *Aman* paddy (sown in rainy season and harvested in winter) and *Boro* paddy (sown in winter season and harvested in summer).

LAND OCCUPANCY

The study area may be considered as a representative of the cultural diversity of Bengal, as the area represents a variegated pattern in caste, creed and clan in population composition (O' Malley, 1904). The population composition of the selected 18 mouzas is shown below:

Table No.1

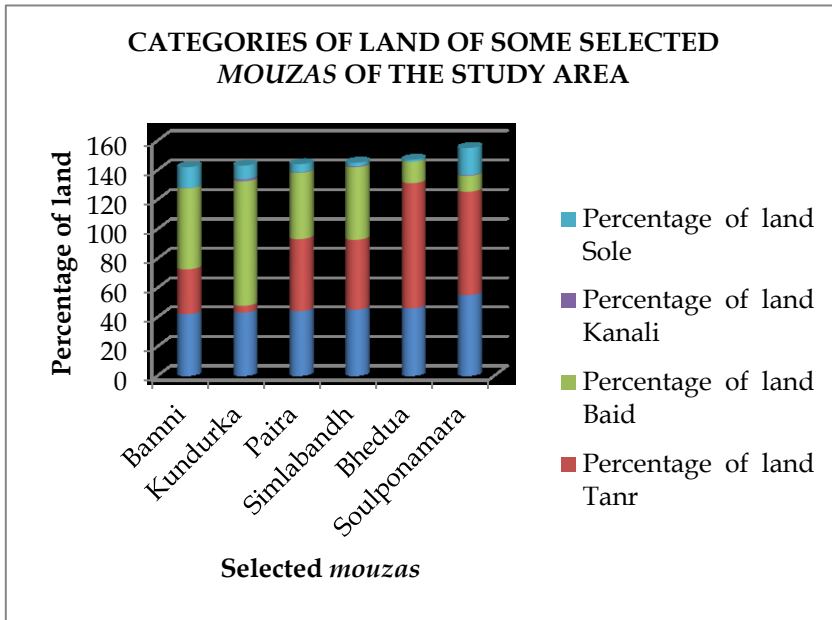
Division of selected *mouzas* on the basis of population composition

Particularities	<i>Mouzas</i>
Homogenous group	Bamandiha (S.C.), Bauridiha (S.C.), Gobarda (S.C.), Koldiha (S.C.), Maisamura (S.C.) and Bagsarka (S.T.). [Schedule Caste = 5 Schedule Tribe = 1 Total = 06]
Heterogenous group	Bamni, Paira, Soulponamara, Udaypur, Sushna-parasigora, Bankati, Dabar and Simlabandh [(General + S.C.+ S.T.) = 08] Kundurka, Bhedua, Dhadkidi and Khayerbani [(General+S.C.) = 04]
Majority of general caste people	Bamni, Paira, Simlabandh, Bankati and Khayerbani [Total=5]
Majority of S.C. people	Kundurka, Bhedua, Soulponamara, Udaypur, Shushna-parasigora, Dhadkidi and Dabar [Total=7]

Source: Field survey, 2014

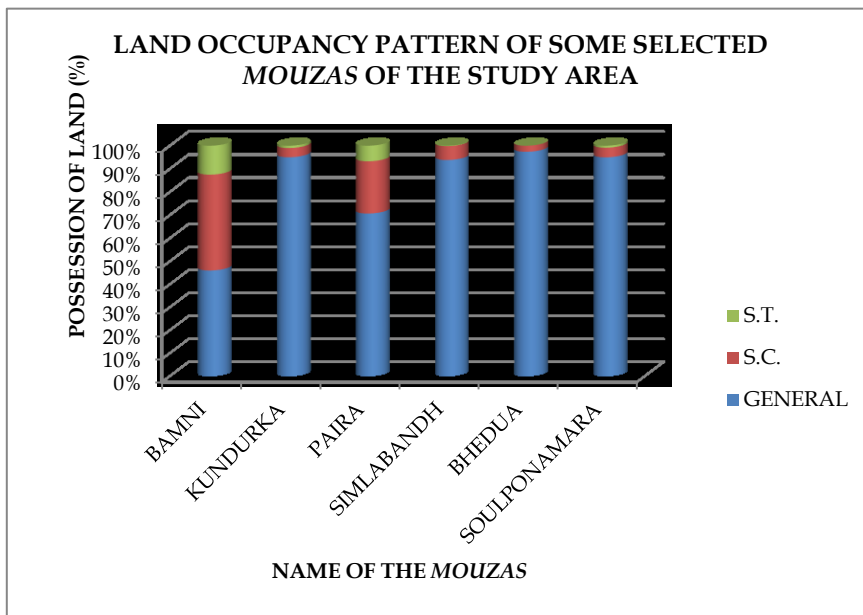
The following Graph (No.1) shows percentage of different categories of lands of six selected *mouzas* in the study area.

Graph No.1



The Graph (No.2) shows caste wise possession of land in some selected mouzas of the study area:

Graph No.2



It is evident from the above graph that most of the land of the area mentioned is possessed by the General Caste people. Good quality *Sole* (most fertile) and *Kanali* (medium fertile) lands are occupied by General Caste people, while patches of low quality lands are under the possession of weaker sections – the Scheduled Caste and the Scheduled Tribe people (Field survey, 2014)

LAND REFORMS: A REDISTRIBUTIVE JUSTICE

In a simple sense, Land Reforms in West Bengal are a Government programme of distribution of surplus lands exceeding the defined ceiling to the landless and the near landless people. In its comprehensive sense, it is an integrated programme of removing obstacles to agricultural production by an equitable and rational restructuring of land tenure systems including the pattern of land ownership and sharing of crops among the land owners and the land tillers (share croppers) with support of agricultural inputs (West Bengal HDR, 2004).

In West Bengal, Land Reforms started in the mid-fifties of the 20th century, along with other States of the country. The Left Front Government of West Bengal launched a programme known as 'Operation *Barga*' in 1978, to accelerate the process of *Barga* recording (West Bengal HDR, 2004).

The Table No.2 shows recorded *Barga* and *Patta* holders in some selected mouzas of the study area:

Table No.2

Name of the <i>mouzas</i>	No. of <i>Barga</i> Holders		Possession of land of <i>Barga</i> holders (in acre)		No. of <i>Patta</i> Holders		Possession of land of <i>Patta</i> holders (in acre)	
	S.C	S.T.	S.C	S.T.	S.C	S.T.	S.C	S.T.
Bamni	46	33	4.20	0.89	01	Nil	0.26	Nil
Kundurka	13	13	3.97	3.97	03	Nil	1.70	Nil
Paira	Nil	Nil	Nil	Nil	01	01	0.63	0.63
Simlabandh	01	01	0.13	0.13	Nil	Nil	Nil	Nil
Bhedua	Nil	Nil	Nil	Nil	05	05	4.44	4.44
Soulponamara	21	21	18.04	18.04	Nil	Nil	Nil	Nil

Source: B.L. & L.R.O., Hirbandh, Bankura, March, 2008.

It appears from the above Table (No.2) that 49.37 acre of arable lands (obviously inferior quality of land) has been distributed among 149 heads of S.C. and S.T. population. The per capita distribution of *Barga* land is 0.33 acre. On the other hand 12.1 acre of arable land has been distributed among 16 heads of S.C. and S.T. population. The per capita *patta* land is 0.76 acre.

AGRICULTURE

Agriculture is the backbone of economy of the area under question and majority of population; nearly 83% are engaged in agricultural pursuits (Field Survey, 2013). The climate and topographic conditions are not much suitable for cultivation throughout the year. The amount of annual rainfall is low (140 cm) compared to the other parts of the state and irrigation facilities are not available during the dry period. At present, out of 18 selected *mouzas* 9 *mouzas* have no scope of irrigation either from the reservoir or from the surface or sub-surface means. The agricultural fields of the rest 9 *mouzas* avail irrigation water from ponds but their percentages varies from 3% of Maishamura *mouza* to 27% of Soulponamara *mouza* (District census Handbook, Bankura & Puruliya, 2001 & 2011). The existing ponds and *jhorbundhs* have been lost their capabilities to store water due to the deposition of sludge on the bed and lack of proper maintenance as the previous integration of the village people to run the all round village developmental works have been broken up. Ploughing of land is mainly done by animate energy. Irrigation from ponds and *jhores* are done by lift pumps, and by using traditional techniques like *sini*, *duni* and *dobka* operated with human power. Ploughing, sowing, transplanting and harvesting of paddy are done by animal and human power but hand machines are used for spraying of pesticides and threshing of crops. Harvested crops are carried from field to *Khamar* (threshing grounds) with bullock carts. Agriculture in the area is traditionally labour-intensive. Currently H.Y.V. seeds of paddy are being used. Thus the yield of any crop is low compared to other regions of the state particularly in the eastern alluvial tracts.

INCOME LEVEL

The major sources of income of the people living in the selected *mouzas* is agriculture but animal rearing, collection of woods, leaves, twigs etc. from residual forests, fishing in the available inland water bodies, working as daily wage labourers in the Government and Private sectors are some significant earning sources. Workers like carpenter, potter, blacksmith, mason, rope maker, small traders of grain, milk, and stone, vegetable, animal, along with shop keeping and money lending are some insignificant occupations.

The economy of the area is predominantly agrarian and the crop pattern is dominated by *aman* paddy cultivation. *Mouza-wise* field survey was conducted (2013) with a structured questionnaire schedule to investigate household possession of land. As per field observation, all the households in this area are categorized as below:

- i.) *Relatively big farmers* possessing more than 3.30 acre (10 *bighas*) of land in possession. These farmers represent 3% to 4% of the total households. [1 bigha = 0.33 acres]
- ii.) *Marginal farmers* with more than 1.65 acres (5 *bighas*) of land but less than 3.30 acres. These households represent 20% to 30% of the total.
- iii.) *Poor farmers* with less than 1.65 acres (5 *bighas*) of land in possession. These households represent 20% to 25% of the total.
- iv.) *Nearly landless to landless households* representing 57% to 60% of the total.

To have an idea on the household-wise monthly income in rupees in this part, an estimate may be presented here with taking 3 households as sample units. These three households are the representatives of more than 80% of the households.

Sample – I

Marginal farmer possessing 2.31 acre (7 *bighas*) of land with an average heads of 6 persons.

% of various categories of arable land

Bahal land – 4 *bighas*

Kanali land – 2 *bighas*

Baid land – 1 bigha

Income from *Kharif* Crops

Cost of paddy production of 0.33 acres (1 bigha) land during *kharif* crops (*Aman* Paddy)

Ploughing cost	Rs. (250 x 3)	Rs. 750.00
Paying labourers	Rs. (4 x 120)	Rs. 480.00
Weeding	Rs. (3 x 100)	Rs. 300.00
Cutting and binding of paddy plants	Rs. (6 x 120)	Rs. 720.00
Carrying harvest paddy plants to the <i>khamar</i>	Rs. (3x 120)	Rs. 360.00
Threshing	Rs. (4 x 120)	Rs. 480.00
Spraying of pesticides and applying fertilizers in the field during growing period	Rs. (2 x 120)	Rs. 240.00

PURCHASE OF FERTILIZER, PESTICIDES AND SEEDS

Fertilizer:

DiAmonium Phosphate (DAP)	Rs. (30 x 10kg)	= Rs. 300.00
Potash	Rs. (10 x 10kg)	= Rs. 100.00
Urea	Rs. (10 x 6kg)	= Rs. 60.00
Pesticides		= Rs. 300.00
Seeds and others		= Rs. 250.00
Total cost of production		= Rs. 4340.00

Total production of paddy from

<i>Bahal</i> lands	(4 x 7) Quintal	= 28 Quintal
<i>Kanali</i> lands	(2 x 6) Quintal	= 12 Quintal
<i>Baid</i> lands	(1 x 5) Quintal	= 05 Quintal
Total from all categories of lands		= 45 Quintal

Market price of paddy		= Rs. 1200/Quintal (Govt Rate Rs.1350)
Total price of paddy	= (45 x 1200)	= Rs. 54000.00
Price of straw		= Rs. 4200.00
Total price		= Rs. 58200.00
Total cost of production	= Rs. (4340x 7)	= Rs30380.00
Total income from paddy cultivation	= Rs. (58200.00 – 30380.00)	= Rs. 27820.00

Income from *Rabi* Crops

<u>Crops</u>	<u>Debit</u>	<u>Credit</u>	<u>Balance</u>
Mustard 0.66 acres (2 <i>bighas</i>)	Rs. 5000.00	Rs.12000.00	Rs. 7000.00
Vegetables 0.17 acres (10 <i>cottahs</i>)	Rs. 3000.00	Rs. 7000.00	Rs. 4000.00
<i>Boro</i> rice 0.17 acres (10 <i>cottahs</i>)	Rs. 3000.00	Rs. 5000.00	Rs. 2000.00
Total income from <i>Rabi</i> crops	=		Rs. 13000.00

INCOME FROM OTHER SOURCES

Domestic animals and poultry = Rs. 5000.00

Therefore, total annual income =Rs. (58,200.00 + 13000.00 + 5,000.00) = Rs. 45820.00

Household-wise monthly income =Rs. 45820/12 = Rs. 3818.00

Per capita monthly income = Rs. 3818.00/6 =Rs 636.00

SAMPLE – II

Wage labourer with 0.66acres (2 *bighas*) of land in possession with an average heads of 7 persons.

(A) Income from agriculture = Rs. (3,250.00 x 2) = Rs. 6,500.00

(B) Wage labourer for 2 heads = Rs. {(65.00 x 100 days) x 2} = Rs. 13,000.00

(C) Income from other sources = Rs. 3,000.00

Annual income from all sources = Rs.(6,500.00 + 13,000.00 + 3,000.00) = Rs. 22,500.00

Monthly income of the household = Rs. 22,500/12 = Rs. 1,875.00

Per capita monthly income = Rs. 267.86

SAMPLE – III

Landless wage labourer with an average heads of 8 persons.

(A) Wages for 2 heads = Rs. (6,500.00 x 2) = Rs. 13,000.00

(B) Income from other sources = Rs. 2,000.00

Total income = Rs. (13,000.00 + 2,000.00) = Rs. 15,000.00

Monthly income = Rs. 15,000/12 = Rs. 1,250.00

Per capita Monthly income = Rs. 156.25

PROBLEMS**Physical Problems**

- 1.) Loss of perennial status of spontaneous flows ('jhores' and *jharnas/springs*) due to inadequate vegetative cover by deforestation leads another problem of the area. Soil erosion and depletion of ground water are increasing day by day.
- 2.) *Tanr* lands which have been converted into agricultural land by heavy earth-cutting increases the intensity of soil erosion. Stone extracting grounds in the hills and *Tanr* lands are kept fallow without taking any conservation measure. During rainy months, loose soils are washed out from the sloping areas and accumulated in the ponds reducing their water holding capacity.

ECONOMIC PROBLEMS

- 1.) The marginal farmers are totally dependent on *Baid* lands for crop production which need irrigation in specific interval. But irrigation is impossible to cover all the *Baid* lands from the existing ponds due to its topographic character. Uncertainty of irrigation causes crop failure. This, as a result, compels marginal farmers to receive another loan on an abnormal rate of interests.
- 2.) Agriculture is the principal occupation of the people in the area. But land is disproportionately distributed among the households. The weaker section of the society, i.e., the S.Cs and S.Ts. possess only 17% of the inferior quality of land (inferior in terms of productive capacity), although, they account almost 62.26% of population. Actually, they are daily wage - labourers. But due to uncertainty of rainfall, low irrigation coverage of land, submergence of good quality agricultural lands under the reservoir, the remaining land does not have irrigation facility. Thus the labour force shifts towards the east in the district of Bardhaman and Hooghly in search of employment in the field of agriculture where wage rate is better. Therefore, the study area suffers from crisis of agricultural labour at the crucial time during *kharif and rabi* season.
- 3.) The drying up of ponds in dry spells discourages pisciculture and creates problem in domestic water use.
- 4.) The topography and soil of the region is unfavourable for water conservation and hence long term utilization throughout the year. Cultural Land in the study area is distributed unevenly among the farmers. The irrigation water supplied from the ponds does not reach the distant fields due to loss of water thorough leakage and seepage. The irrigation water is distributed disproportionately among the owners of land due to slope problem. In a drought prone area, the lands receiving irrigation water are more productive compared to the lands outside the range of irrigation. Thus, this system of irrigation creates inequality in production in the same category of land.
- 5.) Although animal husbandry lost its previous significance but still now, these are regarded as an auxiliary economic activity by the village people, but land for cattle grazing has been reduced due to the construction of the dam.
- 6.) No railway line passes through this area. The old short distance roads (metalled rods, un metalled roads, cart tracks and pack tracks) have been submerged under the reservoir. It causes disruption in the present transport network in the area.

- 7.) Due to shrinkage and loss of land during *khari* season, village people face problem to graze the cattle.
- 8.) Occupations of the village people have changed due to loss of land and forests.
- 9.) Acute scarcity of drinking water arises during dry spells.

PROSPECTS

- i. The area has a scope of development of minor irrigation which will be less costly, less damaging but more viable.
- ii. There is a wide scope of development of plantation agriculture, horticulture and sericulture.
- ii.) Valuable stones and agro-based raw materials may be used for development of small scale industry.
- iii.) Highly skilled artisan groups, skilled and unskilled workforce are still available who could be used in artisan industry.
- iv.) Women empowerment through formation of self-help groups can reduce the poverty faced by the people.
- v.) Extension of the scope of Integrated Pest management and Vermicompost can increase rate of crop production.

SUGGESTIONS

The livelihood strategy of the village people should be more close to the availability of natural resources with specific aims in which participation of both the gender will be assured. The basic resources of the study area are its land, water and forests, with the products like woods, fish, meat, egg etc. Human labour- skilled and unskilled, may also be treated as important resources. As emphasized by some of the scholars that the local communities in our country at several places long managed their community resources carefully without major damages to their traditional wisdom and social practices without harm to the natural ecosystem (Jodha.N.S., 1986; Bandopadhyay and Shiva, 1988; Swaminathan, 1989; Katar Singh, 1994; Guha and Gadgil, 1995 and U.N.Roy, 2005). It should be followed by the people of this area in question. A micro level Watershed Management Programme (WMP), Joint Forest Management Programme (JFMP) and Forest Protection Policy (FPP) have been framed at village level in the study area by the Government of West Bengal for the integrated management of land, water and forest as basic resources. But the net result is waiting. The primary need is to achieve a long term economic sustainability to bring out the ecological stability of the area. But the economic sustainability is dependent upon social sustainability of the village people. These three components -

Ecological stability, Economic and Social sustainability may be woven in a single thread if village level social organizations are formed with this purpose with a foresight. The members of that organization may be selected from each family. Equal importance will have to be given for both the landowner and landless people irrespective of any reservation. Executive members of the organization will be selected unanimously. All the managerial activities will be done by the proper guidance of the executive members of the body.

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References

1. Census of India, District Census Handbook- Puruliya and Bankura, 1961, 2001&2011.
2. Government of West Bengal. (2004). West Bengal Human Development Report, 2004. Kolkata: Development and planning Department.p27-28,30-31
3. Mather, A. S. (1986). Landuse. London: Longman.p1
4. O' Malley, L. S. S. (1908). Bengal District Gazetteers: Bankura (Reprinted in 1995). Calcutta: Bengal Secretariat Book Depot.p64
5. Roy, U.N. (2005), People's Participation in Watershed Management, Kanishka Publishers and Distributors, New Delhi.p42-43
6. Rangarajan, M. (Ed. 2008), Environmental Issues in India - A Reader, Dorling Kindersley Pvt. Ltd. New Delhi.p206
7. West Bengal District Gazetteers, Bankura, 1995.p12
8. World Commission on Dams. (2000). Dams and Development: A New Framework for Decision – Making. London: Earth scan Publications Ltd.p xxix