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Common Property Resource Use by Poor  
in West Bengal

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The significance of common property resources (CPR) of land, forests, and water is increasingly getting recognised for the eradication of poverty and ensuring sustainable development in the country. Both in terms of the existing practice and use potential these are of major significance for the livelihood and wellbeing of millions of rural people, particularly the poor. Perhaps a third of India's geographical area is common property of land and water, comprising of village commons, public waste lands and forests which provide resources for grazing, fodder, firewood and a host of other products for the rural people's livelihood. Common property also includes rivers, lakes, tanks and ponds, irrigation and drainage channels and ground water. Besides, the structure of social organisation and resource management that had been established over time gave certain informal rights to the poor to have access to the fruits of private land and water resources. These resources have also been considered as CPRs.

What seems worrying is that with increasing demographic pressure, growing commercialisation of products, technological change and certain public policies there have come about an erosion not only in the size and status of CPRs but also in the rights hitherto enjoyed by the rural poor in the CPRs.

This paper is concerned with rural people's use of CPRs and how these contribute to their ability to improve their quality of life. Another issue almost juxtaposed to the former that has been considered here is the relationship between common property and equity. Earlier studies indicate that CPR reduces inequality.<sup>1</sup> But what has received little attention is what happens when scale-economies turn out to be important and common property systems become unavailable. This is particularly observed in the case of ground water which is also a common pool resource. This will be examined in the context of the recent developments of water markets where the management as well as the control of ground water resources is in the hands of private individuals. The operation of water markets has been noted in the literature<sup>2</sup>. However, their role in the utilisation of irrigation potential and

their social and environmental impact still need more detailed micro-level enquiries.

This paper is a part of a comprehensive study on "Social and Natural Resource Use in West Bengal" which is being carried out at the University of Visva-Bharati with the support from the International Development Research Centre, Canada. Since the data are at the preliminary stage of processing, quantitative information have to be taken as tentative.

For the present study two villages have been taken up, one each in the **districts** of Purulia and Bardhaman, representing two contrasting agro-climatic regions, namely, the Plateau Region and the Gangetic Plains of West Bengal.

Purulia is the most ~~backward~~<sup>underdeveloped</sup> district in the state. Although the main activity in this district is agriculture, it is poor in terms of the fertility status of soil and irrigation facilities. Its topography being undulating, the cultivated lands lack water holding capacity. Crops are grown mainly under rainfed condition. Intensity of cropping is low, only 3 percent of the net sown area is cropped twice. This district is, however, rich in natural resource potential, particularly forests which occupy 15 percent of the geographical area of the district. The average per capita forest area is 0.05 ha as against 0.01 ha in the state. Besides forests, cultivable waste and other non-arable lands account for 40 percent of the geographical area.

The selected village of this district is well-endowed with forest resources. Forest area constitutes 49.3 percent of its geographical area and the per capita forest area is 0.30 ha. The area under culturable waste lands including pasture and groves and area not available for cultivation taken together constitute 45 percent of the geographical area.

The village is inhabited mostly by scheduled tribe which form 72 percent of the total households. General caste and scheduled caste households constitute 17 percent and 11 percent respectively. Incidence of poverty is very high, nearly 75 percent of the total households live below the poverty line. There is a high incidence of agricultural labourers among the poor households. The literacy level is pathetically low in this village, especially among the poor. While only 56 percent of the men is literate, among women it is measly 4 percent. The corresponding figures

for the non-poor households are 84 percent and 53 percent (Table-1,2,3,& 4).

**Table - 1**

Percentage Distribution of Households by Caste  
and Income Groups : Purulia Village

Income-groups (in '000 Rs.)	General Caste	Scheduled Caste	Scheduled Tribe	Average
1	2	3	4	5
Below - 10	31.3	80.0	56.1	54.3
10 - 15	18.8	10.0	22.7	20.7
15 - 25	25.0	10.0	10.6	13.0
25 - 35	6.2	-	6.1	5.4
35 - 50	6.2	-	3.0	3.3
50 & above	12.5	-	1.5	3.3
Total	100.0	100.0	100.0	100.0

N.B. Households having an income below Rs. 15,000 per annum have been taken as living below the poverty line.

Sources of tables other than specifically indicated are from our own Village Surveys.

**Table - 2**

Distribution of Households and Land Area  
by Caste Groups : Purulia Village

Caste Groups	No. of households		% of land-less households	Total land area		Land per household (acres)
	No.	% Dist.		Area (acres)	% Dist.	
General Caste	16	17.4	25.0	43.94	21.5	2.74
Scheduled Caste	10	10.9	80.0	7.81	3.8	0.78
Scheduled Tribe	66	71.7	25.8	152.70	74.7	2.31
Total	92	100.0	31.5	204.45	100.0	2.22



Bardhaman district, on the other hand, is one of the most prosperous districts in the state with a better means of communication and a developed infrastructure. It is one of the 13 districts in the country which was selected for Intensive Agricultural Development Programme in 1962. The proportion of irrigated area to net cultivated area has been 75 percent in the Kharif season. The corresponding figures for the rabi and boro seasons are 40 percent and 35 percent. The share of ground water irrigation to total irrigated area is 15 percent in the Kharif season and 42 percent each in the rabi and boro seasons. The large scale expansion of ground water irrigation in the recent period has resulted in a substantial rise in agricultural production, particularly rice which overwhelmingly predominates in the crop structure in this district. This is evident from the following table.

Table - 5

Area, Production and Productivity of Rice  
in Bardhaman

Area ('000 ha)	1969- 70	1977- 78	1978- 79	1979- 80	1980- 81	1981- 82	1985- 86	1987- 88	1989- 90	1991- 92
Aus	-	25.0	27.1	26.0	27.4	33.8	23.8	26.3	33.0	31.5
Aman	-	444.8	321.3	403.0	428.1	435.3	417.6	396.2	403.0	402.2
Boro	-	65.8	99.9	31.0	93.9	33.9	97.5	141.0	109.0	106.7
TOTAL	411.0	535.6	448.3	460.0	549.4	493.0	538.9	563.5	545.0	560.4
Production (metric tonnes)										
Aus	-	40.0	40.7	48.3	48.6	43.5	45.2	58.8	113.0	79.3
Aman	-	760.8	686.0	699.1	737.7	585.0	735.8	757.6	975.0	1062.2
Boro	-	183.8	282.7	80.0	216.4	80.3	232.0	424.8	325.0	391.1
TOTAL	651.3	884.6	1009.4	827.4	1002.7	708.8	1013.0	1241.2	1413.0	1532.6

( to be contd. next page)

Table - 5 (contd.)

Productivity (kg.per ha)	1969- 70	1977- 78	1978- 79	1979- 80	1980- 81	1981- 82	1985- 86	1987- 88	1989- 90	1991- 92
Aus	-	1597	1499	1837	1774	1824	1903	2234	3392	2526
Aman	-	1710	2135	1735	1723	1344	1762	1912	2420	2641
Boro	-	2793	2830	2611	2305	2371	2593	2378	2917	3086
AVERAGE	1401	2033	2155	2061	1934	1846	2086	2175	2910	2751

Source: 1 West Bengal Statistical Abstract 1978 - 89

2 Bardhaman District Annual Plan 1993 - 94

The incidence of ground water irrigation is very high in the selected village. Nearly 90 percent of the gross irrigated area is under ground water irrigation. More importantly, it is the single source of irrigation in the boro season which covers 85 percent of the net cultivated area with irrigation. As a result, the intensity of cropping has exceeded 200 percent in this village.

#### Use of CPRs :

It is revealed from Table-6, that in the Purulia village, the rural poor depend more on CPR collections than their relatively well-off counterparts. Income from this source, although considerably under-estimated, accounts for nearly a quarter from all sources among the poor, while it is little over one-tenth among the non-poor. The most widespread use of CPRs is the collection of fuel-wood which constitutes 85 percent among the poor and 81 percent among the non-poor (Table-7). Fuel-wood collection for sale has been observed in all the poor households. It is seen in the table that in the reference period 45 percent of the total collection of wood was sold in the market. This is mostly done in the lean periods when alternative sources of employment and income are non-existent. Dependence on CPRs for income generating activities and other minor products is also observed. The value of raw materials and other products forms about 5 percent of the total collections among the poor and 12 percent among the non-poor. Food items, such as, leafy vegetables, various tuber crops, small fishes, birds, small animals etc. are collected mainly by the poor. It accounts for 9.5 percent of the total collections among the poor and 3.6 percent among the non-poor. The contribution of fodder to the total collections is negligible. It is evident that its share of the total collection is

3.6 percent among the non-poor and 0.9 percent among the poor. However, it has been observed that all the cattle in this village graze in the forest and waste lands for all the days in a year from morning to late afternoon. Thus the contribution from this source would have been much higher if an estimated value of the fodder taken by the cattle could have been shown.

Table - 6

Income by Sources (in %) in the Selected Villages

Sources	Purulia		Sources	Bardhaman	
	Poor	Non-poor		Poor	Non-poor
1	2	3	4	5	6
Cultivation	16.1	29.6	Cultivation	13.3	72.7
Livestock	3.9	1.6	Livestock	2.7	0.4
Crafts	4.8	1.2	Crafts	0.6	0.5
Trade	1.5	14.6	Rice-processing	2.5	-
Agricultural Labour	29.2	4.3	Trade	2.9	13.5
Jahar Rojgar Yojana	4.6	-	Transport Lab.	2.6	-
Forestry Lab.	6.1	-	Industrial Lab.	5.7	-
Transport Lab.	2.9	-	Agricultural Lab.	53.1	-
Services & Profession	4.5	29.1	Other Non-Agrl. Labour	3.0	-
I.R.D.P.	0.7	-	Services & Prof.	6.3	7.2
COLLECTIONS	23.4	10.1	COLLECTIONS	7.3	0.3
Miscellaneous	2.3	9.1	Miscellaneous	-	5.4
TOTAL	100.0	100.0		100.0	100.0



Table - 7  
Percentage Share of Different Items of Collections

Items	Purulia		Bardhaman
	Poor	Non-poor	Poor
1	2	3	4
Fuel wood	84.8(44.9)	80.9	74.3
Fodder	0.9(14.7)	3.6	10.2
Food materials	9.5(12.5)	3.6	15.5
Others	4.8(34.3)	11.9(37.1)	-
TOTAL	100.0(39.8)	100.0	100.0

N.B. Figures in parantheses indicate percentage of sale to total collections of each item.

In the Bardhaman village the availability of CPR lands is very negligible which is due to the development of irrigated agriculture. It is seen in Table-6 that collections form 7.3 percent of the total income from all sources among the poor and 0.3 percent among the non-poor. The collected items consist of fuel, fodder and few food materials. Of the total value of collections among the poor, fuel accounts for more than 74 percent. It has been observed that all the poor households have met all of their fuel requirements in the form of fallen leaves, cowdung crop residues and other materials which the womenfolk gather from house sites, field paths, ponds and wherever else they are available. Food items, such as leafy vegetables, small fish etc. are also collected, mainly by women members of the poor households from paddy fields, ponds and channels, mostly during the rainy season. Since the fields remain under crops for a greater part of the year, cattle are mainly stall-fed. The farmers also maintain a small number of cattle owing to lack of grazing lands. The relative importance of each item of the collections is shown in Table - 7.

However, the most important CPR in this village is ground water resource. The widespread expansion of ground water irrigation in the recent period has significantly increased both the intensity of cropping and production of crops in this

village. As a result, all the households including the landless agricultural labourers have been benefited in terms of increased employment and income generated from the use of this resource.

The significant point to note, however, is that the management and control over the supply of ground water are in the hands of a few private individuals. This has made differential impact among the various sections of the people in this village. Table-8 gives data on the distribution of land holdings, area number of irrigation sets and command area under irrigation by size classes land holdings.

It is seen in Table-8 that the management and control of the command area under ground irrigation is largely in the hands of few better-off farmers. The large farmers, forming about 6 percent of the total households, possess 36 percent of the total cultivated area, but hold control over more than 56 percent of the total command area. This is followed by the middle farmers who form 10 percent of the total households and hold control over 28 percent and 39 percent of the total cultivated area and the command area respectively. Thus these groups jointly form 16 percent of the households, but command 95 percent of the command area. The small and the semi-medium groups of farmers are unable to own irrigation sets in this area which involve high capital investment, and they purchase water from their better-off counterparts for the cultivation of their lands, particularly during the rabi and boro seasons.

The owners of the ground water irrigation systems operate in the water market in three ways. Firstly, they use water for the cultivation of their own lands; secondly, they sometimes take land on lease on a fixed cash rent basis from the farmers who have lands in the command area; and lastly, they sell water to others having lands within the same command area at a certain price. Under this situation it is apparent that the distribution of income among the different households in this village would show a greater concentration than the distribution of holdings.

Table - 8

Distribution of Land Holdings, Area, No. of Irrigation Sets and the Command Area by size-classes of Holdings.

Size-class (in acres)	% distribution of		No. of		Command area		Percentage of operated land leased in/out in the boro season	
	No. of House- holds	area	S.TW	SM.TW	Area (acres)	% dist.	Leased in	Leased out
1	2	3	4	5	6	7	8	9
Landless	17.5	-	-	-	-	-	-	-
Under 2.50	52.1	16.1	-	-	-	-	1.6	4.5
2.50- 5.00	14.7	19.6	4	-	20	4.8	-	7.0
5.00-10.00	10.0	28.3	14	7	161	38.9	5.6	5.6
10.00-above	5.7	36.0	5	16	233	56.3	6.8	-
TOTAL	100.0	100.0	23	23	414	100.0	-	-

**Summing up :**

It is revealed from the foregoing analysis that in the Purulia village the dependence on the collections from CPRs is very high among the villagers, particularly the poor, who constitute about three-fourth of the total population. The villagers generally take illegal access to CPRs, particularly state-owned forests. Recently a Joint Forest Management Committee has been formed where all the heads of households in this village have been enrolled as members. Under the arrangements, the participants are entitled to enjoy 25 percent share of the net sale proceeds at every final harvest of the concerned plantations. However, the members will have to protect the forests and new plantations for at least five years in order to be eligible for a share of the produce. The members have also been given exclusive rights to certain minor forest products for collection and sale in the market. Their need for fuel and fodder (grazing of cattle) has also been taken care of.

This new management system will no doubt facilitate a more egalitarian distribution of benefits of the forest resources. The explicit recognition of the rights of access to forest resources by the local people, and the role of forestry in sustaining their livelihood will certainly induce the local people in actively participating in the protection of forest resources. However, measures will have to be simultaneously taken to provide the local people with viable and sustainable sources of employment and income which will eventually reduce their dependence on forest resources.

In the Bardhaman village the land-based CPRs have been insignificant owing to intensive use of land through the use of canal water for a long time and the process has been further intensified in recent time. The development of agriculture has been sought through the exploitation of ground water resources. It has no doubt benefited all the sections of the village by generating more income and employment in the area. However, since the irrigation system are mostly owned by a few better-off farmers some undesirable social and environmental problems have surfaced. The well-owners enjoy absolute rights to use the water in their wells in any manner and the quantity they like. Under this condition the well-owners are motivated to draw more and more of the water which eventually leads to depletion of water resources. We have observed in the study areas that excessive withdrawals

have contributed to the progressive aquifer depletion. We have also observed that proliferation of shallow tubewells has led to the lowering of water-level and this situation is being met by sinking submersible pumps at a lower depth which is more capital-requiring, and this in turn has been leading to further concentration of ground water irrigation in the hands of better-off sections. Since the management and control over the supply of water are in the hands of a few better-off farmers, the water markets that have emerged in the area have failed to achieve efficiency in water use and social equality. The existing inequitable distribution of income in the village has further increased. Therefore, effective policy interventions are needed to control the amount and the manner in which water resources are used and distributed ensuring thereby both ecological security and social equality in water use across all uses and users.

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