

COMMON PROPERTY RESOURCES AND WOMEN : A STUDY IN RURAL ARUNACHAL PRADESH

R.J. Khataniar*

B.D. Nayak**

Introduction

In broad sense, the Common Property Resources (CPR) can be defined as those resources in which a group of people has joint rights over their uses (Jodha, 1995). Examples of such CPR are community forest, pasture and waste lands, watershed drainage, village ponds/tanks, rivers, perennial stream, banks and riverbeds, etc. The CPR are very much important in the socio-economic life of the rural people as it provides fodder, fuel wood, vegetables, fruits, fish, meat, medicinal herbs etc. Besides these, common property forest resources maintain ecological balance through checking soil erosion and deforestation. Since these resources are being used commonly and freely, a situation of no caretaker prevails which leads to over-exploitation and culminating into a state of degraded condition and thereby places a further stress on the rural economy particularly on the rural poor (Singh et.al., 1996).

Common Property Resources are very much important and crucial to the indigenous people of the Arunachal Pradesh. Since the historic past, CPRs have been contributing a lot to the village economy of Arunachal Pradesh. For the indigenous people of Arunachal Pradesh, hunting and gathering in common forests supplement shifting cultivation. Their life is intimately linked with the forests, which is their well loved home, and sources of livelihood. In spite of the establishment of individual property rights on land, every community has some demarcated village common-forests, pasture, ponds, and rivers. In village common people enjoy freedom to use forest and hunt animals. The CPR are the main sources of fuel and fodder, edible fruits of all kinds, leaves, roots, tubers, animals, birds, and fish from the streams and rivers constitute the items of food for the tribal people. Common forests provide them raw materials for erecting their houses, grazing fields, herbs to cure their diseases, bamboo to

* Research Scholar, Department of H.S.S., NERIST, Nirjuli, Arunachal Pradesh.

** Faculty, Department of H.S.S., NERIST, Nirjuli, Arunachal Pradesh.

prepare baskets, arrows, bows and fishing traps. Besides, teaks are used to make various agricultural implements. Thus, major portion of community forestlands are under common ownership and hence constitute important CPR.

However, very few studies are conducted so far on common property resources and their uses by the indigenous people in the north eastern region. More so the study on CPR is very much limited in Arunachal Pradesh as well. Keeping this fact in mind, the present study is a modest attempt to analyse the importance of common property resources on the socio-economic life of the tribal people giving a special focus on women work participation in CPR based activities and their management institutions using evidence from rural Arunachal Pradesh.

This study is divided into three sections. Section-I deals with the dependency of the tribal people in CPR while Section-II explores the women participation in CPR based activities and the policy implication, suggestion and conclusion appear in Section-III.

Research Design and Methodology

The evidence presented in this paper is based on a field survey on Common Property Resources in Arunachal Pradesh conducted in 2005-2006. The study was undertaken in the Kimin circle of Papum Pare district of Arunachal Pradesh. Five villages are chosen purposively from the selected circle and the sample households-*the basic units of the sample* are selected randomly to collect information as regards to the utilization of CPR products, households characteristics and socio-economic determinants of forest dependency etc. A total of 101 households have been covered in the survey by canvassing structured questionnaires.

Section-I : Dependency of rural people on CPR

The dependency of rural people particularly in Arunachal Pradesh on CPR can be established in various ways. Most of the researchers have considered the household income as the measuring rod in this aspect. But the collection of quantitative information about income from rural areas in the tribal society is extremely difficult and over and under estimation of data cannot be ignored. Therefore, an attempt is made in the present study to record the total consumption expenditure of the tribal households and to estimate its share coming from the common property resources. This is because; sometimes statements of household expenditure give accurate picture than that of the household income. Similarly, an attempt has also been made to determine the degree of dependency of rural people in CPR in terms of household energy consumption.

CPR contribution to the consumption expenditure

Table-1.1 shows the total consumption expenditure of the households, value of CPR products consumed and then the percentage of CPR product consumed to the total consumption expenditure. It has been observed in our surveyed area that both the poor as well as the non-poor households derive a substantial portion of their consumption requirement from the CPR. The collected basket of CPR products consisting of fuel wood, edible leaves, roots, mushroom, fruits from jungles, fish from the rivers and streams, hunted meat, etc. There is marginal variation in the consumption of CPR products among the villages. In Kimin circle of Papum Pare district on an average 17.3 percent of the poor households and 15.5 percent of the non-poor households mainly depend upon CPR for the purpose of consumption requirement.

Table-1.1
CPRs Contribution to the total consumption expenditure in the last year

Village	Category of hh.	No. of hh	Total consumption expenditure (Rs.)	Values of CPRs product consume (Rs.)	5 as % to 4	Average values of cpr consume
1	2	3	4	5	6	7
Kakoi	P	17	548728	63936	11.65	3760.94
	N	13	701436	81410	11.61	6262.31
	T	30	1250164	145346	11.63	4844.87
Lower Jhumi	P	5	138294	35569	25.72	7113.80
	N	11	449240	76279	16.98	6934.45
	T	16	587534	111848	19.04	6990.50
Upper Jhumi	P	8	233012	52918	22.71	6614.75
	N	12	468633	91825	19.59	7652.08
	T	20	701645	144743	20.63	7237.15
Bada	P	12	278956	57252	20.52	4771.00
	N	7	230544	59324	25.73	8474.86
	T	19	509500	116576	22.88	6135.58
Sher	P	5	235274	38250	16.26	7650.00
	N	11	748056	103612	13.85	9419.27
	T	16	983330	141862	14.43	8866.38
Kimin	P	47	1434264	247925	17.28	5275.00
	N	54	2597909	402446	12.03	7452.70
	T	101	4032173	650371	16.13	6439.32

Source : Field Survey, 2005-2006

Note : P=Poor household : N=Non-poor household : T=Total household

It is interesting to be noted here that though the percentage of CPR products consumed is higher for the poor households than the non-poor households yet the average value of CPR products consumed is substantially higher for the non-poor households. It is estimated that the consumption expenditure on CPR products for the poor households is Rs. 5275 per annum whereas for the non-poor households is over Rs. 7452 per year. It thus rejects the most commonly accepted hypothesis of negative association between income and CPR products extraction.

It may be concluded, therefore, that in our survey area though the poor as well as non-poor households are substantially dependent upon CPR yet these are the non-poor households who are exploiting CPR very much.

Dependency on CPR for Animal Grazing

Breeding of animals and agriculture is the prime sources of income in Arunachal Pradesh. Most of the households rear animals like mithuns, cows, pigs, goats, chicken and ducks in order to satisfy the household demand for meat and contribute significantly to household income. Majority of the animals graze on common land and common forests. Partial stall-feeding has been found in case of cows and pigs. The grass, shrubs, wild vegetables collected from CPRs, crops residue from private land and sometimes purchased items are used for stall-feeding the animals. In some villages, grazing of pigs on CPR openly has been restricted strictly as it destroys the standing crops. Otherwise, there is hardly any restriction on grazing of animals in the common land. The private expenditure on rearing animal is incurred only in the form of fodder purchase, which is a rare phenomenon in the study area. Since the private costs for animal grazing is much lower and insignificant as compared to the benefits by the households, the non-poor households exploit the situation for their individual benefits.

To examine the extent of animal grazing on CPR, an attempt is also made to calculate the animal grazing days separately for the poor and non-poor households. The methodology for calculating the animal grazing days has been borrowed from Jodha (1986, p.1173). According to Jodha "a grazing day implies that an animal remained in the grazing land/field at least for 6 hours in a day and no stall feeding (except concentrates) was given. In order to estimate the animal grazing days we first converted all the animals to cow unit as 1 cow unit=0.5 bullock=5 goats=2 pigs=0.5 buffalo=0.25 mithun. Then we record the grazing days for each animal (in terms of cow unit) owned by the respondent household during the reference month. Table-1.2 shows that the average ownership of livestock

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is substantially higher for the non-poor households and with greater ownership of livestock they created larger animal grazing days than the poor households.

Table-1.1
CPRs Contribution to the total consumption expenditure in the last year

Villages	Cate- gories of hhs	No. of hhs	Cow	Bulock	Goat	Mithn	Pig	Total Animal grazing days #	Animal grazing days on CPR	% of animal grazing days on CPR
Kakoi	P	17	44	49.98	6.63	0	18.02	3558.90	2538.90	71.34
		*2.59	*2.94	*0.39	*0	*1.06				
	N	13	64	51.74	15.99	14.04	13.13	4767.00	3793.95	79.59
			*4.92	*3.98	*1.23	*1.08	*1.01			
	T	30	108	101.72	22.62	14.04	31.15	8325.90	6332.85	76.06
			*1.07	*1.01	*0.22	*0.14	*0.31			
Lower Jhumi	P	5	5	6.75	2.00	0	6.3	601.50	409.50	68.08
			*1.00	*1.35	*0.40	*0	*1.26			
	N	11	23	44.99	9.57	21.01	30.14	3861.30	2282.25	59.10
			*2.09	*4.09	*0.87	*1.91	*2.74			
	T	16	28	51.74	11.57	21.01	36.44	4462.50	2691.75	60.32
			*1.75	*3.23	*0.72	*1.31	*2.28			
Upper Jhumi	P	8	25	6.00	7.12	0	8.4	1395.60	1053.60	75.49
			*3.12	*0.75	*0.89	*0	*1.05			
	N	12	66	81.12	34.56	11.00	14.88	6226.80	4563.60	73.29
			*5.5	*6.76	*2.88	*0.92	*1.24			
	T	20	91	87.12	41.68	11.00	23.28	7622.40	5617.20	73.69
Bada	P	12	6	10.68	5.28	0	13.68	1069.20	498.60	46.63
			*0.5	*0.89	*0.44	*0	*1.14			
	N	7	14	30.73	5.39	9.00	0.98	1803.00	1312.65	72.80
			*2.0	*4.39	*0.77	*1.28	*0.14			
	T	19	20	41.41	10.67	9.00	14.66	2872.20	1811.25	63.06
			*1.05	*2.18	*0.56	0.47	*0.77			
Sher	P	5	12	11.50	3.75	13.53	0	1732.50	1560.00	90.04
			*2.4	*2.3	*0.75	*2.71	*0			
	N	11	22	60.72	12.21	30.50	.99	3283.50	2343.00	71.36
			*2.00	5.52	*1.11	*2.77	*9.00			
	T	16	34	72.22	15.96	44.03	0.99	5016.00	3903.00	77.8
			*2.12	*4.51	*1.00	*2.75	*6.19			
Kimin	P	47	92	91.65	24.91	13.53	46.53	8569.20	6060.60	70.72
			*1.96	*1.95	*0.53	*0.29	*0.99			
	N	54	185	269.46	77.76	65.57	59.94	19222.80	14295.45	74.37
			*3.42	*4.99	*1.44	*1.21	*1.11			
	T	101	281	361.11	102.67	79.10	106.47	27792.00	20356.05	73.50
			*2.78	*3.58	*1.02	*0.78	*1.05			

Source : Field survey 2005-06; Note: P=poor households; N=non-poor households and T stands for total households* average households ownership of livestock. # Animal grazing days has been calculated following the methodology of Jodha (1986, p.1173).

CPR contribution to the Household Energy Requirement

The various sources of household energy consumption in the surveyed villages are met by fuel wood, kerosene and eclectic power as we did not find any household using LPG and bio-gas in the Kimin circle of Papum Pare district. The consumption of commercial sources of energy is very much limited. It is a case not only in our surveyed villages but in the entire Arunachal Pradesh and even in the north eastern region also. As per Census Report of India (1991), 94.01 percentage of the total rural households and 51.93 percent of the urban households use fuel wood for cooking in Arunachal Pradesh. The use of alternative sources of fuel is very limited. It is found that only about 20.30 percent of the urban households use cooking gas. This figure is quite insignificant being only 1.65 percent for rural households. Likewise, only 0.05 percent of the rural households and 0.10 percent of the urban households use cow dung.

Table-1.3
CPRs Contribution to the total consumption expenditure in the last year

Villages	Caty. of hh	Qnty.of F/wood consumed from CPRs (last month)	Value Rs.	Cost of kerosene (last month) Rs.	Electric exp. Rs.	Total exp.on household energy Rs.	Value of F/ wood as p.c. to the total energy exp.	Average F/ wood consumpti on (last month) Rs.
Kakoi	P	8880	5772.00	895.00	292.00	6959.00	82.94	522.35
	N	6135	3987.75	916.00	445.00	5348.75	74.55	471.92
	T	15015	9759.75	1811.00	737.00	12307.75	79.30	500.50
Lower Jhumi	P	2870	1865.50	500.00	0	2365.50	78.36	574.00
	N	5400	3510.00	1102.00	0	4612.00	76.11	590.91
	T	8270	5375.50	1602.00	0	6977.50	77.04	516.88
Upper Jhumi	P	3190	2073.50	527.50	80	2681.00	77.34	398.75
	N	6400	4160.00	954.00	510.00	5624.00	73.97	533.33
	T	9590	6233.50	1481.50	590.00	8305.00	75.06	479.50
Bada	P	4560	2964.00	998.00	170.00	4132.00	71.73	380.00
	N	2970	1930.50	328.00	180.00	2438.50	79.17	424.29
	T	7530	4894.50	1326.00	350.00	6570.50	74.49	396.32
Sher	P	3300	2145.00	292.50	65.00	2502.50	85.71	660.00
	N	6510	4231.50	618.00	645.00	5494.50	77.01	591.82
	T	9810	6376.50	910.50	710.00	7997.00	79.74	613.13
Kimin	P	22800	14820.0	3213.00	607.00	18640.00	79.51	485.11
	N	27415	17819.5	3918.00	1780.00	23517.75	75.77	507.69
	T	50215	32639.5	7131.00	2387.00	42157.75	77.42	497.18

Source : Field survey 2005-06;

Note : P=poor household, N= Non-poor household, T= Total household.

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The table 1.3 shows that both the poor as well as non-poor households invariably dependent upon CPR for the household requirement of energy. Around 82 percent of the total energy requirement is met from CPR in the form of fuel wood in the Kimin circle of Papum Pare district.

Section-2 : Women participation in CPR based activities

The importance and magnitude of women participation in various household activities cannot be over emphasized. Apart from the day to day household works, varied farm activities and other responsibilities women particularly in the tribal society spare substantial time for Common Property Resource based activities. They collect various minor as well as major forest products for their day to day requirement. Carrying of heavy loads of fuel wood (one of the most important CPR product) either on head or with egin (traditional basket) by women is a long practice in the tribal society of the north eastern region. In the traditional tribal society the strength of a good mother and wife is judged by the amount of wood/fish they can catch/carry. However, the incursion of macro economic forces like emergence of property right, development of marketing network, commercialization of various CPR products, urbanization, etc. gradually deprived the tribal women from their age-old access to these resources. It results in numbers of illegal activities like encroachment, feeling of valuable trees for the purpose of fuel wood, commercial extraction of CPR products, etc. for which the rural poor specifically the women have to suffer a lot.

Women participation in the total force

In our surveyed area the economic activities are comprised of agriculture, business, service and CPR based activities. Most of the people in our surveyed area are engaged in agricultural activities followed by CPR based activities, service and business (table-2.1). Out of the 270 numbers of agricultural workers 149 numbers are women and rest 121 are male. It is a well known fact that the agricultural activities in the tribal society are women dominated. Women are the back bone of the agricultural economy of the tribal society in the state as well as in the north eastern region. Yet the participation of themale people in the surveyed area cannot be ignored.

Business activities are observed to be very limited in the surveyed villages. Only 20 peoples having business as their source of livelihood, out of which male person accounted for 14 and remaining 6 numbers are female. In CPR based activities substantial time has been devoted by the women. Collection of various CPR products (a list has been given in the appendix) has become increasing responsibility of the women folk as the male members use to migrate from rural areas to town areas in search of job. However, it is observed that some male forest dwellers too collect the commodity like cane, honey, house construction materials, etc. from forests. Again, out of the 81 numbers of CPR based workers 56 numbers are female and rest 25 numbers are male but women participation in the service sector is very negligible as only 6 female workers out of the 34 numbers in the surveyed villages are engaged in service sector.

The above statistics show an overall picture of women participation in the total work force which enlighten the substantial involvement of the women in agriculture and CPR based activities.

Table-2.1
Distribution of work force to the various activities

Villages	No. of hhs	No. of people engaged in														
		Agriculture			Business			Cpr based activities			Service			Wage labour		
		M	F	T	M	F	T	M	F	T	M		T	M	F	T
Kakoi	30	34	39	73	3		6	3	13	16	11		14	9	3	12
L.Jhumi	16	18	26	44	0		1	7	15	22	2		3	1	1	2
U.Jhumi	20	24	32	56	4		4	7	9	16	9		11	3	1	4
Bada	19	22	26	48	1		2	5	10	15	5		5	4	0	4
Sher	16	23	26	49	6		7	3	9	12	2		2	0	0	0
Kimin	101	121	149	270	14		20	25	56	81	29		34	17	5	22

Source : Field Survey, 2005-06

The table-2.2 depicts the employment opportunity provided by the CPR based activities in terms estimated man days. It shows that CPR based activities

provide employment opportunity in the sample study are for a period of about 204 days in a year. It is the lowest 166.1 days in the village Bada while it is the highest 233.73 days in Sher village.

Table-2.2

Employment provided by cpr based activities in the study villages in the last one year

Villages	No. of hhs.	Per hhs. Average no of hours spent on cpr product collection			Estimated total employment mandays		
		Poor	Non poor	Total	Poor	Non poor	Total
Kakoi	30	1438.37	19272.65	1669.89	179.80	246.58	208.74
L.Jhumi	16	1763.00	1652.82	1669.89	220.38	206.60	210.90
U.Jhumi	20	1224.38	1898.17	1687.25	153.05	237.27	203.58
Bada	19	1054.50	1799.00	1628.65	131.81	224.88	166.10
Sher	16	1614.20	1986.09	1328.79	201.78	248.26	233.73
Kimin	101	1357.18	1871.18	1631.99	169.65	233.90	204.00

Source : Field Survey 2005-06;

Note : One man days = 8 hours of working.

Gender dimension in CPR based activities

Local CPRs are very much important in the economy of rural people in general and women in particular. Women are the sole or significant user of various CPR. Women by virtue of their gender role and domestic responsibilities have been pushed to the border in their efforts to meet daily household needs from forest based resources. Women are the primary collector of fuel wood from CPR. Marching out each day religiously in search of fuel wood, in spite of plentiful domestic chores lying unattended in home, demonstrates the pressure on their part to utilize the bio-diversity (Nanda *et.al.*).

It is observed in the field survey that the female members are the prime collectors of various products from CPR. The CPR activities like fuel wood collection is also predominantly dominated by the women. Out of 101 surveyed families in Kimin Circle 195 persons are fuel wood collectors and out of them only 24 are male and the rest 171 are female.

The corresponding data for the five surveyed villages have been shown in the table 2.2. It is evident from the table that the per household's spend of time on fuel wood collection activities is estimated for 88.56 of man days per year (table 2.2, column 8).

Table-2.2
Gender dimension in fuel wood collection

Sl.No.	Villages	F/wood collector	Fuel wood collector			Per hh. average no of hours spent on F/wood collection	Estimated man days
			Male	Female	Total		
1	2	3	4	5	6	7	8
1	Kakoi	66	18	48	66	818.53	110.19
2	L.Lhumi	33	12	21	33	886.63	110.83
3	U.Jhumi	44	10	34	44	691.60	86.45
4	Bada	30	4	26	30	323.58	40.45
5	Sher	22	6	16	22	509.75	63.72
6	Kimin	195	50	145	195	708.44	88.56

Source : Field Survey 2005-06; Note : One man day = 8 hours.

Conclusion

Common Property Resources are very much important and crucial for the economies of the tribal people specifically for the women. Unfortunately development agencies in the state have shown little interest on the needs and interest of the tribal women in the implementation of any programme and policy. As a result achievement of the programmes for enhancing the socio-economic conditions of the tribal women in the state is not satisfactory. Therefore, some attempts should be made to increase the women participation in the management of these resources where they are the actual users. Given the primary role of women in using/ exploring the common property resources such as land, water and forests, their involvement in framing the developmental policies for scientific use, conservation and management of CPR is necessary and need of the hour in the rural sector.