

Population, Poverty and Environmental Degradation: A Special Case of Common Property Resources (CPRs) in Tamil Nadu

A. Kannan¹ and S. Sripriya²

¹Assistant Professor of Environmental Economics, School of Economics, Madurai Kamaraj University, Madurai-625 021, Tamil Nadu

²Assistant Professor of Economics, Sri G.V.G. Visalakshi College for Women, Udumalpet-642 128, Tamil Nadu

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ABSTRACT

The responsibility of CPRs in rural India's daily affairs is estimated, considering variations in BPL and APL populations, according to recent poverty estimates. The study uses two recent poverty estimates from the Government of India, the 2009 and 2014 reports of the Expert Group on Poverty Measurement, to classify households (HHs) into BPL and APL. This study selected 709 HHs, representing one-fourth of the sample village's total, to examine the role of CPRs and its impact on daily livelihood sustenance of the households belong to BPL and APL. Statistical tools like percentage analysis and averages were used to establish relationships between theoretical variables and investigate the linkage between people and CPRs, particularly between BPL and APL households. The study reveals that 67 per cent of the population relied on CPRs for their life and livelihood. Tendulkar and Rengarajan committee estimates reveal that 54.1 per cent and 58 per cent of BPL and 13.1 per cent and 6.7 per cent of APL households in a sample village rely on CPRs for life and livelihood needs. It shows that 59.5 per cent of the sample HHs relies on CPRs due to poor family background. The study estimate shows that 51.3 per cent of households in BPL and 8.2 per cent in APL, as per Tendulkar committee poverty estimates and 54.4 per cent and 5.1 per cent respectively of BPL and APL category households as per Rengarajan committee poverty estimate relies on CPRs primarily due to poor family background. The study found that 67 per cent of sample households rely on CPRs for fuel wood, with 53.9 per cent and 58 per cent of BPL HHs respectively of Tendulkar and Rengarajan committee poverty estimate relies on CPRs for energy. According to Tendulkar committee estimates, the study found that BPL and APL households in the study village collected an average of 1718 and 1561 Kg of fuel wood from CPRs for cooking and heating purposes.

Whereas in Rengarajan committee estimate, the BPL and APL households collected an average of 1712 Kg and 1525 Kg of fuel wood from CPRs for cooking and heating purposes. The household receives an annual income of Rs.5619 from employment opportunities provided by CPR-based activities. CPR-based activities provide HHs with an average of 254 man days of employment per annum, which serves as their primary revenue source. The total annual income received from CPRs was estimated to be Rs.2530 per household per year. The study found that BPL and APL households in India receive income from CPRs at rates of Rs.2756 and Rs.2088 per annum as per Tendulkar committee poverty estimate and Rs.2668 and Rs.2132 per annum as per Rengarajan committee estimate in the sample village.

INTRODUCTION

Rapid population growth in India leads to environmental degradation, with poor urban and rural areas lacking access to housing, water, and sewage facilities perpetuating poverty (Soundarapandian, 2005). Common Property Resources (CPRs) like village pastures, rangeland, community forestry, and wastelands provide sustenance for rural poor, offering livestock grazing space, fuel, fodder, and food items, particularly during the raining season (Jodha et al., 2012). Beck and Ghosh (2000) study in seven West Bengal villages reveals that poor households in these villages have considerably reduced access to critical resources like fuel wood and fodder, largely due to agricultural intensification, commoditization of CPRs, environmental degradation, and population growth, affecting their income. Studies have highlighted the significant contribution of CPRs in income and employment activities to the livelihoods of rural people, particularly women. Jodha (1990) study highlights the reduced productivity of CPRs, resulting in longer collection times and distances for the same or less quantity of products. Overcrowding and lack of regulations in study villages have led to overexploitation of CPRs, resulting in increased scarcity and stress for those relying on them for livelihood sustenance. The decreasing value of CPR products and the increasing reliance on them for sustenance are clear indicators of rising poverty. Ratul Mahanta and Daisy Das (2012) study in 23 districts of Assam state found that depletion of CPRs increases poverty levels due to poor people's reliance on forest resources. The study reveals that the depletion of CPRs has led rural people to migrate to urban areas to search for their livelihood. Kannan A. (2015) reports that the area of Common Property Land Resources (CPLRs) in Tamil Nadu decreased from 25.7 per cent in 1950-51 to 19.1 per cent in 2010-11. The per capita availability of CPLRs decreased from 0.10 hectares in 1950-51 to 0.03 hectares in 2000-01. The changes are primarily owing to the rapid population growth of land mass, particularly in the CPLRs, and various other factors. Jodha (1995) study found that rural poor households generate Rs.534-774 annually from CPRs, contributing over a fifth of total income. This income is used for agricultural implements and input repair. Singh et al. (1996) found that CPRs contribute 27.3 per cent of the total gross income of landless and 22 per cent of

cultivating households. CPRs offer significant revenue opportunities for those reliant on them as a primary source of livelihood and a safety net for survival. CPRs significantly contribute to livelihood materials like fuel wood, fodder, livestock grazing space, fruit, leaves, grasses, leaf litter and food items. In recent decades, the degradation of crucial CPRs has led to long-distance trucking and long hours spent collecting livelihood materials from these resources. Jodha (1985) study in Rajasthan found that privatization of CPRs in arid zones leads to increased cropland area and decline in common property resource extent. Population growth affects cropland area and common property resource extent, leading to an increase in cropland and a decline in common resource. The Dadibhavi R. V. (1998) study revealed that the CPR area in the state decreased from 35 per cent in 1960-61 to 30 per cent in 1990-91. In 1967, 63 per cent of 22 villages' geographical area was covered by CPR, but by 1994, it had decreased to 50 per cent. The decline in CPRs is primarily attributed to the increasing human and livestock population, encroachments, and inadequate maintenance of CPRs. The study revealed that 62 per cent of sample households, 77 per cent of non-poor households, and 57 per cent of poor households rely on CPRs for livestock grazing. In the study villages, 90 per cent of the poor and 75 per cent of non-poor households rely on CPRs for fuel wood needs. The average non-poor household generated Rs.2378 in income from CPRs, while the average poor household generated Rs.2058 from CPRs at the aggregate level. CPRs have not only augmented household income but also reduced income inequalities between the poor and non-poor.

METHOD AND MATERIALS

The study was conducted in Pudukkottai, a dry district in Tamil Nadu, using a multistage sampling design to select the study village. The study selected Kulathur Taluk, which is consisting of four blocks in Pudukkottai district of Tamil Nadu, and specifically chose the Kunnandarkoil block for its research which is endowed in higher proportion of CPRs in comparison with other three blocks. The study was conducted in a revenue village chosen from a specific selected block by following the same conditions which is endowed in higher proportion of CPR. This study selected 709 households, representing one-fourth of the sample village's total, to examine role of CPRs and its impact on livelihood sustenance of the study village. Household survey was conducted in the study village using a well-structured and pre-tested interview schedule, covering all relevant questions. The study uses two recent poverty estimates from the Government of India, the 2009 and 2014 reports of the Expert Group on Poverty Measurement, to classify HHs into BPL and APL. The Tendulkar methodology estimates the national poverty line for 2011-12 in rural areas at Rs. 816 per capita per month, while in urban areas it is Rs.1000 per capita per month. The Rengarajan methodology estimates the national poverty line at Rs.972 per capita per month for rural areas and Rs.1407 per capita per month for urban areas (Mahendra Dev S. 2016; p.639). The author classified households into BPL and APL

using the national poverty line estimates of monthly per capita of rural areas from Tendulkar Committee and Rengarajan Committee for the study. The role of CPRs in rural India's daily affairs is estimated, considering variations in BPL and APL populations, according to recent poverty estimates. Statistical tools like percentage analysis and averages were used to establish relationships between theoretical variables and investigate the linkage between people and CPRs, particularly between BPL and APL households.

RESULTS AND DISCUSSION

This section discusses the impact of CPRs on the livelihoods and lives of rural people in Tamil Nadu, specifically in the study village. The study uses India's 2009 and 2014 Expert Group on Poverty Measurement estimates to classify households into BPL and APL, estimating the impact of CPRs on their livelihoods.

Table 1: Dependence on CPRs

Dependence	Tendulkar committee		Rengarajan Committee		Total
	BPL	APL	BPL	APL	
Dependent	382 (53.9)	93 (13.1)	414 (58.4)	61 (8.6)	475 (67.0)
Not dependent	87 (12.3)	147 (20.7)	112 (15.8)	122 (17.2)	234 (33.0)
Total	469 (66.1)	240 (33.9)	526 (74.2)	183 (25.8)	709 (100)

Source: Primary survey

Table 1 show that 67 per cent of the population relied on CPRs for their life and livelihood. According to Tendulkar committee estimate, 54.1 per cent of BPL households and 13.1 per cent of APL households in the sample village rely on CPRs. According to Rengarajan committee estimate, 58 per cent of BPL and 6.7 per cent of APL households in the sample village rely on CPRs for their life and livelihood needs. Based on the both estimates, the study indicates that the majority of the HHs in the sample village, specifically those belonging to the BPL category, rely more on CPRs. Kannan A. and G. Mari (2015) study found in this regard that people in the study village are utilizing local natural resources, particularly CPRs, for domestic use, employment, fuel wood, fodders, and medicinal plants.

Table 2: Reason for dependence on CPRs

Category	Tendulkar committee		Rengarajan Committee		Total
	BPL	APL	BPL	APL	
Not dependent	87 (12.3)	147 (20.7)	112 (15.8)	122 (17.2)	234 (33.0)
Poor family conditions	364 (51.3)	58 (8.2)	386 (54.4)	36 (5.1)	422 (59.5)
Free of cost	18 (2.5)	35 (4.9)	28 (3.9)	25 (3.5)	53 (7.5)
Total	469 (66.1)	240 (33.9)	526 (74.2)	183 (25.8)	709 (100)

Source: Primary survey

Table 2 shows that 59.5 per cent of the sample HHs relies on CPRs due to poor family background, with 51.3 per cent belonging to BPL and 8.2 per cent belonging to APL based on the Tendulkar committee. The same for Rengarajan committee, it was 54.4 per cent and 5.1 per cent respectively of BPL and APL category households relies on CPRs due to poor family background. Around 7.5 per cent of sample HHs rely on CPRs due to cost-free materials, with estimates varying from BPL to APL in Tendulkar and Rengarajan estimates. The study village had an estimated 2.5 per cent and 4.9 per cent in Tendulkar committee, 3.9 per cent and 3.5 per cent in Rengarajan committee who belongs to BPL and APL category HHs rely on CPRs due to cost-free materials. The above fact implies that CPRs playing a pivotal role in the life and livelihoods of rural poor, in general and the people belongs to BPL, in particular in the study village. Table 2 reveals that CPRs significantly impact the livelihoods of BPL households in the study village, with the highest dependence being due to poor economic background.

Table 3: Dependence on CPRs for fuel wood collection

Dependence	Tendulkar committee		Rengarajan Committee		Total
	BPL	APL	BPL	APL	
Dependent	382 (53.9)	93 (13.1)	414 (58.4)	61 (8.6)	475 (67.0)
Not dependent	87 (12.3)	147 (20.7)	112 (15.8)	122 (17.2)	234 (33.0)
Total	469 (66.1)	240 (33.1)	526 (74.2)	183 (25.8)	709 (100)

Source: Primary survey

In table 3 revealed that 67 percent of the sample HHs had depended on CPRs for fuel wood requirements. The rest (33 per cent) of them do not depended on CPRs for fuel wood requirements because of they have additional alternative energy sources for cooking and heating purpose of their household affairs. This implies, CPRs have been playing a vital role in providing energy needs of the rural HHs for cooking and heating purposes. Around 53.9 per cent of the sample HHs as per Tendulkar committee estimate and 58.4 per cent of the HHs as per Rengarajan committee estimate who belongs to BPL depended on CPRs for their energy needs. Around 13.1 per cent of the sample HHs as per Tendulkar committee estimate and 8.1 per cent of the HHs as per Rengarajan committee estimate who belongs to APL depended on CPRs for their energy needs

Table 4: CPRs as principal source for fuel wood collection

Dependence	Tendulkar committee		Rengarajan Committee		Total
	BPL	APL	BPL	APL	
Not dependent	87 (12.3)	147 (20.7)	112 (15.8)	122 (17.2)	234 (33.0)
Principal	371 (52.3)	89 (12.6)	401 (56.6)	59 (8.3)	460 (64.9)
Supplementary	11 (1.6)	4 (0.6)	13 (1.8)	2 (0.3)	15 (2.1)
Total	469 (66.1)	240 (33.9)	526 (74.2)	183 (25.8)	709 (100)

Source: Primary survey

Table 4 reveals that 64.9 per cent of HHs in the sample primarily relies on CPRs as their primary source for fuel wood requirements. The percentage of HHs reliant on CPRs may vary among BPL and APL households in both Tendulkar and Rengarajan committee’s poverty estimate. The Tendulkar committee's poverty line estimate shows that 52.3 per cent of BPL households rely on CPRs for fuel wood, while only 12.6 per cent of APL households do so. In the sample village, 1.6 per cent and 0.6 per cent of HHs in BPL and APL rely on CPRs as a supplementary source for fuel wood requirements. Whereas in Rengarajan committee estimate, the majority of HHs in the BPL and APL categories, specifically 56.6 per cent and 8.3 per cent respectively, primarily rely on CPRs as their primary source of fuel wood. Around 1.8 per cent and 0.3 per cent of HHs in BPL and APL rely on CPRs as a supplementary source for fuel wood requirements.

Table 5: Uses of CPRs materials by HHs

Category	Tendulkar committee		Rengarajan Committee		Total
	BPL	APL	BPL	APL	
Not dependent	87 (12.3)	147 (20.7)	112 (15.8)	122 (17.2)	234 (33)
Fully HHs uses	312 (44.0)	88 (12.4)	341 (48.1)	59 (8.3)	400 (56.4)
Partly selling	70 (9.9)	5 (0.7)	73 (10.3)	2 (0.3)	75 (10.6)
Total	469 (66.1)	240 (33.9)	526 (74.2)	183 (25.8)	709 (100)

Source: Primary survey

Table 5 shows the utilization of CPR materials by the sample HHs, notably those from BPL and APL in the study village. The sample village's HHs, estimated at 56.4 per cent, fully utilized CPR materials for their household purposes, with only 10.6 per cent selling a portion of collected materials post-use. As per Tendulkar committee estimates, 44 per cent of BPL and 12.4 per cent of APL households fully utilized collected CPR materials, while 9.9 per cent and 0.7 per cent sold leftover items. As per Rengarajan committee estimates, 48.1 per cent of BPL and 8.3 per cent of APL households fully utilized collected CPR materials, while 10.3 per cent and 0.3 per cent sold leftover items.

Table 6: Average quantity and value of items collected by the HHs from CPRs

Category	Tendulkar committee			Rengarajan Committee		
	BPL	APL	Total	BPL	APL	Total
Total fuel collection (in Kg.)	1718	1561	1688	1712	1525	1687
Total other material collection (in Kg.)	48	26	44	47	20	44
Total fish collection (in Kg.)	25	18	23	24	16	23
Total fuel collection (in Rs.)	1985	955	1637	1913	842	1637
Total other material collection (in Rs.)	438	260	405	432	205	405
Total fish collection (in Rs.)	247	179	234	244	155	234

Source: Primary survey

Table 6 shows the average quantity of materials collected by the respondent HHs in the sample village. According to Tendulkar committee estimates, the study found that BPL and APL households in the study village collected an average of 1718 and 1561 Kg of fuel wood from

CPRs for cooking and heating purposes. Whereas in Rengarajan committee estimate, the BPL and APL households collected an average of 1712 Kg and 1525 Kg of fuel wood from CPRs for cooking and heating purposes. The value of fuel wood collection also varied between BPL and APL category HHs and it had also indicates the similar facts in the sample village. The study estimated that BPL households collected 48 Kg of other material, while APL households collected 26 Kg of other materials, according to the Tendulkar committee estimate. According to the Rengarajan committee estimate, about 47 Kg and 20 Kg of BPL and APL households collected other materials from CPRs for their daily necessities. The study village's sample HHs engaged in the common activity of collecting fish from water-based commons. According to the Tendulkar and Rengarajan Committees estimate, the BPL households consumed 25 Kg and 24 Kg of fish, while APL households consumed 18 Kg and 16 Kg respectively which was collected from CPRs. The table provides further insights into the value of materials collections across HHs and poverty estimates. A study conducted by Pasha (1992) revealed in the above fact that CPRs are contributing 63 per cent and 72 per cent to fuel and fodder consumption in three villages. The poor and non-poor respectively collect 95.1 per cent and 49.2 per cent of fuel wood from common property resources. The rural poor significantly benefit from CPRs, with both the poor and non-poor engaging in fodder collection at a rate of 77.2 per cent and 71.3 per cent, respectively. Koli A (2013) study revealed that 40 per cent of respondents were entirely reliant on forest resource extraction, while 60 per cent were partially reliant on these resources for their livelihoods. The study areas showed a decrease in complete dependence on forest resources from 92 per cent to 40 per cent, and an increase in partial dependence from 8 per cent to 60 per cent. The study found that 56 per cent of respondents sell their products in the nearest village market, while 32 per cent sell their resources directly to local elites for income generation.

Table 7: Contribution of CPRs to the HHs (P/A)

Category	Tendulkar committee		Rengarajan Committee		Total
	BPL	APL	BPL	APL	
	Total employment (Man days)	254	247	255	
Total income from employment (Rs.)	5758	3900	5758	3900	5619
Total income from material collection (Rs.)	3407	2986	3390	2839	3360
Total CPR income (Rs.)	2756	2088	2668	2132	2530

Source: Primary survey

Table 7 reveals the contribution of CPRs to household economies in the sample study village of Pudukkottai district, Tamil Nadu. CPR-based activities provide HHs with an average of 254 man

days of employment per annum, which serves as their primary revenue source. It has also exhibited variations across household categories and between estimates. The household receives an annual income of Rs.5619 from employment opportunities provided by CPR-based activities. The income received by BPL and APL households in the sample village showed no significant difference between estimates. The total annual income gained from CPRs was estimated to be Rs 2530 per household per year. The study found that BPL households and APL households in India receive income from CPRs at rates of Rs.2756 and Rs.2088 per annum as per Tendulkar committee poverty estimate and Rs.2668 and Rs.2132 per annum as per Rengarajan committee estimate. The study village's HHs significantly relies on CPRs income for their total income. The study village's respondents' employment and material collection incomes were estimated at Rs. 5619 and Rs.3360 respectively, with variations between BPL and APL households. The study by Iyengar.S (1989) found that 45-76 per cent of households in the study villages utilized common lands for grazing and 35-46 per cent for fuel wood collection. The study in Gujarat revealed that 2.5-15 per cent of households rely on CPRs for income generation, with landless and marginal households primarily engaged in activities like fuel wood collection and vegetable cultivation. The loss of tree-producing timber and forest produce has significantly restricted income-generating activities and the availability of high-quality firewood for cooking. Another study by Gowda and Savadatti (2004) reveal that forest area covers 95 per cent of CPR area, firewood collection meets 2/3 of households' energy needs, and CPR meets 50 per cent of households' fodder requirements. Half of surveyed households used forest CPR for fuel wood collection, accounting for over one-fourth of poor households' income and 22 per cent of non-poor households' income. Kannan A and M. Ravichandran (2011) study reveals that the rural rich in a study village earn more from common land cultivation than the rural poor. The study revealed that large farmers in wet and dry villages earned incomes of Rs.73,800 and Rs.33,600 respectively, while landless farmers earned Rs.33,478 and Rs.3,550 respectively through cultivation of common lands. Gobeze T et al. (2009) study reveals that 73 per cent of households prior to Participatory Forest Management (PFM) relied more on forest-based livelihood activities. The study area's households primarily derived 40 per cent of their income from firewood, 20 per cent from charcoal, 13.5 per cent from crop farming, 10 per cent from forest coffee, 8.5 per cent from honey, and 6 per cent from livestock. The introduction of PFM has increased income from crop and livestock by 30.9 per cent and 13.5 per cent, shifting dependence from forest products and affecting the type of forest-derived income. Respondents collected various products including poles, lianas, timber, firewood, animal feed, wild coffee, furniture materials, farm implements, and traditional medicine. About 37 per cent of respondents viewed PFM as crucial for their livelihoods, while 49 per cent considered it important.

Yemiru et al. (2010) study in southern Ethiopia explored the role of forest resources in rural households' livelihoods, identifying firewood, poles, timber, charcoal, logs, and medicinal plants.

The study reveals that forest products, such as charcoal, poles, and timber, are the primary sources of income for households, followed by livestock production. About 20 per cent of the population relies on forest income to maintain above-poverty per capita income, and it also serves as the primary source of cash income for all income classes. The study reveals that 54 per cent of households generate over half of their cash income from forest products, with higher-income households earning more forest income. Forest products are crucial income sources, contributing 34 per cent and 53 per cent of per capita and cash income, respectively, and helping 20 per cent of the population stay above the poverty line. The study confirms the significance of forest income in poverty alleviation and as a safety net during households' income crises.

Table 8: Status of livestock in the sample village

Category	Before 10 years				Total	At present				
	Tendulkar committee		Rengarajan Committee			Tendulkar committee		Rengarajan Committee		
	BPL	APL	BPL	APL		BPL	APL	BPL	APL	
Cow	484	249	538	182	733	451	217	538	130	668
Buffalo	108	59	61	49	167	53	37	61	29	90
Bullock	264	136	238	99	400	207	87	238	56	294
Goat	1362	751	1445	567	2113	1283	481	1445	319	1764
Hen	1088	378	1104	248	1466	969	336	1104	201	1305
Others	1	3	1	3	4	1	2	1	2	3
Total	3307	1576	3387	1148	4883	2964	1160	3387	737	4124

Source: Primary survey

CPRs had a significant impact on livestock holdings and the livelihoods of the rural population in India, particularly in Tamil Nadu. The livelihood of the respondent HHs in the study village is primarily reliant on CPRs. The study village's livestock population has significantly declined due to the degradation of CPRs in recent decades, compared to the previous ownership of livestock held by respondents. Table 8 shows that the total livestock availability in the study village was estimated to be 4883 ten years ago, now at 4124. The study village has experienced a decline in all livestock populations, as per primary data from respondent HHs. During both study periods, BPL households in the study village owned more livestock than APL households. The study indicates that most BPL households in the study village primarily rely on CPRs for livestock grazing, contrasting with APL households. Kannan A. et al. (2013) study examined the impact of grazing and common pasture land on the livestock population in Madurai district, Tamil Nadu, from 1998-99 to 2010-11. The study reveals a decline in bovine population growth from 51 per cent to 43 per cent between 1951 and 2007, primarily due to insufficient grazing land availability and CPR encroachment. Jodha (1985) study also revealed in this regard that a rapid decline in

the proportion of CPRs used for grazing in Rajasthan's villages, causing further livestock holding reductions and composition changes.

Table 9: Source of grazing for livestock

Category	Tendulkar committee		Rengarajan Committee		Total
	BPL	APL	BPL	APL	
Not possessing livestock	219 (30.9)	126 (17.8)	242 (34.1)	103 (14.5)	345 (48.7)
Private	8 (1.1)	23 (3.2)	14 (1.9)	17 (2.4)	31 (4.3)
CPRs	242 (34.2)	91 (12.8)	264 (38.1)	63 (8.9)	333 (47.0)
Total	469 (66.1)	240 (33.9)	526 (74.2)	183 (25.8)	709 (100)

Source: Primary survey

The present study estimated that 47 per cent of the households to the total sample HHs depended on CPRs as the source for livestock grazing and only 4.3 per cent depended on private source for livestock maintenance in the study village as shown in Table 9. It may also be vary from both committees and also from BPL and APL in the sample village. About 38.1 per cent and 34.2 per cent of HHs who belongs to BPL depended on CPRs as the source of livestock maintenance in Rengarajan committee and Tendulkar committee respectively. Around 13 per cent and 9 per cent of the HHs who belongs to APL depended on private sources for their livestock maintenance respectively of Tendulkar and Rengarajan committee.

Table 10: Family size of respondent households

Category	Tendulkar committee		Rengarajan Committee		Total
	BPL	APL	BPL	APL	
1 to 4	165 (23.1)	100 (14.1)	167 (23.6)	98 (13.8)	265 (37.4)
5 to 6	172 (24.3)	109 (15.4)	218 (30.7)	63 (8.9)	281 (39.6)
7 to 8	83 (11.7)	17 (2.4)	85 (12.0)	15 (2.1)	100 (14.1)
Above 8	49 (6.9)	14 (2.0)	56 (7.9)	7 (1.0)	63 (8.9)

Total	469	240	526	183	709
	(66.1)	(33.9)	(74.2)	(25.8)	(100)

Source: Primary survey

Table 10 shows that the family size of the sample respondent households in the study village. The study found that households in the study village with BPL status have more family members than those in the APL category, according to Tendulkar and Rengarajan committee poverty estimates. The study village shows that the majority of BPL households have families larger than the national average of five. The family size of the respondent household significantly influences the rate of dependence and exploitation of CPRs in the study village. Table 10 reveals that 37.4 per cent of households in the study village had less than the national average family size of 5, while 62.6 per cent had more than this average. Jodha (1995) research reveals that before 1950s land reforms, CPRs accounted for 39-58 per cent of total area in villages with higher environmental stress, and 15-23 per cent in environmentally stable villages. The study shows a 31-35 per cent decline in CPR area in villages from 1950s to 1980s due to population density, reduced market distance, and increased technological changes in irrigation facilities and tractorization. Land prices tripled in the early 1980s, making privatization of CPRs more attractive than in the early 1950s.

CONCLUSION

The study finds that 67 per cent of the population relied on CPRs for their life and livelihood. According to Tendulkar committee poverty estimate, 54.1 per cent of BPL households and 13.1 per cent of APL households in the sample village rely on CPRs. According to Rengarajan committee poverty estimate, 58 per cent of BPL and 6.7 per cent of APL households in the sample village rely on CPRs for their life and livelihood needs. It shows that 59.5 per cent of the sample HHs relies on CPRs due to poor family background, with 51.3 per cent belonging to BPL and 8.2 per cent belonging to APL based on the Tendulkar committee. The same for Rengarajan committee, it was 54.4 per cent and 5.1 per cent respectively of BPL and APL category households relies on CPRs due to poor family background. The study result revealed that 67 percent of the sample HHs had depended on CPRs for fuel wood requirements. Around 53.9 per cent of the sample HHs as per Tendulkar committee estimate and 58.4 per cent of the HHs as per Rengarajan committee estimate who belongs to BPL depended on CPRs for their energy needs. The study estimated that 64.9 per cent of HHs in the sample village primarily relies on CPRs as their primary source for fuel wood requirements. The Tendulkar committee's poverty line estimate shows that 52.3 per cent of BPL households rely on CPRs for fuel wood, while only 12.6 per cent of APL households do so. Whereas in Rengarajan committee estimate, the majority of HHs in the BPL and APL categories, specifically 56.6 per cent and 8.3 per cent respectively,

primarily rely on CPRs as their primary source of fuel wood. The sample village HHs, estimated at 56.4 per cent, fully utilized CPR materials for their household purposes, with only 10.6 per cent selling a portion of collected materials post-use. As per Tendulkar committee estimates, 44 per cent of BPL and 12.4 per cent of APL households fully utilized collected CPR materials, while 9.9 per cent and 0.7 per cent sold leftover items. As per Rengarajan committee estimates, 48.1 per cent of BPL and 8.3 per cent of APL households fully utilized collected CPR materials, while 10.3 per cent and 0.3 per cent sold leftover items. According to Tendulkar committee estimates, study found that BPL and APL households in the study village collected an average of 1718 and 1561 Kg of fuel wood from CPRs for cooking and heating purposes. Whereas in Rengarajan committee estimate, the BPL and APL households collected an average of 1712 Kg and 1525 Kg of fuel wood from CPRs for cooking and heating purposes. The household receives an annual income of Rs.5619 from employment opportunities provided by CPR-based activities. CPR-based activities provide HHs with an average of 254 man days of employment per annum, which serves as their primary revenue source. The total annual income gained from CPRs was estimated to be Rs 2530 per household per year. The study found that BPL and APL households in India receive income from CPRs at rates of Rs.2756 and Rs.2088 per annum as per Tendulkar committee poverty estimate and Rs.2668 and Rs.2132 per annum as per Rengarajan committee estimate in the study village.

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