

COMMON POOL RESOURCES AND COLLECTIVE ACTION IN ECONOMIC DEVELOPMENT: AN EMPIRICAL STUDY FROM INDIA

Dr. Gajavelli V S, Professor and Chairperson-CSGD, IMT Nagpur, Maharashtra-India
Email: gajavellivs@imtnag.ac.in

Abstract

The purpose of this paper is to evaluate the common property (CP) institutions and their management systems in the context of rural land and water resources. In this empirical work an attempt is made to examine the traditional CP institutional arrangements and their role in sustaining the local social security arrangements and the livelihood. For the local communities, the neighborhood, and the households, CPRs take on a different significance and complexity. The common property resources (CPRs) and forest produce are particularly pertinent to the poorer households, especially for women and children. The role of CPRs in their day-to-day livelihood changes by season and year. In the dry season, when the crop lands shrink under the sun, the local forests and grass lands provide food and fodder. Especially during drought and famine years, common resources become critically important. Edible fruits, roots and flowers are utilized during droughts and famines by the destitute and starving poor. Due to variety of roles that CPRs play in the rural as well as tribal households, an attempt was made to examine its significance of the CP institutions in sustaining the local social security arrangements, livelihood and the social organization.

Accordingly this paper attempts to examine the existence of CP institutions and instances of collective action amongst village communities or specific user-groups. Also the paper discusses the complementarities between private property resources and common property resources and the relationship between common property and equality, drawing on the results obtained from the study. Unlike the previous micro-level studies, in this study an effort is made to assess the extent of dependence of households on CP institutions and also in terms of employment and income in both the agrarian and tribal social communities. Besides, the focus is on the class structure across land and caste hierarchy as well as the nature and extent of CPR dependence.

1. Introduction

This paper makes an attempt to examine the status and extent CP institutions and their role in local social security arrangements and village-level livelihood. The CPRs contribution to such vital areas of local economies such as animal grazing, household consumption, and contribution towards household asset formation, farming, income and employment are discussed. Also it discusses the complementarities between private property resources (PPRs) and common property resources (CPRs) and the relationship between common property and equality, drawing on the results obtained from the study.

Unlike the previous micro-level studies (Jodha, N. S, 1986; Iyengar, S. 1989 and Pasha, S. A. 1992, Arabinda, Nayantara, Rucha and Pranab, 2008) in this study an effort is made to assess the extent of dependence of households in terms of employment and income in both the agrarian and tribal social communities. Besides, the focus is on the socio-economic structure across land and caste categories as well as the nature and extent of CP dependence.

The significance of the common property for rural poor and their ultimate dependence on these institutions is evident considering the pattern of landholdings and the subsistence nature of farming.

2. Objective

To review the state of knowledge on the management of the common property resources in general and specifically examine the past practices and present status of institutions for the management of these resources with specific reference to the study area.

3. Hypotheses

- I. User-groups or communities confronted with a common problems will act to achieve their common or group interest – as against the dominant western perspectives as postulated by The Logic of Collective Action (Mancur Olson); The Tragedy of Commons (Garrett Hardin 1968); and The Game Theoretic and Economic Behaviour (John Von Neumann & Oskar Morgenstern, 2007).
- II. The less the State apparatus penetrate into rural localities and higher the state tolerance of locally-evolved authorities, the better the likelihood for collective efforts and sustainable management of CP institutions.

4. Methodology

The study is based on both primary and secondary sources of data. The main purpose of this study, as stated earlier, is to investigate the current status, institutional arrangements, and the accessibility of CPRs for different sections of the local communities consisting of both tribal and agrarian resource use systems. For the purpose of the study a sample of four villages – two tribal and two agrarian – was selected. The villages represent diverse socio-economic and resource use systems in a district in Northern Andhra Pradesh, India. The other major criterion for selecting the sample villages was the nature and extent of CP institutions in the study region. In the dry plains CP institutions are less in extent than those in mountainous tribal regions, but more fully integrated into the agricultural production systems and local institutional aspects than those in other areas. In the mountainous tribal regions, the production organization is more akin to communal mode and local people heavily depend on CPRs as a source of livelihood. The selected villages – two agrarian and two tribal were also characterized by differences in other features such as the extent of irrigation and the presence of differentiated caste system in the agrarian and absence of it in the tribal. The CPRs in the study region are primarily smaller grazing areas, communal forests and groves, irrigation systems, tank-bred fisheries, community ponds, streams, rivers etc. It is in these relatively small-scale CPR situations where the processes of community-evolved arrangements and self-governance are easier to study than in many others.

To ensure representation of different type of households in the sample a preliminary census survey of all the households was undertaken to obtain particulars with regard to landholdings, caste and occupation. Then the final choice of the sample households was made on the basis of systematic proportionate sampling with a sample fraction of about 25 per cent of the households for each of the selected villages separately. Within each land-size category an element of purposiveness is introduced by selecting households from all castes, to give proper representation to all communities since some communities – like fishermen, toddy-tapers, basket weavers, potters, food-gathering communities and so on – are having exclusive user rights or traditional attachment to some types of CPRs.

Out of 800 households in the four selected villages, a sample of 200 households consisting of 110 households from the agrarian villages and 90 households from tribal villages was selected for the study. The data on farming, asset position, transactions, access to various types of CPRs, employment etc., from each respondent household was collected with the help of a structured questionnaire. In addition to the formal survey of the households with the help of a questionnaire, other methods such as group discussions, case histories, physical observations were employed. In obtaining the information on the access, use and institutional arrangements relating to CPRs in the past and present, informal discussions were useful. In each village along with the village officers some elderly persons were informally interviewed.

Since most of the data related to both qualitative and quantitative information on the current and historical situation of CPRs at micro-level, they were initially gathered using a mix of unconventional methods rather than administering the structured questionnaire. Given the qualitative and quantitative information, processing of the data also involved examining the information and its amenability for tabulation for specific purposes depending on the requirement and its relevance. As a result most of the information relating to qualitative and institutional aspects figures only in the form of descriptive analysis.

5.1 The Collective Action Theoretical Context and the Study Region: Prologue

Any meaningful explanation of why the majority of rural communities in the sample are relatively corporate must be corroborated on the basis of presence or absence of similar factors that give rise to different forms of community action, depending on the local-specific conditions (Wade, R 1968). In the semi-arid fragile regions, the crucial variable is the risk and uncertainty of dry land farming and social conflicts faced by most of the rural households as a result of the actions of the other people or animal population. As Wade (1986) rightly put it, 'the magnitude of this risk sets the premium on the village's ability to tighten its internal ordering to create institutions of unitary rule which are continuous, calculable and effective'. Therefore, a certain degree of common concern and cooperation and respect towards customary laws and institutions is discernible in almost every village.

5.2 Corporate Institutions

The circumstances of local-specific conditions that evoke social response and results in corporate institutions can be broadly put into three important relations. They relate to the character of the natural resource, such as land and water, which the corporate organization manages, those relating to the community of users and its size and then concerning relations between the user-community and the State apparatus.

Agrarian Plains

In agrarian villages, in the sphere of community cooperation and provision of public goods, though it has undergone a perceptible change as a practice it involves some traditional institutions. Very often, these institutions are locally evolved, long-established and adopted to the changing conditions in helping the village community in its risk-coping strategies. Some of the institutions that represented the pre-Independence period have either become a part of the present *panchayat* and some of them are well maintained by the local community.

The state with its organ, the statutory *panchayat* does not exercise enough force at the local level to be able to prevent the users from making their own arrangements sometimes; sometimes, these arrangements are on the lines of formal *panchayat*. Indeed, the state machinery is unaware of the existence of community-based organizations. But, the state-sponsored induction of local government forms and its takeover of key productive resources - forests, tanks and other common land - at the local level to a greater extent undermined the local initiative. At the same time, such incursions contributed to the emergence of new forms of cooperative arrangements. Further, the center of power structure shifted from entrenched feudal lords to the representatives of the village people, on the basis of caste and political cleavages.

Tribal settlements

The conditions of clan-based tribal villages are completely different with a contrasting set of sociological and ecological factors. The tribal settlements are dominated by *Koyas* with the complete absence of the traditional caste system and its social hierarchy. Further, the tribal habitats being hilly create an ecological constraint, which has a direct bearing on the low productivity in agriculture and risk of loss of subsistence. Turning to institutional aspects, in spite of the formal induction of village *panchayat* and electoral politics, the community's self-governance and its customary laws are more elaborate and intense even today. The informal authority not only plays an important role in local livelihoods, but also often supersedes and directs the activities of the formal *panchayat* in consonance with the needs and aspirations of indigenous tribe.

Corporate Institutions and Customary Practices

The present forms of existing corporate institutions and customary practices include (I) Common irrigator (ii) Common herdsman, and (iii) the Village Council or *Peddamanshulu* (*Council of elders*). All the three institutions exist in the agrarian villages, whereas the institution of common herdsmen is not been in practice in the case of tribal villages. Both the systems of

organization differ in terms of the extent of arrangements and customary practices governing the functioning of these corporate bodies. And, in almost all the sample villages, the emergence of corporate bodies is more or less a response to the local specific conditions like semi-arid ecology and associated risk, but their functioning always depended on the social structural variables like caste groups and socio-economic variations at the village level. Moreover, irrespective of the type of village, institutionalization tends to take place with reference to the village community as a unit or a specific CP user-group, rather than either clusters of villages, sub-units of villages, or cross village groups of farm neighbors. The reasons for this pattern of institutionalization are often governed by sociological factors rather than ecological constraints.

6.1 Institutionalization of the Village Economies

With some exceptions, common irrigators and common herdsman are provided by the informal authority for the entire village as a whole, rather than for specifically defined groups or area. The arrangements like common irrigator or common herdsman for the whole village rather than for sub-village segments are essentially to exploit economies of scale. Considering common irrigators, from the point of view of farmers, having scattered parcels of land, it would clearly be cheaper in terms of transaction costs to have only one authority responsible to ensure adequate water supplies for all fields, rather than have independent arrangements in each or some of the sectors in which a cultivator's land happens to be located. These are *managerial economies of scale*.

There are more chances that village-wide common irrigator will try to bring down more water for the whole village. But sub-village common irrigators would naturally show interest to bring down extra water for their own jurisdiction. For example, common irrigators, employed by contiguous landowners in agrarian plains often lead to water conflicts and misuse of scarce water, particularly in drought years. Therefore, sub-village common irrigators or privately employed (say, by a group of farmers) irrigators, might generate external costs to the irrigators outside their own Jurisdiction by competing for water and by restricting their efforts to bring more water from the main out let. So, village-wide common irrigator under tank irrigation (or canal irrigation) eliminates *externalities* (Berkes, Fikret 1989).

The necessity of cohesive collective management associated with well-functioning irrigation systems is not so apparent for community grazing fields and village forests in the plains. However, the underlying need for operational CP rules still applies. In those village communities where traditional management regimes for grazing fields are still strong, it has been scale shown that range deterioration is minimised. It has also been shown that CP regimes can be economically more efficient than private property rights (Berkes, Fikret 1989).

Thus, it is clear that village-wide institutionalisation has always an edge over sub-village or group-specific arrangements in providing assured benefits from the point of view of both conflict resolution and collective welfare. The point made about the absence of institutionalisation for clusters of villages or contiguous landowners also applies here. Traditionally, the village community has been treated as the basic socio-economic entity supported by its own State-backed structure of authority. Further, locally-evolved village-wide welfare arrangements like common irrigators, common herdsman and crop protection and other informal CP institutions which are specific to the local conditions – community, ecology and risk – whereas there are no informal arrangements based on group of contiguous landowners or cluster of villages.

6.2 CP Institutions, User-Groups and Collective Action in Study Region – A Case of Agrarian Villages

In agrarian villages, as the village community is stratified on the basis of socio-economic inequalities, the possibility of village-wide welfare arrangements are not so intense and elaborate as the case with clan-based tribal settlements. Thus, the territorially defined groups like village will not be the focus of the local people's identity and needs; rather they try to draw their identity from the groups like caste or specific user-group with common economic interests. The strength of attachment to a non-territorial group like sub-caste could only be contrasted with lack of community action relating to resources with wider scope requiring inter-

community or caste or user-group cooperation. Sometimes the lack of inter-community cooperation is said to obstruct possible solutions to the problem of the village community (Wade,R 1988). This is one of the major constraints to the collective action and cooperation in agrarian villages resulting in limited abilities of the local people to provide village-wide benefit from the local resources on a sustainable basis. Indeed, their efforts to secure community involvement to protect local common grazing fields and forests ran into problems created by differing perceptions and conflicting interests of various groups. As a result, the community resources like grazing commons and village forest have become a prey to the *tragedy of commons, the resources open to use by all but without concern for their sustenance by any.*

However, in the case of those resources which directly benefit some groups and their continued accessibility by virtue of customary rights and traditional attachment, which calls for efforts by their users; these users maintain maximum restraint and greater cooperation among its members. For example, such a situation prevails in the context of specific user-groups like toddy-tappers and fishermen in the villages. *When the survival base of community members is threatened by the circumstances in their resource position, which is scarce, then the people in that dependent group unite, sometimes overcoming the inherent problems of inequalities in their private endowments.* The following cases of collective action among toddy-tappers and fishermen, with varying resource endowments in terms of landholdings and other factors, is an interesting case of an effective group endeavours.

User-Community 1

Essentially, the collective action among the toddy-tapping community arises because of the increasing pressure of the community on the village palm groves. For a considerable number of households in the village there is no other source of livelihood other than their traditional occupation to eke out a living. For, Instance, during the last two decades, the number of toddy-tapper households increased from 40 to 74 and per year income created through this occupation has declined drastically from Rs.24000-Rs.32000 to rs.12000-24000. There are about 74 shares or individual households in the user-community: out of which 8 households large landowners, 12 households medium landowners, 16 households small landowners, 20 households marginal landowners and the remaining 18 households landless poor.

The basic purpose of the community getting together is to reduce the increasing private costs on the palm groves in the village - in the form of licence fees to the Excise Department which in turn reduces the prospects for toddy-tapping as a viable employment. Until recently, the government auctioned the today Licence village-by-village. Bidders from each village were meant to attend the auction and bid against each other. The toddy-tappers community in village Nagaram, however, in one of its community council's meetings had come to a common consensus that only one person is to be sent to the Excise Department auction to get the licence. So that the community get it at minimum price : in case if the community is in need of some money, the council then re-auctioned it within the community members with the balance going to the community council which in turn use it for such purposes like planting of palm tree saplings in the community lands, celebrating community God *Katamaraja* and to meet other contingencies. Or sometimes, the community auction was held before the government auction and the winner went to the Excise Department auction alone to get the licence for as little as he could manage. Preferably, the council chooses only those members with the personal qualities like reliability, integrity and sometimes resourcefulness to be sent to the auction.

Previously, due to political faction more than four persons from the village used to attend the auction and bid against one another, the profit going to the Excise Department. There were days till 1973, when the local landlord (*Dora*) arbitrarily controlled the village and charged exorbitant price of Rs.108, 000/-as against the actual minimum cost of Rs.60000, the surplus amount going to the landlords' coffers. Later, during the period1974 to 1985, when the community members were not united and there was no community council, the licence price increased from Rs.60, 000 to Rs.1, 18,800 due to the increasing number of bidders from the village. With the cooperation of the community members the council has been able to send only one person to the auction or the past ten years and managed to secure the licence at moderate cost of Rs.51, 600 by the year 2006, reducing the burden on the

community to the tune of Rs.67, 200. In recent period there has been a moderate rise in its price by Rs.7, 200. Every time, the community council distributes licence price among the members according to their shares in the total palm trees in the village. Therefore, in instances when the conflict within the community goes against its own welfare then the community adhere to an accord by which the scope of private decision-making is narrowed and the scope of collective decision-making widened.

User-Community 2

A similar situation prevails in the case of fishermen to pursue their joint welfare as opposed to their individual gain. In village *Nagaram*, traditionally *Mudiraj* community enjoys the rights of fishing in the local tanks since there is no other competing caste with claims for fishing. Children born to fishermen rarely have the opportunity of moving out of traditional family occupation, which as a consequence has become a hereditary and caste-bound one. For example, in village *Ramanujapur* where there is no *mudiraj* community, the customary practices are such that the entire village community participates in fishing. The *peddamanshuluor* council of elders regulates the use rights by informing all the households in the village about community fishing, but usually the household belonging to the lower strata of caste hierarchy – such as *Gouda, Telaga, Golla* and others – will participate in it.

In the case of *Nagaram*, as the ayacut under each tank does not go beyond 110 acres, the use and management of the tank is with the village *panchayat*. Till 1980, the village *panchayat* used to lease the fishing rights at a fixed price to the community. However, since 1981 due to the paucity of funds and with a view to raise more local resources, the *panchayat* started auctioning the fishing rights. Due to the increasing number of bidders the auction price has increased to a point where the community incurred heavy losses with the profit going to the village *panchayat* and the bidder. This made the community to come to a common agreement in one of its meetings that only one person should represent the community at the village *panchayat* auction. Ultimately, after a series of representations by the community council, the village *panchayat* informally came to an understanding with the fishermen that the fishing rights will be granted at a reasonable price to the local community itself. The community has appointed a person to monitor the unauthorized fishing in the tanks and ponds and bring it to the notice of the community council.

The other informal arrangements and cooperation in the village are based more on caste, sometimes class identity, rather than the village community as a whole. Every community has its own arrangements. The communities like *Telaga, Gouda, Kapu* and *Mudiraj* have their own intra-community cooperation in the matters of agricultural operations, financial transactions and contract of hired labour during the crop season etc. It was evident during the field study that most of the families from these caste groups belong to the emerging middle class and to a greater extent alienated themselves from the rest of the caste- communities and village-wide cooperation. Similar arrangements, however, are also seen among small and tiny landholding class in the form of highly localised exchange relations in which two or three small farmers help each other in the form of exchange of labour, livestock, agricultural implements and financial adjustments during crop-season.

6.3 Village-level Factions: Caste or Class?

Usually people do not like to expose the conflicts or differences in the village. The factions or village politics are not considered to be a dignified aspect of the village life that the outsider should enquire about. At the most villagers like to say that factions operate only in electoral politics, and not in village related matters. Usually, they dwell upon two kinds of factions. One, where there are quarrels between the groups, perhaps over land, particularly encroachments of government lands or already distributed lands; the others where the groups mobilise on the basis of political affiliations and electoral politics. For example, in the case of *Nagaram*, it is the first type that has completely deteriorated the inter-caste cohesion in the village. This is due to the growing nexus between the revenue administration including village *Panchayat* and outside real estate businessmen; and their profiteering at the expense of actual owners of cooperative lands - formerly village *porumboke* lands and the beneficiaries belong to lower castes - and forest lands.

A similar observation is made by the villagers in *Ramanujapur*, by saying that while village as 'litigations' - over land disputes, water sharing etc., - it does not have political factions', the differences between which often involve group clashes, fighting and even murder. Though there is some truth in these matters, it is partially correct. Indeed, the polarisation is on the basis of both landowning class and caste hierarchy. In 1990, the village landlord (*Dora*), was brutally murdered at his paddy fields, which led to higher scale litigations involving three emerging castes groups, *Gouda, Telaga* and *Kapu*, in the village. Now, the overall village environment is highly mistrustful and for an outsider it is difficult to talk about matters relating to village cooperation. Now, the village is divided more on the basis of caste politics rather than 'political affiliations'. In the words of an elderly man (one of the members of *peddamanshuluor* community council) from shepherd community: 'here in our community we does not believe in our own cousins. How can we look forward for any helpful gesture from other community, when they – pointing to higher caste communities - do not even see our social existence?'

Notwithstanding, as mentioned above in this study, it is observed that a shift took place in the social basis of political power from upper castes to backward castes. But this shift took place only between the top layer of *Brahmin* or *Reddy communities* to the top layer or upper class backward castes like *Telaga, Gouda, Mudiraj* and *Kapu*. As things stand today, state involvement was only by way of a neutral bystander during the elections to the local government bodies. No decisive economic program such as effective implementation of land reforms has been carried out by the state. The changes in the social structure have come about basically, on account of increasing commercialisation of farm production on the one hand and on the other owing to the integration of village economies into the mainstream urban market centres.

6.4 CP Institutions, User-Groups and Collective Action in Study Region – A Case of Tribal Villages

The conditions facilitating collective action among the tribal communities are distinct from the agrarian plains. In addition to the sociological, (a) clan-based highly cohesive groups) and ecological (risk and uncertainly) factors, the State intervention has an important bearing on the kind of collective efforts among the tribal communities. More importantly, these settlements being far from motorable roads and land-greedy outsiders from the plains, has also contributed to the preservation of communal cohesion and collective action among the tribe. Only in the interior of KothagudemMandal (part of erstwhile NarsampetTaluk) in villages far from urban market centres, have the *Koyas* been able to retain their land and their independence. In such villages as Gangaram, Kistapur, Madagudem, Bhupalapatnam and Kodisalmitta close to the borders of Khammam District, the *Koyas* hold virtually all the land and to a larger extent could preserve their cultural identity.

Though most of the purely tribal villages were tucked away in the interior of the forests of Warangal even until 1960s, their incorporation into the State machinery acquired a faster phase from early 70s. Since then, there has been a protracted struggle between the tribes on the one hand and the Forest Department, the traders and others from the plains on the other. The livelihood activities of the tribal population of the village were severely curtailed by the ban imposed on the clearing of forest land for Swidden cultivation (*Podu*), which in this area has to be tolerated because its total abolition in their environments would condemn the *Koyas* to virtual starvation. Further, by declaring surrounding forests as 'reserved', Forest Department curtailed the means of livelihood of the tribes in the village.

Contrary to the situation in agrarian villages, the community approach of the tribes in this village is to be understood against the historical backdrop of their familiarity with the possession of land on collective or communal basis. Their very approach differed with the new terms of title deeds and consequent infringement on their mobility. This resulted in self assertion of tribes and their rights to the local forest lands and irrigation tanks which they built and managed as assets under community regulations.

It is in these circumstances that the community attachment and collective action in the tribal villages acquires greater importance. Such incidents occurred in the case of tanks and small earthen bunds built by the local tribes. In all the cases either they improved the existing bunds to the tanks or built huge earthen structures to store the monsoon water for the paddy cultivation. In some other cases they built earthen embankments on the hill slopes and community lands to arrest the soil erosion which is a recurring phenomenon on their cultivated lands.

Starting from the clearing of the forest under the proposed catchment to the construction of bunds was done by the tribes themselves with their own labour and skills by forming themselves into groups. Sometimes, this grouping is done on the basis of lineage or clan. And whoever in the community participated in the activity, the permanent rights of the ownership in the land would go to the original clearer of the land. The pattern of the landownership under each tank is such that the group members who contribute their labour get almost equal shares. The quantity of shares may differ from one tank to another depending on the extent of its catchment and the total number of the group members contributing its labour. Though every construction work is initiated and supervised by the whole village community, in case any additional improvements have to be done in due course of time, it is the responsibility of that group which is entitled to cultivate crops under that particular tank.

If we carefully assess the ownership structure of tribal lands under each tank, it provides an insight into how group action evolves over a period under new conditions of growing population, market forces and economic diversity. The landholding distribution is such that under those tanks which are built and belong to tribal ancestral land, almost all clan-groups hold a some piece of landholding; whereas the ownership of land by and large confined to a specific clan-group in case of recently constructed tanks. Sometimes, tank bunds are named after the clan-group who originally contributed their labour. This shows that as local population grows the collective efforts are being organised on the basis of clan groups, though every group-based activity is subject to strong community regulation.

All these efforts are made to reduce the stress of increasing pressure of population and the growing restrictions on the extension of cultivation imposed by the Forest Department. As result they were compelled to divert most of the lands allotted for nutritious pulses to the production of staple grains. However, the improvements in the existing bunds and construction of new tanks have helped in increasing the productivity and paddy production has almost doubled. But every effort of the local tribe came in conflict with the Forest Department and its procedures and there has been a long administrative battle with the State machinery, both Forest department and Revenue department.

Village 1 - Gangaram : Community Action 1

There were several instances of collective action amongst tribal communities that resulted in the construction of local tanks and earthen structures to control soil erosion and arrest the devastating effects on top soil and productivity. In the year 1973, with the collective effort and initiative, the local tribe had converted a small earthen bund (locally called *TiruvaniVaguCheruvu*) into a tank inundating some of the Forestland. The Forest Department objected to the construction on the ground that the inundated land was reserve forest. Even in 1980, there was a plan afoot by the Forest Department to convert the tank-bed and some of the tribal lands into a teak plantation. But these plans were failed by the local tribes by blocking the vehicles carrying the outside labour and officials and staging a demonstration in protest. The local tribes in the settlement questioned the very objection of the Forest Department and argued that the previous construction itself was of their ancestors' and the forest land is their traditional property. Finally, in 1984, after six years of litigation with the Forest Department, the tribes in the settlement were able to exercise their rights on the tank and its catchment area. The land under the tank catchment was shared equitably among the group members who contributed their labour.

In recent years, however, there has been a change in the state policy in face of the mobilization by the tribes. The state agencies themselves have come forward to finance such constructions initiated by the local tribes. In 1986, the work was recognized by the

Project Office, Integrated Tribal Development Agency (ITDA) and the value of the tribes' efforts was estimated at Rs.46000. Initially, a grant of Rs.50, 000 was awarded in the year 1987 and then a lump-sum amount of Rs.1100, 000 in 1990 for its further development. The contract was given to the residents of the village and it provided employment for the local labour for a considerable period. The landholding structure under the catchment area is equitably distributed among three clan-groups, viz., *Jajjari*, *Chinta* and *Chimmaboina*.

Community Action 2

In 1972, there was another example of community action in tribal Gangaram. This is also a huge structure on the previous earthen bund; their efforts transformed it into a tank having a catchment area of 85 to 100 acres. In this case also the local tribes had a tough time with the forest officials who objected to the construction on the ground that it would inundate and destroy the forest. This objection was raised even after the clearance from the Revenue Department and Irrigation Departments. This time the dispute went on for about more than two years involving three parties, Forest Department, Revenue Department and the local community. Ultimately, with the intervention of Project Officer (an IAS cadre), ITDA in 1990 the Forest Department has agreed to allow the local community to use the land to which they earlier objected. The value of the work volunteered by the tribes estimated to be around Rs.30, 000 and in the year 1990 an amount of Rs.130, 000 has been sanctioned by the ITDA for the purpose of its further development. Certainly such a community work not only met the growing irrigation needs but also provided an alternative avenue of employment for the local tribe. The landholding structure under this particular tank is dominated by two clan-groups, namely, *Jajjari* and *Ojja*.

Community Action 3

In 1987, there was another instance of collective effort on the part of the local tribe, which resulted in a construction of earthen bund to a running stream. This tank is locally called *BoorkavaniKunta*. This work was also identified by ITDA and a grant of Rs.50, 000 was given for its further development. The catchment under this earthen structure is 35 acres and it was distributed equally among 16 tribal households belonging to a clan group, *Burka*, by the village community. In 1994, when there was a breach in the bund, the local tribe volunteered to participate in the repair work. Later on the tribal efforts were supplemented by a financial assistance of Rs.50, 000 from ITDA.

Community Action 4

A recent example of community action among tribes is the construction of an earthen bund to a running stream, which had its source in the nearby hills. This particular work was undertaken by a clan-group consisting of 15 households and a total 40 acres of land has been distributed equitably among its members. The council of elders' of local tribe has taken up the matter to higher officials to get some financial assistance for its further construction and maintenance. Because, the bund is not strong enough to withstand heavy rain and there are chances of tribal efforts going futile. The special feature of this particular voluntary effort is that the action group consists of all those land poor and tiny peasants in the tribe, *Koya* community. *This example once again reinstates the strong community hold and targeting of a specific weaker segment across different clan groups; so that the incidence of asset inequality is narrowed and communal cohesion enhanced.*

Village 2 - Kistapur

In a small village like *Kistapur* with forty households, the collective action is community-wide rather than group-specific, based upon clan or lineage. There are about four earthen structures in the villages, which are the result of the collective effort and actions of local tribes and they are well-maintained under community regulation.

Community Action 1

For the first time in 1950s, the local community with the collective effort has converted a small pond into a tank. The tribe calls this tank as *MamidiCheruvu*. At the time of its construction the catchment area was 30 acres, but now it supports 95 acres of paddy fields owing to continuous improvements and repair works. The number of holdings under the catchment also increased to 35 holdings from 10 holdings. In the years 1993 and 2008, the ITDA has sanctioned an amount of Rs. 19, 00,000 and Rs. 10, 00, 000 towards its repair works and further improvements.

Community Action 2

It was during the early 70s and later in 80s that the local community has constructed a bund across running stream and converted earlier structure into a tank (local name is *Nallakunta*). Though the stream is completely rain fed, all tribal efforts are meant to alleviate the scarcity of water for their single Kharif crop. The tank has a cultivated area of 35 acres with a catchment area of 5 acres. In this case also, almost all the household have a piece of cultivated land falling under the tank command area. With the efforts of the local people and *Mandal* Revenue Officer (MRO) an inspection team from ITDA has visited the site in 1987 and sanctioned an amount of Rs.65, 000 for its further development.

Community Action 3

The recent example of collective action among the local tribe is a small earthen bund (locally called *Gumankala* tank) constructed in 1996. This time the efforts of tribe were intended to meet the growing pressures of population and increasing restriction on their movement in the surrounding forest, which has severely curtailed the traditional source of livelihood. With the construction of this earthen structure they could raise the area under paddy crop by about 20 acres more. However, the local tribe feels that they are denied timely assistance in terms of technical and financial support. If the concerned agency like ITDA does not provide expected assistance for the improvement of the bund, the entire labour of the community would be a wasteful effort because the bund suffers heavy breaches during the monsoon.

State Intervention, Local communities and Role of Pressure Groups

There are many more instances of tribal land claimed by the Forest Department under various threats and tactics. Forest officials, on the pretext that the forest land was subjected to encroachment by the tribe, destroyed the earthen constructions on the paddy fields and hill slopes to store monsoon water and irrigate the fields. Moreover, forest guards frequently resort to the planting of the tribal lands with teak saplings to claim that the land belongs to the Forest Department. It was found during the field study that there is a wrong notion among the forest officials that if the tribal were allowed to possess more water sources, it could further aggravate the forest felling with more and more lands being diverted to paddy cultivation. Therefore, forest officials basically oppose any kind of improvement in the resource base of tribal livelihood.

However, in all these cases, the local community successfully thwarted the officials' attempts with the active support and solidarity of the locally working political group, *PrajaPantha* (meaning *people's path*). There are instances reported by the local elders, where the Forest Department went on opposing the electrification of the village under the pretext that light would restrict the mobility of wild animals. Further, forest officials used to force the tribes to work as casual labour in the forests of whose resources they have been largely deprived. From such a situation, it is a long way to the scheme envisaged by B.D. Sharma (1978), who suggests that 'the local tribal community, which provides the labour should be accepted as a partner in the management and sharing of profits. They should not be taken merely casual wage-earners whose services can be dispensed with at will'. It is obvious that in the use and management of local resources, the basic problem lies in the approach of the state machinery working in the tribal areas, but not the indigenous community itself.

7. CPR Management Emerging Alternatives

Ideally, both State agencies and the Non-Governmental Organizations (NGOs) should play the role of a catalyst in stimulating village communities' interest in CPR development and in providing them necessary technical and financial support. But this approach cannot be effective unless the benefits of this approach are convincingly demonstrated in diverse situations. Also, given the weaknesses of local government bodies and the fact that agrarian village communities are often segmented by caste, landholdings and other factors, no single pattern of evincing community participation may be feasible. The third option depending on the local-specific conditions seems to be the possible role of political entrepreneurship as a catalyst in promoting collective action (Olson, M 1971).

As pointed out before, the impact of the left wing pressure groups such as *PrajaPantha* is clearly discernible on the kind of collective efforts achieved by indigenous communities in the case of tribal villages. The movement and its activities in the district right from 1960s helped in raising the consciousness of the tribes and protecting their rights. With its inspiration and collective effort of the community, the local tribes managed to protect the settlements from outside traders and settlers and the people who used to exploit and oppress the tribes. Now, with the experience he had with the grassroots movements and pressure politics, an average tribal in the localities feel self-confident to resist any kind of outside interference and to maintain the present status of the settlement with the least presence of land-greedy outsiders and its preservation. Indeed, their collective effort proved effective in bringing about a change in the government policy with the restoration of the community tanks to the local tribes and allotment of the financial assistance to the development of tanks. Interestingly, their efforts also resulted in a much more liberal policy of land allotments under various state government schemes. Further, any outsider, a trader-cum-money lender or land-grabbers from the plains or even a government official is very much cautious not to hurt the interests of tribes.

Thus, the situation of tribal villages could be seen in the context when the State's assertion of its absolute right to the forests lands went against its traditional inhabitants threatening their very existence; its agencies such as Forest Department, Revenue Department and Irrigation Department not only faced stiff resistance from the local tribe, but the government has to change its policy of coercion and resort to welfare measures in the face of unity in the community.

8. Conclusions (1): Collective Action Theories and the Village Context

As we have seen, many theories of collective action are pessimistic about the chances that local communities who would benefit from the collective action or a public good if they organize themselves to achieve it will actually do so. Far-reaching proposals in the management of common property have been justified by this thinking, in the direction of either State regulation or private ownership rights. But neither of these dominant approaches fit into the actual conditions prevailing in the Indian village context or any other South-east Asian village economies. The problem arises as most of the writers are not correct in their assumptions that all CPR problem situations have structures similar to that of the prisoners' dilemma game, the external intervention is necessary for enforcing recommended policy prescriptions and that central authorities in government are willing and able to determine best resource use policies and implement them faithfully (Ostrom, E 1990).

On the contrary, the villagers themselves have organized an informal mechanism to impose rules of restrained access. Because the essence of concern to the local people is precisely to avert such a ruin which Hardin predicts, at least in their vital area of subsistence like water and biomass needs, if not larger concerns. In the context of study villages, either in the case of specific CPR-user groups like fishermen and toddy tapper communities and their collective effort in agrarian plains or collective action among the *Koyas* of tribal settlements to provide themselves with community-wide assurance against the possible subsistence loss are the instances that could be termed as welfare arrangements or in the Olsonian terminology a problem of 'public good' or 'collective action'. *By successfully tackling this problem the above instances of the user -groups invalidate the very proposition of*

Olson's theory that people confronted with a common problem will not act to achieve their common or group interest, unless concerned to do so.

Even if we examine the management of local forests and revenue wastelands under the control of the State and its agencies, the proposals of collective action theorists contradicts the reality. In the case of study villages, the State machinery has been a bystander to the indiscriminate exploitation of the forests and large-scale encroachments and privatization of common lands by the well-to-do families. Further, the same situation prevails even in the case of large tracts of forests all over the country through enclosures and subsequent leasing to commercial interests, again with the active support of the State. These evidences also invalidate the very proposition on which Hardin and other collective action pessimists base their arguments.

However, from the point of view of collective management, in addition to the village-wide provisions like common irrigators and common herdsman, the collective action among traditional CPR user groups provide an assurance within the group that every member will cooperate or will be punished if they do not comply with the rules. In fact, there is an absolute need for cooperation among these user-communities in many of the fragile semi-arid dry areas because there are not only many uncertainties to be insured against but there are numerous production externalities to be internalized.

Moreover, in tribal societies customary practices and norms play a crucial role in the collective efforts, since they assure that cooperation will ensue and the responsibility created (instances like, to contribute labour, to respect community interest or to donate income or land to collective needed such as fields passages, village roads etc.) will be enforced(Plateau, J. Ph 1988). Interestingly, whenever the local community or village elders in tribal villages organize hunting or fishing in the local tanks and ponds, they follow the customary rule that every tribal household in the settlement would be asked to participate in the event, so that no one will be 'suckered' or 'cheated'. These instances also negate the basic assumptions of the prisoners' dilemma game: (a) players choose in ignorance of each other's choices and (b) each player chooses only once before the outcome and so cannot change his mind upon finding out what the other has done.

Examining the above cases of community fishing or hunting and other instances of user-groups cooperation with full information about the event the rational strategy is one of '*conditional cooperation*' in sharp contrast to the dominant strategy of the game i.e., to '*defect*', signifying the interdependence of decisions in a village economy. Therefore, it is clearly evident that once those caught in a dilemma meet frequently, discuss, exchange views and learn from each other experiences of problems. It is unlikely that they will retain the status quo structure, as assumed by prisoners' dilemma game. Rather they try to evolve new ways of learning, new institutions and new trust among themselves depending upon local-specific conditions, the crucial attributes which the contemporary theories of collective action failed to address.

9. Conclusions (2): Conditions for Collective Action

Examining the conditions for collective action among local communities in both the systems of resource management, compared to the agrarian villages the community in the tribal village is not only a homogeneous entity but also relatively a small community consisting of small groups based on clan or lineage. This is in contrast to the highly stratified caste societies of agrarian plains. The cooperation and collective action in the case of agrarian villages is not a community-based action as the case with tribal villages, which ensure its welfare, but concentrated among specific caste-based user-communities. As the problem threatened the means of livelihood, increasing uncertainty and chances of subsistence crisis, the groups have constituted a representative action group - a caste-based committee - to evolve an informal understanding and unity among its members to make use of the resource base in such a fashion as to keep costs and conflicts (which are avoidable) within the limits.

These user groups include only those who want to participate and thus, have a direct common material interest linking them together, rather than only a common geographical jurisdiction. As we have seen, user groups may be recognized by government

and even assisted by the government agencies, as in the case of clan-based tank management and irrigation groups in tribal villages. But their foundation and legitimacy derives in each case from the base of users and local socio-economic and political processes. There are several important factors which contributed to the emergence of user-managed CPRs in the case of caste-based occupational groups like fishermen and toddy-tappers in the plains and clan-based groups in tribal villages:

First, the user-groups are generally smaller with respect to geographical jurisdiction and local population.

Second, group members are homogeneous in the sense that they hail from similar occupation, ethnicity, etc. These two conditions mean institutions are more easily manageable in terms of consensus building and rule adherence within the group.

Third, the user-groups include only those who want to participate and share common economic interests. This common interest coupled with small size and homogeneity implies that the free rider problem inherent in state control of CPRs can be controlled to a manageable limit (Blair, W.H 1996). As in the case of sample villages, when a statutory village council manages local forests and grazing fields, it is difficult to prevent villagers who do not contribute to its sustenance, but given the 'open access' over exploit the resource beyond its carrying capacity. However, in the case of clan-based tribal communities in addition to the above the important facilitating factor is their familiarity with the communal mode of property system and its lasting impact on a relatively preserved cultural identity and community action.

Fourth, the user-groups, sometimes could overcome the problem of heterogeneity in endowments, as the user-group belong to different class of households. This shows that, if cultural group homogeneity and homogeneity in objectives pursued are prerequisites for collective action, this may not hold necessarily true of heterogeneity in endowments as contended by most of the socio-anthropological writings (Baland and Plateau 1995). This also coincides with the above finding that CP regimes, indeed, coexist with significant inequality in private property resource (PPRs) endowments.

Fifth, as the size of the user community is small, their culture and objectives are similar and an effective control on free-riding within the group, it is easier for the member community to assess benefit and costs involved in a group effectively

Sixth, the important variable contributing to group action is the trustworthiness of an enforcer of agreements, whether a council leader or clan leader or state machinery at the local level. For instance, in the tribal villages where the reliability of informal authority is unquestionable, the decision of the community elders or clan leader is highly effective in enforcing the agreements.

Finally, with the above qualities being satisfied, a group of people will agree to cooperate for the collective good or common welfare provided: (a) Such action is expected to bring a substantial amount of benefits to the group as a whole both in relation to the size of the group and the costs involved; (b) the sharing of costs and extra benefits resulting from such collective action is seen by the group to be 'fair'; and (c) the arrangements for ensuring that the agreed sharing of costs and benefits and other group obligations will be enforced.

Above all, what is required is a realization among the user group that collective management and cooperation to ensure an equitable and sustainable use of CPRs is to the benefit of all the members concerned.

10. Emerging Challenges

As studies show, many of these facilitating conditions are found in the situations in which Asian peasant villagers depend to a greater extent on local CPR proper. But there has been gradual erosion or weakening of many traditional systems of community management due to the joint impact of market penetration, population growth and the growing State intervention.

Increasing specialization and division of labour and the integration of local economies into the larger commercial interests place yet more challenges before communities that hitherto may have maintained CP regimes largely through consensus. Such consensus, evolved by common values, social structures with numerous cross-cutting ties, and positive and negative sanctions,

may be increasingly made difficult to realize under new conditions of inequality and economic diversity (Ensminger, 1990). The important contributing elements being erosion of CPRs, increasing exposure to outside markets and institutional intervention. This is especially the case with clan-based tribal societies.

Further, as evident from agrarian plains the inability to reach village-wide consensus under such conditions may force a “change” in rules governing future mode of collective action and existing user-managed CP regimes. Exposure to urban market centres, expansion in commercial agriculture, trade and specialization has played a significant role in relieving feudal clutches, but at the same time undermined the internal consensus formation even among emerging middle classes by creating a diversity of interests and weakening the traditional arrangements through which the customary CP institutions were maintained.

It is certainly true that many institutional developments in tribal villages, owing to State intervention have brought benefits to the tribe, *Koyas*. Among these one can count subsidized housing schemes, cereals and fertilizers. The government has also opened up Girijan Co-operative Corporation (G.C.C.) outlet to help reduce the exploitation of tribes by the middlemen and money lenders. However, by bringing in alien practices and leasing the surrounding forests to the commercial interests, the State virtually made them dependent on the market sources for basic amenities such as food items, agricultural inputs etc. Therefore, what is crucial to the strength with which local ideology and value systems are able to withstand such interventions and their consequences, locally evolved institutions may or may not survive. The greater the reach of the State apparatus and urban commercial centers, the higher the chances to opt for State regulation or private ownership, depending on the extent of stress on the local resource systems (Ensminger, 3 1990). With the exception of the study villages, it is quite evident that most of the tribal villages all along motorable roads became highly vulnerable to land-grabbers from the plains and machinations of those who exploit the innocent tribes and thus reduced to casual wage labourers.

However, the future of these resource user-groups and other traditional CP institutions in the villages and the CPRs, which they consider as their inheritance, does not depend overwhelmingly on the local specific-conditions. It however, hinges crucially on the cultural, socio-economic and political empowerment of local communities. This in turn results from the grassroots processes and institutions evolved in the collective efforts while using and maintaining them under community regulation. As discussed above, the other interacting factors, which have an important bearing on collective action in the localities, are the extent of commercialization, socio-economic diversity and the nature of state intervention.

(I extend my sincere gratitude to DrNarsimha Reddy, Dean-School of Social Sciences, Hyderabad Central University for his assistance on the earlier part of this work; and my thanks to student researchers, AneeshAswal, AneeshPorwal and GauravPatniak from Institute of Management Technology Nagpur for extending support in data entry and completing this work.)

Bibliography

Blaire, H W(2008), Democracy, Equity and Common Property Resource Management in the Indian Subcontinent, Development and Change, Volume 27, Issue 3, pages 475–499.

Narayanan, D(2012), ElinorOstrom on Managing Common Property, *Forbs India*, Special, Mar 1st 2012.

Giangiaco, B(2011),Agents' beliefs and the evolution of institutions for common-pool resource management, *Rationality and Society*,February 1, 2011 23: 117-152

Baland, J. M. and J. P. Platteau (1998), ‘Division of the Commons: A Partial Assessment of the New Institutional Economics of Land Rights,’ *American Journal of Agricultural Economics* 80 (3): 644-650.

Berkes, F. (Ed.) (1989), ‘*Common Property Resources: Ecology and Community Based Sustainable Development*,’ Belhaven Press, London

- Wade, R. (1987), 'The management of common property resources: collective action as an alternative to privatization or state regulation', *Cambridge Journal of Economics*, 11(2).
- Wade, R. (1987), 'The management of common property resources: finding a Cooperative solution', *Research Observer* 2(2): 219-234.
- Moxnes, E. (1998), 'Not only the tragedy of the commons: misperceptions of bio-economics', *Management Science* 44: 1234-1248.
- Murthy, M. N. (1994), 'Management of common property resources: limits to voluntary collective action', *Environmental and Resource Economics* 4: 581-594.
- Ostrom, E. (1990), 'Governing the Commons: The Evolution of Institutions for Collective Action,' *Cambridge University Press*, Cambridge.
- Ostrom, E. (1998), 'How Communities Beat the Tragedy of the Commons', presented at *the International Workshop on Community-Based Natural Resource Management*, The World Bank, Washington, D. C., May 10-14.
- Ostrom, E. (1998), 'Reformulating the Commons', paper presented at the fifth Biennial *Conference of the International Society for Ecological Economics (ISEE)*, Santiago, Chile, November 15-19.
- Ostrom, E. (1999), 'Coping with tragedies of the commons' *Annual Review of Political Science*, 2.
- Berkes, F. (Ed.) (1989), '*Common Property Resources: Ecology and Community Based Sustainable Development*,' Belhaven Press, London
- Platteau, J Ph, (1988) 'Traditional Systems of Social Security and Hunger Insurance: Some Lessons from the Evidence Pertaining to Third World Village Societies', Research Series-15(Mimeo), The Development Economics Research Program, London School of Economics, London.
- Arnesen, O. E. and C. R. Rugumayo (2000), 'Participation in Natural Resource Management: A Review', in O. E. Arnesen, eds., *Partners in Conservation? Participation in Natural Resource Management*, *NIBR Report 2000* No. 2, Norwegian Institute for Urban and Regional Research, Oslo.
