



SOCIAL DYNAMICS OF WATER MANAGEMENT: TRADITION AND CHANGE

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ABSTRACT

Over the last couple of decades a broad range of participatory irrigation management strategies have become popular, one of which is community based water management (CBWM). This paper based on an ethnographic study conducted in central Orissa, India, tries to critically analyze the limitations of CBWM strategies by focusing on traditional water harvesting structures and systems surrounding tanks. It tries to study the social relationships involved in the communal water management systems surrounding tanks and the changes in the social dynamics surrounding them. Contrary to the popular and academic discourse these systems have strengthened over the last few decades along with the continuing dominance of all aspects of village life by the caste group of Kuluthia Chasas. Castes perceived to be at the bottom of the hierarchy like Panas face many disabilities in accessing water. But this dominance does not continue without contestation by the Scheduled Caste groups of Panas and Keutas. The changes in the social life of the villages are reflected in the way the 'tradition' of tank-based irrigation has evolved and the ways in which it gets challenged.

INTRODUCTION

Natural resources form the ecological basis of the productive mechanism of human society. In a world characterized by increasing resource scarcity, better stewardship of resources is called for. Of all the natural resources, water is the most critical and its proper usage is essential for any process of sustainable development. One of the key approaches towards this end has been an institutional approach according to which sustainable and appropriate institutions are the single most important factor in ensuring sustainable management of natural resources, especially that of water. Thus, according to this approach nursing and crafting of institutions become singularly important (Ostrom 1996).

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But natural resources are not merely 'natural'; they are also 'social constructs' that can be seen not only through institutions but also through all the other facets of societal existence. Therefore, locating the use (and abuse) of natural resources in their social context and an examination of the social dynamics involved in their management can throw light on the multifarious ways in which nature and society influence and order each other. This is principally so because constructing stable processes of extraction of natural resource of any kind needs a certain amount of social consensus that facilitates this process (Baviskar 2003). Over a period of time this consensus gets translated into tradition.

THE OBJECTIVE AND METHODOLOGY OF THE STUDY

This study took place to interrogate and unpack the concept of tradition in the context of water management regimes in the commons. The study had three principal objectives: the first objective was to study the various traditional water harvesting structures and water management systems in selected villages; secondly to study the social relationships involved in these water management systems; finally to study the changes in the social dynamics surrounding them.

The methodology followed was primarily qualitative in nature. Ethnographic work was undertaken in four villages and the fieldwork took place in the summer of 2003. The villages were chosen based on their caste composition and size as preliminary studies revealed these factors to be the most relevant for the study. The methods of long interviews, group interviews, and focus group discussions were administered with individuals and groups identified as being important for the purpose of study. Base level socio-economic data was generated for the four villages by using stratified random sampling using caste membership as the basis of stratification.

LOCATION AND GENERAL PROFILE OF THE VILLAGES

This study was undertaken in four villages of Dhenkanal district in the state of Orissa in Eastern India. These villages were chosen with the help of an NGO, Foundation for Ecological Security (FES). Dhenkanal district lies at the edge of the coastal plains of Orissa and has an area of 4595 square kilometers. According to the 1991 census it has a population of 9, 47,770 the majority of which lives in rural areas (Government of Orissa 2002). It has an average annual rainfall of 1421.2-mm and enjoys an average of 73 rainy days per year. The River Brahmani and her tributaries drain most of the district and apart from the narrow valley of the river the land is mostly undulating. The district has no major irrigation scheme; most of the land is irrigated through minor irrigation works such as tanks and diversion of hilly streams (Government of Orissa 1972).

The population of the villages is mostly Hindu with Kuluthia Chasa as the most numerous and dominant caste group. They are the biggest landowners, own the most amount of irrigable land, and dominate the economic life of the villages and the region. Very few of the Kuluthia Chasas are landless agricultural labourers. The proportion of the landless is the highest amongst the Scheduled Castes. The other numerically important castes are Gauda, Pana and Keuta. The Panas have the largest population

amongst the Scheduled Castes and still suffer from taboos like lack of access to places of worship and communal wells. Untouchability, restrictions regarding caste endogamy and commensality are still strictly practiced.

Agriculture is primarily rain-fed in the villages. The cultivated land is divided into two major categories: *bila* and *toila*. *Bila* is land that is cultivated every year as it is generally low lying and of good quality. *Toila* is inferior quality land that is periodically laid fallow. Paddy is the principal crop with more than eighty percent of all cultivable land being devoted to it. Pulses, sugar cane and oilseeds are the other major crops. Apart from agriculture forests play a major role in the livelihood of the villagers.

Agriculture forms the basis of the economic and social life in the villages and most of the agricultural practices revolve around the monsoon paddy cultivation. Other important crops include groundnut, green gram, horse gram, and black gram dal. Despite gains in productivity over the last few years and its continuing importance as a source of subsistence, the importance of rice as a commercial crop has decreased due to declining profitability. Over the last three decades the cultivation of coarse grains has decreased in importance. Due to the increasing cost of labour, cultivation by owner-cultivators and sharecroppers is of increasing importance. There is no mechanization of agriculture and chemical fertilizers and pesticides are used in minimal amounts.

Other modes of livelihood are becoming increasingly important. More than a quarter of the population surveyed in the four villages do service sector work along with agriculture and see it as a significant part of their livelihoods. People are increasingly taking recourse multiple livelihood strategies and older caste-based modes are weakening.

The landholding pattern has a very high correlation with caste and most of the landless are from the Scheduled Castes. Assured crop saving irrigation over the years might have helped the dominant Kuluthia Chasas to consolidate their power over the villages' political, social-economic structures. There has been some change in the ownership pattern of irrigable land: in none of the four villages the various Scheduled Caste groups have gained ownership of such land to any substantial extent; in a couple of villages significant alienation of land by the Panas seems to have taken place.

Growth of sharecropping in the area under study is also a factor in the changing occupational pattern in the villages. The increasing incidence of sharecropping means that now more people have access to land and an increasingly heterogeneous group of people have a stake in the communally managed tank based irrigation system. There seem to be significant relationships between land ownership, caste, the agricultural system and participation in the water management systems in the villages.

In the villages forests form the ecological basis of agriculture. They provide firewood and fodder and make it possible for crop and animal residue to be used as manure by providing for fodder for domestic animals. Forests also protect the catchment area of the tanks. The institutions that are implicated in the governance of forests are also implicated in the governance of water bodies.

KEY FINDINGS

INSTITUTIONS HAVING RELEVANCE FOR MANAGING WATER

The term institution has very structuralist connotations whereas it need not be so. Institutions are different from organizations as they are rules for ordering social action; organizations are groups of people bound by some common purpose (sometimes by common ideology) to achieve common goals. All organizations presume the existence of institutions whereas all institutions need not presume the existence of organizations (Leach, Mearns, and Scoones 1997). An institution can exist in the form of a code, a set of rules or a pattern of organizational behaviour. It is this ambiguity in the usage of the word that allows us to attach the word to diverse social entities. One needs to bring this sociological understanding of institutions to study the management of water.

The village management committee is the most important institution in the villages. It is a nominated body selected by all the adult men of the village and is composed of important representatives of all major caste groups and representatives to the statutory village council from the village. It does not enjoy any legal status and the basic rights and duties of the village management committee are similar across all the villages. These duties involve maintaining village commons like tanks and forests, taking up developmental work like schools and roads, building temples, resolving disputes between various individuals and groups in the village, and maintaining civil amity. It is the most important institution in the village for the management of village resources in the commons, including that of water. Management of the village tanks is one of the most important functions of the village management committees as the annual auctioning of fish from the tanks forms the single biggest source of revenue for them. Most of this amount is spent on the maintenance of these tanks and the water distribution systems and in fulfilling other duties already mentioned.

The significance of the management of tanks by the committee goes beyond the realms of economics. Most of these committees are dominated by Kuluthia Chasas. In the villages a non-Kuluthia Chasa has never become the President of a village management committee. Most of the Schedules Castes are either landless or don't own irrigable land and temple entry is still denied to them. Most of their children drop out of school before completing primary schooling. Thus, one needs to probe the kind of role played by the village management committees through their domination of water bodies as well as of the exclusive nature of the "new village commons" such as schools and temples that are being constructed by them.

The statutory village councils have had a significant bearing on the working of the water management system of the villages. The transfer of ownership of a number of village tanks from the villages to statutory village councils in the mid-seventies of the last century was one of the most significant events in the historical evolution of tanks. A steady flow of funds for the development of tanks through the statutory village councils has taken place. These bodies are the most direct way in which the state system interacts with the villages. The steady flow of funds into the tanks perhaps hints at the fact that despite being ignored by formal policies and plans of the state, local politics has performed a role in keeping some focus on the tanks. These funds are not adequate but significant.

The statutory village council and the village management committee share and contest for power over the water resources of the villages. When the village is a significant player in the statutory village council because of its size or its political influence, the village management committee it is able to influence the statutory village council for getting funds for the tanks. The power of the statutory village councils seem to be inversely proportional to the power of the village management committees of the villages that constitute it.

The hamlet committee is a formal body in only one of the villages under study. Elsewhere these committees take the shape of an informal neighbourhood group of men nominated from amongst the various households inhabiting the hamlet. Hamlet committees manage the largest number of tanks and the challenge to the dominant caste group also manifests itself in the neighbourhood groups. In one village, for example, traditional fishermen inhabiting a specific hamlet have been able to form a fishery cooperative in a village tank owned technically by the government that had been till then been controlled by the village management committee dominated by Kuluthia Chasas.

All the caste groups in the villages have caste councils at the village level. These caste councils set rules of behaviour for married couples, arbitrate domestic fights, settle disputes amongst fellow caste members, take political decisions during elections, and collect fines for transgressions of caste rules and for not obeying its orders. Quite a number of the hamlets are inhabited on the basis of caste. Thus the caste panchayats assume a role in the management of tanks owned and managed by the hamlets.

The institution of *bethi* (or forced communal labour) is one of the critical institutions in the communal management of water resources in the villages. The institution is used to manage resources like water and forests communally and to create communal assets like schools, village roads. Its origins lie in the mandatory labour that the villagers had to do for the king of the erstwhile princely state of Dhenkanal without payment. Any household that cannot contribute labour has to pay the corresponding wages to hire labourer(s) for the task involved.

Foundation for Ecological Security is an NGO that has been working in the villages for the last five years or so. It has been trying to regenerate forests and restore communal tanks under the control of the villages in the area under study. In the process it has invested in the common village forests and five tanks in the four villages. It has chosen to work with the village management committees in its work for ecological regeneration and has been working to strengthen them for the effective management of the village commons. The amount of funding routed to the villages by it is less than the total governmental funding over a comparable period but its most important impact has been the way it has been able to add to the legitimacy of the village management committees.

Many institutions seem to have grown together. The institutions of *bethi* and the village management committee, or example, seem to have gained in strength simultaneously over the last few decades. In fact both of them can be seen in the form of continuing Kuluthia Chasa domination.

IRRIGATION AND COMMUNITY BASED WATER MANAGEMENT

The water resources of the village primarily consist of tanks and wells. The tanks are communally owned by the village, by the statutory village council, or by various hamlets or by clusters of households. Most of the hamlets and clusters of households are inhabited or dominated in terms of population by Kuluthia Chasas. In terms of both ownership and nature, water resources of the villages can be divided into six categories; communal tanks managed by the village committees, tanks managed by hamlets, tanks owned by individuals, communally owned wells and tube wells, tube wells owned and accessed by particular caste groups and hamlets and tube wells and wells owned by individual households. The most important category of water resources are those of communally owned and managed tanks. More often than not these are the largest tanks in the village and have received the most amount of attention from the village management committees. Most of the wells in the village are privately owned and more than ninety percent of these belong to the Kuluthia Chasas.

Tank-based irrigation is the principal mode of irrigation and irrigation from wells or any other sources is insignificant. Use of groundwater for irrigation is minimal and canal-based irrigation is virtually absent in the region and non-existent in the villages. Irrigation is generally done to save the monsoon paddy crop from total failure.

One of the clichés in the discourse surrounding water bodies in the commons is the notion that the last few decades have seen constant erosion of the physical capacity and the management base of the tanks. Contrary to such a perception, in all the four villages under study, tanks are still significant in the life of the community, especially for irrigation, drinking water and bathing; the last three decades have seen the growth of cultivation of high yielding varieties of rice and a resultant increase in rice production. Most of the productivity gain has been due to greater use of the water resources of the tanks. Since wetland rice cultivation has replaced the less water-dependent coarse grains over the same period, this could not have been possible without an absolute and significant increase in the capacity of the tanks and their better management.

Tanks seem to have grown in size, number, and efficiency over the last four decades or so. But the histories of individual tanks seem contingent on a lot of factors. Due to the scarcity of resources, the tanks that are critical or are perceived to be critical by the dominant social groups in the villages (for the purpose of irrigation and for usage in summer) have received attention. The majority of the tanks are generally neglected, but the tanks that do get attention seem to be receiving them constantly over a period of time and these are also the tanks that are ecologically, socially, and economically the most important.

Access to water and water bodies is one of the most concrete ways in which caste ideology is operationalized. For example, the scheduled caste groups have different bathing spaces in the tanks and are still not allowed to access communal water bodies like communal wells or tube wells. Panas are excluded from all the rituals that take place in the village for propitiating the gods for water during periods of water stress. In terms of the sheer quantity of water used irrigation is the principal consumer. Increased irrigation through efficient tank management systems might have contributed to the continued dominance of the villages by the Kuluthia Chasas as they own the most

amount of irrigable land in the village. This short discussion points at the importance of water as a “social resource”

CONFLICTS OVER WATER

All these institutions are created out of the material-historical process of evolution of the village society. In the villages conflict is an essential part of this process and the resources of the village, principally the village forests in the commons and the tanks, are a site as well as causes of contestation and conflicts. Conflicts over water are of a constant nature and these conflicts can be looked at and analyzed in a variety of manners; one of the ways of doing so is by looking at the various parties to the conflicts. Conflicts can be between individual households, between households and hamlets, between two or more hamlets, between hamlets and villages, between an individual and the village and between two or more villages. The more persistent conflicts seem to be between hamlets of a village with the village, and the ones between villages; but that does not mean other kinds of conflict are either insignificant or absent.

Conflicts over tanks have a significant underpinning on caste related issues. In one of the villages, one of the most significant sets of conflicts that have got converted into fights has been the right to fish in the tanks. One has to keep in mind that fishing in the tanks is the most overtly commercial activity and this process of commercialization may have possible linkages with the heightening of conflicts. But these conflictual situations have also given vulnerable caste groups the opportunity to challenge the power of the dominant caste group. Conflicts over tanks and water management systems have to be seen in terms of the wider social conflicts that are a part of the process of social change. The conflicts over the tanks precipitate conflicts in the overall social life of the village whereas sometimes the water management system in general and the tanks in particular become the sites of struggles for dominance and resistance.

CONCLUSION

A common theme of harmony, equilibrium or balance between community livelihoods and natural resources underlies the various approaches to community based sustainable development approaches. A related and widely held assumption is that such a harmony existed till it got disrupted in recent times (Leach, Mearns, and Scoones 1997). One of the common observations from the villages under study is that such equilibrium and harmony has, perhaps, never existed, as the communities in question have always been divided along the line of class, caste, and gender.

The village resources, including tanks, have been the sites of contestation and conflict. Conflict *and* negotiation rather than conflict *or* negotiation is the patterns surrounding water disputes in the villages. These resources have been dynamic in nature and have been continuously shaped and produced by actions of social actors having conflicting agendas, some of which are intentional and affect these water management systems directly. But there are important changes that are produced by unintended consequences of policies of the state and the actions of other actors.

Contrary to popular and general academic perception, there has been an actual growth and strengthening of tank-based irrigation systems in the villages and this is linked to

the continuing dominance of particular caste groups like the Kuluthia Chasas. But this needs to be qualified by the fact that amongst the villagers there are no standard definitions of success and failure as these villages are fairly heterogeneous. Various social actors contest the notion of success and failure and question their nature and content.

Multiple institutions having a multiplicity of social roles affect water management and this institutional multiplicity helps different social actors in making their claims. It must also be noted that the formal/informal dichotomy in terms of analyzing institutional frameworks for resource management is not fruitful in explaining the logic behind the actions of various social actors. Any particular resource management system cannot be equivocally said to be either traditional or modern; but tradition is an important part of this process as most institutions draw upon 'tradition' to maintain and further their legitimacy. Tradition in this context can be seen more in terms of a framework of symbols and ideas from which different social actors draw their legitimacy; what matters is not what *is* traditional but what can be successfully *claimed* to be traditional.

The creation of such complex institutional frameworks is not necessarily a smooth process. In fact social conflicts over natural resources can be seen as the ways in which these resources could be utilized in the long term with some semblance of equity. Most of the frameworks looking at natural resources see asymmetries of power in accessing natural resources through the binaries of 'state v. community' and 'tradition v. modern'. But as this analysis shows, the process of understanding and intervening in resource management might more fruitfully start with interrogating these categories and by engaging with the complex and contingent nature of political identities of most communities. This might go a long way in helping us to productively retheorize natural resources and natural resource management in the commons.

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