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Title of the paper - An Assessment of JFM in Regeneration and Management of Degraded
Sal Forest in West Bengal.

Stream - Forestry

India, like many other Asian countries, is responding to forest degradation and food and energy shortages by experimenting with new forms of resource management. This paper examines recent experiences with joint forest management, a cooperative effort between forest dependent communities and state forest departments (FDs) to regenerate degraded forests. One of the most successful programs to date is in West Bengal where over 1,800 rural community based forest protection committees protect more than 240,000 ha. of natural sal (*Shorea robusta*) forest, dividing the forest products with the forest department. Prior to the initiation of the program, much of the program area suffered from severe forest degradation and conflicts between the forest community (FC) and the forest department (FD).

Efforts by the FD to gain the assistance of local people in forest management through forest protection committee formation began as early as 1970-72 when the Divisional Forest Officer (DFO) of Purulia explored and encouraged such efforts (Palit 1970). Over the next 18 years the program evolved gradually, with FD officers and communities making informal management agreements. It was not until 1989 that a formal program policy was finally approved, and later revised in 1990 (Poffenberger 1989). The purpose of this paper is to examine how far the present government orders can: 1) provide legal justice to the people while allowing for a pragmatic approach for natural resource management; 2) empower the people to manage the forest for their own benefit under the existing forest law; and 3) to consider whether the situation can be improved by changing or amending the government order of the West Bengal Forest Department keeping in mind that "any future legal reform concerning the forest must thus aim first of all at doing justice to the people and only subsequently at doing justice to the nature and future generation (Singh 1986).

One of the earliest experiences with joint forest management in West Bengal occurred during 1971-72, when Dr. A. K. Banerjee, a Divisional Forest Officers and silviculturist from South Division in Midnapur East, motivated people from ten villages in Arabari and involved

them in protecting 1,250 ha of totally degraded natural sal forest and plantations. Initially, through a series of meetings and contact programs, 618 families comprising 3,607 people and inhabiting 11 revenue villages, agreed to cooperate in rehabilitating the forest in the project area.

The rapid forest growth that occurred after community protection activities were initiated provided the FD with a impressive demonstration of the potential of this new approach to management. Poor rural communities, which had previously been considered destroyers of the forest by the Forest Department, became effective resource managers when given the authority to protect them. While the agreement was based on "good faith" during the first 15 years of the program, in 1987 the FD officially agreed to share 25% of the profit from timber sales after deducting project costs with the 10 participating forest protection villages of Arabari. While the original trials with joint management were occurring in Arabari, many other foresters and community groups began forming similar arrangements, however, there was frequently little clarification regarding the entitlements or rights of the participating villagers. The forest department's order had no clear guidelines detailing the formation and functioning of other FPCs. The FD was also not very confident about the consequences of issuing a blanket government order which would formally empower communities to participate in joint forest management activities.

During this period of uncertainty, other agencies, including the World Bank and Ford Foundation (FF), came forward to study and support the joint forest management system in West Bengal. The Ford Foundation enlisted two NGOs, the Indian Institute for Bio-social Research and Development (IBRAD) and the Rama Krishna Mission (RKM) to study the local situation through diagnostic research.

Some senior officers and field staff felt that unless the evolving working arrangements had legal sanction, cooperating villages would stop their protection activities. The government order of 1989 was a response to this concern and provided an instrument to formalize collaborative forest management arrangements that had emerged in hundreds of communities across southwest Bengal over the preceding decade.

The revised 1990 resolution provided the opportunity for the majority of the villages to join FPCs. This amendment has also had a significant impact on the formation of FPCs and on how members join the committee.

At one stage in the history of management of forest resources, the bureaucratic institution of Forest Department emerged as the custodian of these resources. The goal of this institution at its inception during the British period was to earn revenue and manage forest as a sole property of the Govt. Later, even after the sea-change in Govt. Policy in year 1988, where people and their need were considered as prime agenda, the bureaucratic institution remained the same.

But the Forest Community failed to understand the complex of formal rules and regulations embodied in the bureaucratic institution and the rationale behind them. Oftener than not the laws, rules and regulations of FD interfered with the "traditional" rights of the members of the FC to use the forest resources in the ways they liked and in the manner

sanctioned by their social institutions. Hence, the FC found in the FD a countervailing institution in a negative sense.

On the other hand, the FD found in the FC a positive threat to the forest resources because of what the FD perceived as wanton destruction of forest produce through grazing and indiscriminate felling of trees and cutting of grass and collection of herbs and other kinds of forest produce beyond "permissible limits" resorted to by the FC.

But can the FC succeed in managing forest resources on a sustainable basis without the knowledge, expertise, resources of the FD? On the other hand, the FD tends to forget that its power becomes authority, i.e., derives legitimacy, when it is accepted by the people. It appears to ignore the traditional ways of the village community of organizing itself for many common goals and the indigenous knowledge of the FC in sustaining the various resources of the community through time. Can it succeed in successfully implementing its measures for conserving and augmenting forest resources without the active cooperation of the members of the community?

Thus one may find in any human collectivity two sets of institutions: (a) government institution or, more precisely in modern times, bureaucratic institution, and (b) social institution. A little more reflection may, however, raise doubts about the validity of the dichotomy. For, government institutions are a part or product of social institutions. At the same time, the government, defined in the broad sense followed here, has to look after the conformity of the members of a collectivity to its institutions i.e., social institutions.

And bureaucracy, where rules and procedures are followed in a hierarchy of power to ensure the attainment of specific goals with specific means and roles with greatest efficiency (least cost) and utmost effectiveness (greatest approximation to goal), is the result. It has come to characterize all the modern societies. Bureaucracy is the institution embodying rational (systematic, scientific and goal-oriented) authority - i.e., power enjoying legitimacy. Its legitimacy derives from impersonal, objective rules and procedures.

It is pronouncedly noticed, for example, in the chasm between Forest Department (FD) with the attendant bureaucratic institution and Forest Community (FC) with the accompanying social institution in the sphere of management of natural resources like forest in this country as well as elsewhere. This develops a relationship of mistrust between FD and FC (Chatterjee and Roy, 1994).

Foresters of bureaucratic institutions do not believe in the strength of FC, and the present orientation of many foresters has not equipped them to mix with people, establish rapport with them, win their confidence, trust people, and submit to villagers for seeking support by empowering them as partners in solving the problem of deforestation (Chatterjee and Roy, 1994).

In a similar way, the villagers are users of forest produce and get fuel, fodder and other forest produce free from the forest - but have little faith in Government Programmes and FD institutions. How can they forgo their rights to extract forest produces from reserve forest?

The question is: why this separateness? What makes FC and FD come into conflict or harbour antagonism against each other? The answer lies again in the changing nature of actual experiences of the people. Initially, it was the tribal or village community(ies) living in or in the vicinity of forest which was (were) responsible for using and managing natural resources like forest produce of various kinds according to their needs, and, to get the situation worse confounded, for the satisfaction of their greeds. Their institutions grew and took shape accordingly. Any such community has got prescribed and established procedure determining how each member will use different species of herbs, shrubs and trees and in which measure (Maciver, 1974). Not only that. Even the pattern of seasonal utilization of the resources was prescribed by the complex of values, norms and procedures, i.e., institutions, of the community and more or less universally accepted by its members.

To remedy the situation bi-lateral matching institutions are required. That is to say, what is needed is to facilitate free communication between the upholders of the two institutions. And, this will be done when the bureaucratic institution comes to be dovetailed with the social institution in such a manner that the one finds its complement in the other.

The Hypothesis

1. There are **two distinct institutions, the village community and the forest bureaucrats, responsible for the protection and management of the forest resources**. Unless both the institutions have the same goal (to conserve the forest resources) and an agreed plan of actions, and similar socially and legally sanctioned procedures (institutions), there would be conflict instead of co-operation for achieving the goal.
2. The present norms and institutions, i.e., the established procedures, of the FC and the FD to protect the forest are not matching. Hence both community, and forester's norms, behaviour, and procedure have to be recast to develop institutions which would be capable of coping with the difficult situation of natural resource management.
3. This needs organisational change. **The organisation can be changed only when one (i) understands the organisational behaviour - which includes all the beliefs, prejudices and superstitions; principles, norms, values and ideologies; activities and procedures; rules, moral codes and customs; expectations regarding the ideal man and the ideal woman; methods of rewards and punishment of the people who together form the organisation and aim to achieve the organisational goal**. Then the second step will include to (ii) act upon the culturally inherited knowledge, skills, techniques, methods of production and distribution, economic processes through endogenous development methods.

Is Change Possible?

Organisations are **dynamic** and **organisational behaviour does change** from time to time, place to place and situation to situation. In the same way, social institutions also change from time to time to bring about social change. But institutions are very seldom stable over time. Keeping this emphasis on institutional variability in mind one has to examine what the causes and consequences of institutional changes are.

Organization or institution may be changed **consciously**, in a **planned way** in the form of "**Reform**". It may be **altered systematically**, based on studies related to the individual, interpersonal and inter-group behaviour, procedure, role and status system, reward and punishment system and culture of the organisation. Of the many examples the case of reversed of degraded forest from Arabari of West Bengal sets an example (Roy, 1992).

Factors Responsible for Social/Institutional Change

All organisations, both government and non-government, are composed of human beings with emotions and feelings — good and bad — frustrations, misunderstandings, heart burnings, jealousies, egos, and complexes. Any change in the institution accompanying the organization needs change in values, feelings and environment.

Some of the foresters have no clear idea about how to involve the community and how to build a bridge of trust between the Government, the foresters and community members.

Sensitization

How to Sensitize?

The researchers from **IBRAD** have conducted a number of field work aimed at attitudinal change. In the process of field work, the villagers are sensitized. **Sensitization is a process of educating the people by feeding them with adequate information and knowledge. Its effect lies in the fact that after sensitization, a person can take decisions based on realistic, dependable and complete information.** This helps in strengthening a person's ability to gather, organise and evaluate any information more accurately. It may start with sharing ideas to work together and test the reality for future plans (Roy, 1991).

So the villagers are allowed to venture out, learn what the real world is, and what they want out of it; they are encouraged to envisage what can be done. The participants are allowed to unfreeze and share their views with one another. This helps them in unlearning the (false) beliefs, prejudices and misinformation, learning the new and requisite things and changing their attitudes. They test themselves and the merit of the new programme while conducting field work and getting feed-back. They also feel a sense of achievement while learning something that might find practical application in their life and profession and even help them to improve on it.

Steps in Sensitization

1. Clearly state the objective/purpose of visit to the village, in order to be transparent/authentic.
2. Sit on the same level with the villagers, if needed, on the ground, which helps in proper communication.
3. Recognise the strengths and abilities of the villagers for empowerment.
4. Allow the villagers to think and find options.
5. Assign responsibility to the villagers.

It transpires from scrutiny of the actual situation that unless the two institutions (community institution and forest bureaucratic institution) join hands and start working together, appreciating each other's problems, strengths and weaknesses, neither of the institutions will be able to protect the forest. Such harmonious, mutually supportive

functioning by both the institutions for their common goal, i.e. protection and management of forest, has been termed "bilateral matching institution" (Roy, 1992).

The researchers of **IBRAD** have also tested **PRA** methodology (Participatory Rural Appraisal) in the field and modified it to be used as Resource Management through Group Sensitization, based on five years' field work and experience in more than a hundred training programmes, workshops and meetings. Field work **revealed that it was the community members who, when given responsibility and empowered as partners in the programme, provided a solution to the problem. Thus the answer emerged from the villagers themselves; they suggested the means to cope with the problem and address the situation. It was also evident that it is not money alone that can solve the problems and work as the incentive for involvement of the people in forest protection and management. What actually motivates the people is a sense of belonging, their empowerment and institutionalisation of their power** (Roy, 1992).

The second method for bilateral matching institution may be **sensitising the foresters through orientation**. The methodology used for reorientation consists of a process and is not an isolated phenomenon. **This training does not mean only class room teaching**. It may be in the form of one-to-one sittings, readings, meetings, workshops, field work, working together, travelling, interviews and other types of interaction characterising human behaviour. It means intervention in group dynamics, including group/organisational structure, norms, roles, conflicts, achievements, motivation etc. where each participant (forester) has to be treated as an important individual. The faculty draws, as the faculty actually did in the case under discussion, the skills out of each participant to cause self-awareness. Each participant was sensitized to differentiate between facts and opinions. The participants came to learn how to be aware of their own feelings. They tried their best and the result is a noticeable change in the outlook of the foresters as is evinced in scores of reports of positive evaluation of training programmes by the participants in such programme. Such orientation programmes have resulted in bilateral matching of both the institutions of FC and FD. Such results have been witnessed in West Bengal, winner of International Award for forest conservation.

Bilateral matching of institutions has been applied at many places to engage local people and govt. in the management of forest resources. In three Forest Protection Committees (FPCs) of Midnapore, West Bengal it was seen that unless togetherness is developed between Forest Department & Villagers govt. programmes will not be institutionalised by the villagers. It was found that providing fuel to the people did not change their behaviour and attitude towards forest offence. They still have a lot of complaints about the quantity they are given and demand more cards and more fuel loads. Where forest offence has been internalised as its life style, merely giving out material help may not change the institution as whole. The objective is to change the institutional behaviour of the community. This requires motivation in the sense of belonging which JFM imparts.

If people take the initiative, participate in the programme as a part of their own need and culture and are empowered as decision makers, it will socially institutionalise the government programme.

The focus of the study was the community managed forest of Midnapore district of West Bengal. There are four forest divisions, namely Midnapore East, Midnapore West,

Kharagpur and Rupnarayan. The main forest trees are sal, mahua, sensum, behara, piasal, gamar and pial. Blank areas have been planted with Eucalyptus, acacia and other fast growing varieties of trees. The soil of the northern and western parts of the district is mostly laterite and of the eastern and southern parts is mostly alluvial.

Case Study I - Kapasgaria village

Kapasgaria is a village of Jamsole forest protection committee (FPC) of Khajra forest beat of Kharagpur division. It has a mixed population of sadgope, shabar, rajak and bhumij castes. Thirty-one % of the population (above the age of five) is illiterate. The primary occupation is agriculture; the main crop being rice.

The forest cover was severely damaged under the zamindar and a draught-induced famine worsened matters, for the people become totally dependent on the forest. The height was when the people started extracting fuelwood from the existing bushes and underground stumps. In 1989, the Jamsole FPC was formed combining six villages namely, Kapasgaria, Gilagaria, Jamsole, Barchati, Gopalpur and Dehi under the committee. The total forest land of 214 ha of regenerated sal forest and 48.7 ha of eucalyptus plantation was distributed according to their mouja (revenue village). In 1990, the Kapasgaria krisak samity was empowered by the villagers to protect the forest, but it has yet to be recognised by the forest department.

The motivation came from the massive deforestation and loss of biodiversity which resulted in acute shortage of timber, fuel, fodder, food, medicines and other NTFPs. The Kapasgaria krisak samity has 63 general body members. While there are no women in the executive committee, both men and women are general body members. Their function is to discuss conflicts in the village, village developmental works, forest protection, tree plantation, cultural programmes, religious festivals, organising literacy camps. etc. Collection of fuelwood is allowed only during permit period decided by the committee. Fines are levied for violation of rules. There is an indirect system of reward through recognition. There have been no major violations regarding the forest in the last two years, testifying to the efficiency of the management system.

The perception of the villagers has changed to a realisation that protection of the forest is their own duty and indiscriminate felling of trees is a crime. In the present management system the villagers perceive sal, piasal, char, haritaki, bahara and daka plants as *kath* (valuable timber) and others as *akath* (non-timber or bad timber yielding species). The importance of the forest and use of medicinal plants is understood by even children. However, there are no restrictions on grazing. The protected forests are looked after by cowherds and NTFP collectors throughout the day, but there is no regular watchman or patrolling system. Fuel wood is collected twice a year for a week and gathered in a common place. It is then distributed to all 63 members of the samity. There is no restriction on the collection of NTFPs.

Case Study-II; Village - Bhagwatichawk

The village Bhagawatichawk is located in the Gopegarh beat of East Midnapore forest division. The population is dominated by bhumij and there are also Majhi, rajak, kairi and teli. 25.7% of the total population is illiterate. The major crop is rice. The people work as agricultural labourers and sell fuel wood and sal-leaf plates.

During 1970-80 the forest was severely degraded by illicit felling, felling, pilferage and excessive exploitation of the forest by the local people, so much so that people even dug out stumps leaving no scope for regeneration. This created an acute crisis of timber, fuelwood and several NTFPs. In 1984 the Bhagawatchawk FPC was formed by the intervention of the forest department and local panchayat body. It was registered in 1992. Though the primary concern is forest protection, it is also a forum for organising cultural programmes, tree plantation and world environment day programme in the village.

Each beneficiary member is obliged to patrol the forest by rotation. During off periods for fuel wood collection patrollers become responsible for checking the head loads of each collector. The villagers have come to believe in their responsibility for protecting the forest. They consider only sal to *kath* (timber) and the rest *akath* (non-timber). It is a very vigilant committee and has faced confrontation with other villages on the issue of forest protection. There is considerable unity amongst the villagers and there are two women members in the executive committee. There is , however, no restrictions on grazing. collection of sal and eucalyptus is banned, but extraction of other plants or their parts are allowed throughout the year. It should be noted that the forest department has made a significant contribution towards the formation and functioning of the FPC.

Case Study:III - Village Langamara

The village of Langamara is in the Khajra beat of Kharagpur forest division. It has a mixed population of goalas, shabar, munda and muchi and one brahmin. Rice is the major crop. The sabar, munda and muchi depend on wage labour and the forest for their subsistence. The goalas are either small farmers and/or milk sellers.

Originally a dense forest, rich in flora and fauna, the forest was severely degraded by 1987-88. The Langamara forest protection committee came into existence around then to combine four villages, i.e. Langamara, Barapurba, Nutan dihi and Nischintapur and protect 197 ha natural forest and 30 ha of eucalyptus plantation. Intercaste conflict over the cutting of a big pole led to the committee languishing. Other factors like lack of leadership, lack of awareness, indiscriminate use of power by some of the executive members also contributed to the inactivation of the FPC.

There is an identity crisis and lack of belongingness and leadership. The village people are reluctant to come to a common platform to discuss forest protection, which they consider the responsibility of the forest department. There are now no restrictions on either grazing or the collection of fuel wood. There are no hard and fast rules about patrolling. After the destruction of the forest in 1994 the forest guard does not come to the village. Though the forest department played a significant role in the formation of the FPC and the guarding of the forest; it failed to manage the crisis when the FPC fell inactive and there was a mass plunder of coppice shoots from the forest.

Vegetation Analysis:

To assess the impact of forest protection and management through FPC, plant species diversity, distribution, standing biomass, growth rate and production of various NTFPs have to be taken into account.

Langamara has the largest area of unprotected forest land with about 147 ha of natural forest, recording the maximum number of tree species (20 species) - all were below a height of 6 feet. Bhagawatchawk's natural forest (with an 11 year protection period) had the maximum number of shrub and climber species, while Langamara had the minimum. Thus, longer the protection period, greater the number of shrub and climber species in the natural forest. The plantations are basically monocultures of eucalyptus, with few other species (Table 1). The open canopy of the unprotected forest allows more sunlight. This could be the reason why there are a greater number of identified herb species there.

Implication of vegetation management :

1. The management system has affected the growth of several trees species. In Kapasgaria at the beginning of protection they completely banned the collection of seven tree species, which resulted in the growth of all these species along with sal, with a height of about six feet. In Bhagawatchawk the restriction on only sal species (from a perception of only sal being high-value timber) has resulted in a homogeneous forest tree cover. Restriction on other tree species has certainly had an impact on the diversity of species in tree quadrats, which would ultimately affect the regeneration capacity of the forest.
2. In spite of continuous removal of woody biomass in the form of fuelwood from the natural forest by the community, the total woody biomass is higher than that of plantations in both forests. Thus **protection of natural forest** can ensure greater woody biomass to the community with maximum end-uses than plantations can.
3. Since the requirement of woody biomass in both the villages is much higher than the present potential of the protected forest areas, people are required to collect the remaining amount from other sources.
4. Kapasgaria with a five-year old protected natural forest had a higher basal area than that of Bhagawatchawk, which had a protection of 11 years. This indicates a higher density of trees/stems, which would adversely affect the growth of forest.
5. As natural forests ensure more woody biomass and end uses to the community than that of the forest department promoted eucalyptus plantation, the forest department should promote natural regeneration of multi-species forest.
6. The management system has affected the growth of several trees species. In spite of continuous removal of woody biomass in the form of fuelwood from the natural forest by the community, the total woody biomass is higher than that of plantations in both forests.
7. The major NTFPs extracted from the regenerating forests are fuelwood, sal leaf for plate making and mushrooms though there are many NTFP yielding species.
8. Where there is no record of the past vegetation, the only source of information is the perception of the local people.

9. Over time there has been considerable change in the availability of NTFPs in both Kapasgaria and Bhagawatichawk villages.
10. The study has also raised a few serious ecological issues on the sustainability of extraction rates of fuelwood and leaf collection through ground sweeping which is a common practice in these villages.
11. Lagamara example is one of many which has adverse impact on functioning of FPCs depends upon the following - (a) Strong leadership and awareness. (b) Regular monitoring support from the forest department to show their support. (c) Continuous mechanism of conflict resolution on issues related to forest protection and management. (d) Creation of need for forest conservation through sensitisation and regular follow up. (e) Enhance the capability of FPC through training and awareness.
12. Forest protection by the people and scientific afforestation makes for good forest management. The forest ecosystems can be stabilised through co-operative effort and though much has already been accomplished, there is yet a lot to be done. New skills and capacities have to be developed in the people, who were the source of information on vegetation monitoring as presented in this paper. This reflects that when people are empowered, not only can they protect the forests to regenerate them, they become an important source of even scientific information.

Conclusion :

It can be seen from the above that forest protection by the people and scientific afforestation makes for good forest management. The forest ecosystems can be stabilised through co-operative effort and though much has already been accomplished, there is yet a lot to be done. New skills and capacities have to be developed in the people, who were the source of information on vegetation monitoring as presented in this paper. This reflects that when people are empowered, not only can they protect the forests to regenerate them, they become an important source of even scientific information.

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