

BILATERAL MATCHING INSTITUTION: ISSUES IN PARTICIPATORY BIODIVERSITY CONSERVATION AND WELL - BEING OF THE COMMUNITY

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The humans use biological resources for their survival and well - being. While human need biological resources for survival their actions are guided and regulated by both social and government institutions. Though there is no dearth of knowledge, policies, acts, rules, financial support for conservation of biodiversity but the results are not encouraging. Social institutions are established sets of norms and sanctioned procedures. It can be designed to facilitate biodiversity conservation in view of societal need. Same way the government institutions are also established to meet the need and overall development of the society. The government institutions if work with social institution to conserve biodiversity will have desired result in the form of Bilateral Matching Institutions (BMI). The Government functionaries and the community can be sensitized for the common goal of conservation. The paper states how the challenges of biodiversity conservation can be addressed by designing effective community based social institutions and integrate them with the government institution through BMI that can lead to biodiversity conservation and contribute towards human well - being.

Introduction

Humans need biological resources as natural capital for survival and overall well - being. Most of our economic activities are directly or indirectly dependent on the biological resources that contribute to the well - being. Well-being is understood as a state of health, happiness and/or prosperity. *There are number of ways in which natural resource constitute or enable flows into human life support system (Clayton Et al, 1996)*, In a broad understanding, well-being is living a good life with which one is satisfied. We have experienced that 'richer the biodiversity of life, greater the opportunity for quality of life'. While human need biological resources for survival, human actions are guided and regulated by both social institutions and government institutions. Institution is defined as established form of procedure (MacIver, Page 1996). The members of the community harvest and use natural biological resources for their survival. In order to achieve these needs and wants humans came together and formed social groups based on consent of the individuals with a purpose and goal. The individuals are consolidated by consensus and, thus form group in order to facilitate the realization of the cardinal values (Mukherjee, 1991). The pattern of harvesting process of biological and other natural resources

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and the way it is used is guided by some kind of social institutions. If the social institutions are compatible with the local as well national government policy it frames a harmonious and sustainable society. It becomes a matter of concern that while there are number of policy and act to conserve forest, the deforestation has threatened human survival. Deforestation is primarily a concern for the developing countries of the tropics as it is shrinking areas of the tropical forests (Barraclough and Ghimire, 2000) causing loss of biodiversity and enhancing the greenhouse effect (Angelsen *et al.*, 1999).

Institutions, Social Action for Conservation and Cultural Practices

Institutions are the control and regulatory mechanism in society to oversee that a particular procedure as sanctioned norms are followed. Social institution influences and oversees the actions, as cultural practices and interactions of its members in society. The individuals in society harvest biological resource for their personal benefit but cannot ignore the consequences of such act of harvest on other members in society. Such act of individuals when has its own benefit and implication on other members of society is known as “Weberian social action”. It refers to an act which takes into account the actions and reactions of individuals (or ‘agents’). According to Max Weber, “an Action is ‘social’ if the acting individual takes account of the behavior of others and is thereby oriented in its course”. The social institution, as stated are the procedure and regulatory processes as necessary frame work by forest users to have a clear purpose and goal of forest conservation and use it on sustainable basis.

Community and government institution: Issue of Bilateral Matching Institution

No human society is imaginable without institutions and a distinct form of governance. In addition to the social institutions there has always been a government institution to ‘regulate the relationships among members of a society and between the society and outsiders’ and that they ‘have the authority to make decisions for the society’ to meet goals and maintain order. Even in the primitive society some individuals are authorized to assume the responsibilities for supervising the observance of the norms, values and institutions. Gradually they become the governors and the rest are governed. With the passage of time the norms, values and procedures of the former develop into bureaucratic institutions. Simultaneously, the values and procedures of the latter crystallize into social institutions. The two sets of institutions diverge sometimes over how to achieve the similar ends, resulting in conflicts. Conflict is found between the bureaucratic institutions; say the Forest Department (FD) and the Forest Communities (FC) in India and elsewhere (Roy, 1992).

Interestingly, the institutions, community as well as the government, have common goal of conservation of natural resources and work for sustainable

development but they have negative stereotype for each other which has caused mistrust and negative impact on development. But such stereotype can be changed. The Government functionaries and the community can be sensitized for the common goal of conservation and they can work for systematic monitoring of Biodiversity. Such Participatory Biodiversity Monitoring and conservation can bring sustainability. We have number of examples from Joint Forest Management.

Participatory Biodiversity Monitoring

Community members also use socio-ecological monitoring mechanism as feedbacks of resource exploitation at the local levels. Often natural ecosystems are shaken and are disturbed but some level of stability is maintained due to the natural resilience and collective action of the community. It has also been found that whenever there is erosion of social institutions over time, the disturbed parts of the forest or other natural ecosystems are not recovered. Thus functioning of social institution and maintenance of natural ecosystems are complementary.

Traditional knowledge of the community for monitoring the changes in the ecosystem has helped them to take timely corrective actions for biodiversity conservation. Such traditional practices are linked to social mechanisms. Understanding of such ideas and transmission of ecological knowledge, dynamic social institutions, mechanisms for cultural internalization of traditional practices and associated world views and cultural values helps in sustainability.

The social processes and learnings of the members of the community in management of crops have impact on the conservation and production system. There are several mechanisms as social institution for conservation of biological diversity. Biodiversity is complex system involving plants, animals, micro-organism and human beings (Krattiger et al 1994). When found relevant as reviewed by the members of the society they pass it to the next generations as their cultural practices.

Biological Diversity Act, 2002

Sustainable Development and Biodiversity conservation are the urgent as well as challenging issues for human survival. Biodiversity is a complex system involving plants, animals, micro-organism and human beings (Krattiger et al 1994). The global community as well as our own country felt the need to conserve biodiversity. The Biological Diversity Act, 2002 has been framed for conservation of biological diversity and to provide mechanism for equitable sharing of benefits arising out of use of traditional biological resources and knowledge. Current and projected human demands might exceed the mineral and biological flow rates that the planet can yield without adverse consequences, such as ecological, social or economic disruption. Keeping the long term run as the time framework, neither ecological nor economic sustainability can provide a complete specification. (Chopra, Kanchan, et al 2000).

This Act was enacted to meet the obligations under international Convention on Biological Diversity (CBD), to which India is a party. The act emphasizes more on economic ecological activities and not on social actions. The economists were engrossingly concerned with material resources, labor, capital and formulations arising out of these accounts (Mukherjee R, 1991).

The Biological Diversity Act is implemented through a three tier decentralized system. The first tier is the National Biodiversity Authority (NBA) functioning at the national level, headquartered at Chennai. The second tier is the State Biodiversity Boards (SBBs) that are constituted at State level and the third tier is the Biodiversity Management Committees (BMCs) constituted at Local level, may be at the Village / Taluk / District / Municipal Council / Municipal Corporation. The main task, to begin with, by the SBB has been to pursue the local governments to form and set up biodiversity management committees (BMC) and prepare and compile people's biodiversity registers (PBR).

As per the Act, it is important and obligatory to establish Biodiversity Management Committee at the local level. As reported on 29th November 2013 by The Hindu, Mangalore while nearly 70 per cent of the gram panchayats in Kerala have active BMCs, Karnataka comes a distant second with 5 per cent; and the figures are the worst in states such as Gujarat (just one in 13,693 GPs) and Uttar Pradesh (0.008 per cent) (Quote M.D. SubashChandran, Centre for Ecological Sciences, IISc, Bangalore).

Challenges in Biodiversity Conservation despite Policy and Financial Support

Let us examine the case of Joint Forest Management Committee (JFMC), when at all it has been successful, it is due to BMI and broad base JFMC emerging as social institution and can participate in some kind of participatory monitoring. 1990 Joint forest management was initiated which gave a new positive side and a greater contribution to the protection of forests and given a responsibility and rights to village people to take care of the forest lands and areas (Poffenberger, Mark, Ed, 1996).

The success of Joint Forest Management programme from West Bengal and other parts of India has opened avenues to researchers from social sciences and management domain to learn the process of change, its enabling environment and the factors responsible for the new programme (Roy, 1993).

When a group or collection of individuals organizes itself explicitly for the purpose of pursuing forest conservation on sustainable basis jointly with the Forest Department and share rights and responsibility and certain of its interests together in a co-operative way, an association programme is said to be Joint Forest Management. It must be kept in mind that the government initiated programme like Joint Forest Management Committees (JFMC), operates through structural relationship within group and may evolve into social institution over time.

Despite existence of number of policies, norms and rules to conserve biodiversity we have experienced scarcity of biological resources and facing the result of deforestation. While we appreciate the value of natural capital, biological resource in particular for our survival need, we are often carried away by our greed to continue to exploit natural resources crossing the limit of sustainability. This has resulted in extinction of many valuable biological resources. In conservation biology the term 'overexploitation' is usually used in the context of human economic activity that involves the taking of biological resources, or organisms, in larger numbers than their populations can withstand (Oxford, 1996). Such loss of biological resource has to be arrested through consolidated efforts, means, policy, acts and institutions by both social and government, commonly known as Bilateral Matching Institution.

The Challenges in functioning of BMC

BMCs need to function as effective manager of the biodiversity resources at the local level. They have to ensure that a full inventory of the biodiversity resources and the traditional knowledge associated with it are prepared in the form of PBR of their local area. They should set up a comprehensive strategy to take up appropriate mitigation measures and for possible positive biodiversity conservation initiatives. These will subsequently serve as the basis for biodiversity management and biodiversity monitoring of the area.

Within the specified landscape designated to the BMC, high biodiversity importance zones and a high risk of impact zones would be identified and separate Biodiversity Action Plan is to be prepared for conservation of Rare, Endangered and Threatened species and their habitat. Regular and periodic monitoring is to be carried out by involving the people.

Action by the BMC involves a massive task of creating awareness, building competency, framing social institutions and empowerment of communities. Such activities will include conservation of biodiversity and fair and equitable sharing of benefits arising from the conservation and use of genetic resources. The effectiveness of governance has been the most important issue of development. "India stands today at the cross-roads where it is becoming abundantly clear that not paucity of funds, but deficit in governance is the most significant challenge before the society" (Report of the Working Group on Ecosystem Resilience, Biodiversity and Sustainable Livelihoods for the XII Five-Year Plan Planning Commission, 2011)

Developing and Strengthening People's Institutions for Participatory Biodiversity Conservation: Case Study from Chhattisgarh

The individual of human society interacts with the elements of forest ecosystem as per the social norm, structure and system. The social norms and cultural behaviour determine the practices for conservation and harvesting of the forest resources. Once

the community institutions and government department's institutional procedures are matched, popularly known as *Bilateral Matching Institutions* (Roy 1992), it is expected that the members of the community will develop and follow the norms of sustainable harvesting of biodiversity in agreement with the forest department that would facilitate the process of biodiversity conservation.

Under the Peoples Protected Area program in Dhamtari Forest Division of Chattisgarh, local community organized in the form of JFMC, have been orientated to promote in situ conservation of the forest and control fire, grazing and illicit felling. The authors have conducted a study to understand the social actions by the JFMC and its impact on biodiversity. The longitudinal data collected over a period of five years jointly by the forest department and the community members through the grid survey has also been analysed to understand the impact of people's participation on the conservation status biodiversity.

The program is implemented in 5000 ha area under Dugli-Jabarra and Sankra-Chandanbaha forest range by involving 15 JFMCs. The PPAs are constituted in these two areas in consonance with IUCN chapter VI i.e., *protected area managed mainly for the sustainable use of natural resources* to ensure long-term protection and maintenance of biological diversity, while also providing a sustainable flow of natural products and services to meet community needs.

The trained JFMC members were engaged in collection of data on biodiversity by laying permanent plots in their forest areas for five years consecutively. The results show that there has been increase in regeneration status of tree species with presence of new recruits for all species. The relative density under the herbs category ranged from 0.08 to 27.38 in Dugli. Some species like Kaalimusli had the maximum density of 13532 individuals per hectare followed by Bada Dashmool (13298 individuals/ha). Some species like Baichandi, Satavar, Bhespar, Dotakandh, Gaypar, Jarkakand, Satavar and Suaokand that were absent during baseline data have come up after five years. The overall density of Climbers has increased from 2538 individuals per hectare to 9372 individuals per hectare. The density of the medicinal plants under shrub category in the Plot 1 of Sankra has increased from 400 stems/ha to 2708 stems/ha during the protection period and in Plot 2 the overall density of the Climbers with medicinal value has increased from 684 Stems/ha to 5300 stems/ha during the protection period (Mukhopadhyay *et al.* 2012).

Through the participatory monitoring, JFMC members could assess their resources, identified the targeted species based on the market demand and availability in their forest area. They have developed social norms and practices for non destructive harvesting of the targeted species to ensure off take and ecosystem sustainability. It has been realized by the JFMC members that non destructive harvesting of the species is essential for biodiversity conservation and maintenance of ecosystem function. To promote non destructive harvesting, the villagers are sensitized to adopt the practice of 'sustainable use' of different species.

They have developed various social regulations and rituals as control mechanism for harvesting and use of biodiversity. In the case of rhizome species like Tikhur, Keokand and Baichandi, they are given the option to choose one out of the three tubers, so that the regeneration is taken care of. New rituals have been developed like “AonlaNavmi” and the villagers have been sensitized to harvest mature Aonla fruits only after AonlaNavmi. Mature fruits ensures better price. They have also been educated to leave some fruits in the plants for regeneration.

JFMC as a social institution have played important roles in setting norms of use of natural resource and enforce the community controlled and monitored regulatory mechanism support from the forest department.

With concerted and joint efforts of the local forest department and the villagers in the form of BMI the forest biodiversity resources of the PPA under Dhamtari Forest Division could be conserved. Such efforts like Participatory Vegetation Monitoring is such an innovation in the utilitarian or technological order in the sense that it endures the villagers to determine what would be the judicious amount for harvesting the forest products so that sustainability is ensured (Roy et al, 2000). People realized the importance of maintaining both the targeted and non targeted species and their habitat through participatory monitoring. Accordingly they have organized themselves in the form of social institutions, developed social norms and actions for biodiversity conservation. Their income levels have also been increased manifold through livelihood diversification that has improved their level of well - being.

Conclusion

The BMC as a local level statutory body can only function effectively and do justice to the role entrusted upon them by mobilizing, organizing and capacity building of the local community as social institution. The examples of participatory initiatives taken by the villagers in different parts of the country have made it clear that biodiversity can be conserved through community engagement, capacity building and empowerment facilitated through a responsive public governance system in the form of BMI that would certainly contribute towards attaining the goal of human well - being.

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