

# Participatory Action Research for Sustainable Tribal Livelihood: An Eco Chain Approach with Saptapadi

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**ABSTRACT:** The indigenous tribal community and forest have a symbiotic relationship. Arresting the forest's degradation and development of livelihood option have been tried with the Santhal in Purulia District of West Bengal as a partner through Participatory Action Research (PAR). The Eco Chain Approach for creating awareness and SAPTAPADI, a method to develop appropriate social institution for the conservation of natural resources and adoption of technology developed by IBRAD, is illustrated with a case study herewith. It is being carried out as an outcome-oriented intervention and finally generating a new body of knowledge for replication in the similar context of sustainable livelihood of the community.

## INTRODUCTION

The indigenous tribal community co-exist with forests as interdependent parts of the ecosystem, but deforestation and climate change have severely impacted the community's life and living. The indigenous tribal community have contributed least to the cause of climate change, yet they bear the brunt of the climate crisis. Some of the forests are degrading faster, and tribes are more exposed to climate change. The problem of livelihood issues of the indigenous peoples is directly linked with climate change realities. Given the dwindling natural resource base, the authors involved the tribal community as a partner in the development programmes through Participatory Action Research (PAR) to find options and appropriate technology to conserve natural resources at one hand and sustainable livelihood the other. Participatory approaches to developing remedial strategies involving the local community keeping in mind that

ecosystem-based sustainability has some encouraging results. The Eco Chain Approach for creating awareness and SAPTAPADI, a method to develop appropriate social institutions for the conservation of natural resources and the adoption of technology for livelihood developed by IBRAD, is illustrated with a case study.

The tribal society keeps evolving with emergent institutions and cultural practices as a social change process in the rapidly changing world. Inner social change agents take corrective action to develop appropriate social institutions. *Participatory Action Research essentially understands the issues, causal factors, strategy, intervention, and thereby producing a new body of knowledge to improve outcomes. It is usually a participatory activity involving input from people who are likely to be affected by the research and intervention*

Participatory Action Research (PAR) involves identifying the problem - possible causes and intervention, and the learning cycle offer an  
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opportunity for continued reflection. In all professional fields, the goal of action research is to improve outcome and develop a model which can be replicated.

It usually consists of systematically searching for a solution to some problem or puzzle encountered in the field of development in a given context. It is being carried out as an outcome-oriented intervention and finally generating a new body of knowledge. The new body of knowledge may be in the form of theory or a further intervention as a methodology that could be generalized and contribute to establishing cause-effect solid relationships.

*The Question Of Role Of Anthropologists As Change Maker For Development*

Action research has to be replicable if it can be reproduced under similar conditions by independent researchers, which is only possible if a clear, explicit, and complete report of the original study is available. Such a report should contain precise definitions of all the variables and conditionality under the study. The intervention may require building competency of the community and the development of appropriate social institutions. Such action research will essentially lead to social change. Should Anthropologists facilitate social change through a participatory process? We cannot deny that social change is directed by the force of the market, media, politician, muscle man who acts as catalysts of change to exploit the society for their gain. If the media, market, public functionaries, and development agency can facilitate social change, why cannot the Anthropologists act as facilitators for social change-makers for sustainable development?

Participatory Action Research can help the community build their competency to assess the existing social practices and institutions that need to be altered and develop appropriate social institutions and cultural traditions. Action Researcher can help the community design feasibility studies, find new ideas and approaches to solve the problems. The Participating Researchers need to involve the community to continually evaluate their intervention, opportunities to achieve increasingly higher levels of influence, which is economically viable, environmentally sustainable and socially acceptable. The policy will not have the desired result unless the

community accepts it as a socially accepted norm. Social acceptance is the prime factor.

A study by IBRAD reveals that no 'Scientific Theory' or 'Policy' will be influential unless there is accountable public governance compatible with appropriate social institution for 'Participatory Biodiversity Management and blending scientific principles with indigenous knowledge (Roy and Mukhopadhyay, 2015). Such approaches for facilitation of new social order and adoption of appropriate technology to address the problem of food security on one hand and climate change on the other by involving the community themselves as a partner of government functionaries have been appreciated and accepted by the ICAR, Government of India and the state governments of West Bengal, Jharkhand, Odisha and Chhattisgarh

*Purpose of the Discussion: Theoretical Orientation*

We planned to discuss the theory, methods, and views of different scientists about social institutions that are the regulatory mechanism for economic activities for meeting the physiological needs, how the community members learn new skills and share among themselves as a part of the culture. Many social institutions are essential to the community, but such institutions, rituals, practices are not directly related to livelihood related activities. The authors will discuss the field tested method of applying the relevant theories, and formulate a practical way of involving the community as PAR in crafting their social institution and managing the natural resources for sustainable development.

## METHODOLOGY

*1. Understanding The Social Institutions: The Procedure*

*We all agree that the community has to meet the physiological need first.* Malinowski suggested that individuals have physiological needs (reproduction, food, shelter) and that social institutions exist to meet these needs. Natural Forests, biodiversity have been the basic need for the survival and development of the indigenous tribal community as the indigenous community is part of the forest ecosystem. The

community is dependent on the forests ecosystem for nutritional, cultural, economic, and environmental/ecological well-being. The traditional knowledge, cultural practices, social institutions, and indigenous community rituals are linked with their local flora and fauna. The flora and fauna play manifold roles in the livelihood related day to day practices of agriculture, horticulture, livestock, fishery and health care. Erosion of any flora or fauna will also erode traditional knowledge and practices.

### 2. *Re-Crafting Appropriate Social Institutions*

While we know how the traditional knowledge, beliefs, laws and customs are connected with sacred trees and animals (totems), the erosion of valuable trees and animals have become the forgotten social norms of conservation practices. Social institutions and cultural practices that favour conservation has to be re-crafted. Malinowski argued that uniform psychological responses are correlates of physiological conditions. He argued that these needs' satisfaction transformed the instrumental cultural activity into an acquired drive through psychological reinforcement (Goldschmidt, '66). Like a biological organism, a society can maintain its essential processes through how the different parts interact. Institutions such as religion, kinship and the economy were the organs, and individuals were the cells in this social organism. Functionalist analyses the social significance of phenomena: the function they serve a particular society in maintaining the whole (Jarvie, '73). Society is a system of relationships maintaining itself through cybernetic feedback. At the same time, institutions are orderly sets of relationships to sustain the community as a system and explanations of social phenomena had to be constructed within the social level. Thus, individuals were replaceable, transient occupants of social roles. Unlike Malinowski's emphasis on individuals, Radcliffe-Brown considered individuals "Firth's most significant contribution to anthropology is his development of a theoretical framework emphasizing choice, decision, organization and process in social and institutional behaviour" (Watson-Gegeo *et al.*, '91). Causal explanations of social change have to be understood while designing changes when the subject of study involves initial conditions or basic processes.

### 3. *Development of Cultural Norms and Practices:*

Let us reflect on what Anthropological Theories and concepts can be used in Action Research as PAR in developing a cohesive group, appropriate social institutions to meet the physiological need (Malinowski, '44). That means the researcher has to create a sustainable livelihood strategy to meet the community's basic needs. The second task will be about the social structure at the gathering with defined roles and responsibility to work for collective action for biodiversity conservation or develop some orchard or fishery in community-owned water bodies and institutions.

### 4. *Participatory Action Research In Setting Common Goal*

The forest landscape is inhabited by numerous stakeholders, tribes in particular with varied and conflicting interests and institutions. Some of the groups may focus on livestock, and their cows/goats graze into the forests that cause damage to the freshly regenerating forests. The graziers or pastoral communities have their social institution to meet their survival needs. The livestock keepers graze their livestock in the woods and gather lopped branches, leaves, and fodder causing forest resources degradation. The agriculturists practice the farming system. The social institutions of the farmers are not complementary to the pastorals. The prominent landholder's farmers need a considerable quantity of water, and they overdraw the groundwater causing diminishing groundwater levels. Excessive use of chemical fertilizers has short term benefits to farmers but causes soil and water pollution. Thus depending on the perspectives of the different community, often contradictory objectives have emerged. Stakeholders are considered essential players for conserving natural resources and have a unanimous agreement as social sanctions for overexploitation. Methods and approaches have been designed to involve the community in managing the trade-offs and understanding social norms and institutions for conservation-based sustainable livelihood.

### 5. *Initiation of Socio-Ecological Process*

IBRAD's Approaches to Eco Chain with SAPTAPADI, the seven sequential steps of Action

Research for developing appropriate social institutions for Sustainable Tribal Development, has been illustrated herewith.

Interdependence between social action of human society and the environment can be termed as Socio-Ecological Processes. IBRAD, through its several development projects, have observed that seven interconnected variables determine the functioning of the social institution as a system. These variables interact and complement each other in the process of social change and development. Each community has some belief system that conditions the thought process and directs the behaviour. The individuals interact in the natural ecosystem for different activities, but some sequential intervention, as a part of PAR will build appropriate social institutions for the sustainability of the ecological system for sustainable livelihood and lead towards SDGs (Sustainable Development Goals)

Seven issues were addressed, and intervention made with documentation of each phase's outcome for verification of the effectiveness of the PAR.

*1. First issue: Lack of focus on the problem of deforestation and need for a strategy*

Intervention: Eco Chain as Cognitive Stimulation For Re-Orientation of Worldview

Eco Chain is an approach as the first part of SAPTAPADI to create awareness and involve the community and make them realize the interdependence and relationships between different components of ecosystems, like a forest, agriculture, water, livestock and human being in a given landscape which is interconnected like a chain (Roy and Mukhopadhyay, 2016). A common meeting is held at the village level with the community and the government functionaries, like the Forest Officials to develop a common understanding and agreed plan of action for conservation and management of the natural resources through Bi Lateral Matching Institutions – BMI, the concept developed by IBRAD and accepted by the policy makers (Roy, '92; Roy *et al.*, 2015). The community and the government functionaries. The first village-level meeting is conducted in an open space. After an introduction, the participants are shown pictures of five components- forest, waterbody, agriculture- farm, livestock and human drawn on a

chart paper. Four questions are printed on the same chart paper under the picture as mentioned. The four questions asked, viz.,

- Q-1 Of the five, which one is not required in the village?
- Q-2 If you require all, then why you need so?
- Q-3 How one component given in the picture is related to the other one?
- Q-4 what role can the villagers play to conserve them of their own?.

The audience is divided into three groups, and the chart papers with the printed questions on the chart papers are given to each group to answer. It is also mentioned that the best presentations will be recognized and be rewarded. Such reward will not be in cash or trophy but maybe by a leaf of a tree or a pebble. The purpose of this exercise was to create a feeling of competition among the group members and provide an opportunity to arouse rational thinking about the need for the conservation of forest. The members of the groups discuss seriously among themselves and write the answer on the chart paper. And they present their findings after the discussion before the audience and a panel of judges selected from among the community rate the presentations and the best presentations are rewarded with a packet of chocolate that are shared by all.

In the process, the members realize how their survival depends on the forest's richness and other natural resources. Such realization comes from within without any preaching from the development workers or outside experts. The process changes the worldview of the community through cognitive stimulation. Thus from the very beginning, they start taking ownership of their decisions. Secondly, as it emerges through the group discussion, it comes up as a consensus and not only as an individual commitment. The mention of recognition of the best presentation ignites the curiosity and creativity among the group members and encourages them to come up with their best.

Finally, it helps identify some proactive community members, known as SICO (Self Initiated Community Organizers), who desire and commit to working for the cause of conservation. The process is self-motivating and has a cascading effect.

The first outcome of the exercise is awareness of the need for conservation and volunteering by the members as SICO, who agreed to form an action group

The above exercise of Eco Chain indicates the efficacy of the approach to involve the community. And at the end of such PANCHATATVA exercise in Burudi village, inhabited by Santhal tribal community have come forward as SICO (Self Initiated Community Organiser) with great enthusiasm to work for the cause of conservation-based livelihood development in their village. What is important is that these SICO members are not nominated or selected, but they are self-motivated come forward on their own. It ensures the level of commitment, motivation and leadership abilities.

### *II. The Second Issue: Lack of committed social group to work together*

#### Concept

The community members realize that they are interdependent with one another. They have to form a cohesive group following the idea of social structure.

Second Interventions and Outcome in the form of Group Formation

Systematic consideration of the cultural values associated with ecosystems could therefore benefit many kinds of initiatives, including spatial planning, integrated conservation and development and well being of the people (Kai *et al.*, 2012)

After identifying the SICO members, they are facilitated to form a group of like-minded people with a common goal. The SICO members identify some like-minded members in the village with whom they have close bonding and are ready to work under the leadership of the SICO. In Burudi the 33 women members have formed the group “Burudi Jeherayu Mahila Samity” with Jayanti as the group leader.

### *III. Third Issue. The community did not have any social regulatory mechanism for action to be taken against those who continue felling trees*

Such a control mechanism with more precise rules and regulations has to be framed by society members. Small-scale and short-term changes are characteristic of human societies because customs

and norms change, new techniques and technologies are invented, environmental changes spur new adaptations, and conflicts result in redistributions of power. There has to be a stable social system that can be maintained by following the principle of social institutions, the regulatory mechanism by society’s members.

The group members set their own rules and regulations and documented them in the form of written resolutions. The first resolution made by the group members in Burudi village was to conserve the forest adjoining their village and start some activities that promotes conservation like nursery raising to produce planting materials, initiate organic farming for conserving soil health and produce safe food.

### *IV. The fourth issue: Lack of an avenue for learning the new methods of organic farming*

#### Concept

Initiate capacity building and transfer of appropriate technology as the community members have openness with an innate tendency to learn, grow and expand with a mechanism of continuous learning—several social evolution theories to identify technological innovations as the most critical determinants of societal change. Like in human history, we find that technological breakthroughs as the smelting of iron, the introduction of the plough in agriculture, the invention of the steam engine, and the computer’s development have had lasting social consequences. Technological changes are often considered in conjunction with economic processes.

The fourth Intervention has been establishing a Prashishan Shivar and capacity building in the form of technical training and skill-building and the outcomes in the form of the organic kitchen garden, vermicompost pits.

The members must get the right kind of training, and their capacity is built to adopt new technologies to promote conservation-based livelihood development. These pieces of training are designed so that it is conducted in situ at the village with hands-on demonstration and hand-holding following their local culture that has a strong influence in constructions of knowledge and meaning-making (Vygotsky, ‘78). It is conducted following Adult Learning Principles. It focuses upon cognitive

development by emphasizing guided and observational learning through social modelling (Bandura 1998). Accordingly, the members are trained on establishing organic kitchen garden in their homestead land, seed treatment to increase productivity, production of vermicompost and organic compost, azola cultivation, nursery raising for production of quality planting materials.

Several studies revealed that the organic kitchen gardens in the backyard of the tribal households can be raised for food and nutrition security as well as earning extra income by the smallholder farmers (Parida *et al.*, 2018; Poshadri *et al.*, 2019; Suri, 2020). The organic farming method helps maintain soil health and soil moisture content (Reeve *et al.*, 2016, Seufert *et al.*, 2017). Several studies revealed how indigenous communities are, through conservation and promotion of traditional food systems, enhancing their resilience (Duthie-Kannikatt *et al.*, 2019). People are organized to conserve the indigenous seeds, landraces, and cultivars, including highly nutritious millets, tubers, cereals, and other agricultural crops that are becoming rare or at the verge of extinction. These crops are resistant to extreme climatic conditions, disease, and pest, require less water and external inputs, and provide high nutrient values (Salvatore, 2011; Berg, 2009; Ghosh–Jerath *et al.*, 2015; Ficiyan *et al.*, 2018).

The training was conducted in the form of a demonstration in the participants' field so that trainees start getting fresh vegetables, producing compost and applying in their own field, producing saplings that they plant in their own village, and selling in the market.

It is encouraging to find how Burudi Village members related the importance of forest conservation for strengthening their livelihood. Jayanti has provided land for raising a nursery by the group. The members have collected seeds of teak from the adjoining forest and used them for raising saplings in their nursery. In the first attempt itself, the group has earned Rs 17,000 by selling the saplings during July. This could be achieved within six months of the formation of their group.

#### *V. The Fifth Issue: Lack of understanding on the trade-offs analysis,*

##### Concept

A trade-off analysis is a situational decision that

involves diminishing or losing one quality, quantity, or property in return for gains in other aspects. Here in the context of ConservationBased Livelihood, one must understand that they have to sacrifice now and conserve for the future income. Develop a forum of trade-offs analysis so that the community appreciate the value of conservation and sustainable consumption and follow the principles of trade-offs applicable to the processes and conditions that govern the lifelong course of human development in the actual environment in which human beings live. The trade offs among different stakeholders has to be resolved for undertaking spatial planning at any scale.

The village level micro plan is prepared with active participation of the community members and the forest field staff to identify the local resources, measure the consequences between the long term benefit of conservation vis a vis short term profit making, sustainable utilization of the resources and adapt conservation based livelihood practices.

#### *VI. Sixth issue: Lack of understanding of procuring resources from different government departments based on a realistic micro-plan at the village level.*

Interventions through skill development for the implementation of the micro-plan and outcomes in the form of conservation-based livelihood diversification

Systematic skill development programs were organized for the preparation of a micro plan in the villages following the 'Integrated Landscape Management' approach. The rural landscape cannot be managed in isolation by any single department. These landscapes are multifunctional that requires to be addressed comprehensively. It needed a comprehensive, integrated plan to keep in mind the interdependent relationship between agriculture, forest, and water bodies. The project has to be linked with other sectoral landscape-level activities, the institutions and policies (Reed *et al.*, 2015), increasing synergies among them and minimizing or mitigating trade-offs among food production, biodiversity conservation, ecosystem service provision, and poverty alleviation (Estrada-Carmona, 2014).

Thus the members are trained to view the issues of degradation and the linkages among the different components of their landscape in a holistic manner

and adopt an integrated approach to rural landscape management. They also could realize the various ecosystem services generated by the constituent natural ecosystems in their landscape that they are using for their livelihood and well-being. Consequently, the activities such as organic kitchen gardens and organic inputs for application in the forest fringe farmlands are promoted to mitigate the negative impact on the pollinators and other animals. The application of organic manure improves the soil and water quality on the one hand and increases income in a sustained manner. Adopting new agronomic practices like Mixed farming, crop rotation with the introduction of nitrogen-fixing crops like beans to improve soil health has started. Nurseries are raised to produce planting materials that are used for the plantation of fruits bearing trees in the village and sell in the market.

*VII. The Seventh issue. Lack of Rituals and social activities in the form of cultural functions related to conservation of water, forest and livelihood, any event or occasion to celebrate the success story and take pride.*

#### Concept

Create several occasions to discuss traditional knowledge and cultural traits that are maintained and inherited within the social life cycle through rituals. Change in collective ideas is not merely an intellectual process; it is often connected to the formation of new rituals. This in itself might be regarded as a potential cause of social change. Seventh Interventions in terms of designing programmes like rituals and their implementation

Rituals bind the people together. Several programs is designed in the form of observing a day through celebrations. Such celebrations enhance the members' cohesiveness, reiterating the group's purpose, instilling pride among the members, energizing and recreating the members' enthusiasm to carry forward the activities.

The group members in Burudi Village and others' villages celebrate World Biodiversity Day, World Environment Day, World Soil Day, International Women's day following their tradition and culture. The tribal community members have written songs in their language on the themes, performed through

dance and music. These programs also have catalyzed in development of their networks with different departments and agencies. These have created opportunities for them to invite the dignitaries from various line departments and link them.

#### CONCLUSIONS

The Indigenous tribal and forest have a symbiotic relationship. But the deforestation has caused problems not only for Tribal but also for the general community due to climate change. The natural resources are the foundation for a source of agriculture products or forest products such as Sal, Mahua, Amla, Harra, Behera, Char, Imli Tendu leaves, Mehul leave, Honey, and many different types of edible forest roots and tubers. Arresting deforestation and developing sustainable livelihood for the tribal community has been a challenge. IBRAD has designed a unique Participatory Action Research approach where the tribal community in Purulia District of West Bengal was involved as partners to discuss and evaluate their belief, cultural practices, and status of depleting forest resources. We also found that some of the tribal are often at crossroads when they collect a headload of wood to meet their daily need, realizing that such overharvesting will cause depletion of forest resources. Eco Chain PANCHATATVA was used to create awareness of the community, and focus group discussion continued to find option.

The tribal community felt the need to form social groups, institutions and develop action plans with appropriate rules for the community to conserve the forest. It essentially required building up institutions as units for implementing their development programmes. It had been a process of improving tribal- institution's ability to use the available human and natural resources effectively. The institutional development process designed by IBRAD had seven sequentially planned activities, SAPTAPADI keeping in mind the policy, act and rules of the country related to Conservation -Based Sustainable Livelihoods. It was also essential to involve the government functionaries from the beginning, who will support the community in future. Each step of institution-building had three distinct stages an *input*, *process* or *output*. Inputs were mainly in the form of training, providing technology and materials to carry

out a task. The process was action to complete the job to produce a result. Outputs were the intended verifiable results. The input of the training begins with the establishment of a Prashikshan Shivar in the village. Prashikshan Shivar as tribal dormitory-Ghotul, demonstration of sustainable organic farming, water conservation, fisheries, tree plantation, conservation of medicinal plants and finally, agri-business have been the outcome of the project. The ICAR approved such a process of Integrated Forest Mosaic landscape Management for Sustainable Livelihood as a model for replication and were adopted in Jharkhand and Chhattisgarh under a project of the Ministry Of Tribal Affairs for the Birhor and Kamar.

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