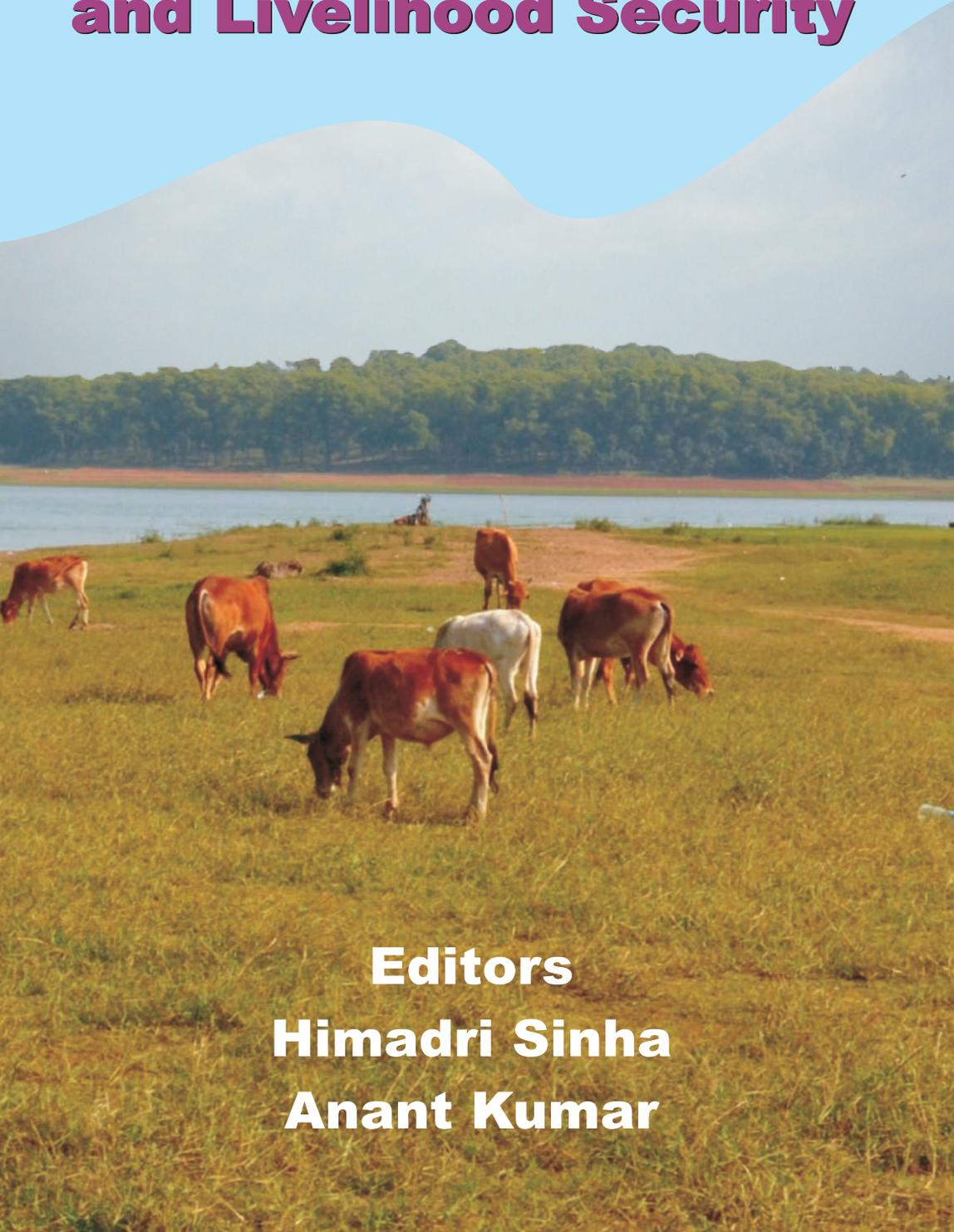


Governance of Commons and Livelihood Security



Editors
Himadri Sinha
Anant Kumar

GOVERNANCE OF COMMONS AND LIVELIHOOD SECURITY

Editors

**Himadri Sinha
Anant Kumar**

Published by



Xavier Institute of Social Service
Dr. Camil Bulcke Path, Ranchi, Jharkhand, India
Phone : 0651-2200873
Website : www.xiss.ac.in

Governance of Commons and Livelihood Security

ISBN: 978 - 81 - 904110 - 2 - 8

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Published in March 2013 by
Xavier Institute of Social Service
Dr. Camil Bulcke Path, Ranchi, Jharkhand, India
Phone : 0651-2200873
Website : www.xiss.ac.in

Price: Unpriced edition sponsored by NABARD

Printed at

Catholic Press,
Dr. Camil Bulcke Path, Ranchi, Jharkhand, India
Printed at Catholic Press, Ranchi - 834001
Ph.: (0651) 2350417/9234300625
e-mail : catholic_press@yahoo.in

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FOREWORD

The book on '**Governance of Commons and Livelihood Security**' is an anthology of selected papers presented at the 'International Conference on Governance of Common and Livelihood Security' held at XISS, Ranchi in Jharkhand, India on August 17-18, 2012. Ranchi owes to a rich tradition of commons which form the basis for its amiable climate and potential growth. Jharkhand has been formed out of the long struggle of tribal communities for *Jal, Jangal aur Jamin* (Water, Forest and Land). Traditionally tribal communities thrive on commons and driven by community ownership. Time and again, the tribals are displaced from their lands, forests and water resources by the proponents of privatized economy. Loss of commons like water, forest and land is like the death warrant for tribal survival. However, tribal voices are seldom heard at the corridors of power.



I am happy that various authors have recognised the importance of commons and tribal living. Publication of the book in a way is the recognition of the spirit of commons engrained in the ethnic values of the forest state of Jharkhand. This book presents a huge opportunity to appreciate the historical as well as the contemporary issues related to commons in Jharkhand and other parts of the world. It is also a recognition of the historical struggle of the ethnic groups for the community governance over water resources, forest and land in the newly carved state.

Xavier Institute of Social Service for the last 57 years has been successfully grooming "*professionals with a difference*" many of whom are spearheading the cause of the commons at various levels. Through its educational programme, research and outreach activities, the Institute has strived all the way towards providing a service oriented pool of talent for the development and for the industrial sector. It is recognized that the Institute plays a leading role both at the regional and the national level for the amalgamation of religio-ethnic values in management practices, which make it a hub of knowledge exchange for commons.

I take this opportunity to express our thanks to all the authors who have contributed to this book. I also extend our sincere thanks to NABARD for sponsoring the entire publication cost of this book. I am sure this book will enrich the knowledge and understanding of those who are intricately involved in governance of commons and livelihood of commoners.

Dr. (Fr.) Alexius Ekka, S.J.
Director, XISS

ACKNOWLEDGEMENTS

This edited book is the outcome of International Conference on Governance of Commons and Livelihood Security. We would like to thank all presenters, authors, sponsors and donors for their contribution and efforts who share a consuming interest in Governance of Commons and Livelihood Security.

We would specially like to thank National Bank for Agriculture and Rural Development (NABARD) for sponsoring the publication cost of this book. We would also like to thank conference co-sponsors - All India Council for Technical Education (AICTE), Church's Auxiliary for Social Action (CASA), Foundation for Ecological Security-Anand and UNICEF - for their belief in issues of commons and supporting this cause. Additionally, we appreciate the institutions and organizations in helping us to shape and refine our thinking on issues of Governance of Commons and Livelihood Security.

We extend our sincere thanks to Dr. Alexius Ekka S. J., Director of XISS and Dr. Ranjit Pascal Toppo S. J., Assistant Director of XISS for their constant support, encouragement and valuable guidance. Without their unflinching support, this book could not be published.

We would like to acknowledge our colleagues at XISS who directly or indirectly contributed in enriching the contents of this book. Our special thanks to Dr. Pramil Kumar Panda, Mr. Prakash Chandra Dash, Mr. Nishant and Mr. Francis Dang for providing editorial assistance. We would also like to thank Mr. Vinit Kumar for providing the cover photo.

Last but not least, without whom this book would not exist, the conference presenters and authors who deserve a special mention. Their eagerness to share experiences as well as their eagerness to learn gave us the privilege of gathering immense learning from their work.

Our special thanks go to Fr. Ranjit Lakra, s.j., Director and Fr. Alexius Toppo, s.j., Assistant Director of Catholic Press for their effort and support in publication of this book.

Himadri Sinha and Anant Kumar

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ABBREVIATIONS

ARCS	Assistant Registrar of Cooperative Societies
ASHA	Accredited Social Health Activist
ATSUM	All Tribals Students Union of Manipur
AVP	Adivasi Vikas Parishad
BMI	Body Mass Index
BPL	Below Poverty Line
BREDS	Bapuji Rural Enlightenment and Development Society
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resource Management
CBOs	Community Based Organizations
CDA	Chilika Development Authority
CF	Community Forest
CFCs	Common Facility Centres
CL	Casual Labor
CLP	Community Leadership Programme
CMWs	Community Health Workers
CPRM	Common Property Resource Management
CPRs	Common Property Resources
DDS	Deccan Development Society
DFL	Disease Free Layings
DVC	Damodar Valley Corporation
EAS	Employment Assurance Scheme
EPO	European Patent Office
FAO	Food and Agricultural Organization
GJMM	Gorkha Jana Mukti Morcha
GVT	Gramin Vikas Trust
HCR	Head Count Rates
HLS	Household Livelihood Security
ICDPs	Integrated Conservation and Development Projects

ICDS	Integrated Child Development Services
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IIED	International Institute for Environment and Development
IMP	Integrated Micro Project
IPR	Intellectual Property Rights
ISG	Institute of Self Governance
ITDP	Integrated Tribal Development Project
IWRG	International Water Resource Group
JFM	Joint Forest Management
JGSY	Jawahar Gram Samrudhi Yojana
JRY	Jawahar Rojgar Yojana
LAMPS	Large and Multi Purpose Societies
LRA	Land Revenues Act
MBT	Mutual Benefit Trust
MEA	Multilateral Environmental Agreement
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MHC	Medical and Health Commons
MIS	Management Information System
MLR	Manipur Land Reforms
MPCE	Monthly Per Capita Expenditure
MPCS	Multi Purpose Co-operative Society
MPRLP	Madhya Pradesh Rural Livelihood Project
MSSRF	M. S. Swaminathan Research Foundation
NBFC	Non Bank Financial Companies
NBJK	Nav Bharat Jagriti Kendra
NCA	National Commission on Agriculture
NFHS	National Family Health Survey
NFT	Nutrient Film Technique
NREGA	National Rural Employment Guarantee Act

NREP	National Rural Employment Programme
NRHM	National Rural Health Mission
NRSA	National Remote Sensing Agency
NSF	Naga Students Federation
NSSO	National Sample Survey Organization
NTFPs	Non Timber Forest Products
OBC	Other Backward Caste
OFDC	Odisha Forest Development Corporation
ORS	Oral Rehydration Solution
OSFC	Odisha State Forest Corporation
PAs	Protected Areas
PDS	Public Distribution System
PIA	Project Implementing Agency
PRA	Participatory Rural Appraisal
PTG	Primitive Tribal Group
RAS	Re-circulating Aquaculture System
RLEP	Rural Landless Employment Programme
RW/S	Rural Workers
SC	Scheduled Caste
SEA	Self Employed in Agriculture
SENA	Self Employed in Non Agriculture
SEWA	Self Employed Women's Association
SGRY	Sampoorna Grameen Rojgar Yojana
SGSY	Swarna Jayanti Swarozgar Yojana
SHG	Self Help Group
SPWD	Society for Promotion of Wasteland Development
SRI	System of Rice Intensification
ST	Scheduled Tribe
TDCC	Tribal Development Co-operative Corporation
TERCOMs	Tracking Entitlements for Rural Communities

TK	Traditional Knowledge
TPDS	Targeted Public Distribution System
TS	Technical Sanctions
TST	Technical Support Team
UNCLOS	United Nations Convention on the Law of the Sea
USDA	United States Department of Agriculture
UVI	University of the Virgin Islands
VA	Village Authority
VDA	Village Development Authority
VFC	Village Forest Protection Committee
VHC	Village Health Committee
WCED	World Commission on Environment and Development
WDC	Watershed Development Committee
WRD	Water Resource Development
WTO	World Trade Organization
XISS	Xavier Institute of Social Service

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Introduction

Himadri Sinha, Anant Kumar and Rohit V. Kumar

The commons are closely integrated to the social, economic and cultural identity of the communities which depend on them. Communities access to and control over the commons are defined by the social and political relations within state and its legal framework. Yet communities' access to and control over commons has been adversely affected by the absence of enabling policy, legal and institutional frameworks since colonial times particularly in Asia and Africa. These have not only impacted upon the management of the commons, but have also engendered conflict within and between resource dependent communities and threaten their livelihood. Imposed policy and legislative frameworks have largely muffled the existing customary laws and institutions that traditionally mediated access to these resources as well as hindered the evolution and development of the new self governed local institutions.

The year 2011 ushered some definitive turning points worldwide. Asia and Africa witnessed the shift in political and economic powers. Mass movement dethroned some great power mongers who ruled their nations for past few decades. It was a year when the conventional economic paradigm recognized the increasing scarcity of natural resources. It was a year when peoples' rights to their resources were recognised.

The notable victories of people's struggle for rights over resources during past two years have instilled much optimism in people's mind. However, it's still uncertain whether the emerging world order will recognise and respect community's rights over resources and supports the sustainable use of the same? At the global level, will there be a turn towards more inclusive governance? Or will we continue to witness the domination of similar breed of power mongers and resources grabbers by another name over local people and wasteful use of natural resources by different masters? Much hinges on whether (a) the rights of rural and forest-dwelling people and other users of natural resources in the developing world will now be respected and (b) they are able to organize and manage the natural resources that are critical for the survival and prosperity of humanity.

Rio +20 began with much hope but ended as inconclusive. In fact here we have witnessed the attempt to grab the last commons in the name of the Green Economy. Green Economy is nothing but a greed economy. In this age of privatisation, recovery of the commons both in imagination and action has become an imperative for both survival

and freedom of people. Local actors, the forest communities of the world have been leading by example and ensuring forest and climate protection for the benefit of the entire world. However, year 2012 gone by without resolving important issues related to land rights, human rights and fate of commons.

This book on '**Governance of Commons and Livelihood Security**' attempts to look towards (a) better conceptualisation of harmonic cohabitation of resource conservation and livelihood generation and (b) evidences of sustainable reconciliation between governance of commons, conservation of resources and livelihood security of actors. The book has five sections with a specific emphasis. Emphasis of the first section is 'governance of commons'. Likewise, the focus of the second section is 'commons and livelihood' and third section is 'effect of climate change on commons'. Sections four and five accentuate respectively on 'poverty, social exclusion and commons' and 'stories of commons'.

Governance of Commons

This section deals with the necessity governance of commons for ecological survival and decentralized democratic freedom through multilevel governing and administrative adjustment. This section also focuses on international laws existing for recognition and protection of commons. The section has four chapters.

In the chapter one, Vandana Shiva argues that the commons are vital to ecological survival as well as to decentralized democracy and freedom. She stressed that when seeds are privatized through patents, farmers lose their rights, and at times commit suicides. Societies lose their seed, food and knowledge sovereignty; when water is privatized, rivers stop flowing free and providing water to all; when land is grabbed, as we witnessed in tribal areas and in India's villages, the state becomes a police state, governing through violence and force. Therefore, she called for mass campaign and action for conservation of commons to secure our democratic rights and ecological survival.

Koen De Feyter debates at length on 'Commons in International Law' in chapter two. Koen points out that international law has long recognized the existence of common areas beyond the national jurisdiction of States. International regimes have been established for such areas that vary from free use to bans on commercial exploitation. In addition, international treaties increasingly recognize issues as 'of common concern to humanity'. Such treaties set up forms of custodial sovereignty, combined with a role of the international community to

both monitor and assist. There is increasing recognition that the safeguarding of common interests requires the cooperation of non-State actors, but normative progress is slow.

In the third chapter, Himadri Sinha explains multi-level adjustment in common's governance. Biodiversity conservation essentially requires community involvement. However, community-based conservation is not just about communities. It is about governance that starts from the ground up and involves multi-level interactions. Complexities of this multi-level governance create problems but also provide opportunities to combine conservation with development. Multi-level governance may facilitate learning and adaptation in complex social-ecological circumstances. Such arrangements should connect community-based management with regional/national government-level management, link scientific management and traditional management systems, encourage the sharing of knowledge and information, and promote collaboration and dialogue around management goals and outcomes. Governance innovations of this type can thus build capacity to adapt to change and manage for resilience. In India, the criticality of commons with respect to social, ecological and economic perspectives is immense. Currently, the challenges for the local institutions are numerous emanating from the rapid globalization and industrialization process with constant flow of information, money, objects, ideologies and exogenous technologies. In subsistence agrarian economy where people largely depend on agriculture and forests for their livelihood requirements and a trend of transition setting in, the problem is all the more critical. Hence, it is critical for the institutions to be resilient to the increased externalities and complexities arising from the forces of globalize economy.

The fourth chapter, 'Negotiated Domains: Evolving Boundaries, Communities and Policy Spaces' by Subrat Singh, deals with the imperatives of social ecological interaction seen through common pool resource's lens. It specifically looks at the process and factors that characterize the dynamics of the above interactions, with particular reference to the changing status and governance of CPRs at the landscape level. The sociological interactions have been developed over the years based on the communities' historical understanding of the larger landscapes, resource availability and dependence on the resources for sustenance. The communities adapt to their needs and create a variety of operational boundaries and property regimes through negotiations across habitations based on access to resources and the availability of certain specific resources but are rarely based on the artificially created administrative boundaries. This chapter attempted to discuss a framework of "negotiated domains" to explain the

existence of informal boundaries across property regimes and mutually accepted rules that have developed through historical negotiations between communities across generations. Neither it is easy to explain the wide range of ecosystem interactions in terms of property theory nor is it possible to legalize the multiple boundaries, as an enforceable claim to the benefits. However, it is essential for such informal spaces to be acknowledged and supported by society through law, custom or convention. The sustainability of the resource depends on the socially constructed norms, rules and entitlement regimes that define the access to the resources and not only property rights that provides enforceable claim to use of or benefit from the resource.

Commons and Livelihood

The second section of the book discusses the commons and livelihood interdependence. It has four chapters. In chapter five, Himadri Sinha writes about 'Commons and livelihood trade-off: Case of NTFP in India'. The chapter gives a brief account of present problems of NTFP collection and marketing; develops a conceptual framework for indicating the trade-off between privatized NTFP production and processing system and collective work domain of the producers; analyzes the type of association required among NTFP collectors, forest department and NTFP purchasers for better incentive mechanism; explores the type of investment required for training, organizational capacity building and conflict resolution to create such institutions and associations; and recommends policy amendments required for the community oriented livelihood management in India.

In chapter six, G. S. Geetha et al. focus on 'Women, sericulture and livelihood: Case of sericulture in Karnataka'. They examine the impact of livelihood oriented sericultural service provision for small and medium holding farmers, gender relationships and socio economic empowerment of women. Women have gained many entitlements including asset possession, work participation, decision-making, access to resources such as credit, land and market, and participation in local civic bodies. While the growth in the production of silk has contributed towards more sustainable livelihoods, it has not translated into women's empowerment. Though the conditions of life and work available to women in sericulture are better as compared to women in many other work groups, it is seen that they are not able to completely break away gender barriers and lead a empowered life due to prevailing socio economic barriers including traditions, customs and patriarchy.

Soumen Roy analyses the 'Livelihood strategies for fishermen of Chilika' in chapter seven. The chapter sets off with the objective to describe the dynamics of livelihood, poverty and vulnerability of fishermen of Chilika lake of Odisha in eastern India and the factors that triggered social movement by the fishermen in the area from time to time. The study supports the argument that increasing mechanization and modern fishing technology have confounded the traditional fisher folk with several problems, socio-political, economic and environmental issues. Issues such as natural disasters and marginalization of farmers change in governance policy like leasing of fishing grounds, and the state versus the community management have been analyzed at micro context for macro strategy.

In Chapter eight, Padam Nepal and Lalit P. Tirkey describe the 'Livelihood insecurity of North Bengal tea workers: Contours, complexities, challenges, and opportunities. The chapter discusses the livelihood insecurity of tea garden workers in North Bengal region of West Bengal in the light of the impact of globalisation and the consequent neo-liberal policies of the Indian state. The study purports to scale the existing pattern of livelihood patterns, identify the factors accounting for livelihood insecurities, locate the consequences of depletion of livelihood resources and opportunities, and explore possible livelihood diversification options for securing sustainable livelihood opportunities for plantation workers. The study adopts a 'mixed' methodology of qualitative and quantitative. The study reveals that the plantation community in the region is exposed to livelihood insecurity owing to a complex interplay of multiplicity of factors. Yet, it establishes that the politics of exclusion and the continued significance of access to land impact livelihoods, including food security of the tea workers, through multiple pathways, often resulting in escalation of tensions and political struggles, jeopardizing peace and security, which necessitates immediate state intervention.

Effect of Climate Change on Commons

The section three includes four chapters on the issue of 'Effect of climate change on commons'. Climate change has significantly affected the commons. Crop failure due to climatic hazards has increased the pressure on commons. Survival needs has been causing the erosion of commons through encroachment. Likewise climatic hazards has also caused destruction of community habitation, inundation of agricultural land and left them homeless, jobless as environmental refugees. In chapter nine, Y. Dayakar narrates 'Commons, climate change and environmental refugees'. The implications of climate change are manifold and the greatest casualties of climate change are food, water

security and human health. Vast population depends on climate sensitive sectors like agriculture and forestry for livelihood. By adversely affecting fresh water availability and its quality, bio-diversity leading to deforestation and desertification, climate change tends to disproportionately impact the poorest in the society exacerbating inequalities in access to food, water and health. As a result many millions of persons have become involuntarily displaced from their habitual areas of residence. The problem of displaced persons (refugees) is becoming ever-more closely associated with environmental degradation. The number of such displaced persons keeps increasing by three millions a year. In the long run, the poignant dilemma of the ever increasing numbers of refugees can be addressed only in terms of achieving environmental security within a framework of comprehensive human security. Climate change, therefore, is intrinsically linked to the environmental issues and to the challenges to sustainable development.

Chapter ten is on 'Sustainable resource conservation and livelihood security: A case of aquaponics and spirulina' is written by Subhrankar Mukherjee and Indrajit Banerjee. Aquaponics is the combination of aquaculture and hydroponics, where the nutrient-rich water from raising fish provides nutrition for the growing plants in a closed-loop, re-circulating system. This creates a sustainable ecosystem and source of sustainable livelihoods. Spirulina is a low-fat, low-calorie, cholesterol-free source of easily-digestible vegetable protein containing all the essential amino acids that the body needs to synthesize the non-essential amino acids. The aquaponics and spirulina unit can be a village commons where (a) fish and vegetables can be grown using nominally 10% of land and water resources required to produce equivalent quantities of fish and vegetables, using conventional methods. Such units can provide nutritional security, especially for children; and sustainable livelihoods, especially for women. In chapter eleven, Pratap Chandra Behera writes about 'Social ecological aspects of the village tanks: Perspectives from central Odisha'. Common pool resources demonstrate a dialectic relationship between nature and society. Governance of these resources in different ecological settings continues to engage the researchers. Tanks are traditional rain water harvesting systems and considered local commons. These are found in good numbers in Odisha, though a lesser extent as compared to southern Indian states. Their contribution in a rain-fed rice growing area in a subsistent economy seems to be significant. The research adopted an explorative-cum-descriptive research design following an ethnographic approach and configured tanks and their functions from the perspectives of social ecology, indigenous knowledge and commons in central part of Odisha. The

study shows that the social variables do have a direct bearing on the ecological variables in managing the tanks. Political economy, more specifically, political ecology explains the status of natural resources on which local communities depend in an area.

Pran Ranjan in chapter twelve describes the 'Restoration of eco fragile zone by offsetting anthropogenic activities: A case study of Bokaro river basin'. This chapter is an encrypt of the intervention made under 'biodiversity conservation through community based natural resource management in Bokaro river basin' in Jharkhand state. The Bokaro river sub-basin is part of the Upper-Damodar river basin. The Bokaro river meets Konar river one of the major tributaries of Damodar, and at their confluence at Kathara is located the Bokaro thermal power station (one of the oldest thermal power station of India). The river catchment has several coal fields, coal washeries and coal loading points dotting the landscape. The open cast mines covering most of the area has disturbed the ecosystem, changed the flow regime, led to immigration and change in land use and has had a detrimental effect on biodiversity. The project has been an effort to map out the matrix of factors affecting resource degradation and to take steps to restore bio-diversity and livelihoods through community effort. The project was implemented in 11 villages of Bokaro river basin and the villages were selected from upstream, mid stream and downstream areas of Bokaro basin overlapping with coal mining regions. The paper specifically deals with the major challenges in the basin for different stakeholders, linkages between biodiversity and different kind of livelihoods, the efforts made to capacitate and generate interest within the community for understanding biodiversity vis-à-vis livelihood and to work accordingly for eco-restoration. It also captures the efforts for facilitating habitats (aquatic and terrestrial), rejuvenating soils (agricultural and forest) for sustainable livelihood and community institutions for conservation and management.

Social Exclusion, Poverty and Commons

Poverty and social exclusion have been two major issues inextricably linked with Asian and African commons. Abject poverty compels community to depend on commons beyond its carrying capacity. Socio-politico power struggles continue to exclude commoners from commons and commons are then grabbed by rich and powerful. The section four of the book deals with 'Poverty, Social Exclusion and Commons'. The chapter thirteen is written by P. C. Deogharia on Human poverty and social exclusion. He argues for three fold actions against social exclusions, (a) Legal safeguards against discrimination faced by certain social groups, (b) Equal opportunities for

excluded social groups in forms of reservation for discriminated groups and (c) Participation of discriminated groups in all forms of governance. He further argues that poverty mainly include lack of access to income and lack of access to employment. Lack of education, skill and poor health status restrict poor from participation in development process, so the poor face the problem of exclusion induced poverty.

Fr. Stan Swamy discusses the 'Fate of commons, commoners and displaced: Why do people resist displacement?' in chapter fourteen. In chapter fifteen Subash Ghimire et al. write on 'Socio-economic heterogeneity and inequality in benefit distribution from community forest in Chitwan district of Nepal. Community forest (CF) is considered as a successful programme for poverty reduction and local community development in Nepal. It aims to reduce poverty by ensuring people's active participation in forest management and channeling the benefits to poor and disadvantaged groups. Therefore, forest benefit sharing is being highly considered as an emerging issue throughout the country. This study tries to explore the role of CF to support the household income of different socio-economic classes of users as well as the level of inequality in benefit distribution from CF. The finding indicates that poor household currently benefited less from the CF and income from CF was more equally distributed than other sources of households income. Though income from CF is helping in reducing the unequal total income of the sampled households, there is presence of inequality in benefit distribution from CF itself. Formulation and implication of the policy which ensures the participation and channelizing the benefit from CF to deprived and needy group is expected to have high significance in this situation. Sujit Kumar Paul, in chapter sixteen discusses on 'Decentralized planning: Experience of West Bengal panchayats'. It has sometimes been considered as a change in the organisational framework in which political, social and economic decisions are made implemented. The term decentralization has also been understood as a mechanism to transfer responsibility and authority. In recent years, decentralization has received singular attention all over the world. It has been considered as one of the most important elements in development strategy. It is a global and regional phenomenon, and most countries have attempted to implement it as a tool for development, as a political philosophy, and as a mechanism for sharing responsibility at different levels. Since 1980s, developing countries have increasingly adopted decentralized form of governance. Decentralization means the transfer of authority and responsibility from central to intermediate and local governments. Although the democratic decentralization in terms of Panchayati Raj Institutions was a post-independence phenomenon, there has been a legacy and tradition of village panchayats since time

immemorial in India. The 73rd Amendment Act has made panchayats an institution of self-government. As per the constitution, panchayats shall prepare plan for economic development and social justice at their level. The district planning committee shall integrate the plan so prepared with the plans prepared by the local bodies at district level. The success and failure of the panchayats would depend on planning and implementation. It also depends on maximum people's participation at every stage of planning process, from proposal to implementation. People's participation in local level development has been exercised through the formulation of the panchayat level development plan, project coordination at intermediate and district levels of the panchayats. The Panchayati Raj Institutions (PRIs) in West Bengal are very strong bodies, which function as real institutions of self-governance. In West Bengal, the planning process of grass root level has some stages from proposal to implementation. In the present study, attempts have been made to discuss the methodology of decentralized district planning and its status of West Bengal. This chapter also examines the real issues involved in the decentralized planning of West Bengal. District Birbhum of West Bengal has been considered for this study. Successful planning and implementation of development programmes require adequate funds, appropriate policy framework and effective delivery mechanism. After 73rd and 74th Amendment, the Government is trying to bring change in planning and implementation process by adopting bottom up approach. It is found from the study that due to financial limitation, low people's participation and local political influence in administration hinders the way of success. Presently, decentralization is a bottom up approach but till now the implementation process is top down. So, most of the time the plans prepared by the villagers are not implemented properly at grass root level.

Chapter seventeen was written by Edakkandi Meethal Reji. Given the context of failure of many of the government social safety net programmes such as targeted public distribution system, and other programmes for providing food security for the tribal communities, this chapter deals with the question, can grass root level experiments like community grain banks provide food security for tribal communities? In order to answer the above question, this paper examines the functioning of village level community grain banks facilitated by Bapuji Rural Enlightenment and Development Society (BREDS), a Non-Governmental Organisation based in Srikakulam district of Andhra Pradesh in India. This chapter describes the issues in food security and a review of various government and NGO initiatives in food security for the poor. This is followed by the description of the experience of the BREDS in organising community food grain banks

and key learning. The paper concludes that community food grain banks facilitated by BREDS demonstrate as an effective mechanism to ensure food security for the tribal poor, especially for those who were excluded from the reach of government programmes.

Stories of Commons

Section five includes few interesting success stories of commons. In Chapter eighteen, Anant Kumar et al. presented a very interesting case of village health worker as a common resource. Medical and Health Commons (MHC) are any sets of resources and institutions including the individuals that a community recognizes as being accessible to all members of that community in improving their health and wellbeing. Although commons literature recognizes medical and health commons as an emerging commons, individuals as medical and health common existed in all societies and culture from centuries in different forms and names. The nature and structure of these commons may differ; they have strong influence on community in improving their life. This paper shows and discusses the Accredited Social Health Activists (ASHAs) under National Rural Health Mission programme as a new emerging medical and health commons in rural India, its strength, and future prospects. The findings show that although the Sahiyas are emerging as a new medical and health commons, there are also threats considering the entrusted social and community responsibility, absence of institutional history, and a new identity. Nevertheless, in conclusion, they advocate that Sahiyas as medical and health commons are giving an opportunity and space to people to meet, learn about health issues, and gain the skills for a healthy living to promote health and prevent illness.

Chapter nineteen includes the case of 'Hope against hopelessness: Story of successful communities in managing commons in Odisha' is written by Sisir K. Pradan. Commons have been extremely critical to provide spaces for the poor for meeting their long term needs and ensuring participation in the democratic decision making process. It has helped to shape community culture and offered platforms for fulfillment of psycho-sociological needs of the member community. The seminal work of Elinor Ostrom on governing commons and subsequent writings by different scholars have established the criticality of commons both for healthy system function and direct livelihoods provisions. The transitional economic setting and competing stakes over commons emanating from macro-economic phenomenon has posed serious threats to resources as well as the institutions of resource communities. Author argues that the failure of economic policy can be attributed to lack of appreciation of engaging

with communities on institutional issues that would not only ensure democratic behaviour, social justice, but also appreciate the complex interaction between human and natural systems. Commons depend more on local knowledge of the environment, respect for nature or indigenous technologies. The extent to which sanctions against environmental degradation are observed depends greatly on the extent to which members of a community rely on common for their long-term livelihoods and thus have a direct interest in protecting it. Along with economy incentive communities manage commons to confirm their psycho-sociological needs and behaviours. In this paper an attempt has been made to crystallize learning from various community actions on commons protection and management and identify few key economic and psycho-sociological drivers for sustaining their efforts.

In Chapter twenty, Janmejy Mishra presents the interesting case of MGNREGS and common property resource management: AKRSP(I)'S intervention in south-western Madhya Pradesh. The chapter explores the Aga Khan Rural Support Programme (India)'s strategies and interventions on common property resource management (CPRM) to sustain the livelihoods of tribal communities through the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in the Nimar region of Madhya Pradesh. It argues that implementation of MGNREGS with primary focus on restoration of common property resources (CPRs) through soil and water conservation activities, construction of water harvesting and irrigation structures, and plantation activities in the wastelands under watershed development intervention at village level has enabled the tribal communities of Korku, Bhil, Bhilala and Barela to enhance their livelihoods in Khandwa, Khargone, Barwani and Burhanpur districts of Madhya Pradesh. Peoples' participation in prioritizing their problems, identifying local solutions and role of community based organizations (CBOs) including the PRIs in planning, implementation and monitoring of the scheme are the major strategies that AKRSP(I) has facilitated for restoration of degraded hills, revival of annual streams, other water bodies and conversion of wastelands into productive lands which have helped the tribal households to improve their quality of life through substantial increase in households income, enhanced agriculture productivity, improved food security, reduced distress migration and improved local governance system.

Finally in chapter twenty one, Franky Varah writes about 'Indigenous knowledge and belief based forest management: Emerging challenges and opportunities. Ukhrul is a mountainous region with a rich biodiversity. Tangkhul Naga community has conserved this

biodiversity through their traditional knowledge system. However, the advent of scientific knowledge system of managing biodiversity has challenged the indigenous knowledge system of forest management and conservation. Modern system of management through its institutional structures and new values undermines the traditional management and attempts to defunct the traditional system. This chapter discusses the role of Tangkhul indigenous knowledge system in managing forest as an integral part of the people's life in Ukhrul district of Manipur. It highlights the dilemmas and difficult situations faced by Tangkhuls in relation to conservation of nature and forest biodiversity within a contested environment created by processes of economic development and social change. It also attempts to identify the possibilities of better management strategies incorporating both the indigenous and modern knowledge.

Looking Beyond

This book has dealt with diverse issues of commons and livelihood. The book has many case studies from the field where authors have tried to see the complexities of governance of commons and appreciated the fact that no single blue print can work in all commons. The pragmatic approach would be appreciating the need for ecological diversity, democratic decentralization and viable movements against privatization. We hope the book will help the academicians and practitioners to work more comprehensible to stabilize people's livelihood with effective governance of commons. We also expect that readers will appreciate the fact commons are complex and any idea of working with simplified model will go against the survival of commons.

SECTION - I

GOVERNANCE OF COMMONS

1

DEMOCRACY OF COMMONS: BIODIVERSITY, WATER AND AIR

Vandana Shiva

Commons: The Ground of Democracy

The very notion of the commons implies a resource that is commonly owned, managed, and used by the community. A commons embodies social relations based on interdependence and cooperation. There are clear rules, and principles and systems of decision-making. Decisions about what crops to sow, how many cattle will graze, which trees will be cut, which streams will irrigate which field at what time, are made jointly and democratically by the members of the community. This democratic form of governance makes a commons a commons. This was as true of England in the late eighteenth century as it is of regions where community control of the commons is still the method of governance and ownership.

Most sustainable cultures, in all their diversity, view the earth as *terra mater* (mother earth). They gratefully receive nature's gifts and return the debt through ecologically sustainable lifestyles and earth-centered cosmologies. The colonial construct of the passivity of the earth and the consequent creation of the colonial category of land as *terra nullius* (empty land), served two purposes: it denied the existence and prior rights of original inhabitants and it obscured the regenerative capacity and processes of the earth. It therefore allowed the emergence of private property from enclosures, and allowed non-sustainable use of resources to be considered as "development" and "progress". For the privateer and the colonizer, enclosure was improvement.

In Australia, the colonizers justified the total appropriation of land and its natural resources by declaring the entire continent of Australia to be *terra nullius*-uninhabited. This declaration established a simple path to privatizing the commons, because as far as the colonizers were concerned, there were no commons. The decimation of indigenous peoples everywhere was justified morally on the grounds that they were not really human; and that they were part of the fauna. As Pilger has observed, the '*Encyclopedia Britannica*' appeared to be in no doubt about this in the context of Australia: "*Man in Australia is an animal of prey. More ferocious than the lynx, the leopard, or the hyena, he devours his own people*". In another Australian textbook,

'Triumph in the Tropics', Australian aborigines was equated with their half wild dogs. Being animals, the original Australians and Americans, the Africans and Asians possessed no rights as human beings. Their lands could be usurped as terra nullius - lands empty of people, 'vacant', 'waste', and 'unused'. The morality of the missions justified the military takeover of resources all over the world to serve imperial markets. European men were thus able to describe their invasions as 'discoveries', piracy and theft as 'trade', and extermination and enslavement as their 'civilizing mission'.

Similarly, in the American colonies the takeover of native resources was justified on the ground that indigenous people did not "improve" their land. As John Winthrop, first governor of the Massachusetts Bay Colony, wrote in 1669:

Natives in New England, they enclose no land, neither have they any settled habitation, nor any tame cattle to improve the land by soe have nor other but a Natural Right to those countries. Soe as if we leave them sufficient for their use, we may lawfully take the rest.

As I wrote in *Biopiracy*, the logic of empty lands is now being expanded to "empty life." Terra nullius is now used to appropriate biodiversity from the original owners and innovators by defining their seeds, medicinal plants, and medical knowledge as nature, and treating the tools of genetic engineering as the only path to "improvement." By disregarding non-market use, authorities free themselves to enclose rivers through India's River Linking Project and to enclose groundwater for bottled water and soft drinks by corporations like Coca-Cola and Pepsi.

The Enclosure of the Biological and Intellectual Commons

The "enclosure" of biodiversity and knowledge is the final step in a series of enclosures that began with the rise of colonialism. Land and forests were the first resources to be "enclosed" and converted from commons to commodities. Later water resources were "enclosed" through dams, groundwater mining and privatization schemes. Now it is the turn of biodiversity and knowledge to be "enclosed" through Intellectual Property Rights (IPR).

The destruction of commons was essential for the industrial revolution, to provide a supply of natural resources as raw material to industry. A life-support system can be shared; it cannot be owned as private property or exploited for private profit. The commons, therefore, had to be privatized, and people's sustenance base in these commons had to be appropriated, to feed the engine of industrial progress and capital accumulation.

The enclosure of the commons has been called the revolution of the rich against the poor. However, enclosures are not just a historical episode that occurred in sixteenth century in England. The enclosure of the commons can be a guiding metaphor for understanding conflicts being generated by the expansion of IPR systems to biodiversity.

The policy of deforestation and the enclosure of commons which started in England were later replicated in the colonies in India. The first *Indian Forest Act* was passed in 1865 by the Supreme Legislative Council, which authorized the government to declare forests and wastelands ('*benap*' or unmeasured lands) as reserved forests. The introduction of this legislation marks the beginning of what is called the 'scientific management' of forests; it amounted basically to the formalization of the erosion both of forests and of the rights of local people to forest produce. Though the forests were converted into state property, forest reservation was in fact an enclosure because it converted a common resource into a commercial one. The state merely mediated in the privatization.

In the colonial period peasants were forced to grow indigo instead of food, salt was taxed to provide revenues for the British military, and meanwhile, forests were being enclosed to transform them into state monopolies for commercial exploitation. In the rural areas, the effects on the peasants were the gradual erosion of usufruct *rights* (nistar rights) of access, of food, fuel, and livestock grazing from the community's common lands. The marginalization of peasant communities' rights over their forests, sacred groves and 'wastelands' has been the prime cause of their impoverishment.

Biodiversity has always been a local, commonly owned and utilized resource for indigenous communities. A resource is common property when social systems exist to use it on the principles of justice and sustainability. This involves a combination of rights and responsibilities among users, a combination of utilization and conservation, a sense of co-production with nature and sharing them among members of diverse communities. They do not view their heritage in terms of property at all, i.e. a good which has an owner and is used for the purpose of extracting economic benefits, but instead they view it in terms of possessing community and individual responsibility. For indigenous peoples, heritage is a bundle of relationships rather than a bundle of economic rights. That is the reason no concept of 'private property' exists among the communities for common resources.

Within indigenous communities, despite some innovations being first introduced by individuals, innovation is seen as social and collective phenomena and results of innovation are freely available to

anyone who wants to use them. Consequently, not only the biodiversity but its utilization has also been in the commons, being freely exchanged both within and between communities. Common resource knowledge based innovations have been passed on over centuries to new generations and adopted for newer uses, and these innovations have overtime been absorbed into the common pool of knowledge about the resource. This common pool of knowledge has contributed immeasurably to the vast agricultural and medicinal plant diversity that exists today. Thus, the concept of individual 'property' rights to either the resource or to knowledge remains alien to the local community. This undoubtedly exacerbates the usurpation of the knowledge of indigenous people with serious consequences for them and for biodiversity conservation.

Intellectual Property Rights to biodiversity result in the biopiracy of indigenous resources and knowledge. Biopiracy is the "enclosure" of centuries of collective, cumulative innovation. It is simultaneously an extinction of indigenous rights to biodiversity and knowledge as commons. Above all, it is the destruction of the freedom that is created by the commons.

Today we have to look beyond the state and the market place to protect people's rights and deepen democracy. Empowering the community with rights would enable the recovery of commons again. Commons are resources shaped, managed and utilized through community control. In the commons, no one can be excluded. The commons cannot be monopolized by the economically powerful citizen or corporation, or by the politically powerful state.

Commons and communities are beyond both the market and the state. They are governed by self-determined norms, and are self managed. In the "colonial" and "development" era, the commons were enclosed and community power was undermined by takeover by the state. Thus, water and forests were made state property, leading to the alienation of local communities, and the destruction of the resource base. Poverty, ecological destruction and social disintegration and political disempowerment have been the result of such state driven "enclosures".

In the globalization era, the commons are being enclosed and the power of communities is being undermined by a corporate enclosure in which life itself is being transformed in to the private property of corporations. The corporate enclosure is happening in two ways. Firstly, IPR systems are allowing the "enclosure" of biodiversity and knowledge, thus eroding the commons and the community. Secondly, the corporation is being treated as the only form of association with legal personality.

IPRs are the equivalent of the letter patent that the colonizers have used since 1492, when Columbus set precedence in treating the license to conquer non-European peoples as a natural right of European men. The land titles issued by the Pope through European kings and queens were the first patents. Charters and patents issued to merchant adventurers were authorizations to 'discover, find search out and view such remote heathen and barbarous lands, countries and territories not actually possessed of any Christian prince or people'. The colonizers freedom was built on the slavery and subjugation of the people with original rights to the land. This violent takeover was rendered 'natural' by defining the colonized people as nature slave, thus denying them their humanity and freedom.

Locke's treatise on property effectively legitimized this same process of theft and robbery during the enclosure movement in Europe. Locke, clearly articulates capitalism's freedom to build on the freedom to steal. He states that property is created by removing resources from nature through mixing with labour in its 'spiritual' form as manifested in the control of capital. According to Locke, only capital can add value to appropriated nature, and hence only those who own the capital have the natural right to own natural resources; a right that supersedes the common rights of other with prior claims. Capital is thus, defined as a source of freedom but this freedom is based on the denial of freedom to the land, forests, rivers and biodiversity that capital claims as its own. Because property obtained through privatization of commons is equated with freedom, those commoners laying claim to it are perceived to be depriving the owners of capital of freedom. Thus, peasants and tribals who demand the return of their rights and access to resources are regarded as thieves and saboteurs.

The takeover of territories and land in the past, and the takeover of biodiversity and indigenous knowledge now have been based on "emptying" land and biodiversity of all relationships to indigenous people.

Whether it's the gradual privatization and divisibility of community held rights or the declaration of terra nullius, the transformation of common property rights into private property rights, implies the exclusion of the right to survival for large sections of society. The realization is that under conditions of limited availability, uncontrolled exploitation of natural resources involves taking away resources from those who need them for survival, has been an underlying element of Indian philosophy. Prudent and restrained use of resources has been viewed as an essential element of social justice. According to an ancient Indian text, the Ishopanishad:

"A selfish man over utilizing the resources of nature to satisfy his own ever increasing needs is nothing but a thief, because using resources beyond one's needs would result in the utilization of resources over which others have a right."

This relationship between restraint in resource use and social justice was also the core element of Mahatma Gandhi's political philosophy. In his view:

"The earth provides enough for everyone's need, but not for everyone's greed."

The Eurocentric concept of property views only capital investment as investment, and hence treats returns on capital investment as the only right that needs protection. Non-western indigenous communities and cultures recognize that investment can also be of labour or of care and nurturance. Rights in such cultural systems protect investments beyond capital. They protect the culture of conservation and the culture of caring and sharing.

There are major differences between ownership of resources shaped in Europe during the enclosures movement and during colonial takeover, and 'ownership', as it has been practiced by tribals and farmers throughout history across diverse societies. The former is based on ownership as private property, based on concepts of returns on investment for profits. The latter is based on entitlements through usufruct rights, based on concepts of return on labour to provide for ourselves, our children, our families, our communities. Usufruct rights can be privately held or held in common. When held in common, they define common property.

Equity is built into usufruct rights since ownership is based on returns on labour. The poor have survived in India in spite of having no access to capital because they have had guaranteed access to the resource base needed for sustenance - common pastures, water, and biodiversity. Sustainability and justice is built into usufructuary rights since there are physical limits on how much one can labour and hence there are limits on returns on investment of labour and return on investment. Inequity is built into private property based on ownership of capital since there is no limit on how much capital one can own and control and invest. Today, the economy of financial capital has become a "virtual economy" - sixty times larger than the 'real' economy of goods and services produced in the world. US \$1 trillion moves around daily in the global economy, and this virtual economy grows exponentially, generating unprecedented inequality.

Because of the inherently inequitable nature of ownership through capital, 'ceilings' have been put on ownership through capital,

to ensure equity. Land reform laws such as 'land ceilings' are an instrument for limiting monopoly over resources. 'Land to the tiller' policies such as operation Barga¹ in West Bengal, are examples of re-introducing juridical concepts of ownership based on return on labour, rather than a return on capital. Not only are juridical systems based on usufruct more equitable, they are also more sustainable since usufruct ownership means resources are held in trust for future generations, so that the rights of future generations are not undermined for short term profits.

Water as Commons

Who does water belong to? Is it private property or a commons? What kind of rights do or should people have? What are the rights do or should people have? What are the rights of the state? What are the rights of corporations and commercial interests? Throughout history, societies have been plagued with these fundamental questions.

We are currently facing a global water crisis, which seems to get worse over the next few decades. And as the crisis deepens, new efforts to redefine water rights are under way. The globalized economy is shifting the definition of water from common property to private good, to be extracted and traded freely. The global economic order calls for the removal of all limits on and regulation of water use and the establishment of water markets. Proponents of free water trade view private property rights as the only alternative to state ownership and free markets as the only substitute to bureaucratic regulation of water resources.

More than any other resource, water needs to remain a common good and requires community management. In fact, in most societies, private ownership of water has been prohibited. Ancient texts such as the Institute of Justinian show that water and other natural sources are public goods. "By the law of nature these things are common to

¹ Operation Barga was a land reform movement throughout rural West Bengal for recording the names of sharecroppers (bargadars) while avoiding the time-consuming method of recording through the settlement machinery. It bestowed on the bargadars, the legal protection against eviction by the landlords, and entitled them to the due share of the produce. Operation Barga was launched in 1978 and concluded by the mid-1980s. Introduced in 1978, and given legal backing in 1979 and 1980, Operation Barga became a popular but controversial measure for land reforms. The ultimate aim of these land reforms was to facilitate the conversion of the state's bargadars into landowners, in line with the Directive Principles of State Policy of the Indian Constitution (Art. 34). To date, Op Barga has recorded the names of approximately 15 lakh (1.5 million) bargadars. Since then, it has been marked as one of the more successful land reforms programs in India.

mankind - the air, running water, the sea and consequently the shore of the sea. In countries like India, space, air, water and energy have traditionally been viewed as being outside the realm of property relations. In Islamic traditions, the Sharia, which originally connoted the "path to water", provides the ultimate basis for the right to water. Even the United States has had many advocates for water as a common good. "Water is a moving, wandering thing, and must of necessity continue to be common by the law of nature," wrote William Blackstone, "so that I can only have a temporary, transient, usufructuary property therein."

The emergence of modern water extraction technologies has increased the role of the state in water management. As new technologies displace self-management systems, people's democratic management structures deteriorate and their role in conservation shrinks. With globalization and privatization of water resources, new efforts to completely erode people's rights and replace collective ownership with corporate control are under way. Those communities of real people with real needs exist beyond the state and the market is often forgotten in the rush for privatization.

The current push to privatize common water sources had its foundation in cowboy economics. Champions of water privatization, such as Terry Anderson and Pamela Snyder of the conservative Cato Institute, not only acknowledge the link between current privatization efforts and cowboy water laws, but also look at the earlier western appropriation philosophy as a model for the future:

"From the western frontier, especially the mining camps, came the doctrine of prior appropriation and the foundation of water marketing. This system provided the essential ingredients for an efficient market in water wherein property rights were well defined, enforced and transferable."

The current push to reintroduce and globalize the lawlessness of the frontier is a recipe for destroying our scarce water resources and for excluding the poor from their water share. Parading as the anonymous market, the rich and powerful use the state to appropriate water from the nature and the people through the prior-appropriation doctrine. Private interest group systematically ignores the option of community control over water. Because water falls on earth in a dispersed manner, because every living being needs water, decentralized management and democratic ownership are the only efficient, sustainable, and equitable systems for the sustenance of all. Beyond the state and the market lies the power of community participation. Beyond bureaucracies and corporate power lies the promise of water democracy.

Climate Change and the Enclosure of the Atmospheric Commons

The pollution of the atmosphere is a form of "enclosure of the commons". The atmosphere has been privatized by the oil and coal companies, the automobile and power companies as a waste dump of their pollutants. On the one hand, the buildup of carbon dioxide from coal and oil has deprived other humans and other animals of their share of a clean, unpolluted, atmospheric commons. On the other hand, climate change triggered by accumulation of carbon dioxide in the atmosphere also affects the poor most, those who have made no contribution to the degradation of the atmosphere and the destruction of its capacity to recycle carbon.

The first privatization of the atmosphere is now being followed by a second privatization - this time as a "solution" to climate change. The second enclosure is carbon trading and emissions trading - the main outcomes of the Kyoto Protocol and the Stern report. Sir Nicholas Stern, who was earlier the World Bank's Chief Economist had stated, "the very basis of emissions trading is assigning property rights to emitters, and then allowing these to be traded". Larry Lohman, the author of "Carbon Trading" shows how market solutions to climate change, whether embodied in US pollution trading programs, the Kyoto Protocol and the EU Emissions Trading Scheme, give "property rights" to the atmosphere "to a selection of historical polluters - wealthy countries and companies - for free".

Indiana law professor Daniel Cole notes, "The allocation of marketable pollution permits constitutes a form of limited privatization as the government conveys to private parties limited entitlements to use the public atmosphere".

Price Water House Coopers, notorious for working with the World Bank to privatize Delhi's water (a move defeated by a massive mobilization of Citizens Against Privatization through the Water Democracy Movement) states that "trade in CO₂ emissions is equated with the transfer of similar rights such as copy rights, patents, licensing rights and commercial and industrial trademarks".

The Kyoto Protocol allows industrialized countries to trade their allocation of carbon emissions among themselves (Article 17). It also allows an investor in an industrialized country (industry or government) to invest in an eligible carbon mitigation project in a developing country and be credited with Certified Emission Reduction Units that can be used by investors to meet their obligation to reduce greenhouse gas emissions. This is referred to as the Clean

Development Mechanism under Article 12 of the Kyoto Protocol. The Kyoto Protocol gave 38 industrialized countries that were the worst historical polluters emissions rights. The European Union Emissions Trading Scheme rewarded 11,428 industrial installations with carbon dioxide emissions rights. Through Emissions trading, Larry Lohmann observes, "Rights to the earth's carbon cycling capacity are gravitating into the hands of those who have the most power to appropriate them and the most financial interest to do so". Such schemes are more about privatizing the atmosphere than preventing climate change is made clear by the fact that emission rights given away in the Kyoto Protocol were several times higher than the levels needed to prevent a 2 degree Celsius rise in global temperatures.

Just as patents generate super profits for pharmaceutical and seed corporations, emissions rights generate super profits for polluters. The Emissions Trading Scheme granted allowances of 10 percent more than 2005 emission levels; this translated to 150 million tons of surplus carbon credits, which with the 2005 average price of US \$7.23 per ton translates to over US \$1 billion of free money.

The UK allocations for the British industry added upto 736 million tons of carbon dioxide over three years, which implied no reduction commitments. Since no restrictions are being put on Northern industrial polluters, they will continue to pollute and there will be no reduction in CO2 emissions.

Market solutions in the form of emissions trading are thus doing the opposite of the environmental principle that the polluter should pay. Through emissions trading private polluters are getting more rights and more control over the atmosphere, which rightfully belongs to all life on the planet. Emissions trading "solutions" pay the polluter.

Earth Democracy and the Recovery of the Commons

Over the past thirty years, I have tried to define and defend the commons on which our life and democracy depends.

As earth citizens, we have a duty to protect the vital ecological resources and processes of this fragile planet. We also have equal rights to share the gifts nature gives for free - the air, water and biodiversity. That is why these must be held in common - through common responsibility and common rights. Democracy in the final analysis is an earth democracy and an earth democracy is rooted in the commons.

For me freedom and the commons are inseparable.

I have resisted the enclosure of the biodiversity and intellectual commons by starting the "seed satyagraha" - the no-cooperation with patent laws and the commitment to keep biodiversity, seed and traditional knowledge in the commons.

I have challenged biopiracy, the patenting of traditional knowledge. Navdanya started the campaign against biopiracy with the Neem Campaign in 1994 and mobilized 100000 signatures against neem patents and filed a legal opposition against the USDA² and WR³ Grace patent on the fungicidal properties of Neem (no. 436257 B1) in the European Patent Office at Munich, Germany. Along with Navdanya, the International Federation of Organic Agriculture Movements of Germany and Ms. Magda Alvoet, former Green Member of the European Parliament were party to the challenge. The patent on Neem was revoked in May 2000 and it was reconfirmed on 8th March, 2005 when the EPO⁴ revoked it in entirety as the controversial patent, and adjudged that there was "no inventive step" involved in the fungicide patent, thus confirming the 'prior art' of the use of Neem.

In 1998, Navdanya started a campaign against Basmati biopiracy (Patent No. 5663484) of a US company RiceTec. On August 14th, 2001 Navdanya achieved another victory against biopiracy and patent on life when the United States Patent and Trademark Office revoked a large section of the patent on Indian Basmati rice by the US corporation RiceTec Inc. These included -

- a. The generic title of the RiceTec Patent No. 5663484, which earlier referred to Basmati rice lines,
- b. The sweeping and false claims of RiceTec having 'invented' traits of rice seeds and plants including plant height, grain length, aroma which are characteristics found in our traditional Basmati varieties, and
- c. Claims to general methods of breeding which was also piracy of traditional breeding done by farmers and our scientists.

The next major victory against biopiracy for Navdanya came in October 2004 when the European Patent Office in Munich revoked Monsanto's patent on the Indian variety of wheat 'Nap Hal'. This was the third consecutive victory on the IPR front after Neem and Basmati. This was made possible under the campaign against Patent and Life as well as against Biopiracy respectively. Monsanto, the biggest seed corporation, was assigned a patent (EP 0445929 B1) on wheat on

² USDA - United States Department of Agriculture

³ WR - W.R.Grace Co

⁴ EPO - European Patent Office

21 May 2003 by the European Patent Office in Munich under the simple title 'plants'. On January 27, 2004, we along with Greenpeace and Bharat Krishak Samaj filed a petition at the European Patent Office, Munich challenging the patent rights given to Monsanto on Indian Landrace of wheat, Nap Hal. The patent was revoked in October 2004 and it once again established the fact that the patents on biodiversity, indigenous knowledge and resources are based on biopiracy and there is an urgent need to ban all patents on life and living organisms including biodiversity, genes and cell lines.

We are now building a movement to challenge the biopiracy of climate resilience and keep our defense against climate change as a commons.

Through the citizens campaign for water democracy, we stopped the privatization of Delhi's water. And in solidarity with women like Mylamma, we stopped Coca Cola's piracy of the water commons in Plachimada, Kerala. Privatisation of the commons erodes both democracy and our future.

**Recovery of the commons is vital to our freedom and survival.
Recovery of the commons is the building of Earth Democracy.**

2

THE COMMONS IN INTERNATIONAL LAW

Koen De Feyter

Introduction

Increased cross border activity heightens awareness within societies and at the governmental level that there are global issues that arise at the level of the entire world, and that threaten the stability of the global system. International organizations, such as the United Nations, have pushed hard to convince States and non-State actors that in order to protect their interests, global coordinated action is a necessity.

In theory, these global common concerns could be effectively addressed by supranational institutions with coercive powers and powers to redistribute more equitably¹. In reality, the principle of the sovereign equality of States remains a cornerstone of international law. State sovereignty implies that while States are fully capable to commit to international obligations across the whole field of international relations, they are not under an obligation to do so. As the Permanent Court of International Justice held:

International law governs relations between independent States. The rules of law binding upon States therefore emanate from their own free will as expressed in conventions or by usages generally accepted as expressing principles of law and established in order to regulate the relations between these co-existing independent communities or with a view to the achievement of common aims. Restrictions upon the independence of States cannot therefore be presumed².

In a system that divides sovereignty on the basis of territory, a government is responsible for and accountable to the population on that territory. Inevitably, the decision on whether to commit to international obligations 'with a view to the achievement of common aims' is determined primarily by the government's assessment of whether such a commitment serves the interest of its own population.

In addition, international law remains strongly focused on States as the primary subjects of international law, possessing the totality of rights and duties recognized by this system of law. Inter-governmental organizations enjoy more limited rights and duties³. The mainstream view is that multinational corporations and

non-governmental organizations do not enjoy international legal personality at all, and that their conduct needs to be regulated at the domestic level. The situation is problematic, since non-State actors acting across borders increasingly impact on issues of global concern, and may be able to escape the reach of domestic law, given its territorial nature. As explained above, there is a growing awareness that addressing global concerns requires the cooperation of the international community as a whole. In this approach, the international community encompasses not only all States, but also non-State actors that have an impact on the achievement of the common aim. States and non-State actors are perceived of as a community that strives after the realization of common aims that go beyond the minimum consensus that can be achieved through the 'accidental' *ad hoc* convergence of national interests of States.

Traditional international law as described above thus appears ill-equipped to deal with global common interests. In the different fields of international law that are relevant to the realization of common aims, and notwithstanding the limitations of this system of law identified above, legal developments have taken place that attempt to respond to the identification of global concerns. Several treaties have been drafted that use the language of 'common heritage of mankind' or 'common concern of humanity' and attempt to draw the consequences by setting up a system of shared responsibilities. Soft law efforts focus on carving out a responsibility or accountability for non-State actors in this regard, but there are also interesting examples of binding multi-stakeholder agreements that are brought under the realm of international law. Some progress has been made in defining extra-territorial obligations of States and duties of cooperation. The UN Security Council has referred situations to the International Criminal Court without the consent of the State where these situations occurred.

1. Common Heritage: Areas Beyond National Jurisdiction

In a system based on territorial sovereignty, the legal techniques developed to deal with areas beyond national jurisdiction are of special interest from a common interest perspective. These spatial areas include Antarctica and outer space, and also - in the UN Convention on the Law of the Sea (10th December 1982)⁴ - the high seas and the areas (i.e. the seabed and ocean floor and its subsoil that is not part of the continental shelf of any State). All these common areas lie outside State boundaries and cannot be appropriated by States, and therefore require international regulation. International regulation can, however, come in various shapes and sizes. Policy decisions determine

the aims of such regulation (ranging on a scale from allowing free use of the areas to all to prohibition of access), and the nature of the international regime that can be either fragmented (i.e. consist of a jigsaw of domestic, regional and international rules) or comprehensive (establishing one international regime without referral to other levels of regulation).

The two contrasting regimes in the UN Convention on the Law of the Sea offer a case in point. The high seas regime combines non-appropriation by States with free use - even if the exercise of these freedoms is subject to a number of conditions, including that the high seas are reserved for peaceful purposes. The high seas are 'open to all States', for the purposes of navigation and fishing. Every state has the right to sail ships flying its flag on the high seas, and those ships are generally subject only to the jurisdiction of the state whose flag they fly (resulting in the applicability of a plethora of domestic legal rules that incorporate international or regional law to varying degrees - hence the problem of flags of convenience). States also have the right for their nationals to engage in fishing.

The Area and its resources however are 'the common heritage of mankind'. All rights in the resources of the Area are vested in mankind as a whole, and mining activities are to be carried out for the benefit of mankind as a whole, taking into account in particular the needs of developing countries. The International Seabed Authority is the organization through which State parties to the Convention organize and control activities in the Area, specifically with regard to the prospecting, exploration and exploitation of marine minerals. The use of the Area is also exclusively for peaceful purposes.

The starting point of the two regimes is fundamentally different: the high seas regime combines non-appropriation by States with multiple flag state jurisdictions and the protection of private interests, while exploitation of resources in the Area is governed by an international body for the benefit of mankind, including an element of positive discrimination in favor of the developing countries. Due to subsequent developments, the distinction between both regimes is less clear cut⁵.

Even on the high seas, States have a duty to cooperate with each other to preserve their common interest in the conservation and management of living resources by agreeing the allowable catch, which may 'as appropriate' require the establishment of sub-regional or regional fisheries organizations. In fact, high seas resources are managed mainly through regional fishery organizations. The UNCLOS^a Convention was later supplemented with the UN Fish Stocks Agreement (4th December 1995)^b and with the FAO Compliance

Agreement⁶. Both instruments call for more effective enforcement by flag states, port states and coastal states of the conservation and management measures adopted for such stocks. As in other treaties dealing with conservation, the UN Fish Stock Agreement recognizes the special requirements of developing States, and provides measures of assistance. The 1995 FAO Code of Conduct for Responsible Fisheries⁷ was adopted by the FAO Conference, and is a voluntary instrument. The Code addresses States but also non-State actors such as 'fishing entities, sub-regional, regional and global organizations, whether governmental or non-governmental, and all persons concerned with the conservation of fishery resources and management and development of fisheries'⁸.

Nothing in these rules prevents fishing for private gain and in practice most of the fishing on the high seas is by private actors, not by States. The role of States is mainly to ensure that their nationals can fish on the high seas, but do so in a responsible way. In the UNCLOS Convention minerals recovered from the Area are, however, 'not subject to alienation'⁹. Ownership of these resources is vested in mankind. The Authority holds the monopoly over activities in the area, and is obliged to ensure equitable benefit-sharing derived from these activities.

Developed States opposed the Area regime, and in order to pacify their concerns and ensure global ratification of the UNCLOS treaty, a 1994 Agreement¹⁰ was adopted by the UN General Assembly that was to be interpreted and applied as a single instrument with the relevant part IX of UNCLOS, but that prevailed over UNCLOS in case of inconsistencies between both texts. Although the common heritage of mankind principle remains applicable to the Area, the 1994 Agreement provided that the Enterprise, the organ of the Authority empowered to engage in mining operations, should do so through joint ventures with contractors 'in accord with sound commercial principles'¹¹. The decision-making system applicable to the Authority was also amended. The International Seabed Authority has concluded contracts with eight contractors for the exploration (not exploitation) of Polymetallic Nodules in the Area. The contractors include State institutions, State enterprises and a private company. The large majority of contractors are from industrialized countries, but also from China and India.

In an article on outer space exploration and exploitation, Oduntan, drawing lessons from developments in the law of the sea and relating to Antarctica expresses concerns often voiced in the Global South¹². Future outer space exploitation, he argues, should not benefit only a few States and companies domiciled in those

States. Commercial exploitation should not take place until a solid international regime is set up including a proportionate financing scheme and the establishment of a committee on environmental protection. The author's preferred solution, however, is that no regime of commercial exploitation is ever developed on celestial bodies in order to avoid the risk of severe environmental damage.

2. Common Concern: The Protection of World Cultural Heritage

The UNESCO Convention concerning the world cultural and natural heritage¹³ offers protection to sites that are not in a common area, but that are situated within the territory of a State. The point of departure therefore is that the relevant cultural and natural sites are subject to the exercise of sovereignty by the territorially competent State. According to the Convention, cultural heritage includes monuments and groups of buildings 'of outstanding universal value from the point of view history, art or science' and sites 'of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view'. Although these heritage sites belong to a people, their safeguarding is nevertheless important to all peoples of the world¹⁴.

As Derek Gillman points out¹⁵, the UNESCO convention reflects the tension between two ways of thinking about cultural property. One is to look at cultural property as local, i.e. as belonging and contributing to the identity of persons belonging to specific communities. The other view is cosmopolitan, encouraging the sharing of cultural objects beyond the source country and the exhibition of achievements of local cultures to a global audience.

The UNESCO Convention takes the traditional approach in international law of representation of communities by their States. Although the sites may belong to a people, it is the State that acts on the people's behalf, both in terms of rights and responsibilities. It is the State that identifies and delineates the cultural and natural heritage on its territory. The State also has the 'primary' duty to ensure protection, conservation and presentation. Only the State of the territory where the site is situated can submit an application to the World Heritage Committee¹⁶ for inscription on the World Heritage List¹⁷, and no property can be included on this list without the relevant State's consent.

On the other hand, since the protection of world heritage is in the interest of all peoples, Article 6 of the Convention provides that:

Whilst fully respecting the sovereignty of the States on whose territory the cultural and natural heritage (...) is situated, and without prejudice to property right provided by national legislation, the State Parties to this Convention recognize that such heritage constitutes a world heritage for whose protection it is the duty of the international community as a whole to co-operate (emphasis added).

The UNESCO Convention establishes a system of international cooperation that consists of two components: assistance and monitoring.

Requests for assistance with respect to properties included in the World Heritage List can be formulated by States Parties and are addressed to the World Heritage Committee. The Committee takes into account the importance of the property, the urgency of the work, but also the extent to which the State is able to safeguard the property from its own means. Assistance takes various forms: studies, training, and also loans or subsidies. A Fund has been established that supports the work of the World Heritage Committee, with resources consisting of both compulsory¹⁸ and voluntary contributions of the States Parties and any other funds raised, including from private actors.

The World Heritage Committee also engages in monitoring of the state of conservation of world heritage sites. States Parties are required to submit reports to the UNESCO General Conference through the World Heritage Committee on the legislative and administrative provisions they have adopted and other actions which they have taken for the application of the Convention. The Committee also engages in 'reactive monitoring' on the state of conservation of specific World Heritage properties that are under threat. States Parties to the Convention should inform the Committee, through the Secretariat, of their intention to undertake or to authorize in an area protected under the Convention major restorations or new constructions which may affect the outstanding universal value of the property. The Committee may inscribe a property on the List of World Heritage in Danger - in cases of urgency, also without the relevant State's consent. The Committee annually reviews the state of conservation of properties on the List of World Heritage in Danger. Properties can be deleted from the World Heritage list in cases where the property has deteriorated to the extent that it has lost those characteristics which determined its inclusion in the World Heritage List; and where the intrinsic qualities of a World Heritage site were already threatened at the time of its nomination by action of man and the necessary corrective measures were not taken.

In the context of the Convention, the duty of international cooperation is organized via an international treaty body that

monitors States Parties' duties and provides assistance. But the World Heritage Committee is not the only means of enforcement of the Convention. The duty of international cooperation complements the primary duty of the State exercising territorial sovereignty to ensure conservation of the heritage on its territory. States parties to the Convention have the right to invoke the primary State Party's responsibility for breach of its treaty obligations. The implication is that other States are entitled to scrutinize, comment and criticize a State's treatment of its heritage. Such actions do not constitute an impermissible interference in the State's domestic affairs.

The expression 'international community' is not limited to States only: it certainly includes international organizations (such as UNESCO itself) that are equally entitled to scrutinize a State's behavior in terms of protecting heritage of significant value for humanity. In the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage¹⁹ the 'international community' further includes non-State actors. The 2003 Convention defines intangible cultural heritage as 'the practices, representations, expressions, knowledge, skills - as well as the instruments, objects, artifacts and cultural spaces associated therewith - that communities, groups and, in some cases, individuals recognize as part of their cultural heritage'²⁰, and approaches the safeguarding of intangible cultural heritage as a common concern of humanity. Since communities and groups are the guardians of intangible heritage, State obligations at the national level include obligations to ensure the participation of communities and groups in the identification of the elements of the intangible cultural heritage, in safeguarding activities, and in specific educational and training programs. International cooperation needs to respect not only national legislation, but also customary law and practices²¹. Non-governmental organizations can be accredited with the International Committee for the Safeguarding of the Intangible Cultural Heritage in an advisory capacity²².

Werner Scholtz introduces the term **custodial sovereignty** to describe this type of approach. International law, he argues, should not abandon the emphasis on sovereignty, but should promote the use of sovereignty to protect the interests of all peoples²³. Custodial sovereignty perceives of a State as the custodian of world heritage or global environmental resources on its territory. Other States have a legitimate expectation that the relevant state will offer protection for the whole of mankind, but they also have a joint responsibility to offer support to the relevant State to fulfill its obligations. In Scholtz' approach custodial sovereignty thus entails the implementation of differential treatment in relation to developing countries.

3. Differentiated Responsibility: Biological Diversity and Climate Change

International environmental treaties that differentiate the responsibilities of States take inspiration from Principles 6 and 7 of the Rio Declaration on Environment and Development (14 June 1992)²⁴. Principle 6 indicates that the special situation and needs of developing countries, particularly the least developed and the most environmentally vulnerable, should be given priority. Principle 7 notes that States contribute differently to global environmental degradation; that developed States and their societies place higher pressures on the global environment, and that they command more technological and financial resources.

Differential treatment between States takes various forms, including non-uniform obligations, a more favorable compliance timetable or forgiving non-compliance all together, the permission of special defenses, or differentiation in financial and technical contributions to international cooperation for the achievement of the objectives of an agreement.

According to the Preamble of the Convention on Biological Diversity (5 June 1992)²⁵, the conservation of biological diversity is a 'common concern of humankind'. This is because of the intrinsic value of biodiversity, but also due to its benefit and use to humans (of present and future generations). The Convention provides for sustainable use of biodiversity - and not simply for preservation.

The Convention constructs a network of rights and duties of various actors, similar to the UNESCO World Heritage Convention. A State has sovereign rights over the biological resources on its territory, but also the duty to conserve and use biological resources in a sustainable manner. Several provisions stress the need for international cooperation, taking into account the special needs of developing countries, and within that group, of the least developed countries and small island States. There is some recognition of the role of non-State actors, as actors to be taken into account at the domestic level, - the preamble refers to the need to involve women in policy-making on biodiversity, and recognizes the dependence of indigenous and local communities on biological resources - and also stresses the importance of involving the non-governmental sector in international cooperation.

Of particular interest to the issue of differentiation of State responsibilities within the context of a common concern approach is Article 20 of the Convention on financial assistance. Each Contracting

Party is required to provide financial support to activities at the national level that are intended to achieve the objectives of the Convention 'in accordance with its capabilities'. The developed States commit to provide additional financial resources to enable developing countries to meet the full incremental costs of implementing the obligations in the Convention. These costs are agreed between the developing country and the Convention's financial mechanism. Since 1996, the Global Environment Facility (GEF)²⁶ is the institutional structure that operates the financial mechanism.

As there is no generally applicable definition of developing and developed countries in international law, treaties including non-uniform obligations need to provide their own mechanism for distinguishing between States having different obligations. In the Biodiversity Convention, the Conference of the Parties is entrusted with the task to adopt and review the list of developed countries that are under an obligation to provide the enabling financial resources²⁷.

Article 20, par. 4 further ads:

The extent to which developing country Parties will effectively implement their commitments under this Convention will depend on the effective implementation by developed country Parties of their commitments under this Convention related to financial resources and transfer of technology and will take fully into account the fact that economic and social development and eradication of poverty are the first and overriding priorities of the developing country Parties.

The provision makes developing country implementation of the Convention as a whole conditional on the fulfillment by the developed countries of their obligation to provide enabling resources. Developing countries are not defined in the Convention, but GEF funding modalities now apply. The wording of Article 20, par. 4 opens the door for protracted debates between developed and developing countries on attributing blame for lack of achievement of the Convention's objectives.

The ultimate objective of the UN Framework Convention on Climate Change (9 May 1992)²⁸ is the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Although climate change is a common responsibility, the attribution of responsibility among States varies. Non-uniform obligations are a striking component of the Kyoto Protocol to the UN Framework Convention on Climate Change (11th December 1997)²⁹. In attributing different responsibilities, the treaty avoids use of the developing/developed country dichotomy. Provisions either refer to 'all States Parties' or to 'Parties listed in Annex I' (to the Framework

Convention). During negotiations on the Protocol and on a potential post-2012 successor treaty, debates on which countries were to be included in Annex I, and were thus subject to quantified emission limitation, proved extremely contentious. National interests obviously play an important role, but there is also a substantive debate on which criteria should be used to determine responsibility, and on the relative weight these criteria should have. Potentially relevant criteria include: historical contribution to the emission of greenhouse gasses, current emission levels, capacity to pay, impact of climate change commitments on economic development or on poverty reduction, limiting permissible emissions to basic needs satisfaction, the need to provide preferential treatment to those immediately and disproportionately affected (particularly with respect to adaptation measures). Depending on the priority given to these criteria, a different list of countries required to carry the heaviest burden for addressing adverse impacts of greenhouse gasses emerges.

Parties included in Annex I, - currently only industrialized States, including countries in transition to a market economy in former Eastern Europe - are under an obligation to ensure that they reduce their overall greenhouse gas emissions by at least 5 percent below 1990 levels in the commitment period 2008 to 2012. In addition, a system of differentiated targets was agreed among the major industrialized countries. The EU agreed to reduce emissions by 8 percent, and internally agreed further differentiated targets for its Member States. Developing countries, including China and India that currently emit significant amounts of greenhouse gasses, are not subject to quantified reductions of emissions. All States party to the Protocol are required to formulate cost-effective national programs to improve the quality of local emission factors, and to keep a national inventory of anthropogenic emissions. Article 3, par. 4 of the Framework Convention on Climate Change offers a justification for the differentiation by referring of the right of States to promote sustainable development: climate change measures should be 'appropriate for the specific conditions of each Party' and integrated into national development plans 'taking into account that economic development is essential for adopting measures to address climate change'.

The climate change instruments stress the need for international cooperation. International cooperation implies first that unilateral actions (such as trade policy measures) to deal with environmental challenges in other countries should be avoided³⁰ and international action in a spirit of global partnership is the preferred approach. An interesting innovation in the field of international cooperation in the Kyoto Protocol is the clean development mechanism (Article 12).

The polluter pays principle (included as Principle 16 in the Rio Declaration) is of particular interest in determining the responsibility of private actors. In essence, the principle is about holding actors that pollute or cause harm to the environment responsible for the consequences of their actions. In the Rio Declaration the burden is on States 'to endeavor to promote' the principle. The provision suggests that if the polluter is a private actor, the principle should be implemented mainly through national torts law. The OECD Guidelines for Multinational Enterprises (25 May 2011)³¹ are also adhered to by States and not by companies, but they are nevertheless phrased as recommendations to multinational enterprises. The OECD Guidelines provide that enterprises should take due account of the need to protect the environment, and conduct their activities in such a way as to contribute to the goal of sustainable development³². This implies that where there are threats of serious damage to the environment, companies should engage in cost-effective measures to prevent or minimize such damage. In the same chapter on the environment, the Guidelines also provide that enterprises should contribute, for example through partnerships, to the development of environmentally meaningful and economically efficient public policy³³.

4. International Crimes, Universal Jurisdiction and the Responsibility to Protect

Crimes that are classified as international include piracy, slavery, genocide, crimes against humanity, war crimes, aggression and torture.

Different reasons may explain why certain crimes are labeled international crimes. The preamble of the Statute of the International Criminal Court (17 July 1988)³⁴ notes that international crimes shatter the mosaic of cultures that binds all peoples; that they shock the conscience of humanity; and, again, that their effective prosecution requires both measures at the national level and enhanced international cooperation. In her book on the Eichmann trial, Hannah Arendt argued that the persecution of the Jews by Germany during the Second World War was a crime 'against humanity', because the Nazi regime went beyond cleansing Germany of Jews, and wished to make the entire Jewish people disappear from the face of the earth. In her view, this was an attack upon human diversity as such, 'that is, upon a characteristic of the 'human status' without which the very words 'mankind' or 'humanity' would be devoid of meaning'³⁵. With considerable foresight she predicted that genocide was an actual possibility of the future that could be directed against other peoples,

who would only be able to feel reasonably sure of their continued existence, with 'the help and the protection of international law'³⁶.

International law places criminal responsibility for international crimes on the individual who committed them, although the State on whose behalf the international crime was done, may also incur responsibility³⁷. In the context of the ICC Statute, the domestic State that is expected to exercise jurisdiction is either the State on the territory of which the conduct occurred, or the State of which the person accused of the crime is a national. State sovereignty is conceived of as responsibility: once again, the State acts as the guardian of the interests of the international community as a whole.

The ICC Statute provides that if the relevant State fails to exercise its responsibility, the International Criminal Court may act with regard to the limited list of international crimes within its jurisdiction, i.e. genocide, crimes against humanity, war crimes and the crime of aggression. The International Criminal Court is complementary to national criminal jurisdictions. The Court needs to show that the State that has jurisdiction is unwilling or unable to investigate or genuinely prosecute³⁸.

The ICC Statute provides for a possible referral by the UN Security Council to the ICC of situations where crimes under the jurisdiction of the Court appear to have been committed³⁹. Referrals by the UN Security Council occur in the context of Chapter VII of the United Nations Charter⁴⁰. When the Security Council referred the situation in Libya 'since 15 February 2011' to the Prosecutor of the ICC, the Council argued that the highest level of the Libyan government was involved in gross and systematic violations of human rights, and that widespread and systematic attacks against the civilian population 'may amount to crimes against humanity'⁴¹. Libya is not a party to the ICC Statute, but this is not a requirement when the Security Council refers a situation to the ICC.

A further issue is whether all States are allowed to assert jurisdiction over international crimes, even if they have no connection with the alleged perpetrator or act. Addis⁴² argues that the current exercise of universal jurisdiction, by transcending boundaries of traditional political communities (i.e. the populations of States) is constitutive of the international community as a community of interest. It is by classifying certain acts as being beyond commonly held international norms, that the international community provides itself within an identity that is based on solidarity across borders and needs to be protected against, in Hanna Arendt's phrase, the *hostis generis humani*, the enemy of human kind.

The concept of the responsibility to protect is also linked to certain international crimes. According to the General Assembly resolution incorporating the 2005 World Summit Outcome, the responsibility to protect doctrine applies to genocide, war crimes, ethnic cleansing and crimes against humanity⁴³. Each individual State has the responsibility to protect its populations from those crimes, and the international community should, as appropriate, encourage and help States to exercise this responsibility. In this instance, the responsibility of the international community is a concurrent one; it stands next to the responsibility of the territorially responsible State. The international community should use appropriate diplomatic, humanitarian and other peaceful means, in accordance with Chapters VI and VIII of the Charter, to help to protect populations from these crimes. Collective use of force, however, can only be authorized by the Security Council when peaceful means are inadequate and national authorities are manifestly failing to protect their populations from the relevant crimes. In the General Assembly resolution, the international community declares that it is prepared to take such collective action whenever these conditions apply, but no sanctions or remedies have as yet been provided in case of a failure of the international community to take up its responsibility. The World Summit Outcome document provides no justification for unilateral military action by a State to protect the population of another State.

The determination that a State is manifestly failing to protect the populations on its territory needs to be made by the UN Security Council. In resolution 1973 (2011), the UN Security Council reiterated the responsibility of the Libyan authorities to protect the Libyan population, and condemned the authorities' failure to provide such protection. The Security Council consequently authorized Member States to take all necessary measures to protect civilians and civilian populated areas under threat of attack in Libya, including the city of Benghazi, while excluding a foreign occupation force of any form or on any part of Libyan territory⁴⁴.

5. Final Observations

Although treaty law is dependent on individual State consent, it remains the source most frequently used in current international law for the protection of the common interest. Initial treaties relevant to the common interest legislated for areas beyond national jurisdiction, establishing a variety of regimes focusing either on user rights or on global management.

Most treaties concerned with the common interest acknowledge the territorial sovereignty of States. In these treaties, however,

sovereignty is not only understood as decision-making power, but also as responsibility. The sovereign State is under a duty to protect the common interest on its territory as a custodian acting on behalf of the international community. Other State parties have the right to monitor and criticize the State's conduct, but they also accept the duty to assist the State (through various means) in circumstances defined by the treaty.

Apart from distinguishing between the responsibilities of the State exercising territorial sovereignty and the responsibilities of other States, treaties may also differentiate among the States exercising territorial sovereignty - usually on the basis of a categorization of countries as either developed or developing. As there is no general definition of these categories in international law, and as the relevance of the developing/developed country dichotomy to the protection of the specific common interest that the treaty aims to protect may be disputed, the creation of non-uniform obligations and the linkage between these obligations and duties of assistance by other States remain controversial. Decisions on treaty-making on these issues are very much ad hoc.

Treaties create international organizations or bodies that may be inter-governmental in nature or consist of experts. Treaty bodies take on an existence that is separate from the State parties to the treaties. They are somewhat removed from the State parties' national interests, and thus potentially well geared to promote a common interest perspective. Typically such international bodies take up both monitoring and technical/financial assistance functions. In the area of peace and security, their role extends to sanctions and the use of armed force.

Treaties are not useful tools for directly creating responsibilities for private actors, since treaties are not accessible to these actors. Treaties do, however, provide for State obligations to regulate the behavior of private actors, mainly through domestic law. A clear example from the law of the sea is the requirement that States ensure that masters of a ship flying their flag abide by the duty to provide assistance to persons in distress at sea, without regard to their nationality, status or the circumstances in which they are found⁴⁵. The treaty provision creates a State obligation, but the primary addressee of the norm is a private actor who is responsible under domestic law.

It should be noted, however, that Article 3 of the Vienna Convention on the Law of Treaties (23rd May 1969) explicitly provides that international agreements concluded between States and other

subjects of international law or between such other subjects can have legal force in international law. In recent literature, the trend is to give priority to the autonomy of the parties to determine the applicable law⁴⁶. If agreements with non state actors are placed under international law, then they will be governed by international law, even if these agreements are technically not treaties⁴⁷. Such agreements involving non State actors are binding under international law if the parties intended to create obligations under international law. The intention of the parties will need to be shown by the terms of the instrument and the circumstances of conclusion⁴⁸. In short, if the conclusion of multi-stakeholder agreements proves a necessity for the protection of global interests in the future, such agreements can have legal force under international law, if the parties so desire. Multi-stakeholder agreements may become more frequent as a result of a move away from a purely intergovernmental diplomacy to a diplomacy that involves all relevant stakeholders. Today, international multi-stakeholder instruments that include private parties are mostly of a soft law nature⁴⁹.

End note

- a The Sea (UNCLOS III), which took place from 1973 through 1982. The Law of the Sea Convention defines the rights and responsibilities of nations in their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources. The Convention, concluded in 1982, replaced four 1958 treaties. UNCLOS came into force in 1994, a year after Guyana became the 60th nation to sign the treaty. As of October 2012, 164 countries and the European Union have joined in the Convention. However, it is uncertain as to what extent the Convention codifies customary international law.
- b. Agreement for the Implementation of the provisions of the United Nations Convention on the law of the sea of 10th December 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks available at http://www.un.org/depts/los/convention_agreements/convention_overview_fish_stocks.htm.

3

MULTI LEVEL ADJUSTMENT IN COMMON'S GOVERNANCE

Himadri Sinha

Biodiversity is claimed as a local, regional, national, and international common property. In the past decade, the roles of international, national and local institutions in biodiversity conservation have been evaluated and hotly debated from different perspectives. Many conservationists promote rigid protection under centralized state agencies and institutions, citing the risks of relying on complicated/complex communities with many different interests^a.

Yet state agencies lack the resources, the cross-scale institutional links, and the transparency needed for implementing policies and enforcing regulations. In most countries, these agencies lack the legitimacy to negotiate with powerful actors in broader society. As a result, despite the continuing global expansion of protected areas, paper parks are the rule¹.

In the era of globalization, communities are connected to global processes perhaps more than ever before. Such connection makes them vulnerable to pressures and incentives that may originate at other levels of social, political and economic organization². Communities respond to various outside pressures through various influences and the linkages between communities. Such adjustment of communities and other levels of political organization need to be studied and understood. There is a developing literature about scale and interplay of institutions across scale³ indicating that institutional linkages and multi-level governance systems are important for a variety of reasons⁴. Understanding the conservation-development issue requires attention to scale. For example, regarding the political economy of conservation in some African countries, Gibson⁵ showed that forces operating at the level of the nation state (many of them related to peculiarities of postcolonial governments) are quite different from those at the levels of regions and communities. In the context of tropical biodiversity conservation, Barrett et al⁶. argued that community-based

^a Prof. F. Berkes has pioneered the research work on resilience management at all community based resource management regimes. This chapter is primarily based on research works and articles of Prof. Berkes and his contributions are duly acknowledged by the author.

conservation overemphasizes the role of local communities, given that local institutions are only one level in a multi-level system with a paucity of strong institutions. More robust designs may 'involve distributing authority across multiple institutions, rather than concentrating it in just one'⁷.

Hence, community-based conservation cannot be conservation that is conceived and implemented only at the local level - because community institutions are only one layer in a multi-level world⁸. More usefully, community-based conservation can be used as an abridged label for conservation from the bottom up, or decentralized governance that starts from the ground up but involves a network of interactions at various levels. An increasingly globalized world requires institutions that link the local level to the various higher levels of social and political organization. Such linkages can provide ways to deal with governance²; multiple objectives⁹; multiple knowledge systems and may result in the creation of networks for learning and joint problem-solving¹⁰. They help address various aspects of complexity, such as self-organization, uncertainty, and resilience, as well as dealing with the challenges of scale. The study of community-based conservation in a multi-level world, with focus on horizontal and vertical linkages, can serve to extend and elaborate commons theory. Edwards and Steins¹¹ pointed out that there is a need to look beyond the community level and deal with contextual issues. More recent studies of commons theory have been addressing the issue of scale with increasing sophistication, and have a major role to play in multi-level governance involving the state, private and civil society actors on resource and environment issues¹². Commons theory can inform conservation science and help in understanding of issues of scale and institutional linkages. The objectives of this chapter are (a) to reconcile local and global objectives of conservation through community-based conservation on the basis various past researches and (b) to assess the governing system of various forest management of India in the light of the above understanding.

The Milieu

Following the preceding discussions, the chapter explores the evolving thinking on the relationship between communities and conservation under four headings: developing the communities' capacity to deal with multiple objectives; the importance of deliberative processes; using lessons learned from commons research; and developing a complexity approach for commons governance. Roe¹³ observed such constellation of issues that need to be considered at higher

as well as lower scales; have a large social content; interact and intersect with one another; tend to be inherently in conflict; and require long time horizons. According to Western and Wright¹⁴ 'community-based conservation includes natural resources or biodiversity protection by, for, and with the local community.' They note that defining it more precisely would be futile since community-based conservation includes a range of activities practiced in various part of the world. But, they pointed out that the coexistence of people and nature is distinctly different from protectionism and the segregation of people from nature¹⁴. Berkes et al¹⁴ suggested an extension of the definition, so that community-based conservation includes natural resources or biodiversity protection by, for, and with the local community, taking into account diverse institutional linkages at the local level and multiple levels of organization that impact and shape institutions at the local level. The concept of livelihood is about individuals, households or groups making a living, attempting to meet their various consumption and economic necessities, coping with uncertainties and responding to new opportunities¹⁵. Livelihood is subsumed in the concept of well-being, a context and situation-dependent state, comprising basic material for a good life, freedom and choice, health, good social relations and security¹. A driver is any natural or human-induced factor that directly or indirectly causes a change in an ecosystem¹⁶. Complexity may be defined as an interconnected network of components that cannot be described by a few rules; generally manifest in structure, order and function emerging from the interactions among diverse parts¹⁷. Chapter has been divided into two sections. In Section I, I have discussed the two critical issues of multi level governance concerning biodiversity conservation and in Section II, I have analyzed cases of Indian Forest Management in the light of concept of multi level governance.

Section I: Critical Issues for Multi Level Governance

A. Relationships between communities and conservation

For quite some time number of researchers have been examining the conflict between conservation policies set by the state and the rights of local or indigenous peoples¹⁸. The issue has a long history¹⁹. Biodiversity is a global commons, and its conservation is beneficial for the world. But is it also good for the local people? If biodiversity conservation is pursued through the creation of protected areas (PAs) and if these PAs exclude resource use for livelihoods, then local people are bearing the costs of a process that is providing global benefits⁴. Further, given the inability of the state to enforce PAs in many parts of the world, the usual experience is that when a local commons is turned

into a PA, it effectively becomes open-access, benefiting neither the conservation cause nor local livelihoods. The relationships between communities and conservation are being contested in several arenas. Here I refer to two debates: the one over the human use of PAs and the other on the question of integrating conservation and development. The debate over the human use of PAs is not new. There has been a growing realization at least since the 1980 World Conservation Strategy of the importance of understanding the needs and perspectives of local people (IUCN, 1980). The 1992 Convention on Biological Diversity emphasized the sustainable use of resources and to stop the practice of excluding people, including indigenous people, from new PAs. 'Conceived as a practical tool for translating the principles of Agenda 21 into reality, the Convention recognizes that biological diversity is about more than plants, animals and micro organisms and their ecosystems - it is about people and our need for food security, medicines, fresh air and water, shelter, and a clean and healthy environment'²⁰. Among other things, the Convention on Biological Diversity has resulted in the creation of new PA categories V and VI to allow for greater human use (IUCN, 1994).

Some conservationists have opposed this development as giving social considerations higher priority over biological ones, and the increased human use of resources in PAs, as taking the PA agenda toward a 'tragic failure'²¹. In turn, some social scientists have claimed that large international conservation organizations have become increasingly influential in setting the agenda for global conservation to the detriment of local interests, rolling back the Convention on Biological Diversity commitment to social considerations such as livelihoods and equity²². The issue is of intensive debate both within and outside of the conservation community²³.

The question of integrating conservation and development is a second arena of controversy. The World Bank and Asian Development Bank started funding development projects, known as Integrated Conservation and Development Projects (ICDPs) in the 1980s. Assuming that poverty drives people to encroach on protected areas, the object was to target poor people in and around parks and protected areas. Over the years, these efforts have resulted in the establishment of some kind of participatory management in national parks in most parts of the world, but ICDPs themselves have often floundered²⁴.

This has led to a debate regarding the merits of community-based conservation and to critical evaluations of these efforts. Two positions have been emerging. One holds that the failure of community conservation is not due to any weakness of the concept itself but rather its improper implementation, especially with regard to the devolution

of authority and responsibility²⁵ and to participation, empowerment and institution-building². The second position holds that the conservation and development objectives, both important in their own right, should be delinked because the mixed objective does not serve either objective well²⁶. To address the two debates, the big question is whether local people are willing and able to participate in protected area management and in the conservation of biodiversity in general. I have argued elsewhere that 'Does community-based conservation work?' is the wrong question. Sometimes it does, sometimes it does not¹⁹.

More important is to learn about the conditions under which it does or does not work². No doubt there are many ways to approach this debate. One promising approach is to focus on the livelihood needs of the local people, as done by the IIED¹³, CIFOR^b, and IDRC among others. A focus on livelihoods as a point of entry into the conservation-development problems is consistent with the field experience in many areas²⁷. Based on the results of IIED's international project on community-based wildlife conservation, Roe et al¹³ observed that in the late 19th century, notion that people and wildlife were in conflict, and that wild areas should be set aside purely for non-consumptive purposes, was a historic anomaly. However, the assumption of ownership of wildlife resources by the state has dominated conservation policy worldwide. Roe et al.¹³ argued that PAs based on human exclusion merely set up a vicious circle: exclusion and lack of attention to livelihoods led to encroachment and poaching and this, in turn, reinforced the view that people do not have the will or capacity to conserve biodiversity. The solution is to break the vicious circle by linking conservation to improved livelihoods, thereby providing incentives for people to conserve¹³. Linking conservation to livelihoods, as a broad strategy, requires a search for implementation models. Salafsky and Wollenberg²⁸ provide models of three conservation strategies. In the "protected area" model based on human exclusion, local livelihood activities merely appear as one of the internal threats to biodiversity. The PA implementation is designed to counter these threats ('fences and fines'). In the 'economic substitution' model as used by some ICDPs^c, the project implements alternative livelihood activities as substitutes for those that adversely affect biodiversity. The goal here is to increase benefits from these other livelihoods, as a way to reduce the threat to conservation from local people. Finally, in the 'linked incentives' model- a link is constructed

b IIED - International Institute for Environment and Development, CIFOR - The Center for International Forestry Research, IDRC - International Development Research, IFAD - International Fund for Agricultural Development.

c ICDP - Integrated conservation and development projects

between biodiversity and livelihood. This link closes the loop and becomes the driving force leading to conservation because it establishes a direct incentive to protect biodiversity in the long-term²⁸. Such an analysis brings out the necessity to deal with multiple objectives; to engage in deliberation to reconcile the local and global meanings of conservation; to make full use of lessons from commons research; and to develop a complexity approach for governing the commons.

B. Developing the capacity to deal with multiple objectives

If conservation and development can be simultaneously achieved, then the interests of both can be served. However, many ICDPs are either primarily about conservation or primarily about development - but rarely both. More common are situations in which one objective or the other dominates²⁹. For example, involving local communities in conservation is often used as a means of making conservation measures less likely to meet local resistance, but the ultimate objective remains one of conservation. Conversely, protecting the productivity of a resource may be used as a means to enhance local livelihoods and development options, but the main objective remains development. Management approaches that explicitly have more than one objective are far less common than those that have only one.

The Millennium Ecosystem Assessment terms this multiple objectives approach, 'integrated responses'. They are those responses that explicitly and purposely state that their objectives address more than one ecosystem service(s) and human well-being simultaneously⁴. The Millennium Ecosystem Assessment report deals with four areas in which integrated responses are explored: sustainable forest management, integrated coastal zone management, watershed and river basin management, and ICDPs⁴. Integrated responses may be seen as a way of moving from problem solving in simple systems to problem-solving in complex adaptive systems. Consistent with the needs of managing complexity, integrated responses tend to involve networks and partnerships of various levels of government, private sector and civil society⁸. Recent approaches such as the Millennium Ecosystem Assessment, in turn, reinforces the view that people do not have the will or capacity to conserve biodiversity. The solution is to break the vicious circle by linking conservation to improved livelihoods, thereby providing incentives for people to conserve¹³.

Section II: Cases from Indian Forest Management

In the above section I have discussed the two critical issues of concern in the field of biodiversity conservation viz, (a) Relationships between communities and conservation, and (b) Developing the

capacity to deal with multiple objectives. In the light of the above issues, I will now analyze the few Indian forest management systems to understand how far I have succeeded in working out healthy multi level governing system both for the betterment biodiversity and the people who derives their livelihood out of it.

1. Joint Forest Management (JFM): A half-baked cake

The National Forest Policy 1988, made a significant departure while overhauling the National Forest Policy of 1952. Impressed by the success of the West Bengal experiment of involving people in forest management, it recognized the need for involving the people around the forest in the development, protection and management of forest. Later on, in June 1990, the Ministry of Environment, Government of India issued guidelines concerning the involvement of village communities and voluntary agencies in the protection, development and management of forests and named it as Joint Forest Management (JFM).

According to JFM policy, forests are not to be commercially exploited for industries. But they are to conserve soil and the environment and meet the subsistence requirements of the local people. The policy gives higher priority to environmental stability than to earning revenue. Derivation of direct economic benefit from forests has been subordinated to the objective of ensuring environmental stability and maintenance of ecological balance. It discourages monocultures and prefers mixed forests. The focus has shifted from 'commerce', and 'investment' to ecology and satisfying minimum needs of the people, providing fuel wood and fodder, and strengthening the tribal forest linkages. It declared that the domestic requirement of fuel wood, fodder, minor forest produce, and construction timber of tribal should be the first charge on forest produce. It advises industry to establish direct relationship with farmers who can grow the raw material if supported by industry with inputs including credit, technical advice and transport services. As these linkages may take time, in the interim, it suggested that import of wood and products should be liberalized, but the practice of supply of forest produce to industry at concessional prices should cease.

JFM units can be formed with a hamlet, or a village, or a cluster of villages in which each household has single membership. Each JFM unit consists of two bodies, (a) general body, which includes all the members of households, and (b) managing/executive committee which consists of elected representatives from among the general body members along with few nominated members. Managing committee

elects its president and the local forester acts as its convener secretary. The general body meets once a year whereas the managing committee's meetings are expected to be held once in three months.

But JFM has failed to live up to the aspiration of people. Many places it is viewed as implementing body of forest policy. JFM unlike *panchayats* has not accommodated democratic representatives of people at various levels of decision-making. Instead of becoming a role model, JFM is viewed as another drama of an oppressive forest regime by the people. Here we will discuss why JFM failed to achieve its desired goal.

Why has JFM failed in ensuring multi level governance?

(a) Dual agenda of JFM

JFM as a programme has a dual agenda, which is related, at an institutional level. Firstly, JFM intends to create productive assets by way of regenerating and/or afforesting forest lands. Secondly, it aims to achieve the first agenda by way of people's participation and giving them the responsibility of protecting and managing their forests. This dual agenda requires strong, robust village institutions which are representative of the interest of the entire community. Thus, JFM also is a patent instrument for the empowerment of local people. It is important to remind ourselves of the dual nature of objectives, JFM is pursuing, else we might end up repeating the follies of the Social Forestry Schemes.

(b) Resistance of bureaucracy to share power

The keenness of the Forest Department (FD) to preserve its own power base and not give away its exclusive position of control over the forest to community institutions has resulted in low level of compliance with the spirit of JFM approach. A frequent complaint against the forest department is that they have still not given up the 'police' image, and are not sufficiently sensitized to undertake extension work. To this charge the forest officials' response is that in the initial stages the community is at a low level of formation, and therefore they cannot dilute their basic responsibility of protection. The forest department also has powers to cancel or dissolve the Village Forest Protection Committee (VFCs), which itself constrains the confidence and autonomy of the village committee. While forest departments will require some statement in the resolution to dissolve the management agreement if their community partners fail to uphold their responsibilities under the JFM programme, it is also important that the identity of the user group is respected. In Rajasthan and Haryana, where the user groups are required to be registered as

societies, would extend greater in dependence. Such groups will continue even if their relations with the forest department are severed. In Gujarat, VFCs are registered as cooperative societies, which in addition to being legal entities provide functional autonomy. Once the user group has a separate legal status this can be used for several purposes.

Often literate villagers are chosen by the FD as leaders. These are generally younger people, therefore, their authority lacks legitimacy. Excessive dependence of the village communities on FD has frustrated village autonomy. Another important element is the response of FD staff to VFCs grievance. In the initial stages, VFCs look forward to getting support from the forest department in booking offenders, negotiating with other villages / departments etc VFCs also need flexibility, and field staff should not throw rule books at them. Many protecting villages have complained that FD unilaterally overrules their decisions without explaining the reasons thereof. In some places, protection is preceded by cleaning, weeding etc. for which the forest department pays wages to the labour. This must change and the forest department must hand over the responsibility of handling funds to the VFCs. This would make financial dealing more transparent and foolproof against misuse of funds. VFCs will also develop a greater sense of accountability in the process. In Gujarat, the committees raided the houses and confiscated illegally poached wood. When they wanted to conduct auction of the seized material, not only did the FD not permit them to utilise the money so received, but it objected to the place of auction too, pointing to the rules that auction must be conducted at the Range Forest depot only.

With the exception of clauses in the national and West Bengal resolutions, most state guidelines do not address the long-term rights of participating communities. Clear tenure security enhances the authority of community management groups to carry out protection activities, especially when under pressure from neighbouring villages and private interest groups. It is necessary that the time frame for such agreements is clear, as well as the basis for its extensions. It may be appropriate for the time period of the agreement to correspond to the production cycle (rotation) of the primary products.

(c) Restricting JFM to degraded forest areas

The stipulation of restricting JFM to degraded forest areas raises two kinds of issues. Firstly, the low economic returns from JFM in degraded forest, makes it an unattractive option for the communities involved. Reserving good forest areas under state control and handing over degraded forest land to community questions the basic premise of

collaborative management viz. linking responsibility with benefits. The flow of benefits from degraded forestlands put to JFM (especially in Rajasthan) is not commensurate to the responsibility of protection handed over to the communities. Thus, the claim that JFM will lead to sustainable management of the forest through community involvement is debatable. Also, such a restriction implies that the community should first degrade their forest areas, so as to bring them under JFM.

(d) Lack of legal arrangements

The JFM resolution envisages a big role of the communities in achieving the objectives of the new forest policy. This collaborative arrangement talks about sharing of responsibilities and benefits with the local communities. However, many of these communities are structurally constrained from exercising these responsibilities, as they lack appropriate authority to do so. There is a case for the necessity to 'empower' the local group engaged in forest protection, in a legal sense. This would help them to derive autonomy and authority in dealings with offenders and powerful non-members.

There are examples of forest protection committee members facing penal proceeding for complaining against powerful and elite offenders. Such incidents bring down the motivation of the members of FPC to pursue the objectives of forest protection. Till the FPCs gather experience and legal authority the, FD has to work in close collaboration with FPCs.

(e) Tenurial insecurity

JFM arrangement derives its legal legitimacy from the resolution issued by the various state governments. As these resolutions do not have a statutory basis, they are subject to reversal. Hence, the tenurial rights of FPCs engaged in forest protection and management are uncertain and insecure. JFM also faces a threat in the form of a massive pull of ad-hoc privatization by way of regularization of illicit encroachments on forest lands. Till such an option is explored vis-à-vis JFM, there will be little faith amongst the community members to forge horizontal ties of solidarity.

(f) Institutional change in the Forest Department

The present institutional set up of the forest department was designed to protect the forests. Participatory forestry requires a different role for the forest department. While FD has development awareness about benefits of participatory forestry in the recent years, its understanding and commitment to share control and responsibility with people is still partial. Institutional reforms in the FD will benefit

the objective of community participation in JFM. This issue should be viewed in light of the dual agenda of JFM viz. Afforestation and Regeneration of forest lands as well as improving local governance. This agenda envisages different roles for the FD and NGOs, involved in JFM. While the FD will have to ensure feasibility of the forest plantations and support to the VFC in related matters on one hand, on the other it will have to involve NGOs in the programme to a greater extent to assist the new VFCs in the complex process of people's institutions.

(g) Rights of non-protecting people

The legal and organisational framework for joint management remains weak and controversial. First, the old rights and privileges of the people (usually established in the colonial period) have continued in most degraded forest, and often such rights include free access to expensive timber, privileges without corresponding responsibility is counter-productive. Second, often more than one village have their rights in the same forest, as a result, it becomes difficult to promote village protection committees. Third, a large number of new settlers in a village (they may be the poorest) have no traditional rights in forests, as their ancestors did not live in the village at the time of forest settlement they get deprived of benefits, and are compelled to obtain these illegally. Fourth, sometimes people living several kilometres away from forest have customary rights in forests. They, with no possibility of getting involved in forest management, have been customarily using these lands as an open-access resource without any restriction, for grazing and collection of fuel wood and NTFPs. Often the VFCs do not allow other villages, who do not contribute to protection to appropriate any rights over forest. Migratory tribes from other states too send their cattle for grazing, and their rights have been upheld by the Supreme Court. Thus, a forest patch does not have a well-defined and recognised user-group, and may admit the rights of the entire population of that region or the entire forest area. This type of 'right-regime', which makes forests open-access lands, is not conducive to successful protection, as rights of contiguous villages protecting forests may come in conflict with those of distant villages, not protecting but still having rights to enjoy usufruct.

Therefore, at least in JFM areas, usufruct rights should be reviewed in order to put them in harmony with the care and share philosophy which is the basis of JFM. Even in un-classed forests, where no previous settlement has been done, the task is not simple due to the practice of use by a large class of stakeholders. Elsewhere, old settlement rights may have to be modified with a view to make these amenable to formation of viable VFCs. This is easier

said than done, as changing customary or legal rights would be perceived as an unpopular step and may face political hurdles. Such a policy can be made acceptable if it is accompanied by other pro-people changes in technology, nature of species and secure rights over produce, etc.

(h) Inter-village disputes

Depriving communities located far from the resource but having traditional rights is a ticklish question. Some close communities have solved this by charging fees from distant villages on the ground that they do not have to protect the resource. In West Bengal, some VFCs negotiated with neighbouring communities to clarify rights and territorial responsibilities when they tried to initiate protection activities. As the user groups have a strong incentive to avoid conflicts, they have often demonstrated that they can conduct much of the negotiation on their own or with the help of the *panchayat* (elected village councils) leaders. However, the Forest Department holds ultimate responsibility for seeing that management groups do not create conflicts over pre-existing usufruct.

Confusion over forest boundaries is a recurring problem for the VFCs. In one case, members from Chandmura village in West Bengal thought that they were also protecting the Arabari forests. Only when the forest was harvested for timber did they realise that they were not part of the programme. The village took the government to court, thus delaying harvest benefits to others. The problem could have been avoided had there been maps and constant dialogue between the participating villages.

The Rajasthan resolution allows revenue village wise VFC formation, which may consist of several hamlets located separately from each other. This makes the smooth functioning of the VFC very difficult³¹. Wherever multi-hamlet forest protection committees have been formed, field experience shows that each community keeps their independent identity within the large group maintaining clear boundaries of their area and by retaining exclusive control over harvests in their territory. Often such groups surrounding a large tract of forest form an apex committee to coordinate their activities and represent themselves to the FD. Although the larger group may facilitate joint protection and dispute resolution, informal partitioning of the resource has no validity in law and may not be sustained over a long period.

Most VFCs want their forest tract boundaries to be formally demarcated. Rough agreements between villages over these boundaries may be sufficient when the resource is degraded, but once

valuable products are regenerated, conflicts will ensue in the absence of formal notification. Often forest maps are not available which delays the formalisation of boundaries. This is not a simple exercise, since natural, administrative and customary boundaries do not coincide. In practice, under existing customary use, different boundaries apply to different products, e.g. grazing and fuel wood. Boundary disputes between neighbouring VFCs are likely to increase as harvesting approaches.

(i) VFCs Panchayats

Another legal problem concerns the status of VFCs versus the village panchayats. The state government resolutions recommend VFCs as functional groups. However, these committees have no legal and statutory basis, and it may be difficult for them to manage resources on a long-term basis. Their relationships with the statutory village *panchayats* will need to be sharply defined.

The 1989 West Bengal resolution stated that the local *panchayat* land management committee shall select beneficiaries for constituting the VFC. This indicated that the *panchayat*, which is outside the user group, would determine who could and who could not participate. Although in 1990, the West Bengal Government allowed every member in the village to be a member of the management group, the hold of the panchayat remained strong. The Odisha order prescribes that the lady deputy Chief of the local panchayat will be the head of the VFC, but the *panchayats* are not working well and her stewardship is not seen as legitimate by the indigenous VFCs.

Experience over the last 20 years from Indian social forestry programme indicates that in many cases *panchayats* had difficulties in managing community woodlots effectively due to their inherent political nature and often-diverse constituencies. *Panchayats* are political organisations based on electoral system, whereas conflict can be quite harmful for the effective functioning of VFCs. Protection can work only if there is almost unanimity and consensus amongst the user group.

Unlike *panchayats*, powers to the VFC are not given under any law, which may affect their powers to check free-riding in the longer run. Thus, most successful VFCs charge fees for collection of forest produce, although this practice is technically against the Forest Act. The illegality can be removed if the allotment of forest land to the VFCs is done under section 28 of the Forest Act. At present it is done administratively.

Due to the increasing importance of panchayats in decision making in India, many field activists feel that community forest management must take place at the smallest possible level of those who actually use the resource. This would require statutory changes in the current panchayat laws.

There is also some concern that if JFM groups were absorbed by village panchayat vested interests might exert control over decision making. Since small user communities may comprise of less powerful groups, they may lose authority to elite if the management becomes a direct adjunct of the *panchayat*. VFCs are recognised only by the Forest Department, all other government departments recognise *panchayats* making them much more powerful than the VFCs. On the whole, there is need to clarify the relationship of local forest management groups to *panchayats*; simply subsuming them as part of the panchayat would almost certainly threaten their effectiveness.

2. Multilevel adjustment in forest management in Odisha: An unfinished agenda

In a subsistent economic setting like central Odisha, where people are extremely dependent on forest and interlinked farming systems, the incentives for collective action around such resources are comparatively high. People often confirm to the collective rules and to some extent the systems that have been emerged through conflicts and confrontations over the period of time. The smaller adjustments within the existing practices of resource management have been effective to some extent. However, with the changing scenario and the process of globalization setting in, now the challenges are many folds. Globalization, defined by increasing economic integration and cultural interchange, is a cross-scale phenomenon. Studies of globalization necessitate tracing connections across spatial, temporal, and intellectual scales. Globalization is of particular importance to resilience, because its increasing number of interconnections introduces new variables into human ecosystems and often invokes new forms of social-ecological interactions. These interactions frequently act to undermine the constituent stabilizing structures and processes that determine resilience, at particular times and in particular places. In a globalizing world, it is crucial to understand the ambiguous complexity that arises from the nexus of these rapid flows and dynamics. In a time when rapid global flows intensify and complicate social transformations, each and every society, to various degrees, faces significant changes in almost every aspect of social life. With such influences, societies are becoming more and more transitional, to

varying degrees and forms. In this respect, transitional villages are a general indication of the fundamental changes of the societies in which we live and they reflect the dilemmas that the contemporary globalization processes bring along. In this context, while the smaller adjustments would only be useful in a short run, the long term viability of such institutions calls for redefining the structural and functional space in varied scale. The paper examines the institutional challenges and various social factors that influence the process of resilience building in an institution. The factors are like, Institutional structure, ownership, rule system, adaptive mechanisms, broad based decision making, mechanisms for accountability and transparency, resource-user interactions. The paper analyses the dynamics of socio-political environment, the ongoing struggle of local institutions to internalize the externalities from within and outside.

The institutional setting

Historically, the feudal kings of the princely states had ruled majority of areas in Angul and Dhenkanal districts and therefore, there exists feudalistic reminiscence in the villages, which structurally had inherent principles of exclusion, dominance and subordination. However, over the years of socio-political changes the structure of single leadership gave way to multiple and more representative leadership. Population is heterogeneous consisting of various castes, sub castes, tribes in a single village. A complex and dynamic web of inter-relationship exists between the different caste groups and tribes depending on each other for their livelihood and existence. The major occupation is agriculture. NTFP from forest is the supplementary source of income and food in the lean season. In such a subsistence economy, forest plays a major role. The district, for most part had dense forests covering about 53 percent of the total area, concentrated mainly in Pallahara and Athamallik subdivision. Forests here, according to the classification of Champion, are typically a dry mixed tropical deciduous forest and sal and bamboo are the principal species. But in the recent past there has been a lot of indiscriminate and uncontrolled felling, owing mainly to urbanization and industrialization in the area. The area is mostly rainfed and prone to frequent droughts. The individual land holding is quite small with an average holding of 1.23 hectares and out of which 0.32 hectare is suitable for lowland agriculture. This along with the rainfed condition limits the community to go for intensive cropping. Every village has a village committee that governs and looks after the social, religious and the development function of the village. The village committee is an informal body consisting of representatives from all caste groups and representation ratio depending on population of the caste groups in

the village or hamlet. These committees look into the management of the resources like the forests, water bodies, village fund, grain banks, and the village assets. Now a day, with increasing emphasis on privatization and modernization and decentralizations by the state, challenges for the local institutions are many fold exerting from such processes and a trend of transition setting in. The transition can be characterized by increasing flow of information, money, objects, ideologies; greater physical mobility of the villagers; The emerging viewpoint of profits, magnetization and economic orientation of goods and services; prominence of individual preference; High opportunity cost of social arrangements to manage local resources. The illustration from few villages of Angul and Dhenkanal region elucidates the process more concretely. The processes at the village level are being analyzed on the basis of various attributes like changing practices, changing policy, changing social structure, increasing alternatives and increasing threat to collectivity in some mainstream villages of Angul and Dhenkanal. From the analysis it is found that the driving force of resource management is shifting from subsistence use with collective interest to economic orientation with individual incentives. Now to engage with the pace of change there is need to reconstruct the institutional mechanism through identification and preservation of those variables that enable systems to renew and organize along a desirable trajectory. There is a need to adopt multilayered institutional approach with the involvement of various actors having short term and long term stakes over the resource base. The experience of the village institutions working on natural resource management in Angul and Dhenkanal with support of Foundation for Ecological Security demonstrates some elements of resilience to deal with the prevailing situation.

Factors influencing resilience building in the local institution

Village communities of Odisha are repositories of traditional wisdom and experiences with respect to natural resource management. These villages are also having a strong history of forest protection right from the princely state era. To benefit from this, and also to make development interventions relevant to conditions of the rural habitats, it is essential that the development of village specific bylaws and village level planning becomes an integral part of the institution building approach. Village specific byelaw is developed upon the existing rules and regulation with the inclusion of democratic values through appropriate discussion in village general body. In Odisha context, the rules and regulations of each village are unique, adapted to the environment, developed for their common good and purpose and widely accepted by the members of the institution. However these

Table 3.1 Changing dimension of forest management in Odisha

Attributes	Changes occurring in transitional villages	Impact on the governance of village commons
Changing practices	<ul style="list-style-type: none"> * Monetization of commodities, * Simpler practices like auctions, over-pricing to reduce use, * Sale for increasing village funds 	<ul style="list-style-type: none"> * Auctioning of village pond * Poisoning of pond by one group * Access to resource rich and politically powerful * Increase in inequity
Changing policy	<ul style="list-style-type: none"> * Confrontation of existing policies, existence of informal rules denied or over-ruled 	<ul style="list-style-type: none"> * Breaking down of village rule structure * More emphasis on legal provisions
Changing social structures	<ul style="list-style-type: none"> * Multiple leaders, internal power struggles, * Unresolved personal conflicts, and * Poor understanding of organizational process 	<ul style="list-style-type: none"> * Challenges for informal institutions, * Need for legitimate institutions, * Breakdown of conflict resolution mechanisms-need for the state to step measures
Increasing alternatives	<ul style="list-style-type: none"> * Knowledge and culture shared * Rapid, expanding, and diverse global flows of objects, information, money, images, ideologies, and people 	<ul style="list-style-type: none"> * More opportunity at times inferior to existing livelihood option but seems lucrative. * Gain from different types of access
Increasing threat to collectivity	<ul style="list-style-type: none"> * Gives rise to cultural disintegration, * Deepens inequalities * Perpetuate the patterns of unequal development * Fragmentation of governance 	<ul style="list-style-type: none"> * Changing power relations more in the line of political affiliation and wealth accumulation * People having access to cash income are ruling over even resource rich person * Strong polarization by individual actors by virtue of money power. * Increasing transaction cost

Source: Pradhan, 2006.

institutions are not free from biases, inequities that emanates from its feudalistic setting in the past. When these irregularities are questioned, appropriate modification and correction are made through community consensus it becomes very effective tool to manage village resource with greater degree of community involvement. The process of rule making needs to make the attempt to devise strategies that not only respect and accommodate the existing social, cultural and

political specificities but also create spaces for those sections of the community, which are disenfranchised. The structural changes like universal membership on the basis of adult franchise, functional shifts by levying primacy on general assemble for decision-making and deliberations, etc. contributes towards the cause of disenfranchised ones.

The institution persists because of the support of the social actors who benefit from its rules and outcomes and who are sufficiently powerful to promote its continuation. Beneficiaries are not necessarily those who had power prior to the institution's creation; they may well have been subordinate to an alternative group at the institution's genesis. However, they subsequently become empowered by its rules and outcomes and support its continuation and even expansion. Institutional change occurs when beneficiaries of the group are weakened and overcome by other, previously subordinate groups, a situation that can occur as a result of social and economic changes. As the rule making system and the planning process provides space for incorporating peculiarities of village situation, subgroup interests, transaction of views of cross section of the communities, it makes the institution adaptive and resilient to deal with externalities.

Search for appropriate mechanisms and solutions

People in the villages, as in any other place, respond best when there are elements of trust, interest and security in any venture they undertake. Often such responses are governed by the principles of self-discovery and are an outcome of trials which are small, gradual and which do not challenge the entire system but only seek to modify elements of it, eventually taking forward the entire system and its status to a different plane. Common needs tend to bring people and communities together. Most often communities go through a natural process wherein these needs are prioritized, analyzed, a few possible solutions are arrived at, some of these alternatives are tried, monitored and the most appropriate solution adapted.

If intervention, in a way, engineers the 'social dynamics' within the village system, the effort is to be made to direct such 'social engineering' towards strengthening local initiatives and mechanisms rather than displacing them with new and outside ideas. This does not, however, imply that one would be closed to outside trials and experiments, but such ideas are introduced as one of the alternatives for the people to decide. The continuous search processes help inducing analytical flexibility within the community and provide openness to accept the new realities and manage the change efficiently³².

Conclusion

Setting up linkages between local communities and higher up other actors of biodiversity conservationist is an essential need. Delinking human element from conservation is less than any viable solution. Setting up these linkages requires understanding the relationships between communities and conservation, and developing the capacity of the actors to deal with multiple conservation objectives. In the case Indian Forest Management, JFM initially brought some fresh air towards achieving the above goal. Unfortunately, forest department could not continue process of establishing multi-level governance through necessary democratization. As a result, JFM is becoming less community oriented and more of co-opted *ad hoc* managing body dominated by forest bureaucrats.

Many self initiated community based conservation efforts in Odisha have been trying to evolve into more viable form multi-level linkages of late. These communities are showing how they are adapting new situations without compromising with conservation objectives. However, these initiatives need to work out some adjustment with governing system of the country. Such negotiation will be very crucial for the sustenance of such adapting behaviour of the communities.

NEGOTIATED DOMAINS: EVOLVING BOUNDARIES, COMMUNITIES AND POLICY SPACES

Subrata Singh

Introduction

The fragmentation of landscapes and eco-systems along administrative or legal boundaries has become the most accepted basis for decision-making processes. This may be attributed to the colonial and post-colonial discourse on property theories that has led to de-collectivisation, classification, allocation and titling of lands to individual households with the forests and common lands retained as the property of the government under the principle of Eminent Domain but placed in the record of rights of each village. Various acts, policies and programmes formulated from time to time have continued to define and redefine boundaries based on manageability rather than the suitability in the larger landscape and the existing socio-political framework. The implementations of these act and policies have strengthened the conflation of property and identity that has had identifiable effects on how both property relations and development prospects have played out. Such actions have lead to what has been termed as territorialisation by many scholars. Property rights are defined by legal concepts, which indicate the variable strength of the relationship between holders of property and their property objects.

The ecosystem interactions often transgress the domains of administrative boundaries and are based on the natural watersheds, geological formations, hydro-geological and nutrient flows. Administrative or legal boundaries make little sense while understanding the evolution of nature, its diversity, complexity and simultaneity. And yet we live in a world in which most decisions have to be taken along these boundaries¹. Further, the sociological interactions have also been developed over the years based on the communities' historical understanding of the larger landscapes, resource availability and dependence on the resources for sustenance². The interactions are therefore characterized by temporal and spatial variability of resources, such as grazing lands, forests and

water points as they are unevenly distributed over wide geographical areas. The communities adapt to their needs and create a variety of operational boundaries and property regimes through a variety of negotiations across habitations based on access to resources and the availability of certain resources but are rarely based on the artificially created administrative boundaries.

The boundaries separating distinct institutional systems - much like the boundaries between individual ecosystems - are often fuzzy and difficult to locate with precision. This is a consequence of the role that social construction plays in determining the scope or domain of individual institutions as well as of inter-dependencies connecting institutional arrangements to one another³. Adding to this complexity is the use of the resources with the resource users being different for different commodities, in fact overlapping in terms of scale spatially and temporally. The objective of the paper is to examine and discuss the possible approaches to understand the interplay between the institutions and the ways to deal with issues of access and property rights within the discourses on commons. The paper attempts to discuss the issue through the framework of "negotiated domains" to explain the existence of 'informal' boundaries across property regimes and mutually accepted rules that have developed through historical negotiations between communities across generations. This chapter is an output of a post-facto analysis of a study conducted across ninety villages in the eastern state of India (Odisha)^a to evaluate the performance of institutions managing natural resources (especially forest resources) against institutional and resource parameters. The chapter is based on our search for mechanisms that assist in the development of rules and regulations, specifically on elements that provide other stakeholders access to the resource.

Landscapes as Livelihood Spaces

We understand that the livelihoods of the community are shaped by the opportunities and the constraints that a particular landscape offers. Defining a landscape is very abstract and having a common and acceptable definition for a common understanding is important. Apart from the topographical and morphological features, it is also important to understand the cultural and social aspects in the landscape as it provides a character to and defines the land use in the landscape. According to the Wikipedia definition 'a landscape

^a This paper is based on the results of fieldwork undertaken in the project villages in Angul and Dhenkanal districts of Central Odisha

^b Wikipedia definition as accessed on 21st April 2008

comprises the visible features of an area of land, including physical elements such as landforms, living elements of flora and fauna, abstract elements such as lighting and weather conditions, and human elements, for instance human activity or the built environment^b. UNESCO defines cultural landscapes^c as 'combined works of nature and of man', illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal. Cultural landscapes include diverse examples of the interaction between humans and the natural environment and could fall into three categories: (i) the clearly defined landscape designed and created intentionally by man; (ii) the organically evolved landscape; and (iii) the associative cultural landscape'. McNeely's definition of the landscape attempts to put the ecological social and cultural aspects in perspective, which is defined as 'a mosaic where a cluster of local ecosystems is repeated in similar form'. A landscape is characterized by a particular configuration of topography, vegetation, land use, and settlement pattern that delimits some coherence of natural, historical, and cultural processes and activities. This definition views landscapes as not only a biophysical space but also as cultural-political-economic space, which interacts to shape the landscape structure.

Landscapes are dynamic systems and various component of the landscape are in constant interactions from inside as well as outside. This is especially true in practice, where the broad-scale processes act to constrain or influence finer-scale phenomena based on few key parameters - i.e. the land-use, the farming systems and the 'supply-side' of agricultural lands (for food security). It is this ecological landscape, based on which the livelihoods of the communities are evolved with the land, forests and water as their basic capital assets. The livelihood strategies so developed are the range and combination of activities and choices that people make or undertake in order to achieve their livelihood goals including the choices they employ in pursuit of income, other productive and reproductive activities, investment strategies, choices, security, well-being, etc. Several researchers have highlighted the critical relation between survival strategies, ecological and biodiversity-rich production systems and the customary rights of the poor to collect and gather food from their surroundings. These ecological and ethical relations fashion a "social landscape" that ensures survival, no matter how difficult that may be (IDRC^d).

^c <http://www.environment.gov.au/heritage/worldheritage/criteria.html> accessed on 22nd April 2008

^d http://www.idrc.ca/en/ev-110416-201-1-DO_TOPIC.html accessed on 28th April 2008

Also, it is important to understand that the livelihoods within a particular landscape are developed and strongly affected by the contexts of the specific complexities present in the interfaces between conservation, land-use and the state of governance order in place. I attempt to understand how local people develop/determine their agrarian landscapes and livelihood practices in a given landscape drawing from Henri Lefebvre's concept of socially produced space. The livelihoods so developed are very much dependent on the access and rights over landscape components. The study of space offers an answer according to which the social relations of production have a social existence to the extent that they have a spatial existence; they project themselves into a space, becoming inscribed there, and in the process producing that space itself. Failing this, these relations would remain in the realm of 'pure abstraction', that is to say in the realm of representations and hence of ideology⁴.

The status of the livelihoods in a landscape today in any location is a picture based on a series of negotiations arising out of contestations over land-use, property and access over resources - private or otherwise. For example, land use and landscape management are strongly linked to the management of water resources and the way land is used determines the livelihoods of the various communities living within the landscape. This therefore brings people together to identify, negotiate and put in place practices that optimize the environmental, social and economic benefits within the larger policy framework and the opportunity and constraints that the landscape offers. The present land-use in the given landscape is a result of years of real-life trade-offs and negotiations and the functionality of the landscape is designed by the policies and practice mainly based on collaborative process of learning and adaptive management. We also understand that both physical and social landscapes do not exist in isolation and landscapes are nested within larger landscapes that are nested within more larger landscapes, and so on. So does the negotiations extend beyond landscapes and people and keep creating new sets of domains to define their existence and thereby their livelihoods ?

Decentralization, Devolution and Territorialization

The colonial and post-colonial discourse on property that has led to titling of lands to individual households in India way back in 1700 AD is leading to gradual decollectivisation and allocation of land. The colonial and postcolonial governments have shaped natural resource governance and the resource rights regimes through the process, what Peluso refers to '*territorialization*'. Critical tools

like cartographic mapping, survey and settlements and land titling etc., carried out mostly in 19th Century and first part of 20th Century under colonial state brought in and established territorialization. Territorialization has been a 'resource control' strategy by the modern state wherein it divides and subdivides the area under its control into economic and political zones, rearranges people and resources within such units and delineates how and in what manner such resources can be used by whom and in what manner. In the globalizing world, state policies increasingly manage natural resources, particularly the common as commodities while ignoring local rights and the negative consequences in the lives of local people.

The survey and settlement undertaken in India during the 1800s drew lines on the map, identifying each bit of land either in the name of an individual or in the name of the village or have been allocated to different departments as custodians of the land resource. While the demarcations drew permanent lines on the ground, the policies over the years strengthened the claims and bringing in the identification of 'mine' and 'yours'. Unfortunately, India continued with the colonial law and policy even in the 21st century, continuing with the policy of considering as public land all land not assessed for revenue and taking over such land after declaring it 'forest' or 'wasteland' irrespective of the history of occupation and use. In practice, the notions of property has been very clear for the private lands but the common lands and the forests though transferred to the revenue and forest departments, continued to be accessed as open access and the communities continue to structure their livelihoods around the resources, especially in terms of depending on the resource for energy needs, fodder and grazing needs, collection of forest products and ecological services and goods. The access of the resources has not been limited to their village but extend to across the landscapes and the communities' access to the resources across villages.

With five decades of programmatic decentralization and about two decades of policy decentralization have further strengthened the boundaries drawn during the colonial rule. Attempting to understand the policy on land by the Indian governments' we find three distinct elements: First, we have a series of legislations creating land title; second, the governments have continued a policy of encouraging the formation of publicly-funded organizations/

^e TGCS- Tree Growers' Cooperative Societies initiated by the Foundation for Ecological Security (earlier NTGCF)

^f The Indian Forest Policy of 1988 that brought in the Joint Forest Management, the 73rd Amendment to the Constitution that brought the three tier Panchayati Raj System have been significant in legal terms and has left an impression on the governance arena.

institutions, many of them have necessitated creating new land title regimes, like Tree Growers' Cooperatives^e, Village Forest Committees^f etc; and third, we have a regime of governance under the panchayats which have been provided custodial rights over certain kind of lands and right to use the same effectively.

Years of development process during the colonial and post-colonial socialist regime, led to the additions of land parcels in the private domain for agriculture, not only through the distribution of public lands for the poor as political largesse but also through the process of regularization of encroachments. The concept of internal territorialization provides a handle for addressing historically embedded political, social and economic processes, which underlie spatial differentiation of landscapes and emergence of property and resource rights regimes. This is not to claim that the state is the only key actor in this process: market forces, traditional systems of resource tenure, existing practices, all influence the emergence of resource regimes; but the modern state often has the most critical role to play, since its laws, policies and practices lay the ground rules of legitimacy. Therefore strategies for internal territorialization followed by States and their interactions with local dynamics become the key processes for entitlement creation over land and other natural resources, influencing the social and economic status of the inhabitants of the landscapes.

Divided by boundaries for collection of revenues and for administrative reasons in the seventeenth century, it had little influence on the use pattern in the landscape. The increasing demand for arable lands, reducing pastures and common lands, increased degradation leading to threatening of livelihood systems has tended to fragment the landscape and disintegrate use patterns and thereby disrupting dependent livelihoods. The decreasing common lands and a combination of acts and policies that encouraged decentralization have furthered and firmed the boundaries and thereby establishing territorialization. Fragmentation and enclosure of the social and physical landscape is therefore a broad trend that has enormous direct impact on the livelihood options of people, which once developed based on the larger landscape are getting smaller and smaller because of allocation of such lands to be protected and managed by habitations or villages which results in these spaces are being fragmented, privatized and redesigned in ways that reduce or eliminate the customary rights of the poor to gather resources and fashion their livelihoods.

Territorialization also provides a handle for addressing historically embedded political, social and economic processes which underlie spatial differentiation of landscapes and emergence of

property and resource rights regimes. This is not to claim that the state is the only key actor in this process: market forces, traditional systems of resource tenure, existing practices, all influence the emergence of resource regimes; but the modern state often has the most critical role to play, since its laws, policies and practices lay the ground rules of legitimacy. Therefore strategies for territorialization followed by States and their interactions with local dynamics become the key processes for entitlement creation over land and other natural resources, influencing the social and economic status of the inhabitants of the landscapes.

Existence of Fuzzy Boundaries

Landscapes are contested territories and raise issues of identity, access, appropriation and power not just for individuals but also involves institutions when we consider the management of common property resources across a larger landscape. Administrative or legal boundaries make little sense while understanding the evolution of resource use, its diversity, complexity and simultaneity. The fragmentation of landscapes and eco-systems along artificial boundaries does impair our ability to let the socio-ecological interactions be monitored or managed in a sustainable manner. By focusing on ability⁸, rather than rights as property theory, this formulation (Theory of Access) brings attention to a wider range of social relationships that can constrain or enable people to benefit from resources without focusing on property relations alone.

Notions of property and access to resources have dominated the discourse regarding the management and governance of commons. Clear delineation of boundaries around resources and social boundaries around groups of rights-holders have been proposed as essential prerequisites of successful common property regimes⁵. Many researchers also feel clear boundaries are important in monitoring and enforcing, and in making sure that those who participate in collective action (either by contributing or refraining from taking too much) will be the ones who benefit from improvements⁶. Lack of boundedness of the resource is more complex and resource managers find it difficult to manage. It is, therefore, various acts, policies and programmes formulated from

⁸ Ability is akin to power, which we define in senses- first, as the capacity of some actors to affect the practices and ideas of others (Weber 1978; Lukes 1986) and second, we see power as emergent from, though no always attached to, people. Power is inherent in certain kinds of relationships and can emerge from or flow through the intended and unintended consequences or effects of social relationships - from A Theory of Access by Jesse C. Ribot & Nancy Lee Peluso, *Rural Sociology* 68(2), 2003. pp.153-181.

time to time have continued to define and redefine boundaries based on manageability rather than the suitability in the larger landscape and the existing socio-political framework. The standard approach to the analysis of property rights recognizes only clearly defined property right regions and considers flexible rights as causes for negative externalities⁷.

Focusing on natural resources as the 'things' in question, the discussion explores the range of powers - embodied in and exercised through various mechanisms, processes and social relations - that affect people's ability to benefit from resources. These powers constitute the material, cultural and political-economic strands within the "bundles" and "webs" of powers that configure resource access. Different people and institutions hold and can draw on different "bundles of powers" located and constituted within "webs of powers" made up of these strands. People and institutions are positioned differently in relation to resources at historical moments and geographical scales. The strands thus shift and change over time, changing the nature of power and forms of access to resources.

However, the situation is very different on the ground and in most cases "fuzzy" boundaries exist and many-a-times may be preferred, especially in highly variable contexts, where people recognize that they may need to tap others' resources under crisis conditions (e.g. drought), and are therefore willing to allow others to use their resources under similar conditions. The existence of fuzzy boundaries has been discussed by many researchers^{6&7}, at spatial (ecological) and social scales and boundaries in contexts like the pastoral lands, river resources, etc. Also, the vagueness, permeability, and overlap of boundaries around resources and user groups pose significant difficulties for implementation of formal tenure regimes designed to address insecure tenures and unsustainable land-use patterns, and the assumptions of common property theory do not hold. Ostrom also later argued that the world of property rights is far more complex than simply government, private and common property and identified a hierarchy of five classes of rights including the right of access, withdrawal, management, exclusion, and of alienation. Corresponding to each of these right regimes, she identified five classes of property rights holders, i.e., authorized entrants, authorized users, claimants, proprietors, and owners⁵.

Understanding Negotiated Domains^h

The socio-ecological interactions and their boundaries often transgress the domains of administrative boundaries and are based on the communities' understanding of the larger landscapes and their traditional knowledge of historical access over resources, resource availability and variety of contestations across communities¹. The communities adapt to their needs and create a variety of operational boundaries and property regimes through a variety of negotiations across habitations based on access to resources and the availability of certain resources but are rarely based on the artificially created administrative boundaries. It is important therefore to understand how communities, user boundaries and property rights are defined in the context of a particular resource. The composition of the users often changes from one product to the other, while the users for timber, fuel wood and fodder are fairly defined under usual circumstances and are specific to the habitations managing the resource, the users for other produce like food, bamboo, fibres, honey, tendu leaves, mohua flowers etc vary greatly across the landscape and are spread spatially. With the larger landscape being used as livelihood spaces, the appropriation and allocation of resources beyond the habitation level lead to negotiations that help in drawing out appropriate collective choice arrangements at various levels between such institutions.

The spatial and social boundaries are difficult to define for use-patterns by communities because - firstly, the resources that communities rely on are multiple and overlapping, representing a corresponding multiplicity of associated use rights, which are often contingent upon one another; secondly, among these multiple resources are many that are difficult or impossible to delineate spatially, except at very large spatial scales, due to inherently flexible or fuzzy resource boundaries -these indistinct and flexible boundaries are the result of the spatial and temporal variability in resource quality and abundance that characterize certain common lands and differentiate from the others, and; thirdly, the groups of resource-users who use these multiple resources are also overlapping, constantly shifting in composition, and consequently difficult to define. The sociological interactions have also been developed over the years based on the

^h The word "contested domains" has been used more frequently in the theoretical discourses on Commons. The word has been used by Dr. Akhileswar Pathak in his book by the same name and later by Prof. Anil Gupta & Riya Sinha (2001) in their paper "Contested Domains, Fragmented Spaces: rights, responsibilities and rewards for conserving biodiversity and associated knowledge systems". I use the term "Negotiated Domains" in this paper as it better explains the concept of establishing new boundaries for access and resource use.

communities' historical understanding of the larger landscapes, resource availability and dependence on the resources for sustenance. This paper attempts to discuss a framework of "negotiated domains" to explain the existence of informal boundaries across property regimes and mutually accepted rules that have developed through historical negotiations between communities across generations.

Framework for Negotiated Domains

Notions of boundaries and property over resources dominate the debate over commons. Property is a three-way relationship between the holder of the property entitlements, the particular resource complex and the collective, state or social norm, which gives legitimacy to the entitlements. Property rights are defined by legal concepts, which indicate the variable strength of the relationship between holders of property and their property objects^{8, i}. The word "contested domains" has been used more frequently in the theoretical discourses when there are disputes over resource use⁹. I use the term "Negotiated Domains" in this paper as it better explains the concept of establishing new boundaries for access and resource use - it is not about contestation or disputes but it is about developing working relationships where resource use is accepted under certain conditions depending on the context. Few factors that facilitate the evolution of negotiated domains are discussed below:

Residual Claims for Historical Usages

Boundaries have for quite some time been discussed in common property literature and with political decentralization considerable attention has been given to the ways that resource boundaries are carved out. While certain boundaries were drawn in the early seventeenth century, these had little impact on the resource use but the post independence policies on resource use have helped in the consolidation and reinforcement of the resource boundaries. In most cases landscapes reflect multiple overlapping or multi-layered boundaries asserted by various social groups developed through years of resource use, their association with the resource and changing policies that impacted the resource use from time to time.

In case of the forest, the communities in the area enjoyed '*nistaar*' rights during the colonial period and for some period in the post independence period after which these rights were withdrawn.

ⁱ Paul, Christopher 2004: Tenure in Community Forests, A Study on Communal Land Associations as Forest Management Regimes in Budongo, Masindi.

While in the revenue lands, which have been historically used as common resources have been left unattended. In both the cases the communities have developed resource use regimes to support and augment their livelihood needs and in most cases, their domain of their sphere has been spread across the landscape. With the decentralization and devolution of resource management to the lower tiers of governance - the habitations or panchayats have been allocated control of the forest, grazing and revenue lands, boundaries have been drawn around the resources as a good practice for resource governance. While most policies have tended to define 'community' and 'boundary' with a narrow connotation on the basis of fixed in place socio-political unit having residential proximity to the resource, the basic weakness of the standard approach arises from the fact that it neglects the complex forms of rights, which are widespread in traditional societies⁷. This has resulted in displacing the historical use pattern on such lands leading to conflicts and breakdown of the institutional arrangements. With such contestations, it has been observed that the residual claims based on the historical use have been accepted through repeated negotiations over the years. These are observed in areas where the resource is scarce and limited but the usage is allowed for certain products and limited for certain others.

Competitive Power Dynamics

Landscape is seen as an arena where socio-cultural and environmental processes meet and where rules of the game are defined and conceptualized between the various stakeholders. The relationship between villages within the landscape is dynamic at any point of time and is in a process of constant negotiation. The spoke-and-hub design of the development process followed in the country often lead to the larger centrally placed villages more powerful as they are the hub of the political as well as the economic activities in the area. Taking advantage of the power they assume, the bigger villages try and negotiate for a larger pie of the resource in lieu of the services they provide. The smaller villages show submissive behavior because in most cases they are susceptible to isolation in the larger development process.

The interactions between the small villages and their big neighbours determine the type of negotiations arrived at. Anticipating the moves of the larger villagers, the smaller villages would be able to respond better and make better decisions. The competitive power dynamics between the actors brings in a lot of challenges in terms of resource use. Many a times, it is too costly for a coordinated effort for resource protection by the larger villages and therefore entirely

depends on the resources protected by the smaller villages - by agreement or by force. The smaller villages also offer support for the larger villages, though not for regular use by all members, but on strategic instances like festivals etc to keep their relationship better. The appropriation and allocation of resources beyond the habitation level lead to conflicts and the negotiations help in drawing out appropriate collective choice arrangements at various levels between such institutions.

Conflicts and disturbances arise when there are varied interests of people in a particular resource. Conflicts are not only unavoidable but are also natural, the intensity and frequency increasing with the demand on the resource. All the stakeholders tend to appropriate resources in proportion to the power (social, economic or political) they command and many are indifferent to the effort that goes into the maintenance of the same. Conflicts are also desirable as they have the ability to bring in positive changes that have long-term impact². They have the potential to be converted for everyone's benefit but when the resources are scarce, competition for the resource increases which tests the effectiveness institutional mechanisms for regulating the use of resources. Negotiations are a way for preventing and resolving conflict arising from competition over resources. Stand-offs in situations of conflicts often lead to degradation of the resources, while the ability of the institution to enter into negotiations and come-up with win-win situations help in maintaining the resource as well as building them as partners in conservation.

Distributional Consequences

The use rights over the resources are negotiated because of the uneven distribution of resources over the landscape. The availability of the commons (forests or grazing) lands within the landscape varies - some are better endowed than the others, which results in the habitations coming into arrangements whereby they benefit from the resource. The distribution of species across the landscape also varies, as it is dependent on the climatic and geological factors for its existence. This requires groups depending on such resources to negotiate with the other communities or get into arrangements whereby the benefit from the resources.

As the resources are developed, only the villages nearest to the resources begin protection, they get short-term gains. As resource grows more stakeholders begin claiming the benefit from resources - based on historical usage (residual claims) - mechanisms develop for sharing by villages protecting the resource to continue getting benefits and for

other stakeholders to also receive occasional benefits. Negotiated access rights are also associated with certain unique conditions such as droughts or calamities, where communities share the resources for such time limits when the going gets tough.

Inter-jurisdictional Rule-making

Where the resources are scarce and contested, cooperation among the stakeholders emerge as networks. The exchanges that take place within networks are typically positive for all, yet often more positive for some than for others. It is generally posited that the greatest gains from exchange within any network will reside in the hands of those that provide links to others in the network who are not themselves directly connected. Being a link between others not directly connected confers brokering power within a network⁹, a "betweenness" advantage maximized when a member has large numbers of diverse links to other members. The opposite condition is to be trapped in a clique with just a small number of links, and all to fellow clique members. In highly centralized networks, brokering power tends to reside at a single center hub linked to all other members by spokes, with the members at the ends of those spokes poorly connected to each other.

Deterring Factors

a. Straight jacketed policy implementation

The tragedy of this situation lies in the fact that most state property regimes are examples of state's reach exceeding its grasp. The state has taken on far more resource management authority than they can be expected to carry out effectively. In such a vacuum, in many areas the local communities took control of the depleting resource, to regenerate and manage the resources to their advantage. As the programmatic and policy decentralization continued, the use mechanisms developed due to the years of government inaction have been displaced and the administrative boundaries drawn during the colonial rule are getting strengthened.

The policy guidelines drawn out for implementation have been detailed seeking straight jacketed implementation on the ground. This large-scale implementation usually leaves little scope for ground realities to be appreciated and is the largest factor that discourages negotiations. Therefore, the communities provided access to the resource tends to control the control the resource and restrict access of the users from across the landscape.

b. Institutional overhangs

In continuation to the discussion on the policies, I would like to extend on the institutions being promoted through the policies regarding the management of natural resources. The literature from evaluations of the programmes suggest that the institutions formed for the implementation are either committees that exist on paper or are very weak in terms of taking the role of the resource governance, while those which have evolved stronger either due to better implementation or because of better awareness and capacity. While in the earlier case, the resource is under threat because on non-regulation and ineffective governance, in the later case, the institutions suffer from institutional overhangs - which function very strictly in accordance to the guidelines and discourage negotiations. Under such situation too, the resource and institution are under threat because of recurrent conflicts arising out of contestations and demand from other stakeholders.

Conclusion

The fragmentation of landscapes and eco-systems along administrative boundaries has become the most accepted basis for decision-making processes. Various acts, policies and programmes formulated from time to time continue to define and redefine boundaries according to their manageability rather than the suitability in the larger landscape and the existing socio-political framework. Understanding the evolution of nature, its diversity, complexity and simultaneity, it is difficult within the framework of these administrative boundaries to manage and conserve the complex landscapes. In the earlier section, we tried to discuss a framework of "negotiated domains" across the landscape to explain the existence of informal boundaries across property regimes and mutually accepted rules that have developed through negotiations between communities across generations. Neither it is easy to explain the wide range of ecosystem interactions in terms of property theory nor is it possible to legalize the multiple boundaries, as an enforceable claim to the benefits but it is essential for such informal spaces to be acknowledged and supported by society through law, custom or convention. The sustainability of the resource depends on the socially constructed norms, rules and entitlement regimes that define the access to the resources and not only property rights that provides enforceable claim to use of or benefit from the resource.

In ecosystems, interaction strength often decays with spatial distance or temporal displacement. However, social systems

interactions can extend far across space or time. We understand that the institutions by design can promote negotiations or reduce negotiations -the landscape as the livelihood space captures the need for institutional format to appreciate such negotiations and allow for multiple boundaries. Understanding that the resources have multiple uses and various stakeholders dependent of the resource, the policies need to appreciate the existence of such interactions and allow for such mechanisms to evolve. While the policies for decentralization are necessary, we need to provide an opportunity for the institutions to evolve mechanisms rather than have detailed guidelines to follow. Appreciating the fact that each of the mechanisms are unique and dependent on the resource, the relationship with the neighbouring habitation, the institution's understanding of cross-scale processes and envisioning their future along with their ability to change would form the key to the understanding of the negotiated domains. Understanding these would provide the leads to policy formulation where the principles could play a larger role than the policy guidelines.

SECTION - II

COMMONS AND LIVELIHOOD

COMMONS AND LIVELIHOOD TRADE-OFFS: CASE OF NTFP IN INDIA

Himadri Sinha

Introduction

In India, 50 percent of forest revenues and 70 percent of forest based export income come from non-timber forest produces (NTFP). They provide 50 percent of household income for 20 - 30 percent rural population particularly the tribal. Until recently NTFPs have been largely overlooked in forest management despite their contribution to the poor households depending on subsistence agriculture and their significant value addition to national economy. Of late when NTFP are attracting much economic interest, poor collectors are overlooked. Income generation from NTFP is constrained because of (i) poor infrastructure and under developed marketing information network, (ii) high degree of indebtedness of the tribal families and their consequent inability to store and process NTFP for better price, (iii) failure of state agencies to open purchase centers at remote locations to provide support price for NTFP, (iv) State's reluctance to provide ownership rights to the collectors over all NTFP, and (v) near absence of institutions to provide training and material support for NTFP processing, storage and sale. As a result, intermediaries appointed by the state forest department play pivotal role in purchasing NTFP from village centers. Intermediaries pay only 1/5 to 1/6 of the market price to collectors¹. Often time such prices turn out be just 1/4 to 1/5 of the prevailing minimum daily wages for the collectors. Low price mechanism and working nexus between forest department and intermediaries nurture a vicious poverty cycle for NTFP collectors.

In this backdrop, the chapter (i) gives a brief account of present problems of NTFP collection and marketing, (ii) develops a conceptual framework for indicating the trade-off between privatized NTFP production and processing system and collective work domain of the producers, (iii) analyzes the type of association required among NTFP collectors, forest department and NTFP purchasers for better incentive mechanism, (iv) explores the type of investment required for training, organizational capacity building and conflict resolution to

create such institutions and associations, and (iv) recommends policy amendments required for the community oriented NTFP management in India.

Problems of NTFP Collection

NTFPs have some inherent disadvantages with regard to exploitation. These are often found in difficult and inaccessible terrains and some of these are perishable thus pose serious threats with respect to their timely harvesting and storage. They occur in scattered areas making economic exploitation difficult and thereby increase the cost of collection and transport. Transport system in many such areas is either non-existent or inadequate or primitive. Despite such inherent disadvantages associated with these products, these are very crucial life supporting means for subsistence of poor forest dwellers living in remote and inaccessible areas. Though they remain isolated from urban society till today, they have been inheriting the customary habit of preservation and conservation of their forest resources. This is exclusively due to the reason that NTFPs are their chief source of livelihood especially during drought and adverse climatic conditions. Importantly, these constitute up to 50 percent of their food needs. They, therefore, owe their survival and existence to the land and forests in which they dwell.

Tribal people subsist on edible leaves, roots, honey and various fruits. For generations, they enjoyed the freedom to use forest resources including hunting of wild animals. Gradually, forest legislations prohibited them from this freedom and termed their activities as an act of deforestation. This directly affected the lives of forest dwellers and resulted in continuous fall of forest revenues. Such phenomenon caused tribal to encroach in other forest areas situated far from their residence and provoked them to collect NTFP and medicinal plants in unsustainable manner².

For most forest dwellers, NTFP collection is the secondary occupation. NTFP availability is region and season specific. Most of these grown naturally in forest once the climatic conditions become favorable. Due to lack of information, many of the potential products remain unexploited. Many of the forest dwellers are not aware of the market for these products due to their ignorance and distress conditions. Furthermore, deforestation has caused the decline of NTFP availability, which eventually had adverse impact on collectors' income, employment and living conditions.

Many cottage industries, such as basket making, rope making and *bidi* (local cigar) making, depend upon forest products. The

livelihoods of people are based on the diversity of these forest resources. Most crucial factor is the gradual entry of traders and agents into the market network to purchase NTFP at low prices and at exploitative terms. Present government's efforts are no different from the colonial government's trade policy that tried to augment forest revenues through traders and contractors by banning the forest dwellers from collecting and consuming the NTFP.

Hardship undertaken by forest dwellers and tribal in particulars to collect NTFP involve great costs since much time is spent to cover huge distance in quest of collection mostly due to deforestation. The very purpose of collection of NTFP is for survival and partly for marketing. But this indeed depends upon the economic standard of living/class, status, caste, local availability, access to forests and the obtainable price of the produce. Various NTFP and parts of the trees and plants grown in forests such as fruits, leaves, seeds, roots, flowers, barks etc. have different medicinal value. There are some medicinal plants available in forests, each portion of which is useful as food and medicines. Most of such plants have great commercial value. These are immensely useful to tribal in remote areas owing to their dependence on wild medicinal shrubs, herbs, roots and fruits in the absence of their accessibility to modern medicine.

The common property nature of forests and NTFP resources require secure, enforceable use rights as preconditions for their collective management and conservation. However, security of tenure and resource rights alone though necessary, are not sufficient for sustainability. The attraction of alternative market options, vagaries of local factional politics, ineffectual leadership and lack of collective sanction and protection mechanisms have left many NTFPs plundered and exploited beyond their natural regenerative capacities. Strong, self-regulating institutions and community organizations with effective transparent mechanisms for equitable sharing and conflict resolution are essential. Investment in training and organization capacity building to create such institutions are as important as technology development².

Problems of NTFP Marketing

A. Revenue, marketing and trade

NTFPs have always played an important role as an instrument of revenue for the state's exchequer. At the national level over fifty per cent of forest revenue and seventy per cent of export income is contribute by NTFP³. These NTFP products accounts for fifty

percent of the income for one-fifth to one-third of the rural population in India. In Rajasthan and Madhya Pradesh, these provide 70 percent and 30 percent of total forest revenue respectively. In Midnapore district of West Bengal, the income derived from timber over a period of 10 years is only the one-third of that generated by NTFPs over the same period. In Sukhomajri village of Haryana state household income has increased by an estimated Rs. 1000 per household due to increased 'Bhabbar' grass (*Eulaliopsis binata*) production⁴. Income from NTFPs like grass for broom-making, stone and tree moss, *Aonla* (*Phyllanthus emblica*), *Poochakai* or *Reetha* (Soapnut - *Sapindus trifoliatus*), Tamarind (*Tamarindus indica*), *Karanj* (*Pongamia pinnata*) kernel, Jujube fruits (*Ziziphus* sp.), Wood Apple (*Limonia acidissima*), Mangoes (*Mangifera indica*) etc. in Sathy Forest Range of Western Tamil Nadu was found to be Rs. 2720 per hectare and Rs. 9000 per household³. The income from Mahua (*Madhuca indica*) yielding edible flowers, Mango, Black Plum, Jujube, *Aaonla*, *Sal* (*Sorea robusta*), *Karanj* (*Pongamia pinnata*), *Tendu* (*Diospyrus melanoxylon*), *Terminalia* has been instrumental in changing the nature and feature of local economy. They generate income as raw material for cottage industries, non-edible oilseeds, fibres, bark, edible fruits and tubers, medicinal plants, bamboos, canes etc.

B. Marketing and trade

Usually the movement of NTFPs from production centre to consumers is through (a) primary wholesaler, (b) secondary wholesaler, (c) itinerant merchants, (d) retailers and (e) direct sale to consumer. There is a large scale private trade especially products such as, edible wild plants, vegetable tan, oilseeds, fibre, beverage (non-alcoholic and alcoholic), for the sale to private trader or middlemen or even to consumers directly in local markets for cash income. The private traders make almost no investment in regeneration of NTFP. Besides seasonality i.e., changes in the demand and supply of various NTFP, collection of NTFP is usually an un-remunerative activity for women, children and elderly people of the lower income group communities. During agricultural lean seasons and drought year barter system is practiced by offering a cheap need based item in exchange for the NTFP as most collectors have low bargaining power. Thus, the major share of the value of NTFP is consumed by the intermediaries and the primary collectors hardly get one-sixth of the final price³. The players in NTFP markets include collectors, local collection agents and a number of wholesalers and retailers at local regional and national level. Under the present circumstances, there is a need to monitor the prevalent system of extraction and marketing of NTFP in order to ensure that it is within the sustainable limits of the harvest. It appears that private

monopolies have also been created under the garb of state's monopoly on purchase and trade rights for NTFP like *tendu* leaf through Large and Multi Purpose Societies (LAMPS), on payment for the modest royalty. LAMPS are unable to ensure prompt payment for the NTFP like *tendu* leaf, *sal* seeds, cashew nuts. In Rajasthan the NTFP, is normally supposed to pass from the collector to the LAMPS purchasing centre. But due to bureaucratic approach of the LAMP, the collector often prefers to barter at the local shopkeeper or moneylender at a throw away price or to clear the pending loans and interest⁵. In Odisha, as per Odisha Forest Produce (Control of Trade) Act, 1981, government organisations have monopoly rights over a number of NTFP⁶. In practice, the organisations like Forest Development Corporations, Tribal Development Cooperative Corporation etc. have appointed the private traders, moneylenders and middlemen as their sub-agents who fully exploit the collectors. Madhya Pradesh produces more than 60 percent of *tendu* leaf of the country. Here also the problems of collectors remain unresolved even after nationalization of *tendu* leaf in 1964 and setting up of a State MFP Cooperative Federation with its 1947 Primary Forest Produce Cooperative Societies. The leaf collectors hardly earn Rs. 30-40 per day during plucking season despite delay in payments, acceptance of only best quality leaves, the stopping of procurement of leaves much ahead of rainy season, and huge earning to the state's revenue. This is even much below the minimum wage prescribed by the government (Rs. 73/ day during the year 2005-06). In summary, it appears that there is a widening gap between the professed objectives of the National Forest Policy, 1988 and actual intention of LAMPS. LAMPS is more keen for higher profits but less committed to ensure judicious payment by sub-agents/middlemen to the collectors.

C. Procurement

Apart from the above stated problems, procurement of NTFP too suffers from various bottlenecks. These are (a) low price paid to the collectors, (b) inadequate and ineffective organisation of collection, (c) short period of collection, (d) lack of storage facilities, (e) large amount of finance required during the short collection period, (f) role of middleman/agent, their intervention and manipulation of market, (g) high cost of processing, (h) lack of fund for infra-structure development, (i) inadequate network of roads and (j) lack of mass consumption lease and (k) unresolved issues of lease amount with the Tribal Area Cooperative Federations. Unless remedial measures, such as creation of fund to safeguard price fluctuation, strengthening of market intelligence, elimination of middlemen and easy availability of institutional finance support, are taken the situation is likely to deteriorate further. Due attention need to be given on proper collection and harvest of NTFPs at the appropriate time, scientific

manufacturing units, storage in godown/ cold storage, networking of small scale industries and allied activities of marketing, infra-structural and institutional support viz. village credit plant, service area approach of banks.

Conceptual Framework - Trade-off between Privatized and Collective Domain

Before understanding trade-off between privatized and collective domain of NTFP collection and marketing, we will look into a model for role of research and development in NTFP collection and marketing. In Fig. 5.1 we have shown the role of research and development in NTFP collection and marketing. Present process of NTFP marketing is depicted by broken line. Currently most NTFP collectors collect NTFP on individual basis and sale in raw forms. As a result, they fetch meager return, which does not even justify the minimum wages as per government recommendation.

We have proposed a different route of NTFP marketing, which is depicted by unbroken arrow. In this pattern, collectors are expected to take up various level of processing of NTFP before marketing. This obviously requires technical intervention but at the end will fetch more remunerative prices. Research and development intervention will be required at each step of collection, processing and waste recycling. We will now focus on how individual collector can be involved in different segment of proposed collection and marketing process. In Fig. 5.2, a private and collective domain trade off has been depicted. Marginalized individuals are always vulnerable to market pressure. At the same time individual's contribution to product development without the scope of personal enrichment is an unrealistic proposition. We therefore argue for a system where individual will be paid according to their performance and collective domain will take care of two aspects (i) infusing technological improvement in collection and processing sectors, and (ii) ensuring higher bargaining power for obtaining better market prices through collective marketing.

In this system individuals will be encouraged to hone their skill to improve product quality since such can fetch higher income. At the same time collective arena will ensure training for skill up gradation and establishing appropriate market tie up.

Having discussed the framework, we will now look into few cases of NTFP collection and marketing in India to analyze the justification and viability of this model.

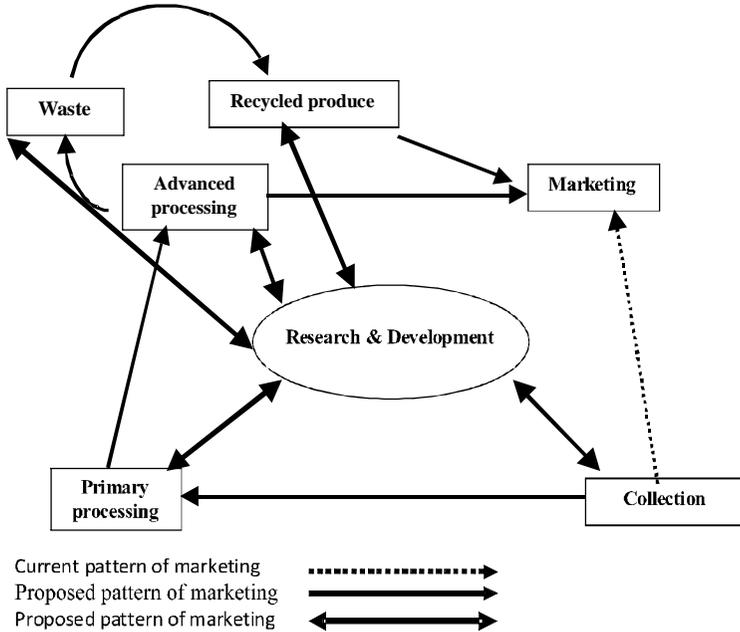


Fig. 5.1. Role of Research and Development in NTFP Collection and Marketing

Procurement and Disposal of NTFP in Odisha: A Case of Deprivation Cycle

Collection of NTFP directly determines tribal life in terms of employment and income. Thus, tribal economy is heavily dependent on such precious forest resource in Odisha state of India. Nearly 5.4 percent to 13.4 percent of tribal income is derived from NTFP in different districts of Odisha. The production potential of NTFP is very high, but it has been scarcely tapped owing to inadequate research. The Ministry of Welfare, Government of India (1987) assessed that the production potential of 'tendu' leaves alone was 1.5 times higher than the present production level and for most of other NTFP at least 10 times higher. It is time now to apply scientific methods of collection/ extraction especially from inaccessible terrains without jeopardizing environmental as well as ecological sustainability of the area.

NTFP collected by primary collectors by and large are sold to businessmen/middlemen, Odisha Forest Development Corporation (OFDC) and government agents. The mode of disposal varies from region to region and place to place in the same region depending on the types of NTFP. Sometimes, private wholesale merchants collect NTFPs from mandies (local wholesale market). The transactions terms

are grossly disadvantageous for sellers. Traders often follow barter system for exploiting them. Many times, credit linked trade practices prevail in sale and purchase in remote areas. Prices mentioned to tribals about NTFP are often not actually paid. Frequently, the traders also act as moneylender. Their modus operandi is similar to that of work contractor. They buy NTFP from the tribals towards repayment of debt or repayment of interest for the debts already incurred by them. The National Commission on Agriculture (NCA, 1976) emphasized the elimination of contractors from forest product collection, and recommended their replacement by trained personnel with adequate financial support so as to do away with exploitative practice.

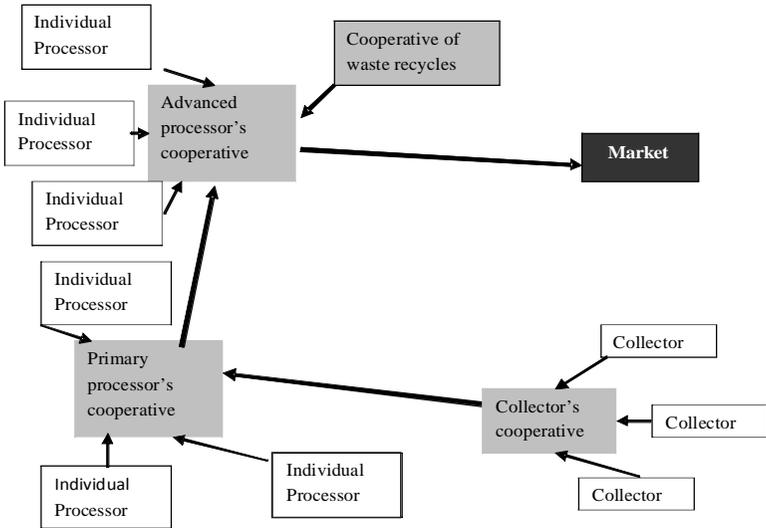


Fig. 5.2 Trade off between Private and Collective Domain in NTFP Collection and Marketing

Earlier private traders, middlemen, contractors were primarily involved in trades in most of such NTFP by fixing price suitable to them, and buying in exploitative terms favorable to their own interest. But, in recent years, the government of Odisha has taken measures to safeguard the interests of primary collectors by entering into trading of some NTFPs in order to do away with exploitative interests of middlemen. The Tikabali Agency Marketing Cooperative Society, Odisha Forest Development Corporation (OFDC), Tribal Development Cooperative Corporation (TDCC), Multi- Purpose Cooperative Society (MPCS), Large and Multi Purpose Societies (LAMPS) have been established to work for general welfare of forest dwellers, and tribal welfare in particular. Some studies suggest that government

intervention has not been successful to safeguard the interest of NTFPs collectors from exploitative interests. In the 50, out of 68 villages studied⁷, the government agencies have not successfully eliminated middlemen in the hierarchy of trading activities in NTFPs. The same middlemen as moneylenders and merchants have been (as the study indicates⁷) continuing in their illicit activities in the garb of agent of government agencies. However, it seems, those NTFP gatherers receive extremely low price because of monopoly controls and exploitation, whether of contractors or of government agencies. This continues even after nationalization. In many cases, nationalization has proved to be an instrument of stagnation in production and procurement of certain NTFP. Because, it reduces the number of legal buyers, restricts free flow, and delays receipt of payment. As a result, contractors enter into trading through a backdoor. Discrimination against those who live in, and around the forests to draw their livelihood, is often practiced. Though, the Forest Conservation Act by the Government of India continues to restrict the use of land, there has been no effort to increase the prices of forest raw materials sold to industries at market rate. In practice, the government interventions instead of helping the poor have a tendency to do the opposite⁷.

Therefore, it can be concluded that in Odisha NTFP marketing suffers due to inefficient government' procurement and marketing methods and exploitation of private agents. In such a situation, one may have to resort to competitive procurement and marketing by departmental agencies, contractors, industrialists, cooperatives and private agencies. But, whether, such competitive methods could successfully prevent the exploitative trade practices, is a moot point. All these issues provoked to study the problem of production potential, procurement and marketing of selected number of NTFPs in an economy of subsistence and survival. This validates my argument that new arrangement is the need of the hour. Instead of appointing agent for procuring NTFP from the collectors, collectors association should be formed. This association can supply to the local processing association which ultimately sale the finished product to open market. Educated youth from the collectors families can be employed in processing sector. This may usher a much-needed progressive empowerment process of marginalized.

Organized Tasar Silk Production and Marketing in Jharkhand, India

Tasar (Tussah) is copperish colour, coarse silk mainly used for furnishings and interiors. It is less lustrous than mulberry silk, but has its own feel and



appeal. Tasar silk is generated by the silkworm, *Antheraea mylitta* which mainly thrive on the food plants Asan and Arjun. The rearings are conducted in nature on the trees in the open. In India, tasar silk is mainly produced in the states of Jharkhand, Chattisgarh and Odisha, besides Maharashtra, West Bengal and Andhra Pradesh. Tasar culture is the main stay for many a tribal community in India.

Economic importance

Jharkhand ranks first among the tasar silk producing states with a contribution of about 45-50 percent of India's production. Tasar culture is concentrated mainly in the tribal areas of the state such as Santhal Parganas and Chotanagapur regions particularly in the districts of West Singhbhum, Ranchi, Dumka, Godda, Giridih, Saraikela etc. An estimated 65,000 families are engaged in tasar silk industry. Of them over 47,000 rearers are reported to be engaged in tasar silkworm rearing but only 50 to 60 percent of them are active and conduct rearing every year. West Singhbhum, Ranchi Dumka, Pakur Godda and Saraikela districts account for over 65 percent of the rearers.

As per estimates the food plants availability in the forests is spread over 900 thousand hectares. But only around 36 thousand hectares are presently being used for tasar silkworm rearing. Among the districts, Singhbhum account for over 35 percent of the forest area used followed by Dumka, Godda, Giridih, Palamu and Pakur district. As mentioned Arjuna (*Terminallia arjuna*) and Asan (*Terminallia tomentosa*) are the two main species of tasar food plants available in abundance in the state.

Tasar silkworm rearing and production of tasar silk yarn/fabrics provide source of livelihood to a large number of families belonging to disadvantaged section of the society and skilled/semi-skilled labour in the state. Tasar silk production accounts for sizeable contribution to the state's domestic product and thus assumes special importance in the economy of the State.

Production process

Tasar silkworm is bivoltine (i.e has two cycles in a year) non domestic species. Its two cycles generally are completed between June to October. For remaining part of the year, silk worms remain in dormant state within cocoon. These cocoons need to be preserved during October to June so to get another good crop in the following year. Local tasar growers collect the cocoons from the local forests or plantation sites and store in well-sanitised room known as Grainage.

Normally village women take care of the sanitation and cleanliness of the Grainage.

Now days in large part of Jharkhand state villagers have raised plantation of *Terminallia arjuna* and *Terminallia tomentosa* on wasteland or unfertile village fallow with the help of government subsidies. Unlike natural forest, plantation sites have pure stand of above two tree species. Tasar silkworm, therefore, remain restricted to the plantation sites. Plantation sites are normally maintained by group of villagers who raise silkworm from egg to cocoon stage. These growers collect disease free eggs/layings (DFL) from the Grainage raise the first crop for commercial seed multiplications. Second crop is generally used for silk production. Considering this nature of production few groups concentrate on first crop and sell the egg to larger number of rearers who are only interested in second crop. Cocoons produced after the second crop largely used for silk production. Only limited cocoons are preserved in Grainage for next season. Cocoons used for silk production are sent to the reelers and from reelers the silk yarn goes to weavers.

Traditionally individuals usually manage Grainage, Cocoon production, Reeling and Weaving by them and finished products used to be sold to the local traders. Traders usually offer very low prices.

PRADAN, an NGO tried to intervene in tasar production process to check the exploitation of producers and to enhance the marketable quality of finished product. It was felt that as long individual producers or collectors manage the show as single individual, their bargaining powers remain low. Low bargaining capacity leads to low earning which then restricts quality improvement. PRADAN therefore, organised the association at different level of producers/collectors. As a result Grainage Association, Seed Producer's Association, Commercial Cocoon Producer's Association and Reeler's Association are formed. Association looks after the marketing and technology up gradation. Individual producers take care of quality control, and production of marketable output at their end. Association ensures better price for the produce. Features of different activities under the above-mentioned project are as follow:

Grainage: Raising people's own Grainage bank (Tasar Seed Grain Bank) is one of most challenging and unique feature of the project. Earlier tasar seed used either collected from natural source where seed loss was quite high due to natural hazards or from central Grainage bank maintained by Central Silk Board. Project aimed to promote Grainage bank owned and managed by individual entrepreneur at village level. An individual can earn a net profit of Rs. 6000-9000 per

one cycle. Same individual can also become rearer and earn additional profit from rearing. The features of these Grainage bank are given below:

A. General features	B. Objectives
1. Owned and managed by individual entrepreneur. 2. Established in rearing villages. 3. Number of cycle per year: 1 Expected production of DFLs (Disease free layings): 4500 5. Number of rearers to be catered: 12 - 18	1. Reduce the risk of crop failure. 2. Reduce cost of production of DFLs. 3. Offer DFLs at affordable price to the rearers
C. Grainage performance under the project	D. Finance required for a Grainage
1. No.of Grainages : 231 2. Germination % age : 84% 3. Fecundity : 216 4. Sale price/DFL (Rs.) : 4.00 5. Subsidy on DFL : Nil 6. No. of rearers to get DFLs: 3130	1. Building (Rs.) : 30,000 2. Equipments (Rs.) : 24,000 3. Working Capital (Rs.) : 12,000 4. Duration of Credit cycle : 4 months 5. Net profit from one cycle : Rs.6000 -9000

Plantation: Project also aimed at raising plantation of host plants primarily consists of Arjuna and Asan on uncultivated barren land. Self Help Groups (SHGs) were formed at village level with the villagers having uncultivated barren lands. These villagers pooled their land and planted the host plants under a joint or common work plan. After raising plantation from third year onward these villagers start working as rearers.

Cocoon processing: PRADAN has created Common Facility Centres (CFC). These centres were constructed in a participatory manner and quality of the work was excellent. Picture of this centre is given below. The objective of the whole activity is to (i) promote capacity building, (ii) extend improved technology, (iii) elim backward linkages. The processing is divided into two phases which are shown as Fig. 5.3, and 5.4 and Exhibit 5.1.



Fig. 5.3. Individual and association trade off in Grainage and Rearing activities

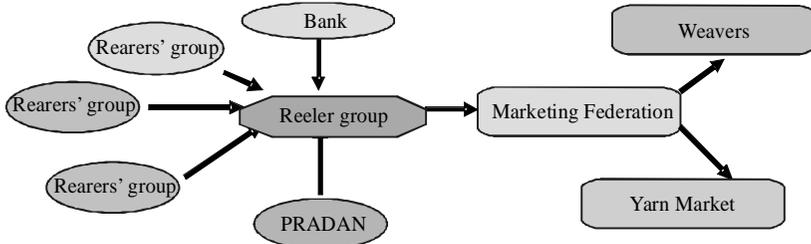


Fig. 5.4. Individual and association trade off in post cocoon processing

The Organizations of Tasar Yarn Producers

1. Selection of producers: PRADAN professionals select poorer pockets in the operational areas. Then they identify the poorer villages and eventually narrow down to poorer families. Intervention starts with formation and nurturing of women's SHGs based on savings and credit activities. After intense input from PRADAN, on SHG's group behaviour, group building and leadership, the groups start leveraging external sources of funds to invest in small ventures. At this stage PRADAN professionals help the group members find new income earning activities or strengthen existing income earning sources. After a rigorous livelihood planning exercise, each group member come up with his or her own plan. Many SHG members assessing their manpower availability and aspirations opt for tasar yarn production based livelihood. Each SHG is then trained in business aspects as well as technical aspects of tasar yarn production to develop as producer entrepreneurs.

Tasar Reeling Activity



- Promoted to create income for women
- Technology: CSTRl Reeling Machine
- Women spend 6-8 hours a day
- Average daily net income: Rs. 40-60

- Common Facility Centre
- Better working conditions
- Enhanced productivity
- Year round production



Exhibit 5.1 Tasar reeling activity

Raw material purchase: The cocoons that contribute 60% of the cost of production are purchased for the whole year within a span of one month when cocoons are harvested. It is not possible to purchase it individually by the yarn producers, as the rearers many a time are situated at places far away from the yarn producers. Besides this, after stifling of cocoons storing those at a safe place for the whole year and price negotiation with the rearers/cocoon traders are the other important issues to address collectively at the yarn producers' level.

Raising finance: Each reeler needs about Rs 15,000 for purchase of processing equipments and another Rs. 15,000-20,000 for working capital for one year. This may be reduced if stifled cocoons are available in the market for the whole year at reasonable price (rearers themselves store the stifled cocoons). Collective purchase of all these will help in price negotiation, less transportation cost and raising of fund for the same. Large volume financing will help banks and NBFCs (Non-bank financial companies) to design different loan products (for working capital as well as long term loans for machines, etc.) for the yarn producers.

Marketing of produce: Like collective purchases of raw materials, the collective sales of yarn also help them in price negotiation. The traders who are situated in big cities require yarn in bulk; they will not collect small quantities of yarn from individual reeling/spinning centres from remote villages. Besides, entering into large volume market and constant supply of yarn in large volume to the purchasers require collectivisation. Marketing of yarn is a specialised job that the producers of this kind cannot do. Thus, it requires a separate set of people to ensure the sale of all the yarn produced with a price that ensures reasonable income to the producers. It requires more sophistication, marketing innovation and professionalism to create demand for the yarn by things like positioning of producers' yarn as an unique raw materials for certain designs and constantly bringing in such designs in the market followed by aggressive promotion of such designs in the domestic and international market.

Size of the organisations: Small primary level organisations with 25-30 members who are residing in geographical proximity (at same village or a cluster of 2-3 adjacent villages) will help to develop ownership and facilitate access to information among all the members, it also will help in monitoring of credit for individual member, decision making processes, etc. In case of yarn producers each reeling/ spinning group can function as an independent primary organisation.

But such small formal organisations in large numbers may cause difficulties in statutory compliances for each of these

organisations. Though large organisations where members are spread over large geographical area have some advantage in meeting legal obligations and promotion but the basic question of ownership of members will remain un-addressed and it will be difficult for the members to remain updated about the functioning of their organisation.

Governance: In selecting the suitable formation issues like governance, autonomy, scope for growth of the organisation and goodwill of the formation to the outside agencies are extremely important. In this context, the primary organisations, which are large in number but small in size and scattered in remote villages of the operational area, may face difficulties to meet the compliances (if it is complex) of their own.

Considering these the Mutual Benefit Trust (MBT) has been found to be the most suitable formation for the primary producers due to its simplicity in compliances (audited statement prepared by a CA to be passed in the general body), new form, no bad image as a formation (unlike cooperatives), and lastly as it is a private trust and the promoter, being a settler, can protect the interest of members and the spirit of the formation as long as necessary.

But the secondary level organisation of the yarn producers, which is big in geographical spread (multi-state operation) but operates at low turn-over, is found to be the best suited as a Producers' Company as it functions like a Cooperative but is governed and regulated like a private limited company. Besides it has various elements to protect the interests of the producers, while simultaneously distinguishing the good and the bad performers and in that way eliminating the inclusion of fake producers.

Organizational structure: The primary structure: Normally 25-30 yarn producers from 2-4 SHGs (each group consisting of 10-20 women-members' association based on affinity) of a village or nearby villages who work under a common shed (common facility center or CFC) are organized into a business group at village level are registered as a Mutual Benefit Trust (MBT). Though each member of such trusts is also SHG-member but they are from different SHGs. Thus, the trusts could not be treated as SHGs; rather these are independent business groups. Such Trusts would function at various villages of the operational area.

The secondary structure: At the secondary level, the MBTs or *tasar* yarn producing groups are organized into a Producers' Company. From the producers' point of view the purpose is to get a fair price of the yarns and other products produced. It acts as an interface between the market (both input and output market) and member Trusts. The Company converts a part of the total yarns produced into fabric and rest are sold directly to the market. It also helps the trusts in bulk

purchase of cocoons, extend facilities like storage and provide services like market information. Here, none but the individual Trusts are the owners (shareholders) of the Company but it is managed by the Professionals deputed by PRADAN. The Company is registered in Jharkhand.

The roles and functions of a MBT: Except in case of decentralized yarn production system, each Trust has assets worth Rs. 7.0 lakh including a concrete work shed (worth Rs. 3.1 lakh), Gen-set (worth Rs. 0.55 lakh) and various machines and equipments. In case of decentralized system, where electricity supply is assured, the trusts do not require work shed and in that case such trusts own assets of about Rs. 3.0 lakh. Each trust requires another Rs. 3.0 to Rs 4.0 lakh every year as working capital, majority of it goes to purchase cocoons (each costs Rs. 0.6 to Rs.1.0), the main raw material. The trust members convert cocoons into yarns and sell it to their Company (The Producers' Company). The net profit out of the operation (comes about Rs. 0.30/cocoon processed) is the earning of the producers.

Lessons learned

The above working structure created by PRADAN quite conforms to the proposed model. This has ensured 2-3 times income enhancement during past two years at each level of processing. Through this system the income of every individual can be enhanced to 5-6 times that what it used to be at constant price. However, the system is in evolving state and we need to wait for its final outcome.

Processing and Marketing of Sabaigrass

Sabaigrass^a (*Eucaliopsis binata*) is a commercially important natural resource. It is a species of a perennial grass that grows wild and is sometimes cultivated on marginal and degraded lands by farmers in many parts of eastern India including Odisha^b. Many rural poor households depend on it to a great extent for their livelihood. Besides providing a source of employment and income to the landless poor and marginal and small farmers, sabaigrass yields raw materials for several small-scale cottage industries and mini paper plants and affords protection against soil and water erosion.

^a Source - K. Singh & D. K. Mohanty's article on 'A study of a sabaigrass processing and marketing cooperative society in Odisha'.

^b Sabaigrass has an average life-span of 10-12 years but in many cases it is found surviving up to 18-20 years. It grows well on steep slopes. Foothills and uplands up to an elevation of 500 feet above the mean sea level. It thrives well in a hot and dry climate. It has 60-90 cm long erect, slender clumps. It is propagated through both vegetative slips and seeds.

In Odisha, Mayurbhanj district is known for sabaigrass production. Mayurbhanj is a land-locked district in Odisha. It has a total geographical area of 10,413 sq. km or 10.41 lakh ha and is situated on the northern boundary of the state with its district headquarters located at Baripada. The total cultivable area of the district is 4.47 lakh ha of which 43.70 per cent is highland with very poor water retention capacity. The highlands are generally not suitable for cultivation of crops or orchards. But they are suitable for cultivation of sabaigrass. The agro-climatic conditions obtaining in the district are also suitable for sabaigrass production^c. According to a rough estimate made by the Odisha State Forest Department, the total production of sabaigrass in Mayurbhanj district of the state is about 200,000 mt per annum of which some 120,000 mt is converted into ropes and the remainder is used for other purposes. At an average price of Rs. 5 per kg of ropes and Rs. 3.5 per kg of grass the total value of the produce works to Rs. 8.8 crore per annum which is quite a significant contribution to the economy of the district^d.

The Mayurbhanj Sabai Processing and Marketing Cooperative Society Limited (hereafter referred to as Sabai Cooperative) was established at the behest of the Government of Odisha with the main objective of improving the economic well-being of sabaigrass growers in the district. The Sabai Cooperative was registered on 27 May 1980, under the Odisha Cooperative Societies Act 1962. It is the only cooperative of its kind operating in the district and it has its jurisdiction throughout the district.

To achieve its objectives the society undertook to make arrangements for procurement and sale of sabaigrass, for supplying technical inputs including credit and for processing and marketing of sabaigrass ropes and other products. In practice, however, the main activities of the cooperative were confined to purchases and sale of sabaigrass and sabaigrass ropes. These instrumentalities were developed to remove the exploitation of sabaigrass growers from the local businessmen.

The society is governed by an elected board of directors (BOD). The BOD remained in office for the full term of four years until 11 January 1992 when its term expired and the election of a new BOD was stayed by the district court. Since then, the administration of the society has been vested in the Assistant Registrar of Cooperative Societies (ARCS). The BOD had 15 members of which 12 were elected

^c According to knowledgeable sources, the tribals of Mayurbhanj district were the first to identify sabaigrass as a useful species and the then Maharaja of Mayurbhanj, Purnachandradev, started its cultivation on an experimental basis

^d This information is based on the office records of the Odisha State Forest Department.

members of the BOD, eight were representatives of the 'A' class members and four represented the 'B' class. The BOD elects an executive committee (EC) consisting of five members of whom the president is the key actor responsible for conducting the business of the society.

There are four types of membership of the society, viz., 'A' class, 'B' class, 'C' class and special class. The 'A' class members comprise individual sabaigrass growers (farmers) and the value of share is Rs. 10 each. The 'B' class members consist of primary cooperative societies and the value of share is Rs. 100 each. The 'C' class members include sympathizers other than sabaigrass growers and the special class is exclusively for the state government. Though according to the bye-laws only those persons who are sabaigrass growers or suppliers can become members of the society and avail of its services, in practice this is not happening.

Business operations

Before the society came into being, there was no such organization existing in the area and consequently, the sabaigrass growers and collectors were exploited by local businessmen. They were often compelled to sell their produce under distress. So to help them out of this situation, the Sabai Cooperative was established in May 1980 and the actual business started in July 1982 with 30 members. Thereafter, on the initiative of the Odisha government, the society enrolled many members from the Lodha tribe from Suliapada and Morada blocks of Mayurbhanj district. The Lodha tribe are professional hardcore criminals. The government wanted to help them give up their criminal activities and take up sabaigrass production and processing activities. The government granted them subsidy of up to Rs. 500 each for free distribution of sabaigrass through the society under the Integrated Tribal Development Project (ITDP). Consequently, the society undertook the distribution of sabaigrass to the members of the Lodha community. The society distributes sabaigrass to the beneficiaries once every week free of cost against the amount of subsidy received. The beneficiaries are supposed to produce sabai ropes and sell them in the market or to the society, wherever they get a better price. But actually this is not happening. The beneficiaries take the sabaigrass and sell it immediately without producing any ropes or any other products and thereby defeat the whole purpose of the scheme. Some 30-40 percent of the member-growers were also not supplying their produce to the society mainly due to the following reasons:

1. It is a centralized society whose area of operation is throughout the Mayurbhanj district. Hence, members located at a distance from its headquarters do not supply their produce due to high cost of transportation and the inability of the society to pay high price to the suppliers to compensate them for the high cost of transportation incurred by them.
2. The price of sabaigrass fluctuates very widely and the official procedures are too rigid to cope with this problem. So the members prefer to sell it in the open market.

The cooperative sells its products to the Odisha State Forest Corporation (OSFC), the Odisha State Cooperative Federation, the Odisha State Handicraft Corporation, Alaka, Rourkela, Wholesale Consumer Cooperative Store, Rourkela and Hindustan Wholesale Consumer Store, Rourkela, etc.

Impact of the cooperatives on members and non members

As described earlier the society is functioning more like a private commercial entity than a cooperative. The quantum of its profit is very low due to the nature of its products, wide price fluctuations, and poor forward linkages of the society. The interaction of the members with the society is almost nil. The society purchases and sells sabaigrass in the open market and the members do not get any benefit out of its operations. Whatever little surplus is generated is not distributed among the members; it is ploughed back till the society's business. So the members do not have any stakes in the society.

As far as the attitude of the members is concerned, they were mostly indifferent. The members of BOD were using it for maximising their personal benefits and interests. The influential members and even some non-members siphoned off the bulk of the benefits.

There is a rift among the members of the BOD. They are divided into two major political factions—one owing allegiances to the Biju Janata Party and the other to the Congress. The secretary virtually controls the president. Previously, when the BOD was in command, the situation was slightly better but since the ARCS took over charge it has been doing badly. The ARCS is unable to devote the needed time to the society's affairs, as he has to look after 98 other cooperatives in the district. For everything the secretary has to take the permission of the ARCS which acts as a hurdle in the smooth working of the society. There is a need for holding fresh elections and installing an elected BOD and EC to save the society from going bankrupt and defunct.

Major issues and options

The society has been facing a number of problems in conducting its business operations efficiently. Some of the major problems that require urgent attention and some alternatives for their resolution are briefly discussed in this section.

1. Poor marketing

Sabaigrass and its products are bulky commodities and the volume of business is very large and the competition with private traders engaged in the business is stiff. The society has certain inherent disadvantages vis-à-vis the private traders. First, unlike private traders, the society cannot transact its business, particularly sales, on credit basis. This forces the society to sell as or most of its products to OSFC and other government undertakings. This problem can be resolved by establishing forward linkages with various apex-marketing organizations. To fetch remunerative prices for the produce, strict quality control and storage facilities for the produce will be required.

2. Rigid purchase and sale procedures

The sale and purchase of sabaigrass and its products are made by a sales and purchase committee as approved by the BOD. This system makes it very difficult for the society to take critical decisions immediately on-the-spot and thereby reduces its competitive strength vis-à-vis the private traders who respond immediately to changing conditions of the market. This problem can be resolved by making the purchase and sale procedures flexible and decentralizing the decision-making process so that the persons responsible for purchases and sales can take the right decisions on the spot.

3. Irrational pay scales and incentives

The society has pay scales that are not commensurate with the nature of work, workload and the nature of responsibilities shouldered by various categories of its staff. In addition, there are disparities in the pay scales of employees working in the society and in the training centre managed by it. Such anomalies in the salary structure have a dampening effect on the morale of the employees thus reducing their efficiency.

Besides, the present rates of travel and daily allowances are miserably low when taking into account the difficulties involved in performing the tasks, particularly purchase and sale of sabaigrass and its products. Consequently, the staff of the society does not have any incentives for doing a good job. They generally avoid going out and

if and when they go out they come back saying that grass or ropes were not available at the prices fixed by the society or that they did not have enough cash to buy all the quantity available. These issues need to be resolved properly in order to motivate the employees to improve their performance.

4. Excessive dependence on the government

The society is dependent on the government for many things such as subsidies for running the training centre, managerial subsidy, and subsidy for distribution of sabaigrass to the members of the Lodha community. In addition, the ARCS has been administering the society for quite some time and this has created a lot of problems in the smooth functioning of the society. To improve the performance of the society, it is necessary that it is governed by an elected BOD and an executive committee constituted by the BOD. The sooner it is done, the better it will be for the society.

Conclusions

We are living in era of global transition. The buzzword for success is survival through individual excellence. Unskilled individuals have less scope to compete in the market arena. Commons do add vital bargaining power to such individuals. At the same time if there is no progressive improvement of production system within commons, commons will lose their own vitality. Commons need to ensure skill up gradation of individuals involved in the systems. But individual may not participate in skill up gradation process unless they see their progressive overall growth in general and economic growth in particular. Therefore, we need a system where commons provides the ample individual growth opportunity through skill enhancement. Individual earning depends on their level of involvement and desire to ensure quality of produce. This is the trade off we highlighted in our model.

From the three cases it is now amply clear that in NTFP collection and marketing both in private and collective domain are equally important. If one suppresses the other, it leads to exploitation of marginalized, inefficient management and non-realization of desired goal. In the first case, we have seen that no importance was given to collective domain. As a result individuals continued to be exploited in one or other form in spite of corrective measures taken by government.

In the second case on tasar producers, we have found an attempt was made to appreciate the importance of both private and collective

domain through mutually interdependent growth sustenance cycle. Here individuals are encouraged to enhance their living standard through skill up gradation. Commons facilitate the individual growth and ensure most competitive market price. This makes private and common dependent on each other without intruding into others domain or suppressing individual's enterprising ability. However, as system it is of recent origin, one needs to wait and watch how it works in the long run.

In the third case on sabaigrass cooperatives, collective domains did not ensure private growth through interdependent accountability. It only aimed at solving marketing problems. This was the case of collective suppressing private domain to a great or small (?) extent. As a result individual producers became less accountable to the cooperatives.

WOMEN, SERICULTURE AND LIVELIHOOD : CASE OF SERICULTURE IN KARNATAKA

G. S. Geetha, G. S. Vindhya and S. M. H. Quadri

Introduction

Mere improvement in economic condition of women is not likely to bring them at par with men. The key factors therefore, are their say in the decision making process and their participation in the domestic as well as community power structure. It is the realisation of the criticality of women's feeble say in the decision making process led to women's empowerment. Longwe¹ developed an analytical frame work for 'gender awareness', which paved the way to women's empowerment perspective. The empowerment approach is in fact a set of methodologies or strategies, which has arisen from the writings and grassroots experiences of third world women².

The Empowerment approach aims at empowering women through greater self-reliance and internal strength. It seeks to meet strategic gender needs indirectly through bottom-up mobilisation around practical gender needs. It recognises the triple role of women and seeks through bottom-up women's organisations to raise women's consciousness to challenge their subordination.

Sericulture activities provide a perfect choice for women's livelihood because of the very nature of the activities that take place close to their place of habitation. Women play a major role in sericulture both in terms of operations performed and time invested. Indirectly, they also contribute to management as well as decision-making. In India the state has co-opted sericulture industry for rural development in general and for empowerment of rural women in particular³.

The gender wise distribution of human labour employed in mulberry sericulture is 41.54 percent male and 58.46 percent female in mulberry cultivation, and 45.87 percent male and 54.13 percent female in silkworm rearing⁴, participation up to 60 percent⁵ and employment potential up to 51 percent⁶. The industry has made few attempts to address the issue of women's livelihood and

empowerment through sericulture by initiating women oriented projects such as exclusive training for women, development of women friendly technologies, providing subsidies and incentives etc. Beside this the Tenth Five Year Women's participation in livelihood activities and their economic empowerment often face several barriers. The main barriers could be caste system, poverty, low educational status, limited work opportunities, low income, lack of assets and access to credit. It is very important to know women's position and status in the industry in today's social, economic and cultural context.

Objectives

With the above background the present study was undertaken with the following specific objectives:

- To find out the socio-economic status of women involved in sericulture.
- To assess the levels of political empowerment, sericulture as livelihood activity and social empowerment of women involved in sericulture.

Methodology

The study was undertaken in Mandya district in the state of Karnataka. Mandya district was purposively selected for the study because it is identified as the 'Traditional Sericulture District' in Karnataka and because of its contribution to total production of cocoon and raw silk.

Out of seven taluks in Mandya district, two taluks^a, Maddur and Srirangapatna were selected randomly for the purpose of eliciting data. Within these two taluks, four villages, two in each taluk were selected purposively for data generation. The selection of the sample villages was based on the criterion of concentration of more number of sericulture households in those villages. The villages selected for the study from Srirangapatna taluk were Tadagawadi and Garkalli and from Maddur taluk Mallayanadoddi and Haleboodanoor.

A total of 25 sericulture women farmers from each village were selected through simple random sampling method. Thus the sample size for the study is 100 from four villages. For collecting empirical data

^a Taluk is an administrative division of some countries of South Asia. Taluk consists of a city or town that serves as its headquarters. As an entity of local government, it exercises certain fiscal and administrative power over villages and municipalities within its jurisdiction. It is an executive agency for land records headed by chief official called Tahasildar.

a semi structured interview schedule was developed. This tool consisted of questions relating to socio-economic profile, work life and other related issues. The data collected were tabulated, analyzed and interpreted by using statistical tools such as percentage and frequency.

Findings

The findings of the study are presented in the following four sections

1. Socio-economic status of sericulture women farmers

The socio-economic status of sericulture farmers was analysed by taking up factors such as age, marital status, type and size of family, caste, education level, main occupation, experience in sericulture, total land holding, proportion of mulberry land, work life of sericulture farmers, membership in self help group, total income and income derived specifically from sericulture.

With respect to the age profile, respondents' age varied between 16 to 68 years. Majority of the respondents were from the age group of 25 to 40 years (44 percent) followed by 40 to 60 years age group (33 percent). Only 16 percent and 7 percent were in the age group of below 25 years and above 60 years of age respectively. Since sericulture is an occupation in which an entire family can participate age is not really a serious factor in deciding who takes up sericulture and at what age. Marital status of respondents suggests that 86 percent of them were married and living with their spouses. Out of the remaining, 3 percent were separated and deserted, 7 percent were widows and 4 percent were single women respectively. Since sericulture is an activity that can be carried out by women at any stage of their life and at home, marital status does not really impact a women's access to sericulture. Women farmers' family members ranged from 1 to 8 with 58 percent of the households having 3 to 4 members. While 18 percent of households have 5 to 6 members, 17 percent of them have 7 to 8 members. Only 7 percent households constituted less than 2 members. A large number of households (81 percent) are found to be nuclear families. This argument is against the generally accepted norm that sericulture is a labour intensive enterprise and taken up by rural families to provide work load to unemployed youth, school dropouts, aged male and female members of rural families. Though sericulture is a labour intensive venture and it is generally believed that joint or extended families are ideally suited for this work, in case of our sample sericulture activity continued in spite of families being nuclear. Majority of the respondents belonged to Vokkaliga caste (93 percent), which is the dominant caste in the district as well as in the selected

villages. Madivala and Scheduled Caste women constituted a miniscule minority (7 percent). Vokkaligas are the dominant land holding caste and also have achieved significant social and economic mobility. This study proves that women from economically well placed groups have a better chance of being economically active.

The educational status of the women farmers indicates that half of them are illiterates. Out of the remaining half, 23 percent each have completed primary level and high school level education. Only 4 percent have completed intermediate/pre university education. It upholds the general argument that sericulture is an agro based rural cottage industry, which does not need any machines/power/technical knowledge. Sericulture actually seems to be ideally suited for women who may not have much education.

Majority of women (46 percent) have more than 20 years of sericulture experience. Since sericulture is primarily a family occupation, women start participating in this activity from a young age. Silkworm rearing practices are being transmitted from generation to generation through informal guidance. However, a significant proportion of them (34 percent) have less than five years of experience. Whereas 11 percent respondents have between 5 to 10 years, 9 percent have between 10 to 20 years of experience in sericulture. This indicates another dimension of the growing silk industry, i.e., migration from other crops, particularly sugarcane, mainly to overcome the constraints involved in it. This clearly confirms that sericulture is a highly remunerative occupation particularly in rural areas compared to other contemporary crops such as sugarcane, paddy and cereals. In the case of our sample farmers both low and highly experienced women have taken to sericulture as their livelihood. Experience really does not seem to impact on women's participation in sericulture activities.

Larger numbers of the respondents (83 percent) have taken up sericulture as their main occupation. However, 17 percent of them have combined sericulture with other economic activities. This is favoring the general argument that sericulture is one of the highly remunerative rural industries in Karnataka, particularly in rural areas. Because of its employment and income generating nature as compared to other commercial crops, majority of the population has taken up sericulture as their livelihood.

The results of the study reveal more involvement of women (48 percent) in various sericulture activities as a family worker (unpaid worker) than as a paid labour (11 percent). Meanwhile, 41 percent of women practice sericulture both as paid labour and family labour. However, since sericulture is an activity that can be

carried out by women at home and combined with other domestic responsibilities most women chose to take up sericulture as family worker. Sericulture is an activity in which farmers need not have to possess their own resources such as land, rearing space, rearing equipment etc. to carry out the production of cocoons. Instead they can procure all the necessary tools from land to rearing equipment on hire and take up sericulture. Good working ambience, flexi hours of work and working with a familiar social group are the factors mainly responsible for women accepting paid work in farms/lands and taking up sericulture labour work as compared to growing other variety of crops.

The result shows that women farmers were small scale farmers with about 56 percent of women cultivating mulberry in less than one acre of land followed by 24 percent of them who cultivate it in 1 to 2 acres of land. Only 9 percent of the women found cultivating mulberry in more than two acres of land. In addition, women without land for any enterprise constitute 11 percent and they worked as sericulture labour for livelihood. Meanwhile, findings from comparison of mulberry cultivation revealed that 50 percent of women farmers were involved in sericulture in their own land, 20 percent in rented land and 19 percent in both own and rented land. This is in line with the general argument that sericulture as an agro based activity, suits rural families, particularly small and marginal farming families, which are in the largest number in the rural population dependent on agriculture. It is evident from the field data that families without land holding are also venturing into sericulture business. Mulberry land holding is not a serious factor to be considered for venturing into sericulture in general, and more particularly in Mandya district, where sericulture has been flourishing on rented or leased garden. The single largest number of families fall in the less than 0.015 million categories (40 percent) followed by 24 percent in the 0.015-0.025 million bracket, 9 percent in the income brackets of 0.025-0.50 million, 12 percent from 0.050 to 0.100 million and only 15 percent in the 0.100 million and above bracket.

It is however, seen that sericulture is an activity that generates some income for the farmers as compared to other crops. Women from Garkalli and Tadagawadi villages accrued additional income by taking up activities such as *agarbatti* (incense stick) making, sheep rearing, growing vegetables and dairy. Women of Mallyanadoddi and Haleboodanoor took to cattle breeding, rearing of sheep and poultry for earning additional income. This additional income helped women to raise the total family resource steadily. However, the income that a family in sericulture business earned depended upon the extent of land holding, ownership of land and carrying out sericulture in rented/leased land.

An overwhelming majority of the respondents (93 percent) were found to be the members of Self Help Groups (SHG). Cutting across their socio-economic status, women joined SHGs because they had seen the empowering experience that membership in a SHG bestowed. In rural India today, SHGs have created a silent revolution by building in women not only the capacity to 'save' for a stable future, but also giving them the courage to counter violence both at home and in the community.

2. Political Empowerment

Political empowerment is about acquiring powers that can influence decisions and direct the course of events, which can change life situations. The political empowerment level of our respondents has been analysed with reference to such factors as political awareness, perception on women's role in political activity and voting preference.

2.1. Political awareness

Political awareness was analysed taking five indicators into consideration such as, the extent of respondent's awareness about election schedule (local, state and national), level of consciousness about the right to vote, degree of freedom enjoyed in the choice of candidates, extent of respondent's exposure to SHG and extent of respondent's involvement in SHG

It was found that irrespective of caste, age, education and sericulture experience, overwhelming majority (96 percent) of the respondents were fully aware of the election schedule and consequently, used their right to vote in all the local, state and national elections held in last fifteen years. Most of them are aware of the existence and operation of the SHG or *Mahila Mandals* (a village level civil society group). Almost all women engaged in sericulture activities are members of one or the other SHG. Of the 4 percent partially aware subjects, one was a college going teenager, two were landless women and the last one was an elderly woman. These women were not members of SHGs. Women who were members of micro-credit institutions or other village level institutions developed a greater sense of political awareness because they had the opportunity to exchange information, views and also felt more confident to cope with life outside the home.

2.2. Perceptions of women's role in political activities

In order to find out the perceptions of respondents on women's role in politics, two issues were studied: Women's attitude towards the role of women in politics and as service providers

It emerges from the data in Table 6.1 that majority (66 percent) of the respondents feel that women play a fair role, both as leaders and service providers. This is by and large in keeping with the reputation that women enjoy both as leaders and community care givers.

Table 6.1 Perception about the role of women in politics and as service providers

Perception Frequency	Percentage	
Women Play a Fair Role	66	66
Women Do Not Play a Fair Role	20	20
No Response	14	14
Total	100	100

Further, women of all groups in our sample support women's participation in mainstream politics. However, more Vokkaliga than Scheduled Caste women and all except one Madivala women have a positive approach to women's role in politics. Also, more women who own mulberry land and more SHG women feel that women can be proactive leaders. Women from low-income families are more favourably disposed to women playing an active role in politics than their counterparts in higher income families.

As for the relationship between educational level and positive perception of women in politics, it is seen that more educated women have a feeling that women can do a fair job in politics and also can deliver. They felt that women as people's representative could perform better than their male counterparts (Table 6.2).

Table 6.2 Education and perception on women in politics

Education	Fair	Not fair	Would rather not say
Illiterate	24	15	11
Primary	19	1	3
High school	19	4	0
PUC	4	0	0
Total	66	20	14

3. Sericulture as livelihood activity

In this paper sericulture as a livelihood activity or a tool for economic empowerment has been studied with reference to three primary factors: i) work participation, ii) access to the resources like land, credit and market, and iii) freedom in decision making related to the use of familial resources.

3.1. Work participation

According to the data in Table 6.3, unpaid participants are more in number when compared to other categories of workers. The unpaid

workers are mostly in the 25 to 40 years age group. Data also showed that paid work is generally taken up by women from landless families.

Certain conclusions can be drawn about the work profile of respondents. First, women with lower income participate both as a family worker and as paid labour. This is mainly because they possess only small pieces of land or carry on sericulture activities on leased land. This naturally calls for higher investment. Women with limited land holdings tend to work both on their family land and as paid labour. Since there is a gender stereotype in sericulture activities performed by women, they have little choice but to work either at home or outside.

The above findings lead us to the conclusion that a majority of women in sericulture work both as family and paid labour to overcome family burdens and also to manage family responsibilities either as single or primary breadwinner or care taker.

Table 6.3 Work participation of sericulture women

Economic participation	Frequency	Percentage
Paid Workers Only	11	11
Unpaid Workers Only	48	48
Both Paid and Unpaid Workers	41	41
Total	100	100

3.2. Access to resources

In this study, an attempt was made to examine the extent of women's access to land ownership, credit facilities, and frequency of visit to cocoon market

It was found that majority of the respondents (96 percent) do not have land registered in their name. Even among the remaining four who had land registered in their names, two were from families without male children, one was a widow and in the case of the fourth woman her brother had sold the land to her because of its proximity to her own land. All the women who had land registered in their names were from the dominant Vokkaliga community.

Most of the women engaged in sericulture were not familiar with the working of commercial banks. Even the market was not a comfortable setting for them. Those who went to the market were women from families in which male members were inactive or immobile/less mobile. In fact, respondents were unanimous in their opinion that women are as capable as men in managing the market. However, they choose to stay away because they wanted to protect their husbands from being ridiculed by peers and relatives about being incompetent.

According to Table 6.4, majority of the respondents (88 percent) have low access to the three resources, viz., land, credit and market. Women who go to the market to sell their cocoons (14 percent) and women who have access to land (4 percent) fall in the category of medium access. Only one woman was found to have a high access. Most of the respondents had access to only one resource, i.e., credit and that too from SHGs.

Table 6.4 Access to resources

Access to resources	Number	Percentage
High Access	1	1
Medium Access	11	11
Low Access	88	88

As shown in the Table 6.5, respondents with no education have least access to resources. There is a clear indication that lower level of education is the reason for lower access to resources. Here we can conclude that a lower level of education is positively correlated with less access to resources.

Table 6.5 Education and access to resources

Education Level	Access to resources		
	High	Medium	Low
Illiterate	-	11	39
Primary	1	3	19
High School	-	4	19
PUC	-	-	4
Total	1	18	81

3.3. Decision making

The pattern of decision making among sericulture women was measured by classifying them into three categories, such as: i) those who make decisions on their own, ii) those who depend on other family members to take decisions on savings and other household based matters and iii) those who never took decisions on their own and always depended on others

The data in the Table 6.6 gives an indication that those who took decisions on their own outnumber the other two categories of decision makers. More middle aged women take decisions on their own as compared to the elderly and the young. Widows, single and separated women tend to take decisions on their own. More women from nuclear than joint families and more Vokkaliga than Scheduled Caste and Madivala women took independent decisions. Membership in SHG had helped many women taking decisions on their own.

Table 6.6 Pattern of decision making

Decision	Frequency	Percentage
Makes Decision on Her Own	60	60
Takes Decisions with the Help of Others	29	29
Makes No Decisions	11	11
Total	100	100

4. Social Empowerment

Social empowerment was analysed by examining the situations prevalent in the lives of respondents with reference to the parameters such as, primary decision maker of the family, experience of domestic violence and physical mobility.

4.1. Primary decision maker in the family

To understand the pattern of decision making, respondent's families were asked about the key decision maker in their families on issues such as children's schooling, daughter's marriage, etc.

It is clear from the data in Table 6.7 that in majority of the sample families women were the primary decision makers. When the data on decision making were analysed in the context of age, marital status and family type it was seen that a majority of the female decision makers were in the age group of 25 to 40 years, single or widowed and from nuclear families. A caste wise count showed that more Madivala women took independent decisions as compared to Scheduled Caste women and so was the case with Vokkaliga women. Women who were SHG members had little education and small landholdings but were more independent than others when it came to exercising their decision making power.

Table 6.7 Primary decision maker in the family

Decision Maker of the family	Frequency	Percentage
Male	8	8
Female	63	63
Both Male and Female	29	29
Total	100	100

4.2. Experience of domestic violence

In order to assess the extent of family violence they may have encountered, sample farmers were asked to state if they had experienced physical or other forms of abuse in the family.

It could be seen from the Table 6.8 that 35 percent of the subjects admitted having experienced domestic violence. Though domestic violence cuts across the barriers of caste and class, it is observed that

women who are economically vulnerable suffered more violence than those who had means of economic subsistence.

Table 6.8 Experience of domestic violence

Domestic violence	Frequency	Percentage
Experienced Violence	35	35
Did not Experience Violence	65	65
Total	100	100

4.3. Physical mobility

For the analysis of data on the extent of physical mobility of sericulture women, they were divided into three categories: i) less mobile (faced restrictions on their mobility), ii) moderately mobile (visit most places, but not all and iii) highly mobile (freedom to visit any place of their choice).

It is seen from the Table 6.9 that 41 percent of our subjects consider themselves highly mobile and nearly 19 percent consider themselves moderately mobile. Together, those who are mobile account for 60 percent. As for mobility being influenced by other factors it is seen that younger women, women who are without male support, members of nuclear families and members in SHGs were found to be more mobile than others. However, it is quite surprising that more illiterate women are mobile than literate and educated women.

Table 6.9 Extent of physical mobility of women in sericulture

Physical Mobility	Frequency	Percentage
Less Mobile	40	40
Moderately Mobile	19	19
Highly Mobile	41	41
Total	100	100

Data in Table 6.10 reveal respondents with more physical mobility experience less violence than those who are less mobile. When women are mobile they develop networks that give them not only emotional support but also provide information about how violence could be countered.

Table 6.10 Physical mobility of women and domestic violence

Physical Mobility	Domestic violence	
	Experienced	Not experienced
Some places she wants to	3	37
Most places she wants to	12	07
Every where she wants to	20	21
Total	35	65

Conclusion

Participation in sericulture bestowed women with a political awareness on election schedule, consciousness to vote and perceiving themselves as the positive political partner and service provider. The working atmosphere in groups, opportunity to exchange views and information among them might have added up.

The sericulture industry had facilitated women to participate economically as a paid worker (sericulture labour) and unpaid worker (family worker). Women worked both as a family worker as well as a paid labour mainly to overcome the family burden. However access to resources was restricted only to credit that too only through local women SHGs. Visit to market was dependent on the availability and health status of the male adult member of the household. Existing patriarchy tradition barred women from access to ownership of land. Decisions on children's schooling, daughter's marriage and other related household decisions were mainly decided by female member of the household.

Even though sericulture practice had given women an opportunity to empower politically, economically and socially, but in reality she could not realise it fully because of many reasons. For absolute experience of empowerment she needs some more support from social institutions such as family, society, community and governments.

LIVELIHOOD STRATEGIES FOR FISHERMEN OF CHILIKA

Soumen Ray

Introduction

The fishing sector is a source of income and livelihood for millions of people around the world and the fisheries resources are the primary form of coastal livelihood for survival and affects lives of fishermen in various ways. In 1990, around 28.5 million people around the world made their entire or partial living from fishery production and capture¹. Employment in the fisheries sector has grown faster than employment in traditional agriculture². It is not only the fishermen whose livelihood depends on the fishing activity, but on an estimate for each person employed in capture fisheries and aquaculture production, about three jobs are produced in secondary activities, including post-harvest. Moreover, on an average, each fisherman supports the livelihood of three to four dependents or family members. As per FAO (Food and Agriculture Organisation) report, the employment in fishing is decreasing in many of the Asian countries including in India. This is the result of several factors, including decreased catches, programmes to reduce fishing capacity and increased productivity through technical progress. In the past, many studies have drawn significant attention to the socio-economic conditions of small-scale fisherman. These study findings reveal that livelihoods of small-scale fisherman more or less kept them in poverty³.

One of the important areas, which have attracted the attention of scholars, is the perception of fishermen towards fishing as a common property and its impact on livelihood. As the livelihood conditions improve, the individual user's negotiating ability to gain access to a resource and a diversity of resources also increases⁴. The pursuit of livelihoods is often understood in terms of the development of 'risk aversion' techniques and the minimization of vulnerability in resource scarce conditions that determines whether or not individuals survive⁵.

The second issue is the number of social movements undertaken by fishermen and their impact on their livelihoods. The fishery sector has witnessed upsurge of social movements over accessibility, shortage of fishery resources and faulty governance. This has resulted not only loss of life and property, but has also impacted long term livelihoods of fishermen.

Climate change along with natural disasters beyond human control pose significant risks to fisher people's livelihood. It is not only the natural disasters but also a heavy rain and high speed wind, which affects the normal fishing and thus affects the livelihood of fishermen.

The reduction of fishery resources and the issue related to livelihood of fishermen has forced researchers to concentrate on the study of developing alternate livelihoods for the fishers. There are two main objectives for the promotion of alternative livelihood. The first is to raise the economic standard of living of fishermen and the second is to reduce fishing effort to save environment. Poverty and vulnerability are direct outcomes of inadequate earnings from fishers' current livelihoods. Ultimately, fishers accept new livelihood opportunity from the limited options available, without considering their potential impact upon the natural and social environment.

Odisha, a state in eastern India, having a long cost line and many water bodies, offers a vast scope for development for inland, brackish water and marine fisheries. Chilika lagoon, situated in this state reveals a unique assembly of marine, brackish and fresh water eco-system and sustains the livelihood of thousands of fisher-folk in and around it. This chapter sets off with the objective to describe the dynamics of livelihood, poverty and vulnerability of fishermen of Chilika lake and the factors that triggered social movement by them in the area from time to time. The study supports the argument that with the increase of mechanized boats and modern fishing technology, traditional fishermen around Chilika suffer several problems, socio-political, economic and environmental in nature. Issues such as natural disasters and marginalization of farmers change in government policy regarding the leasing of fishing grounds, and the state versus the community management have also been discussed in this article.

Study Areas

The study was restricted within the survey of the fisher folk fishing in and around Chilika covering Puri, Khurda and Ganjam districts of Odisha. The lake is surrounded by about 132 fishing villages. Out of the total, 30 percent of the fishing village population is actively involved in fishing. The fishing population consists of sub-groups such as Kandaras, Khatias, Niary, Nolia, Tiaras, etc. who uses different fishing gear and catch different species of fish⁶. Although no official statistics is available about the total fisher folk living on Chilika, a rough estimate suggests that the total fishing population shall be around 1,20,000.

Data Collection

The present research work, took into consideration the fishermen of the said three districts irrespective of their affinities. To locate sample areas and to identify the subjects, multistage, purposive sampling method was resorted. The study focussed only in those Blocks of the said three districts, where the fishermen concentrated. Out of these Blocks, using the sampling technique, three blocks from Khurda, Two blocks from Ganjam and one block from Puri districts were chosen for the purpose. The selection of sample areas and identification of subjects were executed on the basis of 1. exclusively fishermen folk staying in and around Chilika, 2. proximity or distance from the headquarters and 3. priority to villages having fisherman of various categories and types. As per the research setting fifteen households were taken from each of thirty villages and thus 450 households were covered during the study. For the purpose of the collection of data through the structured interview technique was used. The schedule was prepared in strict accordance with the broad objectives and scope of the study. Each schedule contains 100 questions. Though most of the questions are close ended there are also some open-ended questions needed elaborate answers. In order to test the reliability of the data, 10 percent of the households were randomly cross-checked after the study was undertaken. The questions were asked in simple local Oriya language. Only in one village, where there was a dominance of Telugu fishermen, the researcher faced some problem in terms of administration of interview schedule and communication during FGD. The problem could be sorted out taking the help of local interpreters.

Secondary data was collected from the published reports, books and journals available in hard copy format both in the library of Chilika Development Authority (CDA) as well as in the libraries of Universities visited. Internet search engines were of a lot of help.

Findings

1. Socio-economic condition of fishers

The assessment of the socioeconomic conditions of fisher folk of Chilika was made primarily by conducting a detailed survey and by examining how certain social features like family size, participation of family members in fisheries, distribution and ownership of fishing assets and sharing of catch value that affected their living.

Educational levels of the respondents were studied to understand whether the fishermen have so far understood the importance of education in the verge of depleting fishing resources in Chilika. It was observed that there are respondents having different educational

level, i.e., 3.6 percent are highly literate, 73.8 percent are barely literate and 22.7 percent of the respondents are found illiterate in the study area. This is definitely an issue and challenge for their future growth. The working environment of the sample area revealed that majority of respondents involves in fishing sector i.e. 94.6 percent followed by daily-wage earner i.e. 2.4 percent, cultivation i.e. 2.2 percent and a negligible 0.2 percent in trade and business and 02 percent in others activity. None was found in government job.

The family structure of the respondents revealed that, majority 68.2 percent of the respondents remains in nuclear family and 31.8 percent of the respondents still maintain their traditional joint family. This proves that there is predominance of nuclear family structure as against joint in the study area. There are respondents having up to 3 members in families comprising 24.0 percent. Respondents having 4 to 6 members in the family are 67.1 percent and having 7 to 10 members in the family are 7.8 percent. Respondents largely belong to medium size families comprising 4 to 6 members irrespective of their status and very few respondents have more than 10 members of the family comprising only 1.1 percent. The study also revealed that in maximum cases (36 percent) only one member of the family is engaged in fishing. Similarly in 35 percent cases two members of the family are engaged in fishing and in 17 percent cases three of the family members are engaged in fishing. Only in 12 percent cases, four or more than those members are engaged in fishing. This is mostly in the case of joint families.

Income of the family of the respondent here relates to the amount of money received during a period of time in exchange of labour and services, from the sale of goods or property. The facts concerning the income level of the respondents is summarized in the Table 7.1. 24.9 percent of the family of respondents earn monthly below Rs. 2000 followed by 52.9 percent of family of respondents earn between Rs. 2000 to Rs. 4000. Similarly 9.3 percent of the respondents earn monthly between Rs. 4000 to Rs.6000 whereas the percentage of respondents family earning between Rs. 9000 to Rs.8000 is 6.0 percent. Monthly income of family of the respondents between Rs.80000 to Rs.10000 constitutes 3.3 percent. Only 3.6 percent of the sample population earn Rs.10000 and above monthly. The study also depicts that income distribution of the respondents is skewed and found that the lower income group is predominant in the study area which shows direct impact on livelihood of the fishers. Income distribution has a strong correlation on identifying a HH (households), whether BPL (Below poverty line) or not. The study revealed that more than 70 percent HHs studied are below poverty line and only 28.7 percent are in general category.

Income impacting possession of assets symbolizes authority and power. It provides security and confidence to the possessor also. The household assets possessed by each family like motor bike, television, refrigerator, etc. are observed. The economic status of the fishermen is not so good, in terms of possessing necessary assets. While 56 percent respondents possess some kind of motor bike in their family, 52 percent have fan or air cooler in their home. Only 26 percent respondents have audio systems in their home and 19 percent have televisions. A mere 3 percent respondent only possess refrigerator. The study also revealed that 98 percent of the respondents do not possess bullock cart or rickshaw. This means most of the transportation is made through autos, buses or public transport systems. It also means that without having television and radio sets, many of the respondents are actually not reachable for messages. Up to 50 percent of households in a fishing village remain in debt for a good part of the year. As fishers face increasing days of poor catches or no fishing opportunities at all, many fishing households report that an increase in the number of days they go hungry⁷.

One of the important questions was the number of generations the fishermen involved in fishing activity. During the study it was observed that almost 85 percent fishermen are involved for last four or more generations in catching fishes. Only 7 percent are involved for last three generation, 6 percent are involved for last two generations and 2 percent are involved for first generations. This proves that for most of the fishermen fishing is a hereditary business and it is really difficult to get out of fishing completely. 42 percent respondents revealed that purpose of fishing is to catch the fish for someone else, 54 percent catch fish for selling, 3.3 percent are involved for selling only and only 2 percent are involved in liasioning. Fishing technology and license of fishing has a huge impact on the quantity of catch. 53 percent respondents informed that they use manual boats, whereas 46 percent operate machine boats. Similarly while 68 percent of the fishermen have licensee for fishing, 32 percent do not have the fishing license with them.

Table 7.1 Capture and culture from Chilika

Year	Fish	Shrimp/Prawn	Crab
2001-02	9530.03	2347.78	111.07
2002-03	8265.16	2478.82	149.81
2003-04	10286.34	3611.37	155.51
2004-05	8097.77	5000.71	161.89
2005-06	7774.81	4296.02	154.08
2006-07	6463.92	3368.97	122.94
2007-08	6610.23	3298.08	139.12
2008-09	6534.85	3929.68	237.5

Source: Dept of Fisheries and Animal Husbandries, GoO, (Quantity in mt)

The socio-economic situation of fishermen depends on the fish catch. During the study, it was revealed that the fish catch has decreased during the past ten years. Fish, shrimp and crabs are the three main catch from Chilika, which supports the life and livelihoods of the fishermen. The adjacent table shows, while crab catch has increased during 2008 - 09, shrimp catch has varied during the past years. However, most importantly the fish catch has decreased during the past couple of years.

2. Impact of Social movements on the livelihood

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communities; combined with the increasing exclusion of poor fishermen.

Though there is much hue and cry over shrimp *gherries*, the shrimp ponds in and around Chilika are most dangerous to the eco-system of the lake as they pollute both surface water and ground water. They also deteriorate the productivity of neighbouring agricultural land and deplete the estuarine and coastal fishing resources. There is also siltation and degradation of Chilika. The unproductive land, so declared by shrimp industry, is converted into shrimp ponds. The abandoned shrimp ponds are virtually unusable for other purposes for indefinite period without costly rehabilitation which is seldom undertaken. Salt water remaining in the ponds (which are used for the shrimp culture) for a long period seep into the neighbouring cultivable land and salinizes the soils which lose their productivity for crops. Thus it deteriorates the soil quality in the adjoining areas.

All these issues have led to number of social movements in and around Chilika. The study revealed that though the social movements in the Chilika has a history way back pre-independence, the major dispute started in the later part of 1980's. As revealed through FGD interaction with some of the old fishermen of the region and with the CDA officials and after going through several published and unpublished reports as well as news in the print media. There was a dispute in 1986 between two primary societies relating to the fixing of barricades for catching prawn. It was a dispute between fishermen inhabiting the upper and lower region of the lake. The fishermen in the upper region had fixed very lengthy barricades which obstructed the flow of fish to the lower region. Following this dispute the 1988 policy demarcated the fishery sources; it also increased the annual lease of fisheries to three years. In 1991 the Government of Odisha issued an order which divided the fisheries in Chilika into two categories-capture and culture, without however, adequately defining the meaning of the terms. Capture rights were confined to the fishermen and culture was opened to the non-fishermen and those villages which were not member of primary societies. This policy created further confusion and conflict. The fishermen feared that their traditional rights were being curtailed by leasing out culture sources to the non-fishermen. It gradually resulted in the auction of leases to the bidder, and ignored the traditional rights. In this year Chilika Aquatic Farms Limited - a joint project by the government of Odisha and Tata was implemented. With this, the very famous Chilika Banchao Anadolan (Save the Chilika Movement) began. The fishermen's cooperatives challenged the order in the Odisha High Court, which directed the Government to make changes in order to safeguard traditional fishermen's interests. Implementation of court orders was delayed and no new leases were

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protection to primary fishermen of the area to carry on their traditional fishing practices.

When asked what they considered to be the single most important problem affecting the lake's fisheries, 70 percent of the respondents said that it was the ban on leasing fishing rights to local fishing communities and allowing outsiders to participate in the bids. When asked if they thought that additional numbers of boats, fishermen and/or nets was a problem and should be prevented from joining the fishery, 62 percent of the respondents agreed. More than half (54 percent) of the respondents expressed that leasing lake waters for prawn aquaculture also contributed to the decline of fisheries. Just 16 percent of the respondents felt that it was due to excessive fishing efforts. The study reveals that nearly 40 percent of the respondents have experienced some kind of conflict with users of active fishing gear. Sometimes these conflicts result in violence and destruction of fishing gear. The other major development is prawn fishing for export, which does not play a special role in the local livelihoods.

This proves that the concept of common property has led to authorised and unauthorised shrimp culture in most part of the lake, and that has ultimately led to number of social movements including some bloody battles. Questions related to access and use rights in the lake revealed that respondents who had traditional rights were significantly more positive about continuation of such rights than those who did not have them. The latter expressed that they would like to see more open access in the future, whereas the former were opposed to state interventions. The whole concept of common property and the social movements on the lake water points that the insecurities are strongly tied not only to allocation changes, but also to multiple factors, environmental, technological, and demographic.

3. Natural disaster and the impact on livelihood

Natural disasters, such as famine, flood, cloudburst, cyclone and tornado cause immense suffering in Odisha including loss of lives, livelihood, home and habitat. The super cyclone of 1999 was one such disaster and the consequent floods speak for themselves. Odisha's six coastal districts, including the three adjacent to Chilika are often subjected to tropical storm systems like cyclones as well as storm induced flooding and surges. With the burgeoning population, the threat of the coastal vulnerability risk has increased manifold⁸. The fishermen of Chilika regions are vulnerable to cyclone and flood. Disasters in general hit marginalized and economically disadvantaged fishermen hard for a variety of reasons. The fishermen group often live in particularly vulnerable areas and on the other hand,

their access to aids and support during and after the event is restricted. Their lives become even more vulnerable, when they go inside the water for fishing.

The fishermen spend almost 7-8 hours a day within Chilika for fishing. Their techniques of fish capture also vary from place to place depending on the season, depth of water and caste. The subgroups, Nolia and Niary, catch marine fish and so use the open sea and the mouth of the lake where other fishing groups do not operate. The Khatias have access to larger areas including the mouth of the lake.

The fishermen spend most of their time inside the lake and especially within a water area. Their knowledge about natural disaster is found to be poor, and even their view about natural disaster in general and cyclone and high-speed wind in particular varies. However some of the educated youths opined that, they have been trained on disaster management, by local NGOs and even by Red Cross and UNDP. Some of them also are the members of the local disaster management committee, having ideas about natural disaster.

The fishermen in the villages of Mahisha, Berhampur, Alupatna of Puri district opined that they do go inside the lake even during the high wind. It was also interesting to know that 10 percent of the fishermen even go inside the lake after getting the warning from the government. They say that fishing for living force them to go inside the lake. 70 percent of the respondent informed that they have faced some kind of natural disaster during fishing, out of which the maximum number was from Ganjam district. Most of the fishermen could recollect the 1999 super cyclone as one of the major natural disaster in the recent past. The study however reveals that the fishing within the lake during cyclone and high wind is much safer than fishing within the sea. When asked about the warning message they receive, before the onset of Mahuli (high wind and rain), it was surprising to find that, more than 60 percent fishermen strongly believe that they identify it before they receive any government warning. Out of these most of the fishermen (60 percent) are above 45 years. However the educated mass of these villages do believe that government warning message is much more effective than these things. Their natural coping mechanism to fight the natural disaster is also very peculiar. In the places where the water level low, most of the fishermen who goes inside the lake and face the cyclone accidentally, usually do not try to come out quickly. They try to hold the bamboos and stay inside the lake till it comes to an end. It is also true that Chilika is full of gherries and any time you can trapped inside, if you are not cautious. Most of the time they get injured and lose their nets and boats, but they survive. Out of the total respondents, almost all the respondents replied that natural disaster,

whether small or big, affects their livelihoods. This includes decrease in fish catch, loss or damage of property, damage of HH items, etc.

The study therefore proves that the capacity of the fishermen to protect themselves from the threat of natural disasters is constrained by poor and fragile livelihoods as well as man-made constraints. In the event of a crisis, the fishermen usually try and resort to a range of alterations on their daily life which is embedded in the strength of their livelihoods.

Conclusion

One of the key issues related to poverty and vulnerability arising from livelihood analysis is dependence on open-access. The household depends mainly upon open-access using fairly simple means of production for its primary livelihood. Open-access can provide products fish for sale, raw material needed for fish processing, and meeting household needs. However, contested access is caused by competition from modern technologies such as trawlers and aquaculture impacting the livelihood of the fishermen. Open access allows the entry of bigger players into the sector, which comes to dominate or even monopolize access too.

The most effective way to solve the problem is to allocate rights to stakeholders. Traditional fishing communities should be given the right to fishing. Management of fisheries should be entirely in the hand of the communities, with governments serving only as technical advisors, if needed by the communities. Community managed systems have a defined set of users and have in place intricate rules, norms and sanctions that govern use, entry and conflict resolution. When people form rules for them, they are most likely to follow them. When they are given the right to take decisions for the resources that they are dependent on, they would automatically make sure that the resource in question is sustained. There is a necessary requirement of the coordination between various agencies in regard to licensing procedures. What is the rule stipulates is only on the paper. Though the local fishermen are keeping a vigilant eye, no one is bothered about the licensing mechanisms since there is no strict checking or invigilation from the Government side on this regard.

For fishermen, Chilika is the abundant treasure and the supporter to their livelihood. The life of fishermen is always in the stagnations due to natural disaster. Though some of the villages get tourists, during the season, their turnover is not same throughout the year and the competition is also very high.

The study therefore recommends that while the government should think for alternate livelihood for the fishermen, it should also stress on the fishery sector development in Chilika. With a comprehensible ecosystem this should be done under the supervision of the Chilka Development Authority with support of the local fishermen. The study reflects the overuse of motorized boats in the lake, which may lead to reduction in fish in future. Therefore all the fishery equipment including the motorized boats should be kept under the monitoring of an independent local committee having the representation of all the interest groups. Irresponsible fishing can be done away by educating the fishermen and urging them to have a meaningful approach towards the lake's wealth. The Pollution Control Board should also initiate pollution free Chilika. It can be done through the frequent monitoring of the water body and strict legislations. Fish being a renewable resource, biologically it would mean that the rate at which the resources are harvested should be in harmony with the rate at which they multiply. Technologically, it implies utilising the renewable energy resources and methods, which are environmentally appropriate and less destructive. The policy of increased people's participation and decentralisation of investments and planning will offer added impetus.

While CDA with support of Japan government have formed a number of women SHGs in the areas, formation of more women SHGs and support of NGOs in this field can create more opportunities. There should be initiatives from the Government to run the appropriate marketing mechanisms like fish outlets, processing plants etc. This will also help the women of the area to get involved in the fishing or fishing related activities.

LIVELIHOOD STRATEGIES FOR FISHERMEN OF CHILIKA

Soumen Ray

Introduction

The fishing sector is a source of income and livelihood for millions of people around the world and the fisheries resources are the primary form of coastal livelihood for survival and affects lives of fishermen in various ways. In 1990, around 28.5 million people around the world made their entire or partial living from fishery production and capture¹. Employment in the fisheries sector has grown faster than employment in traditional agriculture². It is not only the fishermen whose livelihood depends on the fishing activity, but on an estimate for each person employed in capture fisheries and aquaculture production, about three jobs are produced in secondary activities, including post-harvest. Moreover, on an average, each fisherman supports the livelihood of three to four dependents or family members. As per FAO (Food and Agriculture Organisation) report, the employment in fishing is decreasing in many of the Asian countries including in India. This is the result of several factors, including decreased catches, programmes to reduce fishing capacity and increased productivity through technical progress. In the past, many studies have drawn significant attention to the socio-economic conditions of small-scale fisherman. These study findings reveal that livelihoods of small-scale fisherman more or less kept them in poverty³.

One of the important areas, which have attracted the attention of scholars, is the perception of fishermen towards fishing as a common property and its impact on livelihood. As the livelihood conditions improve, the individual user's negotiating ability to gain access to a resource and a diversity of resources also increases⁴. The pursuit of livelihoods is often understood in terms of the development of 'risk aversion' techniques and the minimization of vulnerability in resource scarce conditions that determines whether or not individuals survive⁵.

The second issue is the number of social movements undertaken by fishermen and their impact on their livelihoods. The fishery sector has witnessed upsurge of social movements over accessibility, shortage of fishery resources and faulty governance. This has resulted not only loss of life and property, but has also impacted long term livelihoods of fishermen.

Climate change along with natural disasters beyond human control pose significant risks to fisher people's livelihood. It is not only the natural disasters but also a heavy rain and high speed wind, which affects the normal fishing and thus affects the livelihood of fishermen.

The reduction of fishery resources and the issue related to livelihood of fishermen has forced researchers to concentrate on the study of developing alternate livelihoods for the fishers. There are two main objectives for the promotion of alternative livelihood. The first is to raise the economic standard of living of fishermen and the second is to reduce fishing effort to save environment. Poverty and vulnerability are direct outcomes of inadequate earnings from fishers' current livelihoods. Ultimately, fishers accept new livelihood opportunity from the limited options available, without considering their potential impact upon the natural and social environment.

Odisha, a state in eastern India, having a long cost line and many water bodies, offers a vast scope for development for inland, brackish water and marine fisheries. Chilika lagoon, situated in this state reveals a unique assembly of marine, brackish and fresh water eco-system and sustains the livelihood of thousands of fisher-folk in and around it. This chapter sets off with the objective to describe the dynamics of livelihood, poverty and vulnerability of fishermen of Chilika lake and the factors that triggered social movement by them in the area from time to time. The study supports the argument that with the increase of mechanized boats and modern fishing technology, traditional fishermen around Chilika suffer several problems, socio-political, economic and environmental in nature. Issues such as natural disasters and marginalization of farmers change in government policy regarding the leasing of fishing grounds, and the state versus the community management have also been discussed in this article.

Study Areas

The study was restricted within the survey of the fisher folk fishing in and around Chilika covering Puri, Khurda and Ganjam districts of Odisha. The lake is surrounded by about 132 fishing villages. Out of the total, 30 percent of the fishing village population is actively involved in fishing. The fishing population consists of sub-groups such as Kandaras, Khatias, Niary, Nolia, Tiaras, etc. who uses different fishing gear and catch different species of fish⁶. Although no official statistics is available about the total fisher folk living on Chilika, a rough estimate suggests that the total fishing population shall be around 1,20,000.

Data Collection

The present research work, took into consideration the fishermen of the said three districts irrespective of their affinities. To locate sample areas and to identify the subjects, multistage, purposive sampling method was resorted. The study focussed only in those Blocks of the said three districts, where the fishermen concentrated. Out of these Blocks, using the sampling technique, three blocks from Khurda, Two blocks from Ganjam and one block from Puri districts were chosen for the purpose. The selection of sample areas and identification of subjects were executed on the basis of 1. exclusively fishermen folk staying in and around Chilika, 2. proximity or distance from the headquarters and 3. priority to villages having fisherman of various categories and types. As per the research setting fifteen households were taken from each of thirty villages and thus 450 households were covered during the study. For the purpose of the collection of data through the structured interview technique was used. The schedule was prepared in strict accordance with the broad objectives and scope of the study. Each schedule contains 100 questions. Though most of the questions are close ended there are also some open-ended questions needed elaborate answers. In order to test the reliability of the data, 10 percent of the households were randomly cross-checked after the study was undertaken. The questions were asked in simple local Oriya language. Only in one village, where there was a dominance of Telugu fishermen, the researcher faced some problem in terms of administration of interview schedule and communication during FGD. The problem could be sorted out taking the help of local interpreters.

Secondary data was collected from the published reports, books and journals available in hard copy format both in the library of Chilika Development Authority (CDA) as well as in the libraries of Universities visited. Internet search engines were of a lot of help.

Findings

1. Socio-economic condition of fishers

The assessment of the socioeconomic conditions of fisher folk of Chilika was made primarily by conducting a detailed survey and by examining how certain social features like family size, participation of family members in fisheries, distribution and ownership of fishing assets and sharing of catch value that affected their living.

Educational levels of the respondents were studied to understand whether the fishermen have so far understood the importance of education in the verge of depleting fishing resources in Chilika. It was observed that there are respondents having different educational

level, i.e., 3.6 percent are highly literate, 73.8 percent are barely literate and 22.7 percent of the respondents are found illiterate in the study area. This is definitely an issue and challenge for their future growth. The working environment of the sample area revealed that majority of respondents involves in fishing sector i.e. 94.6 percent followed by daily-wage earner i.e. 2.4 percent, cultivation i.e. 2.2 percent and a negligible 0.2 percent in trade and business and 02 percent in others activity. None was found in government job.

The family structure of the respondents revealed that, majority 68.2 percent of the respondents remains in nuclear family and 31.8 percent of the respondents still maintain their traditional joint family. This proves that there is predominance of nuclear family structure as against joint in the study area. There are respondents having up to 3 members in families comprising 24.0 percent. Respondents having 4 to 6 members in the family are 67.1 percent and having 7 to 10 members in the family are 7.8 percent. Respondents largely belong to medium size families comprising 4 to 6 members irrespective of their status and very few respondents have more than 10 members of the family comprising only 1.1 percent. The study also revealed that in maximum cases (36 percent) only one member of the family is engaged in fishing. Similarly in 35 percent cases two members of the family are engaged in fishing and in 17 percent cases three of the family members are engaged in fishing. Only in 12 percent cases, four or more than those members are engaged in fishing. This is mostly in the case of joint families.

Income of the family of the respondent here relates to the amount of money received during a period of time in exchange of labour and services, from the sale of goods or property. The facts concerning the income level of the respondents is summarized in the Table 7.1. 24.9 percent of the family of respondents earn monthly below Rs. 2000 followed by 52.9 percent of family of respondents earn between Rs. 2000 to Rs. 4000. Similarly 9.3 percent of the respondents earn monthly between Rs. 4000 to Rs.6000 whereas the percentage of respondents family earning between Rs. 9000 to Rs.8000 is 6.0 percent. Monthly income of family of the respondents between Rs.80000 to Rs.10000 constitutes 3.3 percent. Only 3.6 percent of the sample population earn Rs.10000 and above monthly. The study also depicts that income distribution of the respondents is skewed and found that the lower income group is predominant in the study area which shows direct impact on livelihood of the fishers. Income distribution has a strong correlation on identifying a HH (households), whether BPL (Below poverty line) or not. The study revealed that more than 70 percent HHs studied are below poverty line and only 28.7 percent are in general category.

Income impacting possession of assets symbolizes authority and power. It provides security and confidence to the possessor also. The household assets possessed by each family like motor bike, television, refrigerator, etc. are observed. The economic status of the fishermen is not so good, in terms of possessing necessary assets. While 56 percent respondents possess some kind of motor bike in their family, 52 percent have fan or air cooler in their home. Only 26 percent respondents have audio systems in their home and 19 percent have televisions. A mere 3 percent respondent only possess refrigerator. The study also revealed that 98 percent of the respondents do not possess bullock cart or rickshaw. This means most of the transportation is made through autos, buses or public transport systems. It also means that without having television and radio sets, many of the respondents are actually not reachable for messages. Up to 50 percent of households in a fishing village remain in debt for a good part of the year. As fishers face increasing days of poor catches or no fishing opportunities at all, many fishing households report that an increase in the number of days they go hungry⁷.

One of the important questions was the number of generations the fishermen involved in fishing activity. During the study it was observed that almost 85 percent fishermen are involved for last four or more generations in catching fishes. Only 7 percent are involved for last three generation, 6 percent are involved for last two generations and 2 percent are involved for first generations. This proves that for most of the fishermen fishing is a hereditary business and it is really difficult to get out of fishing completely. 42 percent respondents revealed that purpose of fishing is to catch the fish for someone else, 54 percent catch fish for selling, 3.3 percent are involved for selling only and only 2 percent are involved in liasioning. Fishing technology and license of fishing has a huge impact on the quantity of catch. 53 percent respondents informed that they use manual boats, whereas 46 percent operate machine boats. Similarly while 68 percent of the fishermen have licensee for fishing, 32 percent do not have the fishing license with them.

Table 7.1 Capture and culture from Chilika

Year	Fish	Shrimp/Prawn	Crab
2001-02	9530.03	2347.78	111.07
2002-03	8265.16	2478.82	149.81
2003-04	10286.34	3611.37	155.51
2004-05	8097.77	5000.71	161.89
2005-06	7774.81	4296.02	154.08
2006-07	6463.92	3368.97	122.94
2007-08	6610.23	3298.08	139.12
2008-09	6534.85	3929.68	237.5

Source: Dept of Fisheries and Animal Husbandries, GoO, (Quantity in mt)

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issued till the mid-1990s, which resulted in chaos. In 1993 Odisha High Court gave a ruling affirming the rights of traditional fisherfolk in Chilika, banned modern prawn culture and directed the state government to demolish all prawn *gherries* (*plastic netted boundary*) which was illegal. The Chilika Bachao Andolan also resulted in Tata moving their operation away from the lake. In 1995 Alagarswamy report came out with recommendations to save the cultural resource. In 1996, the Supreme Court of India issued a historical judgment against aquaculture in Chilika based on the report. The Court held that the intensified shrimp farming culture by modern methods violates constitutional provisions and central acts, and therefore it cannot be permitted to operate. In 1997, Odisha Legislative Assembly constituted a sub-committee to look at shrimp culture in the Lake and the committee allowed the practice of leasing out some portions of the Lake for prawn culture. As long ago as 1999, the demolition drive had a head-on confrontation with the local police and the shrimp mafia. The "Chilika Macchhyajibi Mahasangha" started a campaign to implement Supreme Court orders and fulfil their nine points demand. The fishworker organisation then gave a 24 hour ultimatum to demolish all prawn infrastructures, and after the deadline they themselves destroyed the illegal prawn farms. Three fishermen died in police firing. With this the Tripathy Commission constituted to enquire into the police firing. After lots of pressure in 2001 the government suspended lease for shrimp culture in Chilika. In 2002, Fishing in Chilika Bill 2002 was passed by the government. The bill apparently protected the traditional rights of the fishermen by giving only 30 per cent fishing rights to non-fisherfolk. However in the same year the Jan Adalat demanded the withdrawal of the Chilika (Regulation) Bill. In 2004, the government tried to table the bill in the winter session of Odisha legislative assembly with fisherfolks protesting strongly against the sharing of the waterbody's resources. In 2007, Tripathy Commission report published which justified the police firing at Sorana in May. Chilika Matsyajibi Mahasangh rejected the report. In 2008 the Mahasangha threatened to stop the vehicular movement on the roads of Bhubaneswar if the bill was tabled. In April 2010, the fishermen began destroying shrimp farms again, but stopped when the government told them they would remove the farms, however, no action was ever taken. As a result the fishermen entered the lake in mid-January 2011 and began destroying the shrimp farms. On February 5, 2011, The Odisha High Court refused to interfere with the demolition of unauthorized shrimp farms around Chilika Lake and directed the state government to frame a detailed policy for protecting fishing practices in the area. The policy must ensure that no shrimp farms are setup within a kilometer of the lake as directed by Supreme Court of India in 1996. The Odisha High Court also asked the state government to remove the farms from the lake and provide adequate

protection to primary fishermen of the area to carry on their traditional fishing practices.

When asked what they considered to be the single most important problem affecting the lake's fisheries, 70 percent of the respondents said that it was the ban on leasing fishing rights to local fishing communities and allowing outsiders to participate in the bids. When asked if they thought that additional numbers of boats, fishermen and/or nets was a problem and should be prevented from joining the fishery, 62 percent of the respondents agreed. More than half (54 percent) of the respondents expressed that leasing lake waters for prawn aquaculture also contributed to the decline of fisheries. Just 16 percent of the respondents felt that it was due to excessive fishing efforts. The study reveals that nearly 40 percent of the respondents have experienced some kind of conflict with users of active fishing gear. Sometimes these conflicts result in violence and destruction of fishing gear. The other major development is prawn fishing for export, which does not play a special role in the local livelihoods.

This proves that the concept of common property has led to authorised and unauthorised shrimp culture in most part of the lake, and that has ultimately led to number of social movements including some bloody battles. Questions related to access and use rights in the lake revealed that respondents who had traditional rights were significantly more positive about continuation of such rights than those who did not have them. The latter expressed that they would like to see more open access in the future, whereas the former were opposed to state interventions. The whole concept of common property and the social movements on the lake water points that the insecurities are strongly tied not only to allocation changes, but also to multiple factors, environmental, technological, and demographic.

3. Natural disaster and the impact on livelihood

Natural disasters, such as famine, flood, cloudburst, cyclone and tornado cause immense suffering in Odisha including loss of lives, livelihood, home and habitat. The super cyclone of 1999 was one such disaster and the consequent floods speak for themselves. Odisha's six coastal districts, including the three adjacent to Chilika are often subjected to tropical storm systems like cyclones as well as storm induced flooding and surges. With the burgeoning population, the threat of the coastal vulnerability risk has increased manifold⁸. The fishermen of Chilika regions are vulnerable to cyclone and flood. Disasters in general hit marginalized and economically disadvantaged fishermen hard for a variety of reasons. The fishermen group often live in particularly vulnerable areas and on the other hand,

their access to aids and support during and after the event is restricted. Their lives become even more vulnerable, when they go inside the water for fishing.

The fishermen spend almost 7-8 hours a day within Chilika for fishing. Their techniques of fish capture also vary from place to place depending on the season, depth of water and caste. The subgroups, Nolia and Niary, catch marine fish and so use the open sea and the mouth of the lake where other fishing groups do not operate. The Khatias have access to larger areas including the mouth of the lake.

The fishermen spend most of their time inside the lake and especially within a water area. Their knowledge about natural disaster is found to be poor, and even their view about natural disaster in general and cyclone and high-speed wind in particular varies. However some of the educated youths opined that, they have been trained on disaster management, by local NGOs and even by Red Cross and UNDP. Some of them also are the members of the local disaster management committee, having ideas about natural disaster.

The fishermen in the villages of Mahisha, Berhampur, Alupatna of Puri district opined that they do go inside the lake even during the high wind. It was also interesting to know that 10 percent of the fishermen even go inside the lake after getting the warning from the government. They say that fishing for living force them to go inside the lake. 70 percent of the respondent informed that they have faced some kind of natural disaster during fishing, out of which the maximum number was from Ganjam district. Most of the fishermen could recollect the 1999 super cyclone as one of the major natural disaster in the recent past. The study however reveals that the fishing within the lake during cyclone and high wind is much safer than fishing within the sea. When asked about the warning message they receive, before the onset of Mahuli (high wind and rain), it was surprising to find that, more than 60 percent fishermen strongly believe that they identify it before they receive any government warning. Out of these most of the fishermen (60 percent) are above 45 years. However the educated mass of these villages do believe that government warning message is much more effective than these things. Their natural coping mechanism to fight the natural disaster is also very peculiar. In the places where the water level low, most of the fishermen who goes inside the lake and face the cyclone accidentally, usually do not try to come out quickly. They try to hold the bamboos and stay inside the lake till it comes to an end. It is also true that Chilika is full of gherries and any time you can be trapped inside, if you are not cautious. Most of the time they get injured and lose their nets and boats, but they survive. Out of the total respondents, almost all the respondents replied that natural disaster,

whether small or big, affects their livelihoods. This includes decrease in fish catch, loss or damage of property, damage of HH items, etc.

The study therefore proves that the capacity of the fishermen to protect themselves from the threat of natural disasters is constrained by poor and fragile livelihoods as well as man-made constraints. In the event of a crisis, the fishermen usually try and resort to a range of alterations on their daily life which is embedded in the strength of their livelihoods.

Conclusion

One of the key issues related to poverty and vulnerability arising from livelihood analysis is dependence on open-access. The household depends mainly upon open-access using fairly simple means of production for its primary livelihood. Open-access can provide products fish for sale, raw material needed for fish processing, and meeting household needs. However, contested access is caused by competition from modern technologies such as trawlers and aquaculture impacting the livelihood of the fishermen. Open access allows the entry of bigger players into the sector, which comes to dominate or even monopolize access too.

The most effective way to solve the problem is to allocate rights to stakeholders. Traditional fishing communities should be given the right to fishing. Management of fisheries should be entirely in the hand of the communities, with governments serving only as technical advisors, if needed by the communities. Community managed systems have a defined set of users and have in place intricate rules, norms and sanctions that govern use, entry and conflict resolution. When people form rules for them, they are most likely to follow them. When they are given the right to take decisions for the resources that they are dependent on, they would automatically make sure that the resource in question is sustained. There is a necessary requirement of the coordination between various agencies in regard to licensing procedures. What is the rule stipulates is only on the paper. Though the local fishermen are keeping a vigilant eye, no one is bothered about the licensing mechanisms since there is no strict checking or invigilation from the Government side on this regard.

For fishermen, Chilika is the abundant treasure and the supporter to their livelihood. The life of fishermen is always in the stagnations due to natural disaster. Though some of the villages get tourists, during the season, their turnover is not same throughout the year and the competition is also very high.

The study therefore recommends that while the government should think for alternate livelihood for the fishermen, it should also stress on the fishery sector development in Chilika. With a comprehensible ecosystem this should be done under the supervision of the Chilka Development Authority with support of the local fishermen. The study reflects the overuse of motorized boats in the lake, which may lead to reduction in fish in future. Therefore all the fishery equipment including the motorized boats should be kept under the monitoring of an independent local committee having the representation of all the interest groups. Irresponsible fishing can be done away by educating the fishermen and urging them to have a meaningful approach towards the lake's wealth. The Pollution Control Board should also initiate pollution free Chilika. It can be done through the frequent monitoring of the water body and strict legislations. Fish being a renewable resource, biologically it would mean that the rate at which the resources are harvested should be in harmony with the rate at which they multiply. Technologically, it implies utilising the renewable energy resources and methods, which are environmentally appropriate and less destructive. The policy of increased people's participation and decentralisation of investments and planning will offer added impetus.

While CDA with support of Japan government have formed a number of women SHGs in the areas, formation of more women SHGs and support of NGOs in this field can create more opportunities. There should be initiatives from the Government to run the appropriate marketing mechanisms like fish outlets, processing plants etc. This will also help the women of the area to get involved in the fishing or fishing related activities.

LIVELIHOOD INSECURITY OF NORTH BENGAL TEA WORKERS: CONTOURS, COMPLEXITIES, CHALLENGES, AND OPPORTUNITIES

Padam Nepal and Lalit P. Tirkey

Introduction

'Livelihoods' comprises the capabilities, assets (including both material and social resources) and activities that are required by households and individuals for a means of living¹. This definition primarily focuses on three basic components of livelihoods: work and employment, poverty reduction, and well-being and capabilities. At a very basic level, one's livelihood may include wide and diverse range of activities people engage to find sources of food, fuel, animal fodder and cash to make or improve their living. Pursuance of livelihood strategies involve the possession of basic material and social assets, human capabilities (education, skills, health, etc.), access to tangible and intangible assets, generally understood as capital (physical, economic/financial, human, socio-political capitals) and economic activities. Non-possession of any of these capitals, say for instance, lack of proper physical or mental health (an element of human capital), is apt to jeopardise livelihood opportunity or create a situation of livelihood threat to an individual while the possession of the assets stated above may provide livelihood security of the individuals and households. Therefore, 'household livelihood security' (HLS) is understood as adequate and sustainable access to income and resources to meet basic needs (including adequate access to food, potable water, health facilities, educational opportunities, housing etc.) and time for community participation and social integration. According to the livelihood index, there are eight components of livelihood security that includes income and assets, food and nutrition, education, participation, water sanitation, primary health and reproductive health. Hence, to reach the acceptable level of livelihood security, households require assets and capabilities, besides adequate household income for procuring food, potable water, shelter, health and basic education.

Livelihood of tea plantation workers constitute mainly daily labour wage from tea plantation work. There is little contention that the Indian tea industry, since its inception in the mid-nineteenth century, has contributed significantly to the national and provincial economy of the state like West Bengal. For about a hundred and fifty years, tea industry has been the mainstay of North Bengal economy, providing employment and livelihood sustenance to thousands of tea workers and their households². As a matter of fact, the same industry continues to play crucial role in the North Bengal economy by providing livelihood opportunities to thousands of households through direct employment and ancillary jobs³. Yet, it may be noted that since the immigration from Chotanagpur to the labor-intensive tea industry of North Bengal, labour wages have constituted the central livelihood activity for majority of *adivasi* in tea plantations of Terai and Dooars tea belts.

However, in recent decades, the Indian tea industry has failed to provide livelihood security to the tea garden workers. In the last decade, Indian tea industry in general and North Bengal tea industry in particular, has undergone crises affecting both the local and provincial economy. According to analysts, rising production and labour cost, fluctuating tea prices, decline of demand in the global market, combined with stiff competition from other tea producing countries have resulted in a slump in profit leading to the wage-cuts, non-payment of wages and even withdrawal of statutory benefits⁴. Indeed, the tea producers have faced financial crunch but it is the tea garden workers and their households who have been affected the most by the brewing crises. Firstly, for the generation of tea garden workers, tea labour work has constituted the central livelihood activity. The sole dependence or over-dependence on wage labour for livelihoods has led to the livelihood insecurity among tea workers. Secondly, vast majority of tea garden workers in North Bengal (as elsewhere in India) are landless, as they do not own any piece of land, which may serve as buffer during crises period. Thirdly, there are no alternative job options, which may supplement their income from wage labour or help them diversify their livelihoods. Hence, during temporary or indefinite lockouts and ultimate closure or even "sickness" of tea gardens, thousands of tea workers in North Bengal tea gardens not only lose their livelihoods but also face threat to their very survival. The crises faced by the North Bengal tea industry in the late 1990s to mid-2000 exposed the reality that tea industry provides sustainable livelihoods to thousands of workers. It also highlighted the fear that the over-reliance on tea wage labour even during normal operation does not guarantee livelihood or food security, particularly with low wage structure and lack of alternatives options.

To add to their woes, successive state governments have failed to address the subdued or vocal demand for increase in daily wages, granting land rights or establishing some alternative industries. They have failed to implement legislation such as Plantation Labour Act (1951) to safeguard the workers welfare. On the contrary, by introducing neo-liberal policies under the garb of new economic policy, the state has ensured the entry of corporate giants who maximize profit besides generate large revenue for the government by tying up with multinational retail or export companies⁵. Government has been mute spectator in the face of large companies controlling tea prices and even manipulating regulations on auction markets but failing to invest back in the local economy that would benefit tea workers (ibid). One, though subtle in its appearance, is the process of 'otherisation' of plantation workers. Various socio-cultural factors embedded in the social structure reinforce the process of otherisation and perpetuate 'exclusion' of a community/society in terms of their share of natural, social, cultural and economic resources in society⁶. Such social exclusions have led to the denial of rights of some communities in India⁷ for centuries, including the right to livelihood. The combined powerful forces have also ensured that the marginal plantation communities do not have right over the 'commons' in and around tea plantations, such as forest resources and vested land or open access to sand, gravel or water from the rivers/ streams. It is indeed paradoxical that despite being the 'backbone' of tea industry in North Bengal as elsewhere, the workers' livelihood is not secured while the tea garden owners and tea auctioneers continue to reap the profit even during crisis period. The process of otherisation, exploitation and marginalisation, and exclusion of the plantation community in the region has time and again reinforced their livelihood insecurity and perpetuated the vicious cycle of their domination and exploitation.

Therefore, the present study pertains to livelihood insecurity of tea garden workers in North Bengal in the wake of globalisation and the consequent neo-liberal policies of the Indian state. Studies on livelihood related issues in tea gardens of North Bengal and elsewhere, hitherto conducted, have conspicuously failed to grasp the complex interplay of a multiplicity of variables affecting the livelihoods and its diversification options. The present study, drawing from the theoretical insights on livelihood issues developed by Chambers and Conway and others, attempts to unfold the contours and complexities of livelihood threat encountering tea workers in North Bengal, and explores the possibilities of livelihood diversifications.

Objectives of the Study

The objectives of the study were as follows:

- To identify the existing livelihood patterns;
- To identify the factors accounting for livelihood insecurities;
- To locate the consequences of depletion of livelihood resources and opportunities;
- To explore possible livelihood diversification options for securing sustainable livelihood of the plantation workers.

Methodology

Being an analytical, exploratory and descriptive study, based on an emergent approach, we have adopted a 'mixed' method for the study, a sort of a hybrid methodology, synthesizing the merits of both qualitative and quantitative methodologies. The study has employed both primary and secondary sources to collect data and information. Field survey^a was conducted for the collection of primary data, using tools like questionnaire/schedule, in-depth interviews (semi-structured and structured), non-participant observation, and informal discussions with primacy. Employing stratified random sampling technique, 12 tea gardens were selected for the study from the three tea districts of North Bengal tea region. We have taken a sample size of 480 households for questionnaire/schedule from the universe of tea garden workers of which 62 percent are male and 38 percent are female. Ethnically, the household sample consists of 43 percent Scheduled Tribe (ST), 28 percent Scheduled Castes (SC) and the rest 29 percent General (Gen) category. Besides this, we have also interviewed about 5 to 10 key informants or opinion leaders, comprising mainly the union leaders, panchayat members, management staff and government/private sector employees. Informal discussion techniques were used to collect empirical data from the sites as well as corroborating the information gathered from other sources. The study also made an extensive analysis of the documents, reports, newspaper clippings, newsletters, and fliers. Statistical analysis of the quantitative data using SPSS was done to substantiate the information obtained through qualitative data.

Findings of the Study

The study reveals that the plantation community in the region is exposed to livelihood insecurity owing to a complex interplay of multiplicity of factors, which has been explained below.

^a The field study was conducted quite extensively in the North Bengal tea region of West Bengal, which consists of three tea districts, namely, Jalpaiguri Dooars, the Darjeeling Hills and the Darjeeling Terai.

A. Livelihood insecurity: Contours and complexities

1. Disproportionate working and dependent members

In recent decades, due to the cutting down of workforce in tea gardens, the number of working members per household has shrunk while the number of dependents has continued to increase⁸.

The Figure 8.1 shows that out of 480 households surveyed in the 12 select tea gardens 3.8 percent HH (households) have no working member; 28 percent HH have only 1 member working; 49.9 percent HH have 2 working members while only 17.3 percent HH have more than 2 working members, and merely 1 percent (5 households) have 5 members working either on permanent or temporary basis. And though a high percent of households have either one or two earning members, not all of them are permanent workers. In some households the working members are temporary workers^b. In the total sample size of 480 households the average family size was 5 with a minimum of 3 to a maximum of 16 members and the number of dependent members varied from 3 to 13. Thus, due to a small number of earning members and a large number of dependents the saving for the future not only becomes impossible but securing of livelihood, too, becomes extremely difficult. Thus, for generations of tea workers in North Bengal for whom wage labour constitute the only source of livelihoods, reduced working members and increasing dependent members accentuate livelihood threats.

Table 8.1 Working and dependent members

Parameters	Family size	Working members	No. of	dependents
N	Valid	480	480	479
	Missing			
Mean		5.26	1.87	3.33
Median		5.00	2.00	3.00
Mode		5	2	3
Std. Deviation		1.85	.876	1.63
Minimum		0	0	0
Maximum		16	5	13

2. Low Wage and Household Income: Second factor contributing to the livelihood insecurity of North Bengal tea workers is the low wage structure which is one of the lowest in the tea producing regions of India. The tea garden wages (Table 8.2) in West Bengal compared to other states are too low for the workers and their households to make any meaningful savings or investment for future.

^b The nature of temporary work is usually casual or seasonal. As a result, they work only 4-5 months during peak season and rest of the year becomes jobless, thereby, adding to the already large number of dependents.

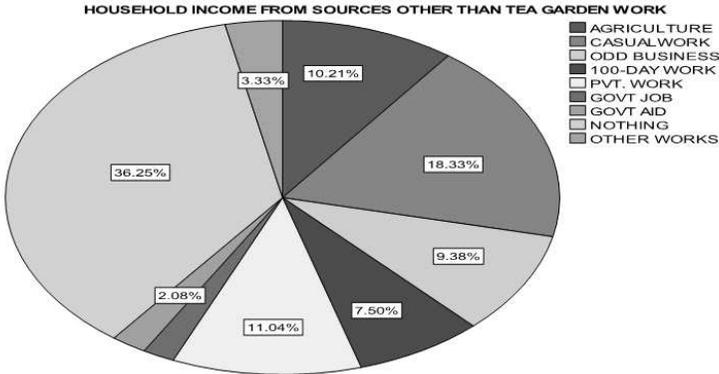


Figure 8.1 Alternative livelihood options in North Bengal Tea gardens

Table 8.2 Wage (Rs. /Day) differential in tea gardens of different tea growing regions

Tea Region	2005	2006	2007	2008	2009
Assam	51.10	53.40	56.10	59.00	62.70
Karnataka	71.00	73.00	75.00	77.00	81.44
Kerala	78.36	80.36	82.36	84.36	88.80
Tamil Nadu	73.00	75.00	77.00	79.00	84.44
WB (Darjeeling Hills)	48.40	50.90	53.40	56.40	57.40
WB (Terai/Dooars)	48.40	50.90	53.40	56.40	57.40

These wages are much lower than even the wages paid to unskilled workers^c of other sectors in West Bengal. From the interviews and informal discussions it was found that recent raise in wages from 2012^d notwithstanding, the livelihood status of tea workers in North Bengal have not improved tangibly because of the continuing price rise of daily commodities and other ordinary expenses. Thus, tea labour wages remain meagre and economically non-viable; it is merely at the subsistence level that is not adequate to grant them any livelihood security even during normal operation of the garden not to mention in crises situation, such as indefinite lock-out or abandonment of tea gardens. That is why, tea industry is considered in actuality an oppressive kind of industry wherein workers, despite enjoying the "permanent worker" status are paid 'daily wages' instead of monthly salary and even a permanent worker's wage is deducted if he is absent for a day¹⁰. Usually, the daily tea plucking of a tea worker in

^c In the agricultural sector in West Bengal, daily wage labourers are paid Rs. 88 for paddy transplantation and sowing, Rs. 135 for ploughing, Rs. 95 for harvesting and unskilled workers (eg sweepers) are paid Rs. 85 a day (Indian Labour Journal, Vol. 51, No. 5, May 2010, Ministry of Labour, Employment Labour Bureau, Shimla).

^d Before the Dushera in October, 2011 after a series of negotiations between the WB government, Tea Planters' Association and workers' union the wage was raised from Rs. 67 to Rs. 85/day for next three year for the workers of Terai-Dooars tea region (wages of Darjeeling Hills tea workers was raised to Rs.90/day since April, 2011).

North Bengal is estimated to be somewhere between 25 to 40.2 kgs which in a retail market would fetch between Rs. 1640 to Rs. 2620. Yet, the tea pickers have been receiving pittance in return while large tea companies are maximizing profits not just with large scale production and sale of tea but also reduction of workforce at a very low labour cost.

3. Absence of Alternative Livelihood Options: The plantation labour wage needs to be supplemented by some other income sources in order to make the household livelihoods more secured and sustainable. In North Bengal tea region, except tourism and to some extent, small odd industries, other alternative industries hardly exist; small scale cottage industries are conspicuous by their absence near tea gardens. To add to the hardships of workers, many tea gardens are located far away from the urban and market centres which make the availability and accessibility of work opportunities hard to come by. The study shows that very limited alternative income generating activities are available in and around the tea gardens of North Bengal³. Therefore, the third factor contributing to the livelihood insecurity of tea workers is the absence of alternative livelihood options in the region. During the survey about 80 percent respondents said alternative work/job opportunities are not available in their tea garden (see figure below).

Interestingly, there are some odd works available outside or in the vicinity of each tea garden as the figure below will show. However, the figure also shows that about 37 percent households "nothing" to diversify their livelihood sources; the multiple livelihoods are too insignificant and insufficient to substantially supplement to their monthly wages. Hence, the livelihood threats and challenges persist despite the presence of some alternative work options. Viable livelihood options become necessary for securing food and other basic amenities whenever basic livelihood system like tea industry collapses. In recent years, many agricultural poor and landless labourers have been provided with work opportunities like '100 days work' under NREGA scheme⁹. These welfare schemes that function as short-term alternative livelihood options are aimed at helping rural poor particularly of SC/ST communities. In surveyed tea gardens only 7.5 percent HH were benefitting from 100-day work schemes while 18.33 percent HH received Government Aids in the form of FAWLI in completely lockout gardens.

Thus, the livelihood insecurity seems to have got magnified owing to lack of any alternative livelihood options^e.

^e Study also reveals an interesting finding that in the past cultivable land of many poor and ignorant tribal cultivators was taken away by ever expanding tea garden owners by lure of permanent plantation only to be given less than market price and 'insecure' wage work.

Table 8.3 Household land ownership (Sample: 480 HH)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	108	22.5	22.5	22.5
	No	371	77.3	77.5	100.0
	Total	479	99.8	100.0	
Total		480	100.0		

4. Lack of Land Ownership and Loss of other 'Commons': The fourth and probably the most important factor contributing to the livelihood insecurity of tea garden workers in North Bengal tea region is the lack of land and other resource ownership^f. The table below shows that out of the surveyed sample size of 480 HH in North Bengal tea plantations only 22.55 percent households have some landholdings while 77.45 percent don't own any piece of land.

Ownership of resources, particularly land, water and forest, provide livelihood security and aid the intervention against economic crises, besides, providing regular subsistence income for improving the livelihoods⁹. Tea workers in the North Bengal tea region have been deprived of land or other natural resource ownerships since the inception of tea industry in the region. The present day argument for the denial of land rights is that tea cultivation fields are government lands given in grants or lease to the tea planters for a fixed period. Ironically, even the vacant and unutilised land in most tea gardens is not made available for workers. And with such low wages, not many households have land purchasing power to diversify their income sources. That is why, tea workers' socio-economic condition has not improved in the tea regions of North Bengal despite unquestionable role played by the indentured migrant workers in the past and by their descendents in subsequent years¹⁰. The interviews and informal discussions also threw light on the fact that tea garden residents have no ownership of the 'common' resources, such as rivers, forests, land and the like within or in the proximity of tea gardens. Observations confirm that present day tea gardens have become devoid of forest areas that would serve as alternative livelihood source during the loss of tea labour wage during garden closures. Lack of forested areas denies

^f Land is not only an invaluable natural resource and physical asset but also valuable source of income generation through agriculture. Ownership of land and access to other resources are essential not just for the economic development but also for the enhancement of livelihoods security. Workers suffer livelihood threats whenever tea industry faces crises in the form of tea garden lockouts or abandonment by owners or proprietors because they have no land and hence, are left with no immediate livelihood resource. UNDP Report (2006) and studies conducted by Talwar *et al* (2003) and Biswas *et al* (2005) in the North Bengal tea regions have shown that closure and abandonment of tea gardens had led to the humanitarian crises in the form of malnutrition and hunger, which in turn resulted in various sicknesses, hunger and starvation deaths.

even the last opportunity like hunting and gathering in extreme situation. Moreover, the strict forest legislations prohibit the use of forest product from the nearby jungles. Today, the sand and gravel are also controlled by the powerful agencies and the garden residents have no control over such resources.

5. Lack of capability and capacity building:

Education is one of the prime components of human capital that is essential to provide capabilities to individuals and households for securing better livelihood opportunities. Without education or for lack of good education human capabilities become stunted. The findings in the surveyed tea gardens show a bleak picture of capabilities formation and capacity building among tea workers. The figure below shows that that a high percent of present day workers have no education (35.83 percent that is 172 workers), or have either only elementary education (30.83 percent that is 148 workers) or junior high school (23.75 percent that is 114 workers) education which is not sufficient to provide capacity building. On the other hand only 9.38 percent (that is 45 workers) have higher secondary (Cl. 10-12) and barely 0.21 percent (one worker) has college education or graduation.

The starvation deaths in the North Bengal tea plantations¹¹ are the indicator that tea workers are most vulnerable to shocks and stresses like malnutrition, hunger, and diseases after the abandonment or closure of tea plantations on which their sole livelihoods depend. This owes primarily to the lack of education, training and skill development for the garden population to be able to secure alternative livelihoods.

B. Opportunities

1. Natural resources: North Bengal tea region is endowed with vast array of natural resources and has the potential to provide great economic opportunities. Besides the variety of forest cover in the area is also endowed with many Himalayan fed rivers that supply water year round, which could be developed as a resource for such people.

2. Potential for alternative industries: Though tea has been the mainstay of the North Bengal economy for more than a century, the region is also famous for two other "Ts"- timber and tourism. Due to abundance of forest cover, timber-related small industries can provide alternative jobs to many people. On the other hand, tourism has been blooming in some parts of the region, particularly in the Hills. In recent years, Gazaldoba forest sanctuary is attracting bird watchers, animal lovers etc in the Doar region.

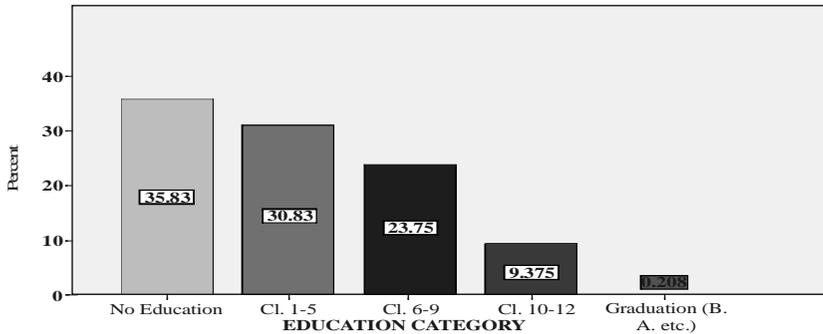


Figure 8.2 Educational level of the garden population

Likewise, Lataguri forest and areas adjoining the Nepal and Bhutan can be developed as tourist destinations that will generate employment to the people.

C. Challenges

1. Globalization: North Bengal tea region is strategically located; besides being the gateway for the North-East India it is surrounded by three small countries dependent on India, namely, Nepal, Bhutan and Bangladesh. So the process of globalization has brought in some kind of economic opportunities in the region, however, not without challenges to the plantation labourers. The tea industry in North Bengal has embraced the globalization by allowing the entry of Indian corporate giants as well as multinational companies. In 1990s the economic policies of the government paved the way for the entry of corporate giants which increased the annual tea output and export quantity by tying up with some multinational giants. One of the factors responsible is the introducing of neo-liberal policies of the erstwhile state government which had circumvented legislations meant to safeguard tea plantation workers in favoured of large tea owning companies. This process allowed for not only quick profit-making but also control of tea industry in the region besides control of domestic market prices and manipulation of the auction markets. Thus, process of globalization aided by neo-liberal policies of the government have subtly marginalized smaller tea producers without in anyway providing livelihood security to tea plantation workers, comprising chiefly the marginalised communities.

2. Politics of exclusion: Government, by favouring revenue generation by large tea producing companies, instead of looking after the welfare of the workers, has established that the politics of exclusion is being underplayed in the tea belts dominated by the marginal communities. The continued significance of access to land impact livelihoods,

including food security of the tea workers, through multiple pathways, often resulting in escalation of tensions and political struggles, jeopardizing peace and security. At the turn of the new millennium when the livelihood security of thousands of tea garden workers of North Bengal, especially in the Terai-Dooars tea belt was at peril, government was conspicuous by its apathetic attitude. It has also been seen that the West Bengal government has been singularly lackadaisical in the enforcement of any of the provisions of the Acts, especially in plantations. Provident Fund Commissioner has taken little action with respect to PF dues; and only in two cases criminal complaints have been filed with respect to wage arrears. Furthermore, even in the tripartite negotiations in which the government had been a party have not concentrated on when workers' dues may be resolved. Is it because the majority of these tea plantation workers of North Bengal belong to the marginalized and certain scheduled section of the society, and hence, can make no significant impact on politics and economy?¹². Certainly, government has shown a subtle discriminatory attitude towards these workers, who are often considered 'outsiders' and so, not original inhabitant of the place. Likewise, corporate giants without any corporate social responsibility, have not invested back for the benefit of the tea plantations. The Commission of Scheduled Caste and Scheduled Tribe that visited Dooars region noted serious problems in obtaining ST certificates, non-availability of Hindi Schools and Hindi Teachers in the existing schools, absence of minimum wages guarantee to tea workers and land right to tribals working in Tea Gardens¹³. It also reported grave hardships caused to the tea plantation tribals due to abnormal delay in payment of compensation, government benefits and involvement of agents who take away the major share in such cases due to illiteracy of these people. The study reveals that illiterate and ignorant *adivasis* never properly benefit from government schemes, due primarily to long-stretched process involved or graffiti of the government officials. For the *adivasis* of tea plantations, there is no mechanism that ensures justice or even raises their silent voices to the upper echelon of the society. For generations they have lived a life of subjugation and submission at the hand of not just their tea estate masters but also government officials. Theirs have been a life of silent suffering, and paradoxically, in spite of a sizable number in the region they have remained a mass of voiceless people. It is under this context that the emergence of *Adivasis Vikas Parishad* (AVP) becomes very significant.

3. Emergent micro-politics of marginal community: Contextualizing the emergence of the AVP:

The escalation of tension from the loss of livelihood resources and opportunities has started becoming manifest. The plantation

community, building its responses on the lived experience of economic marginalization, revealing contradictions between accumulation of profit by garden owning companies with global market connections on the one hand, and the increasing living costs, failure of state policies to support for the sustainable livelihoods of the workers, the pressures emanating from the newer orientations of life for the hitherto unexposed people through globalization, and, their experience of being victims of politics of exclusions on the other, have resorted to the micropolitics of livelihood-based resistance via the emergence of *Adivasi Vikas Parishad* (AVP) as a political force in Terai and Dooars Tea Regions. Though this organization existed in a non-potent force for many years, in 2008, it almost suddenly re-emerged as *Adivasi Vikas Parishad* (AVP), thanks to the renewed Gorkhaland Agitation under the newly formed Gorkha Jana Mukti Morcha (GJMM)¹⁴. At first it only appeared as a counter force to the Gorkha Janamukti Morcha's claim for the inclusion of Terai-Dooars within their proposed Gorkhaland territory¹⁵. But more deep rooted cause for the rise of AVP is seen as unbearable exploitation of the *adivasis* by the tea planters and trade unions affiliated to different mainstream political parties¹⁵. One of the most important victory for the people of the tea gardens of North Bengal, particularly from Terai-Dooars tea belts is that AVP has been the voice of the erstwhile voiceless workers. Besides demanding the high raise in daily wages of tea plantation workers this association has also raised the demand for issuing of land "patta" to each tea garden resident and the grant of right over other 'commons' such as vacant and forested land, etc. Furthermore, the recent alliance of the AVP with the GJMM in its struggle for a separate state - Gorkha-Adivasi Pradesh implies greater political objectives of the AVP in the region with significant political implications.

Conclusions

Mukherjee¹⁶ has aptly pointed out that the Tea plantations in West Bengal are not merely economic production units but are more social institutions, controlling the lives of their resident workforce. Most of the workers here are tribals, who live and work exclusively for their respective plantations without any freedom of choice in terms of work and residence. The deteriorating conditions of tea gardens in terms of closure, abandonment, garden sickness, or temporary lockouts have been contributing continuously towards the workers livelihood insecurity; the rising economic aspirations of the people specially in the aftermath of globalization which has only accentuated this crisis! The situation has been further jeopardized by the absence of proper medical and sanitation facilities in the garden,

absence of adequate educational facilities, especially technical and skill development, etc., among others. The livelihood threats have multiplied in the recent years with pressures of globalization, governments' neoliberal policy designs that conspicuously remain silent on issues like social security and support for the workers. Failure of the state to deliver has opened space for the entry of the smaller politics of collective actions like strikes and protest movements. The *Gorkhaland Movement* in Darjeeling Hills and the *Adivasi Vikas Parishad* in the plains have already started appropriating the issues of the gardens in their political agenda. The North Bengal region with its sensitive strategic and geopolitical location is a zone, however, with long standing experience of protest politics. Given the present state of affairs, the region is likely to witness radical strategies of protest apt to mar and jeopardize peace and tranquillity. This situation necessitates immediate state intervention, albeit with a focus on the possible future trends and their overall implications to the nature of economic policies and politics in the region, which would be capable of addressing the grievances of the workers. The way out would be by way of such arrangements, which would enable the workers to meet their current livelihood requirements and be able to prepare themselves to resilient enough to adapt to livelihood fluctuations, shocks and pressures in future. The agencies of micro-politics of protest and collective action would probably see the necessities of mobilizing the workers, thereby unleashing possibilities of lost peace and order in the event that the state fails to address the basic livelihood issues of the tea workers.

SECTION - III

EFFECT OF CLIMATE CHANGE ON COMMONS

COMMONS, CLIMATE CHANGE AND ENVIRONMENTAL REFUGEES

Y. Dayakar

Introduction

'The environmental crisis arises from a fundamental fault: Our systems of production – in industry, agriculture, energy and transportation – essential as they are, make people sick and die'.

– Barry Commoner

'A man can do what he wants. But he can't want what he wants'.

- Arthur Schopenhauer

OIKOS is a Greek word meaning a house or the dwelling place or at home¹. OIKOS forms the root three disciplines viz., Ecology, Economics, and Ecuminics. Ecology deals with the structure and function of nature in which human beings are an integral part. It is a branch of science that deals with the ordering of different components of creation and their coupling with each other in order to make the functional system a functional whole or a unit. Within a system there are nodal centers with certain functional output. These form a hierarchy. At the top is the dominant component which indicates power. Human beings are the crown of creation and the dominant species hence

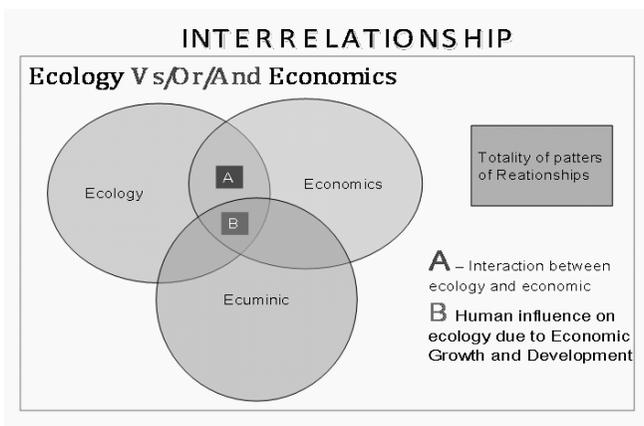


Fig. 9.1 Interrelationship of economics, ecology and ecuminic

man is the mighty geologic agent. Ecology deals with the book keeping of energy (the flow of energy through varied tropic levels of the Eco-systems. Economics deals with the bookkeeping of the currency and Ecuminics deals with the bookkeeping of harmony².

Biosphere is the globe that can sustain life by self-regulation and maintenance. It is the reservoir of the resources which are varied and rich. The human beings live there in such a way to keep the ecological balance of the biosphere. There is harmony in the biosphere as long as human beings maintain the above order (Fig. 9.1).

From the beginning the basic needs of the human beings are water, air, food and land. But the needs of post modern humanity (21st century) are varied, changing and becoming more complex. As a result humans have began to explore, exploit and plunder the resources of the biosphere. His thoughtless action, careless technology and myopic vision rupture the ecological-balance. The cumulative effect of ecology–sin–syndrome is felt everywhere in all the centuries and biospheric system has been running down from cosmos to chaos (increasing of entropy)².

Climate Change

It is a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. Climate change may be due to natural processes or external force or to persistent anthropogenic changes in the composition of the atmosphere and land use. Climate change is one of the most important global environmental issues of our generation and the possible consequences of climate change are alarming. It is distinct from natural climate variability since it alters the composition of the earth atmosphere. Adverse weather events around the world, such as floods in China, Earthquakes in Japan, the changing patterns of the Monsoons in India and devastating drought in the U.S. are the stark reminders that climate change is a major concern of environmentalists.

A. Causes of climate change

1. Natural causes:

a. Volcanic eruptions: Tiny particles called aerosols are produced by volcanoes. Large volume of gases and ash can influence climatic patterns for years by increasing planetary reflectivity and causing atmospheric cooling. Because they reflect solar energy back into space they have a cooling effect on the world.

b. Ocean current: The oceans are a major component of the climate system. Ocean currents move vast amount of heat across the sea surface and drive ocean current patterns. The oceans play an important role in determining the atmospheric concentration of CO_2 . Changes in ocean circulation may affect the climate through the movement of CO_2 into or out of the atmosphere.

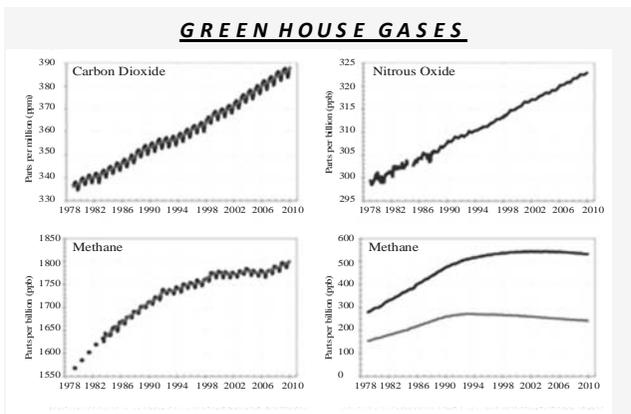
c. Earth orbital changes: Change in the tilt of the earth can lead to small but climatically important changes in the strength of the seasons, more tilt means warmer summers and colder winters; less tilt means cooler summers and milder winters. Slow changes in the earth's orbit lead to small but climatically important changes in the strength of the seasons over tens of thousands of years.

d. Solar variations: The Sun is the source of energy for the Earth's climate system. Although the Sun's energy output appears constant from an everyday point of view, small changes over an extended period of time can lead to climate changes. Scientific studies demonstrate that solar variations have performed a role in past climate changes.

2. Human causes

a. Anthropogenic activities: It has been demonstrated beyond reasonable doubt that the climate is changing due to man-made greenhouse gases.

What are Green House Gases? Many chemical compounds found in the earths atmosphere act as "Green House Gases". These gases allow sunlight to enter the atmosphere freely. These are viz. Carbon dioxide, Methane and Nitrous oxide.



Source: Intergovernmental Panel on Climate Change, *Climate Change 2001: The Scientific Basis* (U.K. 2001)

Fig. 9.2 Trend of green house gases in the atmosphere

The Industrial Revolution in the 19th & 20th Century saw the large-scale use of fossil fuels for industrial activities. Fossil fuels such as oil, coal and natural gas supply most of the energy needed to run vehicles, generate electricity for industries and households. The energy sector is responsible for about ¾ of the carbon dioxide emissions, 1/5 of the methane emissions and a large quantity of nitrous oxide (Fig. 9.2).

Sources of green house gases: The sources of green house gases come mostly from energy use. These are driven largely by economic growth using the technological and industrial development. Technocratic humans demand far more electric power generation to feed into our technology. Electric power is generated by Thermal Power Plant, Hydro Electric Power Plant and Nuclear Power Plants.

b. Climate change – Global warming: These are used synonymously. But the two have distinct meanings. Global warming is the warming of the earth surface by the combined results of anthropogenic (human-caused) emissions of green house gases and changes in solar irradiance. Climate change can be identified by changes in the variability of its properties and that persists for an extended period typically decades or longer. Climate change is anticipated to result from global warming, resulting from accumulation of Green House Gases in the atmosphere.

Implications of climate change: Implications are manifold – on environmental, ecological, economic, social and institutional fronts. These include melting glaciers and rising global mean temperatures, erratic rainfall leading to crop failure, increased desertification and deforestation, emergence/resurgence of tropical communicable and non-communicable diseases, frequent droughts and floods causing internal displacement of people. These effects are threat to poor peoples' climate-sensitive livelihood such as farming, cattle-rearing and fishing. Submergence of lands along sea coasts are also increasing due to rising sea levels.

Case studies

1. Himalayan glaciers: It is estimated that Himalayan glaciers are shrinking at a rate of 10 to 15 meters a year where by Ganges is expected to lose two-thirds of its July –September flow, affecting one-third of India's irrigation land, and causing water shortages for more than 500 million people in South Asia. India is racing towards water scarcity due to climate change. According to International Water Resource Group (IWRG) estimates, India's aggregate water demand is expected to double from the current level about 700 billion cubic meters to 1498 billion cubic meters by 2030, with an estimated supply of about 744 billion cubic meters by then, the water gap is estimated to be 50 percent³.

2. Arctic changes: Climate Change will cause thawing of permafrost in Alaska and other polar regions, resulting in shifting ground, erosion, landslides, and land subsidence⁴. Since the bearing capacity of permafrost decreases with warming⁵, this will affect buildings, transportation, and defense infrastructure such as runways, roads, and radar installations at the 11 active military facilities located in Alaska. Increased temperatures in the Arctic will mean that there will be more ice-free open water during the year, and the sea ice that does form will be thinner⁶. Ice-free surface waters will likely also result in increased shipping and military traffic through Arctic waters. This will lead to policy conflict between U.S. and Canada since they regard Northwest Passage as their own internal waters and an on going debate between the United States and Russia over the Northern Sea Route⁷. Climate change in the Arctic will increase both the scope and duration of northern operations for the Navy and the Coast Guard, who must be prepared to meet them.

3. Middle east: Climate Change will mean more natural disasters as a result of shifting weather and precipitation patterns. The Midwest will face a greater risk of tornadoes and riverine floods, the Gulf Coast and other shorelines will face a greater risk of high seas and hurricanes, and the West will face greater risk of wildfires.

Commons

The environmental and natural resources which are the commons (Eg: Deposits of minerals, Fossil Fuels, Oceans, Rivers, Rain Forestry, Flora & Fauna) are crossing the natural boundaries due to absence of well defined property rights for some of these commons. When the commons reach across national boundaries the difficulties multiply greatly. Moreover, when property rights to natural resources are non-existent or un-enforced the result can be over exploitation and overuse. The key Global Commons issues that affect national survival and well-being include planetary calamities, climate change, deadly epidemics, stability of global economy, global political stability, terrorism, wars, etc. Where there are problems with the global commons, Multilateral Environmental Agreement (MEAs) can play an important role in coordinating policy action. The committee on trade and environment of the WTO has expressed the view that MEAs are the best way of coordinating policy actions to deal with global and trans-boundary monitoring and enforcement problems.

Environmental Refugees

The definition for environmental refugee is 'those people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environment disruption (natural or

triggered by people) that jeopardized their existence and/or seriously affected the quality of their life⁸. Especially this definition defines environmental refugees as people who are forced to leave their original habitat because of some sort of environmental difficulty. In the year 2010, it was estimated that there were approximately 50 million environmental refugees worldwide⁹. Estimates further states that by 2050, there will be 200 million environmental refugees⁹. These statistics show that the issue of environmental refugees is a huge problem, but unfortunately, environmental refugees are not recognized as official refugees. Vast Population depends on climate sensitive sectors like agriculture and forestry for livelihood. Climate change caused due to modern high technology pumping-in additional energy leads to pollution reduces the quality of the living space. The over exploitation of certain global commons adversely affects the biosphere (earthquakes, cyclones, famines, drought conditions) tends to impact the poorest in the society exacerbating in equities in access to food, water and health. As a result many millions of persons have become involuntarily displaced (Refugees) and are compelled to flee from their areas of habitual residence. The problem of displace persons (environmental refugees) is become evermore closely associated with environmental degradation. The number of such displaced persons keeps increasing by three million a year.

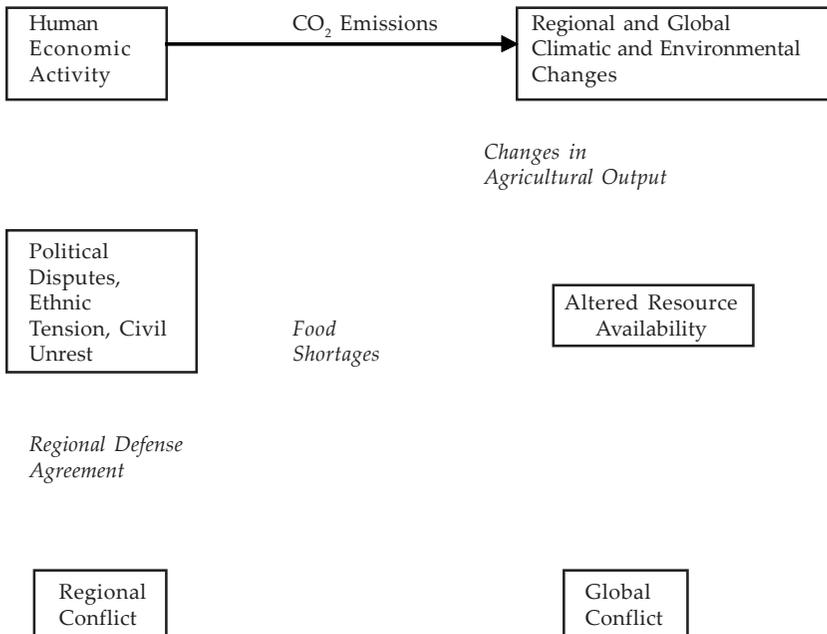


Fig. 9.3 Illustrates the potential for economic activity to cause environmental changes that lead to conflict

Our Response

- Ensuring energy conservation and improved energy efficiency in various sectors.
- Promoting use of renewable energy.
- Use of cleaner and carbon intensive fuel for transport.
- Afforestation and conservation of forest.
- Promotion of clean coal technologies.
- Encouraging Mass Rapid Transport Systems.
- Environmental quality management for all sectors.
- Integrated water resource management through enhanced water use efficiency.
- Ensuring food security through sustainable agriculture by developing drought resistant varieties.
- Public health and health care infrastructure.
- Less carbon intensive economy growth and development.
- Implement well defined property rights for the global commons.
- Enforcement mechanisms to deal with environmental problems associated with certain commons.
- Key role of MEAs in coordinating policy action where there are problems with the global commons.
- National Mission for a Green India.

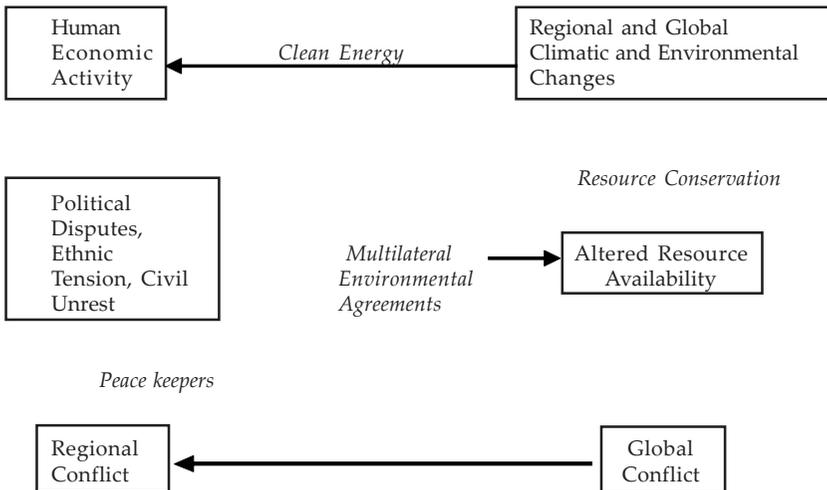


Fig. 9.4 Feedback loops to reduce environmental conflict

Source: Elizabeth L. Chalecki, *Pacific Institute for Studies in Development, Environment, and Security*

Case Studies

1. The Maldives: The Maldives, a small group of Islands found in the Indian oceans, is at serious risk. With the highest elevation level at 2.4 meters, the Islands hold the possibility of being completely submerged by the current sea levels. If and when this happens, close to 400,000 people will become environmental refugees.

2. Haiti: Haiti is the poorest country in the western hemisphere¹⁰. 80% of the population lives under the poverty line due to the prevailing poor environment in the Haiti. While only one-third of the land is suitable for agriculture, three-fifth of land is being cultivated because of the population demand. As a result, the soils are especially prone to erosion and much of the soil is so utilized that it is not reclaimable⁹. Estimates show that about 1.3 million have left their home land with 300,000 of them migrating to U. S.⁹. Deforestation is a huge contributor to environmental degradation in Haiti¹¹. During 19th and 20th century, the timber industry played a large role in deforesting Haitian land. The intensive deforestation led to additional soil erosion, decreased harvest and increasing severity of floods. When the earthquake hit Haiti in January of 2010, the environmental problems only worsened.

3. Sub-Saharan Africa: This is an extremely impoverished region, both in terms of the people and the environment. This region is extremely prone to drought and food resource scarce due to deforestation¹². Recent data shows that in sub-Saharan Africa 80 million people are under nourished due to environmental conditions and is the main producer of environmental refugees with about 7 million people migrating in order to find food⁹.

SUSTAINABLE RESOURCE CONSERVATION AND LIVELIHOOD SECURITY: CASE OF AQUAPONICS AND SPIRULINA

Subhrankar Mukherjee and Indrajit Banerjee

Introduction

Aquaponics is a portmanteau^a of the words ‘**aquaculture**’ (intensive fish farming) and ‘**hydroponics**’ (soil-less plant culture). In aquaponic systems—as shown in the image of the Aquaponics facility on the right that we have built at Village Ullon in South 24 Parganas, West Bengal—the nutrient-rich water from growing fish in a re-circulating system provides a source of natural fertilizer for the



^a A **portmanteau** or **portmanteau** word is a combination of two (or more) words or morphemes, and their definitions, into one new word.

growth of plants, organically. As the plants absorb the nutrients, they bio-purify the water that the fish live in. The growth of useful bacteria in the system promotes the proliferation of natural microbial process which allows the fish and plants to grow in a symbiotic relationship. This process, which can be thought of as 'bio-mimicry', creates a sustainable ecosystem where both plants and fish can live, using less water and space, producing no waste water and pollutants compared to conventional methods, while using semi-skilled and local labor as inputs for production, resulting in long-term creation of sustainable livelihoods¹. One of earliest, large-scale re-circulating aquaponic implementations, was made by Dr. James Rakocy at the University of the Virgin Islands (UVI) in St. Croix, as long ago as 1970.

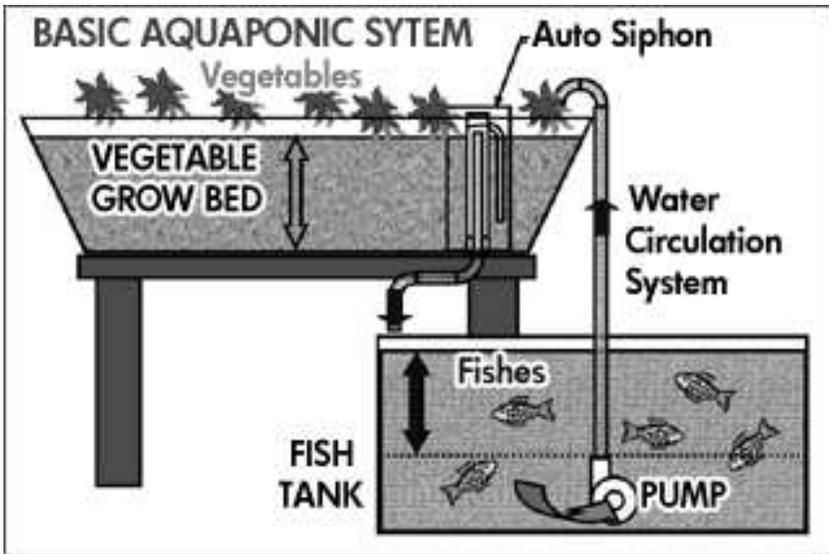
The main advantage of Aquaponics over competing technologies for fish and vegetable growth are²:

- **Water Reuse:** Aquaponic systems are completely contained systems that reuse most of the water from the fish holding tanks. Wastes are removed, water is treated and recycled back to the tanks. Water loss during waste removal/evaporation is typically 1-1.5% of the total volume of water.
- **Space and Production Efficiency:** The productivity is higher than conventional aquaculture, while allowing for optimal year-round growth. Market-sized fish can be produced in 9 months compared to 15-18 months in conventional fish farms. It takes 197.6 acres of open ponds to produce the same amount of shrimp that an aquaponic farm can raise on just 6.1 acres of land!⁵
- **Bio-security:** Aquaponic fish farms, which are fully closed and controlled and operate without any inputs of chemicals, drugs or antibiotics, are bio-secure—as diseases and parasites cannot get into the system. This ensures a more natural product for consumers. AP systems can be (a) located near markets or within urban communities that will use the fish, rather than by natural water sources like oceans or rivers, thus having a smaller carbon footprint due to reduced transportation requirements; and (b) need not be located on water supply systems or for drainage requirements.

Aquaponic systems, which have been under progressive development for over 40 years, can be designed to be economically and environmentally sustainable, while enhancing productivity, profitability and the quality of food security, through continuous improvements in both, 'hard' and 'soft' aquaponic technology.

What is Aquaponics?

The basic Aquaponic system, as shown in the schematic on the right, is a closed loop facility that retains and treats the water within the system. In a process that can also be described as ‘bio-mimicry’, the water flows from the fish tank through a bio-filtering treatment process that also provides the nutrition for the plants, and is finally returned to the fish tank in a continuous, re-circulation system. This symbiotic process is an environmentally-friendly, natural and organic food growing method that replicates intensive **aquaculture** and **hydroponics** processes, without the need to discard any water or filtrate as in the former, or add chemical inputs as in the latter, while leveraging on the benefits and eliminates the drawbacks of either.



Comparison of Aquaponics with traditional approaches

Aquaponics solves many problems faced by hobbyists, hydroponists and fisheries, as shown in the following tabulation:

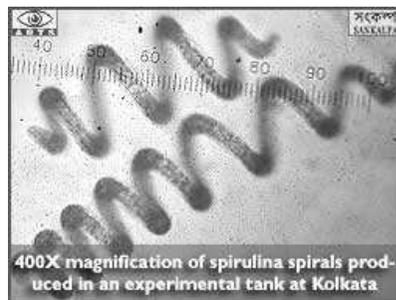
Table 10.1 Comparison of aquaponic approach with traditional approaches^{3,4}

Soil based Gardening	Hydroponics	Intensive Aquaculture	Aquaponics
<i>The problems with traditional soil-based gardening:</i>	<i>The problems with hydroponics are:</i>	<i>The problems with intensive aquaculture are:</i>	<i>The advantages of aquaponic systems are:</i>

- Weeds;
- Relatively large amounts of water required, at regular intervals;
- Knowledge required to know when to water, when and how to fertilize, and what is the composition of the soil;
- Heavy digging, the bending, the back strain;
- Presence of soil-borne insects;
- Pests.
- Relies on the careful application of expensive, man-made nutrients made from mixing together a concoction of chemicals, salts and trace elements;
- The strength of this mixture needs to be carefully and constantly monitored, along with pH values, using expensive meters;
- Water in hydroponic systems needs to be discharged periodically, as the salts and chemicals build up in the water which becomes toxic to the plants. This is both inconvenient and problematic;
- Prone to a disease called “pythium” or root rot.
- The tank water becomes polluted with fish effluent which gives off high concentrations of ammonia.
- Because of this unhealthy environment fish are prone to disease and are often treated with medicines, including antibiotics.
- Water has to be discharged at a rate of 10-20% of the total volume in the tank daily. This uses a tremendous amount of water.
- This polluted water is often pumped into open streams where it pollutes and destroys waterways.
- Give fish inexpensive fish feed, food scraps, and food that you grow yourself.
- We need to carefully monitor the aquaponic system during the first month, but once the system is established, we only need to check pH and ammonia levels occasionally, or if plants or fish seem stressed.
- We NEVER replace the water; we only need to top it off as it evaporates.
- “Pythium” is virtually non-existent in aquaponic systems.
- Fish disease is rare in an aquaponic system.

What is Spirulina

Spirulina—a microscopic, blue-green algae in the shape of a spiral coil—is a low-fat, low-calorie, cholesterol-free source of easily-digestible vegetable protein containing all the essential amino acids that cannot be produced by the body but are needed to synthesize the non-essential amino acids. In the case of Vitamin A and iron—the two most important micronutrients—Spirulina is cheaper than any other natural product, including carrots and spinach.

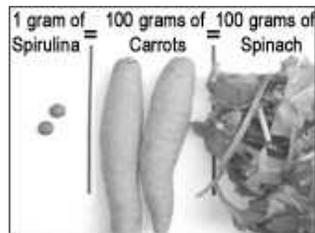


In “*The best investments for humanity*” posted on Economic Times^b on January 20, 2011, the Copenhagen Consensus Center asked a group of the world’s top economists—including five Nobel Laureates—to identify the “investments” that could best help the planet^c.

Theirs and the view of other experts are that community-based nutrition promotions and micronutrient food supplementation programs are key approaches:

- Vitamin A deficiency is the leading cause of child blindness in the world today. Vitamin A supplementation can reduce all causes of mortality for children between 6 to 59 months of age by 23 percent;
- Diets of poor people are often low in iron and fruits, which enhance iron absorption, therefore leading to iron deficiency in their food habits;
- Vitamin D is crucial to activating our immune defenses and without it, the killer cells of the immune system—T cells—will not be able to react to and fight off serious infections in the body.

A study conducted by Urs Heierli⁵ indicates that one gram of spirulina per day—less costly than the 50 or 100 grams of carrots or spinach, which the poor children would very rarely get anyway—would provide roughly the same amount of micronutrients to correct malnutrition of a child in a few weeks. It has also been established that spirulina not only improves the physical strength of the body, but also improves the cognitive development of children.



Types of Aquaponic Systems

There are three primary aquaponic methods emerging in the aquaponic industry. The common components are the fish tank and plant bed. The variables include filtration components, plumbing components, the type of plant bed and the amount and frequency of water circulation and aeration^{3,4}.

Raft system

In a raft system (also known as float, deep channel and deep flow) the plants are grown on Styrofoam boards (rafts) that float on top of water, as shown in the mage on the right. Most often, this is in a tank

^b Refer to [www.peerpower.com/et/3348/The-best-investments-for-humanity]

^c See [www.copenhagenconsensus.com] for details.

separate from the fish tank. Water flows continuously from the fish tank, through filtration components, through the raft tank where the plants are grown and then back to the fish tank.

The beneficial bacteria live in the raft tank and throughout the system. The extra volume of water in the raft tank provides a buffer for the fish, reducing stress and potential water quality problems. This is one of the greatest benefits of the raft system. In addition, the University of the Virgin Islands and other research programs has worked to develop and refine this method for over 25 years. The raft system is a well developed method with very high production per square foot.



In a commercial system, the raft tanks can cover large areas, best utilizing the floor space in a greenhouse. Plant seedlings are transplanted on to one end of the raft tank. The rafts are pushed forward on the surface of the water over time and then the mature plants are harvested at the other end of the raft. Once a raft is harvested, it can be replanted with seedlings and set into place on the opposite end. This method optimizes floor space, which is especially important in a commercial greenhouse setting.

Media-filled bed

A media-filled bed system uses a tank or container that is filled with gravel, perlite or other inorganic media for the plant bed. This bed is periodically flooded with water from the fish tank. The water then drains back to the fish tank. All waste, including the solids, is broken down within the plant bed. Sometimes worms are added to the gravel-filled plant bed to enhance the break-down of the waste. This method uses the fewest components and no additional filtration, making it simple to operate. The production in horizontal beds is comparatively low. The productivity of vegetables can be enhanced with vertical towers, as shown in the image on the right.



Nutrient Film Technique (NFT)

NFT is a method in which the plants are grown in long narrow channels. A thin film of water continuously flows down each channel, providing the plant roots with water, nutrients and oxygen, as shown in the image on the right. As with the raft system, water flows continuously from the fish tank, through filtration components, through the NFT channels where the plants are grown and then back to the fish tank.



In NFT, a separate bio filter is required, however, because there is not a large amount of water or surface for the beneficial bacteria to live. In addition, the plumbing used in a hydroponic NFT system is usually not large enough to be used in Aquaponics because the organic nature of the system and “living” water will cause clogging of small pipes and tubes. NFT Aquaponics shows potential but, at this time, it is used less than the other two methods discussed here.

Highlights of Aquaponic Systems and Technologies

An aquaponic system is not difficult to maintain but there are daily and periodic tasks that must be done to ensure a healthy system. Some of these operations are:

- Fish feeding
- Plant seeding, rotation and harvesting
- Observation and monitoring
- Water quality testing
- Cleaning filters and system

Re-circulating aquaculture system (RAS)

The key to a successful aquaponic system is the presence of beneficial bacteria which convert the fish wastes into nutrients that the plants use. In a re-circulating aquaculture system (RAS), all of the tanks and various aquaponic components are inter-connected. Typically, water flows from the fish tank flows into a clarifier, which constitutes the mechanical filtering arrangement, where solid waste is removed. The clarified water then flows into the bio-filtering arrangement, which

is designed to promote good bacteria growth—so that the ammonia from fish are converted into nitrates. The plants absorb the nitrates in the water and thereby keep the water quality safe for the fish. The “treated” water then flows back to the fish tank, thereby establishing the re-circulating system.

Briefly, some of the important factors to be considered for building and operating an aquaponic system are:

- Water quality and waste management
- Dissolved oxygen
- Temperature
- pH and alkalinity
- Waste removal: Ammonia, Nitrites, Nitrates, solid and suspended waste
- Carbon dioxide

Need for a greenhouse

A greenhouse generally provides protection from environmental factors such as heat, cold, wind, rain and insect intrusion. For Indian climates, a greenhouse is particularly beneficial to protect the crops from rain, wind and insects. The type of greenhouse and the specific environmental control equipment can vary widely, depending on the particular climatic conditions.

Aquaponics is organic

Organic foods are produced under conditions in which all inputs are controlled.

Aquaponic systems, which provide a unique method of raising fish that can completely control the production environment, are based on completely natural processes that mimic lakes, ponds, rivers and waterways on earth. Being a closed-loop system, aquaponic systems can better ensure that fish and plants are not being exposed to synthetic fertilizers or pesticides, growth hormones, sewage sludge, antibiotics or any other artificial feed or treatments. The only input to an aquaponic system is fish food. The fish eat the food and excrete waste, which is converted (by beneficial bacteria) to a form that plants can use. In consuming these nutrients, the plants help to purify the water. The fish and vegetables are healthy and safe to eat, because herbicides, pesticides or other harsh chemicals cannot be used in an aquaponic system.

As long as it is ensured that the fish food is organic, the fish and vegetables produced using aquaponic technologies can therefore be classified as organic products. Other forms of aquaculture that allow water to flow freely in and out of the holding ponds or cages cannot control what chemicals and pollutants are being carried with the water, or contained in the soil.

Aquaponic farms are ecologically sustainable

Aquaponic farms are designed to be energy and space efficient, and re-circulate/re-use water, all with minimal waste. As an enclosed system, the aquaponic farm can be located on poor and rocky soil, virtually almost anywhere! As it is self-contained, the farm can be located close to consumers—hence the rationale for urban aquaculture—resulting in reduced transport and a smaller carbon footprint. The solid waste removed from aquaponic farms can be sold to traditional agriculture farms for enriching their soil. The aquaponic farm does not need to be located near to water supplies, nor requires system drainage, as in intensive aquaculture. Moreover, irrigation claims about 70 percent of the water used in traditional agriculture, and the excess water leaving farms is often contaminated with silt, pesticides, herbicides and fertilizers—making it unfit for reuse.

Thus, aquaponic farms use much less water than many other aquaculture and agricultural systems. To grow about 11,168 kg of lettuce and 5,000 kg of fish per year, the University of the Virgin Islands (UVI) aquaponic farm requires a daily water addition of only 1,646 liters of water⁶, which is about 1.5 percent of the total system's volume of 109,776 liters of water, in order to compensate for water lost in waste removal, evaporation and evapo-transpiration from plants. Now, compare this water consumption rate to a UNESCO statistic: an average 1-lb head of lettuce requires an average of 60 liters of water to grow. Therefore, the aquaponic farm can produce the same amount of lettuce as traditional agriculture using half the amount of water, plus producing 5,000 kg of fish, over and above the vegetables, in the bargain.

Aquaponic farms are more efficient than other forms of fish farming

Aquaponic farms outperform other types of fish farming in growth rates, diverse revenue streams, scalability, array of products and flexibility of location. Importantly, they are more eco-friendly and can provide better quality products for consumers. Production levels

in aquaponic farms are often higher than those from other forms of fish farming. Year-round growth is possible due to the controlled environmental conditions.

Aquaponic system eliminates mosquitoes

A network associate in Hawaii, Friendly Aquaponics, Inc., reports that an additional benefit of running an aquaponic farm—that they noticed after the first system was operational for six months—was that the mosquitoes on their seven-acre farm had completely disappeared! A copy of their report documenting this amazing benefit will be provided to anyone who is interested to know more about their studies.⁶

Highlights of Spirulina Micronutrients

What makes Spirulina even more attractive for village-based projects is the fact that Spirulina can be produced locally with little investment.



With (a) proper training and capacity building; (b) decentralized production, processing and distribution—Spirulina can be organized as a small business for women. With proper funding mechanisms, these same women can be involved in feeding programs and become sustainable 'barefoot nutritionists'. Women who produce, process and sell Spirulina can also become agents of awareness creation and nutrition education.

'Profits' can be made on sales in the up-scale market—to health-conscious people, body-builders, diabetes patients, 'joggers' and used for cross-subsidies in the rural market of the poor. Once they are aware of the nutritional benefits for their children and provided that prices are affordable, poor people have shown their willingness to pay for Spirulina products.

Financial Analysis of Aquaponic Systems

Aquaponic enterprises, like any other commercial activity, shall require adequate investments in equipment, proper design of its facilities, and excellent management and marketing skills. Additionally, the entrepreneur needs to be a skilled fish culturist and plant grower. With these resources and qualifications, an aquaponic farm—which uses natural resources like water and land efficiently and produce multiple products—can be economically viable. For commercial ventures, Aquaponics can be highly profitable.

According to the literature^{6,7}, the aquaponic system at the University of the Virgin Islands (a) was constructed and fully outfitted for US\$ 40,490 (not including labor), which is equivalent to about Rs.18.6 Lakhs (at an exchange rate of Rs. 46 to US\$ 1); and (b) uses 187,775 gallons (or 710,803 liters) of water annually, to produce approximately:

- 11,000 pounds (or 5,000 kg) of fish per year; at Rs.100/kg, this translates to Rs.5 Lakhs per year;
- 37,800 heads of lettuce with the estimated weight of 0.65 pounds per head, which equals to 24,570 pounds (or 11,168 kg) of lettuce per year; at Rs. 40/kg, this translates to Rs. 4.5 Lakhs per year.

This implies that:

- The direct economic value of aquaponic products comprising 5,000 kg of tilapia and 11,168 kg of lettuce totals to about Rs.9.5 Lakhs per year.
- Let us consider the cost of labor for construction to be 50 percent of material cost, so the facility cost in the USA would be about (Rs.18.6 Lakhs × 1.5) = Rs.28 Lakhs; then, assuming that material and labor cost in India is half that of the US, derate that amount by 50 percent to reflect lower material and construction costs in India, which means that an equivalent aquaponic facility in India would cost about (Rs.28 Lakhs × 0.5) = Rs.14 Lakhs;
- Thus, the [Facility Cost: Annual Sales Revenue] ratio is [Rs.14 Lakhs/Rs.9.5 Lakhs] = 1.5.

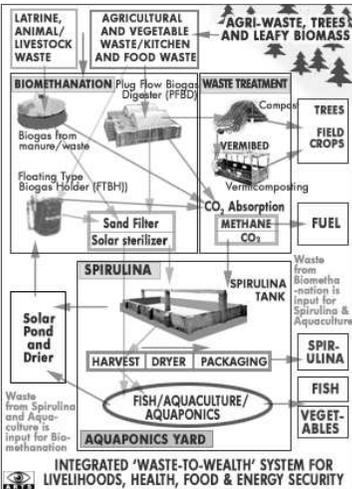
A significant operational advantage of aquaponic systems over traditional fish and vegetable production methods is the low labor cost. Most of the commercial aquaponic applications documented in the classic manual, *'The IBC of Aquaponics'*⁴, are run by family-oriented management systems. Large commercial operations require one full-time, semi-skilled employee per 1,000 m² of enclosed space; for each 4,000 m² of enclosed space, an extra full-time person will be required to help with the fish and plant harvesting. There are no special skills required to operate any facet of the aquaponic systems. Therefore, the payback/break-even point from commercial aquaponic projects should be considerably less than two years. As we gain from the learning curve, the cost economics of aquaponic systems should improve, whilst the cost of production of traditional methods sharply increase, as the cost of land, water and labor resources continue to rise uncontrollably. Aquaponic systems are not only eco-friendly, but they also makes good business sense—especially in a world of dwindling but escalating costs of natural resources!

Holistic Development Model At Village Ullon

We are implementing Aquaponics and Spirulina production processes at Village Ullon, in an integrated process, which is described in the schematic shown on the right⁷.

The conjoint processes of (a) biomethanation of agricultural and human/livestock waste; (b) growth of Spirulina, the 'Super Food'; (c) Vermicomposting; & (d) Aquaponics—has the potential of becoming the centerpiece of sustainable urban and village development, as it has important links and synergies with other sustainable and appropriate technologies that have already been demonstrated and implemented elsewhere, most notably, at the Sankalpa Research Center at Village Baidyapur, Nadia^d—which promotes participatory practices and demonstrates appropriate technologies for sustainable rural development.

The integrated program creates sustainable livelihoods, health, food and energy security for target beneficiaries, by producing:



^d Refer Sankalpa Research Center—Nadia website at: [www.sankalpacmfs.org/src/] for more details

- (a) Methane fuel from bio-methanation of agricultural, livestock and domestic waste;
- (b) Vermicompost;
- (c) Spirulina productivity enhancement, by utilizing the large amounts of CO₂ present in biogas; and
- (d) Fish and vegetables from aquaponic systems, which after human consumption produces agricultural waste products that can be recycled as input materials for bio-methanation, in a mutually beneficial 'waste-to-wealth' recycling loop, between the blocks depicted above.

Agri-tourism and Eco-Park Program Development

Agri-tourism is becoming more popular, as tourists, school groups and the general public wishes to be rejuvenated by coming close to the rural life, meet and interact with individuals involved in agriculture and learn how and where their favorite foods are grown. Agri-tourism in aquaponic-related theme parks highlight educational tours that include seminars and workshops, picnic and camping sites on aquaponic farms, farmers' markets and farm festivals. Increased revenue streams and product awareness are the primary benefits for aquaponic mediated agri-tourism programs⁸.

An aquaponic facility is especially attractive as an Eco-Park, because:

- (a) The technology is unique, naturally simple and also hightech, all at the same time;
- (b) It draws on the curiosity of a wide variety of people and groups;
- (c) School children of any age can learn about biology, horticulture and many other disciplines of science, all in a setting where the technology is implemented to grow food and earn a profit;
- (d) Home gardeners, garden clubs, business groups, restaurateurs and traditional farmers are all candidates for joining the tours.

Once having visited an aquaponic eco-tourist site, a visitor will be tempted to return again and again to see, learn, enjoy and finally, purchase fish and vegetables for their own use, at special rebates.

Tours of an aquaponic facility provide visitors with an opportunity to learn about the economic and practical side of modern urban aquaculture and high-tech farming, while incorporating the many facets of science involved in the daily operation of the business. The operators can offer tours and programs focusing on specific areas

of information. For instance, a workshop on plant propagation, culturing or lighting might be just what a kitchen garden club is looking for, while a group of biology students is keen to learn more about the species of fish being cultured.

One of the greatest advantages of agri-tourism is the diversification of the farm operation. Adding an Eco-Park as a new enterprise, such as tours or on-site sales of produce adds another source of income to an aquaponic farm and provides an opportunity to increase agricultural awareness and education among the public. In addition, Eco-Parks and agri-tourism attract customers to farms. Adding a picnic site or beautiful garden area to an existing operation will not only draw families to the facility, but they will stay longer if interesting attractions are provided and continuously improved or changed. Visitors will increasingly support agri-tourism, as they see that it contributes to the stability of the agriculture industry and helps support rural communities and businesses.

Conclusion

Aquaponic systems are not only eco-friendly, sustainable, provide food security and create sustainable livelihoods, but they are also commercially feasible and make good business sense —specially in a world of dwindling and escalating costs of natural resources, such as land and water. Spirulina can be produced locally with little investment. With proper training and capacity building and decentralized production facilities, Spirulina can be organized as a small business for women. Aquaponics and spirulina systems can be replicated throughout India.

SOCIAL ECOLOGICAL ASPECTS OF THE VILLAGE TANKS: PERSPECTIVES FROM CENTRAL ODISHA

Pratap Chandra Behera

Introduction

The dynamics of the relationship between nature and society has been a subject of academic interest for long¹. One changes the other dialectically. Under given social and environmental contexts, human society has always created and recreated resources for its existence. Resources meet human needs², and are culturally defined³. Some of these resources when extracted from their natural state with economic or social value can be called as natural resources which are 'located in fixed spatial dimensions known as *resource domains*'². Certain resources in the nature of public goods are called 'common pool resources' for which 'exclusion from the resource is costly and one person's use subtracts from what is available to others'⁴. Unlike common property resources, the users of common-pool resources do not have jointly owned legal set of rights⁵. The resource domains of common pool resources are called commons.

In a pragmatic sense, as Jodha⁵ and NSSO⁶ view, members of an identifiable community have certain conventional access to and inalienable use rights over the benefit streams of the commons. They collectively own, hold or manage these resources. But no individual has exclusive property rights over the commons. There are spatiotemporal variations, and often these resources are contested⁷. In this context, sociology of natural resources studies their distribution across communities and regions and how people use and regulate them in a variety of ecological settings. More specifically, the effort is to 'recover, and uncover, the 'materiality' of social structure and social life, and to do so in ways that yield insights relevant to solving environmental [and local ecosystem] problems'⁸. More recently, the importance of regional political economic structures came into picture as political ecology in the study of natural resources⁹.

Seabright¹⁰ looked at the concept of commons at a micro level and labelled it as local commons. The broad institutional framework of

commons would equally apply to the local commons. These refer to 'assets owned by reasonably small communities, such as villages'¹⁰. Being small in size, they know each other and show greater degree of conformity to the values and norms and the resource base has a direct bearing with their livelihoods. In a commons situation, two sets of the complexities emerge while using and maintaining a resource system – appropriation problems and provision problems¹¹. However, community managed local commons can have less of these problems. In Indian context, as Jodha³ and NSSO⁶ describe, these would include village pastures and grazing grounds, village forests and woodlots, protected and unclassified government forests, waste lands, common dumping and threshing grounds, watershed drainage, ponds and tanks, rivers and rivulets as well as their banks and beds, water reservoirs, canals, irrigation channels and the like. Common pool resources offer 'collective access to consumption and opportunities for maintenance of these resources. The sustainable exploitation of these resources may generate adequate livelihood opportunities for the community'¹²

Status of Common Pool Resources in India

Since 1980s, a large number of field studies, most of them are at micro level, have been carried out to comprehend nature and extent of dependence of the rural poor on the commons, its depletion and degradation, and the existing systems of community management of the commons. In the Proceedings of the Conference on Common Property Resource Management 1985, about four Indian cases, out of which two are on water resources, were presented¹³. Jodha¹⁴ studied the commons in the dry and semi-arid regions of India and their relevance to the poor. Land and water management of the village commons in Sukhomajri village in the sub-Himalayan Shiwalik foothills regenerated the natural resources and had a direct bearing on the livelihoods of the people¹⁵. Marothia¹⁶ edited a volume consisting of Indian experiences on the commons relating to water resources, wasteland, and biodiversity among others. However, the 54th Round of National Sample Survey is the first large scale attempt for a comprehensive State-and national-level estimates of size, utilisation and contribution of common pool resources according to 15 agro-climatic zones of India⁶. The report categorises common village land or 'commons' to include common pool land resources within its boundary such as grazing land/pasture land, village forest and threshing floor and the like. The report treats such water resources as common water resources which are held by the village community as a whole or as a social group.

As per the NSSO⁶ report, common pool land resources constitute about 15 per cent of the total geographical area. Out of this, community pastures and grazing grounds constitute 23 percent and village forests and woodlots 16 percent. The rest 61 percent is categorised as other. These resources comprise 'village site, threshing floors etc. and other barren or waste land'⁶. Certain estimates place the figure at about 70 million hectares out of a land area of 328 million hectares that includes various forms of access to a resource domain. About one third of this area is under the control of the forest department. Rest is under the revenue department and local bodies and villages⁷.

In Odisha, according to the NSSO⁶, common pool land resources constitute about 11 percent of the total geographical area of the state. In terms of agro-ecological zones, the Eastern Plateau Hills zone comprising 19 western districts of Odisha has 19 percent under commons; and the East Coast Plains and Hills zone of the state comprising rest 11 districts has about 12 percent of the total geographical area. Availability of CPR land for every household is 0.28 hectare in the state. The four other states where per household CPR land is between 0.25 to 0.33 hectares are Karnataka, Sikkim, Maharashtra and Himachal Pradesh. In western Odisha, 'there are forests called "Gramya Jungle", on which the villagers enjoy rights over fuelwood, fodder and other minor forest produce. Village forests, therefore, constitute 27 percent of the CPR land'⁶. The monthly per capita consumption expenditure in Odisha is 301 rupees as per 54th round of NSS, Report No 448. Similarly, the average value of collections from CPRs in the state is about 929 rupees. The ratio of value of collections from CPRs to consumption expenditure works out to 3.02 percent at the national level. In Odisha, the value is 5.59 percent followed by Madhya Pradesh (4.93 percent) and Assam (4.89 percent). About 62 percent households of the state collect fuel wood as against the national figure of 45 percent. A substantial number of households possesses livestock and is engaged in grazing and fodder collection.

Tank: A Domain of Common Pool Resource

Tanks or ponds are small earthen rain water harvesting systems which are considered as a common pool resource¹⁷. These have traditionally been built by individuals or communities, based on their indigenous wisdom and at times with the generous support of native rulers and chieftains In India¹⁸, to store surface runoff water. Ponds and tanks do not have a dam as in other reservoirs. These are shallow and the water loss through evaporation is quite substantial¹⁹. These structures have been quite an integral part of Indian rural life. 'In many cases, they are the nucleus of the village structure. Known by various

names in different parts of the country, the rural landscape is dotted with tanks²⁰. Being non-excludable but rival in consumption, it is a contested resource²¹. Tank as a commons and its complementary role in the agrarian economy and state formation, especially in south India, has been studied extensively²². Ludden²³ critically looked how the water has been crucial in defining agrarian environment as well as institutions and social formations in South Asia. In many areas, physical factors determine the spatial distribution of tanks, especially in semi arid tropical India²³. These structures do have a number of economic, ecological, and socio-cultural uses and functions²⁴. Raju and Shah (2000) assessed the socio-ecological importance of irrigation tanks in Rajasthan. Bauer and Morrison (2008) observed the sparsely scattered distribution of tanks in the northern India, as compared to the tanks in south India, and are mostly run-off fed. Many of these studies reflect the situation in south India. Only recently, the history and status of tanks in the eastern states of India have been objectively studied²⁴.

The colonial accounts of tanks and their role in agriculture in Odisha can be found in gazetteers and historical writings of the colonial rulers²⁵. The works of Pant and Verma³¹ and Sengupta³¹ on tanks cover the western parts of Odisha. Though D'Souza²⁶ critically looks at the canals of the coastal Odisha, he mentions few references to tanks as they declined because of colonial policies. The inland Odisha was under native rule called Feudatory States of Odisha. Here, the development of agriculture and its commercialization took place later than the coastal areas. The development of water resources were just in a beginning stage in the early part of the twentieth century. Therefore, there is need to fill the gaps in the literature by making an interdisciplinary study of the commons particularly tanks in inland Odisha. Especially, it is important to understand their role in an agricultural system²⁷. To complement the works of NSSO (1999), a comprehensive understanding of aspects of governance of water resources, social aspects of these resources and their meaning, and their role as provider of ecosystem services are quite important.

According to the Minor Irrigation Census 2001 which was third in the list, there are 642013 tanks in India of which 28303 are located in Odisha²⁸. These are labelled as surface flow schemes and most of these are with less than 20 hectares of command area. Out of the total 28303 schemes in Odisha, 14339 are tanks, 6894 storage schemes, 3987 permanent diversion schemes, 2376 temporary diversion schemes, and 707 water conservation schemes. In the state, Minor Irrigation Department manages about 3847 tanks which are relatively large having about 40 to 2000 hectares of command area²⁹. The rest are small and there is hardly any mention of their role – a possible reason which

makes these small structures invisible. As regards the ownership pattern, Government owns 17191, Panchayat 4311, and group of farmers, individual farmers, etc. the rest.

In the year 1971-72, tanks accounted for about 51 percent of the net irrigated area in Odisha. It came down to 26 percent in 1976-77. The figures for the years 1999-2000 and 2002-2003 are 14.6 and 7.70 percent respectively. These statistics indicate that the role of tank as an irrigation source has been diminishing over the years. However, they do have a higher relative importance in agriculture and livelihood of the people of Odisha²⁴. Tanks (including Patas, Jhills, Swamps, Nalas, Joros) in Odisha are in the control of Gram Panchayats, transferred from the Department of Revenue, Government of Odisha in the year 1957. Many of these are being leased out to the private parties for the purpose of fishery. However, the rights of usage and enjoyment of the tank water for drinking, irrigation, etc., remain protected. As per the *Annual Administrative Report on the Working of Gram Panchayats in Odisha for 1960-61*, there are about 43259 tanks under Gram Panchayats used for fishery and generating substantial revenue in Odisha³⁰.

Objective of the Study

Over the years, these indigenous structures and systems emerged and survived in spite of the influence of various political regimes. Tank systems in India, especially in south India, and to small extent in western Odisha, have been studied³¹. However, there is a dearth of literature documenting the status and process of the tanks in the central table land of Odisha. The study looked at the ecological as well as the social aspects of the tanks in a village situation to address the aforesaid social and academic concerns. An effort was made to describe the historical development of these structures and their social, economic, political and ecological role in the wellbeing of a community. The social attributes of a farmer (such as caste and class) and the ecological aspects of the productive resources (such as location of land, soil quality and proximity to water resources) in the locality can be comprehended under political ecological contexts. More specifically, the objective was to configure a tank and its functions from the perspectives of social ecology, indigenous knowledge and the commons.

Methods

To study local natural resource systems, the locally specific and embedded character of resource use and management are to be looked into instead of treating the institutions as unproblematic and uncontested rule systems. In order to comprehend the phenomena, the

proposed study would describe and analyse certain associated attributes at a micro level, that is, in a village situation situated in the inland Odisha under feudal rule. It is a multi-caste village with a history of organizational endeavours and factional groups. There are about ten small tanks and a patch of *Gramya Jungle* among others as village commons. The agriculture in the village is primarily subsistent and rain-fed. This would provide scope to look at social dynamics and interface of natural resources in this study setting.

The researcher's own village was purposefully selected for this study. The idea was that the researcher would be in a favourable position to elicit an *emic* perspective on the phenomena. An explorative-cum-descriptive research design, following an ethnographic approach, was employed to generate in-depth village level data in the study of the aforesaid phenomena. The design helped in dealing with what, when, and where questions. Emphasis was given to the significant processes in the village from the villagers' perspective.

Through a survey method, data was generated on demography and socio-economic characteristics of the households. Visiting the study area and making observations along with compiling the descriptive accounts of knowledgeable community members generated data on soil, agricultural land, water bodies, topography, drainage system, agricultural operations, and water management and so on. Participatory appraisal techniques and, in certain cases, in-depth interviewing of key persons helped in generating information on village history, power dynamics and intra and inter group relations. Apart from the above primary sources, data available on secondary sources such as maps, land records, historical accounts of the area were looked into while analysing the primary data. The generated data was analysed employing qualitative techniques to study narrative data and descriptive statistical techniques to study differences and relations among variables.

The Study Village

The village Jharabandha is in Dhenkanal district of Odisha. As per 2001 census, it has a total population of 1518 out of which 757 are males and 761 females distributed in 337 families settled in an area of 560.03 hectares³². The basic demographic features are mentioned in the table below. The village area consists of several land categories that are defined in government revenue records for a typical village in Odisha. Some important land categories are described below. The literal meaning of the land categories is given when a suitable English equivalent is not available. The categories include homestead land

(which includes the village residential area), agricultural land, village water tanks, fallow land, bagayat land (a vernacular term meant for orchard trees and villagers have customary rights over the usufructs), cremation grounds, grazing land, stone quarries, and gramya jungle (a revenue term indicating a percentage of the total area of the village kept aside as forest area for the villagers). The village is not a very old one, oral history approximates about 300 years. However, remnants discovered during ploughing here and there imply some primitive groups were there. Nomenclatures of some areas are named after some tribe groups and caste groups. So, the present inhabitants are new comparatively in the area.

Social Groups in the Study Village

There are ten *jatis* in the village coming under General, Other Backward Castes (OBC) and Scheduled castes (SCs). There is no Scheduled Tribe in this village. The *jatis* within a caste category can have hierarchical status. This is an official classification of Government of India. In a social hierarchy, the scheduled caste is at the bottom of the layer. Other Backward Castes is a category comprising *jatis* that are socially, educationally, and economically backward compared to the general castes. This category became official during the 1990s. The people belonging to the *Chasa* (cultivator), *Bhandari* (barber), *Tanti* (weaver), *Gudia* (confectioner), and *Gauda* (milkman) castes fall in the OBC category; of these the *Chasa* are in majority. The *Chasas* are known as the land-owning caste and typically consider themselves

Table 11.1 Basic Demographic Profile of the Study Village vis-à-vis the Region for the Year 2001

Parameters	Jharabandha (village)	Hindol (Subdivision)	Dhenkanal (District)	Odisha (State)
Area	560 ha	59379 ha	4595 Sq. Km	155707 Sq. Km
Number of Houses	337	33553	222023	9873029
Population	Total 1518	159395	1066878	36804660
	Male 757	79539	544001	18660570
	Female 761	79856	522877	18144090
Literates	Total 894	89376	39363	19837055
	Male 538	52787	377237	14947221
	Female 356	36589	262126	4889834
SC Population	Total 282	34521	197280	6082063
	Male 141	17496	100095	3073278
	Female 141	17025	97185	3008785
ST Population	Total 0	8141	136501	8145081
	Male 0	4141	69356	4066783
	Female 0	4000	67145	4078298

Source: Compiled from Government of India (2001).

superior to all other castes. The *Pano* (serfs), *Keuta* (fisherman), and *Dhoba* (washerman) castes belong to the SC category. Among them, the *Keutas* are dominant. The people of the *Pano* caste are seen as untouchables by the other castes in the village. The *Panos* are landless or marginal farmers. The *Pano* caste is operationally untouchable and is at an extreme when looked at the pollution purity continuum. The *Chasa* group maintains a varied degree of social distance from the other *jatis*, though to a lesser extent. They are quite influential in village decision making bodies. All these *jatis*, when genealogical sketches are developed, seemed to belong some 26 family lines.



A- Old Settlement, now called *puruna gan*; B- *Ragada sahi* (settled in a rocky patch); C- *Majhi Sahi* (meaning in the middle); and D- *Nua gan* (the name is so because they came first from the old settlement)

Source: (Google, 2012)³³

Fig. 11.1 The four sahis (cluster of households in a neighbourhood) in the village

Currently, the village houses are built in a linear fashion, stretching in an east-west direction, as the figure above indicates. Before 1965, the residential area was confined to the western end of the village, but the settlement spread as the village became congested. The newly inhabited area was labelled *Nua gan* (new village), and the old settlement was labelled *Puruna gan* (old village). The newly settled area has three subzones: *Nua gan*, *Majhi Sahi*, and *Ragada Sahi*. The term *Sahi* refers to a cluster of houses representing a common neighbourhood. *Majhi Sahi* and *Ragada Sahi* emerged later. *Nua gan* is at the eastern end of the village, the *Majhi Sahi* refers to the middle area, and the *Ragada Sahi* refers to the tail end characterized by rocky ground surfaces. Within each neighbourhood zone, there are common halls, common platforms for informal gathering, and places of worship. Each zone has mixed *jati* groups. However, the *Pano* and *Dhoba* families are located at the peripheral circles of the village, never in between other *jati* families.

Table 11.2 Caste and lineage pattern in the study villages

	Jati	Caste	Number of households				Total	No of family lines
			Ragada sahi	Nua sahi	Majhi sahi	Puruna gan		
1.	Chasha	OBC	52	75	47	57	231	11
2.	Gauda	OBC	14	7	4	0	25	3
3.	Tanti	OBC	1	0	1	23	25	2
4.	Bhandari	OBC	4	0	0	0	4	1
5.	Gudia	OBC	0	0	3	2	5	1
6.	Pano	SC	0	17	10	6	33	2
7.	Keuta	SC	0	12	19	3	34	3
8.	Dhoba	SC	0	0	4	0	4	1
9.	Vaishnav	General	0	0	1	0	1	1
10.	Goldsmith	General	1	0	0	0	1	1
Total			72	111	89	91	363	26

Note: Based on the genealogical map developed with the elderly people of the village. (OBC: Other Backward Caste; SC: Scheduled Caste).

Each of the Sahis has one or two socially, economically, or politically influential families. These families treat their fellow *Sahi* members paternalistically. The members of the *Sahi* correspondingly show their loyalty, obedience, and support to the influential families. This phenomenon is crucial in understanding the power relations in the village. The influential families also play leading roles in organizing festivals and cultural programs exclusively for the *Sahi* they belong to, which furthers their *Sahi* identity. In a way, a *Sahi* behaves like a lower tier in the village decision-making system. It has autonomous functions in some aspects of social life. The village council is composed of representatives from each zonal *Sahi*. Members are selected to occupy key positions such as president, vice president, secretary, and joint secretary at a village meeting. Each *Sahi* ensures that some of its nominated members hold key positions in the council. The village council has overall management responsibility of the village affairs including some customary judicial responsibilities related to disputes within families, between families, and between neighbourhoods. The village council does not interfere in the matters of the *Sahi* decision-making body. The *Sahi* has autonomy with respect to decisions made on commensality, plans for pujas (worship, a Hindu religious ceremony or rite) or cultural programs in the *Sahi*, creation of common assets for the fellow members of the *Sahi*, and resolutions of social disputes within a family or between families, and the like.

Village Tanks and the Agrarian Economy

The village tanks, common fallows, the *bagayat* land, and the village forest are some of the commons being controlled and managed

by the informal village council. The structure and form of this council is similar to the traditional *panchayat* (village council) system as documented in the old gazetteer of the area³⁴. The main function of the village council is to oversee all the collective goods in the village, especially the management of village resources such as the forest, tanks, watch and ward of the area with standing crops, and the collection of contributions from every household to be used for the village as a whole.

The water tanks of the village have important economic, social, and religious value. The *gram panchayat* auctions the water tanks on behalf of the government. The village Jharabandha is part of a *gram panchayat* along with five other villages. Usually, when the village is comparatively in harmony among the social groups, a village representative would attend the auction and bids to get the tanks on auction for a year. The amount owed is paid from the traditional village council fund. The village council is responsible for the further investment, management, and control of the tanks. The council draws support from the residents and develops norms for using the tank from time to time. The tanks have immense economic significance during periods of drought since the village harvest is dependent on the erratic southeast monsoon. The water tanks also provide monetary benefits as the villagers collectively engage in fish farming in these tanks. The tank water is also used for bathing, as drinking water for the domestic animals, and for the religious and cultural rites of the villagers.

As the oral history goes, the so called village tanks were farm ponds of different family groups. The identifying names of many of these village tanks are after a family name. Rent was a discouraging factor in the feudal times to own a tank. Later, with imperial influences, the promotion of these tanks started. The so called family tanks became public tanks, a public good for the village community. So, ownership of farm plots in close proximity to a water tank implies a control function of a family group. Some neo-settlers in the village would not have a single plot in the vicinity of a tank. More number of family lines owned plots near a tank having family name which was non-existent for quite some time. It may so have happened that, either the family group migrated, or perished during certain epidemic.

Commons and Social Groups

The nature and extent of benefits of the commons depend on the degree of congruence between group interests and the prevailing norms governing the behaviour of the groups and individuals in relation to the collective goods and resources in question. The degree of congruence is a function of intra- and intergroup relations and the overall

cohesiveness of the village community. The oral history of the village shows the emergence of factions and many instances of violence resulting from the incongruity of interests among the social groups of the village.

In the year 1994, as the researcher witnessed, the management of *gramya jungle* and water tanks become conflict ridden. It led to legal in fights on fictitious grounds among the *sahi* and caste groups. There were six court cases during this period, of which three were of very serious nature. These cases were made by each faction against the active members of its rival faction. The village developed four factions, and each faction had a characteristic organizational structure (not based on caste lines). In fact, each faction behaved like a village in itself. The development of factions is related to the development of *Sahis* and interest groups. Two factions collaborated to fight for their interests against the other two. The core reason was lack of transparency in fund management. In addition, the village president helped a contestant from another village win the post of *Sarpanch* in the *gram panchayat* election. The contestant from Jharabandha happened to belong to a rival faction in the village and lost. The losing faction and its collaborating faction, feeling a sense of deprivation and resentment against the ruling president and his allies, tried to find all possible means to remove the president from his post. As factions joined and coalitions formed to remove the president, some of the prevailing norms governing the village affairs and its resources lost their usual power in regulating people's behaviour in the village. A state of chaos prevailed.

As the factions deepened, the village could not get formal clearance from the government to engage in collective fish farming. The community did not care for forest resources as they used to. In 1994, the management and control functions of the traditional village council disappeared. In the absence of any regulating system, the resources in the *gramya jungle* became free for all, open access. The residents of the village started cutting down the trees from the village forest for domestic use, taking advantage of the weakening of the traditional norms in the village. Soon the neighbouring villagers followed suit. As a consequence, the *gramya jungle* was completely razed, leaving behind a few weeds and some sanctified trees. Shri Harmohan Patnaik, a Gandhian leader, advocate and freedom fighter based at the district headquarter, intervened in the situation. Shri Patnaik and his colleagues hold dialogues with the faction representatives. The dialogues helped in the creation of a new village council that had representatives from the different factions.

However, during the recent *panchayat* elections, many bitter experiences of the villagers led to re-emergence and re-crystallization

of the earlier factions. The corruption prevailing in these institutions of governance make it competitive and unhealthy rivalry. The existing and emerging leaders tried to maintain the factional divisions so that a share of vote bank can be assured. This directly affected the cohesive behaviour of the village community. Recently, there is an initiative by the state government to promote self help groups in rural areas. As a form of encouragement, the auctioning of these tanks is being reserved for the women groups. This has led to development of about twenty women groups – not in true spirit. The male members are behind their promotion. The intent is not self help, rather to be part of auctioning process. The bureaucracy, the Sarpanch and even the MLA are believed to be benefitting from the factional status of the village.

Findings

The geography of the village is such that it almost forms a micro watershed. The forested area labelled as *Gramya Jungle* is in the southern end of the village and makes a slow gradient towards north. The rain water of the village drains to a common channel named after a caste.

Depending on water availability status and soil productivity, the cultivated area of the village has different categories of land and productive zones. Some of the zones are named after certain castes and family lines. In certain patches, a particular caste may not have a parcel of land at all. And in some other zone, there can be concentration of parcel of land of a particular caste or family lines. The study showed patterns of relations between social variables of a farmer village (such as caste and class) with ecological variables of an area such as tanks in the locality.

The village witnessed changes in the pattern of governance and social control mechanism. The contemporary decentralised governance system, called *panchayati raj* in India, is operational at present and is quite different during the feudal ruling. The informal village organisation is still alive and is coexisting with the formal *gram panchayat* systems. At times, both complement each other, and at the other, they are in conflict. The government brought different rules to manage the water resources and other commons. They have a strong bearing on the status of the village resources and the village organisation, both formal and informal. It critically reflected how the political economy influenced the ecological specificities of an area, and thereby, affected the livelihood resource base of the people.

Conclusions

The commons are a part of larger social ecological systems. Political economy, more specifically, political ecology has a direct bearing in the status of natural resources on which local communities depend for their livelihoods in an area. The post-colonial phase witnessed democratisation, post-modernism and globalisation. Though these changes are more visible at a macro level of the society, they tricked down to the micro levels and are affecting families and communities in the rural areas. As the social institutions changed and transformed and are still taking time to be firm, the sustainable management of resource systems remains uncertain.

RESTORATION OF ECO FRAGILE ZONE BY OFFSETTING ANTHROPOGENIC ACTIVITIES: A CASE STUDY OF BOKARO RIVER BASIN

Pran Ranjan

Background

The state of Jharkhand is home to as many as thirty two tribes, rich in mineral wealth and forest cover. Munda, Ho, Oraon and Santhal are the major tribes. Physiographically the state can be divided into four zones Santhal Pargana, North Chottanagpur plateau, South Chotanagpur plateau and Palamau. The area is undulating, and receives more than 1200 mm as average annual rainfall. About forty percent mineral of the country is found in this state. The region accounts for 35.5 percent of the country's coal reserve, 90 percent of its coking coal deposit, 40 percent of its copper, 22 percent of its iron ore, 90 percent of its mica and huge deposit of bauxite quartz and ceramics. The total population of the state 26.91 million of which 77.8 percent is rural population and 22.2 urban- population. The tribal population of the state is quite high and constitutes 27.5 percent of the state population. Jharkhand is richly endowed with forest, mineral and water resources but paradoxically is also the poorest region of the country.

Historically the main source of livelihood has been from forest and agriculture. Most rural households are engaged in subsistence farming under adverse and risky environmental conditions. The families are often engaged in low paying non-agricultural activities. The livelihood basket consists of agriculture (that meets food security only for few months in a year), income from forest (fuel wood and NTFP^a), livestock, and wage labour (local as well as migration). The weak links in the livelihood basket are low agricultural productivity, small and fragmented land holding, poor soil and water resource condition, degraded forest, lack of access to quality and certified seeds, fertilizers/compost, poorly/ non-managed CPR, lack of marketing linkages for forest produce and non availability of local wage labour.

^a Non Timber Forest Produce

According to the Wasteland atlas of National Remote Sensing Agency (NRSA-2005), Jharkhand has the highest area under wasteland followed by Odisha, Bihar and West Bengal in the eastern region. In Jharkhand 70 percent of the total wasteland belongs to the category of degraded forest and 17 percent wasteland is under the category land with scrub. Jharkhand in particular has the second highest industrial wasteland in the country. Nationally the area under mining and industrial waste has increased from 1252.13 sq Km to 1977.35 sq km in a span of just three years between 2000 and 2003 and much of it is contributed by the eastern region. This has created more problems with displacement of people, loss of biodiversity, change in land use and land form. With the increasing demand of the economy more mining companies are setting up units in the state, there is an urgent need to involve the community in restoration of mined dumps and wastelands and prepare a model wherein all the stakeholders are involved to save the fragile ecosystem of the area.

Area and the Problem

Damodar river sub-basin is one of oldest mined sub-basin. The area has been witnessing mining before independence. Damodar has a catchment area of 990780 ha starting from chulhapani in Latehar district it meets bhagirathi near Kolkata. Major tributaries of Damodar are Konar, Barakar, Haharo, Devnad, Dhophdhab, Marmaha and Jamunia.

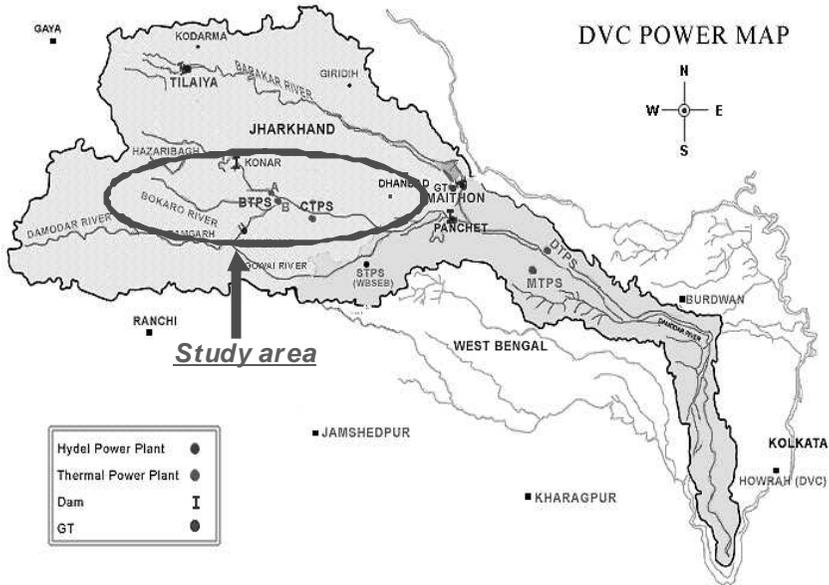


Fig. 12.1 Map of study area

The study area lies in the Bokaro River sub basin a tributary of Konar River. The area is confined to Bokaro river sub-basin which falls in Hazaribagh, Ramgarh and Bokaro districts. Geographic bounds are between latitude (+23, 46.0. to +23, 56 approx) and longitude (+85, 15.0 to 85, 55 approx). The Bokaro river basin is part of the Damodar river sub-basin. The Bokaro river meets Konar river one of the major tributaries of Damodar, and at their confluence at Kathara is located at the Bokaro thermal power station (one of the oldest thermal power station of India). It was closed following orders of the Supreme Court. A new thermal power station is located just beside it. This has been disposing the ash in Konar. The fly ash is also being transported to fill the open cast mines. The Bokaro river originates from Sisoj Protected Forest in Hazaribagh, and is fed with chotha stream flowing from Hesagadha on the south and Chutua nala in the north. The river flows from Bansadih reserved forest and Monemorha protected forest on the upstream while draining Jhumra hills, it passes between the Jhumra pahar and Lugu pahar to meet Konar River near Kathara. The river catchment has a number coal fields namely West Bokaro, Ghato, Lalpania and Parej coal field. Within the catchment there are coal washeries at Basantpur and Kedla, with a number of coal loading points dotting the landscape. The river caters mostly to industries with no major or minor irrigation projects on it. With most of the area under open cast mines, which has since disturbed the ecosystem, changed the flow regime, leading to immigration and change in land use there has been a detrimental effect on agriculture.

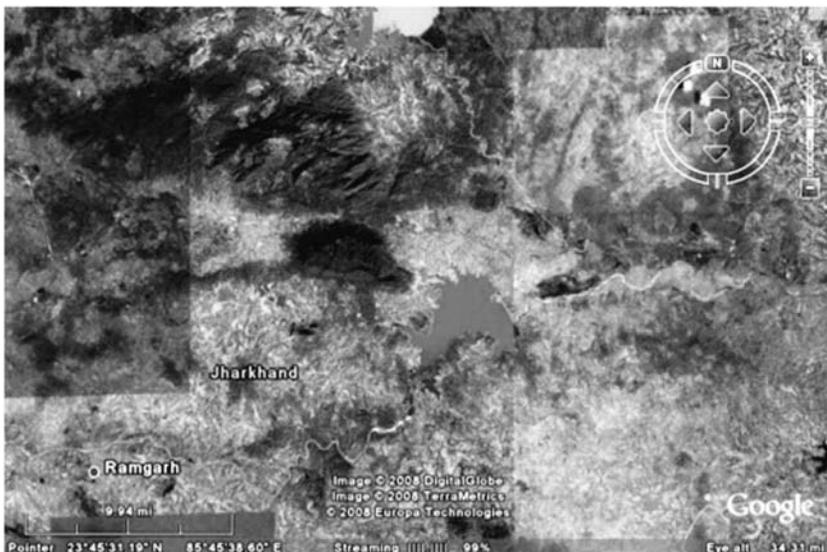


Fig. 12.2 Satellite imagery of Bokaro river basin

Eleven villages/ tola from the catchment area of the Bokaro river basin have been covered in this study. These villages are the part of project namely 'Biodiversity conservation through community based natural resource management'. The West Bokaro coalfield straddles the Bokaro river with mines washeries and power plant on its bank. The river has borne the brunt of pollution. The livelihood basket of the people consisted of agriculture and forest in the early 20th century but with advent of mining it has changed. There has been heavy influx of people in the area and people have taken to mining and other service as vocations. The indiscriminate and unscientific mining and absence of post mining treatment and management of mined areas are making the fragile ecosystems more vulnerable to environmental degradation and leading to large scale land cover/land use changes. The current modus operandi of surface mining in the area generates huge quantity of mine spoil or overburden (consolidated and unconsolidated materials overlying the coal seam) in the form of gravels, rocks, sand, soil, etc., which are dumped over a large area adjacent to the mine pits. The dumping of overburden and coal destroys the surrounding vegetation and leads to severe soil and water pollution. Large scale denudation of forest cover, scarcity of water, pollution of air, water and soil, and degradation of agricultural lands, loss of terrestrial as well as aquatic biodiversity are some of the environmental implications of coal mining. The ecology of the area has also been threatened by unprecedented rise in human population.

The shrinking of agricultural land due to acquisition for mining, undulating topography and non remunerative agriculture added to people's alienation from land and has caused a great damage to the biodiversity of the region. The people of areas above the mining areas are still dependent on agriculture. Though the focus is shifting back to agriculture, as opportunities of jobs in mines and other industries is shrinking. The coal mines which have destroyed the biodiversity also presents an opportunity for restoration of vegetation through efforts on its mines overburden dumps.

The Bokaro-river is mostly fed by small streams. The river flow is based on monsoon. Smaller streams and rivers of the area, which served as life lines for the people, are either completely disappearing or becoming seasonal. Consequently, the area is facing acute shortage of clean drinking and irrigation water.

A study of zooplankton and benthic micro invertebrate diversity of Damodar River done by Dr. Gopal Sharma (Zoological Survey of India) recommends action to arrest fast depleting aquatic biodiversity. The study found out that the species richness (number) was less than 5 for Bokaro-river and its sampling points. The zooplankton richness



Fig. 12.3 Open caste mine filled with water

was at Gomia and below the bokaro steel plant reduced to less than 5. Reasons are high levels of pollution and very less lean season flow. The situation warrants action for improving vegetation on uplands, water conservation and reclaiming of wastelands.

Challenges for stakeholders (community, mining companies, Civil society, scientific community...*overburden dumps, poor soil, water bodies..unused...poor soil ...agriculture, ...*)

The study area consists of villages namely Sarwaha, Keribanda, Toyra, Gargali, Govindpur, KK Basodi, Pundi, Bongahara, Semra, Parej and Siyari. These villages were rich in biodiversity and natural resources before mining activities. The Santhal tribe is in majority in the area followed by agricultural community Mahto and other community like Birhor^b and Turi^c are tribes which are mainly forest dependent. The community has agriculture as source of livelihood. But in current scenario they are working in mines as laborer. The road construction, railway construction and building construction are the other sources of livelihood which is available for them. The most of the villages are falling in core mining area. Coal is the major mineral which is available in the basin.

The lands of these villages are acquired by the mining companies namely Central Coalfields Limited and Tata Steel so the land left for agriculture and other livelihood activities are less. Several families whose entire land was acquired are left with no option and are selling coal of non-active mines or working as daily labour. The area is full of unused open mines debris also called overburden dumps, big water bodies (old open caste mines), denuded forest, distorted topography, vegetation with coal dust over it and fields, water-bodies full of coal dust. In habitation area cracked walls due to blast in nearby mining areas are also common feature. Trend analysis of land use changes in Bokaro river basin:

On the basis of a study conducted by SPWD^d in the year 2009 the findings are given in the table 12.1 and 12.2.

^b Primitive Tribal Group

^c A forest based community depends on Bamboo for their livelihood



Fig. 12.4 Open caste mining and ugly topography

Table 12.1 Land utilization in study area

SL	Land Utilization	Area in sq. km		
		2000	2004	2008
1	Settlement	15.49	20.08	27.94
2	Forest	335.95	330.71	322.21
3	Wastelands	48.46	52.95	66.41
4	Non Forest	249.15	245.31	232.54
Total		649	649	649

Table 12.2 The wastelands category details

SL	Land type	Area in sq km.
1	Land with /without scrub	2.43
2	Waterlogged / Marshy area	1.18
3	Degraded forest	43.19
4	Mining Industrial waste	18.51 (27.8%)
5	Barren rock	1.1

Apart of local population the new crowd has also increased in and around the mining colonies namely Charhi, Ghato tanr, Kujju etc. The urbanization of these areas has increased the demands of daily need of fuel-wood, firewood, agricultural products and mainly water. These all have affected the local eco-system very badly. Though most of the people in the area is using coal as major fuel due to its plenty of

^d SPWD – Society for Promotion of Wasteland Development

availability and cheaper in cost but it also created a mis-use of coal and so the per capita energy consumption in the area is higher than other areas.

Linking Biodiversity and Livelihoods

Micro planning activities through Participatory Rural Appraisal has been carried out in each of the 11 villages selected as a representative sample for the study of Bokaro River Sub-Basin. With proper understanding of their Social- cum Resource map, the problems faced by the community used to be written down separately with their possible solutions. These solutions are the potential activities that can be carried out in the villages. Revenue maps of the villages were also used to demarcate the areas where any kind of activity could be carried out. It could be possible only in some of the villages, as availability of revenue maps was an issue in some of them, while in others the community could not identify the areas in the revenue map. Nevertheless the activities were marked and represented in the resource map.

Three of the ten villages Pundi, Parej, and Bongahara were the severely affected areas due to mining. Parej has no land remaining of their own. C.C.L has taken almost the entire land under its jurisdiction and people have been paid compensation for the same along with staying arrangements in other areas. So migration from the village is in its full swing. A visit to the place at any time of the day, would fail to have an interaction with the community. The members work as laborers in the dumping site and hence with no proper time for work, they are away most of the time. Apart from C.C.L, Tata Steel also has its mine in the area, quite adjacent to the village Pundi. The village Bongahara is near to the West Bokaro Mines.

The rest of the villages like Gargali, Gobindpur, Simra, Toerra, and Keribanda etc. do not have active mines any more. Whatever amount of coal is remaining there, it is being used by the local community for their household purpose and for sale too but at small scale. The closed mines now have been filled by water. These mines are very deep and hold a lot of water. Restoration of biodiversity in these villages is possible. Forest department has already started taking steps through plantation. As far as the severely affected villages are concerned, biodiversity is getting lost at a very rapid pace. Moreover, these villages do not have enough space of their own to carry out any restoration activity. Biodiversity conservation is a real challenge for these villages.

Community participation has been the key word in this Micro Planning activity. Hence the community itself was asked to suggest

measures to counter these issues keeping in mind the ultimate objective of biodiversity conservation and restoration. The area of the village, type of land, land ownership, the purpose of the activity, beneficiaries, scale of activity etc. are some of the issues that were kept in mind while preparing the list of activities in each of these villages. Different activities serving the same purpose were proposed. It was observed that water problem is very severe and if it is resolved then the other issues can take care of themselves.

Evolution of wasteland restoration activities by the village bodies

a. Plantation of fruit bearing trees

With decreasing forest cover and consequential loosening of soil and receding water table, plantation activity can help restoring these crucial aspects of biodiversity. Plantation of fruit bearing trees is important as a sustainable source of livelihood as well. To some extent they can serve the fuel wood needs of the villages. Plantation activities have been proposed in villages like *Semra, Kekebasaudi, Gobindpur, Toerra, Siyari and Keribanda*. Such activities were proposed by the community in *Parej and Pundi* as well but in these villages there is scarcity of community land which is continuously being given to C.C.L for mining operations. The above mentioned villages are facing acute water scarcity. The ponds and wells need renovation and are not able to retain water.

b. Lift Irrigation

Lift irrigation is a very practical, efficient and effective way of utilizing the water of a closed mine which is no more in use. These types of mines are very deep and hold huge quantity of water. These mines have water throughout the year which is sufficient to solve the lack of irrigation facilities in the village. The drawback is that water can get wasted and there will be no check on its use. Point system can reduce wastage and will ensure utilization as per the use. Many points can be established in fields throughout the village. When one point is opened, the other can be kept closed. It will reduce wastage and ensure effective utilization of available water.

c. Renovation of existing ponds

A well constructed pond is a beautiful addition to any landscape apart from flourishing the biodiversity. They can be a potential water sources for livestock and irrigation, as well a source of livelihood for the community by promoting fishing. Renovation of existing ponds is

required when they fail structurally, i.e. the water level goes down by several feet. Same has happened in many of the villages under study. Increasing the depth of the ponds in such cases can help them retain water for a larger period of time.

Renovation of ponds has been proposed in almost all the villages. Creation of a new pond is very expensive and at the same time will go through the same problems which the existing ones are going through. So repairing the older ones is a far more economical option and sustainable too. The site that has been chosen in almost all the villages are ponds which are near to either the forested uplands or agricultural fields so that sustaining water for a longer duration is made possible. Also the water table will slowly rise increasing the amount of water in these ponds. In many villages where the plantation activity has been proposed, usually there is a pond nearby. So in case the pond needs to be revived, plantation activity will help in sustaining it. Renovation of ponds will serve the following purposes:

Community Based Awareness Process

Communities residing in the study villages were the key players who were targeted to meet the project objective of Biodiversity conservation. The two important aspects were kept in priority;

- ❖ Homogeneity of people in the formed group
- ❖ Linking people with viable livelihood opportunities

The male members of the area migrate to nearby places for work in places such as mines, road and rail constructions and other opportunities in urban areas. The women were available in the villages and they have to face the real hardship while doing agriculture, cooking food or maintaining cattle. To meet the urgent regular need of cash for day to day life the women self help groups was formed in most of the studied villages. The livelihood support was promoted like poultry, piggery, and fisheries by keeping human, animal relation in food cycle and also in the local ecosystem. The application was chemical fertilizer has affected the soil biodiversity by killing microbial living organisms. Vermi-compost units were promoted which has helped the soil to regain its natural strength and initiated the revival process. The impact of organic fertilizer is being seen and realised by the local mass and they are now becoming aware about their own nutritional intake in their food. The institution created/ revived in the study area are:

Table 12.3 Wasteland restoration groups and their members and roles

SL	Institution	Nos.	Members	Role
1	Women SHGs	15	210	1 Saving and inter loaning
2	Biodiversity management committee	11	176	1 PBR* preparation and updating 1 Advocate forestation and conservation of local biodiversity (plantation)
3	Lift Irrigation committee	02	23	1 LI maintenance and promotion of organic agriculture
4	Pond/Check dam/Treddle pumd users groups	08	168	· Conservation and management of water for agriculture

*PBR – People’s biodiversity register

Biodiversity Conservation

Community participation has been the key word in Micro Planning activity. Hence the community itself was asked to suggest measures to counter these issues keeping in mind the ultimate objective of Biodiversity Conservation and restoration. The area of the village, type of land, land ownership, the purpose of the activity, beneficiaries, scale of activity etc. are some of the issues that were kept in mind while preparing the list of activities in each of these villages.

Recognizing cultural strength which supports biodiversity

While planning for the villages certain important component was always kept in priority as it was having strong relation with the cultural part of the people. Like the Jaherthan^e in Semra was fenced with the people’s support and contribution from the project. Similarly while doing biodiversity conservation activity the plantation of bamboo was given priority in patches of Turi community in village Gargali. Sindwar was planted as bund plant in the entire plantation site as it has symbiotic relation with local people and plants too.

Facilitating habitats

The local habitats of terrestrial biodiversity and aquatic biodiversity were addressed with priority and considering peoples’ need through planning in participatory way. A large no of saplings were planted (18654 plants) in different plots spread in 7 villages. The

plant varieties included timber, fruit and firewood varieties. The emphasis was given on plants which is the part of local biodiversity. The plants planted are Sisam (*Dalbergia sissoo*), Mango (*Mangifera indica*), Guava (*Psidium*), Sharifa (*Annona squamosa*), Gamhar (*Gmelina arborea*), Sal (*Shorea robusta*), Imli (*Terminalia-tomentosa*), Bamboo, Amla (*Emlica officinalis*), Jamun (*Syzygium cumini*), Kathal (*Artocarpus heterophyllus*), Semal (*Bombax ceiba*), Mahua (*Madhuca indica*), Karanj (*Pongamia pinnata*), Neem (*Azadirachta indica*), Kend (*Disospyros tomentosa*), Piar (*Buchnamia Lanzan*), Kachnar (*Bsuhinia variegata*) & Bel (*Aegle marmelos*) etc. The survival of plantation is assured with the help of cattle proof trench. For Bund plantation Sendwar (*Vitex negundo*) was promoted on large scale along with other local species. The growth of plantation has motivated local people to do plantation by their self initiatives in their own lands. These plants were selected on in the process of PBR^f preparation. Most of the plants are the part of local biodiversity so the habitats of these plants are also conserved in the process. Certain land and water conservation activities were also taken up. The plantation, creation of cattle proof trench, introduction of 5% model has resulted soil and water conservation in areas where these are introduced. The plantation was introduced as per the peoples' short term, medium term and long term needs.

The aquatic biodiversity was conserved with the process of renovation of local ponds, introduction of check-dams as water bodies, space for more water in flowing streams and 5 percent model as a small seasonal water bodies. A proper feed management system was practiced in standing water bodies like ponds. Lime treatment, introduction of vermi-compost and other feeds for fish fingerlings have helped the aquatic biodiversity. The varieties introduced are Rohu, Katla, Mrigal, Mangur, Silver carp, and Pothi. People have left certain ponds and not harvested the fish as they wanted them to survive and promote natural expansion. A number of birds are seen in the paddy fields and near to water bodies. Some of the bird which were seen in the basin area are; Peacock More (*Pavo cristatus*), Vulture Gidh (*Pseudogyps bengalensis*), Koel (*Edynamis seolopaceous*), Panduk (Partridges Panduk), Hill Myna (*Aeridotheres tristix*), Parrot Tota, Wood picker, Neel kanth (Blue jay), Bulbul, Duck, Crane, Canary (Golden oriole) and Drango Koyler.

Animals are very less in the area. The habitat of wild animals are affected so their number also. The animal which are seen in the basin are; *Monkey, Peacock, Wolf, Bear, Hyena, Elephant, Wild dog, and Fox*. The plantation will assure growth in no of animals and birds in coming years as their habitats are being conserved.

^e Worship place of Santhal tribes in villages

Moving towards living soils

The introduction of certain soil and water conservation measures like introduction of 5 percent model in paddy fields, use of vermi- compost, plantation has increased the soil fertility by addition of more biomass in the soil. The use of System of Rice Intensification (SRI) in paddy cultivation has supported soil quality by introduction of more green manure in the field so the soil is moving towards life from death path. In vegetable fields vermin compost is used and it is maintaining the soil health. The local seed preservation is an essential practice of each farmer. After learning intensification method they are now giving emphasis on seed preservation and treatment. The soil health improvement is promoting habitat for local edible plants. It is also increasing the microbial activities in soil so the unseen living things are getting active in the soils.



Fig. 12.5 Agriculture promotion in mining areas

Impact of Wasteland Restoration on Village Economy

The interventions in the villages have helped local mass to add their daily income with the support of project. The total SHGs formed under the project support has saved around 3 lakhs of Rupees and they have a turnover of Rs. 2, 76,000/- in last financial year. They are easily

taking credits for their daily needs and special occasions like illness, education, agricultural need, opening shops, etc. The members of LI committee have earned upto 2 lack of Rupees in last one season. The increase in paddy production from 30 percent to 240 percent has provided food security to 84 families. The irrigation facilities created through check dam, lift irrigation, ponds have increased irrigation in around 200 acres. The small and marginal farmers affected by mining and depending upon encroached mine land near excavated mines and doing agriculture of mines water are supported by Surface paddle pump and bamboo paddle pump in groups. They are cultivation vegetables and meeting their daily vegetable need and also earn some revenue.

Conclusions: Constraint for Local Biodiversity

The Bokaro river basin is highly eco-frazile and in the process of getting damaged day to day. Increase in mining area, more anthropogenic activities, anti environmental approach, lack of people's participation, Non implementation of environmental management plans by mining authority, poor rehabilitation approach all together is creating serious threat for local biodiversity. The local communities have fewer lands or no lands and they have several work opportunity which gives them more money and quick money than agriculture. The mining authorities are also looking for quick money and they have no plans for reclamation of mining land. Since 1972 after nationalization of coal mining, no mine is reverted back to people after proper restoration. In such situation keeping community alarmed and attentive for conserving biodiversity is a real challenge.

SECTION - IV

**POVERTY, SOCIAL EXCLUSION
AND COMMONS**

HUMAN POVERTY AND SOCIAL EXCLUSION

Prakash Chandra Deogharia

Poverty: An Issue of General Concern

In recent times, there has been a general concern about poverty in academic circles, social workers, international agencies like UNDP, politicians and public in general. The concept of poverty and statistical measurement has undergone changes. The calculations have become more sophisticated and the concept broader based. In the narrow sense it is viewed in narrow confines of some indicators like calorie intake / monthly per capita expenditure (MPCE) based on NSS Surveys in India number of indices like HCR (Head Count Rates), FGT Index, Sen Index (depth of poverty) are some of the important rates which give the extent of poverty in narrow sense. In the broad sense, the poverty is viewed as deprivation; it's from, vulnerability of various groups to face contingencies, threats and powerlessness of the part.

Human Poverty: Excluded and Non-Excluded Groups

Indian government has addressed the problem of poverty. We recognized that the poor in India is not a homogenous category. There are poorer within poor, belonging to certain social groups. We recognized that, while the persistence poverty of some social groups is associated with general factors that caused poverty among all the poor (including the poor from social groups and rest of the poor); there are 'groups specific factors' (in additions to the general factors) which aggravate the poverty among certain social groups in Indian society. Therefore, in case of certain social groups, beside the general factors that cause poverty, there are groups' specific factors, which caused more poverty among them. The group specific factors are related to social and cultural identity of these social groups and the process of social exclusion and discrimination from which they suffer.

The problem of the poorest within the poor (chronically poor groups) and focus on the 'group specific' causes of poverty of the poor. Within the broad category of poor, we focused on the realization of the rights and entitlements of women and socially excluded groups in

India's poorest seven states, which include schedule caste, schedule tribe, economically and educationally backward caste, nomadic and de-notified tribes, religious minorities like Muslims, physically challenged and similar groups. The aim has been to make government policies and programmes more responsive to group specific problems of the poor – with a focus on women and socially excluded groups; work with women, scheduled castes, scheduled tribes, minorities, urban poor, people with disability etc.

Poverty amongst the Social Groups

The poverty levels of all social groups are high. The all India averages of the respective categories are presented in Table 13.1. The urban poverty is lower than the rural but the figures for the tribal's are higher than the national average. More SCs and STs were estimated to be below poverty line is a matter of serious concern.

Table 13.1 Poverty amongst social groups (HCR) 2004-05

Poverty	India		
	Rural	Urban	Total
ST	47.6	33.9	46.5
SC	36.8	39.8	37.4
OBC	26.7	30.9	27.6
Others	16.0	16.2	16.0
Total	28.3	25.6	27.6

SC = Scheduled caste, ST= Scheduled tribe, OBC = Other backward caste.

Source: *Employment-Unemployment Situation of Social Groups in India 2000-05, NSS Report*

Table 13.2 Incidence of poverty across economic factors for all social groups in seven backward states (2004-05) (in %age)

States	Ownership of Land (Small Land Size Class)	SEA	SENA (Agr.)	Wage Labour	Illiteracy
Uttar Pradesh	28.06	26.4	34.4	55.3	38.78
West Bengal	17.27	17.6	23.2	45.5	39.66
Jharkhand	47.18	44.0	41.6	75.1	52.97
Orissa 4	8.77	46.1	32.9	64.5	60.93
Chattisgarh	48.29	32.0	44.0	55.5	49.21
Madhya Pradesh	43.09	27.3	32.7	56.5	44.81
Bihar	31.20	25.5	36.9	67.4	52.51
All India	27.43	21.5	23.4	46.4	39.3

SEA = Self employed in agriculture, SENA = Self employed in non-agriculture.

Source: *Employment-Unemployment Situation of Social Groups in India, 2004-05, NSS Report No. 516-Table*

There has been a growing tendency among the social groups to seek solution for their group specific particularly through the policies, which have been used by the government for social groups such as scheduled castes and scheduled tribes. This has led to intense discussion on this issue. Discussion is revived due to initiative by government for reservation in private sector for Scheduled Castes and Scheduled Tribes, reservation for Other Backward Classes in the higher education institutes managed or funded by the State and similar demands by dalit Christians and dalit Muslims, religious minorities like Muslim, women for reservation in legislature, nomadic and denitrified tribe.

In case of the 'Group exclusion', social and cultural identities-such as social origin like caste, ethnicity, religion, gender, colour, and race-become a reference point for exclusion and discrimination and exclude all persons belonging to these, from access to capital assets, businesses, employment, education, civil and political rights, and other social needs. Thus, the group characteristics of exclusion are based on social and cultural identity, and are irrespective of individual attributes.

Social Exclusion and Human Poverty

The social exclusion is defined as 'the inability of an individual to participate in the basic political, economic and social functioning of the society. It involves the denial of equal access to opportunities imposed by certain groups of society upon others'¹.

Social exclusion has three distinguishable features, first is that it affects culturally defined 'groups'. Secondly it is embedded in social relations and it is through the network of social inter-relation that groups are wholly or partially excluded from full participation in the society in which they live. Third is the adverse consequence of social exclusion on entitlement and on the basic needs necessary for good living.

Thus, the outcome of social exclusion in terms of low income and high degree of poverty among the excluded groups depends crucially on the functioning of society, economy and polity through a network of social relations, and the degree to which they are exclusionary and discriminatory in their outcomes. The groups' focus on social exclusion recognizes that people are excluded because of ascribed rather than achieved features, beyond individual agency or responsibility¹.

The economic discrimination which directly results into lack of ownership of income earning assets and employment and also human

capability in terms of lack of access to education and skill operate through discriminatory functioning of various market and non-market transactions. The market discrimination (of a group) may operate through restrictions on entry to markets and/or through 'selective inclusion', with unequal treatments in market and non-market transactions, such as agricultural land, various inputs and services necessary for business, employment, credit, education and health institutions, etc.

Individual Exclusion and Group Exclusion

We also need to draw distinction between exclusion of a 'Social Group' as against exclusion of an 'Individual'. The social exclusion essentially refers to the processes through which "groups as whole" are wholly or partially excluded on the basis of group identities from full participation in the society, economy, and polity in which they subsist. It operates through 'societal relations' (causing exclusion) and resulting into 'outcomes' causing denial of rights and entitlement and human poverty. Therefore, for understanding the nature of exclusion, insights into societal relations and institutions of exclusion is as important as delineating their outcomes in terms of deprivation for excluded groups. We need to clearly draw distinction between exclusion of a 'group' and exclusion of an 'Individual'. Theoretically speaking, in case of 'group exclusion', all persons belonging to a particular social/cultural group are excluded because of their cultural (group) identity, and not due to their individual attributes. Exclusion of an 'individual' is fundamentally different from the exclusion of a 'group'. Individuals (both from excluded and non-excluded groups) often get excluded from access to economic and social opportunities for various reasons specific to them (and not because of their group, social/cultural identity). For instance, individuals may be excluded from employment due to lack of requisite education and skills. Individuals may face exclusion in access to education due to lack of minimum qualification and merit, or their inability to cover high cost incurring education. An individual may also be excluded from access to input and consumer markets due to lack of income and purchasing power.

On the other hand, in case of the "Group Exclusion", social and cultural identities – such as social origin like caste, ethnicity, religion, gender, colour, and race – become a reference point for exclusion and discrimination, and exclude all persons belonging to these, from access to capital assets, businesses, employment, education, civil and political rights, and other social needs. Thus, the group characteristics of exclusion are based on social and cultural identity, and are irrespective of individual attributes.

Social Exclusion in Indian Context

In India, social exclusion revolves around societal institutions that exclude, discriminate, isolate, and deprive some groups on the basis of group identities such as caste, ethnicity, religion, gender, physical disability, regional identity and similar identities in different magnitude and varied forms.

The groups that suffered from social exclusion and discrimination associated with institution of caste include former untouchables (scheduled caste) socially and educationally backward section of other backward castes (OBC). The former untouchables and other backward castes converted to Islam, Christianity, Sikhism and Buddhism also suffered from discrimination and exclusion in some forms, if not in the same form from which their counterpart in Hindu religion suffered. These include scheduled castes and OBC in Muslim, Christian, Sikh and Buddhist fold.

The group that suffered from exclusion associated with ethnic background includes scheduled tribe, nomadic tribe, and de-nomadic tribes. The de-notified tribe also suffered from the stigma of the legacy of criminality. The groups that suffered from religious background mainly include Muslim and Christian. Women from all religious background faced discrimination in various forms. The other categories which have sought recognition from the government include physically challenge persons.

The nature of social exclusion and discrimination of each of these groups differ in terms of spheres and forms:

- a. The social exclusion of scheduled caste and other backward caste is closely associated with institution of caste. The fundamental characteristics of pre-determined and fixed social and economic rights for each caste, with restrictions for change, implies 'forced exclusion' of one caste from the civil, economic, and educational rights which other castes enjoy. Exclusion in civil, educational, and economic spheres is, thus, internal to the caste system and a necessary outcome of its governing principles. The core governing principle of the caste system is however not inequality alone, but 'graded inequality', which implies 'unequal entitlement' of rights to various castes. With the entitlement to rights being hierarchically unequal, every caste (except the higher castes) suffers from a degree of denial and exclusion. But all suffering castes do not suffer equally. Some suffer more and some less. The loss of rights is not uniform across caste groups. As one

moves down the caste hierarchy, the rights and privileges are also reduced. By implication, castes located at the bottom of the caste hierarchy, such as the untouchables, suffer the most. The Other Backward Castes follow closely. The Other Backward Castes have probably not suffered from the practice of untouchability or from residential and social isolation as much as the Scheduled Caste, but historically, they too have faced exclusion in education, employment, and certain other spheres.

- b. Another prominent group is the Scheduled Tribes, the semi-nomadic tribes and de-notified tribe which suffered from physical and social isolation and exclusion due to their ethnic backgrounds.
- c. Coming to the religious minorities, some among them, particularly the Muslims, possibly face discrimination as a religious group in a number of spheres, reflected in their poorer performance with respect to the relevant human development indicators (although there are extremely limited studies on the discrimination of religious groups in various spheres).
- d. The untouchable and other backward caste converted to Islam, Christianity, Sikhism and Buddhism also suffered from some form of discrimination as some elements of the Hindu caste system have been carried forward in case of these low-caste converts. The lower-caste converts face discrimination, though not in the same forms and manifestations as the Hindu low castes. In fact, problem of former Untouchables converted to Sikhism and Buddhism, and of the Other Backward Castes converted to Islam has been recognized and the reservation policy has been extended in selective manner to them. But the problems of the former Untouchables converted to Christianity and Islam have not yet been addressed.
- e. Women too face gender discrimination, though the extent of the discrimination varies with their caste, class, and religious backgrounds.

It is apparent that there are multiple groups in Indian society which suffered from social exclusion but in different forms. The basis of their exclusion also varies, so does the nature of discrimination. Due to variations in the forms and spheres of discrimination, the consequences on deprivation and poverty across various discriminated groups also vary. Unlike in the case of the former Untouchables, there are limited

studies on other discriminated groups regarding the forms, nature, and manifestations of discrimination. However, the visible presence of inter-group inequalities among low caste and high caste, male and female, tribal and non-tribal and minority and majority religious groups with reference to various indicators of human development points toward the consequences of discrimination reflected in differential access to income earning assets, property, businesses, employment, education, health facilities, housing and civil rights, and in participation in legislature and governance in varying degrees.

Social Exclusion and Discriminations

The Caste/ethnicity/gender/religion based exclusion is reflected in the inability of individuals from the discriminated groups to interact freely and productively with others, and this also inhibits their full participation in the economic, social and political life of the community. Incomplete citizenship or denial of civil rights (freedom of expression, rule of law, right to justice), political rights (right and means to participate in the exercise of political power), and socio-economic rights (right to property, employment, and education) are the key dimensions of an impoverished life (World Development Report – Equity and Development, 2006, The World Bank). Viewed from this perspective, the concept of caste/ethnic/religion/gender-based social exclusion through market and non-market channels can be conceptualized and defined in a particular way. Thus theoretically, social exclusion can be defined as follows:

- a. Complete exclusion (unfair exclusion or denial) to certain social groups such as the lower caste by higher castes, tribal by non-tribal, religious minority group (such as Muslim) by majority, female by male, physically challenged by physically able in employment, in private and public domain. Complete exclusion (unfair exclusion or denial) to certain social groups in accessing the social needs like education, housing, health services, and other services transacted non-market channels, by the government and government approved agencies.
- b. Selective inclusion (unfair-inclusion) but with differential treatment to excluded groups, reflected in differential price charged or received for goods and services (different than market prices). This may include price of input factors and consumer goods, price of factors involved in production such as wages to human labour, price for land or rent on land, interest on capital, and rent on residential houses. This may

also include price or fee charged by public institutions for services such as water, electricity, and other goods and services.

- c. Unfavourable inclusion (often forced) bound by caste/ethnic background obligations and duties reflected, firstly, in over-work, loss of freedom leading to bondage, and attachment, and secondly, in differential treatment at the place of work.
- d. Exclusion in certain categories of jobs and services of the former Untouchables or Scheduled Castes who are involved in so-called 'unclean or polluting' occupations (such as scavenging, sanitary jobs, leather processing, etc). This is in addition to the general exclusion or discrimination that persons from these castes would face on account of being low-caste Untouchables.
- e. Exclusion from decision making in Village Panchayat and thereby in the allocation of funds and schemes addressing their problem.

Identifying Exclusionary and Discriminatory Behaviour in Market and Non-Market Spheres

After having an insight about the discrimination involved in the institution of caste/ethnicity/religion/gender, we shall now try to address the issue, of how one could identify certain behaviours of people facing social exclusion. To enable that, it is necessary to draw distinction between unfavourable exclusion, unfavourable inclusion². We also have to draw distinction from other related forms of exclusion.

We need to define the concept of unfavourable exclusion. It is necessary to recognize that the people can have an equal access to civil, economic and political rights t given terms and conditions. And when individual from certain social groups (such as low caste, adivasi, women and minority religious groups) are denied equal access due to their social identity (and not individual attributes), this involve unfavourable exclusion².

The concept of social exclusion in terms of 'unfavourable exclusion and unfavourable inclusion' is important in the context of discrimination in the market. The individual from some groups are considered to be unfavorably excluded if there is complete denial of access to rights and entitlement. The individual from some groups are considered to be unfavourably included if they have access to right

and entitlement but with differential treatment or terms and conditions on which other gets access to rights and various entitlements.

Economic Discrimination

a. Market discrimination

In the light of this understanding we first discuss the concept of economic discrimination and indicate its consequences on poverty in the later portion. Economic discrimination operates mainly through various markets as people as producers/business persons procure inputs and services necessary for production and business from market, including credit. Economic discrimination also operates through sale of product and goods and services.

A typology of market would include: (a) labour/employment markets; (b) land markets for agricultural and non-agricultural use; (c) credit markets; (d) input markets (needed in any production and business activity); (e) markets in services necessary for businesses; (f) products and consumer markets in goods and services; and (g) housing markets; (h) markets in health services and other.

b. Discrimination in labour market

Table 13.3 Average weekly wages of the workers in different social groups 1999-2000 (in Rupees at 1993-94 Prices)

Groups	Wage
Hindu	-
ST	154.61
SC	167.18
Others	190.90
Muslim	208.7
Other Religions	299.35
AH Religions	
ST	160.68
SC	171.50
Others	197.05

SC = Scheduled caste, ST= Scheduled tribe, OBC = Other backward caste, AH= Other than Hindu

Sources: *Employment and Unemployment Situation among Social Groups in India, NSS 55th Round 1999-2000 (Amresh Dubey estimates DFID 2003)*,

Note: a) The average wages are calculated for those who reported wages only, b) The workers considered are those who are employed on the basis of current weekly status.

In light of the above criteria, discrimination in labour market as a concept thus can be conceived as:

- a. Complete exclusion or denial of certain social groups in hiring/employment by higher castes, which is unrelated to productivity;
- b. Selective inclusion or hiring, but with unequal wages, that is, lower wages (lower than market wages or the wages given to workers from non-discriminated groups) unrelated to productivity;
- c. Unfavorable inclusion (often forced) bound by the caste and other obligations and duties reflected in, firstly, over work, loss of freedom leading to bondage, and various types of attachments and secondly, in differential treatment in work place; and
- d. Exclusion in certain categories of jobs and services of those low castes/Muslims/tribal/women who are involved in so called 'unclean or polluting occupations' (such as sanitary jobs, leather processing jobs, etc). This is in addition to the general exclusion or discrimination that persons from these groups would face.

Thus, discrimination in labour market (wage and employment) may be conceived in terms of: (a) complete exclusion of discriminated social groups (SC/ST/OBC/NDT/Muslim/Women other similar groups) from employment, that is, employment discrimination; (b) selective inclusion in employment, but with an unequal treatment reflected in lower wages unrelated to productivity, that is, wage discrimination; (c) selective inclusion with unequal hiring terms and conditions with respect to hours of work and other terms; (d) differential behaviour towards low caste/Muslim/women employees in work place; (e) compulsory or forced work associated with traditional caste related obligations involving loss of freedom; and (f) exclusion of low castes from certain types of jobs due to notion of pollution and purity.

c. Discrimination in land market

In case of land markets, excluded groups may experience discrimination in the form of denial in (a) sale and purchase of land for agricultural and non-agricultural usage (for production/business location and residential housing); and (b) prices paid and received by discriminated persons in event of sale and purchase.

Discrimination may also persist in leasing of land by the discriminated groups for agricultural use and for renting of residential houses. Discrimination in lease markets may be practiced either in the form of denial to lease agricultural lands and residential houses or by charging higher prices or rents on leased land for agriculture use or on renting of houses for residential purposes compared to other social groups for identical services.

d. Discrimination in credit market

Discrimination in credit markets may take the form of denial of credit to the discriminated persons and in the event of their being given credit, they may be charged higher interest rates. Besides, it may also be practiced in other terms and conditions for repayment of loan and mortgage.

e. Discrimination in common property resources at village level

Common Property Resources (CPR) at village level generally includes water tanks, grazing land and forest resources to which all persons in the villages should have an equal access. In case of discriminated group, they may face complete denial of access to resources, or if they have access, it may be given at differential terms and condition.

Discrimination in Education

Discrimination in education may occur inside the school which may operate in various spheres such as discriminatory behaviour of teacher towards the students from certain social groups in various manner, in relation between the students, participation in the cultural and corporate life in the school, seating arrangement inside the classroom and discriminatory access to the facilities in the school such as mid-day meal, drinking water, supply of books and uniforms, scholarship provided by the government and occasional health services. This discrimination in multiple spheres and forms not only affect the social psychology of the discriminated students but also poor academic performance, withdrawal attitude and ultimately in the heavy drop-out from schools.

Discrimination in access to Public and Private Health Services

Discrimination in the sphere of public health service provider and the private health provider may operate in the following manner:

- a. Complete denial of certain social groups, (for example the untouchables/tribal/Muslim);
 - (i) in admission in the primary health center in the villages and by the private health providers,
 - (ii) access to primary health centers and private health centers but with differential treatment:

- in standing arrangement – being ignored and kept waiting for long or asked to come at the end;
- in health check-up and treatment,
- in the delivery of the medicine,
- in visit to houses by doctors and medical practitioners,
- in Private health doctors and hospitals.

After having brought some clarity on the concept of social exclusion and discrimination, we shall now discuss the likely consequences of discrimination in market and non-market on poverty and channels through which social exclusion and discrimination aggravate poverty for excluded groups.

The labour and other market discrimination involves denial of equal economic rights and entitlements to the persons from discriminated groups. The consequences of economic discrimination, not only, negate the provisions of equal opportunity and principle of non-discrimination, but also create fairly serious consequences on access to income earning capital assets like agricultural lands and non-land assets, employment, social needs like education and health, housing and other needs, which induce lower income and high poverty among discriminated groups.

Table 13.4 Occupation pattern of households types by social groups

	SC	ST	OBC	OT	Muslim	Hindu	Other
Rural*							
SEA	16.4	36.2	34.7	41.1	36.3	43.9	38.6
SENA	12	5.2	15.5	14.8	21.2	11.7	22.6
AL	51.4	34.7	29.2	19	24.4	28.3	21.2
OL	10	8.9	7.9	6.3	9.9	8.3	4.6
UE	10.2	10.1	12.7	18.7	8.1	7.9	12.3
Urban*							
SE	27.3	21.6	37.6	35.5	53.7	35.9	44.6
RW/S	37.6	38	36.3	46.5	28.9	46.7	38.3
CL	26.5	25.8	17.3	7.4	13.4	12.1	10.5
OL	8.5	14.7	8.5	10.5	4.3	5.4	6.6

(Figures in percentages 1999-2000)

SC = Scheduled caste, ST= Scheduled tribe, OBC = Other backward caste, OT= Other tribe, SEA = Self employed agriculture, SENA = Self employed non agriculture, AL = Agriculture labour, OL = Other labour, SE=Self employed, RW/S = Rural workers working in urban area, CL= Casual labour, UE = Unemployed.

Source : *Employment and Unemployment situation among Social Groups in India, NSS 55th Round 1999-2000.*

The adverse consequences of discrimination in labour market are fairly obvious. The denial to employ and/or deny giving job

in certain categories of works results in higher unemployment and under-employment among the discriminated groups. Lower wages reduce their wage earnings and compulsory involvement in works due to traditional caste and other obligations make them liable to exploitation and often unpaid labour.

The consequences of discrimination in other markets through denial of access to land, credit, factor inputs, product and consumer goods, restrictions on sale of products, consumer goods and services, and differential treatment in terms of prices paid in purchase of capital goods, inputs, and services are equally adverse. Further, various types of restrictions on the purchase of income earning capital assets and non-land assets reduce the ownership of these assets and increase the incidence of asset less persons among the discriminated groups. Also, restrictions on the purchase of inputs and services affect the scale, viability, and profit of the firms and businesses.

Price discrimination under which the discriminated groups are required to pay higher prices for inputs and services may affect costs, competitiveness, and profitability of firms and businesses owned by discriminated groups. The most adversely affected businesses owned by discriminated groups are likely to be ones dealing in consumer goods, in which the restrictions on purchases by higher castes/or majority religion from the low castes/minority persons may be more pronounced and persuasive due to the notions of purity and pollution and various stereotypes. Such restrictions affect the magnitude of sale of consumer goods and incomes of businesses owned by the discriminated groups. Finally, discriminatory access to social needs like education, health services, food security schemes, housing, etc. will lead to lower education level, lower access to food, and public housing.

Consequences of Social Exclusion

In order to bring further insight on the consequences of social exclusion on poverty, we need to discuss the case of each individual market separately.

- I) Markets in sources of livelihood and income earning capital assets:
 - * agriculture land,
 - * non-farm business, and
 - * employment
- II) Social Needs:
 - * education and skill development,
 - * public and private health,
 - * participation in village panchayat.

The consequences of discrimination in agricultural land markets may operate through the restrictions faced by the discriminated groups in purchase of land for agriculture use. This may also operate through denial of land to discriminated groups through lease for agriculture purposes. The denial faced by discriminated group in the purchase of land for agricultural use may result in low ownership of agricultural land and landlessness and higher dependence on wage labour. This also results in increased dependence of discriminated groups on wage labour, low income and ultimately in high poverty.

Labour market and poverty

The adverse consequences of discrimination in labour market manifests in poor terms of engagement (hours, pay and work conditions). The denial and exclusion in employment in general and in certain categories of works, results in higher unemployment and under-employment amongst the discriminated groups. Lower wages, reduce/depress their wage earnings and compulsory involvement in works due to traditional caste obligations, makes them liable to exploitation and often unpaid labour. Consequently, excluded groups are over-represented among poor. Poverty is likely to be caused because of forced labour which is an extreme manifestation of discrimination in the labour market. Workers from the excluded groups may be vulnerable to this form of discrimination which results in the practice of debt bondage. The system of bondage due to debt may operate when wage workers from the excluded groups are recruited by labour intermediaries who – through wage advances and other manipulations – induce them into an artificial debt that they cannot repay. Long hours of work may not be sufficient to repay this debt, thus trapping the workers into greater debt and a longer debt repayment period. This system perpetuates the poverty or extreme poverty of the workers belonging to excluded groups.

Consequences of discrimination in school education

Discrimination in school in village setting may take form of denial of access to education and skill development and/or discriminatory treatment in school. This may reduce the quality of human resource and reduce the employability for quality jobs and force them to fallback on low earning manual wage labour in farming and non-farming activities. Specifically, denial of access to education leads to high illiteracy, low functional literacy, and high drop out

rates, limited skill development and low human capital due to discrimination in education may cause high representation in menial jobs, low wages, low income and ultimately high poverty.

Consequences of discrimination in public and private health services

Discrimination in the sphere of public health service provider and private health provider may operate through denial of admission in the primary health center in villages and/or through discriminatory access to primary health centers and private health providers which may take the following form:

- * Separate standing lines
- * Being ignored and kept waiting for long
- * Discrimination in health check-up and treatment, including the avoidance of physical touch;
- * Discrimination in the delivery of the medicine
- * Avoidance of visit to houses by public and private doctors and medical practitioners.

Lower access to public health services and private health services affect the health status, increase the number of days fallen ill, lower the days of employment and ultimately affect the income levels negatively. Denial of access to public health services or improper services leads to the dependence on private health services providers with expensive medical treatment. This results in borrowing money for treatment, high debt and ultimately affecting the income levels.

Poverty eradication by socially inclusive policies

Adverse consequences of economic and social discrimination on human poverty, reducing discrimination is necessary.

Correcting discrimination would require two steps: First the legal safeguards in the form of legislation banning discrimination, second, "positive actions" for facilitating a fair access to discriminated groups in various spheres like employment, business, education, legislature and governance. The positive steps take the form of measures for fair access and participation of discriminate groups in various spheres, through measures like reservations and similar measures. It calls for positive action in land, labour, and capital markets, in product and consumer markets, and social needs such as education, housing, and health. Central to this view is the exposition that discriminated groups face discrimination in transactions through market and non-market channels and in that regard positive affirmative steps are necessary.

In Indian context another issue came for discussion. It is argued that since poverty has been the main problem of discriminated group, the general policy of economic and educational empowerment will be good enough to address their problem. However, another view asserts that while policy of general economic and educational empowerment is necessary for all poor (poor from discriminated groups and rest of the poor), there is a need for supplement empowerment policies by equal opportunity policies with “positive steps” for equal access to rights and entitlements.

The policy of social and economic empowerment is essentially directed towards improving the ownership of capital assets like agricultural land and business, education and skills, housing and other social needs. These measures are supposed to augment the capabilities of discriminated groups to undertake businesses, and to enhance their employability by enhancing their education and skill level. These policies take the shape of pro-poor policies involving measures to increase access to capital assets including agricultural land, employment, education, social needs like housing, and food.

Indian context

In our country, there is a discussion on developing alternative policies not only for those groups who suffered from caste discrimination in Hindu and non-Hindu folds, including those who suffered from ethnic identity, but also for those who suffered from discrimination associated with gender, religion and similar identities. Indian society is characterized by multiple forms of exclusion associated with group identities like caste, ethnicity, gender, and religion, region in various spheres of society, polity, and economy. Therefore, addressing such forms of exclusion requires inclusive policies to overcome deprivation faced by each of these groups.

Inclusive policy in the Indian context

It becomes apparent that due to variations in forms and spheres of discrimination faced by different social groups in Indian society, the consequences on deprivation and poverty across various discriminated groups also vary. Unlike in case of former Untouchables, there are limited studies on other discriminated groups regarding the forms, nature, and manifestations of discrimination. However, the visible presence of inter-group inequalities among low caste-high caste, male-female, and minority-majority religious groups with reference to various indicators of human development points toward the

consequences of historical discrimination, reflected in differential access to income-earning assets, property, businesses, employment, education, and civil rights, and in participation in legislature and governance in varying degrees.

By implication, the equal-opportunity policies for the different discriminated groups would differ in spheres and forms of interventions depending on the nature of discrimination faced by each of these excluded groups, and their present social, educational, economic, and political standing.

The feature of equal opportunity policies for various discriminated groups such as lower castes, women and religious minorities need to be comprehended in their unique context. Generally, three components characterize equal-opportunity policy. Firstly it incorporates “legal safeguards” against discrimination faced by certain social groups in multiple spheres of society. Secondly, an equal-opportunity policy which includes specific policy measures in the form of reservation or similar measures to ensure due share and participation of the discriminated groups in various spheres of society, polity, and economy. Thirdly beside this, the participation of the discriminated groups in governance at all levels – from legislature to drafting policies, their execution and monitoring – is also crucial. Representation and participation of the discriminated groups in governance is central element of inclusive policy and building an inclusive society.

Anti poverty programmes and strategy in India

India has a long history of anti-poverty programmes and experiments for poverty reduction. In the post-independence India, expenditure on poverty-reduction programmes stepped up since the Fifth Plan, and the subsequent period. It is worth mentioning here that despite a number of directly poverty reduction programmes available on increasing scale, the extent of their impact on reducing poverty in India is not clearly established.

A number of changes have occurred in recent times in poverty alleviation programmes new entitlements have been created. Now poverty reduction is considered as common responsibility. The major changes have been:

- a) MNREGA which for first time in post independence India gives statutory right of 100 employment guarantee to rural registered families on demand;

- b) The Seventy-third Amendment has included anti-poverty programmes in the Eleventh Schedule and there has been a move towards decentralization of rural development administration. The role and responsibility of local communities has been increased through the gram sabhas and the Panchayats.

Direct interventions

The Programmes which has been done by different poverty alleviation are addressed directly to the identified poor families, having the objective at bringing about an improvement in the living conditions of the poor.

Inclusive policy for reducing human poverty

However, in the case of poor belonging to discriminated groups, in addition to these known causes of poverty, the poor from excluded/discriminated groups suffered from groups specific problems which induced poverty among them. These discriminated groups suffered from either exclusion or discriminatory access to sources of income, which results in denial of equal access to opportunities and hence it induced more poverty among them. They faced a problem of "Exclusion induced poverty", from which only excluded and discriminated groups suffer. Therefore the problem of excluded group differs in some respects, (if not all respects) from that of "rest of the poor". Therefore in addition to the anti-poverty policy for improvement in access to income earning assets, employment, education, health facilities, which are required for 'all' poor i.e. poor from the discriminated group and the rest of the poor, the poor from discriminated groups need additional policy measures. The aim of such measures will be to overcome the constraints posed by the unfair exclusion and unfair inclusion and to provide equal but non-discriminatory access to poor persons to rights and entitlements'. Therefore, we require dual policy:

- a) One set of policy measures for improving the access to income earning assets (or sources of livelihood), employment, education and skill, health measures for all poor, including the poor from discriminated groups and,
- b) Second set of policies for poor persons belonging discriminated group to provide safe guards against discrimination which they face in accessing sources of income earning assets, employment, education, health facilities and participation in decision making in panchayat.

As regard the general policies, the Indian State has used “general programmes” for all poor, aimed at improving access to sources of livelihood through private ownership of capital assets or building human resource capabilities. These programmes have been undertaken primarily as part of anti-poverty and other economic and social programmes for the poor. The main focus of such programmes have been to improve private ownership of fixed capital assets like agricultural land, non-land capital assets, education and skill development, as well as access to social and basic services like housing, health, drinking water, electricity and others. Thus such programmes have addressed general factors which cause poverty for “all Poor”, both poor from discriminated groups and rest of the poor.

FATE OF COMMONS, COMMONERS AND DISPLACED: WHY DO PEOPLE RESIST DISPLACEMENT?

Stan Swamy

Introduction

I would like to ask you a simple question: 'Is any one asking why do people resist displacement?' The question is simple to ask but the answer is rather difficult to answer. Still, we will make an effort.

Alienation of land results in the displacement of people^a. Hence Land alienation and displacement are two sides of the same coin. The sad fact, however, is the people whose land is alienated and who become the victims of displacement process are mostly the indigenous and forest dwelling communities.

Displacement in Jharkhand

Extent and nature of displacement in Jharkhand

Medha Patekar, the respected human rights activist of *Narmada Bachao Andolan* once remarked, 'the Indian government is very good in keeping accounts. Thus when a dam is constructed the government keeps track of how many bricks, cement, iron rods, etc. are to be used. But if you ask the government how many persons and families have been displaced, it has no answer. It may sound cruel to say it but it is however a fact that bricks and cement are more valuable than people and their life. We are then forced to depend on other sources of information to fill up this gap. Independent studies say that about 15 lakh people have been displaced during the five decades after independence, out of whom almost 85 percent are Adivasis and Moolvasis and only about 25 percent of them have been resettled and the rest have been thrown on the streets¹. When it comes to land alienation, total area of Jharkhand is approximately 80,000 sq.km (exactly 79,714.000 sq.km.)^b.

^a By 'people' in this context is to mean indigenous peoples which includes Adivasi (scheduled tribes) and Moolvasi (scheduled castes and backward classes)

^b Source: Savarimuthu, Unpublished research paper

- 1) Land already acquired by the Government (between 1951 – 1995): 32,911 sq.km. or 32,91,100 hectares)
 - a. Forest area already declared - 23,417.082 sq.km.
 - b. Total Land acquired in the name of development (up to 1995) - 6,256.109 sq.km.
 - c. Land acquired illegally mainly in around towns and cities - 3,238.000 sq.km.
 - d. Percent land acquired: 41 percent
 - e. Land Available in Jharkhand after 1995: 46,802 sq. km. (59 percent)
- 2) Total land planned to be acquired: 29,916 sq.km. (36 percent) for mines, dams, factories, power houses, infrastructure, etc.
- 3) Balance land left for the people for survival: 16,886 sq.km. i.e. 23 percent of total land^c.

The implication is with three-fourth of land already taken or slated to be taken of which about 80 percent of the population made up by adivasi / moolvasi Jharkhandi people will have only one-fourth of the land for habitation and agricultural production.

Concept of ownership

There are certain concepts and practices with regard to ownership of land and other resources it contains. The British colonial rulers, as part of their appropriation of resources for the empire, established a norm that while land may belong to particular raiyats or communities, the resources such as forests above the land and minerals beneath the land were supposed to be the property of the State. With the imposition of such a norm, the colonial rulers looted the forests as well as the minerals and shipped them to their country to augment its industrialization process. It is important to note that the industrialization in Britain during the 18th and 19th centuries corresponded to the colonial rule of India and other countries during the same period.

One would have expected that once we became independent we would chalk out a new and more human attitude towards land and its resources. Alas, it was not to be. The Indian ruling class which formulated a constitution and other laws for the country followed the same logic should their use be determined. A report in a prominent daily says that a petition seeking clarity on the matter was filed in the Supreme Court, and the court admitted that no comprehensive legislation has been enacted to generally define natural resources and a framework for their protection. However, the court came to the unfortunate conclusion that (1) the state is the legal

^c Source: Savarimuthu, Unpublished research paper

owner of the natural resources as a trustee of the people, and (2) auction is the best method for alienating natural resources. Existing legislations on natural resources is premised on the colonial concept of 'Eminent Domain' which gives the state unrestrained power to use the natural resources of the people as it deems fit. The people are just helpless spectators. Unless this alienation of the people from their wealth without their consent is set right, it does not really matter which method is used to allocate natural resources to profit-hungry monopolists whether through first-come-first-served method or the auction method². Then as part of the Five Year Plans, the concept of 'Public Sector' and 'Private Sector' came into existence. It was presumed that Public Sector, meaning government, can acquire the land, forests and minerals, forcibly if need be, because public sector is supposed to work for the interests of the general public. Private Sector companies, on the other hand, cannot acquire these resources directly but the government would have to procure this for them.

Under this dynamics the public sector undertook the construction of dams, factories, mines, wild-life sanctuaries all over the country which implied huge alienation of land and displacement of people. This period witnessed rapid industrialization resulting in appropriation of not only land but also of other natural resources. The Indian state used its sovereign status and exercised its 'right of eminent domain' over private land and the commons on which vast number of poor, rural and tribal people depended for their economic, social and cultural needs. Thus displacement became an inevitable feature.

However, the sad part is that the state which is displacing people in ever increasing scale has not bothered to put in place a meaningful Rehabilitation / Resettlement Policy. Half-hearted measures were undertaken and their implementation was left to government officials who fixed arbitrary and often minimal amounts as compensation. But rehabilitating the displaced has not been a concern. At long last, the UPA government has brought a '*Right to fair compensation, Rehabilitation, Resettlement and transparency in Land Acquisition Bill, 2012*'. Several intellectuals, activists have taken exception to some of the provisions of the Bill. In what form and shape it will be enacted into an Act of the parliament is yet to be seen.

History of people's resistance to displacement after the creation of Jharkhand

The real reason for the creation of Jharkhand as a separate state in November 2000 was not so much to respect and honour the long cherished wish and struggle of the indigenous people to govern

themselves as per their culture and traditions but in view of opening up the vast mineral resources to national and international mining companies whose pressure was increasingly brought to bear on the government. Quite understandably one MOU after another were signed between the state government and various companies without any reference or consultation or consent of the mainly Adivasi people in whose land all this natural wealth is stored. Legal safeguards meant to protect Adivasi land from being alienated to non-Adivasis such as *The Chotanagpur Tenancy Act (1908)*, *The Santal Parganas Tenancy Act (1949)*, *the Constitutional provisions through the Vth Schedule*, *The Provisions (Extension to Scheduled Areas) Act (1996)*, some significant Supreme Court judgments such as *The Samata Judgment (1997)* were and continue to be neatly ignored by the central and state governments in generously awarding vast tracts of land to industrialists at their asking. Over hundred such MOUs were signed during 2001 and 2010. Rough estimates indicate that about 1.4 lakh acres of land have been signed off. This is a cruel betrayal to the Adivasi people for whom land is not just an economic commodity but a source of spiritual/cultural sustenance.

Enough is enough

In a span of three to four years the Jharkhandi people began to realize that the central and state governments were not for people's welfare but that they were laying steps to sell off people's land, their water and forest resources together with all the mineral riches to corporate houses. They decided to act. Wherever projects together with land requirements were announced people mobilized and organized themselves and said a definite 'no' to the government and companies. People's resistance movements against displacement sprang up in different parts of Jharkhand from 2004 onwards. Even as people stood together in the form of micro-resistance movements, the industrialists, local administration, police, lower judiciary, most of print and electronic media and the urban middle class joined forces. They began to sing the song of 'development' and accused the people's resistance movements as 'anti-development'. The police started to harass the leaders of people's movements as 'obstructing government work' and as having extremist leanings. It is this situation which brought together activists leading anti-displacement struggles, some socially concerned intellectuals, a few members of the media, a few folk artists, and some journalists. After a series of discussions and reflections it was decided to bring together the various anti-displacement movements under some umbrella organizations so as to strengthen people's struggles and to express support and solidarity to each other. Three to four such macro bodies emerged. Public meetings, rallies, advocacy, press conferences

were held to educate and motivate the people in struggle. It was made very clear that these anti-displacement movements will not enter into any dialogue with the government or the company to discuss rehabilitation facilities for particular projects since it would imply that people accept to be displaced.

By 2009, it became clear that companies are not making any in roads in Jharkhand in terms of acquiring land and setting up their industries whereas they are ready with their large investments and latest technology and the only thing they want is land. The corporate houses then started to exert pressure on the central and state governments to take some drastic steps by which this stalemate could be put an end to.

Operation Green Hunt . . . meant to hunt out the people and clear their green fields and forests to give to mining companies. A new philosophy was created to the effect that development is not taking place in the tribal belt of central India because of the 'menace of naxalism' and if the naxals/maoists can be eliminated, the government will undertake systematic development programmes and the tribal population will catch up in the developmental process. Hundreds of police and CRPF jawans were sent into the villages of the so-called "red zone". They did not have the guts to go deep into the jungles and confront the naxals. Instead they gave vent to their frustration on the helpless innocent village folk. They harassed them, beat them up, ransacked their houses, humiliated the elderly, dishonoured the women, arrested or shot at any young person. They were not accountable to any civil authority. The peaceful life of village communities was shattered.

Protests against state repression by human rights and civic rights groups started in good earnest. During 2010 public meetings, rallies, advocacy work condemning state action against its own citizens were conducted. At the same time, resistance to displacement was also strengthened. The end result was despite the state coming down so heavily on them, the indigenous adivasi / moolvasi people steadfastly refused to part with their land for the industrialists. Out of the about one hundred MOUs signed by Jharkhand government with industrialists, hardly three or four companies have succeeded in acquiring some land, set up their industries and start partial production. This too they did by dividing local communities, enticing them with false promises or threatening them by using hired hooligans. *Most significantly, the big companies which asked for hundreds and thousands of acres of land were turned away empty handed.* This is indeed a heroic achievement of the poorest of the poor against the mighty industrialist giants.

Reasons Why People Resist Displacement?

Displacement is painful for any body. To leave the place where one was born and brought up can be even more painful. And when government has no rehabilitation policy and one has nowhere to go, it is most painful. And when it comes to the indigenous Adivasi People for whom their land is not just an economic commodity but a source of spiritual sustenance, it can be heart-rending.

1. Indian government ignores the directives set by the United Nations which has spelt out some principles to guide the process of the rehabilitation of the indigenous peoples (IP) when they are displaced:

Free, prior, informed consent of the displaced persons/ families/communities must be ensured before displacing them. They shall not be forcibly removed from their land and territories^d.

In Article 26, IP have the right to the lands, territories and resources which they have traditionally owned, occupied or acquired.

Indian government has been quite liberal in signing progressive documents such as this. But when it comes to implementing it in our country, it says “there are no indigenous people in India”. The very existence of 10 crore indigenous peoples is being denied which is a serious injustice indeed. On the other hand, it has coined a new terminology calling the indigenous people “Scheduled Tribes and Scheduled Castes”, and has made some provisions for their welfare.

The violation of these rights have brought on tremendous social, emotional, economic losses

- i) Land owners become rickshaw-pullers the arbitrary, undervalued compensation they got is spent in a short time, or their meager land is no more able to support the family. In a city like Ranchi in Jharkhand there are about 180,000 cycle rikshaws and most of them are indigenous adivasi men often physically emaciated and hardly able to pedal. But they must pedal to eke out a living. As they struggle to pull the passengers on the main thorough fares of the city, they are passed by the affluent class riding in the latest models of two-wheelers and four-wheelers. A veritable picture of affluence and poverty riding side by side.
- ii) At least 200,000 young women are working as house-maids in metropolitan cities The truth of the matter is if in a social group large numbers of young women leave their hearths

^d (Article 10) (Permanent Forum on Indigenous Issues-UN- Sixth Session, 25 May 2007)

and homes and their loved ones and move to far away unknown places it is a sure sign that such a social group is on the verge of collapsing. This is what we are witnessing in the indigenous society of Jharkhand. A systematic trafficking process is in place which includes men and women from the indigenous community itself. These young women join the ranks of unorganized labour. Many of them lose contact with their families. The destiny is to become domestic help in urban middle class homes without any personal or job security. Several of them are even 'sold off' to brothel owners with the obvious consequences. It is estimated that about 20 percent are lost forever and never come back home. Even those who come back after a shorter or longer period find it difficult to get settled in life since an automatic stigma is put on them doubting their integrity.

Thousands of young men have gone off to faraway places like Tamil Nadu / Kerala in the south to Punjab and Haryana in the north as casual or contract labour. The families of these young women and men languish in the villages of Jharkhand without knowing when their loved ones will come back home.

- iii) Those young men and women who are at home are sandwiched between the police who treat them as suspect Maoists and Maoists who see them as possible 'police informers'. This sad situation has led to thousands of young men and women being harassed, arrested by the police and scores of them being killed by Maoists. The end result being peaceful life in villages has become a thing of the past.
- iv) Another painful fact is those who realize the injustice in the displacement process and resist displacement are easily dubbed Maoists / naxalites and hunted down. During the past decade, about 550 young men and women have been killed in police firings in so called naxal operations, and about 6000 Adivasis are languishing in the jails of Jharkhand. Practically every day 1 or 2 or more young men are arrested as suspected naxal members/supporters. A Union Minister has written twice to the Chief Minister of Jharkhand about the arrest of innocent people and pleaded for their release but no action has been taken by the government of Jharkhand.
- v) A fraction of the displaced who were resettled elsewhere has faced disruption of their community insofar as they have been scattered amid strange and often unfriendly neighbours. This leads to lot of emotional and social tension and the community-bond, which is the back bone of indigenous people, is broken. This is an irreparable social damage done to the displaced people.

- vi) Government by and large acts in favour of industrialist. One example will suffice to illustrate this. On 2nd Jan. 2006 in Kalinganagar of Odisha, people were demanding dialogue with TATA company for higher rate of compensation. The said company, instead of talking to people, trampled the peaceful protest by bull-dozer and tractors with the help of 11 platoons of armed police. When people objected, police opened fire killing 13 Adivasi land owners.
- vii) The Public Hearings (Jan Sunwai) for environmental clearance are farce because (1) holding the hearing far away from the project-area so not many people can come, (2) ignore the traditional indigenous leadership in scheduled areas by not informing them about the hearing, (3) threaten and abuse those expressing their views against the project during the hearing and (4) create an atmosphere of fear by an overwhelming presence of armed police who are there to protect the government officials and company personnel.

2. False assurance by the Central and State governments

If there is even a modicum of justice with regard to the governance of commons and given the fact that so many millions of people have been displaced over the last six decades, the central and state governments should have come out with a humane and just law on displacement, resettlement and rehabilitation. A callous government has not bothered to do that, although it has been wantonly and forcibly acquiring land in huge quantities. At long last, the Central Government has introduced 'The Land Acquisition, Rehabilitation and Resettlement Bill, 2011' in Parliament. Several intellectuals, people's movements and activists have criticized several provisions of the bill and have proposed concrete suggestions. When will it be passed as an Act and what will be its final shape is yet to be seen?

However, one MoU after another are being signed by the government with national and multinational companies giving away thousands of acres of mostly Adivasi land. All this is done in violation of constitutional (Vth Schedule), legal (PESA Act), judicial (Samata judgment of SC) provisions.

A Glimmer of Hope from the Judiciary

Very recently the Supreme Court of India is coming out with some favourable judgments aimed at protecting the interests of the

Scheduled Tribes and Scheduled Castes. In a significant judgment on 21 September 2012 the SC has held that the land of STs and SCs cannot be acquired by non-STs and SCs, especially companies. Whether it will have retrospective effect so that the land of STs and SCs which has already been acquired by non-STs and SCs will be returned to the original owner is yet to be seen.

In the final analysis, with or without the judiciary standing by them, the affected people have decided they will not give their land. Their message is: "We will give our life but not our land because our land is our life".

SOCIO-ECONOMIC HETEROGENEITY AND INEQUALITY IN BENEFIT DISTRIBUTION FROM COMMUNITY FOREST IN CHITWAN DISTRICT OF NEPAL

Subash Ghimire, S. J. Balaji and K. Chandran

Introduction

Community management of local natural resources has been an integral part of sustainable development policy in developing countries for past few decades. Since last few decades, community based natural resource management (CBNRM) system is replacing the predominantly centralized natural resource management system. The CBNRM models emphasis on participation of local groups of people to make suitable decisions regarding utilization of natural resources and it also helps on strengthening of local institutions. This model deploys control over of natural resources to local communities. So, it is also taken as an example of chief institutional reforms and basic changes in power¹.

Community forest management has been initiated with a view of empowering local communities and providing them benefits. More than 50 developed and developing countries have been pursuing community forest management². It was believed that providing full authorities and responsibilities to local communities for controlling forest resources would result in a better management than the state controlled regime³. Community forest (CF) was initially known as forest management activities, in which local people closely involved in forest management activities with more responsibility towards management and yielding them to fetch direct benefits through their own efforts⁴. It was known as collective action of local communities in forest management and utilization. It is clearly understood that benefit derived from community forest is an incentive for collective action in forest management activities. These benefits can be termed in both monetary and non-monetary. Non-monetary benefits associated with forests include ecological balance, preservation of drinking water, cultural, spiritual, medicinal, recreational, and aesthetic

values. Local employment, timber and non-timber forest products derived from CF by the users are also counted as monetary benefits. Further, the monetary benefits can be classified into direct and indirect. Direct benefits contribute to users by provision of timber and non-timber forest products and indirect benefits include employment and tourism contributes for household's economy by generating income opportunities. In spite of major role of forest in environmental aspects along with many associated indirect benefits, they are not being quantified in planning and measuring because of complexity in measurements. The direct benefits from forests such as fuel-wood, timber, fodder, grasses and other non timber forest products (NTFP) are considered as major benefits by the users.

Community Forest in Nepal

In Nepal, community forest management has been leading towards the localization of forest management since last few decades. According to Forest Act 1993 and Forest Regulation Act 1995, CFs are those areas of the national forest that can be handed over to local communities who have been living in the vicinity and using their traditional right. Full authorities and responsibilities have been provided to them through the existing forest related legal documents like Forest Act 1993 and Forest Regulation 1995. The management practice has been formally started since 1978 and is still in continuation with improved regime. The management system is being practiced based on local indigenous knowledge, principles of community rights and ethics to ensure forest conservation and utilization. Nepal's Community forestry has completed over 30 years of commencement and is well established. By 2008, the government had handed over 1.23 million hectares of forest land to 14,686 CFUGs involving 1.66 million households, which is about 39 percent of the country⁴.

The concept of community forestry in Nepal is known as a model towards the participatory forest management by grass root level which is also regarded as pioneering and courageous. This is widely accepted as progressive policy of passing authority of forest resources to local user groups along with legal status⁵. Several Community CFUGs have been a success throughout the country as a good mechanism for rural development. Some of the CFUGs are managing the forests much better than government organizations⁶.

Community forestry in Nepal can provide billions of rupees to national economy but the forest users and managers have not yet realized the benefits that one can get from CF⁷. Due to the unavailability

of secondary data on environmental valuation of Nepalese forestry, it is very difficult to give monetary term, though users realize those values and importance. Most of the studies in Nepal are focused on benefits of CF but economic aspect is less focused.

Problem Focus

Two decades of experience in CF management has been evaluated as a successful program to improve forest greenery throughout the country. CF management has been emerged as a revolution in conservation of forest resources and sustained base for poor people, although some issues such as benefit sharing are needed to be resolved. A study was conducted by⁸ showing that the CF is not being perceived as favourable for all users.

In Nepal, forest is a highly prioritized sector through which poverty reduction would be achieved according to the 10th national plan. The forest policy has focused to reduce poverty by ensuring people's active participation in the forest management and channeling the benefits to poor and disadvantaged groups. Therefore, forest benefit sharing is being highly considered as an emerging issue throughout the country^{9,8}.

The issue of benefit sharing is significant in both local and national contexts. Regarding to local context, if anyone gets less benefit from CF they would be unwilling to participate in the management and would refuse to pay the levy as per their share of cost⁷. Concerning national context, if poor people are deprived of access to forest benefit, it could be difficult to achieve the desired national objective to reduce poverty that has been set up by the current interim national plan. Hence, the study strived to identify the relationship between the household's economic status and benefit sharing CF and to examine the inequality in benefit from CF. In practice assessing economic contribution of CF is examining the economic values of the forest products and their importance to the poor livelihood. Forest products being the economic goods are important sources of income that have direct influences on poverty alleviation of rural communities¹⁰. Thus the current issue is what the economic values of forest products are and its contribution in poor's households in CFUG. Similarly, the analysis of the contribution of CF household level income will produce insight regarding the effectiveness of CF programme at household level. Estimating the economic contribution of the derived income are the key steps towards understanding the role of CF in rural people's day life¹¹.

In this context, this study attempts to quantify the value of at least, directly consumable products; and their contribution to forest users in the financial terms support their household income and community necessities in terms of development works. Besides this study also measures the income inequality between rich, middle, poor categories of user's households and effect of CF income to reduce the income inequality gap.

Although CFUGs have generated more goods and services in to society, it is observed that poor are not able to capture in substantive amount⁷. Thus there may be possibility of uneatable distribution of benefits from CF among the forest user households. So this research tries to explore the magnitude of inequality by measuring skewness of distribution using the Lorenz curve and quantify the inequality using the Gini co-efficient in selected CFUGs.

Material and Methods

The study was conducted in the Kankali community forest of Chitwan district of Nepal in Feb-Mar, 2011. The study area is selected because, Chitwan district has more than 64 percent (1,42,422 hectare) area forest cover and sixty-nine community forests are already handed over to the community. The Kankali community forest is handed over to the community in 1995, which is spread in 752 ha and is being managed by the 1876 households. The Kankali CF is purposively selected because of the average performance in District forest office report, socio-economic heterogeneity among the CFUG members and good record keeping in system of wealth ranking and benefit distribution among the member.

Wealth ranking

The primary objective of the study is to know the magnitude and extent of inequality prevailing in several socio-economic classes in two CFUG households. Indeed, this research wants to assess quantity of CF benefits i.e. timber, fuel-wood and bedding material attained by poor class households of the society (Table 15.1). Therefore it is necessary to classify total households of CFUGs into three wealth ranking classes (Rich, Middle and Poor); wealth ranking is carried out in all two selected CFUG. All information about wealth ranking was gathered from community forest user groups Committee. Wealth ranking in the CF was carried out by using Participatory Rural Appraisal (PRA) technique. The criteria shown in the Table 1.was adopted to categorize the users households.

Sampling of CFUG member household

Based on the records of the selected CFUG, a sampling frame was made incorporating all households within the selected CFUG. Then according the proportion of wealth ranking exercise carried out in CFUG, from the sampling frame, 16 households of wealth- class (Rich), 58 of class II (Medium) and 46 (poor) of class III, 120 sample in all together were selected by using stratified random sampling method.

Table 15.1 Wealth ranking criteria adopted to categorize Users HH in the study area

Wealth group I (Rich class)	Wealth group II (Middle Class)	Wealth group III (Poor class)
1 Surplus cereals (12+) months	1 Year round foods ecurity	1 Seasonal or chronic food insecurity
1 15 kattha land	1 5-15 Kattha land	1 Lacking basic necessities
1 Monthly income is >Rs 20,000	1 Monthly income Rs 5,000-20,000	1 Sell>3 months of labour per year
1 Saving in the bank	1 No saving in the bank	1 < 5 Kattha land
1 Many HH assets, some luxuries	1 Non-gazette level service at least of a family member	1 Monthly income < Rs 5,000
1 No family members doing wage labour		
Number of household in wealth groups		
Rich	250	
Medium	907	
Poor	719	
Total	1876	

Data collection

Household survey was carried out to collect primary information from the users' HH using pre-tested questionnaire. The questionnaire was structured with questions to gather information on HH characteristics of respondents, income of HH from various sources, cost/ inputs of HH in various activities, quantity of major forest products consumed and sold in the market, wage rate, price of forest products. Informal discussion were carried out with different key informants; teachers, elder persons, local leaders and social workers to get the overall general information on CFUG and check the information collected with other respondents. The meeting with the CFUG executive committee was carried out before, during and after the household survey and focus group discussion was carried out on the issues and major questions arising during data collection, and to collect information on community level activities carried out by CFUG with their fund. Relevant and necessary

secondary information and records for this research study were collected from different published and unpublished literatures from different sources.

Household benefit from CF

The benefits derived by household from community forest were carried out by valuing the good collected and harvested from the forests. The monetary value of tangible benefits like firewood, tree fodder, cut grass, leaf litter, medicinal herbs and plants, timber were calculated based on the market value of each goods. Though there are possibilities of many promising forest products, only firewood, grasses, fodder and leaf litter were important benefits contributing the household economy in the study area. The methods deployed for valuing household income from CF in this study are as follows.

Data on distributions of benefits for all user households from the CFUG for a year was collected. For this period, total timber, fuel wood, grass and fodder harvested by each sample household is collected and monetization was done with the help of selling price of above mentioned goods in local markets. Formulae as presented below were used for the calculation.

(i) $IF = QF * PF$

Here, IF = Income from firewood

QF = Quantity of firewood (per bhari = 50 kg)

PF = Price of fire wood (Rs. 125/- per bhari)

(ii) $ITF = QTF * BGTPTF$

Here, ITF = Income from tree fodder/ bedding material

QTF = Quantity of tree fodder/ bedding material (per bhari 30-35 kg)

BGTPTF = Barter game price of tree fodder/ bedding material (rs. 25 /- per bhari)

(iii) $ILT = QLT * PLT$

Here, ILT = Income from log timber

QLT = Quantity of log timber (per Cft)

PLT = Price of log timber (Rs. 700/-per Cft)

Thus Gross income from forest product (GIFP = IF + ITF+ILT)

The data collected during the field works were categorized and analyzed. The data were logically interpreted along with simple tables,

charts and graphs. The quantitative data were analyzed using statistical tools like, frequency distribution, mean, standard deviation, percentage (to find out the forest dependency of sample household), and Lorenz curve & Gini co-efficient (to show the income inequality among the sample households).

Lorenz curve is a graphical representation of the proportionality of a distribution among a set of sources¹². These sources can be persons (as in the original use of the Lorenz curve), actors (a terminology often used in social network analysis), performers, authors, articles, and so on¹³. Economists or sociologists generally draw a Lorenz curve and calculate the Gini coefficient based on income data of a group, a city or a country. The value of Gini coefficient (from 0 to 1) reveals the degree of income inequality (from complete inequality to complete equality). There is tremendous amount of research on the relationship between the degree of income inequality on one hand, and social development and economical growth on the other hand. The departure of the line below the line of equality (straight line) in the Lorenz curve shows the inequality (diagonal line) to the household income. Farther the line from the line of equality, greater is the inequality it represents. Lorenz curve for two CFUGs for total household income, total household income except income from community forest and income from community forest were plotted.

Results

Socio-economic characteristics of the respondents

Since brief explanation of socioeconomic features helps to understand the overall scenario of the study area, the socioeconomic characteristics such as caste base, sex, occupation, literacy rate, age of household head, household members, land holding by household etc were analyze and presented here.

As this study was focused on the financial aspects of household income and cost attributed to community forest (CF) activities and other household activities, socio-economic characteristics of the respondents give quick understanding of the scenario of socio-economic condition of the users in the study area. Detail of the socio-economic characters of respondent is given in Tables 15.2 and 15.3.

Table 15.2 Ethnic characters of respondents

Ethnic composition	Number	Percentage
Brahmin and Chettries	64	53.33
Ethenic group	32	26.67
Dalits	24	20
Total	120	100
Sex Ratio		
Male	50	41.67
Female	70	58.33
Total	120	100
Age group (years)		
4< 35 years	44	36.67
36-55 years	56	46.67
>55 years	20	16.66
Total	120	100
Family Size		
Small (<5)	32	26.67
Medium (5-6)	62	51.67
Large (>6)	26	21.6
Total	120	100

Income of users' household

The rural household economy in Nepal depends on the income from various sources. Table 15.4 describes the importance of income from various sources, including community forest, in studied CFUG non-farm source of income (income from both in-country and foreign services) was the major income source, which contributes more than 60 percent to the total household income. The major share from non-farm sources may be because of high rate of foreign employment as 27 percent of households in study area reported out-migration for employment (especially to Gulf countries).

Annual average income per household for different household categories

The households in different categories had different levels of annual income because their wealth level was directly related with their income level. The annual average income from different sources per household according to the household categories is shown in Table 15.5.

It could be inferred that the annual average income of poor household in Kankali CFUG was NRs. 77991 and that of middle and rich were NRs. 251057 and NRs. 391005 respectively. It is found from

the result that, poor household are getting lower income from all the sources and income from community forest is not far away from this trend.

Table 15.3 Occupational characters of respondents

Occupational status	Number	Percentage
Agriculture	64	53.33
Private job	16	13.33
Wage labor	14	11.67
Business	8	6.67
Government jobs	10	8.33
Others	8	6.67
Total	120	100
Size of holding		
<10 Kaththa	56	46.67
10.1 kaththa - 20 kaththa	46	38.33
>20 kattha	18	15.00
Total	120	100
Educational Status		
Illiterate	22	18.33
Primary	46	38.33
Secondary	44	36.67
Collegiate	8	6.67
Total	120	100

Table 15.4 Annual average income per sample household in terms of income sources (In NRs.)

Sl. No	Income Source	Amount	Percentage
1	Agriculture	47486	23.35
2	Livestock	20042	9.85
3	Non- Farm Income	123323	60.64
4	Community Forest	12524	6.16
	Total	203375	100.00

Note: US\$1= NRs.72 (February 2011)

Contribution of community forest income to users' household

Community forest is one of the major sources of fodder, fuel wood, timber and leaf litter to the users. Besides, community forest provides several indirect benefits to the users' household such as water, fertilizers, etc. In this study area, it was found that most of the forest products derived from the community forests are consumed in the household and not sold outside the CFUGs.

In this study, forest income implies the income derived from the use and sale of forest products from community forest. In the studied

CFUG no alternative forests other than community forests was used by the users to collect various forest products. Income from forest was, therefore, the monetary value of the products consumed and sold by the users. The annual income per household from community forest is presented in Table 15.5.

In Kankali CFUG, a rich class household derived an annual average of NRs. 19568, where as a middle class household derived NRs. 14469 and a poor class household derived NRs. 7622 from the forest. The total average income from the use of forest products was NRs.12524. Table 4 shows that poor class households were getting low gross income from community forest than the rich class households. The reason behind this might be the fact that the poor households had less land and livestock ownership and so used less quantity of fodder, leaf litter and grass. Also the poor class households used very low quantity of timber. The middle class households, as they had larger number of livestock, used more amount of forest products from CF. Rich households used more timber than other two classes of user households, so, they were getting more gross income from CF. The findings were similar to that of Adhikari⁵ and Richards et al.¹⁴ in case of poor households which confirmed that poorer households were currently benefiting less from CF mainly because they had less livestock and farmland, which provides the main demand for forest products as inputs.

Contribution of community forest income to the household income of the sample households from Kankali CFUG is shown in Table 15.6. It was found that rich households were getting five percent of total household income from community forest; middle class households and the poor class households were getting around six per cent and eight per cent of total household income respectively from community forest.

Table 15.5 Income from different sources for different groups of respondents

Household Category	Rich	Medium	Poor	Average	p-value
Agriculture	135387 (34.63)	54609 (21.75)	7930 (10.17)	47485 (23.35)	0.00 ^a
Livestock	44800 (11.46)	24931 (9.93)	5265 (6.75)	20042 (9.85)	0.00 ^a
Non-farm income	191250 (48.91)	157048 (62.55)	57174 (73.31)	123323 (60.64)	0.00 ^a
Community forest	19568 (5.00)	14469 (5.76)	7622 (9.77)	12524 (6.16)	0.00 ^a
Total	391005 (100)	251057 (100)	77991 (100)	203374 (100)	0.00^a

Note: Figures inside the parenthesis indicate percentage to total.

^a shows p values derived from Kruskal- Wallis equality of population rank test with 2 degrees of freedom

Measuring income inequality between household categories

The measurement of dispersion of tangible benefit within selected two CFUG was our core objective. What kind of inequality of distribution of timber, fuel wood and bedding material was occurred? How far (sharp or smooth) and to what extent of distributional inequality be observed in those selected CFUGs? These were our research problems to be solved. Thus finding the extent of inequality was our prime concern. As shown in the Table there is a clear gap in the total household income generated from community forest within three categories of households.

The household income of a household was the sum of the income from different sources as described above. The income inequality of the household could be shown by drawing the Lorenz curve and calculating the Gini coefficient. The departure of the line below the line of equality (straight line) in the Lorenz curve shows the inequality (diagonal line) to the household income. Farther the line from the line of equality, greater is the inequality it represents. Figure 1 represents the Lorenz curve for household income of Rich, Middle and Poor categories for both the cases of inclusion and exclusion of CF income and total forest income. In this study we had applied two methods for measuring the inequality, they are:

Lorenz curve

The income inequality of the household could be shown by drawing the Lorenz curve and calculating the Gini co-efficient. The departure of the line below the line of equality (straight line) in

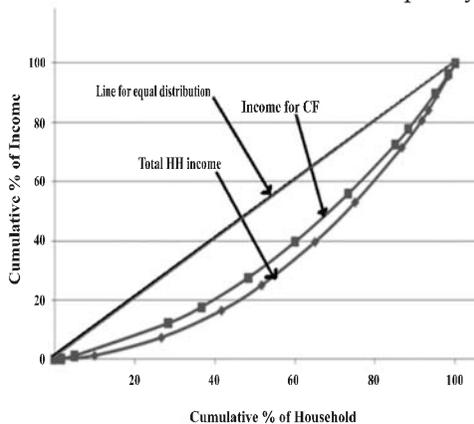


Fig 15.1 Lorenz Curve for total income and income from community forest

the Lorenz curve shows the inequality (diagonal line) to the household income. Farther the line from the line of equality, greater is the inequality it represents. Lorenz curve for total household income and income from community forest were plotted.

The Lorenz curves for the Kankali CFUG are shown in Figure 15.1. From the figure it could be depicted that there was presence of inequality in income distribution. According to Figure 1, it could be inferred that the total household income was more unequally distributed than income from community forest only. The Lorenz curve for the total household income was far from the line of equality as compared to the Lorenz curve for the income from community forest. Even though the inequality was less in case of the income from community forest still there was presence of inequality in income distribution. From the Figure 15.1, it is clear that the Lorenz curve for income from community forest is near to line of equality than the Lorenz curve for total household income.

Gini co-efficient

Gini co-efficient is a measure of concentration derived from Lorenz curve. As the degree of concentration in the concerned variable increase, so does the curvature of the Lorenz and thus the area between the Lorenz curve and equal distribution line becomes larger. It averages when the inequality of distribution increases, the gap area between Lorenz curve and equal distribution line (i.e. line of 45°) increases so on. Thus Gini coefficient (G.C.) is the ratio between the areas between 45° line & Lorenz curve and total area below the 45° line. If the Lorenz curve coincides on the 45° line, the value of G.C. is Zero i.e. there is equal distribution of concerned variable, whereas, if the Lorenz curve covers the whole area below the 45° line. G.C. will be equal to unity i.e. there is higher inequality in the distribution of variable concerned. Table 15.6 shows the Gini coefficients for studied CFUG, for total household income, household income excluding the income from community forest as well as total household income from community forest.

Table 15.6 Gini co-efficients of incomes from different sources in selected CFUG

CFUG	Total HH* Income	Total HH income excluding Income from CF	HH Income From CF
Kankali Community Forest User Groups	0.48	0.53	0.29

* HH = Household

Table 15.6 shows that the Gini co-efficient for income from three different sources of household income in sampled household. From the

table it is clear that, the total HH excluding income for CF has more unequal distribution with highest Gini-coefficient of 0.53. The Income from the CF is more equally distributed among sample household with the Gini-coefficient of 0.29 only. The Gini-coefficient for total household income is 0.48, which is little less than that of excluding income from CF. So it can be inferred that, income from the community forest has significant role in reducing the level of inequality in case of the study area.

Conclusion

Efficiency in utilization and management of scarce natural resources by engaging local people through Community Based Natural Resource Management System seems to be higher than the central and state level administrative capabilities, when provided full authorities and responsibilities to the communities at the local level. Nepal is one such country where CBNRM has proven its potential in last few decades. But the scope and importance of CBNRM has not been realized because of complexities involved in obtaining data and employing appropriate evaluation techniques.

From the study, the following observations and conclusions were made: (1) Agriculture provides employment to more than half of the sample respondents (53.33 percent) followed by private jobs (13.33 percent), wage labour (11.67 percent); (2) But in terms of income, it is the non-farm sector which provides highest annual income to a household (60.64 percent of annual income per household). Out-migration towards various countries was the sole reason behind this scenario; (3) They are the rich households who attain more benefits from community forests than the poor (in absolute terms). It can be explained through the out-migration tendencies of poor than the rich; (4) Though the benefits from community forests are skewed among different wealth groups, comparing with total income distribution it is less skewed. It was concluded by the estimates of gini values which was much lower for income from community forests alone than the total income or the income excluding benefits from community forests. So, we can conclude that community forestry provides substantial income to all groups of people and CBNRM has to be encouraged at different parts of the country. It can also be considered as a tool for curtailing inequality in income distribution among the people.

DECENTRALIZED PLANNING: EXPERIENCE OF WEST BENGAL PANCHAYATS

Sujit Kumar Paul

Introduction

Decentralization means the transfer of authority, legislative, judicial or administrative, from central to intermediate to local governments. There are four types of decentralization¹ i.e. *Deconcentration*: some administrative authority or responsibility handing over to lower levels within the government ministries, *Delegation*: transfer of responsibility for defined function to organizations that are outside the regular bureaucratic structure and are only indirectly controlled by the central government, *Devolution*: creation and strengthening of sub-national units of the government, activities of which are substantially outside the direct control of the central government; and, *Privatization*: passing all responsibilities for functions to non-governmental organizations or private enterprises independent of the government. The term 'decentralization' has generally been used to refer to a variety of institutional reforms. It has sometimes been considered as a change in the organizational framework in which political, social and economic decisions are made implemented. Gandhiji's idea about gram swaraj is very appropriate and timely in present context. Gandhiji's political philosophy on gram swaraj is now come into existence in the form of gram panchayat which is very effective instruments of grassroot governance and participative development. We know from our India history that there was village panchayat which was responsible for local problem solutions within the village area. In Vedic era there was "panchayat" means a group of five people who were selected by the villagers and they were responsible for local governance. 'sabha', 'samiti', and 'Vidath' term is mention in the *Rigveda* as local self units. The Ramayana and the Mahabharata both indicates about local self governance in Epic Era. Some term like gram, Maha gram, Ghosh are mention in the Ramayana. 'sabha' and 'samiti' played a vital role in controlling the decisions of the king stated in Kautilya's Arthashastra. Neeti Shastra of Shukracharya also mentions village governance during Ancient period. In Sultanate period, sultans divided their kingdom in to provinces like 'Vilayat', 'Amir'. Village was the smallest unit and had

sufficient powers for local self governance. panchayats were prevalent in villages in the Medieval period. According to S.R. Maheswari, the beginning of local government can be presumed from 1687, when the Madras City Corporation was established. The British period was divided into four time line i.e. 1687- 1881: local government was established to share the burden of resources of the central and provincial governments, 1882- 1919: local Governments was seen as local self government, 1920-1937: local government was established and people's representatives were controlling the provincial administration and 1938- 1947: local government was in the state of rejuvenation and reconstruction². After Independence, Village panchayats get included in Indian Constitution. According to Article 40 of the Indian constitution "The state should take steps to organize Village panchayats and endow them with such power and authority as may be necessary to enable them to function as units of self government." Rajasthan was the first state where panchayati Raj was established in 2nd October, 1959. After that almost every state established the panchayati Raj Institution as a unit of local self governance.

The 73rd Amendment Act has made panchayats an institution of self-government. Article 243/G of the constitution envisaged panchayats as Institute of Self Governance (ISG), which means they should enjoy functional, financial and administrative autonomy in their working area. As per the constitution, panchayats shall prepare plan for economic development and social justice at local level. The District Planning Committee shall integrate the plan so prepared with the plans prepared by the urban local bodies at district level.

The success and failure of the panchayats would depend on planning and implementation. It also depends on maximum people's participation at every stage of planning process, from proposal to implementation. People's participation in local level development has been exercised through the formulation of the panchayat level development plan, project coordination at intermediate and district levels of the panchayats.

In West Bengal the gram panchayats have been given more powers in comparison with powers given to the Block/District panchayats. They have 14 obligatory and 21 assigned functions, apart from a large number of discretionary functions. The gram panchayats have full power to approve works. The panchayat samities also perform a large variety of functions related to 18 sectors. The Zilla Parishads have a wide range of administrative and financial powers. They are delegated with all the functions of 29 sectors under schedule XI with 17 other items and 24 departmental schemes for implementation.

Study Area

The panchayati Raj Institution in West Bengal is very strong body, which function as real institutions of self governance. In the present study, attempts have made to discuss the methodology of decentralized planning and its current status in Birbhum District of West Bengal. This district is one of the backward districts of west Bengal. For the present research work, field investigation has been carried out in two gram panchayats, one is Ruppur gram panchayat of Bolpur-Sriniketan block considered as advanced gram panchayat and another one is Rajnagar gram panchayat of Rajnagar block which is considered as a relatively backward gram panchayat. The area of this district is 4545 sq. km, with a population of 30, 125, 46^a. Agriculture is an important source of income in this district and it contributes near about 33 percent of GDP in Birbhum. This district registered 11.5 percent growth rate in agriculture, which is little higher than the state level³. In Birbhum, more than 91 percent of people are living in rural areas. In term of development, Birbhum is ranking 9th and as per HDI, Birbhum is ranking 14th among the districts in West Bengal. Low per capita income, poor HDI ranking, inadequate transport & communication network, inadequate basic public goods, low rainfall & prone to recurrent drought, low cropping intensity, vast fallow land, low literacy, high infant mortality are the special feature which have a great impact in preparation of developmental plans.

Panchayati Raj Institution in Birbhum

Under Birbhum Zilla Parisad there are 19 panchayat samitis and 167 gram panchayats. To perform all kind of developmental works properly each gram panchayat constitutes gram sansads in their respective panchayats. There are 2138 numbers of gram sansads in this district. The termination period of a panchayat board is five years. At present in the Birbhum district there are 35 seats at Zilla Parisad, 422 at panchayat samitis and 2258 at gram panchayats. As per 2003 election there were 1547223 voters in this district.

Methodology of Decentralized Planning in West Bengal

In West Bengal, the planning process of grass root level has some stages from proposal to implementation. At first, local area plans are prepared by gram unnayan samiti and those plans are submitted in the gram sansad meeting. Then all local area plans of all gram sansads come into the gram sabha. gram sabhas are convening to identify the problems of development and identify the local needs. Special efforts

^a Census 2001, Govt. of India

are made for ensuring participation of the people. The most important guideline is to hold group-wise discussion in each gram sabha according to various development sectors. After the identification of the felt needs in the gram sabhas, the next step in the planning process is to make an objective assessment of the natural and human resources of the locality. The reports of the gram sabha discussion, including list of problems identified are consolidated for each development sector in the panchayat. After getting the final plan from panchayats, the panchayat samiti and zilla parishad started preparing their annual plans. The plan proposals were consolidated at the district level and integrated with the Municipal plans. The task force constituted by the District Planning Committee (DPC) for the purpose has evolved broad strategy for district level development. The district plan is nothing but only the synthesis of the village plans. At present the rules favour the implementation of planned activities by the zilla parishad. The DPC forwards the integrated development plan for rural and urban areas of the district to the State. The State Planning Board is the state level-coordinating agency for planning.

Current Scenario of Birbhum District Planning

The state government of West Bengal decided for decentralized planning from the seventh five-year plan period. In the 80s' the block level planning and district level planning was formulated and implemented. To implement and formulate the district level plans, district planning committee was reformed after 73rd and 74th Amendment. For huge people's participation gram sabha and gram sansad also created in this district. As per state cabinet (1999) the department of planning and development released an order (Memo no. 1415/P/2M-6/99 dated 24.05.1999) to allocate of untied fund for implementation of the district plans at the district level. Now the village level plans are prepared by the gram unnayan Committee (Village Development Committee). Those plans are finalized in the gram sansad meeting. In the gram sabha meeting the final consolidated plans at panchayat level are prepared from all the sansad level Plans. Action plans prepared by the gram panchayats are integrated into Block Plans and again integration the same into the District Plans and incorporating therein the District Sector Scheme and District Plans are formulated. The planning structure of West Bengal has four levels for consolidation.

Now the state government divided the budget for the plans into two segments, one is State Sector Scheme and another one is District Sector Scheme. The District Planning Committee after discussion with the State Government had decided some area for development and planning like – 1. Area Specific Agricultural Product, 2. Extension of technical services, storage and marketing facilities,

3. Minor irrigation, 4. NREGA, 5. Social Forestry, 6. Animal husbandry etc.

Findings and Results

Ruppur gram panchayat is situated 3 kms away from nearest town Bolpur and 4 kms from Santiniketan. The area under the Ruppur gram panchayat is 9293 acres. It covers 42 villages. Total population of this panchayat is 26895 as per 2001 census. On the other hand Rajnagar gram panchayat is situated 24 kms away from the district town Suri and 58 kms away from Bolpur and area covered by 34.81 sq. km by 17 villages. Total population of this panchayat is 16459 as per census 2001. All the welfare and development functions in the rural areas are given to the gram panchayat yet it has been given only a few small independent sources of income. gram panchayat depends primarily upon the higher panchayat bodies for necessary funds to perform. The situation invariable has made the gram panchayat an agent of an appendage to the higher panchayat bodies and the State Government. There are 21 panchayat members in the 21 gram sansads in Ruppur gram panchayat where as 14 panchayat members in 11 gram sansad in Rajnagar gram panchayat.

Table 16.1 Political representation in Ruppur and Rajnagar gram panchayat

Political representation	No. of Members in Ruppur gram panchayat	No. of Members in Rajnagar gram panchayat
Left front	19 [18-CPI(M), 1CPI]	8 [CPI(M)]
TMC	1	3
Congress	-	1
BJP	1	2
Total	21	14

Source: primary data computed from panchayats.

Out of the 21 panchayat members in Ruppur gram panchayat, 19 members are from Left Front [18 - CPI (M), and 1-CPI], one member from Trinamul Congress, and one from BJP. Out of 21 panchayat members, 10 are SC (5 male and 5 female) all 3 ST members are male and the rest 8 members (6 male and 2 female) are general caste category. Among panchayat members 3 are engaged in teaching, 2 are cultivator, 1 engaged in govt. service, 6 are labourer, 5 are housewives and the rest 4 members are engaged in other activities. Out of 7 female members, 5 are housewives and 2 are labourer. In connection to the education of the members, out of 19 Left Front members, 10 members can only draw their signature, 6 members studied up to primary level, 2 members continue their studied up to secondary level and only one member who completed graduation. The representative from Trinamul Congress can

put signature only and the BJP representative completed his post Jgraduation.

On the other side, out of 14 panchayat members (6 females and 8 males) 8 members from CPI(M), 3 members from Trinamul Congress, 2 members from BJP and one members representing from Congress. Out of these 14 members 5 members are belonging from Scheduled Caste (4 females and 1 males), one Seheduled Tribe member and rest 8 members came from general caste category (2 females and 6 males). This panchayat is headed by a female member who can only write her signature. Only one TMC member who completed his graduation. Two members crossed madhyamik (school final) level and four members studied up to secondary level but below madhyamik and rest 6 members stopped their education in primary level. Among the 6 female members one is working as governance in a private primary school, one member work as agricultural labour and another four members are housewife. Out of 8 male members 5 members are small farmers, one LIC (I) agent, one member is working as a casual labourer and rest one member completely engage in politics.

For the present research work, I have selected four-gram sansads from each gram panchayat for detail study on simple random sampling basis. Those gram sansads are Ruppur/I/128, Ruppur/VII/134, Ruppur/XIII/140, and Ruppur/XIX/146 from Ruppur gram panchayat and Khodaibag, Barobazar, Sakirpara and Kastogara from Rajnagar gram panchayat. Table 16.2 and 16.3 show the people's participation and percentage of people's participation in gram sansad meeting.

People's participation plays an important role for successful decentralized planning process. The above mentioned tables show that the participation of both female and male are very low, which is not desirable in decentralization. Most of the meeting dissolved for the first time due to lack of Coram. But it is clear from above mention two tables that the condition of advanced gram panchayat is comparatively better than the relatively backward gram panchayat. In Rajnagar gram panchayat most of the record about gram sansad meeting is missing from the panchayat. Either meetings are not holding properly or members are till indifferent about the importance of gram sansad meeting. The PRIs have a significant role to empower as well as develop the rural people. But in reality due to low awareness among the villagers and workload among both men and women the participation in the development process is very low. Here women participation is less than 33 percent. Due to low people's participation the planning process hampered at sansad level.

Gram sabha has another important role in decentralized planning process. Gram panchayat makes final plans in the presence of all adult voters of that panchayat. But here also the participation is very low in compared to the total voters of these two panchayats. The table 16.4 shows the people's participation at the gram sabha meeting.

Table 16.2 Constitution and composition of Ruppur gram panchayat

Gram sansad	Total Voters	Total Attendance			Female Attendance		
		Nov-Dec.' 2006	May-June' 2007	Nov-Dec' 2007	Nov-Dec.' 2006	May-June' 2007	Nov-Dec' 2007
1 Ruppur/I/128	1032	56 (5.42)	146 (14.15)	61 (5.91)	9 (16.07)	35 (23.97)	23 (37.70)
2 Ruppur/VII/134	302	27 (8.94)	26 (8.60)	51 (16.88)	5 (20)	5 (19.23)	10 (19.60)
3 Ruppur/XIII/140	887	104 (11.72)	103 (11.61)	102 (11.49)	22 (21)	20 (19.41)	33 (32.35)
4 Ruppur/XIX/146	432	72 (16.6)	98 (22.68)	46 (10.64)	34 (46)	22 (22.44)	7 (15.21)

Figures in the parenthesis showing the percentage.

Table 16.3 Constitution and composition of various gram sansads

Gram sansad	Total Voters	Total Attendance			Female Attendance		
		Nov-Dec.' 2006	May-June' 2007	Nov-Dec' 2007	Nov-Dec.' 2006	May-June' 2007	Nov-Dec' 2007
1 Khodaibag	913	105 (11.50)			43 (40.9)		
2 Barobazar	1601	80 (4.99)	81 (5.05)		25 (31.25)	21 (25.92)	
3 Sakirpara	1472						
4 Kastogara	1042	105 (10.07)	102 (9.78)	104 (9.98)	12 (11.42)	3 (2.94)	19 (18.26)

Figures in the parenthesis showing the percentage.

Table 16.4 Constitution and composition of gram panchayats

Name of gram panchayat	Voter	Total			
		31/12/2006		31/12/2007	
		Attendance	Female Attendance	Attendance	Female Attendance
Ruppur	14560	786 (5.39)	364 (46.31)	668 (4.58)	286 (42.81)
Rajnagar9895		391 (3.95)	36 (9.20)	401 (4.05)	68 (16.95)

Figures in the parenthesis showing the percentage.

For the success of the decentralized planning, the people have to realize their roles and responsibilities. In Ruppur gram panchayat special arrangements like bus for traveling, cultural programme etc. are made for the members (voters) to bring them into the gram sabha meeting. But still the participation is less than the expectation. On the other hand, in Rajnagar gram panchayat female participation was very low. We have conducted group discussions on the above sansad areas for better understanding of the causes of less participation in the gram sabha and gram sansad meeting. At the time of both gram sabha and gram sansad meeting people are engaged themselves in daily chores. Sometimes there is a lack of proper information about the date and time of meeting. Mostly, villagers are not aware about their role in planning and implementation process. The villagers are not interested to participate in the development process because the plans prepared by them are implemented very rare. On the other hand political involvement in the entire planning process is also hampering the decentralization. At the time of planning and implementation, priority is given on the basis of political involvement of that area. Some influential persons speak in the meeting and they just ignore common people's opinion. Middle and upper class villagers are simply not interested to attend the meeting because they think that the government programmes mainly in favour of marginal or poor community. Most of villagers think that the panchayati raj institution is nothing but ruling party's institution. In Rajnagar gram panchayat, the members of panchayat are also not interested to invite more number of people to the gram sabha and gram sansad meeting.

Funds for decentralized planning at district level, block level and panchayat level comes from (i) local body's own income, (ii) funds from the state government and (iii) various government sponsored programme on cost sharing between central and state government. To implement the micro level plan at micro level it is necessary that there is an uninterrupted flow of funds to gram panchayat. But still this system has not been strengthening through the planning commission. The process of financial devolution, the panchayats still depend on state government for funding. The untied funds are very limited in respect of plans. The scope for resource generation is also very limited. The allocation of fund is also insufficient. Table 16.5 shows the scheme wise planned and allotted fund. From table nos. 16.5 and 16.6, it is clear that there is a financial crisis to implement the prepared plans. Another Table 16.6 shows the expenditure level of these two panchayats on various schemes.

Due to lack of proper infrastructure, sometime panchayats are unable to utilize the entire fund. There are so many problems in implementing the plans at grass root level. Poor quality of plans lack of infrastructure, Administrative and bureaucratic interference, local political problem all are constrains in the way of plan implementation.

From this table it is clear that the expenditure level of advanced panchayat is comparatively high than the relatively backward panchayat.

Table 16.5 Scheme wise planned expenditures and amount received by gram panchayat during 2006-07 and 2007-08

Sl. No.	Scheme	Planned for (2006-07)		Amount received (2006-07)		Planned for (2007-08)		Amount Received (2007-08)	
		Ruppur gram panchayat	Rajnagar gram panchayat	Ruppur gram panchayat	Rajnagar gram panchayat	Ruppur gram panchayat	Rajnagar gram panchayat	Ruppur gram panchayat	Rajnagar gram panchayat
1	NREGA	4,15,75,117	3,00,00,000	1,46,16,887	52,00,000	8,70,64,446	1,38,24,147	1,78,28,897	5,27,10,47
2	12 th FC	22,00,000	71,00,000	12,47,857.54	60,16,300	25,86,434	6,70,000	18,42,592.84	3,07,067
3	UNTIED FUND	26,00,000	3,00,509	5,95,952.50	3,14,219	38,00,000	82,500	46,276	3,14,219
4	OWN FUND	45,00,000	15,4200	37,94,038	88,493	22,74,268	34,7500	24,93,054	1,20,537.25

Source: Ruppur and Rajnagar gram panchayat

Table 16.6 Scheme wise receipt and expenditures of two gram panchayats during 2006-07 and 2007-08 (in Rs. 00000)

Sl. No.	Name of scheme	Ruppur gram panchayat				Rajnagar gram panchayat			
		Total Receive (in Rs.) 2006-2007	Expenditure (in Rs.) 2006-2007	Total Receive (in Rs.) 2007-2008	Expenditure (in Rs.) 2007-2008	Total Receive (in Rs.) 2006-2007	Expenditure (in Rs.) 2006-2007	Total Receive (in Rs.) 2007-2008	Expenditure (in Rs.) 2007-2008
1	NREGA	146.17	137.32	178.29	178.26	531.26	441.55	616.81	51.50
2	SGRY	6.30	6.22	0.09	-	1.23	0.89	-	-
3	12 TH FC	12.48	5.31	18.43	18.42	8.51	0.20	11.37	8.34
4	UNTIED	5.96	5.49	0.46	0.01	8.55	6.69	4.93	1.14
5	IGNOAPS	9.13	2.29	27.88	23.09	1.31	1.23	16.24	15.74
6	IAY	19.89	13.80	10.18	0.64	6.85	6.44	1.17	1.13
7	SRD	0.95	0.68	13.19	0.11	6.75	5.75	1.40	0.90
8	INDO JARMAN	9.91	9.88	8.42	0.01	0.00	0.00	0.00	0.00
9	PUP	0.00	0.00	4.26	4.26	0.00	0.00	0.00	0.00
10	OWN FUND	37.94	23.88	24.93	23.71	0.88	0.97	1.21	1.00

*Total Receive=Previous year's balance + amount received + bank interest

Scheme wise planning and implementation in Ruppur and Rajnagar gram panchayats

There are lots of constraints on implementing the plans in the village level. The major objective of the decentralization is effective

people's participation in plan programme and proper planning and implementation. In the sansad level, the villagers are taking plans but implemented rare. Following table shows the implementation level of plans in respect of plans undertaken.

Table 16.7 Scheme wise planned and execution by gram panchayat during 2006-07 and 2007-08

Sl. No.	Name of the Scheme	Ruppur gram panchayat		Rajnagar gram panchayat	
		Plan taken/ Plan implemented in 2006-07	Plans taken/ plans implemented in 2007-08	Plan taken/ Plan implemented in 2006-07	Plans taken/ plans implemented in 2007-08
1	NREGA	138/60	283/102	45/41	64/43
2	12 th FC	7/1	8/3		11/3
3	UNTIED FUND	6/2	7/0	13/19	14/5
4	OWN FUND	9/3	6/2	9/2	7/2

National Rural Employment Guarantee Act is a major activity for panchayats. In Ruppur gram panchayat only 60 plans under NREGA have implemented out of 138 plans in the year 2006-2007 and 102 plans have implemented out of 283 plans in the year 2007-2008. Rest of the plans is untouched due to fund deficit and poor infrastructure of the panchayat with limited resource. In 2007-08 this gram panchayat have not received any untied fund. That is why this year this panchayat was unable to implement any plan, which was taken under the untied fund. In case of 12th finance commission and own fund there also due to unavailability of full fund, panchayat was unable to success implement of undertaken plans for the both two financial year. In 2007-2008 own fund amount was satisfactory than 2006-2007 but the plan implementation ratio are same in both two year. In case of Rajnagar gram panchayat numbers of implemented plans are comparatively more than Ruppur gram panchayat. This panchayat expanded small amount to cover all plans. On the other hand Ruppur gram panchayat expanded as per necessary for those particular plans.

From this study it is clear that yet the planning process is a Bottom- Up approach but the implementation process is continued to be Top-Down approach.

There are lots of factors which are hampering the decentralization process like local level political interference on the whole process of Planning and implementation, low demand from the grass root level people, low peoples' participation, limited fund to implement any plans and availability of fund at the fag end of the financial year, administrative and bureaucratic willingness is rare, ambitious and poor planning without considering the available resources, lack of Awareness of the members, lack of technological

know-how, proper budget estimation is not done institution cost carried from the programme cost and do not submit utilization certificate in time by the panchayat office.

Conclusion

Successful planning and implementation of development programmes require adequate funds, appropriate policy framework and effective delivery mechanism with healthy environment for decentralization. After 73rd and 74th Amendment the Government is trying to change in planning process by adopting bottom up approach. Financial limitation, low peoples participation local political influence in administrative decisions are creating barriers in the way of success of decentralization and bottom up planning process. Implementation process is continued to follow top down approach. So, most of the time, plans prepared by the villagers are not implemented properly at grass root level. Through this study, it has been observed that the plans are good on paper but are rarely good in implementation.

COLLECTIVE ACTION FOR FOOD SECURITY FOR THE TRIBAL POOR: CASE STUDY OF COMMUNITY GRAIN BANKS

Edakkandi Meethal Reji

Introduction

Ensuring food and nutrition security is a great challenge for India, given its huge population (1.2 billion) and high levels of poverty and nutrition deficit among the population. Despite one of the largest producers of agricultural products, fruit and vegetables, cereals, and milk; food insecurity for a large section of population, especially tribal community is a major issue in India. Economic access to food for about one-fourth of the population, who are living below the poverty line, is a challenging issue in the country. The level of food absorption is also very low. The food and nutrition insecurity in the country is evidenced from the outcomes of the most recent National Family Health Survey (NFHS-III) conducted in 2005-06. According to this report, almost one in two (46 percent) of the children below three years are underweight; one-third (33 percent) of women and 28 percent of men have a Body Mass Index (BMI) of below normal; 79 percent of the children aged 6-35 months have anemia, as do 56 percent of every married women aged 15-49 years and 24 percent of similar men; and 58 percent of pregnant women¹.

Tribal communities are one of the most poorest and vulnerable population in India. The Tribal habitations are located mainly in remote areas and in hilly tracts. Their food security is threatened by the effects of changing climatic conditions, unsustainable land use and cropping patterns, declining levels of water resources and unprofitability of small scale farming. Although there are several constitutional safeguards through specialized programmes for F improving the living conditions of the tribal population in India, most of them still live in extreme poverty.

Given the context of failure of many of the programmes targeted for development of Tribal population such as targeted public distribution system, and other social safety net programmes for providing food security for the tribal communities, this paper deals

with the question, can grass root level experiments like community grain banks provide food security for tribal communities? In order to answer the above question, this paper examines the functioning of village level community grain banks facilitated by Bapuji Rural Enlightenment and Development Society (BREDS), a Non-Governmental Organisation based in Srikakulam district of Andhra Pradesh, in India. The paper describes the issues in food security and a review of various government and NGO initiatives in food security for the poor. This is followed by the description of the experience of the BREDS in organising community food grain banks and key learning. The paper concludes that community food grain banks facilitated by BREDS demonstrate as an effective mechanism to ensure food security for the tribal poor, especially for those who were excluded from the reach of government programmes. The concept of grain banks is built on the traditional practice of thrift and savings in food grains among the tribal groups. The experience also suggests that participation in grain bank groups had helped the community members expand their livelihood through various income generating activities and increase trust and confidence among them and reduce the dependence on money lenders.

Food Security in India

Despite having a total food grain production at 220 million MT with a per capita food grain availability of 480 gm per day² and implementation of several safety net and social security programmes such as targeted public distribution system, mid-day meals, integrated child development schemes etc.; food insecurity for the poor especially in tribal areas is still a very crucial problem in India. Recent reports of the Food and Agricultural Organisation (FAO), reveals that nearly 240 million out of 925 million undernourished people across the world live in India³. India ranks 94th in the Global Hunger Index (2010) brought out by the International Food Policy Research Institute⁴. Further, the India state Hunger Index developed by International Food Policy Research Institute (IFPRI) reveals wide gap in the index scores across 17 major states, ranging from 13.6 for Punjab to 30.9 for Madhya Pradesh⁵. The report also mention that, if these states are compared with the countries in the recent Global Hunger Index rankings, some states in India have index scores at the bottom: Bihar and Jharkhand rank lower than Zimbabwe and Haiti; and Madhya Pradesh falls between Ethiopia and Chad⁶.

Various conceptualizations and approaches in food security focused on i) the concerns towards building up national and global food stock⁷, ii) entitlement approach⁸ - which recognize that a mere physical availability of food does not ensure access to that food to all people; and iii) the intra household distribution and allocation of

food⁹ - a shift in focus from national and household level food security to individual level food and nutrition security. India's food security status cannot be judged from the status of food grain production alone. Following the FAO declaration in 1996, which states that 'food Security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life'¹⁰ and several refinements on conceptualizations on food security and country level experiences around the world, food security is understood in terms of not only food availability, but also economic access to food and the biological absorption of food in the body¹¹. The food and nutrition insecurity in India has largely been examined in the literature from two angles: i) intake, primarily intake of calories obtained from data on consumption of food; and ii) outcome; reflected in anthropometric measures like stunting, wasting etc.¹² The report of the National Sample Survey Organization (NSSO) reveals that, the average daily intake of calories of rural population has dropped by 106 kcal (4.9 percent) from 2153 kcal to 2047 kcal from 1993-94 to 2004-05 and by 51 kcal (2.5 percent) from 2071 to 2020 kcal in urban areas. The average daily intake of protein by the Indian population decreased from 60.2 to 57 grams in rural India between 1993-94 and 2004-05 and remained stable at around 57 grams in the urban areas during the same period¹³. In terms of outcomes reflected on anthropometric measures the conditions are still worse. Almost one in two (46 percent) of the children below three years are underweight; one-third (33 percent) of women and 28 percent of men have a Body Mass Index (BMI) of below normal; 79 percent of the children aged 6-35 months have anemia, as do 56 percent of every married women aged 15-49 years and 24 percent of similar men; and 58 percent of pregnant women¹.

Further, household level food insecurity are affected by ownership of poor quality of land or no land, distress sale of productive assets, livestock and valuable assets like jewellery, indebtedness, heavy dependence on wage employment, few income earners in the family, accepting attached labour positions, migration in search of work and using inferior quality of food. Clearly, most of the indicators of food insecurity at the household level are linked to poverty. In order to combat the problem of undernourishment and food insecurity, as evidenced from the reports and studies mentioned early, the national government had initiated several measures which include: supply of food grain at subsidized rate through public distribution system outlets, food for work programme, mid-day meals programme for school going children, targeted public distribution system in tribal areas, supply of food grain at free of cost to the select poorest families and other safety net programmes like *Antyodaya Anna Yojana*, - *food support for the poorest of the poor*. The public distribution system in India,

the largest network of its type in the world covers nearly 160 million families through fair price shops, which distribute annually commodities worth more than Rs.300, 000 million¹⁴.

Along with the Public Distribution System (PDS), an important element of India's food security regime has been the Food for Work (FFW) programme that provide employment to the poor during hard times, to create community assets through labour-intensive work and to pay the labourers in food grains or other food items¹⁵. The National Rural Employment Programme (NREP) and the Rural Landless Employment Programme (RLEP) were initiated in the 1970s during Sixth and Seventh Five Year Plans. These were then merged into the Jawahar Rozgar Yojana (JRY) in 1989. JRY was meant to offer the poor employment through asset creation. JRY was subsequently redesigned in 1999 into the Jawahar Gram Samrudhi Yojana (JGSY) to convert it into a project that was primarily for economic infrastructure creation, with employment as a secondary objective. The Centrally-sponsored Employment Assurance Scheme (EAS), launched in 1993, had objectives similar to the JRY programme. In 2001, FFW was launched as a component of EAS in some states. Soon afterwards, EAS, JGSY and FFW were merged into Sampoorna Grameen Rozgar Yojana (SGRY). In order to have a more focused attack of poverty and extreme hunger and ensuring food security to the people, in recent years the government of India initiated several new missions like National Horticulture Mission, National Rural Health Mission, National Livelihood Mission, National Skill Development Mission etc. In addition to these, the government of India had enacted two land mark legislations in recent years namely, Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and Right to Food Bill. The former provides guaranteed employment for at least 100 days in a year for a rural household, and the latter is to provide access to food grain through universal public distribution system.

Several studies show the inefficiencies of many of these programmes to effectively reach the poorest of the poor. A national level study¹⁴ reveals this fact while reporting that 'of the food grains meant for the below poverty line (BPL) families, about 32 percent of rice and 56 per cent of wheat are not reaching the beneficiaries'. Besides illegal diversion of food grain, the study also reveals some of the other problems associated with the scheme, which includes: the poor do not have enough cash to buy the quantity of food grain (35 kg) at a time, and often they are not permitted to buy in installments. Deshingkar and Jhonson¹⁶ points out the design faults, administrative mismanagement and local politics created conditions that were conducive to the large-scale misappropriation of resources meant for the poor under the food for work programme in Andhra Pradesh. The study reveals six generic types of irregularity, which were particularly damaging to the poor: i) ineffective *Gram Sabhas* and

top-down methods of work identification; ii) the employment of 'contractors'; iii) the selection of beneficiaries by contractors instead of the very poor self-selecting themselves; iv) inappropriate wage-setting and the displacement of the very poor by slightly better-off people; v) payments in cash instead of grain; vi) the use of labour-displacing machinery and a disregard of the mandatory labour-material ratio in works executed. Harriss et al.,¹⁷ and Nayak et al.,¹⁸ were also made similar observation stating that, because these programmes are so dependent on local channels of administration, they are highly prone to misallocation, which has typically diverted food and subsidies intended for the poor^{17, 18}. In addition to that the Bureaucratic inefficiency in releasing the rice, combined with unrealistic targets for completing works, added to these problems. The overall outcome was that the programme reached very few poor people.

A World Bank study¹⁹ reveals that safety net programs are funneling many of their benefits to the non-poor. According to data from the 1993-94 National Sample Survey (NSS), 76 percent of the wealthiest rural households, for instance, are likely to take advantage of the subsidized prices for food under the Public Distribution System while, at the opposite end of the scale, fewer than 70 percent of the poorest households benefit from food subsidies. The poor do participate in rural public works and to a lesser extent in credit programs (IRDP), but all three schemes (PDS, IRDP, and public works) remain loosely targeted. Similarly, the Nutrition programmes such as the Integrated Child Development Services (ICDS) continued to limp along with shoestring budgets, scant monitoring and fragile accountability mechanisms. Public health services were grossly neglected, to the extent that the steady decline of infant mortality virtually came to a standstill. No major initiative was taken to address the problem of endemic hunger²⁰.

The failure of various government programmes reaching the poorest of the poor had motivated several NGOs try to experiment with alternate models through organising community food grain banks, which are proving to be effective for ensuring food security to the poorest. For example, the Self-Employed Women's Association (SEWA) in Gujarat, works in several villages through self-help groups and facilitates the setting up of community managed grain banks which are based on the principle of local procurement and local employment. Similarly, Gramin Vikas Trust (GVT) in the states of Gujarat, Rajasthan and Madhya Pradesh, and Seva Mandir in Udaipur district of Rajasthan state had also promoted several food grain banks through self-help groups (SHGs). The Deccan Development Society (DDS) in Medak district of Andhra Pradesh (AP) facilitates women's groups to manage food grain banks in several villages²¹.

The M. S. Swaminathan research Foundation (MSSRF) had initiated establishment of community grain banks in tribal pockets of Odisha and Tamil Nadu²². Most of these initiatives focus on mobilizing the community and building their capacity to effectively devise mechanisms for food and livelihood security. Similarly, BREDS an NGO working in the North coastal Andhra Pradesh had organised community grain banks in 39 villages benefiting nearly 6000 poor tribal people. The following provides the details of organising and key learning of organising community grain banks by BREDS.

Organising Community Food Grain Banks: Experience of BREDS

Brief profile of BREDS

BREDS is an NGO working in North Coastal Andhra Pradesh in India. It works to propagate the Gandhian values of serving the poor through community mobilisation based on the values of co-operation and self-help. Since its inception in 1983, BREDS have been contributing for the socio-economic empowerment of the poor through initiating various programmes. Some of the major initiatives undertaken by BREDS include: establishment of village level organisations; livelihood interventions through farm based economic activities, natural resource management and integrated watershed management; life skills training for unemployed young people and school dropouts; establishment of community line credit centers; and facilitating market linkages for microenterprises. All programmes follow an empowerment approach, where the target community actively involves in planning and implementation of the programmes. BREDS works in 445 tribal villages and activities reaches to nearly 20000 Tribal families in Srikakulam and Vizianagaram districts of Andhra Pradesh. The community grain bank is an initiative under the *Subhodayam* project supported by the Welthungerhilfe(WHH), Germany which aims at providing food security for the tribal poor through setting up of village level grain banks and integrated natural resource management.

Tribal communities in BREDS's project area

Andhra Pradesh has a tribal population of 50.24 lakh, constituting nearly 7 percent of the state's population of 762.10 lakh. There are 33 tribal groups in the state. Out of the 33 tribal groups, 12 tribal groups, namely, Bodo Gadaba, Gutob Gadaba, Bondo Poraja, Khond Poroja, Parangiperja, Chenchu, Dongaria Khonds, Kuttiya Khonds, Kolam, Kondareddis, Konda Savaras and Thoti, have been

recognized as Primitive Tribal Groups (PTGs). The tribal population is one among the poorest, most vulnerable and exploited communities in the state. The tribal economy in the state is primarily subsistence oriented and based upon a combination of agriculture, forestry and wage labour. The tribal habitations are mainly located in hilly tracts and remote areas, and are characterized by lack of irrigation facilities, communication and extension facilities etc. The ecological degradation due to erratic rainfall and high risk of drought has resulted in food insecurity, increasing outmigration, periodic deaths and starvation in tribal areas. The life of tribal communities is increasingly vulnerable due to persistent lack of assured entitlements to their resource base.

The tribal community primarily depends on agriculture labour and allied activities for their livelihood. A few of them have small land holdings with plantation, mainly cashew crops. Since the area being drought prone, agriculture labour is available only for a few months in a year, especially during the rainy season. During the rest of the season, the community is engaged in subsidiary activities such as goat rearing, collection of forest produce etc. The income during this period is very small and irregular as well. Lack of a livelihood support system, force many of the families migrate to distant places in search of livelihood opportunities. Many settle in the distant places for almost six months as construction workers or casual laborers and return to their hamlets during agriculture season. Small land holding, low agricultural productivity and low-income levels led to rising indebtedness, trapping tribal communities into a vicious circle of exploitation. The housing condition in many villages is in very bad shape. In spite of many housing schemes of the Government, several families still live in dilapidated houses. One of the major reason for this is that the most of the tribal families do not have property rights (patta) over their land that prevent them in making use of the various government schemes like housing. In absence of the property rights over their land the tribal are unable to access credit from co-operatives or other formal financial institutions. They are forced to depend on money lenders for credit at high rate of interest that absorbs lion share of their earnings. Another crucial issue related to young people lack of employable skills, leaving them idle and vulnerable to anti-social elements.

Since their production is primarily confined to meet their household consumption requirements and have little market orientation, the economic activities of tribal community is characterised the absence of capital investments. Many efforts have been made by the Government of Andhra Pradesh to provide technical and financial assistance to the tribal families through various schemes and development programmes. Though these schemes did offer some relief, there are tribal pockets in the state where most of the peoples do not have access to these programmes.

More than half of the tribal population in the state is still in below the poverty line. It is a fact that, the generalised approaches to tribal development attempted during the past have not met with significant results in tribal areas. Inadequate access to food grain, especially in lean season is a major problem facing the tribal communities. The existing government programmes for distribution of food grains through public distribution system is not effectively reaching to tribal population due to a variety of reasons including lack of proper identification, not having a below poverty line (BPL) card, inadequate resources and remote and inaccessible areas. Due to the widespread illiteracy and low level of education among tribal population, majority of them are unaware of various government schemes targeted for their welfare. The tribal poor, especially women and children are victim of severe malnutrition and anemia. A majority of the tribal poor do not have sufficient food at least for three- four months in a year.

Community grain banks

In order to address the problem of extreme poverty and hunger among the Tribal communities, BREDS had initiated a community based project called *Subhodayam* (*Rise of Dawn*) with support from Welthungerhilfe (WHH), Germany. The project covers 2135 families in 83 tribal habitations. The project works towards developing a sustainable livelihood base for the tribal communities with a strong institutional base and community participation. The project enables the community to expand their livelihood base through productive use of land, water, forest resources, access to financial services, markets, linkage to various government schemes and building their capabilities. As part of institution building, the tribal communities were mobilized into habitation level *Subhodaya Sanghams* (Village Development Groups) and Mandal level federations. Each *Subhodaya Sanghams* has emerged as a micro enterprise unit through financial support and capacity building activities. Several land and livestock based livelihood interventions (such as horticulture, cow/ goat rearing, poultry etc.) have been promoted by linkage with existing government programmes like, Swarna Jayanti Swarozgar Yojana (SGSY), Horticulture Mission, Animal Husbandry department and Water Development agency. The community grain bank that is built on the traditional practice of thrift and savings, were conceived as a solution for reducing extreme hunger among the tribal groups through their collective effort. Community grain banks have been organised in 39 villages in Srikakulam district covering 1047 tribal households. During the last season, these grain banks have stocked 41132.00 kg of grain of which 32311.00 kg purchased by using revolving fund assistance from BREDS and remaining 8821.00 kg mobilized through community contribution.

Targeting

The target area of operation of BREDS is situated in North Coastal Andhra Pradesh, where large number of tribal population in the state is concentrated. The target area consists of the 39 villages in Srikakulam district. The target communities belong to the poorest of the poor, and are vulnerable to various risks. Grain banks were established in those villages where at least 50 percent of the population belongs to scheduled tribes. The grain banks had covered 1047 poorest tribal households in 39 villages. BREDS, through *Subhodaya Sanghams*, facilitates village level awareness creation on grain banks and mobilizes the tribal families into small groups, called grain bank groups. Each household is represented in the group by the eldest women member of the family. Each participating household has encouraged saving a portion of food grain they produce, or they receive as part of their wage. These savings of food grain is pooled together and stored in a common storage structures managed by a grain bank committee. The members were allowed to withdraw equal amount of food grain deposited by them at the time of difficulty, especially during lean season when there is no work and income.

Institution building

The organization process starts with a series of household visits by the community organizers of the *Subhodayam* project. Once the village is finalized, the community organizers of the *Subhodhayam* project personally visit each tribal household in the village and explain to them the proposed activities under the project and the concept of the community grain banks and its advantageous for them. A key objective of the household visit is to sensitise the tribal community on the need for a collective effort for addressing some of the critical issues they are facing. After a couple of such visits, members in each household, especially women were able to realize the need for a collective action and the benefits of grain banks. Once a reasonable number of families express their willingness to join the programme, the community organisers convene a meeting of those people and facilitate a discussion on the modalities of establishment of grain bank in their village. This participatory process is an important aspect of facilitating collective action and organization of community grain banks. In the meeting, the members discuss the type of grain to be stored, identifies a place of storage, type of storage facility to be constructed, extent of individual grain contribution, limits of grain withdrawal and timings, broad principles and code of conducts with regard to management of the grain bank. The group elects a seven member committee, consisting of four women and three men, to look into the establishment and maintenance of the grain bank in their village and pass a resolution on their willingness to establish the grain

bank in their village. The management responsibility lies with the grain bank committee.

Training and capacity building

Training and capacity building is an important aspect of the institution building process. The training and capacity building aimed at equipping the participating families in the management of the grain banks as well as building their confidence to start income generating activities. The village level *Subhodhayam Saghams* were involved in the training and capacity building activities. The training and capacity building focused beyond the management of grain banks. A key aspect of the training programmes is the focus on expanding their livelihood activities through sustainable Natural Resource Management and improving skills that enable them to undertake various income generating activities at village level. The training and capacity building had ensured the target group to enhance their livelihood base by undertaking various income generating activities.

Financing grain banks

BREDS felt that, based on its previous experience of working with the communities, matching grant is one of the important component for facilitating participation of the poorest tribal communities. Each grain bank is assisted with an initial grant of Rs.6000-10000. This matching grant is enhanced through contribution from the community from time to time, that strengthen the resource base of the grain banks. The community contribution acts a binding force to get associated with the community grain banks. It is to be noted that the poor tribal families were unable to contribute a large quantity of grains at a time when the food grain availability is low. For this reason, the community contribution is fixed at minimum level depending on their ability to contribute. However, it is expected that the community contribution will accumulate over the years so that each grain bank have sufficient fund to stock food grain for extended period that reduce their dependence on money lenders and traders. The revolving fund assistance is used for procurement of essential grains from the local market and stocked the grain bank. The grain bank members were also supported with assistance for income generating activities. These include rising of kitchen garden for growing vegetable mainly for household consumption, purchase of goats and poultry birds. The objective of financing these activities is to facilitate the consumption of vegetable, milk, meat and egg in the diets thereby increasing the nutritional security for their household.

Business case: Grain banks and tribal food security

This case study illustrates the experience of organizing community grain banks in Brujuvada village in Srikakulam district. There are 42 Tribal households in this village. Many of the Tribal families in this village are not able to get a hand full of rice for consumption in the lean season, due to unemployment and lack of income. Worst affected among them are women and children. In the lean season, normally they borrow food grains from landlords and traders with an agreement to repay with interest by working in their field. A majority of them migrate to distant places in search of job leaving the old aged at home. BREDS had introduced the community grain bank scheme in covering these 42 households in this village with an objective of ensuring food grains for the poor and to prevent periodic migration of the tribal community.

The members of the tribal families were mobilised into small groups called grain bank group. The *Subhodaya Shangam* of the respective village took initiatives for identification and mobilisation of the tribal families in to grain bank groups. The grain bank is represented by the eldest women member of the families. The members of the group were trained on grain bank management. The grain bank was assisted with an amount of Rs.7480 from BREDS for establishment of grain banks. The amount had deposited in the bank account of *Subhodhayam* committee in the village. The amount has used for the procurement of the grain that to be stocked in the grain bank. It is a condition that this amount can't be used for the construction of the structures for storage of food grains. The storage structure needs to be constructed by the participating members using voluntary work. The members of the grain bank groups constructed the storage structure for keeping the grain stock. Each participating family agreed to contribute a fixed amount of grain to be stored in the grain bank and permitted to withdraw their contribution during lean season. During the last season, the grain bank had stocked 1326 kg of food grain. The participating member families were allowed to withdraw food grains at the time of urgency with an agreement to repay the same quantity with interest during the next season. The withdrawal of grains is permitted only during lean season. The grain bank committee maintains the record of member's contribution and withdrawal of grains. This ensures transparency and accountability in the activities.

Lessons Learned

This section provides key learning from organising community grain banks.

Thrift and savings

Community grain banks established by BREDS had helped the participating members to develop thrift and savings in terms of food grains. The concept of grain banks is well accepted by the participating tribal families which have been reflected in the active participation of the community members in the organization and management of the grain banks. The felt need in terms of ensuring availability of food grain for household consumption, especially in lean season acts as a motivation for the members to get associated with the grain banks. The community food grain had also helped the participating family members to develop the spirit of self-help and collective action that benefit of the entire community. With the help of the grain banks, participating families were able to ensure availability of food grain at least for three-four months in a year. The support from BREDS and donor agency Welthungerhilfe (WHH) through various capacity building initiatives had helped the participating families to develop awareness on various government programmes targeted to the tribal communities. The participation in grain banks and income generating activities had contributed to increased trust and co-operation among the members. The experience of BREDS in organising community food grain banks suggest that the increased social capital evidenced in terms of trust and co-operation among the community members is a first step towards their empowerment.

Household participation and monitoring

One of the key learning from organising community grain banks in villages is the participation of the household members in the activities of the grain banks. The collection and storage of food grain is the responsibility of the participating member families. Generally, a grain bank is established to benefit a minimum of 20-60 families in a neighbourhood. The participating members voluntarily agree to contribute a fixed quantity of food grains as a means of savings out of daily consumption or through the wages they receive or produced in their farm. Generally, the collection of the food grain takes place in the month of December to January, the harvesting season. It is this time most of the families are left with some surplus of grains. Since the member's contribution alone will not be sufficient to meet the requirement of the need of food grain of all the participating families, their contribution is supplemented through purchase of food grain by using the grant received from BREDS. The members decide the type and quantity of grain to be purchased and stocked. The grains are purchased either from the local market or directly from the farmers. In order to maintain the transparency in dealing, the purchase is made in the presence of representative of the *Subodhayam* project.

The quantity and quality of the food grain is examined by the representative of the village level *Subodhayam* committee.

The group identifies a place where the common storage structure is to be constructed. Generally a location is identified adjacent to their household so that all the members have easy access to the grain bank. A place near to their vicinity also helps them to safeguard the food grain stored in the grain bank. The food grains are generally stored in large bamboo mats plastered with cow dung or in separate storage structures built for the purpose. The members themselves build the storage structure using bamboo poles, stones and mud that are locally available. Both men and women contribute their labour for the construction of the storage structure. A typical storage structure is a round cylindrical shaped and thatched with dried grass that protect from the sun rays and rain. Special care is also taken to protect the grain from reach of rats and insects. The structure built with mud and bamboo stones help to maintain the required temperature and humidity to protect the grain from decay. Members bring their contribution of their grain and deposit them in the storage structure. The grain bank committee takes stock of the food grain availability with the grain bank at regular intervals and makes arrangements for procurement of food grain using fund available with the gain bank for meeting the demand for the food grains by all the participating member families. The participating members take a collective decision on when and how much of grain will be withdrawn by a member family at a time. Each individual family, under normal circumstances gets an equal share of grain they had deposited. This needs to be repaid during the next season. Individual families were also permitted to withdraw over and above their contribution as borrowing. The borrowing member needs to make a commitment to deposit an equal quantity of the food grain that they had borrowed along with the agreed interest. The interest is calculated in terms of the quantity of grain. Those families, who don't require grains at all, are paid an equal amount using grant amount available with the group. The withdrawal of food grain by a participating family is permitted only during the agreed time fixed by the group. As a norm, no family is permitted to withdraw their grain before the commencement of the lean season. The food grain management committee maintains records of the member family's withdrawal of food grain from time to time and is matched with their contribution of food grain. Once the normal withdrawal limit is achieved, the member family is informed accordingly and further withdrawal is permitted a borrowing with a commitment to return an equal quantity of food grain along with interest.

Entrepreneurship and livelihood promotion

The community grain banks are organically linked with the *Subhodayam* project through various entrepreneurship and livelihood

promotion activities. The livelihood promotion focuses on expanding the livelihood base of the tribal communities through integrated natural resource management, watershed management and skill development, which form a major component of the Subhodayam project. The livelihood promotion is sequenced to first enhance the existing or introducing new supplemental income generating activities. The *Subhodayam* project facilitates income generating activities of the members of families participating in the grain banks. Before introducing the income generating activities, a livelihood plan for each household is developed that outline the existing livelihood activities, skill sets and cash flows of each household. Financial assistance have provided in terms of revolving fund for each grain bank groups. The beneficiaries for Income generating programme are identified by the village level *Subhodayam* committee. The income generating activities and the functioning of the grain bank is closely monitored by the *Subhodam* committee through its monthly meeting attended by the representatives of the *Subhodayam* project. The project also facilitates linkages to various government welfare schemes that offer subsidies, access to employment, and other services to the tribal communities. This helps to rapidly increase household income while enhancing their self-confidence and trust in the implementing agency. This approach also moves away from creating an immediate dependence on credit to meet daily consumption needs and avoids disrupting their existing income generating activities without requiring the program to put in a cash subsidy. The income generating activities are chosen based on their low barriers to entry, low skill requirement, and access to local resources. The income generating activities primarily focus on livestock, such as cow and goat rearing, poultry farming, a familiar activity in demand throughout the year, and backyard kitchen gardening, which requires little land. The participation in income generating activities considerably increases the household and individual level confidence and a developing sense of achievement and financial security for the participating household.

Building trust and confidence

It is a fact that the tribal communities have bitter experience of dealing with the members of outside their communities. This had resulted from a series of exploitation of the tribal communities by the local money lenders, traders and land lords. As a result, the tribal community mistrusts outsiders. The continuous interventions of the project staff of BREDS in the villages had helped to build confidence and trust among the community members. The involvement of the participating family members in the construction of the storage

structure, and their involvement in day to day management of the grain banks and participation in income generating activities are visible example of increased trust and co-operation among the community members. This trust and co-operation among the tribal communities is an important aspect in the empowerment of the tribal population in the villages. A key learning from the community mobilization is that, the project team's ability to gain acceptance and transfer knowledge and skills for the participating households relies heavily on the support of local people who serve as community mobilizers, trainers, and government liaisons. Cultivating healthy relationships with local leaders and community mobilizers for the delivery of services is critical in building trust and buy-in. It is also important that the routine household visits must also engage all members of the household—not just as a client, but as partners for finding solutions for their issues.

The mobilisation of the individual families in to village level grain bank groups had facilitated frequent interaction of members. Apart from the issues related to collection and withdrawal of food grain, the members also discuss other pertinent issues facing their day to day life. These include the issues relating to provision of BPL cards, problems in getting difficulties for getting job card and employment under NREGA, income generating activities etc. As a result of the continued participation in the grain bank activities and income generating activities, the members were sensitized on various government programmes such as targeted public distribution system, mid-day meal scheme for school children, Integrated Child Development Schemes, programmes for self-employment, etc. The increased awareness on these schemes had resulted utilization of such schemes, for example sending their children in anganwadi centers, schools, etc. An interaction with the participating families during the field visit revealed a sense of togetherness and closeness among them. The members agreed that the continued association with the grain bank facilitate open discussion on various issues facing their daily life, and they are able to take up some of those issues with the support of village level *Subhodhayam* committee.

Gender

Gender inequity is prevalent among the tribal communities as women were not equally treated in terms of social, economic, political issues. The general bias against women was also found in tribal societies with no property rights, lack of education and lack of opportunity for economic advancement. Although they have a major influence in household affairs, women generally play no part in the village decision making. Literacy among tribal women is even lower than the males. In addition to their domestic and child care duties,

women contribute to a major part of the labour in agriculture, especially in podu cultivation. The training and capacity building activities of the project are directed at increasing the participation of women in the grain bank and income generating activities. The project aimed to empower women so that the ultimate beneficiary is the entire household.

Sustainability

The overall sustainability of the grain banks depends on several factors. Towards the long term sustainability of grain banks BREDS focus its activities on i) capacity building of grain bank committee, ii) participation of all the households, iii) support to additional income generation activities complementing grain bank activities and iv) linking the various government schemes especially targeted public distribution system and NREGA. BREDS is working towards making these grain banks self-sustainable. The functioning of each grain bank is closely monitored by BREDS through its community mobilisers and field staff of *subodayam* project. The village level *Subhodhayam* committee is involved in capacity building of the group members on various aspects of management of the grain bank. It helps the members to prepare norms for the function of the groups, clarifying the roles and responsibilities of committee members, member's participation, record keeping and maintenance of stock etc. The committee discusses the progress of working of the grain banks, the members' contribution, additional requirement of grains if any, status of income generating activities undertaken with the revolving fund assistance, repayment made etc. It also helps the groups to establish linkages with other village organisations and various government departments to channelise available resources for the effective functioning of the grain banks. The matching grant (revolving fund assistance) provided by BREDS is expected to be enhanced by contribution from the participating families. It is expected that the community contribution will gradually accumulate over the years, improving the resource base of the grain banks. The support in terms of additional income generating activities through linking with other government schemes is also acting as a motivating factor for the members to get associated with the grain banks. A key element in the functioning of grain banks is its simplicity and transparency in operation. Everyone knows how much quantity a member had borrowed, and how much he had repaid. This transparency in operation ensures reducing conflict among the participating members.

Conclusion

Grain Banks as an institution has come as a great relief for the tribal poor who are hard pressed for food during lean season. Grain Banks are functioning successfully in all 39 villages where it has been introduced. The experience so far reveals that grain banks are instrumental for reducing the dependence of the tribal poor on local money lenders and traders and liberating them from the vicious cycle of bonded labour. The grain banks help the participating families to savings in grains at the time of food grain availability. The participating families validate the benefits of grain banks in terms of improved food availability especially during the lean season. A participating family is able to ensure the availability of food grain with the grain bank at least for two-three months in a year when there is no work or regular income. The grain bank also permits them to borrow additional grain if need arises. This helps them to reduce their dependence on the village traders for purchase of food grain on credit at high rate of interest, which they normally do during the lean season. The continued interaction of the participating families with the *Subhodhayam* committee, and the capacity building support and assistance for additional income generating activities through the *Subhodhayam* committee had resulted increased trust, co-operation and confidence among the members. One particular feature of the Grain banks is the simplicity in operation and community participation. The contribution is in terms of grain only that allows the members to borrow grain at the time of difficulty and repay after harvesting season. Along with simplicity, the transparency in operations of grain banks has contributed to its success. All important decisions are taken involving the whole community. Another key element in the success of the grain banks is the organic linkages with the *Subhodayam* project that facilitate livelihood promotion and income generation of the members of the grain bank group. The matching grant provided by BREDS is also an important aspect of motivating the communities in participation of the grain bank.

SECTION - V

STORIES OF COMMONS

ACCREDITED SOCIAL HEALTH ACTIVISTS: EMERGING MEDICAL AND HEALTH COMMONS IN RURAL JHARKHAND, INDIA

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Introduction

The concept of 'commons' is not new. It has been in existence since centuries. Commons are any sort of resources, institutions, and services, available and owned by the community. Bollier and Rowe¹ have defined commons as 'gifts of nature and society; the wealth we inherit or create together and must pass on, undiminished or enhanced, to our children; a sector of the economy that complements the corporate sector. These resources may be village pond, community hall, public land, natural resources, pastures, etc that a community recognises as being accessible to any member of that community. The commons are historically evolved which continued from centuries. However, in recent years, due to limited resources and growing demand, technological advancement, globalization, and neo-liberal policies, many new resources, institutions, and services have emerged as (new) commons such as medical and health commons.

The concept of medical and health commons (the notion of public access to a commonly managed set of health services) are not new. However, it is a neglected area in health and not much has been researched, written, and promoted². It existed from centuries in all societies and cultures in different forms. However, our understanding and focus of medical and health commons (MHC) were more towards institutions, agencies, and resources rather than on the role of an individual as MHC.

In modern era, the role of community health workers (CHWs) scheme has been re-emphasised since the Alma Ata conference (1978) which is close to the concept of MHC. Primarily, the concept of CHWs were conceptualised and developed to address the shortage of health workers in many developing countries (especially in Africa and Asia) to address the unequal distribution and much bigger deficit of doctors and nurses. This led to the development of

CHWs scheme by many countries considering the varying demands and differing levels of health within these countries, regions, districts, and villages. World Health Organization (1990) defines CHWs as 'men and women chosen by the community, and trained to deal with the health problems of individuals and the community, and to work in close relationship with the health services. They should have had a level of primary education that enables to read, write and do simple mathematical calculations³.

Under the National Rural Health Mission (NRHM) programme of the Government of India, the concept of Accredited Social Health Activist (ASHA) is guided by the CHWs model. However, these ASHAs are playing the role of MHCs and there are opportunity and potential to groom these CHWs as medical and health commons considering the long term larger impact and community involvement. This will help ASHAs to think beyond the NRHM programme and in getting new identity and acceptance as a medical and health commons. In this context, using the case of Jharkhand state of India, this paper is an attempt to recognise Accredited Social Health Activists (ASHAs) as an emerging medical and health commons in rural India, its strength and future prospects.

Accredited Social Health Activist

Accredited Social Health Activists are trained community/village based health workers under the National Rural Health Mission (NRHM) programme launched by the Government of India in 2005 to improve the availability of and access to quality health care to people residing in rural areas. Like every programme and project, NRHM programme also has certain goals, objectives, timeline and will end^a. But interestingly, it is hoped and believed that these ASHAs and their services to people will continue beyond the NRHM programme due to various reasons. Foremost among these are ASHA's affinity with their village and its people, selection of ASHA by the village community, recognition by the state, and community ownership over them. These ASHAs are driving force to their community/village in improving the health status of their village by awareness generation, information dissemination, referrals, and service delivery at door step, etc. Thus, the community considers ASHA as their common resource (medical and health commons) in improving village health and wellbeing.

In Jharkhand state of India, these ASHAs are known as Sahiya (a friend or companion in Nagpuri^b). Jharkhand has 40,964 Sahiyas

^a National Rural Health Mission Programme was for 7 years (2005-2012) which is likely to be extended for next 5 years.

^b Nagpuri is a local dialect of Jharkhand, spoken in the Chhotanagpur region of Eastern India.

covering 2,50,36,946 rural population (NRHM, 2012). Sahiyas have emerged as a new medical and health commons promoting good health and wellbeing in their community. They are guided by self volition, delivery, empowerment (ownership + participation in decision making) mode of development with right based approach (human rights centered approach). The Sahiya programme in Jharkhand was conceptualized and guided by two inter related processes. The first one is sustainable, decentralized, community-owned and driven behavioral change, strengthening the primary healthcare system and services, and the second is creating a space for the Sahiya (within the community and the public system) to enable her to provide continuous inputs and supportive structures. The prime objective is to ensure awareness generation on health education, and to ensure the reach of health care to the last person in the last household of the last village through these Sahiyas.

Sahiyas are selected by the villagers based on NRHM guidelines. Sahiya must be a local married woman aged above 18 years (preferably a daughter-in law of the village), confident, and has shown self motivation and leadership qualities. Besides, she must be supported by her family, is willing, and able to spare time to carry out health related tasks for wellbeing of people. Literacy is desirable (Class 8th Pass) but not mandatory.

The Sahiya plays an important role in the community as a first contact point for health services. She undertakes home visit, identifies target groups and disseminate information about health issues to generate awareness in the community. She also maintains a constant liaison with the Anganwadi worker^c and Auxiliary Nurse Midwives^d for referral services. Besides these, some of her key responsibilities are promoting behavioral change and counseling. She visits each and every household, does early registration of pregnancy, and promotes birth spacing, nutrition, and exclusive breast feeding. She also works and participates in public health activities through providing assistance in disinfecting well, informing disease outbreak, and assist in births and death registration. She also acts as a depot holder for iron-folic-acid tablets, contraceptives, oral rehydration solutions, and malaria drugs.

Asha/Sahiya as a Medical and Health Commons

It is important to understand what makes ASHA/Sahiya as a medical and health commons. Although, there is no consensus on

^c An Anganwadi worker provides integrated child development services in a courtyard (Anganwadi), that is, a play centre which is located within a village or slum.

^d Auxiliary Nurse Midwives are trained nurses in midwifery and related services.

definition of medical and health commons, it may be defined as ‘any set of health resources or services (by institutions, agencies and persons) available, accessible and commonly owned by people⁴ for the common good’. This definition emphasizes that health resources and services should be

1. commonly shared and owned by the people,
2. utilized for the common good (public health),
3. available and accessible to all members of the population, and
4. based on democratic principles and community participation (in health planning, promotion and wellbeing).

If we go by this definition, besides fulfilling the above mentioned criteria, Sahiyas are definitely playing the role of medical and health commons by providing health services to population in their community by maximizing effective use of services, ensuring quality of care, and better health outcomes. Sahiyas are a link between community and health systems. Thus, through their work, they are bringing the community close to health systems to increase the access to health services and available resources to improve the wellbeing and health of their community. Not only that, the services provided by Sahiya also strengthens the concept that governments and societies have an obligation towards the collective social welfare, and that the health of masses should be maximized and thought of as a public good². This also breaks the dominant neo-liberal thinking which believes in economic profit as the primary social good and views services connected with human welfare as a cost that must be justified on economic grounds.

It would be pertinent to recognise some of the health services provided by the Sahiya which makes them medical and health commons. Entire community is benefitting through these services, viz. promotion and use of clean drinking water, safe institutional delivery, maternal health care, immunization, nutrition and control of communicable disease such as malaria and tuberculosis, etc. The services provided by Sahiya which makes them distinct from other service providers are the notion of its community ownership, democratic participation, equality, and equity which ensures equal availability, accessibility, and services. Unlike medicines which focus more towards curing bodies from disease, Sahiya’s work and interventions are more focused towards community mobilisation and laying strong foundation for public health (preventive health and promotion of wellbeing). Health of a community is the outcome of a complex interplay of clean water and nutrition, sanitation, emotional wellbeing, education, and occupational health⁵ where Sahiyas are

trying to make real difference by generating demand for services by their relentless efforts. Their work is not only guided by eradicating or eliminating diseases rather guided by the aspects of public health services.

Methodology

The study is a mix of qualitative and quantitative methods. For the quantitative part, the data were collected from 100 village panchayats where the Community Leadership Programme^e (CLP) was implemented through Xavier Institute of Social Service (XISS), Ranchi and Nav Bharat Jagriti Kendra (NBJK), Hazaribagh. In each village, there is one village health committee consisting of 10 members, excluding the Sahiya. The number of Sahiyas in a village depends on the population size and the number of hamlets (*tolas*) of the village. As such each village would have at least one Sahiya. In each village, one representative member of Village Health Committee (VHC) and one Sahiya were randomly selected for the study. In case the village had only one Sahiya, she was compulsorily selected for the study. The self administered questionnaires were developed in Hindi language for the study. The questionnaires were also pre-tested for improving the quality and clearness before the broad survey. After collecting the data, the questionnaires were scrutinized for errors and omissions. The final analysis was carried out on 80 eligible Sahiya questionnaires and 67 eligible village health committee questionnaires.

Qualitative data were collected through focus group discussions, select case studies, and interview with key stake holders.

Findings

Quantitative Findings: The analysis of quantitative data shows that 91.56 percent of the Sahiyas and 85.08 percent percent of the Village Health Committee (VHC) members, on an average, recognize Sahiya as a medical and health commons. Almost on all the aspects that were explored in the study, it was seen that the Sahiyas and VHC members have responded positively (Table. 18.1).

^e Community Leadership Programme (CLP) is an important component of Leadership Development and Organisational Effectiveness (LDOE) program funded by the David and Lucile Packard Foundation. CLP focuses on strengthening the community leadership in select districts of Bihar and Jharkhand state of India. The programme is being funded by the Jamset Ji Tata Trust and implemented by the International Council on Management of Population programmes (ICOMP), Malaysia, Xavier institute of Social Service (XISS), Ranchi, Integrated Development Foundation (IDF), Patna, and Nav Bharat Jagriti Kendra (NBJK), Hazaribagh.

Table 18.1 Percentage of positive answers of respondents to various aspects related to Sahiya and her work

Statements (Aspects)	Sahiya	VHC
1. Community recognizes Sahiya's contribution in improving their health & wellbeing	96.25	97.01
2. Sahiya will continue to serve the community beyond NRHM program	92.50	92.54
3. Sahiya will continue her work even without incentives	82.50	74.63
4. Community health is Sahiya's personal responsibility and commitment	87.50	68.66
5. Community owns Sahiya	98.75	97.01
6. Sahiya feels accountable to the community in improving their health status	87.50	80.60
7. Community sees Sahiya as their common resource in improving village health and wellbeing	86.25	80.60
8. Sahiya ensures health awareness generation and access to health care to everyone in the village	96.25	88.06
9. The community see Sahiya as a first contact point for health services	95.00	91.04
10. Sahiya visits every household, do early registration of pregnancy, and promote birth spacing, nutrition and exclusive breast feeding	100.00	100.00
11. Sahiya provides assistance in disinfecting well, informing disease outbreak, and assist in births and death registration	90.00	76.12
12. Sahiya acts as depot holder for IFA tablets, contraceptives, ORS and Malaria drugs	86.25	74.63

It is interesting to note from the table that on almost all aspects, Sahiyas have responded more positively as compared to the members of the VHC – except on one particular aspect 'Sahiya's contribute in improving community health and wellbeing' (statement 1). On two aspects, both the VHC members and the Sahiyas have almost similar opinion – first on continuing to serve the community beyond the NRHM program (statement 2) and second on visit to each and every household to promote information about pregnancy and breast-feeding (statement 10). In fact, in the latter (Statement 10), it is seen that the response has been 100 percent from both the groups. This is an interesting aspect, because the statement coincides with the NRHM mission as implemented in Jharkhand. It is felt that the 100 percent response may be due to the fact that none of the respondents wanted to court trouble by saying no to this particular statement which questions their performance and accountability. On all the other parameters and on the overall, the percentage of Sahiyas saying yes is much higher than that of the VHC members (Table 18.2).

Table 18.2 Summary statistics of responses (All statements together)

Summary Statistics	Sahiya	VHC
Mean	91.56	85.08
Median	91.25	84.33

Mode	96.25	97.01
Standard Deviation	5.67	10.51
Coefficient of Variation	5.89	10.84

The table 2 shows that mean and the median percentage response of the Sahiyas have been greater than those of the VHC members. The standard deviation and the coefficient of variation also confirm the fact that variability in the responses on VHC members is higher than those of the Sahiyas. In order to understand whether the percentage differences in responses were due to sampling error or not, the null hypothesis of “no significant difference between the proportion of Sahiyas and VHC members saying yes” on 11 statements were tested. Statement 10 was eliminated from testing as the standard error would be zero and the test statistics would not be calculable. The results are presented in Table 18.3 below.

Table 18.3 Test of statistical significances

Statements (Aspects)	SE(P ₁ -P ₂)	Z-Calc	Result
1. Community recognizes Sahiya's contribution in improving their health & wellbeing	0.0300	-0.253	N.S.
2. Sahiya will continue to serve the community beyond NRHM program	0.0436	-0.009	N.S.
3. Sahiya will continue her work even without incentives	0.0676	1.165	N.S.
4. Community health is Sahiya's personal responsibility and commitment	0.0676	2.789	***
5. Community owns Sahiya	0.0234	0.743	N.S.
6. Sahiya feels accountable to the community in improving their health status	0.0602	1.147	N.S.
7. Community sees Sahiya as their common resource in improving village health and wellbeing	0.0612	0.923	N.S.
8. Sahiya ensures health awareness generation and access to health care to everyone in the village	0.0436	1.880	*
9. The community see Sahiya as a first contact point for health services	0.0417	0.950	N.S.
10. Sahiya visits every household, do early registration of pregnancy, and promote birth spacing, nutrition and exclusive breast feeding	0.0000	—	—
11. Sahiya provides assistance in disinfecting well, informing disease outbreak, and assist in births and death registration	0.0612	2.268	**
12. Sahiya acts as depot holder for IFA tablets, contraceptives, ORS and Malaria drugs	0.0650	1.787	*

* Significant at 10% level; ** Significant at 5% level; *** Significant at 1% level

From the analysis, it was seen that the responses on four statements were significantly different at 10 percent level of significance. The statements on which significance occurred were 'Community health is Sahiya's personal responsibility and commitment' (statement 4), 'Sahiya ensures health awareness

generation and access to health care to everyone in the village' (statement 8), 'Sahiya provides assistance in disinfecting wells, informing about disease outbreak and assist in birth and death registration' (statement 11) and on 'Sahiya acts as depot holder for IFA tablets, contraceptives, ORS and Malaria drugs' (Statement 12).

The overall analysis of the findings shows that the Sahiyas are more committed to their work and seen by the community as medical and health commons. Statement 4 is significant at 1 percent level – a difference which is astounding and which points to the aspect that the Sahiyas consider community health and service delivery as their own personal responsibility and commitment. This could be due to their direct contact with people, association, recognition, and motivation by their own people of her village and hamlet (*tola*) for delivering better services to the community.

Qualitative Findings: The qualitative finding of the study supports the quantitative findings. The case studies, personal interview and focus group discussions with Sahiya and VHC members show that there is wider acceptance of Sahiya as a medical and health commons in her community. It also emerged that despite various challenges, Sahiyas are bringing changes at ground level by showing exemplary leadership and commitment towards their work. For example, Ms. Samina Khaton of Patheriya village has really brought a change by promoting institutional delivery in her area (Box 18.1).

There are various stances shared by many stakeholders and community that shows that Sahiyas are committed to bring change at the ground level and see their roles beyond the NRHM programme. Ms. Mary Dang is Sahiya of village Musurumu (of Chainpur block of Palamau district). Mary has now become Mukhiya of her panchayat but still she continues her work as a Sahiya. She participates in all the training programmes organized for Sahiyas like any other Sahiya. Mary says that "Sahiya position has given her distinct identity and everyone recognizes and respects her". As a Sahiya she got an opportunity to visit each and every household of her village and meet the people to provide them health related information and awareness. People contact her first for any health related problem and services. She helps the community by providing health related information and about services available. She tries to ensure that all children are immunized and accompanies the pregnant women for institutional delivery. People can contact her anytime for any health related problem. Her work and commitment made her popular in the village and nearby areas.

BOX: 18.1 Case Study: From the dark rooms of ignorance to open air of freedom

Ms. Samina Khatoon, 37 years, of village Patheriya (Panchayat - Sughaphari-II, Block - Madhupur, District - Deoghar) is Sahiya of her village under the NRHM Programme. Patheriya village is primarily inhabited by Muslim and Harijan communities. The village has 200 households with over 1000 population. In her village, due to religious customs and practices, people are not availing the government health facilities. They feel that the health centres are not clean and the person visiting there may get infected. In such a situation, institutional delivery was a distant dream. After joining as Sahiya under NRHM programme in 2008, Samina organized many village level meetings and did door to door campaign to spread awareness among the villagers and counselled women for institutional delivery. She had to struggle a lot to change the mindset of people having strong belief in traditional home deliveries in dark rooms and the concept of keeping the pregnant women aloof from light, air, and external eyes at the time of delivery. Her never die attitude and inner will prompted her to run from temple to mosque to meet the religious heads to convince them on benefits of modern health facilities for wellbeing of child and mother. She got gradual success and was able to ensure 108 institutional deliveries within her coverage area. She not only transformed her village but also influenced other Sahiyas to bring a change in their villages. She set milestones of success and left footprints for others to follow. Admiring her endeavours, the district administration encouraged her with the award of 'best Sahiya of Madhupur Block' in Sahiya Sammelan. Now the village community feels glad that she walked on the bed of thorns to bring their daughters and daughter-in-laws away from the dark rooms of ignorance to open air of freedom. VHC also got Rs. 10,000 as untied fund under NRHM programme, which she along with VHC members spent for repairing of hand pumps, purchase of table and chair for Anganwadi centers, and to support few needy families for institutional delivery.

Although there is provision of incentives for Sahiyas under NRHM programme, it is interesting that at many places, these Sahiyas are guided by their inner will to serve the people rather than to work only for incentives. For example, Ms. Neelam Devi (Sahiya of village - Shunluramdih, block - Jasidih, district - Deoghar) has set an example for other Sahiyas by showing her commitment to serve the people. In her village, Mr. Yadav was tested HIV positive. After knowing his positive status, his family members' attitude towards him changed and was not supportive. The Sahiya tried her best to counsel them. Nevertheless, there was not much change. Then, Neelam Devi on her own initiative and help from others arranged a vehicle to bring him to Deoghar Sadar hospital for proper treatment and care. Later, Mr. Yadav was moved to Ranchi for better treatment

and care. Ms. Neelam continuously followed about Mr. Yadav's health, treatment and care through phone. This shows her commitment to serve people and value for human life.

Discussion

The study findings show that Sahiyas as well as community members are accepting Sahiya as MHC and recognising their contribution in improving the community health and wellbeing. Findings also show that these Sahiyas (92.5 percent) will continue to serve the community beyond NRHM program. In the last five years in Jharkhand, only three percent of Sahiyas have left their work due to various reasons⁶ such as moving forward on career path, becoming elected representative of PRI, etc. Interestingly, few of them have continued their work as a Sahiya even after becoming the elected representative of PRI. Authors also presume that there is strong likelihood that Sahiya will continue their work considering the non-cash incentives such as community recognition, respect and trust which may prove strong motivation to continue their work. They study by National Health Systems Resource Centre shows that Sahiyas in Jharkhand are providing as much coverage to home deliveries as to institutional deliveries which shows that they see themselves more as an agent of change rather than focusing on maximising their incentives through a mechanical and unacceptable way^{vii}. Bhattacharyya et al. (2001) argues that non-monetary incentives are critical for the success and sustainability of any CHW programme such as an identification badge may provide a sense of pride and increased status in their communities⁸. Contrary to that overemphasis on cash incentive under the NRHM is a major hurdle in establishing these Sahiya as MHC in the community. We have seen in the past that cash incentive as an honorarium is not a successful and sustainable model of community health worker schemes such as Village Health Guide Scheme (1981) of Government of India⁹. Besides, monetary incentives often bring a host of problems because the money may not be enough, may not be paid regularly, or may stop altogether⁸. The NRHM programme should learn from the past experiences and should think of a non-cash incentive such as community reward, recognising and rewarding Sahiyas work at public platforms, etc. It is hoped that the reward and social recognition by the community and the state will make enduring impact on Sahiya in comparison to monetary incentive. It will also reinforce and motivate the Sahiyas to perform better which in turn, will further strengthen the bond between Sahiya and the community. Fifth Common Review Mission Report (2011) of NRHM also shows that at the community level many Sahiyas have earned goodwill and respect in the community¹⁰. In the study by Haider et al⁹, 89.7 percent of women reported that Sahiya is easily available in the

community and 95.4 percent reported that Sahiya of their village/hamlet is knowledgeable¹¹. The findings and cases mentioned above strongly shows that Sahiyas are considering community health as their personal responsibility and commitment. Sahiyas are providing assistance in disinfecting well, informing disease outbreak, and assisting in births and death registration, and acting as depot holder for IFA tablets, contraceptives, Oral Rehydration Solution (ORS) and Malaria drugs. One may argue that if this is the case, why health indicators in the Jharkhand state are poor. The fact is that although through these Sahiyas, there are awareness and demand for better health care service; our health delivery systems are still weak and poorly managed. Thus, not able to provide better health care services due to inadequate human resources such as doctors, nurses and paramedics. But in future, these services will be improved because of two reasons. First, investments in health sector by the central and state government under NRHM programme, and secondly demand for better health care services from the community. In demand generation, Sahiyas have played a significant role by educating and empowering people. The findings also indicates that recognizing Sahiya as a MHC will definitely have a far reaching impact on the health of the community considering the role taken by Sahiya as a link between community and health systems. Sahiyas' works are not only generating awareness about good health but it is also mobilizing people for better health care demand.

Conclusion

The health resources are limited but demands for those resources are growing day by day¹². In such a situation, recognising and promoting the Sahiya as a new emerging medical and health commons would be a positive endeavour to meet the growing demands for health care. Although Sahiyas as a MHC are not recognized, the study finding gives a new perspective to the commons literature. Indeed, Sahiyas are emerging as a new medical and health commons, nevertheless, there are also threats considering the given social and community responsibility, absence of institutional history, and a new identity. In summary, we can conclude that Sahiyas as medical and health commons are giving an opportunity and space to people to meet, learn about health issues, and gain the skill for healthy living to promote health and prevent illness.

Contributors

The study was led by Anant Kumar. He conceptualised the study, designed the study tools, wrote the first draft of the paper and was responsible for subsequent collation of inputs and redrafting. Vikas

Kumar Gupta translated the questionnaire in Hindi, coordinated data collection and did data entry. Rohit Vishal Kumar contributed in quantitative analysis of the data. Akay Minz provided case studies on Sahiya and provided qualitative inputs and information. Sant Kumar Prasad gave his comments on the paper.

Acknowledgement

Authors are thankful to Shri Girija Satish, Executive Director, Nav Bharat Jagriti Kendra (NBJK) and CLP staff of NBJK for coordinating the questionnaire administration and data collection. Authors would also like to thank Professor K. R. Nayar and Professor Doncho M. Donev for their comment and suggestions on the paper. Special thank goes to Professor Himadri Sinha for inspiring us to work on this topic.

This paper was presented by Dr. Anant Kumar in the International Conference on Governance of Commons and Livelihood Security (17-18 August 2012) organised by Xavier Institute of Social Service, Ranchi and All India Council of Technical Education, New Delhi.

HOPE AGAINST HOPELESSNESS: STORY OF SUCCESSFUL COMMUNITIES IN MANAGING COMMONS IN ODISHA

Sisir Kanta Pradhan

Introduction

Protection of common property resources and commons, is becoming critical not just because of the pressure of increasing population but also because of the higher level of consumption of these resources^{1,2,3}. In the late 90s' there has been a wider discussion on the sustainability of community livelihoods. Right from the Bruntland Commission on Environment and development till today, many authors have defined it in various ways. Schoons⁴ perceived the sustainable livelihoods under the framework of capital stock. He identified five capital assets such as financial capital, physical capital, social capital, human capital and natural capital, which determine the livelihoods of people on a sustainable basis. However, the fallacy of development programmes and its failure to appreciate the interrelationship between economy and ecology manifested as progressive erosion of commons and vulnerable livelihood systems for communities. It is required to view the production system as integrating resources and recognize the criticality of inter-linkages between various production systems. Commons offers the space for effective interaction and healthy system functions within an ecosystem. For example sustained agricultural production is dependent on stability in the environment around it. Barbier¹ argues that the main obstacle to sustainable agricultural development is the failure of economic policy to address adequately problem of natural resource management. Hence, it is very important to carefully engage with communities on institutional issues that would not only ensure democratic behaviour, social justice, but also appreciate the complex interaction between human and natural systems.

The successful commons depends of combination of factors such as building upon local knowledge, context and management control by members, higher engagement in protection owing to strong

livelihoods interactions and other psycho-sociological factors like cultural belief, religious sentiment and sense of goodness. In this chapter, an attempt has been made to crystallise learning from various community actions on commons protection and management and identify few key drivers for sustaining their efforts.

Perception of Livelihood Benefits and Food Security

In subsistence agrarian economy, people largely depend on agriculture and forests for their livelihood requirements. But the large chunk of farmers are marginal land owners and agricultural workers, landless labourers and livelihoods groups like pastoralists, fisher folks, NTFP collectors who strongly rely on their access to commons.

A recent study conducted by FES⁵ on sample size of 3000 households in 22 districts of India suggest that across all ecological regions, a high percentage of households access CPRs for meeting their variety of livelihood needs. The study also reveals that about 27 to 73 percent people access CPRs for agricultural use and a similar pattern has also been observed with respect to non-timber forest products (NTFPs) and other forest produce collection and sale. In case of grazing needs the share of commons is extremely high and it is found that in arid region about 75 percent of the households graze their animals in the common land. Without going into further details, it is quite apparent that the CPRs continued to provide a source for meeting various needs for a significant portion of the population across regions⁵.

Amidst lot of challenges and negative externalities, people in subsistence agrarian setting do realize the criticality of commons for the livelihoods and role of commons as safety net. This has prompted many communities to sustain their efforts in managing their commons.

Perception of Collective Threat

Common crisis and threat often create the necessity for collective action and appreciation of common resources. Many a times the magnitude of problem is beyond the individual capacity and comprehension. The other dimension of crisis management is that of scale of the problem and the resource as well as actors that are associated with that resource base. Many examples of such nature are found in India.

Super cyclone of 1999 in Odisha has shaken the communities in the coast and brought a realization of extreme loss of life and property and in many places communities initiated its own measure to protect the mangrove forest and marine resources all along the Odisha Coast. One such good initiative is found in Astaraga situated on the mouth

of Devi River in Puri district of Odisha. A group of local youths and women organized themselves and initiated the Sea Turtle Action programme in Gurundia village. Under this initiative, they are running a campaign and building local action like beach patrolling for sea turtle conservation, protection of mangrove forest and promoting responsible tourism. The communities of Gurundia realized that protection of coast and coastal ecosystem will save them from tidal surge and sea coast erosion. This unique initiative has also received wider acclamation from government and non-government agencies and they have set example of a successful community based coast management.

Perception of Identity

Economic incentives are not to be sure, the only incentives; people are sometimes also motivated by a desire to win prestige, respect, friendship and other social and psychological objectives.

The social-psychological theory by Hogg and Abrams highlights the fact that people derive part of their self esteem from the group they belong to. The strong sense of community identity not only provides voice and strength but also facilitate the strong collective action and cooperation among the individuals having a strong community identity. Individuals often visualise their self interest and good safety net within an overarching community interest. Hence, people believe that what is good for the community is also beneficial for them. Shared identity enhances trust and also creates a conducive environment of reciprocity which in turn provide for collective restraints for management of CPR. Prof Elinor Ostrom in her book "Governing the Commons" has also argued that a strong identity and boundary of resource brings in structural conditions for effective management of commons¹⁰.

In the state of Odisha, grass-roots community forest protection movement has been growing for several decades. These groups have shown great degree of resilience against the negative externalities emanating from policy environment and also from private actors having competing interests such as control over the resources, commercial farming, mining and industrial interests etc. The resource dependency is critical, but the motivations behind such tenacity of these groups are the sense of identity and resource affinity these communities have built over the years. There has a been lot of writing on the policy tension between joint forest management and community forest management in Odisha and even the Forest Rights Act, 2005 clearly recognises the ethnic identity of tribals with regard to forest protection and use.

Perception of Managing Externalities

The marginalisation of communities dependant on common becomes very evident in the form of multiple deprivations causing from limited access to their commons as a result of privatisation, encroachment and degradation of commons. It is observed that the conflict of interest between the resource communities and commercial interests has resulted in the displacement and disenfranchisement of local communities from their own resources. It is also widely acknowledged that the development initiatives themselves have caused displacement of numerous indigenous people, variety of resource usages and thousand hectares of common land. Independent experts estimate that the number of persons displaced by development projects since India's independence is between 60 and 65 million, out of which 40 percent are tribals and another 40 percent are Dalits and other rural poor (Human Rights in India, status report 2012, WGHR, pg no. 5). Odisha, one of the eastern states of India has become a hotbed of industrial investment and competing priorities of use of common property resources are very strong. People are losing their access to ommons in a fast pace. Sporadic examples of strong people's institution either based on ethnic identity or locational affiliation have shown great success in dealing with unequal powers like industries and mining organisation.

Niyamgiri incident of Kalahandi in Odisha represents one of such conflicts between the tribals and a multi-national Company. A tiny particularly vulnerable tribe Dongaria Kondh is fighting long battle to protect their land, livelihoods source and cultural identity. Dongaria's way of life is shaped with their cultural, religious and livelihoods associations with the Niyamgiri hills. Niyam raja is not only the testimonial of their ethnic identity, it provides the livelihoods choices by offering unique opportunity of rotational patch cultivation and a strong agroforestry practice with the use of numerous streams flowing through the hill slopes and collection of large volume of forest produce. They are known for their horticulture skills that fetch them handsome earning and the low land-man ratio provide scope for maintaining proper rotation in shifting cultivation good soil health and remain largely forested. Owing to strong judicial and cultural intervention, government constituted several independent enquiry committees to assess the situation. The NC Saxena committee¹² in 2010 visited the area. The Dongaria community shared their unanimous resolution citing the criticality of Niyamgiri for their survival and committee recommended that, the Ministry of Environment and Forest^a cannot grant clearance for diversion of forest land for non-forest purposes except if: a) the process of recognition of rights

^a MoEF – Ministry of Environment and Forest, Govt. of India

under the Forest Rights Act is complete and satisfactory; b) the consent of the concerned community has been granted. The resultant effect is that Supreme Court of India gave the decision in favour of Dongarias and protection of their habitat in Niyamgiri hills.

Perception of Access and Collective Bargain

Recently, active citizenship and rights based approach has been taking centre stage in policy making by many governments across the world. Good governance attributes to enhance transparency and citizens' participation in policy making and programmatic action were the key discussion agenda in the sixth Global Forum on Reinventing Government. In India, post 2000, a strong leap is observed in mainstreaming the citizen's participation in policy making. However a huge gap is observed in translating such policy directions to the field actions. Often, organizational leaders pass on the blame for inefficient and ineffective functioning of developmental programmes on to the lowest rung of bureaucracy¹³. At the same time discrete information management systems brings lot of ambiguity and act as disincentives for the community to hold the public authorities accountable. Technology commons has paved way to help good governance through appropriate information management and varied feedback loops. The clients subscribe to such technology commons as it provides them authentic and updated information which in turn enhances their access and ability for collective bargain.

Example of one such technology commons is Tracking Entitlements for Rural Communities (TERComs) initiative of Concern worldwide and its partners, a group of non-governmental organisations working in Odisha, India. TERComs a mobile based monitoring system for tracking the efficacy of important social protection delivery of entitlements to rural poor. It manages the database for 46000 households in three highly underdeveloped blocks in Keonjhar district of Odisha. Village Volunteers appointed by the village communities are monitoring the entitlements under three major social protection schemes on real time basis at service delivery points and sends the delivery acknowledgment to central server through mobile. Reports on these entitlements are generated monthly and shared with community in order to facilitate collective action on the ground. The access and sharing of information of a large number of households infuse strength among its members to initiate joint action to hold the government accountable. This initiative has strengthened the service delivery mechanism at district level, paved way for a policy on central reporting of closing stock of Targeted Public Distribution Schemes (TPDS) and helping poor in demanding livelihood entitlements to check loss of residual entitlements not claimed by the beneficiaries dealt by citizens. Efficacy of Livelihood entitlements of

46,000 households in 47 Gram Panchayats (lowest unit of governance) in 2 blocks of Keonjhar are being monitored monthly. 1,321 poor and socially excluded households have gained access to public distribution of food through citizen tracking. 876 widow and old people have access to monthly pension and social security. 4,298 TPDS cards were identified as duplicate and 1,364 as bogus/ghost cards. These cards were already seized by Panchayats and action was taken, many more in waiting. Rough estimates suggest leakages of INR 25 million annually in the 2 blocks from TPDS rice alone¹⁴.

Cultural Practice and Sense of Bio-Ethics

Sense of bio-ethics is a precondition of successful common property resource management. It offers restraints and guides decisions regarding current versus future consumption needs. In fact, many communities and cultures in India have built upon such premise of bio-ethics. The totems of tribes are clear manifestation of such cultural evolution vis-à-vis bio-ethics. Many communities have formulated their rule system and mechanisms out of the sense of goodness and respect to nature and God's creation. The practice of conservation agriculture in Zimbabwe, an African nation has begun on Christianity motivations. Hence, it has been found over time and space that communities have been successfully managing commons with clear sense of bio-ethics that draws motivations from cultural practice, belief system, religious faiths etc.

The Balipadar-Bhetnoi area comprises of about 70 villages of Buguda, Aska and Kodala Forest Ranges in Ganjam District. The Blackbucks of Balipadar-Bhetnoi areas are protected socio-religiously by the local people for several generations. The belief that the presence of Blackbuck in the paddy fields brings prosperity to the local villagers has contributed greatly to the conservation of this species. As the story goes more than a century ago, there had a long spell of drought in the locality. During this period, a small group of Blackbuck appeared in the area and then there was rain and the drought spell was broken. Since then people had started rigidly protecting these animals as they feel that their fate is linked with these Blackbuck. Even the changing time of people's perception towards natural resources could not affect the determination of people in protection of Black Buck. In fact, communities are more organized and insulated their institutional mechanisms to counter the emerging threats from transitional economic setting. The sheer census information speaks volume about the community effort. "While in 1918 their number was around 100 (as per estimates of the villagers), the census done in 1998 revealed their number to be 551. Finally, the census of 2008 reported that the number had gone up to 1,672.

Clear Perception of Socio-Ecological Systems

The other important driver of successful commons is that of interaction between human and natural systems. From time immemorial, the resource condition and systems have been instrumental in shaping institutional behaviour of community organization and vice-versa. The trajectory of institution needs to correspond with the stage of resource development and appropriation. In case of forests where the restoration process takes a longer time frame, it is all the more important to be vigilant to the response of both the institution and resources. The incongruence in both the process may lead to uncertainty and vulnerability. Therefore, it is realized and acknowledged that the framework of management principles needs to be inclusive and build upon the complexities of both the societal and ecological factors like class hierarchy, caste structure, occupational mosaic, succession stage, carrying capacity, rarity, endemism etc.

When analyzed the rule system and governance mechanism of forest protecting communities in central Odisha, it is clearly evident that communities are quite informed about the need for evolutionary institution mechanism with the growth of forest resource. The following matrix presents a typical example of successful community forest management institutions in Odisha.

Table 19.1 An institutional rule making framework for management of forest resources¹⁶

Growth of resource vis-à-vis Institution	
Stage 5 Established forest with good crown cover and return of biodiversity	Forest management rules Access and use rules Boundary rules Conflict management rules Monitoring & Sanction rules
Stage 4 Establishment of species and good resource condition	Forest management rules Access and use rules Conflict management rules Monitoring & Sanction rules
Stage 3 Stabilization of degradation/ availability for use Monitoring & Sanction rules	Forest management rules Protection rules
Stage 2 Regenerating/ Initial phase of resource development	Protection rules Monitoring & Sanction rules
Stage 1 Degraded/ absence of resources	Boundary rules Protection rules Monitoring & Sanction rules
Manifestation of Resource condition in the process of Ecological Conservation	Evolution of Normative arrangements in Social-Institutional Processes

Perception of Risk Adjustment Options

Sustainability requires a very deep understanding of the processes through which different classes of the households adjust with risks. Public policy interventions may strengthen or weaken such adjustments. Building sustainable organization requires accommodating risk adjustment strategies so that buffering capacity can be built¹³. Informal norms and culture change more slowly than formal rules, and tend to remold those formal rules so that the external imposition of a common set of formal rules will lead to widely divergent outcomes¹⁴. It is common to notice that at the moment there has been greater tension between modern governance mechanisms derived from policy and state intervention and traditional system evolved through human settlement process. The rigidity in both traditional and modern governance mechanism often flicker the breakdown of commons management. The community often rejects the new institutional mechanisms with fear of losing their cultural identity and social legitimacy. Certain communities are creative, preempt such risk and make adjustments in their system to avoid the tension and institutional collapse.

Badamasigh is a remote village of Gajapati district of Odisha. Gajapati is one of the most underdeveloped districts with high concentration of tribal population and situated in the heart of Eastern Ghats. The traditional village management system is quite strong and evolved over the years as a part of tribal culture. The modern governance legitimized by state and panchayati raj system often rejects the traditional form of management. The new functionaries and representative of state institutions are gradually taking over the charge of the tribal villages in the region. The communities in this village apprehended the collapse of their traditional governance and control over resource management mechanism and hence brought in adjustments in their system. They introduced a system called 'India'. India is an elected representative who will be responsible for convening village meeting and try to ensure that traditional leadership and representative of state institutions, women groups participate in all decision making process. With this mechanism they have reduced the tensions between modern institution, traditional institutions and also ensured participation of women in village decision making process.

From this case it can be inferred that on the key driver of successful commons management is that the ability of community to preempt risks and adopt risk adjustment mechanism to avoid the crisis.

Conclusion

Common resources are best governed by local communities. Community processes are woven around these resources and built upon long drawn practices. In India, the criticality of commons with respect to social, ecological and economic perspective is immense. Today the challenges for the management of commons are manifold including a rapid globalization and industrialization process with constant flow of information, money, objects, ideologies and people. With such influences, societies are becoming more and more transitional, to varying degrees and in various forms. In this respect, transitional villages are a general indication of the fundamental change in the societies in which we live and they reflect the dilemmas that the contemporary globalization processes brings along¹⁵. Amidst all these challenges, many communities are quite successful in managing their commons and even quite successful in influencing policy makers to promulgate protective policies like Forest Rights Acts, Participatory Irrigation Management Act, Right to Information Act, etc. In subsistence economic setting, the success could be attributed to both economic and psycho-sociological needs of the resource communities.

The experiential evidence from Odisha, an eastern state of India threw lights on such drivers. In Odisha, about 20 percent of the forest area are under active management of proximate communities, 7 percent of geographical area of the state is under water bodies and those are often used as commons with the presence of 13,200 Pani Panchayats and about 986 primary fishermen communities. In addition, about 2.85 percent area of the state is used for grazing of 240 lakh livestock and substantial share of revenue waste lands are used as village commons¹⁶. The number of self-initiated species conservation and marine conservation initiatives of local communities stands testimony to successful commons management. The resilience of many communities has also been manifested with long social, political and resource movements against industrial investment, irrational and incompatible land use options and various governance imperatives. The analysis suggests such successes draw strength from multiple economic and psycho-sociological drivers like relevance to local livelihoods and food security, dealing with collective threat, managing externalities, perception of access and collective bargain, perception of identity, cultural practices and sense of bio-ethics, understanding of socio-ecological systems and perception of risk adjustment options. Processes of state planning can be strengthened with a clear view of the commons as a complex relationship of commons that support the economy, ecology and livelihoods of a large gamut of vulnerable populations of India. Planners need to appreciate the demonstrated examples that helped to withstand the community efforts amidst strong adversities.

RURAL EMPLOYMENT GUARANTEE SCHEME AND COMMON PROPERTY RESOURCE MANAGEMENT: AKRSP(I)'S INTERVENTION IN SOUTH-WESTERN MADHYA PRADESH

Janmejaya Mishra

Introduction

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in India offers legal entitlements to rural households for at least one hundred days of wage employment in a year. It aims at enhancing livelihoods of rural poor through creation of durable assets in rural areas of the country. In a sense, it offers India a historic opportunity as a state to do justice with the vast section of people in rural areas who live in chronic poverty and survive with bare minimum needs. Since its implementation in 2006, MGNREGS has been considered as the largest ever anti-poverty programme in the human history¹. Providing decent wages to job seekers, bringing poorest, marginalized, scheduled castes (SC) and scheduled tribes (ST) households which have been sidelined from the mainstream development process to its purview by offering them a secure source of income, strengthening their livelihood base, reducing distress rural migration, empowering rural women and Panchayati Raj Institutions (PRIs) are the most noteworthy features of the Act.

Common property resources (CPRs) play a significant role in the life of rural poor. However, notwithstanding their private contributions, CPRs are faced with a serious crisis, as reflected by their area shrinkage, productivity decline, and management collapse². Common property resources also formed the component of rural people's strategies for adjusting to harsh and stressful environmental conditions³. Recently, Tiwari et al. found that the MGNREGA has provided multiple environmental services which included ground water recharge, water percolation, more water storage in tanks, increased soil fertility, reclamation of degraded lands and reduced

vulnerability, apart from providing employment and income to rural communities⁴.

Nimar lies in the south-western Madhya Pradesh and it is considered to be one of the most backward regions of the state in terms of widespread poverty and underdevelopment. Once used to be rich in abundant natural resources with vast possession of dense forests, water bodies, flora and fauna due to its unique location in between the valleys of the Narmada and the Tapti rivers. Tribal communities of Bhil, Bhilala, Barela, Korku and Gond constitute a significant portion of the population in the region who were primarily dependent on forest and land resources for their survival. However, environmental degradation occurred in the region through massive deforestation and soil erosion made them vulnerable over the years and severely affected their livelihoods. Thus, these tribal communities were forced to depend upon subsistence agriculture. Low crop productivity and negative income from rainfed agriculture forced them to depend on distress labour migration. The tribals seasonally migrate to well off areas in nearby state of Maharashtra and parts of Madhya Pradesh to earn their living. Mostly engaged in agriculture wage labour, construction works and manual labour work in cotton mills, they survive with bare minimum needs.

Realizing the potential role of MGNREGS in reviving the degraded common property resources and providing employment opportunities to the local communities through watershed development interventions, Aga Khan Rural Support Programme (India); a non-governmental organization (NGO) collaborated with the Government of Madhya Pradesh (GoMP) for implementation of MGNREGS in the districts of Khargone, Khandwa, Barwani and Burhanpur in the south-western Madhya Pradesh. In an agreement with the Rajiv Gandhi Mission for Watershed Management, a nodal agency of the Department of Panchayat and Rural Development, GoMP, it became a leading project implementing agency (PIA) for implementation of MGNREGS in Zirniya block of Khargone and Pandhana block of Khandwa district in 2007-08. Further, AKRSP(I) also signed an agreement with the Madhya Pradesh Rural Livelihood Project (MPRLP), another nodal agency of the state government, wherein it became the technical support team (TST) to help gram panchayats for implementation of MGNREGS in Rajpur and Niwali blocks of Barwani district. By the end of 2010, AKRSP(I)'s expertise in implementation of MGNREGS earned credentials in wider circles. Especially, various agencies/departments of the state government started recognizing its efforts in implementation of the scheme at ground. In a new initiative, the State MGNREGA Council, GoMP invited it to implement the newly launched Integrated Micro Project

(IMP) under MGNREGS in the tribal dominated Kharknar block of Burhanpur district in 2011. The table below shows details of MGNREGS projects being implemented by AKRSP(I) in MP.

Table 20.1 Details of MGNREGS projects

Type	Nature of Agreement	District	Block	No of villages	Sanctioned Area (in ha)
Model-I	Implementing Partner + Technical support team to <i>gram panchayats</i>	Barwani	Niwali	09	4728
Model-II	Implementing Partner	Khargone	Rajpur	06	4511
		Khandwa	Pandhana	12	4793
Model-III	Independent implementing agency (Micro-plan approach)	Burhanpur	Khaknar	16	5000
TOTAL		4	5	52	23245



Fig. 20.1 Map of AKRSP(I)'s programme area in Madhya Pradesh (highlighted)

Strategies for Implementation of MGNREGS

- a. **Community mobilization, formation of CBOs, training and capacity building**

As the implementation of the MGNREGS projects started in 2008, AKRSP(I) approached the projects with a set of interrelated activities. Building social capital, capacity building of villagers and community

based organizations (CBOs), natural resource management approach to livelihood enhancement, implementation of physical work with technical specifications and convergences with other suitable activities were the broad areas of work identified by the organization. During the initial stage, it was observed that the villagers had either no or very little idea about MGNREGA, about their legal rights to demand for wage employment, etc. Thus, lack of awareness among the villagers was emerging as the biggest challenge. To overcome such problems and make them aware about MGNREGS, its provisions and benefits to villagers, AKRSP(I) adopted a comprehensive strategy and organized set of event which included a number of meetings, mass events, video shows. Further, some of the community members including women were taken to see similar such projects running elsewhere through exposures visits that made them to have firsthand account of such work carried under the scheme there. Followings are the list of detailed events/ activities that the organization conducted for social mobilization, formation of community based institutions in the project villages and their training and capacity building.

- ❖ Household contact
- ❖ Village/ hamlet meeting
- ❖ Conducting Gram Sabhas
- ❖ Formation of Watershed Development Committee (WDC)
- ❖ Election of WDC leaders
- ❖ Formation of Self Help Groups (SHGs)
- ❖ Conflict resolution (if arises)
- ❖ Coordination with Gram Panchayat, Janpad, Zila Panchayat & PRI members
- ❖ Exposure visits of villagers and members of CBOs
- ❖ Trainings of community members and CBO members
- ❖ Video shows and street plays
- ❖ Mass awareness events
- ❖ Social audits

b. Participatory bottom-up planning

Lack of proper planning at village level has been one of the fundamental flaws in the implementation of MGNREGS throughout the country. Realizing this fact and utilizing its expertise on participatory bottom-up planning, AKRSP(I) rigorously followed a set of activities including the Participatory rural appraisal (PRA) exercise to facilitate the process of preparing detailed project report (DPR)/ village micro plans based on which the scheme was implemented in the villages subsequently. Participatory rural appraisal (PRA) is a

significant tool which helps in identifying the problems and issues that villagers face in their day-to-day life. Further, the villagers also play a vital role during the PRA exercise to identify and prioritize their own problems. During the initial stage of planning, the organization involved villagers from different sections including the poorest and women who identified existing problems in the villages and prescribed probable sustainable solutions to solve the issues affecting their livelihoods. During the PRA, villagers identified the fundamental problems faced in the villages such as soil erosion, deforestation and lack of irrigation facility leading to low agriculture production among the other. They also identified selected blocks which were to be treated under watershed development interventions through soil and water conservation, water resource development measures, forestry and wasteland development activities, etc. These activities were kept in the DPR for implementation based on their importance and priority. Presented below are the set of detailed activities that the organization facilitated and did for implementation of MGNREGS in the project villages.

- ❖ Participatory Rural Appraisal (PRA)
- ❖ Net Planning with households
- ❖ Preparation of Detailed Project Report (DPR)/ Village Micro Plans
- ❖ Preparation of Technical Sanctions (TS)
- ❖ Submission/issuing Administrative Sanctions (AS)
- ❖ Issuing Muster Rolls and Measurement Books from Janpad
- ❖ Execution of works through task rates
- ❖ Measurement of works
- ❖ Regular labour payments through banks
- ❖ Labour management
- ❖ Submission of management information system (MIS) files to Janpad
- ❖ Submission of monthly progress report to Zila Panchayat

1. Interventions on CPRM through MGNREGS

AKRSP(I) is implementing MGNREGS in the region since 2008. Initially, it facilitated the preparation of village micro plan/ detailed project report (DPR) by involving the local communities in a participatory manner wherein they identified selected blocks for watershed development treatment. These blocks included common property resources such as degraded hills, wastelands, annual streams,

small nallas and existing tanks, etc. Subsequently, implementation of natural resource based interventions was done under the watershed development theme in the villages. Works implemented through MGNREGS are soil and water conservation activities such as contour trench, nala plug, gabion, check dams, earthen dams/ percolation tanks, bori bandhs and plantation on wastelands, hill slopes and grass seeding on common land etc. Besides these, activities like farm bund, farm pond were also constructed in the private land of small and marginal tribal farmers. Major focus of the activities implemented through the scheme were to reduce soil erosion, retain soil moisture content, water harvesting and conservation, increasing irrigation potential for small and marginal farmers leading to enhanced agriculture productivity.

Table 20.2 Details of physical progress

Sl. No.	Activity	Unit	Achievement	Household Coverage	Remark
1	Soil & Water Conservation	Ha*	2140	1096	-
2	Check Dams	No**	29	225	Increased area of irrigation by 228.5 ha
3	Percolation Tanks/ Earthen Dams	No	16	57	-
4	Bori Bandhs	No	461	831	Irrigated 519 ha of land
5	Wasteland Development	Ha	48	-	-

*Ha – Hectare, **No - Number

2. Impact of the intervention on livelihoods of the tribal communities

a. Impact of soil and water conservation activities

- ❖ Continuous contour trench, staggered contour trench, cattle protection trench, and water absorption trench dug on barren hill slopes and waste lands especially in Niwali and Rajpur blocks in Barwani, Zirniya block in Khargone and Dedtalai in Khaknar block of Burhanpur district have immensely helped in decreasing soil erosion, retention of soil moisture, recharge of ground water, regeneration of wastelands.
- ❖ Nalla plugs and gabion structures constructed on common lands and small streams have also helped in ceasing soil erosion.
- ❖ Additional irrigation facility was availed in 228.5 ha land through constructions of 29 check dams. As a result of which, 225 rainfed small and marginal tribal farmers now been able to cultivate rabi crops.

- ❖ Bori Bandh, a temporary and low cost structure is proved to be very effective in availing irrigation facility to farmers belonging to poorest category. Though construction of 461 bori bands, 519 poorest Korku, Bhil and Barela tribal farmers benefited by cultivating wheat and gram during rabi season who were deprived of prior to the intervention.
- ❖ Earthen dams/ percolation tanks constructed in Rajpur and Niwali blocks in Barwani and Zirniya block in Kargone have helped in recharging ground water as a result of which dug wells constructed on the downstream have better water availability that provide irrigation support to wheat crop and vegetables grown during rabi season.
- ❖ Major impacts of WRD (water resource development) works have been observed especially in increase of net irrigated area, frequency of watering to crops during rabi season. Farmers are now using water efficiently though efficient devices such as mobile pumps and drips, etc.
- ❖ Due to enhanced irrigation facility during rabi, and other agriculture extension services, production of wheat has now gone up to 10-12 qtls/ acre in comparison to 5-7 qtl/acre before the intervention. Such enhanced wheat production has helped in food sufficiency round the year and increased household income from agriculture of poor Korku, Bhil and Bhilala tribal households in the villages.
- ❖ Based on documentation of some success stories/case studies, it has been observed that the annual agriculture production has increased up to 20-25 percent per ha. of land through irrigation facilities thus providing small and marginal farmers an additional annual income of Rs. 20000/- per ha. These farmers have invested the income gained from agriculture in purchasing quality agriculture inputs like seeds, fertilizers, creation of assets such as livestock, bullock cart, water lifting devices, mobiles phones, satellite TV sets, etc. Also, many of the households have repaid old credits taken from local money lenders, invested in health care facilities and children's education.

Box 20.1 Case Study: Check dams enabled small and marginal farmers to cultivate Rabi crop in Kakoda

Kakoda village is located in Pandhana block of Khandwa district. Mostly inhabited by the tribal communities of Bhil and

Barela, poverty in Kakoda is partly due to poor natural resources in forms of degraded forest on the Satpura hills and less fertile land which was lacking irrigation facility. AKRSP(I) started interventions in Kakoda village in 2005. Subsequently in 2008, it implemented MGNREGS under Rajiv Gandhi Mission for Watershed Management in the village. Since topography of the village is undulated, hence, soil erosion was the major concern in the village. There are three small streams and a major river namely the Abna flowing through Kakoda. These streams used to be the main source of irrigation for handful of farmers earlier who were able to irrigate only few acres of land. However, due to early drying out of the streams leading to insufficient irrigation facilities, they were facing difficulties to take second crop during rabi season. When AKRSP(I) started working in the village, farmers in Kakoda cited lack of irrigation facility as the major problem for them. After, formation of the Watershed Development Committee in the village, villagers were involved in preparation of participatory village micro plan and planned to construct check dams for irrigation. Accordingly, five check dams were constructed. Two check dams were constructed on the Mata river, two were on the Abna river, one on Gaonwali Nala and one check wall was constructed on Kumarbhata Nala to stop the water flowing through the streams. The check dams constructed are now helping to irrigate an area of 58 acre each year. Though, few farmers who have dug wells used to cultivate wheat in their fields prior to construction of the check dams, the production was very low as the water availability was not sufficient. Presently, water is available for longer period till March in the dug wells which are recharged due to construction of check dams on up streams. Now sufficient water is available for wheat cultivation. In total, 26 farmers are getting benefited through the check dams constructed. As a result of the intervention, substantial increase in production of food crop especially wheat and gram has addressed food insecurity issues faced by the households and enhanced food sufficiency round the year.

Box 20.2 Case Study: Earthen dams ensuring livelihoods of tribal farmers in Zirniya

Bhadlen and Gaybeda are among the nine villages in Zirniya block of Khargone district where AKRSP(I) has implemented MGNREGS under Rajiv Gandhi Mission for Watershed Management since 2008. These villages are predominantly inhabited by tribal communities of Bhil and Barela. Subsistence

rainfed agriculture practiced by the tribal farmers unable to sustain their livelihoods. Therefore, households in the villages seasonally migrate to Harda, Itarsi, Sendhwa and Indore region. By working mostly as agriculture labourer, unskilled manual work in construction sites and cotton mills, they were earning their living few years ago. However, implementation of MGNREGS has raised fresh hopes among the tribal households. While activities implemented through the scheme provide them employment opportunity and durable assets such as earthen dams/water harvesting structures constructed are ensuring sustainable livelihoods for rainfed farmers in the villages.

Before construction of the earthen dams, dug wells used to dry off just after second irrigation in wheat crop during rabi season. Construction of the structures at suitable location has increased the life span of nearly 15 dug wells through ground water recharge. As a result, water table has gone up in these wells. Farmers namely, Naren, Jagdish, Gokul bhai, Dhan Singh and Lakhan Bhai and others in Gaybeda are extensively benefited through the structure and are growing wheat, ginger, arvi (local name for *colocacia*) and other vegetables in this rabi season. Similarly, Bharat Mangtiya, Sadashiv Bhagwan, Radheshyam Mangtiya and Nandalal Shivilal in Bhadlen are benefited through the structure constructed near the primary school. These farmers were cultivating rabi crops previously in limited areas. After construction of the earthen dams in 2011, they have scaled up the cultivation of ginger and arvi which provide them more cash value along with wheat and vegetable cultivation that ensure their household food security.

**b. Impact of MGNREGS on tribal migration in Zirniya block:
A case study⁵**

Seasonal labour migration has traditionally been an unavoidable part of lives and livelihoods of tribal communities in the region. Extreme poverty, indebtedness and lack of local employment opportunities force the Bhil and Barela tribal families in Bagdari, Palda, Saka, Ted, Bhadlen and Piperkhed villages in Zirniya to most often migrate to the areas of Bediya, Sendhwa, Dhar, Indore, Itarsi, Harda, Khandwa, Burhanpur in Madhya Pradesh and Bhusaval, Nagpur and Pune in the neighbouring state of Maharashtra. They are largely engaged in wage labour works in unorganized sector especially in private agricultural farms, construction work in brick kneels, roads and unskilled labour work in ginning factory/ cotton mills to earn their living. During this period, they face lot of hardships including improper habitation, lack of sanitation facility and live in subhuman conditions

at the migrating places. Further, they are also frequently exposed to harsh economic as well as physical exploitations by farm owners, contractors and brokers at work places. Work of longer duration and payment of low wages are the major problems they face at the migrating places. Amount of daily wages paid to the migrant workers varies from person to person depending on the nature and duration of work they perform. Generally, women are paid less in comparison to the men. In cotton mills, average wage paid to a man labourer is Rs. 90-100/- while a woman labourer is paid Rs. 70-80/- for 10-12 hours of work in a day. In agriculture labour work, for 8-10 hour duration of work, a man worker is paid Rs. 60-80/- whereas a woman labourer receives Rs. 50-60/- per day. In construction work, while a man labourer is paid Rs. 70-90/-, a woman worker receives Rs. 50-70/- for 8-9 hour duration of work per day. Since, labour work consumes most of their times, small kids accompanying their parents during migration are left on open space and remain fully dependent on their elder siblings.

The tribals generally migrate after the festival of Diwali in October. After working for nearly about six months till March in the following year, they return to their villages during the festival of Holi. The month of March is indeed a happy time in the lives of the poor tribals. Bhagoria - the most significant festival among the Bhil, Bhilala and Barela is observed during mid of March with overwhelming enthusiasm across all age groups including children and elders. After celebrating Bhagoria which is followed by Holi in late March, they are engaged in agriculture works in the villages during the monsoon season. Again they start migrating to their respective places after Diwali. Thus, the cycle of migration continues year after year.

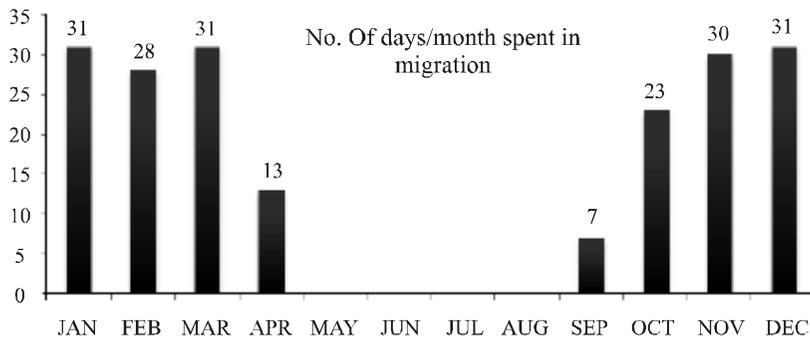


Fig. 20.2 Seasonality of tribal migration in Zirniya

Having no alternative source of income, landless and below the poverty line (BPL) households in the villages were completely dependent on seasonal labour migration before implementation of MGNREGS prior to 2008. Almost 100 percent of these households were dependent on labour migration as their major source of livelihoods.

In villages like Palda, Bagdari, Bhadlen and Piperkhed, doors of most of the families would remain closed for more than six months. As many as more than 90 percent of the households in these villages migrate out during the period. Similarly, in villages like Saka and Ted, approximately 75-80 percent of the households were migrating prior to implementation of the scheme. Nearly, 80 percent of the households were migrating with their entire family members. Migration among households of different tribal communities also varied depending on their economic status. Among the Bhil tribal community which is relatively the poorest in the villages, 94 percent of the households were migrating whereas among the Barela who are relatively better off, 91 percent of the households were migrating until 2008. Interestingly, 74 percent of the above poverty line (APL) households were dependent on seasonal labour migration for their survival.

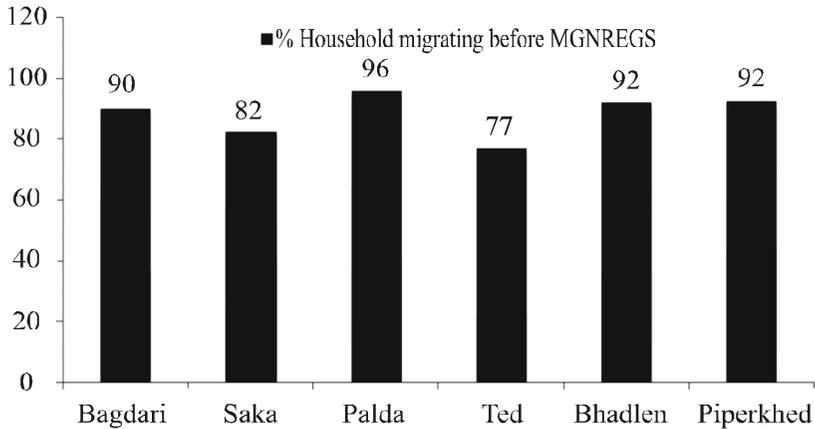


Fig. 20.3 Village wise details of households migrating before MGNREGS

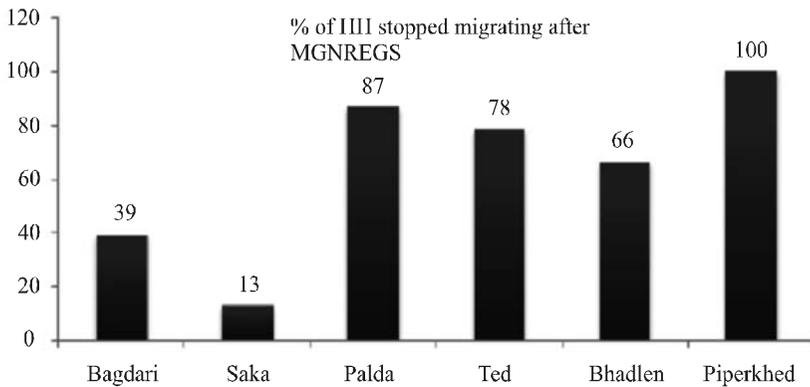


Fig. 20.4 Village wise details of households stopped migrating after MGNREGS

In 2008, AKRSP(I) started implementing MGNREGS in the Zirniya region which provided wage employment opportunity to the villagers. Works implemented through the scheme are soil and water conservation activities such as construction of field bund, contour trench, nala plug, gabion, earthen dams/percolation tanks, check dams, bori bandhs and plantation on waste lands, hill slopes and on bunds of private farms in the villages. Around 60 percent of the total budget spend in the MGNREGS are meant for labour generation. Through these works, people get enough opportunities for wage employment in their villages that led to significant reduction in distress labour migration. Major impact of MGNREGS on migration is observed in villages especially Piperkhed, Palda, Ted and Bhadlen. Due to availability of wage labour opportunities in the villages, most of the households which were migrating earlier have stopped migrating after implementation of the scheme. However, in villages like Bagdari and Saka, some of the households still migrate as substantial intervention is yet to be taken place. The figures below present various trends of labour migration in pre and post implementation phase.

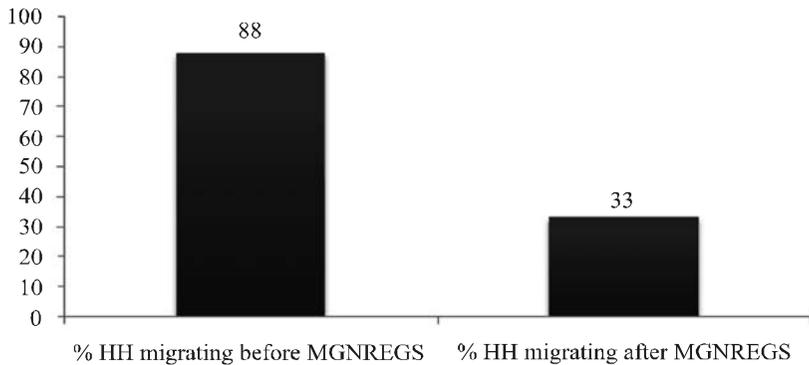


Fig. 20.5 Percent of household migrating before and after MGNREGS

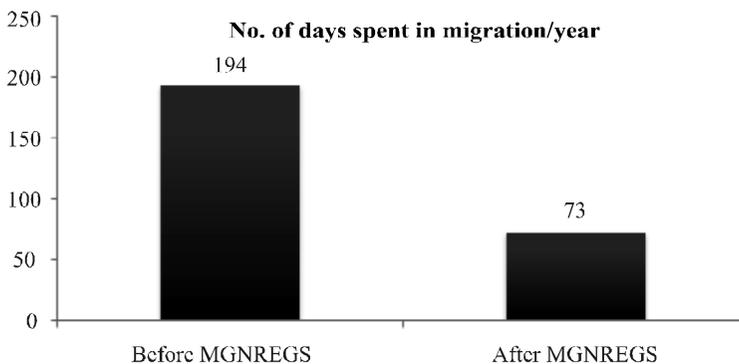


Fig. 20.6 Period of migration in pre and post implementation phase

c. Improving local governance through social audit and gram sabhas

Social audit as a tool to maintain transparency in implementation of the scheme is mentioned in the act. In this particular case, AKRSP(I) used social audit not only as a tool to maintain transparency in the implementation of the project but used it to increase awareness among the villagers and also made social audit as a forum for gathering various stakeholders like gram panchayats and women self help groups, at one place to have their inputs and feedback for better implementation. It facilitated social audit process of the work done through MGNREGS in the villages during the gram sabhas and prepared annual work plan for the next year through inputs from PRI representatives, women groups and other villagers. During the social audit process, members of village watershed development committees (WDC) present the progress of work done with physical and financial details with all bills, vouchers, balance sheets and audited books of accounts before villagers and answer queries raised during the proceedings. Further, they would discuss about the works to be executed in the next year. Villagers would prioritize the works with immediate importance and put it in the work plan and get sanction in the successive gram sabha. It has immensely helped in generating awareness among the villagers and maintained high standard of transparency in the works done through MGNREGS. Realizing the importance of social audits during gram sabhas, villagers increasingly demanded that social audit should be done on quarterly basis in a year.

d. Improving quality of life

Since implementation of MGNREGS in 2008, approximately 50 person's days of labour have been availed per household in a financial year against the target of 100 days per year in the project villages. Thus, on an average, a household has earned Rs. 6000/- through wage labour in MGNREGS works per financial year. The tribal households in these villages have invested the wages received through labour work in MGNREGS primarily in buying sufficient food items - grains, cooking oil and spices in order to improve their consumption pattern, purchased agriculture inputs - seeds, fertilizers and pesticides on cash, created agriculture assets such as pumping machines, bullock carts, oxen, renovation of dug wells, leased in agricultural land, repaid old credits taken from moneylenders and purchased livestock especially goats. Few have constructed new houses and many repaired their existing ones. Household assets like bicycles, sewing machines, utensils, mobile phones, TV, DVD sets, and transistors are being owned and some amount is being spent on health issues, rituals, marriages and children's education as they

now attend schools and women are regularly saving in self help groups thus improving their quality of life.

Conclusions

AKRSP(I)'s interventions on common property resource management (CPRM) through MGNREGS in the region has helped in reviving the degraded CRPs through soil and water conservation measures, water harvesting structures and plantation activities leading to improvement in agriculture productivity and enhanced food security. Further, implementation of the scheme has provided sufficient wage employment opportunity to the local communities thus providing them additional income and helped in substantially reducing their dependency on distress seasonal migration. Social audits and gram sabhas held in villages have helped in increasing awareness among the villagers and maintained transparency in MGNREGS works and provided a forum for the PRIs and CBOs to work together resulting better local governance system. The watershed development initiatives taken up by the villagers including PRIs members with support from district administration and facilitation done by AKRSP(I) is to witness more enduring impacts in the years to come, thus putting an end to the poverty owes of vast section of marginalized tribal people in the region.

INDIGENOUS KNOWLEDGE BASED FOREST MANAGEMENT: EMERGING CHALLENGES AND OPPORTUNITIES

Franky Varah

Introduction

Forest biodiversity is being lost at an alarming rate. Many studies indicate that a large number of forest ecosystems, populations and species are being lost due to the loss of forest habitats. Managing forest biodiversity is a must for the long-term and broad flow of forest ecosystem services. Over the past years, attention has been paid to the potential and real benefits regarding the use of traditional knowledge (TK) in forest biodiversity management¹, for locally sustainable living. Recently, many international organizations and conventions, including the World Commission on Environment and Development (WCED), Convention on Biological Diversity (CBD), Agenda 21, and Guiding Principles on Forests, specifically recognise the importance of indigenous knowledge. For example, Indigenous territories encompass not more than 22 percent of the world's land surface but the areas hold about 80 percent of its biodiversity².

Further, according to Indian official estimate based on satellite images of Forest Survey of India 2011 Report, tribal areas and the North East India in India and areas of remaining forest cover found a close correlation between the two. These two diversities are mutually supportive and reinforcing. So the relationship may not be accidental because many indigenous people resource use and practice tend to conserve forest biodiversity, as they rely on collection of resources for livelihood, rather than concentrate on few species for cash income and exports. But it does not mean that forest biodiversity are not declining in these areas. According to the India State of Forest Report, 2011 the tribal areas and North East India saw an unprecedented loss in forests³.

Objectives and Methodology

The present study takes Ukhrul district as a case study to understand the role of indigenous knowledge in forest management.

It is structured in three parts: firstly, attempting to understand their knowledge about forests and the cultural importance exemplified as a major component and reflection of indigenous knowledge. Secondly, highlight the dilemmas and difficult situations faced by Tangkhuls in relation to nature conservation and forest biodiversity protection within a contested environment created by processes of economic development and social change. Finally, the implications of these extensions and evaluation on what constitutes a pluralistic knowledge system of the environment will be discussed in terms of management strategies that can be used to promote the management of forest biodiversity in Ukhrul district.

The study is mainly based on field work in the Tangkhul Naga area and relies on the strength of participant observation by taking part in the various day to day activities of the socio-cultural life of the Tangkhuls. A questionnaire was also developed for interviewing key informants on the challenges faced, strategies and measures needed to help in conserving the Tangkhul culture and local forest biodiversity. Further, this study also reviewed the secondary materials, largely published books, journals, daily newspapers, magazines and internet.

Study area

The study is confined to Ukhrul district of Manipur state. The State of Manipur is a landlocked, hilly and mountainous region with an area of 22327 sq. km. Manipur can be divided into two geo-topographical locations i.e. Hill Districts and Imphal Plains. The total forest cover of Manipur is 76.54 percent of which the hilly area covers 82 percent and the valley, 13 percent³. Manipur has two distinct socio-cultural groups: those living in the valley and those inhabiting the hill. According to the Census 2011 valley people are predominantly Meitei's (Hindu) comprising 1,628,224 person that is 60 percent of the total population, while the hill people are various Tribal (Christian), who make up 1,093,532 person that is 40 per cent of the state's population (Table.21.1).

Table 21.1 Manipur Forest Covers and Population

Region	Geographical Area (km ²)	Population 2011	Total Forest Cover (km ²)
Manipur	22,327	27,21,756	17,090
Valley	2,238	16,28,224	352
Hill	20,089	10,93,532	16,738
Ukhrul	4,544	1,83,115	3,549

Source: Forest Survey of India. State of Forest Report, 2011 and Provisional Population Totals and data products -Census 2011: Manipur⁴

Ukhrul district is part of the eastern Himalayan biodiversity hotspot, indicating its richness in biodiversity and high vulnerability to anthropogenic pressures. Over the past few decades there has been a drastic increase in population, developmental activities, decreasing shifting cultivation cycle and the privatization of community forest for monoculture (horticulture crop and tea) which have increased the pressure on forests and their resources. These factors have also affected the livelihood base of the local poor, reinforcing persistent cycles of poverty amid 'plenty' in many pockets of the Ukhrul district.

Tangkhul Nagas

The Tangkhul is one of the Indigenous Naga tribe residing in North East India. They inhabit the biodiversity rich hills in Ukhrul district of Manipur. They are the largest ethnic tribal people of Manipur with a population of 183,115 according to 2011 census. Being in the hilly area their social and economic activities revolve around the village, land and forest which form the basic foundation of their livelihood and culture. In Tangkhul tradition, one never abandons the concept of "my village, my home, and my clan". Their tradition reinforces this concept of ethno-territorialism. The village has been the highest political, social, economic and religious unit and the main source of spiritual, social and cultural bonding amongst the people. The basic structure of the governance system in Tangkhul villages is headed by a hereditary chief called *Awunga*, along with village clan based village council commonly known as Village Authority (VA) who are responsible for the well-being of the villagers. All village festivals, social and religious functions begin with rites and scarifies by the *Awunga*. These customs and traditions bind the entire village community including the *Awunga*. The Tangkhuls have rich reservoir of knowledge about nature which is conceptualized as indigenous knowledge through various sacred rituals, cultural practices and beliefs in which they remain embodied. The traditional knowledge of the Tangkhul stems mainly from four sources. Firstly, the experience accumulated over centuries and transmitted from generation to generation. Secondly, the experiences shared socially by the members of the group. Thirdly, the experience shared in the household or the domestic group to which the individual belongs. And lastly, the personal experience, particular to each individual, achieved through the repetition of the annual cycles, enriched by the perceived variations and unpredictable conditions associated with them. Tangkhul indigenous knowledge is determined by a set of shared meanings available to individual knowledge.

Most of Tangkhul culture and customs and its traditions bonded the family, clan, the village as a community in the form of songs, folklore, proverbs, dances, values, beliefs, rituals, agricultural practices, carving of figures on stone and wood, and designs on clothes. Most of this teaching and learning process took place at the Morung (learning and socializing dormitories) and during celebration of festivals and agricultural work where knowledge was shared by ways of daily activities. Most of the folk songs speaks about or relate to the historical background of the Tangkhul community, the village, the clan, and certain well known individuals. Seasonal songs are sung only in their particular season. For instance, spring songs inform what the spring season is and what one should be doing during that season. There is at least one folk song for each period of the agricultural cycle. Oral historical traditions have been the primary means of passing village, clan and individual story where knowledgeable elder narrates about the customs and traditions of the past. They also share about spirit worship. The indigenous knowledge system of the Tangkhuls in matter of sacred and religious importance is handed down to selective members like the village chief, chosen clan and family member of the village. Here transmitting of knowledge is not disclosed to the public, for instance, knowledge of important rites, rituals ceremonies but is handed down to dutiful members of the village. Likewise, the knowledge about the use of herbs and shrubs is transmitted to those people who can be trusted and who show an interest in medicinal plants.

Traditional Livelihood Strategies

The Tangkhuls largely depend on forest resources for their livelihood. Agriculture, hunting, fishing, and food gathering are important activities of their sustenance. The inherent indigenous knowledge system allows them to interact with the surrounding forests in different ways. They use their indigenous knowledge base to produce products for their daily needs and other purposes which apparently prove the values and significance of forest biodiversity in their way of life. The linkages of forests with livelihood, food security, and agriculture make it a very important.

Non-Timber Forest Products (NTFPs) derived from forest biodiversity, such as herbs, medicine plants, fiber, honey, gum, nuts, fruits, flowers, seeds and wild meat are essential food items used by Tangkhul to sustain their way of life. Bamboo and canes are also used to make bows and arrows, bamboo spears etc. The culture and religious and traditional perception of forest biodiversity also includes those plants and animals connected to their beliefs (nature worship) and traditional rituals. Some plants and animal have special usage in

the Tangkhul culture; for example, a special type of small bamboo with long internodes is used for drinking rice beer from a common pot, feathers of the hornbill bird is used to decorate the headgears. Further, a dance form has been evolved, inspired by the hornbill and to this day the hornbill is widely respected in the Tangkhul culture.

In the Tangkhul traditional practice, trees such as oak and alder are never cut and uprooted completely. They are cut just at or above the breast height and also just above tree node and the trunks are usually left. When the coppices are about one year old, only six or seven of them are left on the main trunk and the rest are cut. The remaining coppices grow fast and in four to five years, the trunk is ready for pollarding again. The branches that are thus cut provide a large quantity of firewood. This practice also help in protection from fire and when the trunk becomes big enough, the bees make hives inside the elongated hole of the trunk which is very sustainable for ecosystem.

Shifting cultivation is the major occupation of the Tangkhul Nagas. The practice of shifting cultivation represents an intricate relationship between ecology, economy, society and the cultural ethos of the region. For the Tangkhul forest management, there is often no clear cut demarcation of forest and agricultural lands. In shifting cultivation areas the same piece of land can be under cultivation at one time and under succession forest at another point of time. While clearing the cultivation field they spare certain trees which are good for soil conservation, for example, the Alder tree.^a As opposed to the general notion the Tangkhuls believe that shifting cultivation helps the forest to regenerate on its own and give rise to new plantations from time to time and contributes to conservation through a number of practices, including the use of more variety of plant species than other agriculture and food production system. Further, shifting cultivation produces many kinds of food which are organic in nature. For example, farmer produces a wide range of mixed cropping and sequential harvesting in the jhum field. This multiple cropping system creates agro- biodiversity and makes gene pool conservation possible which is absent in other agriculture system. Different age of the fallow forest provide different products for livelihood. This richness of biodiversity is possible with the knowledge and effort developed and evolved by shifting cultivators over centuries.

^a Jhum fields are often found intermingling with alder plant which is a socially valued tree and Tangkhul farmers have recognized their significance since time immemorial. According to Ramakrishnan, 2004 the scientific justification of keeping these plants intact is that it enriches the soil by fixing atmospheric nitrogen to the tune of 125kg per hectare per year.

Conservation practices of the Tangkhul are deeply interwoven in their day to day lifestyle, and forest related livelihood pursuits of their understanding of the environments practice and act as a mode of cultural conservation. Every person has an equal share, and each member of the society plays a role according to his physical and mental abilities. For example, the selection of site for the shifting cultivation, religious ceremonies are performed by the elderly and experienced members of the society, while the felling of trees and clearing of jungles as well as burning of the dried biomass is carried out by the younger members of the village community. For example, Hodson pointed out that “when felling the jungle for the shifting cultivation, it is not unusual to leave one tree in the middle of the field as a refuge for the tree spirit”⁵.

The Tangkhul traditionally practice shifting cultivation by developing a balance for meeting their present needs and protecting the environment for future generations. Using their indigenous knowledge for controlling the menace of diseases some of the traditional farmers alter certain crops and plants according to biological control, adjusting crop density, time of planting, fallowing, mulching, multiple cropping, planting without tillage, planting in raising beds, rotation etc. For example, rice is mixed with other crops primarily to make a physical barrier for the movement of insect pests-pathogens. From time to time creeping vegetables like pumpkin, cucumber, etc., are included in between plants primarily for checking the weed pests to attract the insect’s pest pathogen for feeding in preference over the rice crop.

Religious Belief toward Nature

Tangkhul traditional religion believes that nature is endowed with spirits; benevolent and malevolent spirits. They believe in the existence of the creator called *Ameowo* who is a benevolent spirit. It was widely believed that the creator, through a benevolent entity, has little concern with humanity. The malevolent spirit had more to do with people’ lives inhabiting every stream, mountain and forest bring about upon men illness and misfortune. The Tangkhul was in constant endeavor to appease their spirit embodied in huge rocks, caves, forest, rivers, and every place one can think of. The appeasing of the sacred is connected with environment protection. They believed that if they can protect the spirit/sacred tree well, then it will protect the village and wildlife of the forest, and bring rain and provide general protection of the environment and bring good luck and fortune.

Though all trees were believed to have their spirits, those of big trees were considered more powerful and greatly feared. Besides, forests were believed to be the abodes of the spirits. For example, in Tangkhul tradition there are numerous festivities associated with erecting monoliths either wooden or stone, among them, maximum importance was given to *Maran kasa* (feast of merits), erecting wooden pillars as symbol of honour, dignity and prosperity. There was an elaborate ritual involved in the selection of the tree to be used as pillar, for the actual carving and transportation of the pillar, and for its erection and dedication. Before the tree is cut, the priest propitiates the spirit of the tree by offering rice beer, animals and other things as offerings to the guardian spirits. Trees and plants were respected as they were believed to belong to forest spirits. Such belief gives them the conscience that they cannot take more than they need. Tangkhuls believe appeasing of the sacred is connected with environment protection. This implies that the fear of the spirits was the most effective means of social control. For instance, in sites like Shirui Kashong which is a sacred peak for the Tangkhuls, they looked upon the peak with respect, fear and wonder.^b

Further Tangkhul Naga established a system of beliefs and taboos for forest conservation and management practices that ensured existence of forests even in critical and fragile areas by developing and adopting mechanisms like placing certain taboos on harvesting, prohibition on hunting of particular animal species within specific area and also during specific period to ensure the continuance of animal life. Culture and religion played an important role in developing, managing and protecting natural biodiversity and common resources. Tangkhul society succeeded in managing resources well over time by adopting traditional practices such as religious or ritual representation of resources management. The key point is not religion per se, but the use of emotionally powerful cultural symbols to a particular moral code and management system. For example, a piece of cloth is woven around the trunk of some flowering trees like Papaya (*Carica papaya*), Yongchak (monkey tree/*Parkia roxbughii*) and Tera trees (*Bombax ceiba*), as a gesture of protecting the modesty of the tree and to increase fertility so as to get more yield, which otherwise may stop bearing fruits. However, the logic behind is that the bright colored clothes deter the pest from attacking the roots and stems of the tree which affect their flowering ability. The application of Tangkhul traditional knowledge in the management of natural resources has developed into a systematic body of knowledge regarding the natural environment, functioning of the ecosystem and habitat of human use in more holistic way without damaging the natural process and cycle.

^b Shirui Kashong which is now preserved as national park known for rich biodiversity and the flower that grows on this particular peak called the Shirui Lily is the State Flower of Manipur.

Regulations on Traditional Customs

Tangkhul customary law considers the forest as common for all which provides their survival base. The local community is allowed unrestricted accessibility by considering the forests as common property of the village. For them, one of the main important products of the forest is timber and firewood. The owner of a piece of forest can use as much as trees for timber or firewood and other requirements. If he does have the desired types of timber in the forest land which is common for clan or village forest, he seeks permission from the clan or village chief to utilize another person's forest land. Though a person can get as much timber or firewood from his own forest as he needs, he cannot sell it. In the same way the practice of customary laws also holds for water management. As Hodson pointed out that in the case of villages which possessed terraced fields we find a mass of "customs relating to the equitable distribution of water"⁵. Customary sustainable use of forest biodiversity, such as hunting, is often essential for the subsistence and for the cultural and spiritual identity of Tangkhul. The sharing of forest products among the community was prevalent irrespective of the economic status of the individual. For example, a rich man shared his forest products like timber with the needy as alms. Tangkhul have a tradition of erecting monoliths and on such occasion a series of feast feting is conducted among the village as a sign of oneness and togetherness.

As Thingreiphy Lungharwao argued, in shifting agriculture Tangkhul land resources are managed by traditional institutions in such a way that every family has access to resources required to meet their needs. Economic activity is dictated by needs and not by commercial interests or greed. Land resource allocation is done according to equitable identification of factors such as the needs of a family or individual and their ability to utilize their allocated land. Redistribution of land among those who need more and who require less is a common practice. This is an efficient system in handling poverty and food security in villages where the community is left alone with no support services⁶. The management system was based on the principles of equity and sustainability. The resources were considered a gift from the ancestors meant to be used according to the needs of the present generation and preserve for posterity. Everyone's need was its guiding principle related to shared-labour or labour exchange and mutual cooperation as well.

Challenges and Opportunities of Forest Management Strategies

In this section, we examine the challenges and opportunities that local forest-user groups face in managing forests in Ukhrul district. The Tangkhul traditional outlook, customs, beliefs, rituals, concept of forest biodiversity conservation have been subjected to aggressive changes due to the impact of socio-economic, cultural and political forces which are also responsible for the breakup of traditional Tangkhul society. Tangkhul are no longer living in conditions of balanced ecosystems that they managed and maintained earlier. Such alteration gives rise to new needs and values which may imply the loss of indigenous knowledge, the shattering of old binds and beliefs which have been the pillar of social cohesion and cultural continuity. During last couple of decades, there are internal challenges within the Tangkhul that can be attributed to socio-economic transition, population dynamics as well as the influence of globalisation and internal transformation in the Tangkhul society.

Today Tangkhul Nagas are predominately Christian, forming more than 90 percent of the population. Colonialism and missionaries were the first who forbade the Tangkhul converts from taking part in festivals, dances, singing folk songs and other Tangkhul customs. For example, Christian beliefs did not allow Tangkhuls to worship traditional sacred objects and such prohibition slowly resulted into changing their relationship with nature. Christian priests tend to be aggressive and demanded destruction of such sacred objects. These attitudes not only undermined the priceless values of a people's culture but also resulted in total chaos and confusion for some generations. The present cause of forest biodiversity crises are often expressions of cultural crises, arising from loss of traditional and cultural roots without acquiring new roots.

Population pressure and market force

Many scholar stated that population pressure leads to overexploitation of natural resources⁷. Yet, these same statements also commit themselves to contradictory, incomplete and untenable claims: Bilsborrow and DeLargy concede that "while population pressure is

^c Forest Survey of India. 2007-2001. *State of Forest Report 2001-2007*, F.S.I., Dehradun

^d Here it is not to deny that population problem does not exist in Tangkhul, but the kind of attention it has been accorded. Other serious issues of resource distribution have been neglected in the rhetoric of population growth.

often considered an important factor in environmental degradation, solid empirical evidence on its role is almost non-existent." According to Forest Survey of India Ukhrul's forest land areas changed from 79 percent in 2001 to 80 percent in 2007.^c If forest area increased and decreased while population went up each year, clearly there are other factors that are much more significant in explaining deforestation.^d Arun Agrawal's⁸ study in Kumaon district of Himachal Pradesh show that: "Broad structural factors such as demographic pressures and spread of markets are not the best variables in trying to explain the condition of resources, even if they may seem to be intuitively appealing explanations of resource degradation. At the local and the micro level, a host of social and institutional variables mediate the impact of larger structural variables. Putting it directly, the level of institutional effectiveness is more important in determining the condition of resources than either population pressure or market forces per se"⁸.

Their impacts have been small at a time when their population numbers were small and technology simple enough to be environmentally caring. But now people are diversifications of economy and many people now do not look at forest and related activities as an occupation. But when people are deprived of the means to adopt their resource management practice to the changing needs of the community, the resources may become unsustainable.

In recent years indigenous natural resources management knowledge system been replaced with a modern market-oriented and profit-oriented management system. The entry of the dominant capitalist mode into the Tangkhul Naga has created formidable obstacles for the reproduction of customary management practices. Today many species are overexploited for food and shelter, and search for tradable commodities, and curiosities, has threatened other species. Many of the most exploitative activities such as illegal logging and fishing has led to people losing their love for nature, because people are motivated to convert local diversity of biodiversity into market value. Market forces encourage use of forestland for commercial purposes such as growing cash crops, logging and firewood. For example, in the mid-1980s due to the improved road transportation the region experienced a huge scale of indiscriminate timber logging supplying it particularly for construction of the railway tracks in Nagaland and elsewhere. However, logging was later banned by the Tangkhul Naga civil organisations. The reasons for ban was rapid loss of forest area, and degradation of forest resources.

^e Manipur village authorities acts, chapter 11, clause 3(4)

There is no place for the Tangkhul in the market with the skill and knowledge they have acquired by living and working in the forest. The timbers, firewood and non-timber forest products such as fungi are in great demand in market due to availability of modern technology (sawmill) in the district headquarters and are sold in the market without proper planning. The introduction of market mechanism or government controlled institutions, will affect local indigenous knowledge, which in turn will affect the way resources are managed/used. The increasingly monetized economy pressures the local economies and environments to produce a marketable surplus. For example, many state programs promote cash economy for the alternative jhum cultivation. Some indigenous knowledge related to livelihood cannot be measured by money alone and once lost can never be recovered.

Forest laws at the root of the problem

Apart from commercial forces, legal processes in Manipur have introduced changes in the Tangkhul land and forest. In some cases the State did not succeed in introducing the proposed changes. In other cases, it succeeded partially. The proposed changes are meant to make possible for the non-tribals to own land and forest in the tribal areas. An attempt was made in 1956 Manipur Hill Village Authority Act which introduced elections of chairman and referred the traditional chief to and ex-official position^e. Further, The Manipur Hill Areas (Acquisition of Chief's Rights) Act, 1967 was made to abolish chieftainship in the hill areas of the state by paying compensation. It was a deliberate attempt of "the state to get control over the land, customs, and traditional political practices by the village chiefs but the Manipur Legislative assembly passed it despite strong opposition from the Hill Areas Committee"⁹. The majority of the villages continue to select the Village Authority on the basis of consensus and equal representation of all clans.

There is a persistent attempt to change or modify the existing tribal customary laws and practices that will impact the resource and land ownership pattern of the tribal people. For instance, looking at the reason behind the proposal to extend the Manipur Land Reforms and Land Revenues Act, 1960 (MLR and LRA) to the hill areas of the state. The desirability of a single law is given as the official reason. In reality the change are meant to facilitate transfer of (tribal) land in the areas to the (predominantly non-tribal) inhabitants of the Imphal valley. This Acts has been amended several times. It was extended to the village lying in the (non tribal) Imphal valley of the hill areas of Churachandpur and Senapati district. In the latest proposal, sub-section (2) of section

1 the word “except the hill areas thereof” was to be change to: “it extends to the whole of the state of Manipur.

On the other side, hill people argues is that the customary tribal land ownership institutions should not be tampered with on the plea that the land rights of the people are closely linked to the authority of the chiefs and the community over the land. This implies that there is no government land in the hills and the villagers hold the land with the sanction of the Chief and community and not the government. The notion of exercising control over land and forest originates from their tradition. Community control and collective responsibility rose because of the nature of collective corporate living among the people. Such collective approaches initiated the tradition of customary practice and respect for law.

State Policies

Central government and state are developing various policies and laws related to natural resources management. Laws and policies have played an important role in the process of legitimisation of state's control over the land and forest of the tribes in Manipur through Joint forest management; attempt to declare protected areas and creation of wildlife department. There has been frequent clash of interest between the two regarding the management of the forest conservation with their competing claims as the protector of the forest. For instance, as government circular in June 1990 to all the state and union territories provided guideline for the involvement of village communities and voluntary agencies in the regeneration of degraded forest which is known as Joint Forest Management (JFM). JFM which has taken off in a big way in many state in country, is still at an initial stage in the region. The idea of JFM implies the handing over of certain right to village communities' appropriate natural resources for their own use. However, there is the lack of a clear definition of who precisely the right holders are and what are the kinds of rights and sanctions that can be applied impeded the process of establishing social institutions. An important obstruction to the full development of JFM is that the people have involved in protection but have not been given enough authority to deal with management. Due to lack of clarity regarding tenure, the villages are often apprehensive of their future status.

The major issues forest is what returns can be guaranteed to the communities to generate sustained interest in protection. If the forest are in good condition, nearby communities probably have already been getting the benefit from the non-timber forest products. For instance, in Ukhrul, the forest department's effort to introduce or expand JFM

programs in village forest that are listed as unclassified forest have not been well appreciated by the communities. While the communities consider that all the so-called unclassified forest areas are effectively under the communities-controlled forest, the government's efforts to introduced JFM in such areas for better forestry development and management have been resented by the communities as a government's ploy to control the community forests.

In recent years, Tangkhuls are making several efforts to protect and revive traditional institution either in the traditional form, or innovative forms, in order to empower local communities with appropriate information, skills and technologies to respond in their own way to the threat posed by various forces. For example, many villages have created a new system as Village Development Authority (VDA). The village chief takes care of land and forest issues and also safeguards the village customary laws, while the VDA look after development issues and takes care of all government schemes and its beneficiaries. Conservation initiatives must result in tangible social, environmental, and economic benefits to communities. The significance of indigenous knowledge as a mechanism to implement management partnership and self government and as a mechanism to integrated local values into decision making can be best appreciated in this context. These measures would act to strengthen their local knowledge of forest management wherever it still exists together with community property management system to sustain.

The Tangkhul people have largely preserved their identities, value of kinship, institutional reciprocity and knowledge and continue to resist alien resource exploitation and management onslaughts. Besides, their increasing awareness of natural resource management is stimulating their interest of rediscovering their traditional knowledge. In fact the institutional values of self-management may have been reclaimed, re-conceptualized, and renegotiated among the Tangkhul people. One of the best examples of this process is the existence of the number of self-initiated institution like, Student Association (Tangkhul Katamnao Long) and youth organization (Tangkhul Mayar Ngala Long) which issue notices not to indulge in government related project like tree plantation and other activities which are likely to disturb ecological balance. These institutions in collaboration with All Tribals Students Union of Manipur (ATSUM) and Naga Students Federation (NSF) have successfully resisted such structural exploitation of the forest by the Manipur state government and raised awareness of biodiversity importance. They have tried to involve the participation of villagers in regeneration, protection, conservation and management of degrade forest. It seems that here is a deep disconnect between the interests of Tangkhul and the government and private agencies involved in participatory programs like in JFM.

Keeping traditional ancestral domains such as forests and natural resources under communal tenure is an effective strategy for maintaining forest management. The local people are more familiar with the given forest biodiversity. The future of forests management lies in such strategies, as does the well-being of the people of communities dependent on forests. The failure to ensure local co-operation in biodiversity conservation efforts may make the local people indifferent and perhaps even hostile to the effort because of the top down initiatives which people might not be very receptive of. From the previous section we find that the tribal people oppose any policy that treats the every community as homogeneous or entails the enactment of a uniform law applicable to all without acknowledging the existence of traditional land owning system and also governance. Assimilation and integration are seen as attempts to undermine historical and customary rights over territory and natural resources. Any special protection accorded is seen by them as a legitimization of their distinct identity and a prelude to state formation of the tribal areas. In the indigenous communities land and forests are the two basic resources for subsistence. If their land and forest rights are not carefully guarded and often threatened that attempts to change land from communal ownership to state ownership have disrupted behavioural pattern, indigenous knowledge and social self regulation mechanisms that once ensured of conservation of biodiversity as well as sustainable uses of species and ecosystem¹⁰. Lack of security of land rights and user rights for communities is a major cause of decline in local systems of forest management. Biodiversity conservation measures should be incentivized to ensure the participation and ownership of stakeholder communities. Conservation measures should enhance local people's livelihoods, technical and management capacities, and decision-making role, otherwise sustainability can prove elusive.

Is it possible that indigenous knowledge based forest management can survive within a context where powerful actors, governments, international institutions in charge of globalising an economic pattern of open markets and deregulation? Will we be aware enough to make the difference between genuine cases and those which are just a co-option to the prevailing model? There is no single model of community-based forest management but all of them have as a common trait the necessary autonomy and sovereignty of their legitimate authorities in order to make decisions relevant to the control, use and management of the resource base of the community with a view to fulfil the needs of its members. Hence, management partnerships for natural resources are best built upon existing social capital such as indigenous knowledge and culture, traditional institutions, and customary rights and practices, from the community

level up. By empowering and trusting these institutions and building their management capacity, the formal authorities created viable partners in the new biodiversity management system, which relies on networks of villages and community conserved areas. The best hope for conservation may come from the fusion of indigenous knowledge and science. In the past, wasteful and selfish exploitation of forests by individuals was prevented by a system of social control of the traditional institutions. But strong forces are today eroding Tangkhul traditional practice of forest conservation. Even in this bleak scenario there is reason to hope for the re-institutionalization of self-management system.

Conclusions

On the basis of what has been said above, it is possible to identify the Tangkhul traditional knowledges contribution to the conservation of forest biodiversity through their daily practices of livelihood activities, traditional beliefs and traditional customs in its varied aspects. In order to empower local communities with appropriate information, skills and technologies, efforts are made to protect and revive indigenous knowledge either in the traditional form or in new innovative forms. However, the government policy of conserving forest biodiversity in Ukhrul district is targeted more towards legitimizing its own governance rather than addressing the needs of the people. For example, applying scientific ideas the government attempts to do away with shifting agriculture. Since the local people largely depend on shifting agriculture for their staple food and since their cultural and the overall indigenous knowledge has a basis in shifting cultivation, regulating shifting agriculture amounts to regulating their way of life. These efforts have failed due to adverse physical, socio-cultural environment in which the Tangkhuls are compelled to practice shifting cultivation.

The social and cultural practices that have an inherent respect for nature enabled them to offer complete protection to natural systems. Tangkhul's indigenous knowledge cannot stand solely viable in this modern age beneath population pressure and the constricting global market force in Tangkhul Naga society. The present research shows an urgent need and consolidated use of pluralistic system of knowledge to solve the loss of forest biodiversity. This pluralism can include local knowledge about specific ecosystem as well as non local perspective in interpreting that knowledge. There are difference ways of knowing and no one standard for determining the validity of knowledge.

Indigenous knowledge need to be wisely mixed with modern principles of conservation of natural resources. But government and outside agencies should not replace the local community's right to make decisions that affect their livelihood and culture. Instead, efforts should be made to assist the local people to preserve and utilize their indigenous knowledge and natural resources in order to protect biodiversity and sustain their traditional livelihood. The systems that follow the principle of sustainable rural livelihoods must be recognized and strengthened with appropriate policy support to form the basis for sustainable forest management. One does not have to go back to the past and maintain all their beliefs and practices intact. Instead one has to look at the past with the future in view by identifying the fundamentals of their indigenous knowledge system, build on them and update them. To retain culturally significant element of traditional way of life, combining the old and the new in way that maintain and enhance their identity while allowing Tangkhul society and economy evolved.

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