

DWINDLING FOREST RESOURCES AND ECONOMIC VULNERABILITY AMONG TRIBAL COMMUNITIES IN A DRY/ SUB-HUMID REGION IN INDIA

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Abstract: The paper examines livelihood conditions and explores policy options for mitigating poverty among tribal communities in Gujarat state, which is experiencing rapid economic growth and widening disparities where tribals are the most poor and deprived. While labour force diversification and migration are important coping mechanisms, these alone may not help lift a large number of the poor out of the poverty trap, which to a large extent is linked to degradation and lack of proper entitlement for managing and using forest resources among these communities. Forest-based livelihood options assume special significance especially in the wake of the emerging policy framework for adaptation and mitigation of climate change, where the main thrust could be on combining regeneration and conservation of forests with right kind of incentives for ensuring sustainable management and use of forest resources within the region. The mechanism of 'compensated conservation' proposed by India could prove very useful in this context. Copyright © 2009 John Wiley & Sons, Ltd.

Keywords: poverty among tribals; forest and poverty; livelihood and conservation

1 INTRODUCTION

1.1 Poverty Among Forest-based Economies

Persistent and high incidence of poverty among tribal communities is a widely prevalent phenomenon in large parts of the country (Kumar *et al.*, 2000). An estimated 275 million people in India depend on forest for at least a part of their livelihood. Forest dwellers, which constitute a large proportion of tribals, are among the poorest and the most vulnerable

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groups in the society. Forests offer vast potential for poverty reduction and economic growth in rural areas along with fulfilling the national goal of resource conservation. Approximately 89 million tribal people live in the forest fringe areas, and they have close cultural as well as economic links with the forest (World Bank, 2006a, pp. xiii–xiv). Lack of access and entitlement to develop, use and manage forest resources are among the most critical factors responsible for sustained high level of poverty among these largely forest dependent communities in the country (Sen, 2000; Radhakrishna and Ray, 2005). The recent discourse on chronic poverty in India has also reiterated that social exclusion and initial inequality are particularly important in examining the pattern of long duration poverty and multiple deprivations among tribal communities in the country (Mehta and Shah, 2003). Degradation caused by both natural processes as well as human interventions further aggravates the situation with respect to livelihood security among these communities. Forest areas within dry land and sub-humid conditions pose particularly severe threats to people's livelihoods, given the sparse and highly degraded vegetative cover in large parts of forest areas within these regions (Shah, 2007). A related issue to entitlement and conservation leading to poverty among tribal communities pertains to displacement and inadequate compensation as well as rehabilitation of the displaced—a majority being tribals.

Whereas economic diversification, including out-migration, is considered an important coping mechanism and a future livelihood strategy (Farrington *et al.*, 2006) among tribal communities in dry/sub-humid regions, economic diversification alone may not work owing to a number of factors—demographic, socio-cultural-economic and environmental. The environmental implications are particularly important in the wake of the growing concerns about climate change where increasing energy requirements of industry-urbanisation appear to be a major contributor to the total emissions of the green house gases (GHGs) in India. Alternatively promotion of conventional crop-farming, especially through water and input intensive practices, is treated as the mainstay of livelihood support for redressing poverty condition among these communities (World Bank, 2006b). It is, however, likely that a crop-centric strategy may bring negative externalities for the forest-ecosystems especially by diverting the scarce and already depleted land as well as water resources, thereby limiting the watershed services (Shah *et al.*, 2006).

Of late, the conservation-based livelihood approach has emerged as an important strategy whereby regeneration and protection of forest resources are brought to the center-stage of a developmental paradigm for such regions (Lele *et al.*, 2005). While a number of policy initiatives have already been undertaken, the actual impact on people's livelihood has lagged behind. This is mainly due to the fact that regeneration and protection of forests continue to remain on the margin of, rather than central to, the development strategies in such regions. This may be particularly so in a region with relatively faster industrialization where diversion of land from forest and agriculture assumes special significance. The result is continued high levels of poverty, especially among tribal communities in the forest-based regions. In this context, pro-active measures for adaptation as well mitigation of climate change through regeneration as well as conservation of forests may assume special significance.

1.2 Climate Change, Forest Ecology and Poverty

Forests, which constitute approximately one-sixth of the global carbon emissions, have a significant role to play in mitigation and adaptation strategies for climate change. Forests,

Table 1. Poverty among tribal communities in rural Gujarat—a comparison

Year	HCR-Tribal	HCR-All
1983	57.6	29.8
1993–94	31.1	22.2
1999–00	29.1	13.2
2004–05	34.3	18.9

Note: The estimates for 1999–2000 are not strictly comparable because of the difference in reference period.
Source: Thorat and Mahamallik (2006a); For 2004–2005 as per Table 1.

in Gujarat suffer a relatively higher degree of discrimination in the state.¹ A detailed analysis by Thorat and Mahamallik (2006b) noted that the human poverty index (HPI) among the tribal population was 0.311 as compared to 0.406 among all communities in the state. Tribals were found to be fairly worse off in comparison to scheduled castes (SCs) for whom the HPI was 0.371. It was, however, observed that tribals in Gujarat are relatively better placed in comparison to tribals in other states with a significantly high incidence of poverty. This could be due to the positive impact of several factors—economic, social and spatial. To an extent this may reflect growing inequality, especially in the wake of the high economic growth experienced in the state since the mid-1990s.

2.1 Incidence of Poverty (Head Count Ratio (HCR))

The incidence of poverty among tribal communities is both severe as well as multi-dimensional in nature. This section highlights some important features of poverty among tribal communities, particularly among the 43 designated tribal talukas in the state.

The official poverty estimates in Gujarat indicate that the state has made a major stride towards poverty reduction from approximately 31 per cent during 1983 to 17 per cent during 2004–05. Tribal communities, however, have been largely bypassed by the process of poverty reduction in the state. This is reflected by the comparative estimates of rural poverty among tribal and total population in Table 1. As per the latest official estimates, slightly more than one third of the tribal population (34.3%) is poor as compared to approximately 19 per cent among all rural households in the state. What is more concerning is that the incidence of poverty among tribal population has increased as compared to the early 1990s.

A similar picture is obtained while comparing poverty estimates across regions, indicating that that whereas poverty has declined in three out of the five regions, eastern region, consisting mainly of the tribal areas, along with the dry region, has experienced a marginal increase in the incidence of poverty (Shah and Sajitha, 2008).

2.2 Multiple Deprivations

We tried to examine multiple deprivation among tribal (ST) and non-tribal (NST) households in the state. This is based on the socio-economic survey conducted for all the

¹According to Thorat and Mahamallik (2006a), the disparity in the poverty ratios among tribal and non-tribal communities was higher in Gujarat as compared to that of the all India level.

when managed sustainably, are sources of benign alternatives to fossil fuels, and have potential to absorb approximately one-tenth of global carbon emissions into the biomass, soils and products by the first half of this century (Food and Agricultural Organization (FAO, 2009)).

Nevertheless, degradation of forests may accentuate the impact of climate change through loss of diversity, reduced watershed services and increased occurrences of droughts and floods. All these may have significant implications for human well being especially in a situation when bulk of the population, especially in forest-based economies are asset-poor and devoid of entitlement to the forest resources. Economic growth is seen as the most important mechanism since it helps in terms of both absorbing the cost as well as developing capabilities for adapting to climate change (Planning Commission, 2008, p. 205). In this context, the approach for expediting workforce diversification among the forest dependent communities, especially tribals, may assume special significance. The problem, however, is that shifting people away from forests *per se* may result in another set of environmental consequences that may prove worse than the cause itself. This, in turn, reinforces the criticality of sustainable management of forests as a central theme in sustainable development especially in regions with large populations and continued dependence on forests for their basic livelihood. The need therefore, is to evolve an integrated perspective on sustainable development of forests where environmental and socio-economic solutions are being derived simultaneously (Intergovernmental Panel on Climate Change (IPCC, 2007, p. 574)).

India has approximately 23.6 per cent of its total area under green cover; of this 20.6 per cent is on forest land. Whereas the dense green cover has undergone a decline even in the recent period, that is, since 2001, the overall area under the green cover has stabilized since then. The major concern therefore is about the density and quality of forests rather than decline in the area *per se* (Planning Commission, 2008, p.193). The climatic change, if not countered through mitigating measures may accentuate the process of degradation, if not deforestation, in the country. Forests in dry and arid regions may be at the immediate risk under such scenarios.

Given this backdrop, the paper examines economic vulnerability among tribal communities within forest-based economies under dry/sub-humid conditions in Gujarat, a predominantly dry land and relatively more industrialised state in western part of India. The specific objectives are to: (a) examine poverty conditions and ascertain the link between poverty and natural resources, (b) explore livelihood options among tribal and non-tribal communities in the forest-based areas in the state and (c) discuss policy implications for combining the twin objectives of forest conservation and livelihood support. The analysis is based mainly on secondary data for 43 blocks in Gujarat state, characterized by concentration of tribal population (>30%) and forest areas.

2 POVERTY AND MULTIPLE DEPRIVATIONS AMONG TRIBAL COMMUNITIES IN GUJARAT

Tribal communities, constituting approximately 15 per cent of the state's population, bear a disproportionately high burden of poverty and multiple deprivations. While the phenomenon of significantly higher incidence of poverty among tribal as compared to non-tribal population is common to almost all the states in the country, tribal communities

Table 2. Comparison of tribal households with non-tribes and all by household characteristics in 43 tribal dominated talukas, Gujarat 2002–03

Characteristics	Percentage of households		
	ST	NST	ALL
Food security			
< 1 meal/day in major part of year	5.86	2.94	5.13
1 m/day but < 1 occasionally	9.37	5.92	8.51
1 m/day through out year	6.19	4.98	5.89
2 m/day with occasional shortage	52.42	38.55	48.97
Enough food for year	26.16	47.62	31.50
Land type			
Landless	30.98	36.75	32.41
< 1 h unirrigated. 0.5 h irrigated	57.65	46.19	54.80
1–2 h unirrigated. 0.5–1 h irrigated	8.65	10.23	9.04
>2.5 h unirrigated > 1h irrigated	2.72	6.83	3.74
Children status			
Not going school and working	13.52	7.63	12.05
School going and working	9.15	7.60	8.76
Reason for migration			
Casual work	32.69	16.39	28.63
Seasonal employment	15.21	9.48	13.78
Other forms of livelihood	2.93	4.03	3.20
Total	764085	142014	906099

Source: Calculated from Socio-Economic Survey, 2002–2003. Department of Rural Development, Government of Gujarat.

rural households for identification of those below the poverty line (BPL) categories in the state. The results in Table 2 depict the relative deprivation of tribal versus non-tribal communities with respect to a range of indicators, namely, food security, land holding size, child labour and nature of work during migration.

2.3 Employment and Occupation

Another important feature of tribal households is relatively higher work participation rate (WPR) as compared to other communities (Figure 1). The WPR among tribal population is 51.7 per cent as compared to between 39 and 42 per cent among other communities including SCs. This may suggest that there is poverty-induced work mainly in low productive activities, which may include collection of forest produce for sustaining livelihoods. Cultural factors may also be responsible for the higher WPR among women in these communities. Similarly, a larger proportion of tribal workers is likely to be children as indicated in Table 2.

Tribal workers are particularly more concentrated in agriculture-related activities rather than in household industry or in other non-agriculture work (Figure 2). It may be noted that the proportion of workers engaged in casual employment is 20 per cent higher among the tribal as compared to the non-tribal population. Conversely, the proportion of tribal workers engaged in other (non-farm) activities is significantly lower (say, by the same factor of 20%) as compared to non-tribal workers.

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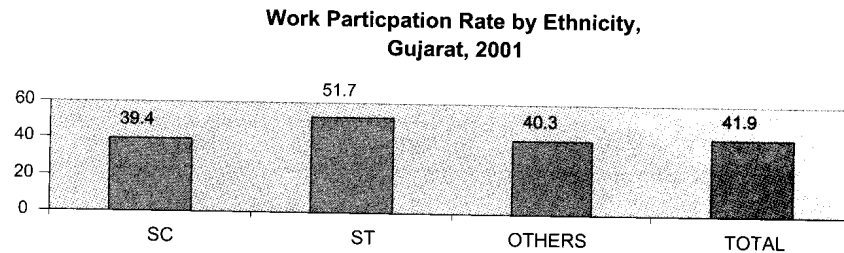


Figure 1. Work participation rate—a comparison. *Source:* Census of India, 2001. This figure is available in colour online at www.interscience.wiley.com/journal/jid

2.4 Correlates of Poverty

An examination of the factors influencing poverty reduction among tribal and other communities in India by Thorat and Mahamallik (2006a) indicates that increased rural employment and wage rates play an important role in reducing tribal poverty, given their overwhelming dependence on agriculture and allied sectors within the rural economy. In addition to these factors, increasing urbanisation, employment diversification (particularly in favour of salaried employment), non-agriculture wages and education were also found to be significant for poverty alleviation among tribals. The authors, however, noted that 'these positive processes are not sufficiently strong to reduce the overwhelming dependence of the tribal community on agriculture (and allied) sectors in rural areas' (p. s49).

Taking this forward, we have looked into the correlates of poverty and vulnerability among households in the 43 tribal talukas in Gujarat (Table 3). The results suggest three important findings:

- i. Employment in small-scale industries and literacy are the two significant variables having a negative association with the proportion of vulnerable households among tribal, non-tribal and all communities.
- ii. Strangely, the proportion of forest area has significant positive correlation with vulnerability among non-ST population within the tribal areas. A plausible explanation

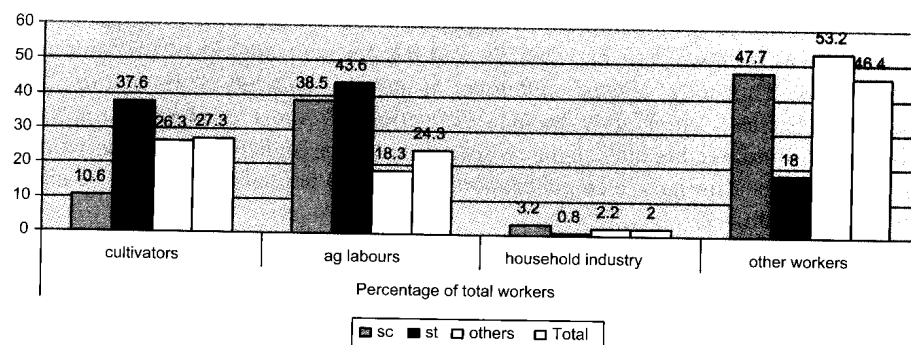


Figure 2. Workforce diversification by social groups: Gujarat, 2001. *Source:* Census of India, 2001. This figure is available in colour online at www.interscience.wiley.com/journal/jid

for this phenomenon could be that tribals in the areas with higher proportion of forest land may have been given land for cultivation whereas the non-tribals may not have got such land through settlements. In that sense, the non-tribals may turn out to be more dependent on forest resources as compared to the tribals for their subsistence. It may, however, be noted that the proportions of vulnerable households among STs and non-STs within these talukas are positively correlated. Alternatively, we tried to use a proxy variable, namely, the number of households per forest village within a taluka, to capture the link between forest economy and tribal poverty. The results therefore suggest that the presence of forest villages has a significant positive correlation with the proportion of vulnerable households—tribal and non-tribal combined—in the taluka. In this sense, forest dependence does figure in understanding vulnerability among households in tribal talukas in the state.²

- iii. Concentration of tribal population is significantly related with literacy (-), sex ratio (+) and WPR (+). Migration, reflected by higher sex ratio, thus emerges as an important feature of tribal communities among these talukas.

Overall the evidence in this section suggests that tribal households in Gujarat suffer from a high incidence of poverty despite high economic growth experienced by the state. These households face multiple deprivations with respect to access to land and irrigation and also sectoral diversification of the workforce. Migration especially as agricultural labourers is the mainstay of livelihood for a large proportion of the workers. This along with subsistence agriculture does not help lifting many of these households above poverty line. Enhancing access to forest-based livelihood options may help strengthening their livelihoods as the extent of forest area exerts significant impact on the extent of poverty within a region.

3 EMERGING PERSPECTIVES ON TRIBAL DEVELOPMENT

The discourse on the interface between forest conservation and people's livelihood suggests two important gaps in creating a win-win scenario. These are well-defined entitlements and appropriate institutions to govern the resource management. Together these gaps have led to a scenario where pushing out the forest dependent communities is considered as an effective way for breaking vicious circle of 'people's dependence on forest-degradation-poverty'. Workforce diversification thus becomes the central thrust for redress in poverty among tribal (and also other rural) communities in the country. That much of the diversification depends on the growth of primary sector-degradation of forest forms a part of the constraint, especially in tribal dominated areas.

Another exit route could be migration and urbanization where skill formation may operate as an important starting point. Again, skill formation, though an essential component to be introduced in basic education for all, by itself may not work as a sure shot for getting employment outside the rural economy. Besides this, socio-cultural discrimination in the wake of increasing competition for limited work opportunities and the costs involved in out-migration may operate as constraints for tribal communities.

²If one considers districts/talukas with larger proportion of forest villages, the picture may get clearer. Of the 4846 forest villages, a large proportion is located in tribal talukas.

Table 3. Correlation co-efficient among tribal talukas in Gujarat: 2001

	ST population (%)	Urban population (%)	Literate persons (%)	Sex ratio (Female: Male)	Forest to total area (%)	Road length (km)	Number of workers in SSI	Pasture to total area (%)	Work force participation rate	BPL among ST population (%)	BPL among SC Population (%)	BPL among all Population (%)
ST population (%)	1											
Urban population (%)	-0.296	1										
Literate persons (%)	-0.338 ^(a)	0.185	1									
Sex ratio (Female:Male)	0.595 ^(b)	-0.192	-0.253	1								
Forest to total area (%)	-0.005	-0.053	-0.436 ^(b)	0.163	1							
Road length (km)	-0.135	-0.375 ^(a)	0.008	-0.124	0.420 ^(b)	1						
Number of workers in SSI	-0.226	0.393 ^(b)	0.435 ^(b)	-0.101	-0.284	-0.172	1					
Pasture to total area (%)	0.517 ^(b)	-0.082	0.024	-0.340 ^(c)	-0.237	0.037	-0.138	1				
Work force participation rate	0.131	-0.351 ^(a)	-0.194	0.367 ^(a)	-0.152	-0.131	-0.155	-0.1	1			
BPL among ST population (%)	0.334 ^(a)	-0.16	-0.524 ^(b)	-0.019	0.134	0.072	-0.337 ^(a)	0.061	-0.008	1		
BPL among SC Population (%)	0.412 ^(b)	-0.196	-0.682 ^(b)	0.234	0.571 ^(b)	0.173	-0.450 ^(b)	-0.167	0.185	0.651 ^(b)	1	
BPL among all Population (%)			-0.598 ^(b)	0.178	0.258	0.089	-0.370 ^(a)	-0.015	0.103	0.921 ^(b)	0.744 ^(b)	1
N		43	43	43	43	43	43	43	43	43	43	43

^aCorrelation is significant at the 0.05 level (2-tailed).^bCorrelation is significant at the 0.01 level (2-tailed).

SSI, small scale industries; BPL, below the poverty line.

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Table 4. Strategy for livelihood promotion among tribal areas in Gujarat

Economic development	Cluster-based approach for promoting selected economic activity at taluka level; value addition to the local natural resources
Irrigation	Group irrigation; watershed development; financial support for equipments
Infrastructure	Universal electrification; road connectivity
Urbanisation	Thirteen tribal towns as growth engines

The contemporary perspective on poverty and livelihoods of tribal communities thus is saddled between processes of marginalisation (lack of entitlement to forest resources) on the one hand and mainstreaming (into the non-farm urban economy) on the other hand. The former implies exclusion and the later may connote adverse incorporation. The area-based approach adopted in Gujarat state over the past several decades for development of tribal communities needs to carefully calibrate these aspects. Recently, the state Government has worked out a 10 points-programme for development of tribal areas, of which the following four points assume special importance for livelihood support to the poor (Table 4).

While this represents a broad-based approach, it is imperative that compensation rather than mainstreaming should assume central place while addressing the twin issues of sustainability and social discrimination, since the former is a precondition for bringing these economies on to a sound basis (Shah *et al.*, 2006).

4 SCOPE FOR FOREST-BASED LIVELIHOOD OPPORTUNITIES

Gujarat state has 18 612 km² of forest land, which constitutes approximately 9.6 per cent of the total geographical area in the state. Of the total forest land 15 152 km² was under actual forest cover by the turn of the century. This accounts for 7.7 per cent of the geographical area. The forest cover constitutes only 8673 km² (57.2%) of dense forest and the rest is open forest. Besides these, there are areas under trees, shrubs, grassland and mangroves outside the forest area. Forest resources, notwithstanding the degradation, offer significant potential for supporting livelihood among large proportion of the poor, including the tribal communities. According to the available estimates for Gujarat, the contribution of forestry may vary from Rs 1500 to 5500 per household per annum. The major contribution of forests is through fodder for grazing (75.4%), firewood (18.0%), minor forest produce (4.7%) and timber/bamboo for house construction and repairs (1.9%).

It has been clearly recognized that regeneration of degraded forest and also pastures as well as grasslands is the major task facing forest management in the state. This is possible only by involving local communities in management and recognizing their legitimate share in the fruits of regeneration. Joint Forest Management (JFM) thus occupies special significance in this context. A study by the World Bank (2006a) indicated that, if properly operationalised, JFM could bring as high as Rs 1 million worth of forest produce for supporting the livelihood of the communities. Processing and value addition may also grow further by using new technologies for processes and products. Nevertheless, this may still leave out a sub-set of tribals or rural communities who may continue to depend on forest resources. It was therefore recommended that if JFM could be restructured to include only such forest dependent households, it would have the potential of 'a second land reform

whereby resource poor households may get compensatory rights over public land resources' (Lele *et al.*, 2005).

4.1 Strategies for Adaptation and Mitigation of Climate Change: Exploring Policy Options

With approximately 4 per cent share in the global emissions, India does not have the obligation of reducing emissions as part of the Annex 1 countries under the Kyoto protocol. Nevertheless, India has already undertaken a number of measures that support adaptation/mitigation processes to combat climate change. As far as the forests are concerned, mitigation measures, especially in the form of afforestation, assume special importance as such measures may simultaneously help enhancing livelihood support to the poor through creation of wage employment on the one hand and regeneration of Non-Timber Forest Products (NTFPs) on the other hand, especially fodder and fuel in dry land regions and highly degraded forests such as that in Gujarat. The XI Five Year Plan has set a target of increasing the forest cover by additional 5 per cent of the land, which amounts to 16 million hectares by 2012 (Planning Commission, 2008, p.194).

One of the policy approaches for attaining the target is to move towards the initiative of reducing emission from deforestation in developing countries (REDD)—a mechanism for compensating countries for reducing rates of deforestation and conserving intact forest areas, which has evolved from the UN conference on the climate change in 2006. Given the fact that several of the developing countries, including India, have already made significant efforts for checking deforestation, there has been a demand for including provisions for compensating conservation in the REDD mechanism. The approach put forward by India and supported by a number of developing countries has been paraphrased as 'compensated conservation' (ICFRE, 2007). While the proposal is yet to reach a consensus in the Conference of Parties (COP), the approach offers a new direction for moving into an integrated approach for environment and development where the emphasis is on qualitative shift in development pathways rather than quantitative reduction in emissions (Sanwal, 2008).

The approach for compensating conservation may go a long way in strengthening the various initiatives that the Government has undertaken for afforestation and conservation in different parts of the country. The Government in Gujarat is one of the pioneering states for promoting schemes like joint forest management, social forestry and regeneration of degraded pastures under wasteland and watershed development programmes. A number of innovative initiatives have been undertaken by various agencies exploring various institutional alternatives such as co-operatives, forest management committees and user groups etc. The state has been one of the leading states for promoting JFM. By 2000, there were 1424 JFM Committees in Gujarat that covered 1.6 lakh hectares of forest area and 1.49 lakh people. Of the total population covered by the JFM Committees, approximately 83 per cent were tribal. The average area per person works out to be 1.07 hectares. Proper management of forest and arrangement for benefit sharing may yield significant benefits to the tribal and other households living in these areas. However, of late, the JFM programme in the state has slowed down due to absence of financial support. Moreover, the programme has failed to attain the desired impact on poor's livelihood given the inequitable sharing of benefits (Saxena, 2000). As a result, the regeneration and conservation objectives have also suffered.

The limited effectiveness of most of the policy initiatives emanates mainly from the three following constraints pertaining to: (a) the issues of rights and entitlements, (b) institutional arrangements governing incentives and compensations and (c) inadequate budgetary provisions. Together, these constraints lead to a scenario of lack of strategic planning (Nilsson, 2008) for forest regeneration and management in the state where people's livelihood needs get simultaneously addressed. In this context, compensating the regeneration and conservation efforts may open up new avenues for an effective regeneration programme, provided the compensation is appropriately shared with the local communities. In fact the recent enactment of the Tribals' Forest Rights Act,³ along with appropriate compensation as well as sharing mechanisms, may help in shifting at least a part of the erstwhile forest land from the its present use under agriculture to a mix of plantation, pastures and crops. Ensuring this would, however, necessitate strong institutional support that steers a shift from private to socially optimum land use patterns in these regions.

These are of course some of the long-term options requiring shared understanding and cooperation among the stakeholders at international, national/regional and community levels. Meanwhile, some of the modifications in the existing policies on regeneration and use of forest resources may help to enhance livelihood support to the local communities in the region. These issues are discussed below.

4.2 Strategies for Forest-Based Livelihood Support⁴

NTFPs in most tribal areas are an important component of livelihoods. They are collected for direct consumption or use and also for sale with or without processing. At present, some of the most commercially valuable NTFPs are nationalized, with government agencies having monopoly rights over their collection and marketing. This converts the NTFP gatherers into wage labourers who often receive less than the minimum wage for collection while the profits go to the concerned government agency or contractors. This arrangement will need to be drastically overhauled or totally replaced to enable the right holders to maximize their returns from the produce that they collect. Various community-based institutional arrangements have already been developed both within Gujarat and outside for collective action. Federations of women's self-help groups or cooperatives could be nurtured for taking over management of these tasks from the forest department or its agencies. What is therefore essential is a thorough review of the existing legal framework and modifications suggested as follows:

1. Deregulation in NTFP collection, value addition and marketing giving greater role to community-based organisations. NTFP trade and processing to be removed from restrictive trade and suitable amendments so the community-based organisations have the rights to determine marketing.
2. Convergence of activities for forest dependent communities across departments and schemes.
3. Recognition of economic activity groups as independent registered cooperative societies or producer companies to be managed by people.

³The Ministry of Law and Justice, Government of India has enacted The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

⁴This section draws upon the valuable inputs from Madhu Sarin and Meena Bilgi.

There are immense possibilities of enhancing livelihoods through value addition to bamboo once communities acquire ownership rights on it. As well as one of the communities, the Kotvalias, other communities could be provided skill training for producing different articles of bamboo. It is essential that value added should be based on new technological options for converting bamboo into alternative uses such as construction material. Promotion of self-help groups, of course, is an important component of supporting livelihoods among tribals as in the case in non-tribals in most parts of the country. Micro-finance performs both protective and promotional roles for livelihoods. However, the evidence from a number of studies suggests that micro-finance may tend to exclude the very poor and the asset-less. Also, in a group mechanism, it may shift the burden of repayment to poor borrowers as against the lenders. Lastly, micro-finance by itself does not reduce poverty unless it is accompanied by development of backward and forward linkages (Shylendra, 2005).

The recent policy initiative under the Tribal Land Rights Act may help moving further into this direction. Particularly, the emphasis on the community-based access to forest land may hold special significance. What is, however, needed is fresh thinking on the legal, institutional and market arrangements and above all a mechanism for compensating community's efforts for conservation.

It is, however, imperative to note that the above approach for promoting NTFP-based livelihood support has to be balanced against the basic objective of regeneration and net increase in the forest cover rather than being mainly extractive in nature. Maintaining the balance would call for detailed planning and strong institutions for overseeing the implementation over a long period of time.

5 SUMMING UP

This analysis on the status, opportunities and challenges for livelihoods among tribal areas in Gujarat reconfirms some of the known realities and has also brought some new insights. The analysis highlighted the point that forest-resources have a special niche in shaping livelihoods of tribal and other communities in the designated tribal areas. This, however, does not mean that forest-based livelihood activities should be the mainstay of the livelihoods of all households in these areas. This is neither environmentally desirable nor feasible, as bulk of the income-employment for at least a sub-set of these communities may have to come from overall development and economic diversification as well as population mobility within the state.

The important point about forest-based livelihoods is that there is a substantial potential for regeneration of forest in these areas and that people should have a rightful share in the regenerated resources—either through extraction and processing of NTFPs or through compensation mechanisms for conserving the forest. It may, however, be noted that promoting forest-based livelihoods support necessitates strong institutional mechanisms for promoting diversified land use and also for the sharing of benefits from forest produce and/or conserving the resource.

At present, the state Government is working on multiple approaches for reducing poverty among tribal communities. The approach, though fairly comprehensive, seems to be lacking in terms of integration with forest management plans, perhaps owing to the legal, institutional and financial constraints. Whereas the Tribal Forest Land Rights Act may help resolving the issue of entitlement, the institutional and financial constraints

continue to operate. Compensatory mechanisms proposed under the IPCC framework may go a long way in addressing the institutional as well as financial issues, if the stakes of the local communities are appropriately recognized. The need therefore is to explore new forms of organizations and local institutions to identify and negotiate people's stakes in the process of high economic growth in the state. International cooperation and resources transfer may play an important role in promoting conservation by way of compensating the poor tribal communities for the lost opportunities of their livelihoods.

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