

7. Unlocking Opportunities for Forest-Dependent People: Policy and Program Options

Introduction

A central thrust of the government's strategy for meeting forest conservation goals has been the adoption of the JFM model of partnerships with communities. The program has had a positive impact on increasing national forest cover and improving the ability of many forest communities to meet their subsistence requirements, but the direction and scope of reform is uneven across states. Furthermore, this evolution is not keeping pace with the challenges posed by a domestic and global environment that is rapidly changing, both. India is enjoying high rates of economic growth, increasing industrialization, and shifts in agriculture to a more market-driven model. The rural nonfarm sector, which includes forestry, has great potential for economic growth, employment, and improved livelihoods. But encroachment, unsustainable grazing and fuelwood collection, fires, and shifting cultivation are contributing to serious timber and fuelwood deficits.

States with high levels of forest cover tend have large populations of forest dwellers, including tribal people, many of whom are among the poorest groups in society. Forest-based communities tend to rely on marginal agriculture systems and wage labor as the primary source of livelihood. Forest resources contribute to livelihoods mainly as a safety net during lean times. They also provide a seasonal source of income through the collection of subsistence fuelwood, fodder, and other nontimber products, such as medicinal plants, fruits, and flowers. Forests are not a major contributor to cash livelihoods in most of these communities, but the potential exists to increase commercial forest-based activities as one step along the pathway out of poverty, going beyond subsistence and seasonal production.

Many mature natural forests already have high market and nonmarket values. Degraded forests, which tend to be allocated to communities through JFM, have the potential to generate higher values as their productivity increases. But turning these potential values into measurable livelihood improvements will require further evolution of the JFM model along the community forestry continuum.³⁵

Options for Reform

A suite of policy and program reforms has been identified for consideration by the government in addressing four critical enabling factors under the broader development goals of improving natural, physical, social, human, and financial capital in communities (box 7.1). Forest sector reforms around these enabling factors require a gradual transformation in which communities are more empowered and both willing and capable of capturing the potential livelihood opportunities from forests.

³⁵ See appendix 12 for more information on the community forestry continuum and how forests can be a better pathway out of poverty for communities.

Box 7.1. Critical enabling Conditions to Unlock Forest Values for Forest-Dependent People

To support continued evolution of JFM into a model of community forestry where people are more empowered and livelihoods improved in concert with forest productivity, four key enabling conditions need to be met:

1. Secure forest resource tenure and management rights for communities

- Operate within the space provided by existing legal frameworks.
- Respect historic tribal rights over forest resources.
- Where historic rights do not exist, provide communities with stronger resource tenure.
- Provide communities that are willing and able the opportunity and incentives to assume greater responsibility for sustainable forest management, in both degraded and good-quality forests.

2. Provide robust support systems for forest management regulation, monitoring, and control

- Provide communities, forest management agencies, and the public with accurate and cost-effective baseline and change data on forest resources and livelihood changes.
- Develop silviculture systems based on robust growth and yield data that support effective management of key timber and nontimber species by communities and forest departments.
- Establish computer-based mapping systems to underpin forest management planning requirements at the community, division, and state levels.
- Create a computer-based information management system to support management planning, forest policy, and reporting.
- Establish a participatory micro-planning system that addresses the broader rural development needs of forest fringe communities.
- Make investments that improve forest productivity.

3. Increase access to more efficient markets

- Establish marketing systems based on open and direct community and private sector participation.
- Provide fair returns to communities for commodity and specialized timber and nontimber forest products.
- Generate higher revenues to communities and government for forest management and local livelihoods.

4. Establish effective and flexible institutional models

- Adopt models that reflect the reality of limited state resources and the growing numbers of communities participating in forestry programs.
- Adopt models that position forest departments as key partners to communities, with sharper focus on strong technical advisory, facilitation, and monitoring functions rather than on ineffectively addressing a wide mandate in a command and control environment.
- Ensure that models recognize tribal communities' unique cultural links with the forest and traditional institutional structures.
- Integrate models with the evolving local authority and other relevant institutional structures.

Source: Adapted from Molnar, Scherr, and Khare (2004).

Reforms will require significant increases in public investment, primarily to build institutional capacities and structures, in both communities and in public forest agencies with a more focused mission. Increased investments to improve forest productivity are also necessary. Although a number of progressive national and state policies and guidelines have been developed in the past two decades, implementation has been weak and uneven across states. The fundamental challenge is to move from a JFM model in which communities are helping the forest department implement important public conservation goals to a model in which forest departments and other stakeholders help communities achieve their own development goals, subject to rational conservation safeguards. Conservation and improved forest livelihoods are not mutually exclusive goals.

STRENGTHENING THE FOREST RESOURCE TENURE AND MANAGEMENT RIGHTS OF COMMUNITIES

National legal reforms should be guided by the National Forest Commission report. The legal and policy issues surrounding forestry and interactions with communities are not new.³⁶ One of the greatest challenges is supporting the 1988 National Forest Policy with a more efficient legal framework for implementation. The main enabling legislation, the Indian Forest Act of 1927 and the Forest Conservation Act of 1980, is not in full concordance with the 1988 National Forest Policy or subsequent initiatives, such as JFM. A myriad of smaller legal and policy issues arise at the state and even community level from national policy and legal incongruities. Recognizing the magnitude of these legal and policy challenges, in 2003 Ministry of Environment and Forests constituted a National Forest Commission to address a fairly broad term of reference (box 7.2). The National Forest Commission has sought input from a wide range of stakeholders. Recommendations in the draft report, expected in early 2006, should help set a much needed national vision on forestry and guide national legal and policy reforms.

Box 7.2. Terms of Reference for National Forest Commission

The then Prime Minister, Shri Atal Bihari Vajpayee, on 21st January 2002 recommended that a Forest Commission be set up to look into restructuring, reform and strengthening of the entire forest setup and affiliated institutions in the country. The terms of reference for the Commission are:

1. Review and assess the existing policy and legal framework and its impact in a holistic manner from a ecological, scientific, economic, social, and cultural viewpoint.
2. Examine the current status of forest administration and forestry institutions at the national and state levels to meet the emerging needs of civil society.
3. Make policy recommendations for achieving sustainable forest and wildlife management and development, biodiversity conservation, and ecological security.
4. Suggest ways and means to make forest administration more effective, with a view to achieving the above policy options.
5. Establish meaningful partnerships and interfaces between forestry management and local communities, including tribal people.

Source: MOEF 2003

Individual states need to examine practical options for legal and policy reform. In some cases this may mean amending existing law. In others it may mean drafting a new Forest Act that consolidates various acts and amendments into a single piece of law, incorporating needed reforms. Legal reform must also be supported by a more effective regulatory framework for field implementation. Regardless of the approach selected by state governments, a number of key priorities should be addressed to help communities unlock increased livelihood opportunities from the forest while continuing to provide for effective forest conservation.

State policymakers need to review and strengthen state forest policies. States need to strengthen their forest policies, using a participatory process that allows for broad public input. State forest policies should reflect national policy goals, be better integrated with other state policies (such as industrial development and tribal development), and incorporate local goals and objectives expressed by a range of stakeholders, including government technical specialists, forest dwellers, tribal groups, and community support organizations. A revised policy must also acknowledge historical tenure-based forest resource rights. The 2004 Assam Forest Policy is a good model to examine. It is progressive, innovative, and based on a reasonable level of public input. The recent “visioning” work conducted in Orissa with assistance from the Department for International

³⁶ See, for example, Khan and Pillai (2001), Upadhyay and Upadhyay (2002), and Bahuguna and others (2004).

Development (DFID) is another positive approach worth replicating that can feed into new state forest policies.

Stronger forest resource rights for communities need to be established. Globally, more than 100 million indigenous people live near forests, yet most do not enjoy secure access to natural resources or recognition of historic rights to use these resources. The global situation is changing rapidly, as governments recognize the forest sustainability and livelihood benefits of providing stronger resource rights to communities. Over the next decade, the area of global forest under actual community ownership is forecast to double to nearly 500 million hectares. The area of forest being administered by communities on behalf of government is forecast to double to 260 million hectares (Molnar 2004). In India state governments have devolved limited management responsibilities and modest usufruct rights to communities through JFM, but they have not appreciably strengthened security of tenure over resources. Without more secure and efficient tenure over natural resources such as forests, communities lack incentives to invest in long-term management and have little recourse to fight powerful interests from exploiting these resources (Ellsworth and White 2004). As Molnar, Scherr, and Khare (2004) note, “secure tenure and resource access rights are crucial for the success of community-level conservation initiatives.”

New approaches in three broad areas need to be considered for tenure arrangements with forest dwellers in India:

- *Tenure arrangement where historic forest resource rights already exist.* Various historic forest rights exist, especially in tribal areas. Some of these rights may be acknowledged in old legislation that has been eroded over time or is not recognized in practice. These historic rights should be reviewed, acknowledged where justified, and codified in current law.³⁷ Any moves to legally acknowledge historic forest rights should be linked with ongoing land policy reform in India and new legislative developments, such as the proposed Scheduled Tribes (Recognition of Forest Rights) Bill.³⁸
- *Tenure arrangements where no historic forest resource rights exist.* While clear, inheritable, and transferable title to forest land may be a desirable long-term economic and policy goal, as an interim measure resource rights could be significantly strengthened without directly addressing land title. A number of countries enhance resource rights without granting land ownership (table 7.1). One option for India would be to specify a fixed-term lease during which the community would have rights and responsibilities over the assigned forest.³⁹ This approach is being used in China for individual households for periods up to 99 years for commercial production (Xu 2004). Such long-term leases are a step forward, but they create uncertainty over tenure as the termination date nears, and they limit options for sanctions if forest management performance is poor. At the other extreme, short-term leases of a few years offer little incentive for the tenure holder to invest in sustainable practices. A third option, used in a number of countries, including Canada, is a 20- to 25-year management agreement for a specified area of public forests, renewable in regular, periodic increments (for example, every five years) based on the community meeting clear performance standards for forest

³⁷ Where villagers do not demonstrate good land and resource management practices, a case could also be made to extinguish these rights (N.C. Saxena, former head of Planning Commission, personal communication, 2005).

³⁸ The proposed bill seeks to address historic land rights held by a number of tribals in forest areas. It is designed to allocate 2.5 hectares per family through a long-term lease arrangement with legal backing.

³⁹ For example, a period of 10–30 years could represent the time period during which various forest trees could mature into commercial products. With faster growing species and small poles, the period could be 10 years; for slower growing species and larger poles, the period might be closer to 30 years.

management.⁴⁰ Tenure holders gain secure resource use rights, while the state retains land ownership.⁴¹ Forest officers or independent forest consultants can compare performance against management standards. If performance is satisfactory, the contractual agreement is extended five years, so that the community always has a renewable 20- to 25-year planning horizon and security of specified rights over the assigned forest resources. Failure to meet specified performance standards could constitute just cause to remove the forest rights or, in less serious cases, require closer supervision and control by forest department or other designated agents for a defined period. This approach is similar to community forestry in Nepal, where forest user group are established as autonomous and corporate bodies with legal and statutory perpetual rights to develop, conserve, use, and manage the forest and to sell all forest products independently of the state (Subedi 2002; Centre for Civil Society 2003).

Table 7.1. Forest Rights Regimes Without Land Title in Selected Countries

<i>Country</i>	<i>Community Tenure Description</i>
China	Long-term contracts for 30–100 years are issued to farmers on former collective land; tenure is transferable, and it can be inherited and used as collateral for loans.
Ethiopia	Groups of 200-400 farming families can organize into peasant associations with clear usufruct rights for up to 10 hectares per family. The peasant association is responsible for soil, water, and forest conservation.
Honduras	Communities can become legally registered cooperatives and enter into a contractual agreement with government that assigns management and production rights to the forest.
Senegal	New forest code transfers responsibility for forest management and exploitation to communities, but ownership of land remains with state.
Tanzania	Village council becomes land manager for allocated nonreserved forest land (forest, farmland, commons), held under collective title by the village in perpetuity. Villages can become co-managers of reserved forest land through a legal joint management agreement.

Applying this approach for community-based forests in India would require amendments to the Forest Conservation Act of 1980. For scheduled and autonomous district council areas (as in Assam) and communities holding historic land or resource rights, similar performance standards could be used to guide communities and local authorities in sound forest management. The use of these forest resources and tenures as collateral for loans needs to be investigated, possibly through a task force comprising the Ministry of Environment and Forests, the Ministry of Finance, commercial banks, and state lending agencies, such as the National Bank for Agriculture and Rural Development. Countering these alternative approaches is the reality that in many JFM forests, traditional use rights—for grazing, for example—may be held

⁴⁰ Criteria could include no net loss of forest area (or increases in the area under forest cover), specified levels of loss of forest-growing stock from fire of human origins, number of fires per year, verified harvesting of forest products within 5–10 percent of the maximum sustainable levels identified in the management plan for major species, and adherence to silviculture prescriptions agreed to in the micro-plans.

⁴¹ One constraint might be Indian culture, which does not distinguish between land and resource tenure. This is one reason the tree patta scheme was not as successful as planned.

by people located in distant villages. Strengthening the tenure rights of one local village (through a community users group) and restricting access by other villages (to avoid market failure through open access issues) could easily lead to intervillage conflict. One way of addressing this issue is by following examples from West Bengal, where communities holding rights to the local forest resource negotiate resource access and user fees with more distant villagers, often with the assistance of local *panchayat* leaders.

- *Tenure rights for nomadic tribal people.* A third, and likely minor, case is that of nomadic tribal people living in remote forest areas as low-impact hunter-gatherers. As a starting point, governments, assisted by tribal leaders, could identify the nomadic tribes and areas within the forest estate. Governments then need to determine if there is sufficient unencumbered forest in these areas to demarcate a form of protected forest for nomadic tribal people.

Options for tenure reform need to be seriously considered. A continuum of options exists for strengthening resource tenure for community forestry, depending on the particular context, presence or absence of historic land or resource rights, nature and strength of community institutions, broader land policy reforms, and political will. New tenure regimes must respect forest rights and use a transparent process for decision making on alternative land uses that lead to loss of forest livelihoods, such as mining. Land and resource rights are a complex and politically charged issue that requires extensive national debate and political will to address. State governments may consider establishing a high-level forest rights review body, chaired by the chief minister's office, with appropriate representation from line ministries, communities, and tribal groups living in areas where historic forest exist are known to exist. Tenure reform, while a critical element of broader legal and policy reform is only one of four enabling factors to improve forest livelihoods through community forestry. On its own, it cannot improve forest livelihoods and rural development.

Communities holding either acknowledged land rights or proposed renewable use agreements need to be fairly compensated when their forest livelihoods are affected by changes in land use, such as mining. Discussions currently taking place in Orissa, in which the owners of firms engaged in new land use activities would issue nonvoting shares to community members as compensation in addition to resettlement and rehabilitation entitlements, offer promise. These steps would likely reduce the number of issues escalating to the courts, which take an inordinate amount of forest department staff time.

The registration process for communities needs to be reformed. Although the Ministry of Environment and Forests has issued a policy directive on this issue, implementation has been slow in most states. Registration of communities under proposed renewable tenure must be a legal process. This process could be handled under the Indian Registration Act, the Societies Registration Act, the Cooperative Society Act as a subcommittee of local authorities, the trust acts, or amendment to the Indian Forest Act of 1927. The Mutually Aided Cooperative Societies Act in Andhra Pradesh may also provide a good model. Another option could be modeled from Assam, where communities are grouped under the FDA and registered together through the Societies Registration Act. There are similarities between the Assam model and watershed programs, where groups of communities establish a registered society with a common bank account (to receive project funds) and facilitate landscape level planning. It is important that whichever act is used, the field officer signing on behalf of the government (forest department) has the legal right to do so.

Processes need to be established for strengthening community resource tenure. Recognizing historic and legitimate resource rights for specified forest communities and improving security of tenure for communities without historic rights can be a lengthy and sensitive process. Global experience suggests actions to support these processes (box 7.3). Brazil has made good progress settling legitimate land claims of indigenous forest peoples. In 1988 constitutional changes recognized the historic rights of many tribes in the forest interior. By 2001 more than half the land claims had been settled, mostly in the Amazon basin. These claims accounted for 12 percent of the country's landmass (Ellsworth and White 2004). The government of India can encourage these processes and opportunities at the national and state level as separate policy initiatives or link them to ongoing activities, such as land policy reform and land recording.

Box 7.3. Opportunities to Advance Community Tenure Security

Community tenure can be secured in a variety of ways:

- supporting anti-corruption and justice reform
- supporting tenure mapping and legal process
- convening stakeholders to discuss specific tenure issues
- supporting emerging community leaders and organizations
- building successful field models of improved tenure
- mobilizing civil society through networks
- creating a global learning network including field visits
- supporting federations and marketing associations.

Source: Ellsworth and White (2004).

Mapping forest and land tenure is critical. Historic and new tenures must be recorded and mapped (box 7.4). Much of the fieldwork, initial digitizing, and mapping could be contracted to a neutral third party from the private sector to provide objective, impartial, and cost-effective services. The model used by Assam's forest department for contracting out basic GIS services has merit and could be applied in other states. Forest tenure mapping would increase clarity over boundaries between forest area and revenue area records. Both the forest and revenue departments would need to be involved in new tenure and mapping programs, using readily available local technology and expertise.

Box 7.4. Mapping customary land tenure in Canada and Indonesia

Canada and Indonesia have used community mapping for many years. With the assistance of NGOs, rapid appraisal methods are applied to develop field maps with indigenous tribes. The map is then used as a basis for negotiating tenure rights with the government. The accuracy of the mapping process can be improved with GPS-GIS technology. The community participates fully in this process, which may be conducted by a neutral third party, such as a community support organization or research institute.

Source: Ellsworth and White (2004)

The linkages between state forest legal frameworks, community-based forestry, and panchayats need to be strengthened. Some states have made efforts to modify JFM to account for PESA legal requirements. But the reality in the field suggests that implementation is weak, due to a number of contradictions with the existing forestry legal framework. In watershed or community-driven development projects throughout India, village user group committees (similar to JFM committees) are registered as subcommittees of the *panchayat*. But although these solutions may provide a veneer of concordance, PESA will not be fully implemented until the broader forestry legal and regulatory framework is reformed. Even with these legal reforms, local authorities would require significant investments to build capacity for administration and finance and to strengthen knowledge and understanding of forest management and marketing with communities. A national review should be considered to better understand the issues and opportunities surrounding decentralization, PESA, and forestry legal and regulatory frameworks for scheduled areas; identify

a roadmap for reforms; and develop a program for appropriate capacity building and education in local authorities, communities, and relevant line agencies.

The harvesting and transit permit regime for forest products needs to be reformed. Although some states have made progress in relaxing these rules, further reforms are needed. A detailed review of all state harvesting and transit permit regimes should be considered as a precursor to national policy and legislative reform of this issue. It is important not only to relax these restrictions but to eliminate the wide regulatory variation between states. As part of a national reform process, state governments could consider input by an independent panel of stakeholders, including forest departments, private forest farmers, community forest committee members, local sawmill owners, nontimber forest product buyers, local development banks, and interested community support organizations. Consultants with forest regulatory experience could be contracted to work with the Ministry of Environment and Forests to develop a new system that provides a mechanism for monitoring product flows from farms and communities, while at the same time reducing needless delays and transactions costs. A recent study in 18 countries, including India, suggests that there is usually a major gap between regulations and the government's capacity to effectively deliver service (Contreras-Hermosilla 2004). Command and control systems tend to reduce democratic participation and create an environment that is conducive to corruption. The 2004 study recommends that governments relax the command and control regulatory system and allow incentives, participation, and market forces to regulate forest management. Coupled with broader market and tenure changes, these reforms would offer stronger incentives for communities and farmers to invest in forests.

Education, information, and awareness need to be improved. It is imperative that communities have access to all relevant legal documents in local languages and a clear sense of their legal rights over the resource. Beginning with the existing JFM model, at a minimum each community should have copies of the resolution, the Memorandum of Understanding, and the micro-plan. This is being done in some states but on a very limited basis, due to financial constraints. Field research reveals that many officers in state forest departments lack an understanding of the legal and policy framework for forestry and the broader penal code. New programs are needed to provide legal education and increase awareness of officers at various levels, from basic rules and procedures for forest guards to more complex training for senior managers. Lack of legal knowledge means that forest officers do not know what is allowed under existing law. This prevents them from testing creative solutions for fear of operating outside the law. Police and state judiciary would benefit from sensitization on specific forestry legal and policy issues. As tenure structures with communities are gradually reformed, stakeholders will need updated information in local languages on their new rights and responsibilities over forest management and marketing.

Legal and policy reform will need significant financial and technical support. All three states reviewed are contemplating legal amendments. The draft proposals examined represent positive thinking and a move toward greater forest rights for forest-based communities, especially tribal people. But these developments are hindered by a lack of agreement on important legal questions, particularly with respect to addressing historical land and forest rights systems, providing a stronger legal basis for community-based forest management, strengthening community resource use and marketing rights under PESA, and dealing with more efficient transit of forest products. Although recent draft legal reforms are to be commended, more comprehensive reforms and capacity building are still needed. These will require time, significant financial resources, technical inputs (national and international), further research, and appropriate public input.

STRENGTHENING SUPPORT SYSTEMS FOR IMPROVED FOREST MANAGEMENT, MONITORING, AND CONTROL

To facilitate the gradual transfer of rights and responsibilities over forest management to interested communities, a number of reforms are needed in underlying forest management, monitoring, and control systems. These include strengthening resource management and planning approaches, developing better mapping systems, upgrading inventory systems, and refocusing R&D to better match species and products that are important to communities.

A comprehensive forest sector strategy needs to be developed. At the national level, the Ministry of Environment and Forests could consider developing a national forest sector strategy that outlines a common vision for forest development, including community forestry, building on the National Forest Action Plan and the National Forest Commission's forthcoming report to Parliament, which was based on extensive public input. As part of strategy development, a comprehensive review of supply and demand for major forest products is needed, including timber and fuelwood, long-term trends relative to forest sustainability, pricing patterns, and spatial analysis. This review would clarify questions about long-term forest health, particularly for fuelwood, and provide guidance for investment programs. In addition, it would be useful for the Ministry of Environment and Forests and other land-based ministries, such as the Ministry of Agriculture, to undertake a preliminary national land assessment to identify lands best suited to forestry, agriculture, and conservation.

This information would help states develop forest sector strategies by identifying land classes best suited for forest production. The three states reviewed have a forest strategy or vision document that sets out a framework for forest sector development. But much more work is needed to transform these documents into comprehensive forest sector strategies, particularly for community forestry and rural livelihoods. Better information is needed on supply and demand forecasts for key forest products, secondary processing capacity and market demand, pressures on the forest, rural livelihood issues, and economic analyses of policy options. Input from other rural development agencies and civil society would broaden the scope of analysis and increase plan relevance. Developing these strategies will require significant investments in information and analyses that most forest departments currently lack. Recent work by DFID with the government of Orissa and the state forest department offers a good example of developing a common vision and comprehensive forest sector strategy.

Working plans need to become more strategic and flexible. The working plan and its 10-year cycle are generally appropriate for the current planning model at the divisional level, but over time these plans should shift to a more strategic focus that will provide a stronger foundation for community-level forest planning. As more forest in each division is allocated to communities through evolving models of forest tenure,⁴² the concept of a top-down working plan as the basis for controlling decisions in these forests becomes less relevant. Outside of state plantations, forest management at the division level would be implemented increasingly by individual micro-plans meeting specified standards for forest sustainability. Working plans could evolve into a broader strategic document to guide, rather than control, field-level management in community forests.

A balance is needed between the state's responsibility to ensure overall forest sustainability and allowing communities to make rational decisions about managing forest lands, including conservation. As an example, in steep areas with fragile soils, the state has a responsibility to ensure that community forest practices maintain vegetative cover for conservation values and reduce

⁴² As an example, Jharkhand plans to eventually have all its forest under co-management

negative externalities by management guidelines that either exclude harvesting or limit it to selective felling for example. In other areas, people may want to manage their forests for multiple returns and set aside areas for conservation, which has important and positive biodiversity and watershed implications. This could eventually bring significant conservation benefits for community forests near protected areas. In the longer term, protected area boundaries or zoning could be redefined based on the inclusion of conservation areas under community management. This new working plan approach requires improved division-level forest resource information from a combination of remote sensing data (from the Forest Survey of India) and more intensive field surveys from micro-plan inventories that extend beyond traditional timber species.

Better information is also needed on communities, rural development priorities, biodiversity values, and options for forest management to meet local needs. Socioeconomic information is available through the national census (to the village level), other state departments, and local community support organizations. Improved information is also needed on how resource supply meets subsistence and market demand and how supply could be modified through appropriate management inputs to meet future requirements. More economic analysis is required on silviculture and forest management strategies to inform micro-planning and implementation. It is also recommended that state forest departments consider a public consultation process for more strategic working plans, possibly through the FDA structure. A balance is required, however, between completing the division-level plans within a reasonable time frame and allowing interested parties an opportunity to contribute input.

The integration of working plans and micro-plans needs to be improved during a transition phase. The challenge facing forest managers and policymakers is dealing with the transition phase, as community-managed forests gradually cover increasing areas of divisional forests. New working plans would benefit from a more complete summary of key inventory data derived from community forest micro-plans and linked to key forest cover types in the division. A spatial overview could be provided with a map showing the location of all community forestry operations in the division (by block), overlaid on the block or division-level forest cover maps. An agreement between state forest departments and the Ministry of Environment and Forests may be needed that new micro-plans prepared after the working plan is already approved can proceed with implementation as long as they fit within the broad goals and objectives of the working plan. A short report could be sent to the Ministry of Environment and Forests each year listing the new micro-plans and providing a summary of key data for information and filing purposes. This kind of approach is imperative to avoid having the Ministry of Environment and Forests review hundreds of new micro-plans each year. It would also put more responsibility for management plan review and approval at the state level, where it logically belongs. Where community forestry covers most of the forest area in some divisions, working plans could be converted into more a strategic planning and summary documents as they are revised after 10 years.

Micro-planning should be guided by an operational manual. An operational manual is needed to guide all parties in community-based forestry. Good examples from other sectors are found in the District Poverty Initiatives Project in several states, the Karnataka Watershed Development Project, and the India EcoDevelopment Project. The operational manual covers a range of steps to build social capital and an integrated plan for livelihood improvement (box 7.5).⁴³ It is important that the manual reflect a planning process that is sustainable once donor funding ends. The end goal of the process should be creation of a simple micro-plan that addresses broader rural development and livelihood activities beyond forestry, such as livestock, grazing, energy, agro-forestry, fish ponds, and agriculture intensification. The operational manual should present criteria and processes for

⁴³ Madhya Pradesh recently developed an operational manual for JFM. Policymakers could build on this manual and on examples from watershed programs.

developing a local forest management plan to a minimum standard, including resource inventory measurement, definitions, and sampling intensities for timber and key nontimber forest products; common silviculture systems and treatments based on best practices to manage sustainable flows of products desired by communities for subsistence and commercial sales; simple models and methods for sustainable harvesting regimes for key species; and methods for monitoring and reporting. The Ministry of Environment and Forests should actively participate in the development of forest management plan criteria with each state in order to achieve consistency. Other rural development agencies and experienced community support organizations also have a role to play in compiling operating manuals. The plan criteria and operating manual should be available in local languages, and simplified versions should be available to all community members.

Box 7.5. Social and Institutional Elements of an Operational Manual

A good operational manual for social and institutional development would provide guidance on a number of important steps:

- Contact community to raise awareness.
- Assess current institutional structures.
- Help establish a resource users committee and executive with wide representation across community groups and gender that accounts for traditional community institutions.
- Create self-help groups for future income-generating activities.
- Provide training in key areas, such as running effective meetings, bookkeeping, decisionmaking, and gender.
- Sign an agreement to register and participate.
- Identify development needs and gather baseline natural resource inventory and socioeconomic information through processes such as village mapping and participatory rapid appraisal.
- Develop a micro-plan that addresses broader livelihood needs on all lands in the community area.

Source: Background studies

In some areas forest communities could be consolidated. Many watershed development projects in India are consolidating communities in order to facilitate planning on a broader landscape or watershed basis. A consolidated approach could have a number of advantages with respect to forest planning and conservation (box 7.6). Specific forest management needs and interventions and broader rural development activities for each community would be identified through the micro-planning process; these could then be combined into a single consolidated plan for as many as four or five communities. Each community would still implement an annual work plan. This approach

Box 7.6. Why Consolidate Forest Committees?

Consolidating forest committees could serve several purposes:

- It is more economical to produce field maps at a scale smaller than 1:20,000, and smaller scale maps allow all land uses to be identified
- Development issues common to all villages, including road upgrading, health and education, service delivery of agriculture and forestry extension, and minor irrigation, could be addressed in a more efficient, coordinated, and economic manner.
- Dealing with common forestry problems would be easier.
- Development of marketing cooperatives or federations could be promoted, based on economies of scale for product sales and improved market positions.
- Training of communities would be facilitated by covering a larger but similar group.
- Landscape-level forest planning would be supported that addresses conservation and economic goals.
- Scope would be provided for zoning community forests into areas conducive for timber and pole production, nontimber forest products, grazing and biodiversity conservation (with limited access).

Source: Background studies

may be well suited to many tribal groups, which already have village clusters as part of their traditional institutional structures. But it is important to let communities themselves determine if they want to cluster, how doing so would work, and what structures should be used.

Silviculture systems need to be reviewed and revised to meet local needs. Further shifting the focus of forest management away from commercial high-forest plantations and clear-felling of traditional timber species such as sal and teak toward multiple-use forest management by communities will require commensurate changes in silviculture practices. Where communities are managing forest types dominated by teak and sal, silviculture systems need to support selective felling regimes through uneven-aged management for subsistence production. Where market potential exists, this approach should also support commercial timber production that also allows intermediate products, such as fodder, nontimber forest products, nontraditional tree species, and fuelwood from branches, litter and shrubs, to be sustained. This approach requires better knowledge and understanding of relationships between crown closure and nontimber forest product production in the understory. For degraded lands, economic analyses suggest silviculture regimes favoring the management of natural regeneration rather than plantations. Information is therefore needed on appropriate silviculture practices that will develop these natural forests into an architecture that yields multiple products, including timber, fuelwood, fodder, and trees, such as *neem*, *mahua*, and *arjun*, that provide nontimber forest products.

Agro-forestry also offers potential short- and intermediate-term economic returns. Mixing lower value subsistence agricultural crops, such as paddy rice, with higher income horticulture, poles, or nontimber forest product trees planted along field boundaries or through intercropping could increase average annual net revenues per hectare from Rs6,000 to Rs15,000 or more after 10 years (Pandey 2003). With agro-forestry, farmers continue to partially satisfy household nutrition requirements from subsistence rice production. Pressure is also reduced on neighboring forests for domestic fuelwood and poles. Agro-forestry is not suited for everyone; farmers with very small holdings will be hard pressed to give up valuable food production land for tree crops that take several years to mature. Rather than a simple either/or approach, efforts to improve agricultural livelihoods of small-scale farmers should provide higher crop yields and increase confidence in investing in trees for part of their holdings. Expanded agro-forestry will require capacity building and better coordination between forest departments and the Department of Agriculture.

Forestry research needs to focus more on community livelihood requirements and agro-forestry for small farmers. Applied R&D is critical to support further transitions of JFM in India and ensure that community forests achieve higher productivity in a range of species. Although some states, such as Andhra Pradesh and Madhya Pradesh, are gradually reorienting R&D to nontraditional timber and nontimber forest product species, in general the linkages between scientific research, development and dissemination, and uptake by communities are weak across India (Khan and Pillai 2002). These results are consistent with those of Hedge (2000), who finds poor linkages between forest research and extension agencies, limited resources allocated to forest research, and weak technical support. The Indian Council of Forest Research and Education (ICFRE), the Ministry of Environment and Forests, and state forest departments should consider developing a new national strategic plan for R&D that is more focused on community-based forestry. It should propose options for rationalizing limited R&D capacity around key priorities related to silviculture, growth and yield, harvesting and marketing in community forests and small farmers, and the identification of institutional partners that can assume lead responsibilities on specific topics. It should also identify opportunities for increased private sector involvement in R&D to ensure a more market-driven planning framework for appropriate species. The plan needs to examine new approaches for disseminating research findings to both communities and state forest managers in the field. It should also include a research agenda that can capture community

knowledge about improving the growth and yield of selected nontimber forest products. The new concept of establishing village “ethno-botanists,” as in Andhra Pradesh, is worth exploring in more detail.

Resource assessment and monitoring systems need to be improved. The underlying forest resource assessment and monitoring system must be significantly strengthened to support further evolution of JFM and enhance the ability of state forest departments to monitor overall forest stewardship. A more effective resource assessment and monitoring system could be based on six pillars:

- *Let communities assume greater responsibility for basic forest inventory.* Communities could use simple inventory methods (box 7.7), the basics of which can be learned in a few days. These methods would provide better information than the approach currently used by forest departments. As experience is gained, some communities could eventually incorporate portable GPS units to geo-reference cover types in order to provide better spatial information, linked to the broader division-level and then state-level resource inventory. Community-oriented inventory processes need to

Box 7.7. Options for Conducting a Community Forest Inventory

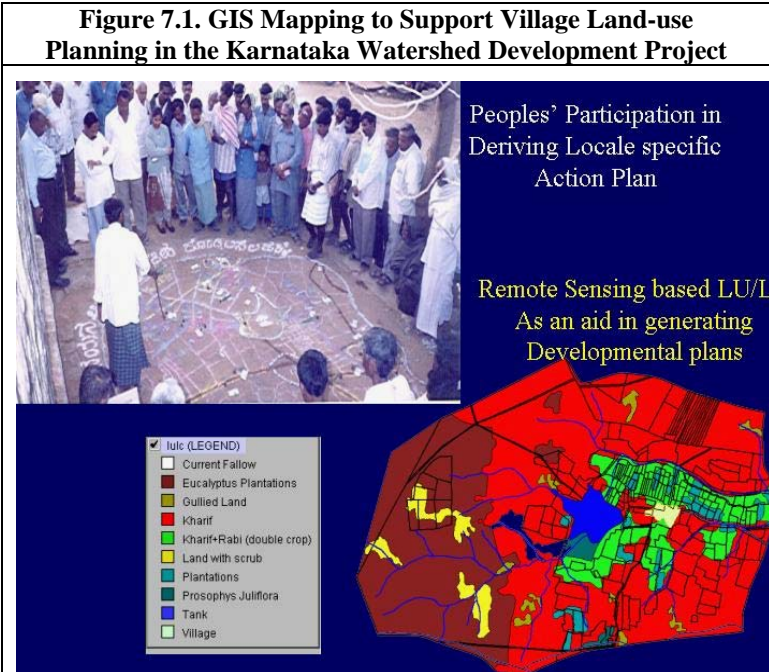
A timber inventory could be conducted by laying out square inventory plots of a 0.25 hectares in random locations and tallying the trees on it by diameter class and species. The inventory crew would measure diameter at breast height. On a subplot (25–100 square meters), the seedlings and saplings could be counted. The crew needs to be able to recognize the various species with some degree of reliability.

Another method is to use circular plots, marked by drawing a circle from a center point with a short rope. A 1–5 percent area might be sufficient for baseline and regular stock monitoring. The only equipment needed by the community would be a 50-meter measuring tape; a diameter tape; increment calipers borer (to measure tree age) or tree fork to measure tree girth; a simple hand compass, preferably with a clinometer (to estimate tree height); a clipboard; pencils and paper; and perhaps preprinted tally forms. The cost of this equipment would be less than \$100.

Source: Background studies

- be extended to nontraditional commercial species, important nontimber forest products, and biodiversity values in relevant forest cover types. A number of methods are emerging for inventorying nontimber forest products that hold promise for India (Poffenberger and others 1992; Peters 1994, 1999; Wong, Thornber, and Baker 2001).

- *Make increased GIS mapping capability a higher priority.* The development of GIS in forest departments is



making slow progress in the states examined, constrained by limited financial, technical, and human resources. A longer term goal should be to have individual micro-plans for communities, or clusters of communities, prepared with higher quality maps, based on GIS technology. This approach would lend itself to including digitized thematic data on soils, water potential, topography, and basic cadastral information. The technology for this level of mapping already exists in India and is being used in other sectors, such as watershed development (figure 7.1). Significant increases in capital investment and operational budgets will be required by both the center and the states for several years to accelerate progress with initial digitizing and mapping systems for forestry.

- *Strengthen division- and state-level inventory processes.* At the state level, the biannual Forest Survey of India provides satisfactory reporting of forest cover at the state and district level for broad planning purposes. This information is not sufficient to support broader division level management planning, however. States need to invest in more intensive continuous inventory at the division level on a five-year cycle. Andhra Pradesh provides a practical model to replicate that would complement improved community-based inventory data.

- *Improve computer-based management information systems (MIS).* Computer-based MIS should ultimately link the department's GIS, inventory information from division and community levels, more general forestry data, and information from other sectors, where appropriate. Forest management is a dynamic process; all data, including map-based information, must be regularly updated and stored in a system that allows open sharing to support policy, planning, analyses, and reporting. A possible model for integrated application of GIS and MIS to both micro-planning and divisional planning is being developed by the forest department of Andhra Pradesh. Headquarters could be linked with district offices to share inform through computer connections via land line phones, a wireless system, or the Internet. Both Assam and Madhya Pradesh already have functioning Web sites that could be used for this purpose. The Ministry of Environment and Forests also has a Web site with useful forestry information that offers a model for states to study and build on.

- *Establish permanent sample plots for growth and yield measurement.* Growth and yield studies require long series of field observations from plots established and maintained in a range of forest cover types. They tend to be expensive and generally involve complex statistical analyses. However, as community-based forestry continues to evolve, it needs to be based on the design and evaluation of innovative silviculture systems, for which no precedent exists. One essential element of improved growth and yield information is field data. State governments should consider working in partnership with communities to establish and maintain permanent sample plots to provide ongoing data for new growth and yield models for tree species identified as important in a survey of micro-plans. Communities could be paid an annual maintenance fee to protect the plots from illegal harvesting and provide regular data collection. Potentially useful methods exist for extending growth and yield to nontimber forest products, but these methods will have to be prioritized according to the economic importance of the crop and partnered with appropriate research institutions in India and in other countries.

- *Build a strong monitoring system.* Monitoring is a critical element for greater empowerment of forest management to communities but progress is hindered by a practical dilemma. Unless communities can demonstrate effective forest stewardship for the small areas under their responsibility, it will be difficult for state forest departments to allocate more forest management responsibilities. Currently, however, communities cannot easily demonstrate forest stewardship, because systems are not in place for them to monitor performance. New approaches are needed to break this impasse, perhaps based on small pilot projects by

communities showing strong interest and ability to assume a higher level of responsibility. Local monitoring could be done by communities, beginning with a set of clear management responsibilities, good baseline data, simple indicators, and achievable performance targets. Periodic site visits by forest department field staff or private consultants would facilitate field checking as well as provide an opportunity to offer technical advice. In addition, the forest department, in collaboration with other relevant line departments, needs to adopt a method for ongoing livelihood and poverty impact monitoring of forest communities (box 7.8).⁴⁴ This would help track progress toward improving forest livelihoods and poverty, act as a learning tool to help community forest programs evolve, and provide valuable information for stakeholders. Local information can feed into division-level reports that could be aggregated at the state level. A parallel task is to develop the capacity in the Ministry of Environment and Forests to collect state-level monitoring information to generate national reports and support national-level analyses. This kind of monitoring would also help shift the focus of forest departments from financial and input targets (such as planting so many ha of trees within budget), to targets related to outputs (how many trees survive?), impacts (potential contribution to wood supply), and outcomes, including measurably demonstrating improvements in livelihoods.

Box 7.8. SMART Indicators for Monitoring Forest Livelihoods

According to the Centre for [International Forest Research](#), indicators for monitoring forest livelihood should be SMART (Simple, Measurable, Adapted to local conditions, Relevant and reliable, and Time-scale appropriate). Indicators can monitor changes in forest-based communities with respect to financial, physical, natural, human, and social capital. The monitoring system should use communities to gather much of the information, with technical assistance from government or community support organizations.

Source: Pandey (2005).

Community-based forest management needs much more guidance from economic analysis.

There is a serious lack of capacity for economic analysis in both the Ministry of Environment and Forests and the state forest departments. More focused economic analyses would support policy reform, particularly to identify and evaluate incentives for communities, in the following five areas: reviewing the costs and benefits of alternative tenure options; assessing the economics of silviculture options for community forests; evaluating community incentives by allocating good-quality forest along with degraded land in JFM; analyzing the costs and benefits of farm forestry; and reviewing benefit-sharing schemes. A simple analysis suggests that commercial timber and pole production as part of mixed forest architecture can offer high returns to communities (see appendix 11). Moreover, augmenting timber production with subsistence nontimber forest product in part of the forest under-story can increase returns significantly.

This finding corroborates that of Manoharan (2000), who claims that managing multi-species forests for timber and nontimber forest products can increase annual revenue flows by 20–32 percent compared with forests managed solely for timber. When faced with degraded lands, the most efficient option is to manage the existing natural regeneration rather than undertake expensive forest planting operations. Bamboo is a lucrative investment on degraded lands, but overall a mixed forest with timber and poles, bamboo, and nontimber forest product appears to offer the highest returns. These results suggest that during micro-planning, communities should consider putting at least some of the allocated forest area into bamboo and nontimber forest product species, depending

⁴⁴ The work currently undertaken by the Centre for International Forest Research (CIFOR) in Jharkhand is financed by the World Bank and PROFOR. CIFOR is developing and testing simple tools for monitoring the impact on livelihoods and poverty (see appendix 13 for background information).

on market access. Partnerships between the Ministry of Environment and Forests, state forest departments, and national institutes, such as the Delhi University Institute for Economic Growth, could be explored for contract research and training programs in forest economics. The Institute already operates an economic training program with several central government agencies. The Ministry of Environment and Forests could explore the benefits and costs of joining this partnership. Together with state forest departments, it needs to build better links with existing environmental economics networks, such as the South Asian Network for Development and Environmental Economics (SANDEE). In the longer run, forest agencies would benefit from stronger internal capacity in economics and policy analysis.

Providing more immediate revenues and subsistence products is an important incentive for communities. As Kumar (2002) notes, having to wait for financial returns over a long gestation period from regenerating commercial forests on degraded land provides little immediate incentive for communities to actively engage in management and protect the forest through a formal community forestry program. Where possible, a positive incentive would be to allocate a small portion of healthy or semi-mature forest to communities in addition to degraded lands that are subsequently rehabilitated. This approach is already acknowledged in recent Ministry of Environment and Forests policy circulars on extending JFM to nondegraded forests, but it is not being widely implemented. One hectare of high-quality teak-dominant forest harvested for timber could easily yield immediate net revenues of Rs50,000–Rs60,000 a year with a conservative selective felling approach. These revenues would provide the community with financial capital to invest in the forest and contribute to other local livelihood opportunities in the community. Based on likely micro-plan outcomes, investments must also be expanded in degraded areas adjacent to communities to promote natural regeneration for fuelwood and grasslands for grazing as subsistence products.

IMPROVING THE MARKET SYSTEM FOR FOREST PRODUCTS

Major challenges lie ahead to enable those communities wishing to move beyond subsistence production to engage in more commercial opportunities. The preoccupation of state governments and forest departments on maintaining legislated monopoly marketing structures for certain forest products, especially the most lucrative timber species, has hindered the introduction of more open, efficient, and transparent marketing systems. A major obstacle in reforming forest product market systems is to change the prevailing mindset that forest products are different from specialized agricultural commodities and that marketing therefore has to be managed by the forest department. This view is slowly changing in some states, particularly for unregulated nontimber forest products, but it has not yet reached across to timber or regulated nontimber forest products in any meaningful way. Given the forecast deficit in domestic wood and expanding opportunities for various nontimber forest products both in national and international markets, many communities can play a more substantive role as low-cost producers for commodity wood (fuelwood, construction grade timber, poles); higher quality timber, such as teak and sal; industrial pulpwood and bamboo; and nontimber forest products (Scherr, White, and Kaiomowitz 2002). This strategy would rest on several key marketing policy thrusts, similar to ongoing agriculture reform in India (World Bank 2005a). It must be accepted, however, that not all forest-based communities will benefit equally from market reforms. Local forest quality, distance to urban markets, the condition of access roads, and the capacity of community institutions will all influence the potential of any community to expand into commercial forestry production. Where conditions are conducive to greater commercialization, the benefits may not be shared equitably among all community members unless strong local institutions are in place. Greater commercialization with more valuable products, such as teak, raises the risk of increased local corruption, exploitation from private buyers, and capture

of income gains by local elites. Global studies suggest that higher valued products tend to be managed intensively by specialized producers in the community and yield higher incomes than lower value products managed by less specialized producers (Ruiz-Perez and others 2004). For nontimber forest products, this means that incomes may rise as a result of a shift toward intensive cultivation inside or outside the forest and a move away from simply gathering products in the natural forest. This has equity implications, as marginal farmers and landless may not be able to participate in cultivated production. For motivated and enabled communities to capture higher commercial values from at least part of their forest, what are the options for market reforms?

Contract growing schemes should be explored.

Communities and farmers wanting to sell commercial forest products outside of local markets need access to major buyers or processors. Outside of state controlled monopolies, contract sales see communities enter into a forward agreement with processing and/or marketing firms, usually at negotiated prices for a specified sales volume. This approach reduces risk and uncertainty to sellers, while purchases are assured of a more reliable supply over the specified time. Purchasers may also provide credit support, inputs, storage facilities and technical advice to producers as part of the contract agreement. There is growing experience with this arrangement in India for agriculture (box 7.9) that can and should be extended to forest products through partnerships (Kumar 2005).

Box 7.9. Contract Farming in India

ITC, Tata, and Mahindra are three of India's largest conglomerates. All are becoming more involved in contract farming to help farmers move up the value chain, boost yields, and increase incomes. Good examples of contract farming are found in Punjab (dairy, rice, vegetables, groundnuts, seeds); Madhya Pradesh (wheat); Tamil Nadu (rice and cotton); Haryana (vegetables); and Andhra Pradesh (poultry). Royal Cotton Mills is helping organize farmers to participate in a buy-back program. It provides farmers with genetically improved seeds. The farmers then sell their raw product to the company at negotiated prices on long-term contracts. If market demand falls, the Cotton Company of India underwrites the purchases, so that farmers receive income on a continual basis. Crop insurance is also used for the crop and cotton price to provide greater security for farmers.

Source: World Bank. 2005a; unpublished Bank reports

Selected nontimber forest products should be promoted with these new market options. Many nontimber forest products could be marketed through agricultural marketing systems, although doing so might require states to amend the Agricultural Produce Market Committee Acts. This change would facilitate contract marketing, organized retailing, flows of raw materials to agro-processing industries, more competitive trading, and adoption of innovative marketing systems and technologies. For nonlisted nontimber forest products, communities are generally free to sell excess production in open markets, outside of the state legislated monopolies. The patchouli aromatic oil model from Assam is a good example of contract growing. Andhra Pradesh has also demonstrated innovative approaches to nontimber forest product marketing (box 7.10). In addition to increasing quality and prices, villagers in Andhra Pradesh have reduced losses from deliberate underweighing, receive full cash payments at point of sale, save time previously spent taking products to local markets, eliminated price uncertainty, and improved incomes of women, who normally engage in marketing.

Supplying specific nontimber forest products to organic markets is another lucrative option to explore. Returns from organic produce are generally higher, depending on the premium the consumer is willing to pay.

According to some estimates, the global organic market, worth \$17 billion in 2000, may reach \$31 billion by 2005. India's current share of this market is just 0.001 percent (Scialabba and Hattam).

Most wild nontimber forest products are by default organic, but organic certification is required to receive a premium price. A number of certifying agencies are operating in India. A multitude of nontimber forest products have been certified in other countries according to organic standards, including berries (Finland),

hearts of palm (Brazil), chicle (Mexico), maple syrup (United States), cohune palm (Guatemala), and mushrooms, medicinal plants and plants used by the cosmetic industry (Walter 2002). Global experience suggests that simple steps taken to improve the quality of nontimber forest product can have significant financial benefits for communities. Communities need technical and financial assistance to improve quality control during and after harvesting, follow better grading practices, gain access to storage facilities to allow sales in off-peak times, and improve availability of market information. They also require better access to commercial credit, to help finance small business development around nontimber forest products and other forest products.

Bamboo, timber, and fuelwood also have strong potential for contract sales. The experience with farm forestry and nontimber forest products such as patchouli in Assam and other nontimber forest products in Andhra Pradesh offers useful lessons for greater market access by communities

Box 7.10. Lesson from Andhra Pradesh for Improving Forest Livelihoods

The Andhra Pradesh Rural Poverty Reduction Project has helped support rural development by mobilizing 450,000 self-help groups, 29,000 village organizations, 800 federations, and 5 million households. These institutions and their members have cumulative savings of more than \$20 million and are mobilizing more than \$150 million of commercial bank loans a year. The program is supporting development of market linkages in many commodities, including several nontimber forest products. It is also supporting investments in local value addition and development of market linkages with the private sector. The project has developed innovative institutions, including a "partnership cell" that facilitates linking community organizations with a range of private sector organizations. Areas in which partnerships have been developed include commodity trading, local value addition, buy-back arrangements, rural retailing, a livelihood business school that develops skills among rural men and women to access service sector jobs, and the development of organic cotton brands. This integrated approach has many valuable lessons for improving rural livelihoods in forest fringe communities.

Source: Kumar (2005).

Table 7.2. Economic returns from improving the efficiency of nontimber product production

ACTIVITY	BENEFIT
Improve harvesting methods.	Increases income by 10% or more.
Reduce postharvesting losses through: <ul style="list-style-type: none"> • improved forest storage and/or transport • improved local warehouse/storage • better transport to processing plants 	Reduces product loss by 5% or more. Reduces product loss by 25% or more. Reduces product loss by up to 35%.
Improve transportation through <ul style="list-style-type: none"> • volume shipping • backhauling • processing product to reduce water and waste 	Reduces shipping costs by 10% or more. Reduces transport costs by up to 50%. Reduces costs by up to 70%.
Hold product in storage and sell in off-season.	Increases gross income by up to 200%.
Add value through local processing.	Increases gross income by up to 500%.
Obtain better pricing information.	Increases income by 10% or more.
Improve credit terms.	Reduces credit costs by up to 75%.
Negotiate income sharing deals with processors.	Increases income by 10% or more.

Source: Clay (2004).

for bamboo, nonlisted timber, and fuelwood (table 7.2). Farm forestry saw a period of initial growth in the 1970s, followed by a decline in the 1980s, as farmers in many states failed to receive expected returns (Saigal, Arora, and Rizvi 2002; Saigal 2002). Primary reasons included inappropriate silviculture, poor-quality seedlings, lack of capacity building to farmers for plantation maintenance, poor organization of farmer producer groups, oversupply of production, and restrictive laws and regulations governing transport for some species.

Farm forestry and contract marketing are re-emerging, benefiting from lessons of the 1980s and generating interest among processing firms. There is no reason why, after a period of transition, this approach cannot be extended from farmers to many communities as legal suppliers of commercial timber, bamboo, and fuelwood from both existing high-quality forests and rehabilitated stands on degraded lands. This is particularly true in states such as Assam and Jharkhand, where legal timber harvests are quite small as working plans are being prepared and approved. When working plans are approved, trade licenses could be issued by the forest department or *panchayats* to communities that successfully demonstrate sustainable forest management on reserved or protected forests. The license would allow the community to negotiate contract agreements with private buyers for the sustainable harvest of different products as per the micro-plan. The contracts could be for standing timber (where the buyer does the selective harvesting) or for roadside sales (where the community does the felling).

There is keen interest by private processors, such as sawmills, for these simple and direct arrangements for timber procurement. One potential issue is subsidized competition from state plantations. In Uttar Pradesh the state forest department is supplying major wood-based industries with plantation wood at 20 percent less than the prevailing open market rate (Saigal, Arora, and Rizvi 2002). Giving communities a choice of production and marketing options (through the forest department or contract sales to processing firms) may be a logical starting point. Forest departments often raise two concerns about opening up timber, bamboo, and fuelwood sales. One is the loss of revenue to the department (and ultimately the state) as communities sell their timber outside of state marketing corporations. This issue can be addressed through a review and reform of forest fiscal systems. Alternatives to the cumbersome and opaque JFM benefit-sharing scheme, such as royalty charges or downstream value-added, sales, or income taxes, are available. A second issue is ensuring forest sustainability. This issue can be addressed through a more robust monitoring program.

The government should support producer organizations. These organizations can improve networking and access to more efficient markets. They can strengthen sellers' market position and allow larger, consolidated consignments of timber, bamboo, fuelwood, and nontimber forest products to be sold directly to large processing or marketing firms through auctions or various contract agreements. Producer organizations can also help overcome the countervailing power of middlemen and money lenders. They can pool resources for storage facilities and make it easier for communities to receive training on quality control and value addition.

Producer institutions can consist of a few communities grouping together informally as a cooperative for marketing around geographic or tribal clusters, or they can be part of larger community-led state associations that focus on specific commodities. There is considerable scope to link nontimber forest products with existing and emerging agriculture cooperatives. These kinds of institutions may need initial assistance to develop, as the Madhya Pradesh nontimber forest product federation did, but within a reasonable time period these institutions should have a fully independent federation at the apex, with elected officials representing communities and a board of directors that includes a minority of forest department members. Andhra Pradesh, where milk cooperatives have been operating successfully for many years, also offers a model that could be

replicated in other states. A reason often cited for their success is the power-sharing arrangement and democratic structure, which helps ensure management integrity. Experiences in Mexico with community-managed timber also offer positive lessons for India (box 7.11).

Box 7.11. Strengthening producer organizations in Mexico

In the 1980s, a number of indigenous communities in the poor southern states of Mexico formed a regional organization and went on to form forest enterprises, with initial assistance from government and the World Bank in the late 1990s. Approximately 256 communities are now members and have completed land-use and forest management plans that encompass community forests and protected areas. Training courses have been implemented on silviculture, management and marketing of wood and non-wood products. Private sector consultants are often used to provide technical expertise. The area under forest management has increased from 500,000 to 600,000 ha and total sustainable wood production increased from 400,000 to 600,000 m³ per year. More than 13,000 ha of old-growth forests have been protected in biological reserves and 90,000 ha of commercial forests have been certified by the Forest Stewardship Council. Wood production generates US\$10 million in revenues each year. About 1,300 jobs have been created in wood production and another 175 jobs in NTFP marketing. As well, the state government has increased its tax revenues by US\$1 million per year and the communities have contributed around US\$1 million per year to internal social development.

Source: PROCYMAF (2000); DeWalt, Olivera and Betancourt-Correa (2000)

It is important that producer organizations be led by communities and be demand driven. Their goal should be to facilitate marketing by communities (and farmers) rather than to replace a pure state monopsony with a quasi-public monopsony requiring government subsidies to survive.⁴⁵ Many local organizations may fail, due to corruption, rent capture by elites, and other problems. As Saxena (2001) suggests, social stratification and internal inequity can affect producer organizations, and these problems may become worse with commercialization. This finding strengthens the argument that communities need substantial investments to build social capacities and strong, inclusive institutions as part of reforms of tenure and markets. These institutions need to develop organically and be strong enough to function without government subsidies. Only then will communities truly be empowered.

Market information sharing and networks need to be strengthened. Mechanisms for gathering and sharing market intelligence within government line departments, communities, and farmers must be strengthened. One policy option to explore is extending the e-Choupal concept to forest product marketing (box 7.12). Forest products could be added to this network, or a new network could be established with private sector support. The Internet is a powerful tool for sharing information. The

Box 7.12 Extending the e-Choupal concept to forestry

The e-Choupal concept opens opportunities to access expert knowledge to the smallest individual farmer in India. More than 3.5 million farmers in India are connected to markets through local solar-powered Internet access, with network support from ITC. Farmers can check market prices for various commodities and then either choose to sell through ITC or in local markets. Providing easier access to market intelligence through this network allows farmers to counter the market power of middlemen, who monopolize information, input sales, and commodity purchases.

Source: www.itcportal.com

⁴⁵ Examples of poorly performing quasi-public cooperatives include the Tribal Development Cooperative Corporation (TDCC) in Orissa, Large Areas Multi-purpose Cooperative Societies (LAMP) in West Bengal, and Tribal Cooperative Marketing Development Federation (TRIFED) in Chhattisgarh (N.C. Saxena, personal communication, 2005).

Madhya Pradesh Minor Forest Products Federation Web site lists the kind of information a market Web site could offer people and organizations with Internet access.

Another option is to expand the Agriculture Market Intelligence Network (AGMARNET) scheme in most states to encompass various forest products.⁴⁶ In the longer term, state forest departments should strengthen information sharing and networking by providing ongoing product monitoring service to collect market prices; providing quality and volume information, possibly as part of an e-Choupal network; undertaking market analyses for specific products to share with communities; and maintaining a list of active traders to help communities, farmers, and producer organizations contact traders to get competitive open market prices.

The role of the forest department in marketing needs to be refocused. The evolution of marketing away from inefficient, high-cost, and restrictive state monopolies toward a system in which the state is more of a facilitator and provider of information and high-quality technical support should be encouraged and gradually extended to a wider range of products. For some marketing corporations, such as those in Jharkhand, a strong case exists for eventual liquidation once more efficient market channels and institutions for communities and farmers emerge. By contrast, the timber marketing system in Madhya Pradesh is competitive and is returning positive revenues to the treasury, but it absorbs a significant share of the state budget's allocation to the forest department.

Policymakers need to evaluate the opportunity cost of maintaining these structures versus adopting alternatives outlined earlier in this report. States should retain an important role in marketing by facilitating greater private sector competition in local markets, strengthening technical services to communities and cooperatives to facilitate value addition, promoting direct market access and sharing of market intelligence, offering technical services in silviculture, providing credit for storage facilities, and monitoring market performance. Technical services must deliver knowledge founded on sound and relevant applied research.

The forest departments and marketing corporations in Andhra Pradesh and Madhya Pradesh have made satisfactory progress toward helping communities improve sustainable nontimber forest production and harvesting, adding value, and building on local knowledge systems. The state may also provide a valuable function in supporting remote communities and farmers as buyers of last resort for forest products at a minimum price, where market failure occurs due to distance, poor roads, or other factors.

This type of government role may be well suited to kendu, because of the scale of operations (mobilizing Rs15–Rs20 billion in financing to purchase the leaves in a short 40- to 50-day season) and wide geographic range in many states. Eight reforms should be considered:

- Collectors (and people with kendu on private land) should have the right to market their product directly to the private sector at higher market prices.
- Marketing federations and corporations should be led by community representatives and return all profits to collectors.
- Prices paid to collectors should reflect at least minimum daily wages.
- Villagers should assume responsibility for managing collection centers after appropriate capacity building.

⁴⁶ The scheme provides Internet-based sharing of market information among agriculture produce market committees in most states in India.

- Prices from federations should reflect quality standards rather than a uniform average price. Quality should be acknowledged at the point of sale rather than a year later, when profit shares are distributed.
- The group insurance scheme initiated in Madhya Pradesh should be replicated in other states as a welfare measure.
- All records of local people employed, payments, and deliveries should be posted in villages and on a central Web site as public records.
- An independent commission or community-led cooperative association should be constituted to review kendu marketing performance at the state level and suggest practical measures to continually improve transparency, reduce corruption, and increase local incomes.

National incentives should be established for market liberalization. The government of India should consider instituting a forest diversification program similar to the recently announced Development/Strengthening of Agricultural Marketing Infrastructure, Grading and Standardization scheme. That scheme is designed to induce large investments from the private and cooperative sectors for setting up agricultural markets, marketing infrastructure, and support services, such as grading, standardization, and quality certification. The new budget announced the launching of the National Horticulture Mission, with an allocation of Rs6.3 billion in FY 2006 to promote backward and forward linkages in the horticulture sector. States that amend their agricultural produce and marketing committee acts will be eligible for the new scheme. There are many parallels between the needs this scheme is addressing for agriculture and the issues identified for diversifying community forest production and marketing.

The forest fiscal system should be reviewed. The government should consider conducting a national review of the forest fiscal system. The review could be undertaken by the Ministry of Finance or the National Planning Commission, with a significant supporting role by the Ministry of Environment and Forests and state governments. As JFM gradually transforms into a model in which communities have greater rights to harvest their forest products based on an approved management plan and more flexibility to choose private marketing channels, the current benefit-sharing system will become less relevant. A fiscal system review should identify national and state government goals for revenue collection from communities managing state forest land. These goals include rural development and allowing communities to keep most if not all primary forest revenues; the state capturing some or all of the economic rent on primary commercial outputs; or collecting enough revenues to cover department operating costs. The review should identify and evaluate options for fiscal revenue instruments such as assessing royalties on farm gate prices for various commercial forest products, sales or value added taxes levied on primary or secondary producers, downstream income taxes; permit fees for communities, or a general land rent. It should also consider how to develop a more transparent fiscal system with greater accountability among different actors.

Experiences in other countries could be used to generate ideas for consideration (table 7.3). If communities have more

Table 7.3. Nation Fiscal Systems in Selected Countries

Cameroon	50 percent of rent goes to federal government, 40 percent to local councils, and 10 percent to communities.
Brazil	All revenues except a forest recovery fee go to the federal government.
Cambodia	20 percent of revenue goes to forest department.
Canada	On crown land owned by provincial governments, large forest leaseholders pay a stumpage fee on a per cubic meter basis and in many cases a forest protection land tax.
Indonesia	Tax and nontax revenues are differentiated, with nontax revenues used for reforestation

Source: Oksanen (2004); World Bank team.

management responsibilities, there is less merit in levying royalties on primary production. In this case, more emphasis could be placed on downstream taxes through value-added taxes or income as primary products are transformed and value added. The fiscal system should examine linkages between state expenditure on forest management; the level of economic activity generated (income, GDP, poverty reduction); and revenue generation downstream along the value chain. At the same time, it is critical to emphasize the concurrent need to strengthen community capacities for production and marketing.

While exploring new fiscal systems for community-based forestry, a number of experiences and cautions must be accounted for. Karsenty (2000) provides a summary of economic instruments for tropical forests, based on a case study in the Congo Basin. He cautions:

“Wherever possible, market mechanisms should be introduced in place of administered systems, auctions in place of royalties, marketable permits in place of taxes. Care must be taken, however, not to confuse efficiency with ideology: a mechanism may be theoretically efficient, but the economic, political or institutional conditions may not be right for it to work and serious prior study will need to be undertaken to determine whether it will be feasible in one country or another. All the same, market mechanisms are, and should always be, overseen by a regulatory policy defined and implemented by government, and administrative regulation is still necessary to oversee management practices. Government intervention must be aimed at organizing competition where it is needed to encourage innovation and economic efficiency and to establish the operating procedures of markets set up to allocate rights to exploit and export forest resources. This means that governments must acquire the ability to use these economic instruments effectively, which is not currently the case. It would be a tragic misunderstanding to think that depends on rolling back the state and privatizing its main functions. The organization of competitive markets, and of fair, transparent procedures for allocating resources, implies that the public authorities must genuinely control the mechanisms.”

The fiscal system can give strong signals to forest managers, be they government, communities or the private sector, in terms of putting a value on the resource and providing incentives for sustainable management. Wherever possible, market mechanisms should be used. Government systems, particularly those in developing countries where forest monitoring and statistics are weak, are usually unable to provide the correct signals.

EFFECTIVE AND FLEXIBLE INSTITUTIONAL MODELS

Constraints in forest departments with field staff and pressure to downsize, an overly broad mandate, and limited, albeit slightly increasing operating budgets suggest major repositioning is required to provide more effective and focused service delivery in key functional areas in order to improve rural livelihoods and conserve the forest.⁴⁷ A new partnership model is needed that recognizes inherent comparative strengths and weaknesses by forest departments communities, private forestry consultants, and community support organizations. A range of options is available for new roles and responsibilities (see appendix 14 for details). Some of the main points for consideration include the following:

⁴⁷ Constraints include the number of staff (which is either fixed or declining); the high average staff age, which implies large-scale retirements in the next decade; and inadequate field equipment and transport to carry out even basic forest management support to communities.

- Moving toward a system of private forestry consultants has several merits. First, it would gradually build up a private market for these services. Second, sharing some of the field responsibilities with consultants would allow forest department to focus limited field staff on other core functional roles. Third, it would provide employment opportunities for technical graduates and retired foresters. Governments or donors would need to subsidize these services until communities began to generate sufficient revenues to cover these costs. The net revenue from 1 cubic meter of sal sawlogs could cover the cost of two days of a local consultant's time. The Lok Vaniki program in Madhya Pradesh offers a good model to study and possibly extend to JFM communities (Box 7.13)

Box 7.13. The Madhya Pradesh Lok Vaniki Initiative

Madhya Pradesh is encouraging forestry on private and degraded revenue land. Chartered foresters help prepare management plans and silvicultural operation in these forests. The M.P. Lok Vaniki Act 2001 (M.P. Act No. 10 of 2001) provides an opportunity for willing landholders to manage their own forests.

The law encourages owners of private forests and other tree-clad areas to manage their natural resource on scientific lines, in order to optimize both economic and environmental returns. The act provides for active involvement of village *panchayats* and *gram sabhas* in preparing, implementing, and monitoring management plans prepared for private areas. Chartered foresters provide technical assistance to people willing to take up forestry on their private holdings.

Source: <http://www.mp.nic.in>.

- Local authorities have a growing role and mandate for forestry that needs nurturing. *Panchayats* have a strong legal and constitutional mandate for specific forestry functions on lands within their jurisdiction. Assuming that contradictions between the PESA and forestry legal frameworks are resolved, *panchayats* will need to establish stronger internal capacities and awareness about forestry and build stronger partnerships with forest departments for technical services. New national legislation being proposed by the Ministry of Tribal Affairs would assign 2.5 hectares of state forest land to specified tribal households under long-term leases on land on which they have been living for generations. The *gram sabah* would be the competent authority in recognizing vested rights of forest-dwelling tribes. Much of this land is not forested but is used for agriculture. If promulgated into law, the bill would require new partnerships, and working relationships would need to be established between tribal agencies, forest departments, tribal communities, and local authorities.

What are the potential implications of these shifts? Further evolution of JFM will require transforming the roles and responsibilities of key players in the forest sector. By focusing on core business functions and sharing more responsibilities with other actors, state forest departments should be able to reduce current staffing levels (as Madhya Pradesh is trying to do) and free up more financial resources to support critical core functions and better technology for inventory, mapping, monitoring, and knowledge sharing.

Some 195,000 permanent staff currently is employed in the central and state forest departments. The density of field staff in the three states examined ranges from 453 hectares per officer in Madhya Pradesh to 2,421 hectares per officer in Jharkhand. By contrast, the figure in the United States is one forest officer per 2,200 hectares; in Honduras under new reforms it is one officer per 2,100 hectare (Molnar 2005). A more effective system in the longer term might reduce staff densities, assign fewer responsibilities, and support staff with better equipment, transport, and

monitoring systems. The objective is to move away from a system in which the state tries to provide detailed oversight on every hectare of forest (with resulting poor service delivery) toward a system in which implementing agencies have more focused oversight and broader responsibilities are gradually allocated to communities, the private sector, *panchayats*, and community support organizations. The first step is determining which jobs must be performed by state forest departments and which can be done by other actors. This report provides options for beginning a dialogue, leading to gradual reforms of roles and responsibilities. Appropriate capacity building program need to be developed for forest departments to help with this transition, and for communities, especially those demonstrating high levels of awareness and interest in testing new approaches and taking on greater responsibilities for forestry.

Private sector investment is needed in production and marketing. Lack of adequate internal savings or access to formal capital markets means, that forest fringe communities are usually unable to finance major investments in forest resource development. Both government and the private sector can help finance the initial forest crop to build a sustainable forest products supply that can be marketed and generate revenues. Partnerships involving large industrial leases are not recommended without careful study of the impacts on small-scale producers. Global evidence suggests that industrial leases often supply low-value commodity timber products at costs below those of communities due to economies of scale and in many cases indirect state subsidies, such as below-market stumpage costs. At the same time, large processing firms are moving away from managing their own forest resources toward partnership agreements with farmers and communities as suppliers. These approaches have huge potential in India, where imbalances between the supply of and demand for fiber are conducive for developing new partnership models in which communities supply large timber processing mills or fuelwood markets.

The International Finance Corporation (IFC) is working with clients in Africa and Latin America to develop emerging opportunities for strategic partnerships between forest industries and communities for commercial timber (box 7.14). One precondition set by IFC is that communities must have the right to market their timber independently of state marketing corporations or forest departments.

Box 7.14. International Finance Corporation Support for Partnerships Between Communities, Farmers, and Industry

The International Finance Corporation is supporting partnerships in the forestry sector in many ways. These partnerships will:

- Provide technical and financial analysis of small and medium-scale forest industries to identify ways to upgrade equipment and improve their competitiveness with imports.
- Pilot test partnerships between government, processing enterprises, and communities, with support of the IFC's Corporate Citizen Facility.
- Provide technical assistance for development of business models, financing, and training in small-scale forest enterprises.
- Promote improved market access for small-scale forest enterprises through collaboration with the World Wildlife Fund's Global Forest and Trade Network.
- Build the capacity of the forest industry, related NGOs, and relevant associations of communities or farm forestry owners for independent monitoring and possible certification
- Finance commodity-based research to identify issues and opportunities.

Unpublished Bank reports

Carbon financing represents another option for generating finances and drawing the private sector into forestry production and marketing (box 7.15). The challenge for policymakers in India is to find the right mix of policies and incentives to attract private investment that can partner with communities. Out-grower schemes and contract growing, noted earlier, represent innovative approaches.

Box 7.15. Carbon Financing in Community-Based Forestry in India

A new World Bank-funded project in Andhra Pradesh and Orissa proposes to mobilize and encourage small and marginal farmers to raise plantations of tree species with high rates of carbon sequestration in their farmlands. The project will:

- Provide advice and training
- Use clonal seedlings to establish high-density plantations.
- Promote partnerships between farmers and local paper companies to purchase wood.
- Encourage farmers to adopt agro-forestry practices such as intercropping during the first year to meet their subsistence costs.
- Provide short-term financing to farmers from an upfront payment by the global BioCarbon Fund.
- Arrange long-term credit to small and marginal farmers to meet the cost of plantation and maintenance.
- Involve local communities in the protection of plantations.
- Generate additional income from carbon credits to farmers.

Source: World Bank documents.

Fuelwood supplies need to increase, with the private sector playing a role. Village fuelwood plantations have the potential for significant welfare improvements, especially for women, through increased biomass consumption, decreased collection time, and reduced pressure on natural forests. Kholin and Ostwald (2001) estimate the willingness of the average village household in Orissa to pay for community fuelwood plantations at Rs5,500 per hectare per year. This willingness reflects the desire by women to collect fuelwood closer to home rather than foraging for branches and windfall from forests several kilometers away.

Fuelwood plantations would also reduce inter-village conflicts. To augment limited government resources, opportunities for private sector investment need to be explored that would help establish village plantations (on protected forests or wasteland) to meet subsistence needs of villagers while generating excess production for commercial sales to urban markets, hotels, hospitals, and companies, such as tea companies. Partnerships between the state (which would provide wasteland or degraded forest land to communities under secure and legal tenure); people (who would establish and manage the stands); and the private sector (which would provide the financing and marketing channels) have potential, but they require careful economic, market, and social analysis.

Delivering integrated rural development services to more remote forest fringe communities requires new models for service delivery. To help identify and evaluate options, a state-level review of rural service delivery programs in forest fringe communities is suggested, coordinated by the chief minister's office. Options that could be evaluated include transforming state forest departments into broader rural development agencies for remote communities outside revenue lands, supported by additional financial resources and training; strengthening mechanisms for more collaborative rural development planning, budgeting, and program implementation at the district and community level among relevant line agencies such as forestry, rural development, tribal

affairs, agriculture, minor irrigation, water, and *panchayat raj* institutions (box 7.16); and merging the functions of the FDA and the District Rural Development Agency at the district levels, chaired by the district magistrate.

Box 7.16. Options for Delivering Rural Development Service in JFM

The World Bank–financed Assam Agricultural Competitiveness Project is improving rural development in communities through a wide range of livelihood options. Participating line agencies are represented through project and district coordinating bodies. The World Bank–funded Gemidiriya Community Development and Livelihood project in Sri Lanka established a People’s Company to manage a Village Development Fund. Allocations were 10 percent to capacity building; 45 percent for an infrastructure development fund; and 45 percent for a livelihood improvement fund, split up among a savings and credit fund (85 percent), skills development for youth (10 percent), and a one-time grant for the poorest people in the village.

New community forestry projects financed by the Japan Bank for International Cooperation in India provide villages with Rs100,000–Rs1 million for rural livelihoods and forestry development. New project designs may have three phases (preparation, implementation, consolidation). Coordination with other line agencies is effected through a district level committee headed by the district collector.

Source: World Bank reports

Whatever model is chosen, government agencies such as tribal affairs, agriculture, and rural development need to play a stronger role in rural livelihood programs linked with forest-based communities. A study based on community “report cards” of local government service delivery could help guide this review process.⁴⁸ Where local authorities have jurisdiction over forest resources, joint capacity building with the forest department would be helpful in forging closer working relationships that would benefit communities. Another idea for strengthening interdepartmental cooperation for rural development is to establish a staff cross-exchange program, in which professional officers of forest department exchange positions with counterparts in other line departments, such as rural development. New community-based forestry programs could also be twinned with community-driven development initiatives, such as District Poverty Initiative programs to provide communities with livelihood incentives while forests mature. Nonforest livelihood measures include self-help groups and income-generating activities, agricultural support, tubewells, fish ponds, and water harvesting.

Small-scale testing of program merging is currently being undertaken in Andhra Pradesh, with favorable results. In Assam a pilot forestry project in two districts has been merged with the statewide Assam Agricultural Competitiveness Project, a Bank-funded project that broadens livelihood opportunities and community support organization support for community development. The project has also set up effective coordinating institutions among participating line agencies.

Advisory bodies for forestry and rural development are needed at the state level. Rural development in forest fringe communities is complex and involves a number of actors. State governments should consider establishing a Forestry and Rural Development Advisory Board or similar body, led by an independent senior chairperson, with senior representatives from key government rural development agencies, tribal leaders, and selected community support organizations. Under one approach, the board would report to the state minister for environment and forests, advising him or her on priority actions for forestry and rural livelihoods and policy

⁴⁸ This kind of study was completed in Jharkhand in 2004 (Public Affairs Foundation 2004).

reform and ensuring active public participation where required. A second option would be to have the body report to the chief minister. This approach would allow the proposed board to focus on wider rural development and coordination issues. All these bodies must be viewed with caution, however. Experience often shows these institutions often exist on paper but rarely meet, that they are used more for monitoring than coordination or strategic guidance. The proposed Forestry and Rural Development Advisory Board could be an effective body to guide the transition toward community forestry management. States such as Assam already have bodies such as wildlife advisory boards that could serve as models.

State-level community forestry associations need to be established. Community forestry associations could be established in each state in order to level the playing field in terms of power relationships with government. An association would bring together interested villages involved in community-based forestry in a forum to articulate common goals and issues to government and to serve as a focal point for communications, education, market intelligence, and training programs. Tribal leaders and women would need to be a central part of such an organization. A small capital grant would provide seed money to pay for a small office, equipment, membership drives, registration, development of a data base, and production of materials. The grant could come from the central government or donors, on a declining basis over three to five years. As communities begin to earn higher revenues from forestry operations and more communities participate in forestry development, external funding could gradually be replaced with annual contributions from communities. With 13,698 JFM committees and an annual levy of Rs500 per committee, for example, Madhya Pradesh would generate Rs6.8 million (\$152,000) a year. Even if only one-third of the communities were functioning and contributed, there would more than enough resources to sustain a small office secretariat and strong institutional support programs. It is important that these institutions grow organically.

Information must be shared across institutions. India is blessed with a range of experiences and abundant information on JFM and related topics from government agency reports, Web sites, research institutions, community support organizations, and external agencies. It is extremely difficult, however, to sort through the thousands of relevant reports and articles scattered in different locations and forms. Stakeholders involved with JFM in India cannot easily build their knowledge bases or share experiences from India or other countries where community-based forestry has gone through the same transitions.

In partnership with appropriate community support organizations and international organizations, the government needs to create a strong and sustainable national multi-stakeholder community forestry network. These networks should build on existing systems, such as the Resource Unit for Participatory Forestry (RUPFOR), which is housed in a private NGO and acts as a stakeholder forum in close consultation with the Ministry of Environment and Forests. Discussions with various stakeholders suggest that the RUPFOR could be strengthened, by expanding Web links, offering publications electronically, and organizing more workshops and field visits, for example.

An effective network requires strong financial and technical support. It should constantly gather information on thematic issues and innovative solutions from within India and globally, post information that can be downloaded for free, offer training materials, and create and manage focused e-discussion groups on community forestry issues. The RUPFOR network could be reviewed by interested stakeholders, who could identify ways of making it even more accessible and supportive to community-based forestry from policy level to field officers. At the same time, the JFM cell in the Ministry of Environment and Forests could be reviewed to assess its effectiveness and determine how to better integrate it into national and international networks.

Knowledge sharing must also occur through personal exchanges of experiences of policymakers, government officials, and community members. There are abundant opportunities for cross-fertilization between leading and lagging states; tapping this wealth of internal knowledge is critical for moving all states farther along the community forestry continuum. An expanded program of exchange visits within India could facilitate this process. Another option to explore is establishing model community forests in states in which progressive reforms and processes can be tested and used as demonstrations. An extension of this option would be to twin leading forestry communities with counterparts in other countries to facilitate cross-cultural experience sharing. Experiences in other countries offer great scope for sharing information and lessons learning. A program for international exchanges is needed in partnership with international NGOs and donors. Opening up India to other global experiences can be a powerful catalyst for change.

Potential for Welfare Gains from Proposed Reforms

An example from Jharkhand illustrates the productive potential of forests and the possible gains in total income from implementing proposed reforms.⁴⁹ Based on three alternative scenarios of increased productivity, output, and marketed commodities; projections of increased JFM area and forest productivity; and a sustainable selective timber felling system augmented by modest nontimber forest product production, by 2020 a typical JFM community could increase annual forest income by less than Rs200,000 to more than Rs1 million. At the same time, annual revenues per hectare collected by the state government could increase tenfold to almost Rs700 per hectare.

At the national level, total forest income from commercial sales could rise from an estimated \$222 million in 2004 (worst-case scenario) to about \$2 billion a year in 2020 (best-case scenario). Furthermore, with a 20 percent increase in nontimber forest product prices due to local quality improvements and modest value addition and 10 percent increases in timber and bamboo prices from quality enhancements, annual market-based incomes could increase another 11 percent, or \$220 million, by 2020 in the best-case scenario. Communities would continue to enjoy subsistence benefits from the forest. The imputed net subsistence value of fuelwood and fodder alone could be worth another \$1.1 billion a year.⁵⁰

Conservation values from the forest are also important. Ecological and ecotourism benefits increase net income from 1.1 percent to 2.4 percent of GDP (Chopra, Bhattacharya, and Kumar 2002). This represents an increase of \$6.2 billion from the entire forest cover in India. Given that JFM forests currently represent about 27 percent of total forest cover, a simple assumption is that 27 percent of these gains (\$1.7 billion) could be derived from current JFM forests as they mature. This model is very basic and produces only order of magnitude estimates. More complex models could be based on refined growth and yield estimates by region and forest types, more precise data on prices and costs, and different assumptions about how a “typical” community forest is allocated across various land uses.

Commercial fuelwood could be another option for increasing value addition from the forest for communities. With better market access, villagers could be induced to increase forest stocking on their private farm holdings through agro-forestry, which can generate food, poles, timber, raw

⁴⁹ See appendix 15 for more information on the Jharkhand and national projections.

⁵⁰ This figure is based on 8.4 million families (or households) involved with JFM (Bahuguna and others 2004), average gross subsistence value for fuelwood and fodder from case studies in Jharkhand and Assam (see appendix 4), and net values of 50 percent of gross values to account for collection time.

materials for crafts, and fuelwood. If some communities produce lucrative aromatic oils or medicinal plants for international markets, net returns could rise even more.

Production of timber could increase to almost 20 million cubic meters by 2020, making a significant contribution to India's deficit in high- and mid-value hardwood. It would also improve the balance of payments, by reducing the need to import logs. Annual community income could increase to almost Rs1 million, an incremental increase of Rs5,000 per household.

These projections are based on communities selling logs to local sawmills or larger intermediaries at the roadside. Moving into secondary processing by turning logs into squares or lumber is a logical progression for some communities or a consortium of communities, which would add significant value and increase local incomes further.

The main message is that even under very conservative assumptions, the asset value of forest resources has great upside potential under proposed reforms, as community-based forestry evolves and expands, forest productivity improves, and better market channels open up. This simple analysis reveals that community-based forestry, coupled with investments in increasing forest productivity, could substantially expand rural incomes and increase revenues to the state through downstream taxes. Yet this potential will not be realized until governments address the fundamental issues and constraints that are hindering more effective development of community-based forestry livelihood opportunities.

Priorities and Phasing of Reform Options

A mix of reforms is needed at both the national and state levels (table 7.4). The array of reforms is complex and needs to be phased carefully. Priorities may emerge from recommendation in the forthcoming report of the National Forest Commission. But based on experiences in India and other jurisdictions, it is suggested that reforms initially focus on small actions that have a good chance of success, provide incentives for communities to participate, and encourage government to implement more challenging reforms. These reforms will require significant financial and technical support. Current national and state priorities for fiscal allocations need to be reviewed and more attention given to the core business functions of government, including more targeted forest R&D, information networks and exchange programs, remote sensing, mapping, and monitoring. While forest rehabilitation remains a critical national priority, creative financing solutions and incentive programs involving the government, private sector, and communities need to be explored, through the IFC, for example. In addition, sustained and perhaps more coordinated donor support is needed to community forestry, building on the comparative advantages and experiences offered by the principal actors (the Asian Development Bank, the Japan Bank for International Cooperation, DFID, and the World Bank, among others). Donor funds can play a critical role in building institutional capacities, undertaking strategic sector work, and supporting knowledge sharing.

Table 7.4. Options for and phasing of proposed policy and program reforms

<i>Reform/actor</i>	<i>Timeframe</i>	<i>Recommended policy or program</i>
<i>Policy and legal reform to support better resource tenure and management rights for communities</i>		
Government of India	Short term	<ul style="list-style-type: none"> • Build national vision for forestry and community forestry based on National Forest Commission report and other studies.
	Medium term	<ul style="list-style-type: none"> • Establish national policy guidelines on tenure reform to strengthen community resource rights.
	Long term	<ul style="list-style-type: none"> • Conduct major review of decentralization, PESA, and JFM legal and regulatory conflicts, and identify short and long-term reforms.
States	Short term	<ul style="list-style-type: none"> • Consolidate national forestry legislative reforms. • Institute processes to identify and acknowledge historic forest rights that have a legal basis. • Disseminate information on legal and policy framework to communities in local languages. • Provide legal training to forest department staff, sensitize police and judiciary to community forestry issues.
		Medium term
	Long term	<ul style="list-style-type: none"> • Record and map forest tenures, beginning with pilot areas in key states.
		<ul style="list-style-type: none"> • Consolidate state forestry legislative reforms.
<i>Strengthen forest management regulation and monitoring and control systems for community forestry</i>		
Government of India	Short term	<ul style="list-style-type: none"> • Conduct a national review of forest research around community forestry.
	Medium term	<ul style="list-style-type: none"> • Develop a new national research strategy with strong community forest focus.
States	Short term	<ul style="list-style-type: none"> • Develop operational manuals for community forestry. • Strengthen working plans and micro-plans in key areas, to support community forestry reforms.
		Medium term
	Long term	<ul style="list-style-type: none"> • Improve forest and livelihood monitoring systems with community and community support organization partners.
		<ul style="list-style-type: none"> • Strengthen growth and yield systems and silviculture prescriptions focused on nontraditional timber and nontimber forest products; use communities to help establish and maintain field plots.

Improve access to more efficient markets by forest communities to support improved livelihoods		
Government of India	Medium term	<ul style="list-style-type: none"> • Explore policy of letting communities consolidate into clusters for more efficient management; build on established tribal institutions. • Conduct national review and reform of harvesting and transit regulations and notified species.
	Long term	<ul style="list-style-type: none"> • Review forest fiscal systems, and identify options to improve efficiency and transparency.
States	Short term	<ul style="list-style-type: none"> • Improve market information sharing and networks. • Build new market-driven partnership models for marketing nontimber forest products, timber, fuelwood, and bamboo.
	Medium term	<ul style="list-style-type: none"> • Strengthen extension and technical service delivery to communities and producer organizations. • Facilitate creation of strong local producer organizations. • With the government of India, review regulatory framework leading to reform of harvesting and transit regulations.
<i>Build more effective and flexible institutions to support community forestry recommended policy and program actions</i>		
Government of India	Short term	<ul style="list-style-type: none"> • Explore new approaches for private sector investment in wood supply with communities. • Develop systems for information and knowledge sharing at local, state, national, and international levels. • Consider establishing national advisory body for forestry.
	Medium term	<ul style="list-style-type: none"> • Strengthen policy and economics functions in the Ministry of Environment and Forests. • Conduct national review of rural development service in forest communities.
States	Short term	<ul style="list-style-type: none"> • Establish model forests in states where various reforms can be tested and implemented at field level and used for demonstration purposes. • Establish a national and state system for allowing private consultants to work with forest communities.
	Medium term	<ul style="list-style-type: none"> • Establish state-level advisory body with broad representation. • Conduct state-level reviews of rural development service delivery. • Develop a stronger role for community support organizations in community forestry. • Develop a strategic plan for forest department to support shifting roles and responsibilities. • Build capacity in local authorities to support decentralization of forest management. • Build capacity in communities to assume greater management responsibilities. • Strengthen forest department capability in key areas to support shifting roles needed to support community forestry.
	Long term	<ul style="list-style-type: none"> • Establish functioning community forestry associations at state level.

Further reforms in the community-based forestry model will not be easy, given the competing interests in the forest sector (Khare and others 2000). Government foresters are mandated to implement policy, but they are ill equipped to deal with the challenge of change brought by JFM, let alone further transitional approaches. While many forest officers are open to progressive reforms, others are locked into old ways of doing business. The departments suffer from a rigid hierarchical structure, centralized planning, and limited mechanisms for two-way dialogue about issues and opportunities. The strong forestry conservation goal of the Ministry of Environment and Forests and state forest departments is viewed seriously by field staff; changes that potentially threaten this goal (real or perceived) are viewed with considerable caution. Many forest officers have major concerns about the ability of communities to assume more forestry responsibilities, but they accept that with proper capacity building of both communities and forest departments, many of these concerns can be alleviated. Forest industrialists who have benefited in the past from subsidized raw materials will continue to lobby for long-term forest leases, which would reduce the

opportunity for communities to supply needed timber inputs. Conservationists, who promote biodiversity protection above rational forest utilization, often have considerable influence on forest policy. Social activists effectively promote the interests of rural forest-based communities and tribal people.

What is needed is a common vision at the national and state levels that focuses on forest livelihoods as well as conservation, the enabling factors required to unlock forest values for communities, and agreement on how to implement progressive reforms. Achieving and implementing this common vision will be challenging. With bold steps and political will, a strong foundation can be laid to transform community forestry into a more productive and competitive sector of the rural economy while also addressing national forest conservation goals.