

**Document of
The World Bank**

Report No.: 32246

PROJECT PERFORMANCE ASSESSMENT REPORT

INDIA

**MADHYA PRADESH FORESTRY DEVELOPMENT PROJECT
(CREDIT NO. 2700)**

April 28, 2005

*Sector, Thematic and Global Evaluation Group
Operations Evaluation Department*

Currency Equivalents (annual averages)

Currency Unit = Indian Rupees (Rs.)

1995	US\$1.00	Rs.32.4
1996	US\$1.00	Rs.35.4
1997	US\$1.00	Rs.36.3
1998	US\$1.00	Rs.41.3
1999	US\$1.00	Rs.43.1
2000	US\$1.00	Rs.44.7
2001	US\$1.00	Rs.47.2
2002	US\$1.00	Rs.48.9
2003	US\$1.00	Rs.46.5
2004	US\$1.00	Rs.45.9

Abbreviations and Acronyms

EDC	Ecodevelopment Committee
FPC	Forest Protection Committee
ICR	Implementation Completion Report
JFM	Joint Forest Management
NGO	Non-Governmental Organization
OED	Operations Evaluation Department
PPAR	Project Performance Assessment Report
VFC	Village Forest Committee

Fiscal Year

Government: April 1 – March 31

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OED Mission: Enhancing development effectiveness through excellence and independence in evaluation.

About this Report

The Operations Evaluation Department assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, OED annually assesses about 25 percent of the Bank's lending operations. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons. The projects, topics, and analytical approaches selected for assessment support larger evaluation studies.

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by OED. To prepare PPARs, OED staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country for onsite discussions with project staff and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader OED studies.

Each PPAR is subject to a peer review process and OED management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

About the OED Rating System

The time-tested evaluation methods used by OED are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. OED evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (more information is available on the OED website: <http://worldbank.org/oed/eta-mainpage.html>).

Relevance of Objectives: The extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). *Possible ratings:* High, Substantial, Modest, Negligible.

Efficacy: The extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Possible ratings:* High, Substantial, Modest, Negligible.

Efficiency: The extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. *Possible ratings:* High, Substantial, Modest, Negligible. This rating is not generally applied to adjustment operations.

Sustainability: The resilience to risk of net benefits flows over time. *Possible ratings:* Highly Likely, Likely, Unlikely, Highly Unlikely, Not Evaluable.

Institutional Development Impact: The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. *Possible ratings:* High, Substantial, Modest, Negligible.

Outcome: The extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project). *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, towards the achievement of development objectives and sustainability. *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

Contents

Preface.....	vii
Summary.....	ix
1. Background	1
2. Evidence.....	3
<i>OED Findings.....</i>	<i>3</i>
<i>Other Data Sources.....</i>	<i>9</i>
3. Ratings	13
<i>Project Objectives and Components.....</i>	<i>13</i>
<i>Outcome</i>	<i>14</i>
<i>Institutional Development Impact.....</i>	<i>17</i>
<i>Sustainability.....</i>	<i>19</i>
<i>Bank and Borrower Performance.....</i>	<i>19</i>
4. Lessons	20
Annex A. Tables	23
Annex B. Basic Data Sheet.....	29

Principal Ratings

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Satisfactory	Satisfactory	Moderately Satisfactory
Sustainability	Likely	Likely	Unlikely
Institutional Development Impact	High	Substantial	Modest
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

* The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The ICR Review is an intermediate Operations Evaluation Department (OED) product that seeks to independently verify the findings of the ICR.

Key Staff Responsible

<i>Project</i>	<i>Task Manager/Leader</i>	<i>Division Chief/ Sector Director</i>	<i>Country Director</i>
Appraisal	Ian Hill	Shawki Barghouti	Heinz Vergin
Completion	Irshad Khan	Ridwan Ali	Edwin Lim

Preface

This is a Project Performance Assessment Report (PPAR) for the India Madhya Pradesh Forestry Development Project, for which Credit No. 2700-IN in the amount of US\$58.5 million equivalent was approved on March 30, 1995. The loan closed on December 31, 1999, as originally expected.

The Operations Evaluation Department sent a mission to assess the project in October 2003, conducted by Mr. John R. Heath. A checklist of key performance indicators was filled out for six randomly-selected villages covered by the project. In January 2004 this was followed by a survey of 30 communities in the two districts of Betul and Bilaspur, entailing interviews with 1,147 respondents, focus group meetings and interviews with key informants. The survey work was led by Ms. Anju Gupta and Ms. Nalini Kumar and formed part of a broader OED evaluation of community-driven development in various countries. The 18 month lag between the mission and the issue of this report was the result of successive changes to the analysis of the survey data to keep the method used in line with the evolving approach taken by the community-driven development study to which this report was one input. The survey results were complemented by findings from other studies on Joint Forest Management in Madhya Pradesh, from satellite imaging, and from fiscal trends data.

The report also draws on interviews with officials of the Government of India and with the staff of the Madhya Pradesh Forestry Department. The collaboration of these persons is gratefully acknowledged.

Following standard OED procedures, the draft PPAR was sent to the Borrower for comments before it was finalized. The Borrower had no comments on the report.

Summary

This is a Project Performance Assessment Report (PPAR) on the Madhya Pradesh Forestry Development Project which was supported by a credit of US\$54.8 million equivalent. The loan was approved in March 1995 and closed on schedule in December 1999.

The project sought to help the state government of Madhya Pradesh implement its strategy for the development of the forest sector (Joint Forest Management). Specific objectives were to strengthen the state's Forestry Department, to increase forest cover by improved management based on the participation of local communities, to upgrade forest research and extension, and to conserve biodiversity.

The findings of this assessment are based on an initial reconnaissance of six randomly-selected villages, findings from which were used to help design an in-depth survey of 30 communities in two districts of Madhya Pradesh (Betul and Bilaspur), involving questionnaire interviews with 1,147 respondents, interviews with key informants and focus group meetings. The survey compared communities covered by the Bank-supported project with those outside the project. The survey results are complemented by findings from other studies of Joint Forest Management in Madhya Pradesh, by satellite monitoring of the change in the forest cover, and by data on state and federal government funding of the strategy.

The completion report stated that the project had helped introduce a participatory management strategy for 221,000 ha of dense forest and 419,300 ha of degraded forest, respectively 138 percent and 122 percent of the appraisal target. A total of 2,451 committees were established under the project to help manage forestland in their vicinity, double the number expected. The conservation of biodiversity was enhanced over an area of 826,000 of forestland and protected areas, 160 percent of the appraisal target.

The outcome of the project is rated moderately satisfactory. The project concept remains substantially relevant to current concerns about forest degradation, and output targets were much exceeded with project costs somewhat lower than expected; on the other hand outcomes were mixed, with the best results for biodiversity conservation, the weakest for research and extension, with strengthening of the Forest Department and promotion of a participatory management strategy falling in between the two extremes. Although the project did not give a central place to reducing poverty, joint forest management may have lessened the disparity between rich and poor because the latter sell a larger quantity of non-timber forest products, a resource promoted by the strategy.

The project's institutional development impact is rated modest. On the one hand, the Forest Department pushed to decentralize and won support at all levels for the participatory model of forest management, and the momentum to create village committees has continued since the loan was closed. On the other hand, there are a number of inconsistencies and lacunae in the legal framework that underpins joint forest management. It is possible that the elected local authorities may overrule the (not

formally elected) village forest committees, challenging the distribution of forest benefits decreed by the latter. (The evaluation, however, was not able to establish if this has actually happened).

Based on the evidence of insufficient legal underpinning, coupled with state fiscal constraints (aggravated by the Bank's decision not to fund a follow-up project), sustainability is rated unlikely.

The performance of both Bank and borrower is rated satisfactory, based on the soundness of the project concept and the implementation record.

A project of this nature has a long gestation period and this should be borne in mind when assessing the various survey results reported here, all of which paint a fairly modest picture of project achievements. The OED survey found the following:

- Little evidence of an increase in the consumption of non-timber forest products—but with the likelihood of an increase greater for the poorest.
- A negative trend in forest cover with 60 percent of respondents indicating shrinkage since the start of Joint Forest Management.
- Little impact from the small-scale village infrastructure projects that were adjuncts to the forest strategy.
- Mixed evidence on changes in welfare impact since project startup.
- No significant increase in various measures of participation, awareness and trust—with particularly limited impact on women.

This survey was limited to two districts (Betul and Bilaspur), which account for about 5 percent of the area covered by the project. The survey results were compared to data from other data sources which covered Madhya Pradesh but were not limited to Betul and Bilaspur. These sources include evidence from other surveys and from satellite pictures. Findings from these sources are broadly consistent with the Betul/Bilaspur survey findings.

The following lessons may be derived. *First, to mobilize villager support for resource conservation a long term commitment is needed by the government and donor agencies.* The JFM strategy involves increasing the stake of communities (residing in the neighborhood of forests) in the management and protection of those forests. However, the regenerated forest area can be maintained only if the villagers get adequate returns from the forest. This requires a long term strategy of forest protection and creating alternative economic opportunities for villagers at least until the forest regenerates and communities can depend on the forest for their livelihood. There are important implications here for the Bank's strategic approach to forest management. The appraisal document envisaged the need for a ten-year program of Bank support and the low impact found by this evaluation suggests that such an extended commitment may be warranted.

Second, flaws in the legal and incentive framework need to be addressed. An overarching strategy of forest protection through community participation also requires attention to the legal and policy framework for forest management bearing on, among other things,

forest user rights, relations between protection committees and village institutions, and issues related to the marketing of non-timber forest products.

Third, the Bank's involvement in the forest sector needs to be seen in the larger and longer term context of poverty reduction and the poverty impact of such involvement should be monitored. A large percentage of the poor in rural areas are found in and around forests and the Bank can make a substantial contribution to poverty reduction in India through a strategy that involves the poor in forest protection. However, this must be done in a way that is monitorable and should be backed up in design by a systematic monitoring and evaluation system capable of measuring poverty impact.

Ajay Chhibber
Acting Director-General
Operations Evaluation

1. Background

1.1 In July 2000, OED's review of the completion report for the Madhya Pradesh Forestry Development Project recommended further evaluation of the project "to provide lessons of broad applicability for programs based on community participation for the South Asia Region as a whole". It also pointed to the need to verify whether the community participation efforts sponsored by the project were likely to be sustained. This report addresses these issues, reviewing several data sources on the early results of the *joint forest management* strategy in Madhya Pradesh, which was a central part of the project under review (see Section 3 for a detailed statement of project objectives).

1.2 Madhya Pradesh¹ is a pivotal state for the Indian forestry sector, containing more forest than any other state in India. The state covers 13 percent of the national territory but accounts for 21 percent of India's forest cover. Thirty percent of the state area is classified as forestland, providing a livelihood for about 50 million people, over half of whom belong to tribes or scheduled castes.

1.3 The rest of this chapter gives a detailed description of how joint forest management (JFM) has been organized. This is followed by a presentation of evidence on the results of the strategy in Madhya Pradesh, including findings from a OED survey of over 1,000 households in two districts of that state.² Subsequently these findings are used to rate the Bank-supported project in terms of OED's evaluation criteria. A final section presents the lessons to be drawn from the assessment.

1.4 In India, forestland remains, *de facto*, the property of the state—90 percent of India's 64 million ha of forest is state-owned. The central government's current strategy aims to involve village communities in the management of this resource, providing in exchange use rights to a range of non-timber forest products and a share of the proceeds from the sale of mature trees.³ Since the early 1990s 22 of the 26 Indian states have issued enabling resolutions permitting partnerships with local people for the management of the forest; and 6 of these have received support from World Bank projects.⁴

1.5 According to the federal policy enunciated in June 1990, all the tribal peoples and other villagers living in and around forests will have first claim to forest produce. The management strategy rests on involving villages in measures to conserve biodiversity, reduce the incidence of forest fires and illicit felling, and promote the regeneration of degraded forest. In exchange they are permitted to extract, in a sustainable manner, the

1. Including the state of Chhattisgarh, which was carved out of Madhya Pradesh in November 2000. All further references to Madhya Pradesh include Chhattisgarh, unless otherwise stated.

2. The OED reconnaissance mission and survey together touched only 7 percent of the forest area in Madhya Pradesh: 6 villages in the districts of Indore, Dewas and Sehore and 30 villages in Betul and Bilaspur districts. It is unclear how representative the findings are of the state as a whole (Annex A, Table A3).

3. While the center and state governments share responsibility and control over forest matters, the responsibility of administering the forests lies primarily with state governments.

4. By order of loan approval, Maharashtra (FY92), West Bengal (FY93), Andhra Pradesh (FY94), Madhya Pradesh (FY95), Uttar Pradesh (FY98) and Kerala (FY98).

timber and non-timber products of the forest; and they also receive funding for village infrastructure. The process is led by the state forest departments who initially inform villagers about the purposes and implications of JFM. A meeting of the village governing council (Gram Sabha) is convened and, if the villagers assent, the village becomes a partner in JFM. The implications of this partnership vary according to the forest zone to which the village is assigned (Table 1).

Table 1. Key Features of Joint Forest Management

	<i>Zone I</i>	<i>Zone II</i>	<i>Zone III</i>
Forest characteristics	Protected Areas (Parks & Sanctuaries)	Dense Forest (crown cover >40%)	Degraded Forest (crown cover <40%)
Criteria for village selection	Villages inside Protected Areas and demarcated buffer areas; outer villages within 5 km of Protected Area boundary	Villages within 5 km of dense forests	Villages within 5 km of degraded forests
Relevant village institution	Ecodevelopment Committee (EDC)	Forest Protection Committee (FPC)	Village Protection Committee (VFC)
Management objective	Biodiversity conservation	Protection of closed forest; Assisted Natural Regeneration	Protection and rehabilitation of degraded forest
Planning process	Protected Area Management Plan plus Village Development Microplan plus Annual Action Plan	Working Plans plus Village Development Microplan	Working Plans plus Village Development Microplan
Village has Nistar/1 rights?	Yes	Yes	Yes
Share of profits from selling timber and bamboo	In districts where a net profit is realized it is distributed among all Joint Forest Management Committees as follows: 20% is given to Committees in whose areas most of the felling took place; Of the remainder, one-fifth is used to fund training, awareness and extension campaigns and four-fifths is shared out among all the Committees in the district.		

Source: Joint Forest Management Resolution, Madhya Pradesh Forest Department, October 22, 2001.

/1 Royalty-free usufruct, bearing on access to a wide-range of common property resources, not limited to forest products.

1.6 Forest committees have a five-year (renewable) term. The general membership of the committee comprises everyone in the village, usually allowing for one male and one female representative from each household. There is also an Executive Committee, consisting of 11 to 21 members, including statutory representation of women, tribes, backward castes and the landless. This committee handles day-to-day administration and must meet at least once every three months. It may organize villager patrols designed to protect against fire, encroachment and illicit felling and grazing. The committee assists the Forest Department in preparing the Village Development Microplan, which includes provisions both for forest management and for investment in training, small-scale infrastructure and other activities intended to reduce dependence on incomes derived from the forest (“village development”). The state government is a key financial

contributor for both the forestry and the village development components of the Microplan.

1.7 In each participating village a JFM fund is set up, the primary input coming from the Forest Department, supplemented by membership fees and voluntary contributions. There are no strict rules governing contributions to, and use of, this fund and both the size of the fund and the conditions attached vary substantially between villages: some of the money is used for forest protection, some for village development. Village committees typically levy fines on those caught in the act of illicit felling and revenue from fines may be an important fund inflow; but the committees have no legal right to levy fines (the India Forest Act does not recognize this committee function).

2. Evidence

OED FINDINGS

(a) Reconnaissance Mission

2.1 In October 2003 OED visited six villages in Madhya Pradesh picked at random from the list of those covered by the Bank-supported project. The visits helped to identify issues that could be examined more systematically in the subsequent survey. The villages were scattered over a broad swathe of territory between the towns of Indore and Bhopal. At each village an OED checklist was filled out by the local Forest Department officer, in consultation with the forest committee.

2.2 The data collected (Annex A, Table A1) showed that, nominally at least, a large number of households were participating in JFM with good representation of women and “backward” groups. All of the six villages had funds, these most commonly being fed from government financing and fines collected from violators of JFM rules. Most of the money from the fund was earmarked for community micro projects, rather than for forestry. There is a significant problem of encroachment by outsiders and half of the villages had been involved in disputes with other villages over access to land. Revenues from timber harvest were still limited but there was a significant income in four of the six villages from non-timber forest products. Given that local forestry staff were present when the data were collected it is possible that the villagers’ responses were not as candid as they might have been had they been interviewed in private. A checklist of this nature is not an effective tool for probing the intensity of participation by villagers. With respect to women’s participation, findings from more rigorous surveys (paragraphs 2.20 and 2.26 below) do not bear out the Annex A data, suggesting that the extent of female empowerment is quite limited.

(b) The OED Survey

2.3 The January 2004 survey was undertaken in thirty villages in two districts of what used to be the state of Madhya Pradesh: Betul and Bilaspur. Bilaspur was selected because there was forest management data on this district from a previous World Bank

survey that could be used for comparison.⁵ Betul was proposed by the Forest Department because it represented, in their estimation, one of the districts most likely to show a positive result from the program. In all there were 1,147 respondents, of which 70 percent were in communities covered by the Bank-supported JFM project, 23 percent were in communities outside the project but still enrolled in the state government's JFM program, and the remaining 7 percent in communities without JFM (Table 2). Thus, there were two comparator groups which will be labeled "Non-Bank JFM" and "Non JFM". Comparing Bank JFM to Non-Bank JFM enables an assessment of the difference the project made to the JFM program. Comparing JFM respondents to non-JFM respondents makes it possible to see what difference the JFM program made. Findings from the questionnaire survey are compared with reports from focus group meetings and interviews with key informants.

Table 2. Sample Size and Composition

	<i>N</i>	<i>Betul</i>	<i>Bilaspur</i>	<i>Total</i>
Bank-supported JFM	Communities	11	10	21
	Respondents	421	386	807
Non-Bank JFM	Communities	4	3	7
	Respondents	142	119	261
Non JFM	Communities	0	2	2
	Respondents	0	79	79
Total	Communities	15	15	30
	Respondents	563	584	1,147

2.4 The survey data are analyzed from two angles. First, what evidence is there that JFM has produced benefits, including greater forest cover, increased collection of forest products and perceived improvement in welfare? Second, has JFM led to a more participatory development process, one that increases the range of people involved in village planning—with better representation, in particular, of the interests of women, tribal peoples and the landless? Given the length of time needed for improved forestry management to produce a payoff, it would perhaps be unfair to attribute too much weight to survey findings that show little improvement so far in perceived changes in welfare. But it is reasonable to expect some pick up in revenues from increased collection of non-timber forest products given that these, unlike trees, do not entail a long maturation period.

2.5 On participatory process, it is important to have reasonable expectations. The project did not sell itself as a fully-fledged exercise in community-driven development. This was not a demand-driven project: the menu of actions (largely forest-related) was pre-determined, by the Forest Department and not by village communities. Nevertheless, the project did seek to broaden participation in forest management. It could be argued

5. Ruth Alsop *et al.*, "Community Level User Groups in Three World Bank Aided Projects: Do They Perform as Expected?" Social Development Paper (No. 40), Washington, D.C., World Bank, September 2002. (Madhya Pradesh Forestry Development is one of the projects covered: data are taken from a survey of 799 households in Madhya Pradesh, 400 in the district of Bilaspur). See paragraphs 2.24 to 2.26 below for a presentation of some of the findings.

that it will take a long time to transform village institutions: once again, the survey took place too soon for its findings to be definitive. On the other hand, it should be possible to read whether the trend is in the right direction. For example, if the survey results show that villagers are poorly informed about JFM this would cast doubt on its powers to ultimately strengthen the participatory planning process.

(i) Benefits

2.6 The villages included in the Bank-supported project were compared with (a) JFM villages outside the Bank-supported project and (b) non-JFM villages. The non-JFM respondents came from only 2 villages so the comparison JFM/non-JFM is weaker than the comparison Bank JFM/Non-Bank JFM (there were 7 Non-Bank JFM villages). The actual design of the JFM program does not appear to have varied significantly between villages that received Bank funding and those that did not.

2.7 JFM cuts two ways. On the one hand, tighter forest protection may decrease villagers' access to forest products. But the same measures may also lead to increased supply—although the time taken for the forest to respond may result in a lag. On balance, there may be a short-term reduction in the benefits derived from the forest.

Table 3. Forest-Related Benefits

<i>% reporting increased collection of...</i>	<i>Bank JFM</i>	<i>Non-Bank JFM</i>	<i>Non JFM</i>	<i>Total/1</i>
Fuel wood	9.9	9.2	7.1	9.5 (N=728)
Fodder	11.6	7.7	--	10.1 (N=247)
Grass	9.2	5.8	--	7.7 (N=156)
Tendu	19.2	14.1	2.5	16.7 (N=552)
Mahua	11.8	8.6	--	10.6 (N=416)
Amla	6.6	8.1	--	6.9 (N=189)

Source: OED Survey, 2004

/1 N refers to the sum of persons responding "decrease", "same" or "increase" (not the number responding that there was an increase) and those that had heard of JFM in Bank treatment group.

2.8 Indeed, with respect to collection of a variety of forest products, only a minority of respondents reported an increase (Table 3), although Bank JFM respondents were more likely to report an increase than the two comparator groups. Multivariate analysis indicates that the likelihood of increase in the consumption of forest products is negatively correlated to economic status, indicating an increase for the poorest compared to others (see paragraphs 2.26 and 3.13).

2.9 What about the impact of JFM on forest cover? The sample as a whole reports a negative trend (60 percent say that cover has shrunk since the start of JFM). But, of those reporting an increase, the Bank JFM respondents represent the highest proportion (33 percent, compared to 17 percent for Non-Bank JFM and 1 percent for Non JFM). This

evidence needs to be interpreted carefully: the time elapsed is too short for a final verdict to be passed. The focus group findings reveal major differences between the two districts covered by the survey. In Betul, five out of nine male focus groups commenting on the state of forest cover said that degradation had been reversed, citing the positive work of the Forest Committee. In Bilaspur, all nine focus groups for men made negative comments about the state of forest protection, including allegations that forest guards as well as villagers were involved in illicit felling of trees. In this district, the Bank JFM villages were no better than the Non JFM villages in terms of defending the forest. The contrasting observations for the two districts were echoed in the comments of the female focus groups. In Chapora (Bilaspur) women said that they saw the importance of protecting the forest but could not count on men's support. The evidence of significant difference between the two districts is reinforced by the satellite data (paragraph 2.23) which shows that while the forest cover has increased slightly in Betul it has shrunk in Bilaspur.

2.10 In addition to the forest benefits, villagers also stood to gain from the micro projects (e.g. irrigation, wells, access roads) that JFM helped to finance through the village development fund. The survey showed that these interventions corresponded more closely to villagers' perceived needs than forest interventions. Although all the villages surveyed had some degree of dependence on forest resources, forest degradation was a priority for only 3 of the 1,147 respondents. The most commonly cited priorities in each community were the lack of drinking water or electricity, followed by the shortage of jobs. This evidence is strongly reinforced by the findings of each of the 38 focus groups. In most cases, village development priorities had not changed over the past decade suggesting that any initiatives taken have not been very effective.

2.11 In terms of the number of micro projects funded JFM does not appear to have had a big impact. Non JFM respondents were more likely to report a larger number of micro projects financed than Non-Bank JFM respondents who, in turn, reported more of these investments than Bank JFM respondents. Only 1 percent of Bank JFM respondents said that 3 or more micro projects had been financed since the start of JFM. This compared to 7 percent for the Non-Bank JFM group and 11 percent for the Non JFM group. In the Bank JFM group, 63 percent of respondents reported that no micro project had been funded. Reviewing comments made in the male focus groups about the micro projects, seven out of ten of the groups passed a broadly negative verdict in Betul and eight out of ten were negative in Bilaspur. There were some references to the misappropriation of funds by village leaders and Forest Department officials. Three groups complained that the much-valued opportunities to work as paid laborers in implementing the micro-projects were not shared out fairly, village leaders and forest guards tending to favor their friends, often bringing in people from outside. While Betul villagers are significantly more upbeat than their counterparts in Bilaspur with respect to forest protection (paragraph 2.9), there is no significant difference between the two districts concerning village development initiatives. The negative evaluation of micro projects was echoed in the female focus groups in both districts, women remarking that they were not involved in decision-making and were poorly informed about the work undertaken and how it was funded.

2.12 On trends in welfare impact, there is a marked difference in the evidence from the questionnaire survey compared to the focus groups. According to the questionnaire survey, a majority of respondents in all villages reported an improvement in welfare, using the increase in consumption and expenditure as a proxy. Over the past ten years there was an increase in consumption of food grains, oilseeds and milk products, and a rise in expenditures on clothes, shoes, consumer durables, health, education and entertainment. Whether or not the village was enrolled in JFM, or whether JFM support was Bank or non-Bank, there is no discernible difference of impact on consumption and expenditure. The multivariate analysis confirms the finding; but indicates that the likelihood of an increase in consumption or expenditure was greater for respondents from Betul, and respondents with stronger mobilization skills. The focus groups present a much more negative picture. Ten out of twelve male groups in Betul said that welfare was either unchanged or had deteriorated over the past decade. In Bilaspur eight out of eleven male groups said that welfare had not improved. In both districts a majority of the female focus groups delivered the same negative verdict.

(ii) Participation, Awareness, Trust

2.13 Even if the evidence of benefits from JFM is still limited, it could be argued that the program is helping to give villagers a bigger voice in local planning, a process that, in the long-term, may have several positive effects, not confined to the forest sector.

2.14 Almost three-quarters (72 percent) of respondents in the Bank-supported communities had heard of JFM, compared to 39 percent of Non-Bank JFM respondents. (This last figure is surprisingly low because, of the respondents in villages not enrolled in JFM, 47 percent had heard of the program). The focus group data show six out of nine male groups in Betul saying that information was not widely circulated and awareness was low. In Bilaspur, four out of five male groups gave a negative evaluation of information availability and awareness. Women and the poorest members of the community tend to be less aware. Six female focus groups reported on this issue in Betul and six in Bilaspur. In each district, five of the six delivered a broadly negative verdict, with several references to ignorance of funding arrangements and a lack of transparent accounting.

2.15 Forest committees are the locus for all JFM activities. These are new organizations formed at the instigation of the Forest Department and do not build on existing village institutions. In Bank-supported areas, 92 percent of respondents had heard of the local forest committee, compared to 84 percent of Non-Bank JFM. Five percent of Non JFM respondents had heard of the forest committee—which is puzzling given that there was no such committee in their village. (Possibly they were thinking of another committee).

2.16 Questions on committee membership were asked only of those who said they were aware of its existence. Of the Bank JFM respondents, 56 percent said they were members of the committee, compared to 53 percent for Non-Bank JFM respondents. This similarity in the level of membership suggests that the project did not have much impact. The focus group data suggest that many villagers are confused by the plethora of village committees—as more and more committees are created, so doubts about the value of

participation tend to increase and enthusiasm for active membership tends to wane. While, in principle, JFM allows for membership of the forest committee by two representatives from each household, in several focus groups it became apparent that only a minority of villagers considered themselves members—active or otherwise. There was a tendency to confuse membership of the Executive Committee with the village-wide body. Also, there were several reports of fudging meeting attendance records to give an artificially high impression of the level of participation. In Betul, six out of eight male focus groups gave an overall negative impression concerning committee membership, tending to say that the process was not inclusive and tended to be over controlled by forest department officials. In all ten of the male focus groups in Bilaspur the assessment was negative. The female focus groups in both districts reiterated this finding.

2.17 Of those who are aware of the committee, less than half attend regularly. The proportion attending is slightly higher for Non-Bank JFM compared to Bank JFM respondents. Lack of time or information are the main reasons given for not attending meetings. On the other hand, Bank JFM respondents come out ahead on another measure of participation: one-fifth of them knew the cost of the micro-project, compared to 7 percent for Non-Bank JFM respondents and 12 percent for Non JFM respondents.

Table 4. Change in the Level of Trust

<i>% reporting increased trust in...</i>	<i>Bank JFM</i>	<i>Non-Bank JFM</i>	<i>Non JFM</i>	<i>Total/1</i>
Village members	24.0	14.8	36.4	22.8 (N=1,112)
Local leaders	18.7	16.3	21.1	18.3 (N=1,103)
Village organizations	22.9	18.7	16.9	21.5 (N=1,046)
Local government officials	18.0	12.6	14.5	16.5 (N=886)
Forest Department	19.0	18.3	18.8	18.8 (N=1,035)

/1 N refers to the sum of persons responding "decrease", "same" or "increase" (not the number responding that there was an increase).

2.18 Table 4 shows the change in the level of trust over the period of project implementation, in relation to five entities. Taking the JFM respondents as a whole, for none of the five entities was the proportion reporting an increase larger than one-quarter. For each of the five categories, Bank JFM respondents reported a somewhat larger increase in trust than for the Non-Bank JFM respondents. On the other hand, for two categories (village members and local leaders), there was a larger proportion of the Non-JFM respondents reporting an increase in trust. In any event, the impact on trust was modest and the difference made by JFM seems to have been limited.

2.19 The multivariate analysis showed that respondents in villages less well served by infrastructure, males, the more highly educated, the members of forest committee, and the better off, were more likely to have said that their level of trust increased during the course of the project. The focus group data overwhelmingly indicate that trust has not increased. This was true for seven out of eight male focus groups in Betul and four out of four male focus groups in Bilaspur commenting on this issue.

2.20 Effective participation of women was considered critical to the success of JFM, particularly given that females play the key role in collecting non-timber forest products. JFM rules were revised to allow two members per household (man and woman) to be represented on the forest committee. But women in the Bank-supported areas were still much less likely than men to have heard about JFM. Also, compared to men, they were less likely to have heard about it from Forestry Department staff, suggesting that staff may focus their attention on men. Of those women aware of the existence of the forest committee, only 48 percent were members, compared to 62 percent in the case of men (Annex A, Figure A1). Of these, only a small proportion were active committee members. The bivariate analysis confirms the result. Male bias is also evident in the multivariate analysis. Both the male and the female focus groups in each of the two districts surveyed left no doubt that women tend to be underrepresented and, where they are represented, tend to have little say in decision-making. Many women commented that not enough training is made available to villagers, limiting the opportunities for them to improve their livelihoods.

OTHER DATA SOURCES

(a) Satellite imaging

2.21 From the nationwide data there is some indication that joint forest management has had a positive impact on forest cover. By the late 1990s, 14 of India's 35 states—henceforth, the “JFM states”—had a substantial program of joint forest management.⁶ Of these, three pioneer states (West Bengal, Haryana, and Orissa) had about two decades of experience with the program. Changes in forest cover between 1996 and 2000 based on satellite images show that the JFM states experienced an 8.4 percent increase in forest cover and the pioneer states an 8.7 percent increase; all the other states—those without significant JFM engagement—registered an increase of only 3.2 percent.

6. Based on 1997-1999 data reported by the states to the Indian Institute of Forest Management (Bhopal).

Table 5. Madhya Pradesh: Forest Cover Trends/a

	<i>Oct/Nov 1992</i>	<i>Oct/Nov 1994</i>	<i>Oct/Dec 1996</i>	<i>Oct/Dec 2000</i>
Forest	135,164	131,195	131,830	133,713
--Dense	95,153	82,745	81,619	82,264
--Open	40,011	48,450	50,211	51,449
Scrub	4,822	3,320	3,853	3,652
All other land	303,460	308,931	307,763	306,081
Total area	443, 446	443, 446	443, 446	443,446
Forest/Total (%)	30.5	29.6	29.7	30.2

/a Includes Chhatisgarh.

Source: State of the Forest Report, 1997, 1999 and 2001, Forest Survey of India, Dehradun.

2.22 Table 5 shows the recent trend for Madhya Pradesh. These satellite data have not been cross-checked through ground truthing. As technology is upgraded, the satellite images have become sharper over time. There is no way to be sure how much the post-1994 increase in forest cover is an artifact of improved image resolution and interpretation rather than actual change on the ground. Comparison of the 2000 with the 1996 data is particularly problematic because between these years there was a switch from visual (i.e., human) to digital (computerized) interpretation and an increase in scale (from 1:250,000 to 1:50,000).⁷ This bias applies equally to all parts of India. Thus, it is impossible to tell how much of the observed change in Madhya Pradesh is real; but it is possible to claim that the relative underperformance of this state—1.4 percent increase in forest cover against a nationwide increase of 6 percent—reflects genuine slow progress and is not an artifact of the measuring technology.

2.23 What of trends in the districts covered by the OED survey? Satellite imaging shows that between 1996 and 2000 forest cover grew from 35.8 percent to 36.2 percent of Betul territory. In Bilaspur, over the same period, forest cover shrank from 32.2 percent to 30.3 percent of the district's area. This impression of a significant difference between the two districts is strongly reinforced by remarks made by focus group participants (paragraph 2.9).

(b) Another World Bank Survey of the Madhya Pradesh Forestry Project

2.24 In 2000, Ruth Alsop and colleagues examined the performance of Indian communities in managing a natural resource, including communities involved in the Madhya Pradesh Forestry Project.⁸ The two districts studied were Bilaspur (which was

7. "In the art of interpretation of digital data, it is well known that the use of coarser resolution overestimates forest cover in the large continuous forested areas and underestimates it in other areas", Forest Survey of India, State of Forest Report, 2001, p. 8.

8. Ruth Alsop *et al.* 2002, *op. cit.*

also included in the subsequent OED survey) and Kanker. In each district 20 villages were randomly chosen and a questionnaire instrument was applied to 20 persons in each village who were selected using poverty ranking. One-half of the 799 respondents reported the overall value of the forest development project as “good” or “very good”. The factors contributing most to a favorable rating of the project were the provision of material goods and inputs and temporary job creation (Table 6). The factor which would seem to bear most directly on the project’s development objective—increased production from a common property resource—contributed very little to the overall evaluation of project benefits.

Table 6. Weighting of Factors Underlying Beneficiaries Positive Assessment of the Madhya Pradesh Forest Development Project/a

%/b	<i>All Madhya Pradesh (N=799)</i>	<i>Bilaspur Only (N=400)</i>
Benefit Categories		
Employment	34	62
Subsidy	--	1
Loans	17	18
Material goods and/or inputs	50	15
Increased production from a common resource	4	4
Increased production from own land	1	2
Access to information	1	1
Increased future opportunities	2	4
Improved personal relationships	1	3

Source: Alsop *et al.*, 2002.

/a In Madhya Pradesh as a whole, 49 percent of beneficiaries rated the project as “good” or “very good”; for Bilaspur, the proportion was 46 percent.

/b Percentages do not sum to 100 because each respondent may select more than one benefit category.

2.25 A report on the focus group discussions in Bilaspur noted that

“Forest Department staff have been given total responsibility for implementation...They run the village forest committees...hence, villagers have little idea about forest related benefit-sharing mechanisms...[They] have no idea of the rules and regulations of the group or executive committee...In discussions on what the committee should do...the majority of groups said develop irrigation facilities in the villages, provide better credit facilities, and improve drinking water and electricity supplies. Villagers placed more emphasis on the role of the village forest committee as an overall development organization and as an opportunity for wage employment rather than forest management”.⁹

2.26 Generalizing from the three user group projects studied,¹⁰ Alsop and colleagues found that members perceive user groups mainly as a means of accessing short-term benefits rather than as a mechanism of cooperation for long-term collective action. Attendance at meetings is low, with the better off tending to participate more while

9. Alsop *et al.*, 2002, *ibid*, p. 24.

10. This survey also examined the Uttar Pradesh Sodic Lands Reclamation Project and the Andhra Pradesh Economic Restructuring Program (Irrigation Component).

women in general have very limited participation. Awareness of business and accountability rules is low, information about meetings circulates poorly and members have little knowledge of group finances. On the other hand, benefits were found to be relatively well distributed among members. These findings are consistent with the results of the 2004 OED survey.

(c) A Survey of Villager Awareness of JFM in Madhya Pradesh

2.27 If JFM is to be effective, villagers need to understand the process involved, what their role is, and the potential positive impact of the strategy. Using a purposive sampling strategy, Rishi interviewed 110 respondents from 14 local committees representing all 7 Forest Divisions in Madhya Pradesh.¹¹ An open-ended questionnaire was used to capture data on the following dimensions of awareness:

- Committee formation
- Committee functioning
- Financial matters
- Forest protection/management
- Species selection
- Village development activities.

The survey found that in three-quarters of the villages sampled aggregate awareness ranged from “low” to “moderate”. Awareness varied substantially between dimensions, being highest with respect to the process for committee formation and lowest for species selection (Table 7).

Table 7. Awareness of JFM

	<i>Level of Awareness (% of Respondents, N=110)</i>		
	<i>High</i>	<i>Moderate</i>	<i>Low</i>
Committee Formation	33	48	19
Committee Functioning	12	70	18
Financial Awareness	16	27	57
Forest Protection/Management	32	48	20
Species Selection	5	13	82
Village Development Activities	33	25	42
Total	25	58	16

Source: Rishi, 2002.

(d) The Budget for JFM

2.28 Funding for the forestry sector in Madhya Pradesh is primarily derived from the state government, supplemented by modest transfers from the federal government (Table 8). The proportion that JFM expenditures represent of total spending on the sector is not clear; but it may be assumed to be the lion’s share. When the project closed in 1999 there was an immediate drop in sector expenditures with only a partial recovery by 2002. An

11. Parul Rishi, “Joint Forest Management at Village Level: A Cognitive Analysis”, *The Indian Forester*, Vol. 128, No. 5, May 2002, pp. 539-544.

attempt was made to gather more recent budget data from various sources but these proved to be internally inconsistent and, anyway, consisted only of provisional estimates. The prospects for maintaining the JFM program are therefore somewhat uncertain.

Table 8. Madhya Pradesh Forestry Sector Budget/1

	<i>FY97-98</i>	<i>FY98-99</i>	<i>FY99-00</i>	<i>FY00-01</i>	<i>FY01-02</i>
State government	764	786	759	164	355
Federal transfers	316	179	238	227	215
Total	1,080	965	997	391	570

Source: Personal communication from Madhya Pradesh Forestry Department, May 2004.

1/ Actual expenditures in millions of 1993 rupees.

2.29 A fiscal trend study prepared for the project—not available when the completion report was written—casts doubts on the ability of the government to continue financing a strategy which involves considerable short-term costs, even if the payoff over a period of 40 plus years is sufficient to justify the investment.¹²

2.30 The short-term fiscal burden was aggravated by the downturn, after 1997, in the physical output of forest products, particularly timber (Annex A, Figure A2). This translated into a significant real decline in the revenues from the forest sector—and, correspondingly, in the revenues accruing to the Forest Department (Annex A, Figure A3). For the three years 1998/99 to FY00/01 Forest Department expenditures exceeded revenues implying, for the first time, a net transfer from other sectors of the economy (Annex A, Figure A4). A key reason for this is the salary bill which, according to the fiscal trend study, has been doubling every five years; by contrast, wages paid by the Forest Department have remained in line with inflation. The report argues that some reduction in staffing—which has remained at around 38,000 persons over the last 20 years—will be needed to ensure that joint forest management is fiscally sustainable. The transfer of forest protection responsibilities to village committees will permit some reductions in staff; but additional cutbacks will be needed.

3. Ratings

PROJECT OBJECTIVES AND COMPONENTS

3.1 The main aim of the project was to help implement the strategy of the government of Madhya Pradesh for developing the forest sector. Specific objectives were:

- (a) To develop the necessary human resources for the planning, implementation and monitoring of the strategy; to ensure that management procedures and the structure and resources of the Madhya Pradesh Forestry Department are appropriate to its role as the nodal public sector agency in the forestry sector; to assist with the prioritization of various types of land through improved planning at a macro-scale;

12. JPS Associates, Madhya Pradesh and Chhattisgarh Forestry Fiscal Trend Analysis, New Delhi, May 2002.

- (b) To increase both forest cover and productivity through development of participatory processes for management and use of forest resources, taking special account of the interests of tribal peoples and other disadvantaged groups;
- (c) To adapt and improve existing technologies and to provide technical and management advice; and
- (d) To improve incentives for forestry management and the cultivation of trees; and to promote the conservation of biodiversity.

A detailed description of project features is given in Annex A (Table A3). Table 9 shows the outcome rating for each of the four project objectives outlined above.

Table 9. How the Outcome Rating is Derived

<i>Objectives</i>	<i>Relevance</i>	<i>Efficacy</i>	<i>Efficiency</i>	<i>Outcome</i>
(1) Strengthen the Forestry Department	Substantial	Modest	Substantial	Moderately Satisfactory
(2) Increase forest cover by promoting participation	Substantial	Modest	Substantial	Moderately Satisfactory
(3) Strengthen research and extension	Substantial	Negligible	Modest	Unsatisfactory
(4) Conserve biodiversity	Substantial	Substantial	Substantial	Satisfactory
Overall	Substantial	Modest	Substantial	Moderately Satisfactory

OUTCOME

3.2 *Relevance.* The project's development objectives are rated substantially relevant to both the Bank and the government's current strategy. Forest degradation remains a serious concern in Madhya Pradesh—37 percent of the state's forest area was classed as degraded when the project was appraised in 1994, a circumstance that has changed very little since. The project also remains relevant to the India-wide strategy of forest management. Experience here and in other countries suggests that government command and control measures are necessary but by themselves insufficient to ensure adequate management of the forest resource; the people living in and around the resource have to be involved.

3.3 On the other hand, the project's relevance must be qualified in one sense—explaining why the relevance rating is substantial, not high. By today's standards, as the completion report acknowledges, the project gave little emphasis to reducing poverty. No provision was made for establishing a monitoring and evaluation system to measure project impact on poverty. An OED country case study hypothesized that the lack of emphasis on poverty alleviation in the various JFM projects reflected a tendency in the Bank's 1991 Forest Strategy to regard poverty as one of the causes of resource degradation, but without any corresponding emphasis on the extent to which sound forest management could contribute to reducing poverty.¹³ The Bank's forest strategy has subsequently been revised and now gives importance to the forest sector's role in poverty reduction.

13. OED, India: Alleviating Poverty Through Forest development, World Bank: Washington, DC, 2000.

3.4 The Bank's freeze on lending for forestry in India—which took place after this loan closed—might seem to cast doubts on the project's relevance to the Bank's current strategy. But this decision had more to do with reducing the risk to the Bank's reputation—by avoiding conflict with adversarial non-government organizations—rather than with the effectiveness of joint forest management. The objectives of this project are substantially relevant (Table 9), not least because a large percentage of the poorest in India depend on forests directly or indirectly for a living.

3.5 *Efficacy.* This criterion is rated modest because, although the targeted project outputs were greatly exceeded (Table 10), the *outcome* of each of the project's development objectives was more mixed.

Table 10. Outputs by Component

COMPONENTS	COSTS (US\$ million)		OUTPUTS
	Appraisal Estimate	Actual	
Sector Management	6.0	4.1	The planning, management and monitoring capacity of the Madhya Pradesh Forestry Department was strengthened.
Forest development	39.9	43.2	221,000 ha of dense forest and 419,300 ha of degraded forest were served (cf targets of respectively 160,000 and 342,900 ha). 1,164 Village Forest Committees were set up (cf target: 1,140).
Extension, technology and research	10.3	8.4	9 Research and Extension Centers were set up with a further 5 still under construction (cf target: 13). The seed production area was 2,450 ha, compared to the target of 2,400 ha.
Biodiversity conservation	11.1	8.1	Pressure reduced on biodiversity in 826,000 ha of forestland and protected areas (cf target: 517,400 ha). 186,000 ha were brought under jurisdiction of Ecodevelopment Committees/a
TOTAL	67.3	63.8	

Source: Implementation Completion Report.

/a No appraisal target was specified.

3.6 The objective of strengthening the forest department was partly achieved. A human resource development plan was implemented, with appropriate staff training, and there was significant progress in winning support at all levels for the participatory model of forest management. A positive step was to decentralize decision-making to the divisions, giving the District Forest Officers the authority to adjust work plans to local needs (Table 1). On the other hand, the preparation process for the working plans—the primary documents for forest management—was not adequately reformed, failing to fully incorporate the new principles of community management and benefit sharing. Also, the Policy Analysis Unit was ineffective and, owing to procurement problems, was unable to conduct any of the proposed studies. The Forest Management Information System was not completed. It was a mistake to try to develop this system from scratch without reference to existing models.

3.7 The objective of increasing forest cover through participatory management was also partly achieved. The project substantially exceeded targets in terms of the area of

degraded forest covered—419,000 ha compared to the 343,000 ha expected (Table 10). The completion report says that regeneration surveys show steady improvement in tree seedling recruitment on most sites. The introduction of rotational grazing and the stall-feeding of livestock have apparently helped to reduce degradation. But neither the evidence from satellite imaging (paragraphs 2.21-2.23), nor the reports of respondents in Betul and Bilaspur (paragraph 2.9) indicate a significant growth of forest cover. On the other hand, significant forest regrowth takes time and it would be premature to reach a definitive conclusion based on the data examined.

3.8 The objective of strengthening research and extension was not achieved. Although a State Forestry Research Institute was established and the infrastructure of gene banks, nurseries and seed orchards was strengthened, research is still less demand-driven than intended and there has been little progress in encouraging villagers (or private sector interests) to adopt new technologies. The OED survey found that although respondents in the JFM communities received more extension assistance than those in Non-JFM villages, the numbers involved were still very low: 6 percent had received inputs, 3 percent had been given technical advice, and only 1 percent had made visits to training facilities and demonstration plots.

3.9 Compared to these first three objectives, more progress was made toward achieving the objective of conserving biodiversity. Although, at appraisal, it was intended only to cover degraded forest, the joint forest management model has been extended to areas of denser forest, where there is a broader range of species to conserve. The area protected is 160 percent of the appraisal target (Table 10). Ecodevelopment committees have been set up in buffer zone villages and, according to the completion report, a recently initiated monitoring system has indicated a slowing in the loss of biodiversity. Key informants in all of the six villages visited by OED in 2003 said that wildlife numbers had increased since the start of joint forest management (Annex A, Table A1).

3.10 *Efficiency.* This criterion is rated substantial. To begin with, output targets were much exceeded but actual project costs were only 95 percent of what was expected at appraisal. Implementation was timely—the loan closing date did not have to be extended. The cost to the Bank of administering the project was in line with the country and regional average (Table 11 below). Two other factors helped to raise the project's efficiency. First, the area generating income benefits was larger than expected because, contrary to what was thought possible when the project was designed, the joint forest model was extended to include dense as well as degraded forest. Second, early implementation experience supported an upward revision of the benefits from coppicing and bamboo decongestion.

3.11 *What of unintended outcomes?* Although the project did not give a central place to reducing poverty at least it does not appear to have increased relative poverty. The benefits from joint forest management are not significantly greater for better-off households. Also, there is no significant difference between income groups in wage earnings from joint forest management—mainly from employment as a forest guard. In the bottom income quartile, 25 percent of households list wage earnings as a program benefit compared to 30 percent of households in the top three quartiles. One striking difference lies in the volume of non-timber forest products sold: for each product, poor

households (those in the bottom two quartiles) sell a larger quantity than richer households (paragraphs 2.8 and 2.26). This suggests that joint forest management is not a significant driver of income inequality; and may actually soften the disparity between rich and poor. However, the program's overall contribution to poverty reduction should not be exaggerated. The most frequently cited problem facing villages was the lack of jobs and income; this is as true today as it was before the launch of joint forest management.

3.12 Based on the arguments presented here, and following the aggregation scheme in Table 9, OED rates project outcome as moderately satisfactory—rather than satisfactory, the rating proposed by the completion report.

INSTITUTIONAL DEVELOPMENT IMPACT

3.13 There are two aspects to this: capacity building of the Forest Department and village organizations; and strengthening the framework of laws, regulations and incentives bearing on forest management.

3.14 The strengthening of the Forest Department has already been dealt with (paragraph 3.7). There are other signs of momentum. The village committees set up as partners in joint forest management have mushroomed in Madhya Pradesh. In 1993, there were 350 committees, growing to about 12,000 by the end of 1999 and to 20,760 by late 2002.¹⁴ The Bank-supported project embraced 2,500 village committees, or about one-fifth of the total number in existence when the project closed. Today, joint forest management encompasses 63 percent of the total forest area of the (reduced) state of Madhya Pradesh, and 48 percent of the forest area in the (newly-created) state of Chhattisgarh.

3.15 Perhaps the most critical issue is the extent to which people living in and around the forest have internalized the JFM credo. There is ample evidence from the OED survey of limited change in this respect. First, most people do not perceive forest protection as a development priority (paragraph 2.10). Second, although JFM has cast a wide net the intensity of participation remains limited, particularly among women (paragraph 2.20). Third, the degree of internalization seems to vary according to the quality of forestland. Respondent awareness of the JFM program was higher in degraded forest areas (79 percent) than in dense forest areas (65 percent), possibly suggesting that the assisted natural regeneration initiative (applied to dense forest areas) was less effectively promoted than the village resource development program (degraded areas). Also, people in degraded areas probably feel more urgency about the need to adopt better protection measures.¹⁵

3.16 OED could not find any evidence that the project has helped to stimulate private sector investment in the forest sector (this was a sub-component of the fourth objective as

14. The 2002 figure comprises 14,073 in Madhya Pradesh and 6,687 in Chhattisgarh.

15. In West Bengal, there was much more support for the Bank-supported JFM project in the degraded south than in the more densely-forested north.

detailed in paragraph 3.1). There was some progress in liberalizing the trade in forest products: transit restrictions on mahua seeds, flowers and charota seeds were removed in 1998; and there was a move to ease felling and transit restrictions for timber. Long-term supply contracts which provided forest products to industries at well below market prices were also terminated in 1998. But so far these reforms have not increased private sector investment in the forestry sector.

3.17 A larger challenge concerns the legal status of joint forest management. Currently it is the subject of a government resolution not an act, so it could be challenged in a court of law. In December 2002, the national government requested the state government of Madhya Pradesh to pass the appropriate law in support of the forest strategy; but it has not yet responded. This makes it difficult to prosecute outsiders who encroach on the forest land assigned to joint forest management villages. The state government has been slow to clarify land tenure rules and does not share the central government's view that a firm line should be taken with those who have encroached since 1980 (when a Forest Conservation Law was passed). There is enormous scope for wrangling, irrespective of whether the courts are involved. For example, if there are two villages within 5 kms of a forest tract and the resource is not large enough to support both villages' need for fuel wood and other products, under joint forest management, one of the villages will be arbitrarily excluded even if according to customary usufruct rules it has a legitimate claim on the forest. In Madhya Pradesh there is no shortage of advocacy groups waiting to represent the interests of groups (for example, tribal peoples) who claim their rights have been infringed. This makes it hard to consolidate the joint forest management strategy.

3.18 Another potential area of concern is the considerable leeway for interpreting customary use rights (Nistar).

“Nistar refers to the necessities in the carrying on of the business of living. Land set apart for exercise of nistar rights may be timber or fuel reserve; pasture, grass, bir or fodder reserve; burial ground and cremation ground; *gaodhan* or village site; encamping ground; threshing floor; bazaar; skinning ground; manure pit; public purposes such as schools, playgrounds, parks, lanes, drains; and any other purposes that may be described”.¹⁶

This suggests two areas of uncertainty. Under JFM villagers are supposed to retain their Nistar rights (Table 1) but, given the breadth of these rights, it is not hard to imagine circumstances in which pursuit of those rights might come into conflict with management of the forest. When exactly does grazing, for example, become illicit? Second, according to the Forest Department resolution of October 2001, if committee members (i.e., all those living in a village that has signed up to JFM) do not cooperate with the JFM committee (e.g. by carrying out illicit felling or grazing) they may be deprived of their Nistar rights. But it is not clear if the resolution takes precedence over the 1959 law

16. Section 237 (1), Madhya Pradesh Land Revenue Code, 1959.

which guarantees these rights in the first place.

3.19 A further consideration is that the local authorities (*panchayats*) can override the village forest committees, distributing forest benefits as they see fit. Some people consider that since the village committees are not elected bodies they do not have the legitimacy of the *panchayats*. They also question whether the Forest Department is the most appropriate agency for promoting village development. In many remote areas, however, the forest officer is the only government agent on the spot and, by default, tends to be given responsibility for a wide range of development activities.

3.20 The overall weakness of the legal, regulatory and incentive framework and the limited endorsement of the aims of JFM by villagers suggests that institutional development impact should be rated *modest*, not high, as the completion report states.

SUSTAINABILITY

3.21 The completion report rates sustainability as likely, which OED finds hard to support. The institutional shortcomings alluded to in the previous section are the main reason why a rating of *unlikely* seems more appropriate. Also, extension needs to be greatly strengthened if forest productivity is to be boosted in a sustainable manner (paragraph 3.9). Perhaps of even greater importance in the short-term is the fiscal strain imposed by JFM (paragraphs 2.28-2.30), aggravated by the Bank's failure so far to fund a follow-on project.

BANK AND BORROWER PERFORMANCE

3.22 Bank and Borrower Performance are rated satisfactory. The cost to the Bank of preparing the project was lower than the mean for the country and the Region; but supervision costs were above average, probably reflecting the large number of persons and specialties involved—for example, 9 persons went on the mid-term review mission (Table 11).

Table 11. Bank Administrative Cost

	<i>Preparation through Board approval</i>		<i>Supervision</i>	
	<i>US\$</i>	<i>Staff weeks</i>	<i>US\$ per year</i>	<i>Staff weeks per year</i>
This Project	325,500	126.7	55,000	17.7
Mean: India rural projects	531,630	N/A	44,966	N/A
Mean: S. Asia rural projects	486,420	N/A	46,901	N/A

Source: Implementation Completion Report, p. 28; Corporate Resource Management (Special Tabulation, July 1999)

N/A Not available.

3.23 One factor tending to push up supervision costs was the need to address claims by advocacy NGOs that the rights of tribal peoples were being infringed by the project. The present assessment did not attempt to address this issue—not because it is unimportant but because it would have required a detailed inquiry in itself. In an earlier study, OED

found that Bank projects had not paid enough attention to these conflicts. Projects have to anticipate the possibility of conflict between the tribal poor and the non-tribal poor who also live around the forests and may feel slighted by perceived preferential treatment of the tribal population. But the same report also concluded that the Bank's critics had underestimated the difficulty of addressing the issue.¹⁷ Also, the OED survey conducted for this assessment did not find that those in the bottom two quartiles (many of whom are tribal peoples) had been made worse off by the project (paragraph 3.12).

3.24 The appraisal report identified the need for the Bank to support the Madhya Pradesh forestry sector for a period of about ten years, with investments that could total more than US\$200 million. Actual support provided was about one-quarter of this amount over four years. Furthermore, the reversal of the Bank's decision to fund a follow-on project aggravated the project's sustainability. However, the decision was taken after the loan closed and therefore does not reflect on the Bank Performance rating for this project. A broader evaluation of the Bank's forest sector strategy would give more weight to the absence of follow-up and the performance rating might be unsatisfactory—but a judgment of this nature lies beyond the scope of this assessment.

4. Lessons

4.1 The following lessons may be derived. *First, to mobilize villager support for resource conservation a long term commitment is needed by the government and donor agencies.* The JFM strategy involves increasing the stake of communities (residing in the neighborhood of forests) in the management and protection of those forests. However, the regenerated forest area can be maintained only if the villagers get adequate returns from the forest. This requires a long term strategy of forest protection and creating alternative economic opportunities for villagers at least until the forest regenerates and communities can depend on the forest for their livelihood. There are important implications here for the Bank's strategic approach to forest management. The appraisal document envisaged the need for a ten-year program of Bank support and the low impact found by this evaluation suggests that such an extended commitment may be warranted.

Second, flaws in the legal and incentive framework need to be addressed. An overarching strategy of forest protection through community participation also requires attention to the legal and policy framework for forest management bearing on, among other things, forest user rights, relations between protection committees and village institutions, and issues related to the marketing of non-timber forest products.

Third, the Bank's involvement in the forest sector needs to be seen in the larger and longer term context of poverty reduction and the poverty impact of such involvement should be monitored. A large percentage of the poor in rural areas are found in and around forests and the Bank can make a substantial contribution to poverty reduction in

17. OED, 2000, *op. cit.*, p. 46.

India through a strategy that involves the poor in forest protection. However, this must be done in a way that is monitorable and should be backed up in design by a systematic monitoring and evaluation system capable of measuring poverty impact.

Annex A. Tables

Table A1. Madhya Pradesh: Joint Forest Management in Six Villages

1. District	Indore	Indore	Dewas	Dewas	Sehore	Sehore
2. Village	Ash.	Kal.	Hat.	Jab.	Nad.	Yar.
3. Participates in JFM now ? (Yes/No)	Yes	Yes	Yes	Yes	Yes	Yes
4. If yes, when was JFM Committee formed?	1996	1994	1998	1995	1997	1997
5. What type of committee? (VFC/VRDP or FPC/ANR)	VFC	VFC	VFC	FPC	FPC	FPC
6. Number of households in village	95	110	92	57	85	30
7. Percent of households that are tribal or backward	100%	100%	75%	100%	76%	100%
8. Percent of households with migrants outside:						
(a) Now	-	-	50	60	-	-
(b) Before JFM was introduced	8	-	80	-	10	10
9. Forest area managed by this JFM Committee						
(a) Closed (ha)	-	120	-	1,338	582	2,431
(b) Open or degraded (ha)	265	544	995	-	-	-
10. Number of JFM Committee members	95	110	184	114	85	30
11. Number of backward members on JFM Exec Comm	7	2	19	12	8	13
12. Number of women on JFM Exec Comm	4	5	3	3	4	2
13. How much money is in the JFM fund? (Rupees)	181,705	217,261	299,716	194,245	45,938	83,856
14. List sources of money in JFM fund	a,b,c	c	d	d	a,c,d,e,f	c
15. What proportion of the fund is earmarked for						
(a) Forestry (%)	35%	35%	40%	40%	10%	5%
(b) Community development (%)	60%	60%	60%	60%	90%	95%
(c) Other use? (%)	5%	5%	-	-	-	-
16. Dependence on forest for firewood (% of households)	100	-	30	57	-	30
(a) Number of improved chullahs installed?	35	3	20	-	1	5
(b) Number of gobar gas/biogas plants installed?	10	1	4	-	20	-
(c) Number of households using LPG?	Dung	-	Dung	-	-	Solar
(d) Other source of energy (Name)						
17. Number of forest offences booked in last 12 months:						
(a) Illicit cutting (N)	3	10	10	3	2	2
(b) Grazing (N)	-	-	5	-	-	-
(c) Encroachment (N)	-	-	-	-	1	-
(d) Fire (N)	-	-	-	-	-	-
18. Area under encroachment						
(a) Forest (ha)	-	-	20	5	40	80
(b) Other government lands (ha)	-	-	-	-	4	-
19. How much timber harvested in the last 12 months (cu m)?	-	-	55	-	-	160
20. NFTPs harvested in the last 12 months?	No	No	Yes	Yes	Yes	Yes
21. How much tendu (kgs)?	-	-	15,000	15,000	7,200	80
22. How much mahua (kgs)?	-	-	10,000	25,000	20,000	100
23. How much amla (kgs)?	-	-	2,500	5,000	1,500	-
24. How much grass collected in last 12 months (mt)?	250	-	100	50	20	2
25. Water level of wells risen since JFM introduced?	Yes	Yes	Yes	Yes	Yes	Yes
26. Area under irrigation increased since JFM introduced?	Yes	Yes	Yes	No	Yes	Yes
27. Area under horticulture increased since JFM introduced?	Yes	No	No	No	No	No
28. Production of milk increased since JFM was introduced?	Yes	Yes	Yes	No	Yes	Yes
29. Number of trees of more than 30 cm girth increased since JFM was introduced?	Yes	Yes	NA	Yes	Yes	Yes
30. How much afforestation conducted since JFM introduced						
(a) On forest land (ha)	90	120	60	-	-	-
(b) On other government land (ha)	-	-	-	-	-	-
(c) On private land (ha)	-	-	-	-	-	-
31. Wildlife numbers increased since JFM introduced?	Yes	Yes	Yes	Yes	Yes	Yes
32. Conflicts over forest access in last 12 months?						
(a) Within this village?	No	No	No	No	No	No
(b) Between this village and other villages?	No	Yes	No	No	Yes	Yes

Source: OED field trip, October 2003 (Data supplied by local Forest Department officers).

Notes to Table A1

Villages: Ash=Ashapura; Kal=Kalikiray; Hat=Hathnori; Jab=Jabalpur; Nad=Nadan; Yar=Yarmagak.

Q14 a=grass; b= royalty from sale of timber; c= government funds; d= revenue from fines; e= revenue from sale of NFTPs; f= small business revenue.

Table A2. Detailed Features—Madhya Pradesh Forestry Project (C2700)

<i>Specific Objectives Components</i>	<i>Intended actions Target/</i>	<i>Significant Inputs and Outputs</i>	<i>Initial Outcome</i>
Management Development	Sector Management—change the approach of MPFD, improve management system, increase policy analysis capabilities. Planning, Monitoring and Evaluation—develop MIS, develop GIS, improve forest survey techniques.	Expected cost, US\$6.0 m. Actual cost, US\$4.1 m. Target: 1,239 VFCs, FPCs and EDCs. Actual: 2,451.	Shift from a regulatory style of management to one based on partnership with communities (for dense as well as degraded forest). Site specific joint planning in VFCs carried out. Effective M&E instruments developed but MIS and GIS not integrated, and poverty impact not monitored.
Forest Development	Assisted Natural Regeneration—regenerate whole forest ecotype, not just individual species. Village Resource Development—develop village JFM plans using participatory process, guided by Planning Teams	Expected cost, US\$39.9 m. Actual cost, US\$43.2 m. Regeneration: 221,000 ha of dense forest (cf 160,000 ha expected) and 419,300 ha of degraded forest (cf 342,900 ha) benefited. Value of usufruct about US\$280 per household/yr (inc. intermediate and non-timber forest products).	Revenue sharing expanded to include FPCs; pricing policy strengthened; felling and transit restrictions eased; long-term industrial supply contracts ended in 1998; state policy of leasing non-forest wasteland to private companies declared in 1997, but not implemented; Growth of agricultural production, cottage industries, communal infrastructure and wage employment
Extension, Technology and Research	Research and Extension Service Centers—establish 12 centers and 1 sub-center, one for each ecological zone. Extension—support extension in 40 priority Forest Divisions, with training and equipment; establish Industrial Liaison Unit. Seed Improvement—set up facilities for drying, processing and storing seed at each R&E Center; support staff training. Nursery Demonstration—Set up nursery in each R&E Center. Research—Establish SFRI as an autonomous agency, upgrade laboratories, overhaul program.	Expected cost, US\$10.3 m. Actual cost, US\$8.4 m. Centers: 9 complete, 5 under construction (cf 13). Seed production areas: 2,450 ha (cf 2,400 ha). Modern nurseries: 14 (cf 13).	Demand-driven research not yet functioning as intended. No widespread adoption of improved technology by farmers. Increased extension efforts, successful demonstration plots and further actions to create a supportive policy environment and adequate marketing are still needed.
Biodiversity Conservation	Protected Area Management—support operation of 5 zonal teams; support 24 Protected Areas; study impact of communities on biodiversity. Ecodevelopment Program—set up a support fund to finance income-generating activities in villages peripheral to Protected Areas; support training and operation of 5 Planning Teams.	Expected cost, US\$11.1m. Actual cost, US\$8.1 m. 18 outline and 6 draft Management plans prepared for Protected Areas (cf 24). Habitat improved in 8,375 ha (cf 2,100 ha). Area covered by EDCs: 186,000 ha (cf No target)	Around buffer zone villages, forest floor vegetation is returning, natural regeneration is taking place, diversity of indigenous flora and fauna is increasing, water retention is rising.

Acronyms: EDC Ecodevelopment Committee; FPC Forest Protection Committee; GOMP Government of Madhya Pradesh; JFM Joint Forest Management; MPFD Madhya Pradesh Forestry Department; MOU Memorandum of Understanding; SFRI State Forestry Research Institute; VFC Village Forest Committee.

Table A3. Forest Status, 2000: Districts Covered By OED Evaluation

	Total Area (Km ²)	Forest Cover (Km ²)		Total	Forest Area/ Total Area (%)	Dense Forest/ Forest Area (%)
		Dense Forest	Open Forest			
Betul	10,043	2,957	677	3,634	36.2	81.4
Bilaspur	8,270	2,093	409	2,502	30.3	83.7
Dewas	7,020	1,157	560	1,717	24.5	67.4
Indore	3,898	253	237	490	12.6	51.6
Sehore	6,578	739	698	1,437	21.8	51.4
Sub-total	35,809	7,199	2,581	9,780	27.3	73.6
M. Pradesh/a	443,446	82,264	51,449	133,713	30.2	61.5
Sub-total/ M. Pradesh (%)	8.1	8.8	5.0	7.3		

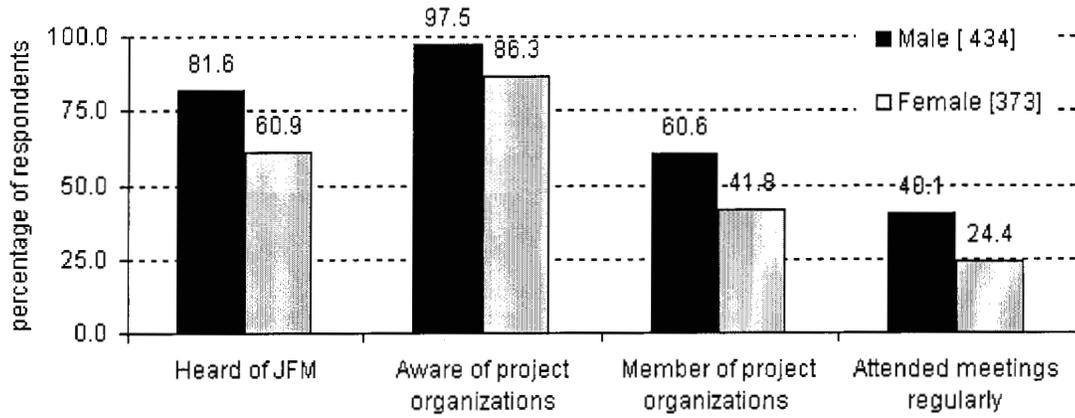
/a Including Chhatisgarh

Source: State of the Forest Report, 2001, Forest Survey of India, Dehradun.

Table A4. Multivariate Analysis

	Increase in collection of Forest Products		Change in Consumption		Change in Expenditure		Increase in Trust	
	Bank-JFM	Non-Bank JFM	Bank-JFM	Non-Bank JFM	Bank-JFM	Non-Bank JFM	Bank-JFM	Non-Bank JFM
No	85%	86%	9%	8%	1%	1%	62%	67%
Low	10%	8%	19%	25%	3%	4%	15%	12%
Medium	4%	3%	17%	16%	21%	51%	13%	13%
High	2%	3%	55%	51%	75%	70%	10%	7%
Total	807	261	763	251	687	227	807	261
	Coeff.	P> z	Coeff.	P> z	Coeff.	P> z	Coeff.	P> z
Dummy for treatment community	0.00		0.06		0.10		0.13	
Dummy for poor in treatment	0.03		-0.03		-0.05		0.05	
Dummy for Betul district	0.62***		0.15**		0.13*		0.06	
Score for community	-0.09		-0.02		0.05		-0.16***	
Economic Status	-1.60**		0.46		0.74		0.85*	
Household size	0.05**		0.06***		0.07***		0.00	
Number of children	0.02		0.02		-0.04		0.00	
Dummy for member of forest committee	0.13		0.00		0.10		0.36***	
Dummy for male	0.19		0.00		0.08		0.20**	
Age of respondents	0.02		0.00		-0.02*		-0.01	
Age square	-1.36		-0.59		0.51		-0.05	
Schooling of the respondent	0.15		0.15**		0.05		0.37***	
Number of leaders known	0.03		-0.02		0.06*		0.02	
Participation in traditional events	-0.02		-0.04		0.04		0.04	
Participation in non-traditional events	0.12**		0.05		-0.02		0.05	
Mobilization skills of the respondent	0.19**		0.10**		0.18***		0.03	
Observations	861		993		897		1041	
Pseudo R-squared	0.09		0.02		0.03		0.05	
Chi2	83.13		79.42		95.41		119.09	

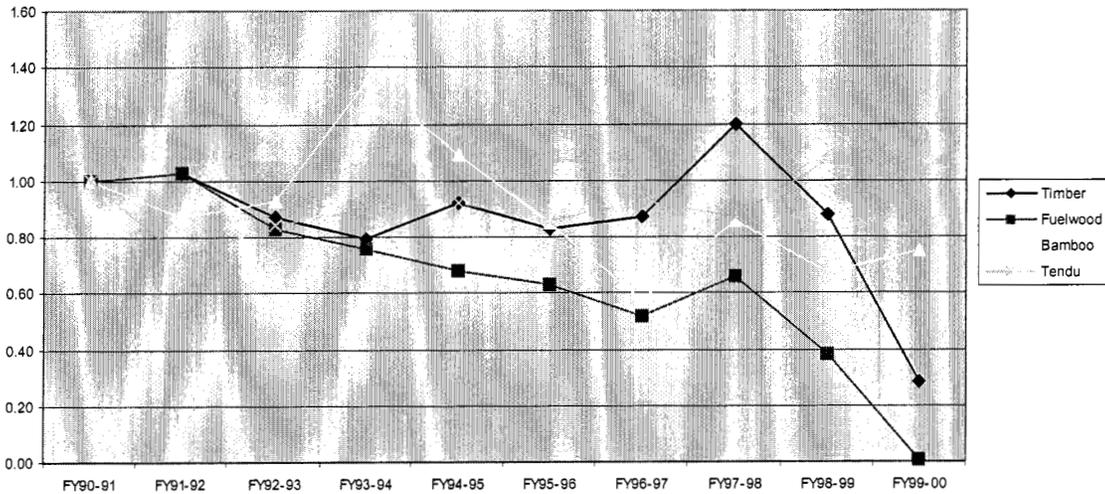
Figure A1. Males are more aware and participate more than females within Bank-JFM communities.....



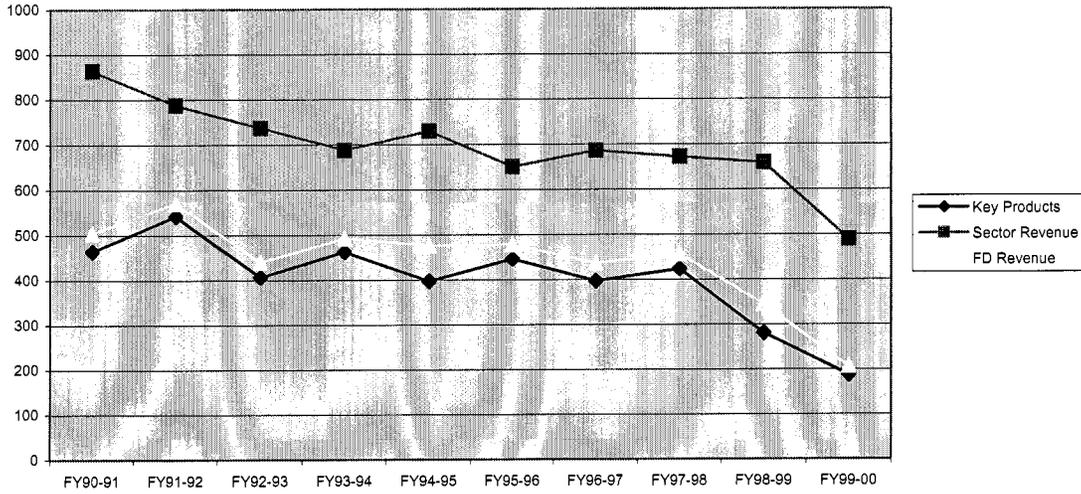
Source: Household Surveys

FIGURE A2. Madhya Pradesh: Production of Forest Products, FY1990/91 to FY99/00 (Index Numbers, 1990-91=100)

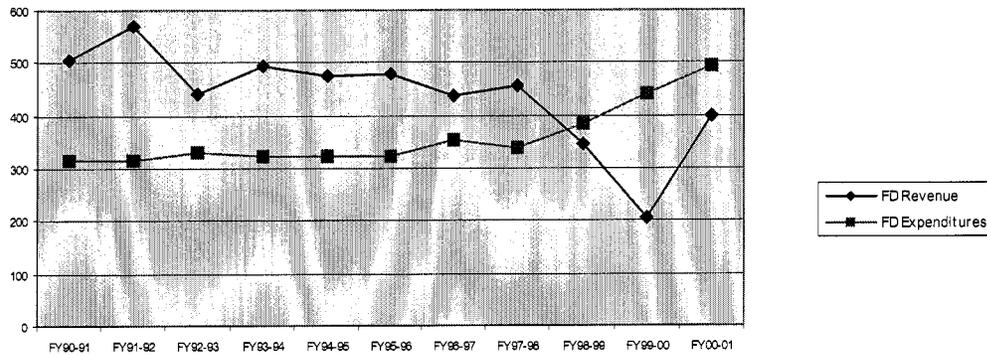
Source: Forestry Fiscal Trend Analysis, May 2002



**FIGURE A3. Madhya Pradesh Forestry Revenue Trends
(Constant 1993 Crore Rupees)**
Source: Forestry Fiscal Trend Analysis, May 2002



**FIGURE A4. Madhya Pradesh: Forest Department Gross Revenues and Expenditures
(Constant 1993 Crore Rupees)**
Source: Forestry Fiscal Trend Analysis, May 2002



Annex B. Basic Data Sheet

MADHYA PRADESH FORESTRY PROJECT (CREDIT 2700-IN)

Key Project Data (amounts in US\$ million)

	Appraisal estimate	Actual or current estimate	Actual as % of appraisal estimate
IDA Credit	54.80	53.40	97
Cofinancing	0.0	0.0	0.0
Government	8.90	10.41	117.0
Total project costs	63.70	63.81	100.0

Cumulative Estimated and Actual Disbursements (US\$ million)

	FY96	FY97	FY98	FY99	FY00	FY01	FY02
Appraisal estimate	2.6	9.6	19.7	32.4	39.3	39.3	39.3
Actual	3.1	8.1	16.5	27.6	38.8	38.8	38.8
Actual as % of estimate	119	84	83	85	99	99	99
Date of final disbursement:							

Project Dates

	Actual
Identification/Preparation	April 3, 1992
Appraisal/Negotiation	April 16, 1994
Approval	March 30, 1995
Effectiveness	September 29, 1995
Mid-term review	March 16, 1998
Credit closing	December 31, 1999

Staff Inputs (staff weeks)

	Actual Weeks	Actual US\$000
Identification/Preparation	101.6	252.4
Appraisal/Negotiation	25.1	73.1
Supervision	87.3	275.0
Total	214.0	600.5

Mission Data

	Date (month/year)	No. of persons	Specializations represented	Performance rating	
				Implementation status	Development objectives
Identification/ Preparation	March 1992	2			
	November 1993	9	A, F, EN, P&G, R, E, FN, I		
Appraisal/ Negotiation	April 1994	11	A (2), F, AF, EN, R, I, E, P&G, P		
	November 1994	2			
Supervision 1	June 1995				
Supervision 2	December 1995	3	A, EN, IN	S	S
Supervision 3	June 1996	5	A, EN, F	S	S
Supervision 4	January 1997	5	A, F, EN, S	S	S
Supervision 5	June 1997	3	A, S	S	S
Supervision 6	April 1998	9	A, F, SF, EN, E, P, IN, FN	S	S
Supervision 7	July 1998	1	A	S	S
Supervision 8	March 1999	9	A, F, EN, P, FN, IN	S	S
Supervision 9	June 1999	2	A, F	S	S
Supervision 10	December 1999				

Specializations represented: A: Agriculturalist; F: Forestry Specialist; P: Procurement Specialist; AF: Agroforestry Specialist; FN: Financial Analyst; P&G: Planning & GIS Specialist; E: Economist; I: Institutional Specialist; R: Rural Sociologist; EN: Environmental Specialist; IN: Information Specialist; S: Social Science; SF: Social Forester.

Performance ratings: S: Satisfactory.

Other Project Data

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS

Operation	Credit no.	Amount (US\$ million)	Board date
India – Andhra Pradesh Community Forest Management Project	3692-IN	108.0	July 16, 2002
India – Integrated Watershed Development (Hills II) Project	3243-IN	85.0	June 15, 1999
India – Kerala Forestry Project	3053-IN	39.0	March 24, 1998
India – Uttar Pradesh Forestry Project	3018-IN	52.94	December 9, 1997
India – Ecodevelopment Project	2916-IN	28.0	September 5, 1996