

India

FY2019 Ex-Post Evaluation of Japanese ODA Loan

“Uttar Pradesh Participatory Forest Management and Poverty Alleviation Project”

External Evaluator: Keishi Miyazaki, OPMAC Corporation

## **0. Summary**

The objective of the project was to restore degraded forests, to augment forest resources and to improve the livelihoods of, and empower, local people dependent on forests by promoting sustainable forest management, including the Joint Forest Management (JFM) plantation and community/tribal development, in the state of Uttar Pradesh in north India, thereby promoting regional environmental improvement and poverty alleviation. The relevance of the objective is high, as it was consistent with India's development policy and development needs, as well as with Japan's ODA policy at the time of appraisal and ex-post evaluation. Although the project cost was within the plan, the project period exceeded the plan, and therefore the efficiency is fair. The reason for extension of the project period was the additional activities regarding capacity strengthening of the executing agency and village organizations from the viewpoints of expansion of project effects and enhancement of sustainability. All but two of the 10 operation and effect indicators achieved or almost achieved their target values. Through the sustainable forest management, regional development/livelihood improvement activities, supporting activities, etc. implemented by this project, forest restoration in the target area, biodiversity conservation awareness among residents, and an increase in the wildlife population were recognized. Therefore, it was confirmed that the project had a certain effect on water and soil conservation and biodiversity conservation. In addition, improvements in the living environment and diversification of the means of livelihood led to increases in the income of local residents. Furthermore, this project has made a certain contribution to the improvement of women's social and economic capacities in the target villages by improving literacy rate and self-confidence of women and increasing their opportunities to participate in financial activities and decision making as well as poverty reduction by increasing their income. However, there were factors affecting poverty reduction other than this project, such as poverty alleviation measures by the Government of India. No negative impact on the natural environment was observed, and resettlement of residents and land acquisition did not occur through the project. Therefore, the effectiveness and impacts are high. After the completion of the project, the operation and maintenance system was taken over by the executing agency, the Uttar Pradesh Environment, Forest and Climate Change Department (EFCCD), and village organizations established in this project, such as the Joint Forest Management Committees (JFMCs), Eco-Development Committees (EDCs) and Self Help Groups (SHGs). EFCCD faces issues such as labor and budget shortages. Village organizations also have some issues with the organizational, technical, and financial aspects of each organization. Therefore, the sustainability is evaluated to be fair.

In light of the above, the project is evaluated to be satisfactory.

## 1. Project Description



Project Location



Afforestation by JFM

### 1.1 Background

The state of Uttar Pradesh, the most populous and fifth largest province, is located in the northern part of India. In 2003, the forest and tree coverage in the state of Uttar Pradesh was 9.0%, which was much lower than the national average of 23.7%, while the ratio of open forests in the total forest area was much higher, at 57.5% (compared to the national average of 42.4%). Farm land was found mainly in the central part of the state and occupied 87.4% of the total state area. In the northern and southern parts of the state, where the density of forests was high, scheduled castes and scheduled tribes (indigenous tribes), who had a high incidence of poverty, relied on forests for their livelihood. Their overgrazing and excessive harvesting of forest resources had been partly responsible for causing degradation of the forests. The state of Uttar Pradesh, with the country's largest population living in poverty, had been striving to implement poverty alleviation projects with the Department of Rural Development playing a key role. However, since most of these projects were concentrated in the central region, support had not reached the surrounding forest areas distributed along the state border.

### 1.2 Project Outline

The objective of the project was to restore degraded forests, to augment forest resources and to improve the livelihoods of, and empower, local people who are dependent on forests by promoting sustainable forest management including JFM plantation and community/tribal development, in the state of Uttar Pradesh in north India, thereby promoting regional environmental improvement and poverty alleviation.

Loan Approved Amount/ Disbursed Amount	13,345 million yen / 7,404 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	March 10, 2008 / March 10, 2008
Terms and Condition	Interest Rate 0.01% Repayment Period 40 years (Grace Period) 10 years) Conditions for Procurement General Untied
Borrower/ Executing Agencies	The President of India / Environment, Forest and Climate Change Department (EFCCD), Uttar Pradesh State
Project Completion	December 2017
Target Area	15 forest divisions and 5 wildlife divisions in the northern and southern parts of Uttar Pradesh State.
Main Contractor	None
Consultants (Over 100 million yen)	<ul style="list-style-type: none"> <li>• Jai Prakesh Associates (JPS Associates Pvt. Ltd.) (India) / NR Management Consultants India Pvt. Ltd. (India) / Nippon Koei India Pvt. Ltd. (India) / Nippon Koei Co., Ltd. (Japan) / Natural Resources International Ltd. (UK)</li> <li>• Louis Berger Group, Inc. (USA)</li> </ul>
Related Studies (Feasibility Studies, etc.)	Special Assistance for Project Formation (SAPROF) for Uttar Pradesh Natural Resource Management and Poverty Alleviation Project (NRMPAP) in India (October 2007)
Related Projects	None

## 2. Outline of the Evaluation Study

### 2.1 External Evaluators

Keishi Miyazaki (OPMAC Corporation)

### 2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: November 2019 – February 2021

Duration of the Field Study: January 6 – January 24, 2020

### 2.3 Constraints during the Evaluation Study

Due to the global COVID-19 pandemic, the 2nd field study, planned for April 2020, was canceled. As an alternative, the external evaluator conducted a field survey in Uttar Pradesh State remotely, with the support of a local consultant. There was therefore a limitation in the collection of some of the data and information.

### 3. Results of the Evaluation (Overall Rating: B<sup>1</sup>)

#### 3.1 Relevance (Rating: ③<sup>2</sup>)

##### 3.1.1 Consistency with the Development Plan of India

At the time of appraisal, the Government of India had set the goal of 33% forest and tree coverage in the entire country by the end of *the 11th Five-Year Plan* (April 2007-March 2012). In addition to the restoration of degraded forests, emphasis was placed on sustainable forest management by promoting Joint Forest Management (JFM) and support for the acquisition of alternative income means for forest dependents. The platform of the Manmohan Singh administration (2004-2014), which was launched in May 2004, also stated that it would focus on investing in afforestation projects that would create jobs.

At the time of ex-post evaluation, *the Three-Year Action Agenda*<sup>3</sup> (2017/18 - 2019/20<sup>4</sup>), India's national development plan, places environment and forest protection as a priority item, with the target of achieving the national forest and tree coverage of 33% and with an emphasis on improving the effectiveness of afforestation programs. The upcoming *7-Year Strategy* and *15-Year Vision*<sup>5</sup> will also set the protection of forests, wildlife and biodiversity as priority goals.

As mentioned above, forest protection and ecosystem/biodiversity conservation have been important issues in India's development policies at the times of appraisal and ex-post evaluation, and JFM's role in promoting sustainable forest management were emphasized. Thus, the project is considered to be consistent with the development plan of the Government of India.

##### 3.1.2 Consistency with the Development Needs of India

Regarding the forest sector in Uttar Pradesh at the time of appraisal, as mentioned in "1.1 Background," the forest and tree coverage in 2003 was 9.0%, which was significantly lower than the national average 23.7%. Farm land, distributed mainly in the central part of the state, occupied 87.4% of the total state area. In the northern and southern parts of the state where the density of forests was high, scheduled castes and scheduled tribes (indigenous tribes), who had a high incidence of poverty, relied on forests, and their overgrazing and excessive harvesting of forest resources had been partly responsible for causing degradation of the forests.

At the time of ex-post evaluation, according to the *India State of Forest Report*, which is prepared every two years by the Forest Survey of India under the Ministry of Environment, Forest and Climate Change, the national forest and tree coverage was 24.56% in 2017, which

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<sup>1</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory.

<sup>2</sup> ③: High, ②: Fair, ①: Low

<sup>3</sup> The Government of India decided to terminate the existing National Development Five-Year Plan with the 12th Five-Year Plan (April 2012-March 2017), and instead set up a new framework of 15-Year Vision (2017/18-2031/32), 7-Year Strategy (2017/18-2023/24) and 3-Year Action Agenda (2017/18-2019/20) starting in 2017.

<sup>4</sup> In the Indian fiscal year, 2017/18 is from April 2017 to March 2018.

<sup>5</sup> According to information provided on the website of the National Institution for Transforming India Commission (former Planning Commission), the 15-Year Vision and the 7-Year Strategy were in draft stage at the time of ex-post evaluation.

was an improvement over the rate in 2003. However, the open forest rate in the total forest areas was 42.8% in 2017, which was almost the same as in 2003. Expanding and improving forest area continues to be an important issue in India. Comparing the rates of dense and open forests in the forest area of Uttar Pradesh in 2007 (before the start of the project) and 2017 (when the project was completed), it can be seen that the dense forest rate increased in 2017 while the open forest rate declined. This has led to some improvement in forest degradation, and the state-wide forest and tree coverage slightly improved from 9.01% in 2007 to 9.15% in 2017 (Table 1). On the other hand, this remains at a low level when compared to the national forest and tree coverage, and the expansion and conservation of forest area remains an important issue in the state.

Table 1: Forest Coverage and Forest Canopy Rate in Uttar Pradesh State

Item		2007		2017	
		India	UP (Note1)	India	UP
Forest coverage (%)	Forest	21.02	5.95	21.67	6.15
	Non-forest	77.72	93.73	76.92	93.61
	Scrub	1.26	0.31	1.41	0.24
	Tree (Note 2)	2.28	3.06	2.89	3.0
	Total	100.00	100.00	100.00	100.00
	Forest and Tree	23.30	9.01	24.56	9.15
Forest canopy rate (%)	Dense forest	12.23	11.34	13.94	17.67
	Moderately dense forest	45.53	31.82	43.31	27.56
	Open forest	42.24	56.84	42.75	54.77
	Total	100.00	100.00	100.00	100.00

Source: India State of Forest Report 2009 (data measured in 2007), India State of Forest Report 2019 (data measured in 2017)

Note 1: UP: Uttar Pradesh State.

Note 2: It is defined as a forest area of less than 1 ha with a tree coverage of more than 10%. Statistically, it is treated separately from the forest coverage.

As mentioned above, at the time of appraisal and ex-post evaluation, the forest and tree coverage of Uttar Pradesh remained low compared to India as a whole, and the need for expansion and conservation of forest area in the state continued to be recognized.

### 3.1.3 Consistency with Japan's ODA Policy

Japan's *Country Assistance Program for India* (formulated in May 2006) at the time of appraisal placed "improvement of poverty and environmental problems through health and sanitation issues, local development, water supply and sewerage support, afforestation support, etc." as one of its three priority areas. In addition, JICA's *Overseas Economic Cooperation Operation* (2005) positioned "regional development that benefits the poor" and "response to environmental issues" as priority areas for India. Furthermore, JICA's *Country Assistance Strategy for India* (FY2006) positioned the forest sector as a major sector for assistance to India.

As stated above, this project was highly relevant to India’s development plan and development needs, as well as to Japan’s ODA policy. Therefore, its relevance is high.

### 3.2 Efficiency (Rating: ②)

#### 3.2.1 Project Output<sup>6</sup>

This project consisted of three main components: (i) Forest conservation and management (forest area development and management by EFCCD and JFM, wildlife conservation and management), (ii) Community development and livelihood improvement, and (iii) Supporting activities, targeting 15 forest divisions and five wildlife divisions (total 80,500 ha) in the northern and southern parts of Uttar Pradesh State. Overall, the actual outputs were produced mostly as planned. The major actual outputs are shown below (for details, please refer to “Comparison of the Original and Actual Scope of the Project”).

#### (1) Forest Conservation and Management

##### a) Department Forest Area Development and Management

The actual amount of afforestation under the direct management of EFCCD was 20,200 ha, which was as planned (Table 2). In addition, the installation of forest boundary pillars to demarcate forest land, the creation and maintenance of firebreaks to prevent forest fires, the purchase of fire extinguishing equipment, the implementation of channel countermeasure work, the improvement of existing permanent nurseries for seedling development and sapling production, the creation of cloned tree nurseries, the creation of the Non-wood Forest Products Research Center, etc. were carried out mostly as planned.



Figure 1: Project Target Area

<sup>6</sup> The project outputs are the inputs (project plan) to be realized by the project which were mentioned in the project appraisal documents. For details, please refer to “Comparison of the Original and Actual Scope of the Project”.

Table 2: Afforestation by EFCCD

Type	Afforestation Area (ha)		
	Plan	Actual	Difference
Open, barren forest area	8,900	9,300	400
Moderately dense forest area	7,000	7,100	100
Very dense forest area	4,300	3,800	-500
Total	20,200	20,200	0

Source: Documents provided by JICA and the response to the questionnaire by EFCCD.

b) JFM Forest Area Development and Management

The actual amount of afforestation by JFM was 60,495 ha, which was as planned. As other outputs, a firebreak for a forest fire prevention measure was created and maintained, channel countermeasures were carried out, and a JFM small-scale joint nursery was created. Regarding the creation and maintenance of firebreaks and the creation of JFM small-scale joint nursery fields, the actual results fell below those planned.

Table 3: Afforestation by JFM

Type	Afforestation Area (ha)		
	Plan	Actual	Difference
Open, barren forest area	19,200	2,231	-16,969
Moderately dense forest area	32,100	30,824	-1,276
Very dense forest area	9,000	27,440	18,440
Total	60,300	60,495	195

Source: Documents provided by JICA and the response to the questionnaire by EFCCD.

c) Wildlife Conservation and Management

For the development of wildlife forest areas, national parks and wildlife sanctuaries were established; earth retaining works were conducted; and check dams, boundary pillars, watchtowers, check posts, drinking fountains, etc. were constructed. In addition, 140 Eco-Development Committees (EDCs) were established, ecotourism was developed, a community-managed wildlife sanctuary was established, and community fuelwood and forage production forests (village common forests) were created. Regarding the creation of community fuelwood and forage production forests, the actual area was only 350 ha compared to the planned 700 ha because of the lack of land. The outputs of wildlife conservation and management were almost as planned.

## Afforestation by JFM in Forest Conservation and Management Component (Examples)



Afforestation area managed by JFMC of Phkhradh village, Mirzapur district



Afforestation area managed by JFMC of Siddhi village, Mirzapur district



Community forest area managed by EDC of Badholi village, Mirzapur district

### (2) Community Development and Livelihood Improvement

This component supported 940 village animators (villagers who act as extension workers of partner NGOs) and organized 800 Joint Forest Management Committees (JFMCs) and 140 EDCs through partner NGOs employed in this project. In addition, the formation of 2,680 Self-Help groups (SHGs) and support for the formation of 20 SHG alliances were implemented. Based on the micro-plan created in each village targeted by this project, entry point activities (EPAs), such as school renovations, small-scale infrastructure development including community centers, farm roads and water supply, and the provision of health services and small loans were carried out (Table 4). In addition, the various activities shown in Table 5 were implemented as income-generating activities (IGAs) by micro-enterprise companies and SHGs in the target villages. The outputs of these regional development and livelihood improvement activities were mostly as planned.



Table 4: EPAs

Type	No. of Activities
Installation of water supply facilities	140
Extension of school buildings	110
Construction of JFMC/EDC office buildings	
Purchase of tent houses	100
Improvement of link roads	90
Construction of monuments (Chabutara) (Note 1)	80
Installation of solar lamps	70
Medical health care camps	60
Others (Note 2)	200
<b>Total</b>	<b>850</b>

Source: Response to questionnaire by EFCCD

Note 1: Chabutara (meaning “pigeon tower” in Gujarati) is a tower with an octagonal or pentagonal shape at the top where pigeons can be fed or find space to build nests. These are usually installed at the entrance of a village and have a monumental meaning. The pedestal part of the tower has a space for sitting, which serves as a gathering place for villagers and a playground for children.

Note 2: For example, irrigation pumps and smokeless furnaces.

Table 5: IGAs by SHGs

Type	SHG
(1) Forest-based business	
Non-Timber Forest Product (NTFP)	96
Leaf plates & bowl production	81
Incense stick production	27
Lac production	15
Others	30
(2) Natural resource-based business	
Goatery	643
Vegetable production	387
Poultry	299
Agriculture	212
Others (Note 3)	
(3) Non-natural resource-based business	574
Trading	94
Brick making	78
Grain trading	60
Tent house rental	54
Others (Note 4)	30
<b>total</b>	<b>2,680</b>

Source: Response to the questionnaire by EFCCD

Note 3: For example, dairy cow breeding and the production of spices such as turmeric.

Note 4: For example, sales of accessories and sewing.

### Small-Scale Infrastructures in Target Villages by developed by EPAs (the Examples)



Community Center  
(Also used as EDC Office)  
Gurwal village, Mirzapur district



Water facility  
Pukhradh village, Mirzapur district



Stage around the Hindu place of  
worship (meeting space)  
Siddhi village, Mirzapur district

### (3) Supporting activities

In order to strengthen the project implementation structure, 20 local management offices, 101 site management offices, official residences for site staff, etc. were constructed, communication and surveying equipment was maintained, vehicles were procured, and manuals, guidelines, etc. were created. In addition, training was conducted for the competence development of EFCCD staff, NGO staff and members of village organizations (JFMCs, EDCs, SHGs). For the purpose of project monitoring and evaluation, regular monitoring/ evaluation (monthly, quarterly, yearly), baseline surveys, mid-term/final impact assessment were also implemented, and Geographic Information System (GIS) and Management Information System (MIS) were installed as part of

the project's activities. Publications such as newsletters and pamphlets were used to disseminate information and raise the awareness of environmental conservation among residents inside and outside the project area. In particular, as part of environmental education, a school tree planting program, the Children Forest Program<sup>7</sup> (CFP), was implemented for 1,000 schools in the state. CFP include various awareness-raising activities, such as tree planting on school grounds and in surrounding communities, painting contests, speech contests, nature tours in natural parks, workshops and seminars for teachers, and preparation of environmental education materials (environmental calendars, posters, etc.).



GIS Equipment installed  
in this Project

Furthermore, research studies for forest development and management, biodiversity and management, and research<sup>8</sup> related to CDM<sup>9</sup> afforestation were also conducted through the commissioning of research institutes in India. As mentioned above, the outputs related to the supporting activities were almost as planned.

In this project, consultants were hired to support the project management of the executing agency. The consultants provided technical assistance for procurement operations, fund management, annual planning, report preparation, review and formulation of the JFMC operation manual, etc., for the Project Management Unit (PMU). These operations were carried out as planned, and the total amount of operations was within the plan.

### 3.2.2 Project Inputs

#### 3.2.2.1 Project Cost

The actual project cost was 9,169 million yen compared to the planned project cost of 16,394 million yen, which was within the plan (56% of the planned amount) (Table 6).

While most of the project cost was in local currency, the rupee exchange rate against the yen fell by 63.5% in the 10 years from 2007 to 2017. As a result, while the outputs were produced almost as planned, the actual project cost in yen amounted to 56% of the original amount. For reference, when comparing the project costs in rupees, the planned project cost was 5,754

<sup>7</sup> A program in which children take action in promoting the greening of the earth while cultivating 'a love for nature' and 'an affection for greenery' through the practical activities of planting and growing seedlings on and near school grounds.

<sup>8</sup> In order to implement CDM-sinks (CDM afforestation) introduced as one of the Kyoto Protocol, a research organization in India was entrusted to conduct a survey for the purpose of finding the areas conforming to the CDM standards within the target area of this project, prepare materials necessary for registration, and implement registration work.

<sup>9</sup> CDM: Clean Development Mechanism. One of the Flexibility Mechanisms stipulated under the Kyoto Protocol, which aims for developing and advanced countries to jointly implement greenhouse gas reduction projects in developing countries. The scheme allows a country to receive emission reduction credits based on the reduction amount, which can be counted towards meeting Kyoto targets.

million rupees, while the actual project cost was 5,066 million rupees, which is 88% of the planned amount.

Table 6: Planned and Actual Project Cost

Item	Plan			Actual		
	Foreign currency (Mill. yen)	Local currency (Mill. yen)	Total (Mill. yen)	Foreign currency (Mill. yen)	Local currency (Mill. yen)	Total (Mill. yen)
Forest conservation and management	0	7,042	7,042	0	4,533	4,533
Community development and livelihood improvement	0	2,105	2,105	0	1,567	1,567
Supporting activities	0	1,897	1,897	0	1,060	1,060
Price escalation	0	1,010	1,010	0	0	0
Physical contingency	0	603	603	0	0	0
Consulting services	324	364	688	311	371	682
General administration	0	1,958	1,958	0	868	868
Tax and duties	152	447	599	0	160	160
Commitment charge	137	0	137	95	0	95
Interest during construction (IDC)	359	0	359	204	0	204
Total	972	15,426	16,398	610	8,559	9,169

Source: Documents provided by JICA and the response to the questionnaire by EFCCD.

Note: The exchange rate at the time of appraisal was 1 rupee = 2.85 yen (As of October 2007), and 1 rupee = 1.81 yen at the time of evaluation (2008-2017 average)

### 3.2.2.2 Project Period

The planned project period was 97 months (March 2008-March 2016), while the actual project period was 118 months (March 2008-December 2017) (Table 7).

Table 7: Planned and Actual Project Period

Activity	Plan	Actual
Signing of Loan Agreement	March 10, 2008	March 10, 2008
Consulting Service (incl. Selection of Consultant)	Mar. 2008 – Oct. 2011 (28 months)	(i) Aug. 2009 – Sep. 2013 (48 Months) (ii) May 2014 – May 2016 (24 Months)
Forest Conservation and Management	Apr. 2009 – Mar. 2016 (84 months)	Apr. 2009 – Dec. 2017 (105 months)
Community Development and Livelihood Improvement	Apr. 2009 – Mar. 2016 (84 months)	Apr. 2009 – Dec. 2017 (105 months)
Supporting Activities	Mar. 2008 – Mar. 2016 (96 months)	Mar. 2008 – Dec. 2017 (117 months)
Project Completion	March 2016 (Original) December 2017 (Revised)	December 2017

Source: Documents provided by JICA and the response to the questionnaire by EFCCD.

Note: (i) a joint venture headed by Nippon Koei, (ii) Louis Berger.

The reasons for the 21-month extension of the project period were as follows: (i) the target area of CFP was expanded, and an additional activity period was needed, (ii) 20 partner NGOs were re-selected due to the delay in the project and based on the mid-term evaluation, (iii) it

took time to formulate a village common forest with the involvement of village organizations because this activity was a first time in Uttar Pradesh state, (iv) it took time to disseminate livelihood improvement activities by SHGs, and (v) time was needed because the executing agency was unfamiliar with the method of project implementation in collaboration with NGOs. In order to cope with the above issues, after the contract with the consultant was completed in August 2013 as originally planned, another consultant was employed additionally after 2014 and took over the works by the first consultant (e.g., technical assistance for PMU in procurement, financial management, establishment of annual implementation plans, and preparation of reports, etc.). Considering these reasons, EFCCD formally requested JICA to extend the project period by 21 months until December 2017. Based on this request, JICA agreed to extend the project period in February 2015.

Among these reasons, the CFP was initially targeted at 650 schools in the six major cities in the state, but it was expanded to 1,000 schools in 13 districts with the hope of spreading the beneficial effect to a wider area. It was a response to cope with the increase in the project outputs. As for the other reasons, the implementation schedule of each activity was extended from the viewpoints of expansion of project effects and enhancement of sustainability. However, this did not cause any change in the project scope (i.e. increase or decrease in project outputs). Meanwhile, it is assumed that this extension was a response that led to the high achievement of effects and impacts of the project, which will be described later.

Considering this, although a formal agreement between the executing agency and JICA was made on the amendment of the project implementation period, it is appropriate to consider the project period at the time of appraisal (March 2008 to March 2016) as the planned value and compare it with the actual project period. Therefore, it is judged that the actual project period was delayed by 21 months against the planned project period, and exceeded the plan (122% against the plan).

### 3.2.3 Results of Calculations for Internal Rates of Return (Reference only)

#### (1) Financial Internal Rate of Return (FIRR)

The Financial Internal Rate of Return (FIRR) of the project was not calculated at the time of appraisal.

#### (2) Economic Internal Rate of Return (EIRR)

The Economic Internal Rate of Return (EIRR) of the project calculated at the time of appraisal was 13.79%. The preconditions of the EIRR calculations are referred to in Table 8. The result of EIRR recalculation at the time of ex-post evaluation was 10.20%, which is slightly lower than the EIRR at the time of appraisal. The main reason for this is that the benefits of forest products/firewood material were lower than assumed at the time of appraisal.

Table 8: Economic Internal Rate of Return (EIRR) of the Project at the Time of Appraisal

Item	Contents
Economic Internal Rate of Return (EIRR)	13.79%
Cost	Project cost (excluding tax and duties), Operation and maintenance cost
Benefit	Increase in fuel-wood and forest products, prevention of soil erosion, etc.
Project life	50 years

Source: Documents provided by JICA.

In light of the above, although the project cost was within the plan, the project period exceeded the plan. Therefore, the efficiency of the project is fair.

### 3.3 Effectiveness and Impacts<sup>10</sup> (Rating: ③)

#### 3.3.1 Effectiveness

##### 3.3.1.1 Quantitative Effects (Operation and Effect Indicators)

In this project, 11 indicators were set as operational and effect indicators. No baseline values were set for each indicator. Generally, the achievement of each indicator is judged based on whether the actual value has achieved the target value two years after the completion of the project (2019). However, after the completion of this project, EFCCD of the State of Uttar Pradesh has not collected the actual values of each indicator exclusive to the project, and therefore most of the actual values have been judged based on the actual values at the time of project completion in 2017. The results of each indicator are as follows (Table 9).

Table 9: Operation and Effect Indicators

Indicators	Baseline	Target	Actual		
	2008	2018 2 years after completion	2017 Completion year	2018 1 year after completion	2019 2 years after completion
Afforestation area (ha)	—	80,500	80,695	80,695	80,695
Quantity of planting (trees)	—	28,230,000	36,330,000	36,330,000	36,330,000
Survival rate (%) (Note1)	—	1 <sup>st</sup> year: 76 3 <sup>rd</sup> year: 64 5 <sup>th</sup> year: 55	Southwestern region: 47 Northern region: 42 Southern region: 70	N.A.	N.A.
Number of JFMCs formed	—	800	800	800	800
Number of EDCs formed	—	140	140	140	140
Number of SHGs formed	—	2,680	2,680	2,680	2,680

<sup>10</sup> Sub-rating for Effectiveness is to be put with consideration of Impacts.

Indicators	Baseline	Target	Actual		
	2008	2018 2 years after completion	2017 Completion year	2018 1 year after completion	2019 2 years after completion
Forest coverage (%)	—	Scrub (0-10%) =>Open forest (10-40%) Open forest (10-40%) =>dense forest (40% or higher)	See Table 11	N.A.	N.A.
Production of forest product (rupees/year)	—	337,000,000	140,068,949	N.A.	N.A.
Annual income increase percentage per household (%)	—	7.9	JFMC: 14.5 EDC: 28.8	N.A.	N.A.
Employees (man-day)	—	19,900,000	15,900,000	N.A.	N.A.
Trainees (people)	—	30,774	31,009	N.A.	N.A.

Source: Documents provided by JICA and the response to the questionnaire by EFCCD.

Note 1: Planted trees managed by JFM.

Note 2: The survival rate is the result of a sample survey conducted in March 2015 by a third-party evaluation.

Note 3: All actual values of 2017, with the exception of the survival rate, are based on the end-term impact assessment report.

The actual value of the afforestation area is 80,695 ha, which has achieved the target value. The actual quantity planted was 36,330,000, sufficiently achieving the target value (achievement rate: 128%). However, according to the executing agency, although seedlings were distributed to the target villages free of charge after the completion of the project, it was difficult to secure a budget (worker employment costs) for planting them. Therefore, at the time of ex-post evaluation, afforestation has not progressed much in the areas targeted in the project.

Regarding the survival rate of planted trees managed by JFM, the actual data for each region were as follows: 47% in the southwest region (Bundelkhand Region; 85% of the 5th year target), 42% in the northern region (Vindhyan Region; 76% of the 5th year target), and 70% in the southern region (Terai Region; 127% of the 5th year target). However, the above data is the result of an analysis of a third-party evaluation in March 2015 during the implementation of this project, and the sample is the average of the trees planted between 2011/12 and 2014/15, so these actual values cannot simply be compared with the target values. Due to this, it is difficult to accurately determine the degree of target achievement regarding the survival rate of planted trees.

The number of Joint Forest Management Committees (JFMCs), the number of joint Eco-Development Committee (EDCs), and the number of Self-Help groups (SHGs) have each achieved the target values (achievement rate: 100%). According to the executing agency, new JFMCs, EDCs, or SHGs have not been established in the project area since the completion of this project.

The definition of the target value for forest coverage is unclear, but the comparison of 2011 and 2016 in the project area in Table 10 shows that the proportion of scrub decreased from

33.91% to 19.02% and the proportion of open forest decreased from 46.55% to 29.02%, while the proportion of medium dense forest increased from 14.08% to 29.56% and the proportion of high dense forest increased from 1.35% to 8.31%. Due to this indicator, it can be said that the forest coverage in the project target area has been improved. In addition, a comparison of the 2011 and 2017 data from the India State of Forest Report shows that the areas of open and medium dense forest have decreased, and the area of dense forest has increased in the five northern districts (Pilibhit, Kheri, Bahraich, Shravasti, and Balrampur) out of the 14 target districts (Table 11). From these facts, it is recognized that the improvement of forest coverage has been remarkable in the northern part of the target area of this project. In addition, although it is not possible to make a clear judgment as to the degree of achievement of the forest coverage target, it can be said that this project has improved forest coverage in the project area to a certain extent.

Table 10: Forest Coverage

Category	2011		2016		Difference (ha)	Growth Rate (%)
	Area (ha)	Percentage (%)	Area (ha)	Percentage (%)		
High dense (>80%)	148	0.15	2,353	2.33	2,205	1,490
High dense (70-80%)	1,216	1.20	6,050	5.98	4,834	398
Medium dense (50-70%)	8,193	8.10	14,220	14.06	6,027	74
Medium dense (40-50%)	6,051	5.98	15,677	15.50	9,626	159
Open Forest (20-40%)	23,803	23.53	19,234	19.01	-4,569	-19
Open Forest (10-20%)	23,284	23.02	20,761	20.52	-2,523	-11
Scrub (<10%)	34,308	33.91	19,243	19.02	-15,065	-44
Agriculture	3,588	3.55	3,303	3.27	-285	-8
River/Water body	568	0.56	318	0.31	-250	-44
Total	101,159	100.00	101,159	100.00		

Source: Documents provided by JICA and the response to the questionnaire by EFCCD.

Table 11: Forest Coverage in the Five Northern Districts in the Project Target Area

District	Unit: %					
	Dense forest		Moderately dense forest		Open forest	
	2009	2017	2009	2017	2009	2017
Pilibhit	48.71	68.46	22.64	12.50	28.65	19.04
Kheri	30.75	63.19	36.47	12.40	32.78	24.41
Bahraich	34.20	43.72	37.15	28.42	28.66	27.87
Shravasti		53.33		29.82		16.84
Balrampur	42.53	53.24	35.54	29.39	21.93	17.37
Entire Uttar Pradesh State	11.34	17.83	31.82	27.72	56.84	54.45

Source: India State of Forest Report 2009, India State of Forest Report 2019

The actual production value of forest products was 140,068,949 rupees per year, which was below the target value (achievement rate: 41.6%). This project did not involve large-scale harvesting forest products. However, forest products such as bamboo, tendu (leaves used for

cigarette wrapping paper), and mafua (seed oil is used as a raw material for medical and daily necessities) are harvested and processed for use. The sales revenue of forest products is returned to JFMC and EDC through a benefit sharing<sup>11</sup> scheme.

The rate of increase in income per beneficiary household was 14.5% in the JFMC target area and 28.8% in the EDC target area, which sufficiently achieves the target values (achievement rate: 184% and 365%). The actual number of people who were employed was 15,900,000 man-days, almost reaching the target value (achievement rate 80%). The actual number of trainees was 31,009, achieving the target value (achievement rate: 100%). However, the training for JFMC, EDC, and SHG conducted during the project has not been continued by the executing agency since the project completion.

### 3.3.1.2 Qualitative Effects (Other Effects)

In this ex-post evaluation, the qualitative effects related to effectiveness were classified into “water and soil conservation,” “biodiversity conservation,” and “increased income of residents.”<sup>12</sup> In order to confirm these qualitative effects, six<sup>13</sup> (four forest divisions, two wildlife divisions) out of the 20 divisions (15 forest divisions, five wildlife divisions) targeted for the project were selected. Three villages were chosen from each forest division, and interviews were conducted with representatives or the group leaders of JFMCs, EDCs, and SHGs of each village, based on a semi-structured questionnaire. The interviewed village organizations were 12 JFMCs, six EDCs, and 18 SHGs. The results of the end-term impact assessment of this project were also included in the analysis.

#### (1) Water and Soil Conservation

In interviews with 12 JFMC groups (four forest divisions), 100% of the respondents recognized that there had been some improvement in forest regeneration (Figure 2). Regarding water and soil conservation, 100% of the respondents recognized some improvement (Figure

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<sup>11</sup> When forest products are sold through a forestry association (an organization of EFDDC), JFMCs, EDCs, and other groups receive a predetermined percentage of profit after deducting the costs borne by the EFCCD.

<sup>12</sup> The appraisal report of this project stated “improvement of natural environment (forest restoration, water and soil conservation, biodiversity conservation), improvement of the livelihood of residents (diversification of livelihood means, improvement of the living environment), improvement of women's social and economic capacities” as the qualitative effects related to effectiveness and impact. However, the logic behind how outcomes and impacts were determined from the four main outputs of this project (sustainable forest management, wildlife conservation management, supporting activities, regional development/livelihood improvement activities) needed to be reconfirmed. As a result, in this ex-post evaluation, “water and soil conservation,” “biodiversity conservation,” and “increased income of residents” were reorganized as qualitative effects related to effectiveness, and “improvement of natural environment,” “improvement of women's social and economic capability/status,” and “poverty reduction” were reorganized as qualitative effects related to impacts, and these qualitative effects regarding effectiveness and impacts were used for analysis.

<sup>13</sup> 1) North Kheri Forest Division (Lakhimpur Kheri Province) (north), 2) South Kheri Forest Division (Lakhimpur Kheri Province) (north), 3) Dudwa Wildlife Sanctuary (Lakhimpur Kheri Province) (north), 4) Hamirpur Forest Division (Hamirpur Province) (southwest), 5) Mirzapur Forest Division (Mirzapur Province) (southeast), 6) Kaimoor Wildlife Sanctuary (Mirzapur Province) (southeast).



3). Specifically, (i) expansion of forest area, (ii) increase in plant types, (iii) increase in wildlife habitat, (iv) increase in green areas in villages, (v) increase in groundwater level, (vi) reduction in soil erosion, etc. were recognized. According to the Range Forest Officer of the Mirzapur Forest Division, the groundwater level of wells has risen in the area. An increase in precipitation was also mentioned in many cases as a specific example, but since various conditions affect changes in weather, the direct relationship with this project is unclear.

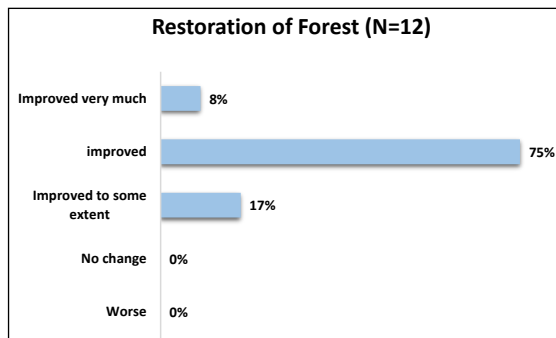


Figure 2: Restoration of Forest

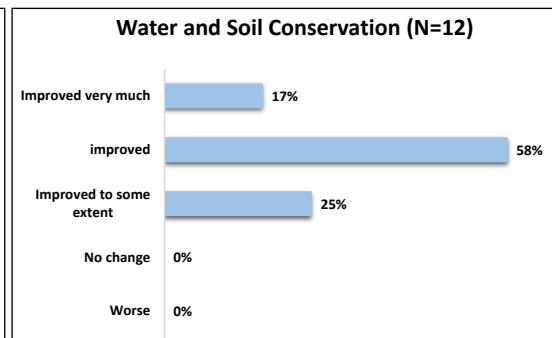


Figure 3: Water and Soil Conservation

## (2) Biodiversity Conservation

### Improved awareness of biodiversity conservation among residents

In interviews with 12 JFMC groups (four forest divisions) and six EDC groups (two wildlife divisions), 100% of the respondents recognized some improvement in their awareness on biodiversity conservation (Figure. 4). The improved awareness has resulted in positive changes in the behaviors of the villagers, such as (i) reduction of illegal logging by villagers, (ii) changes in the method of collecting firewood for fuel (e.g., they used to break the branches of young trees, but now they pick up dead trees for use), and (iii) when problems arise in the habitat of wildlife, EDC now reports them to EFCCD. The Forest Conservator of the Mirzapur Forest District also acknowledged that villagers' awareness of nature conservation has changed since the implementation of this project. According to the results of a sample survey conducted by a third party during the project, the available amounts of firewood for fuel and feed for livestock had increased by 20% and 60%, respectively, after the implementation of the project in all the target areas. This is also considered to be one of the factors that influenced the change in the method of collecting firewood mentioned above.

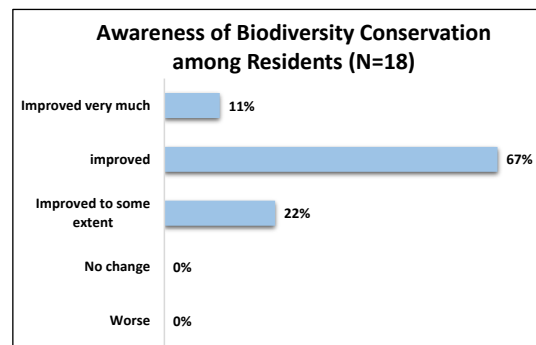


Figure 4: Awareness of Biodiversity Conservation among Residents

### Changes in the wildlife population in wildlife forests

In addition, according to the end-term impact assessment conducted at the timing of project completion, the survey results targeting 438 households in the villages where EDCs were established showed an increase in the number of wild animals at the time of project completion (end-term) compared to the beginning of the project (baseline). More than 90% of the respondents in the survey said that the populations of nilgai, bears, deer, foxes, jackals, leopards and wild boars had increased. Meanwhile, as a result of the increase in wildlife, increased damage to crops, especially by nilgais and wild boars, has also been reported. According to a survey by EFCCD, the number of tigers across the state increased from 117 in 2014 to 173 in 2018.

### (3) Increased Income of Residents

As the improvement of living environments, including infrastructure and SHGs livelihood improvement activities through EPAs, are closely related to the income improvement of residents, it was included in the analysis.

### Improvement in living environment

In this project, based on the micro-plans of the target villages, the following EPAs were conducted: construction of schools, roads, water supply (hand pumps for wells), and solar lamps; purchase of tents; and implementation of health check-ups. In interviews with 12 JFMCs, five EDCs, and 18 SHGs in four forest divisions and two wildlife divisions, 92% (33 groups) of respondents recognized some improvement in their living environment (Figure. 5). For

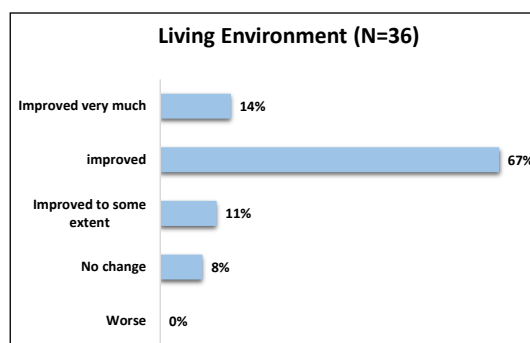


Figure 5: Improvement in Living Environment

example, in villages that introduced solar lamps, the following improvements were noted: small-scale meetings can be held at night, children can study at night, and security at night has improved. In villages where a community center (also used as JFMC and EDC offices) has been constructed or tents have been purchased, villagers are able to hold various events such as village meetings and weddings (a free wedding facility is especially beneficial for the poor). In villages where farm roads were constructed, the convenience of transportation has improved. The villages where wells were installed now have safer drinking water than they used to have from the river, and the risk of water-borne diseases has been reduced. The villages where toilets were constructed saw improvements in hygiene.

### Diversification of livelihoods

According to the end-term impact assessment of this project, at the start of the project, there were only a limited number of households in the target villages that earned a monthly income on a regular basis as government or office workers, and most households were engaged in agriculture or in manual labor. Specifically, 79.9% of the villages targeted by JFMC and 82.9% of the

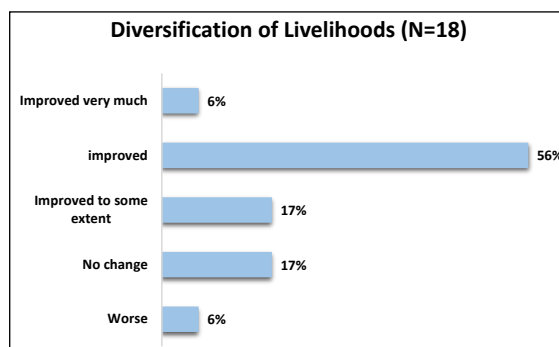


Figure 6: Diversification of Livelihood

villages targeted by EDC were mainly engaged in agriculture, and the figures for those mainly employed in manual labor were 36.6% in the villages targeted by JFMC and 34.6% in the villages targeted by EDC. Through this project, 2,680 SHGs were established, the capacities of members were strengthened, and 54 types of livelihood improvement activities, such as the processing of forest products, poultry farming, goat breeding, vegetable/flower cultivation, brick manufacturing, and retailing, were supported. As a result, SHG members have gained new means of livelihood in addition to traditional agriculture. At the start of the project, the target households were engaged in one or two jobs, but when the project was completed, the number had increased to three or more. In addition, JFMC and EDC earned 7.3 million rupees during the project implementation period by selling forest products obtained from common forests based on benefit sharing. Access to banks has also increased. The number of migrant workers has dropped sharply since the project was implemented due to the livelihood improvement activities and improved access to SHG loans. As a result, the proportion of households dependent on manual labor decreased from 80-86% (before implementation) to 35-37%.

In addition, in an interview conducted in this ex-post evaluation with 18 SHGs at four forest divisions and two wildlife divisions, 78% (14 groups) of the respondents recognized some improvement in the diversification of livelihood (Figure. 6). There was one SHG (Murtiha Indira Nagar village in the North Keri Forest District) that answered that the diversification of livelihoods had worsened. The reason for this was that they had introduced livestock during the project, but the livestock died due to illness and livestock activities could no longer be carried out.

### Increased income of residents

According to the end-term impact assessment of the project, the monthly income per capita of households participating in JFM activities increased by 14.5% from 608.6 rupees (at the start

of the project) to 1,141.4 rupees (at the completion of the project). In addition, the monthly income per capita of households participating in EDC activities increased by 28.8% from 492.7 rupees (at the start of the project) to 1,346.6 rupees (at the completion of the project). Due to the increase in average income, purchasing power has improved, leading to a significant increase in household expenditure per household.

In an interview conducted in the ex-post evaluation with 18 SHGs at four forest divisions and two wildlife divisions, 78% (14 groups) of the respondents recognized some improvement in their income (Figure. 7). This is largely due to the diversification of livelihoods through SHG activities and the generation of new income through these activities. three SHGs (17% of the respondents) answered that there was no change, and one SHG cited the failure of

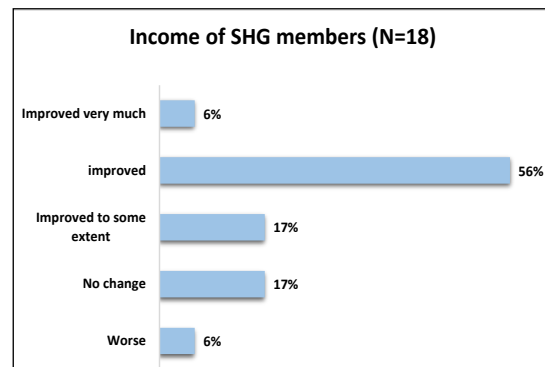


Figure 7: Improvement of SHG members' Income

goat breeding due to illness as for the reason, the one SHG (Murtiha Indira Nagar village in the North Kheri Forest District) that answered that their income had worsened, the failure of livestock activities (livestock death due to illness) and the increased burden of microcredit repayments associated with this failure.

In addition to the qualitative effects of “water and soil conservation,” “biodiversity conservation of” and “increased income of residents” mentioned above, the following qualitative effects were also observed.

#### Promotion of CDM afforestation

In this project, as one of the supporting activities, research related to CDM afforestation was conducted through consignment to a research institute in India. As a result, 10 small-scale CDM plantation projects targeting 10 forest divisions in Uttar Pradesh were registered by EFCCD, and three of them (Allahabad Forest Division, Obra Forest Division, Jhansi Forest Division) were approved. However, at the time of ex-post evaluation, the projects were not yet in operation.

#### Changes in environmental awareness of schools and local residents through CFP

In this project, as part of environmental education, a school tree planting program, the Children Forest Program (CPF), was implemented in 1,000 schools in 13 districts in Uttar Pradesh. There was an increase in awareness of environmental conservation among students,

their families, teachers, and local residents who participated in the program. For example, at a school in Varanasi, students continue to plant trees in the schoolyard and take care of trees planted in neighboring areas, while teachers also continue to provide environmental education even after the project completion. Local residents were also influenced by the activities of the students, and showed a change in their environmental awareness. For example, they started to use bicycles more often instead of cars and made efforts to save electricity at home.



Students taking care of schoolyard garden, Jai Maa Kalawati Middle/High School (Varanasi)

### 3.3.2 Impacts

#### 3.3.2.1 Intended Impacts

##### (1) Improvement of the Natural Environment

In interviews with 12 JFMCs and six EDCs in four forest divisions and two wildlife divisions, 100% of the respondents recognized some improvement of the natural environment (Figure. 8). Specifically, the cleanliness and hygiene of the villages improved, the quality of air improved, and the number of trees around the villages increased. As mentioned in “3.3.1.2 Qualitative Effects (Other Effects)”, certain effects related to “water and soil conservation” and “biodiversity conservation” were confirmed, and therefore it can be concluded that this project has had a certain contribution to the improvement of the natural environment.

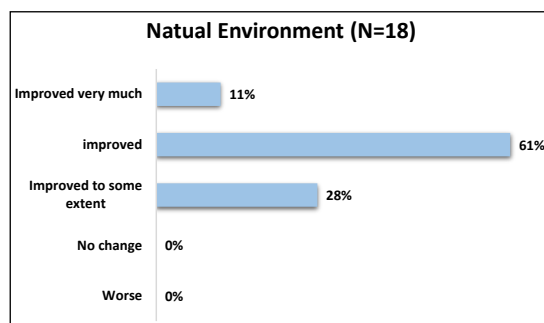


Figure 8: Improvement of Natural Environment

##### (2) Improvement of the social and economic capacity/status of women

Of the 2,680 SHGs organized in this project, 60% are female-dominated groups. According to the end-term impact assessment of the project, compared to the start of the project, the literacy rate of men increased by 11% and that of women increased by 9% in the villages targeted by JFMC. In the villages targeted by EDC, male literacy rate increased by 6% and that of female increased by 7%. After the project was implemented, the Women Empowerment

Index<sup>14</sup> improved in the targeted villages of JFM activities. Specifically, the quality of life for women improved through the skill acquisition and competence development necessary for various production activities through SHG activities. There were also increases in household income, and savings and consumption, as well as an increase in women's independence and their role and status in the household. According to the end-term impact assessment of the project, it can be concluded that with the success of the project, women have gained financial opportunities and expanded their ability to act in groups, significantly reducing problems such as domestic violence and an underrepresentation of women in mainstream decision-making.

Interviews with 12 JFMCs, six EDCs, and 18 SHGs in four forest divisions and two wildlife divisions conducted in this ex-post evaluation showed that 89% (32 groups) of the respondents recognized some improvement in the social and economic capacities and status of women. (Figure. 9).

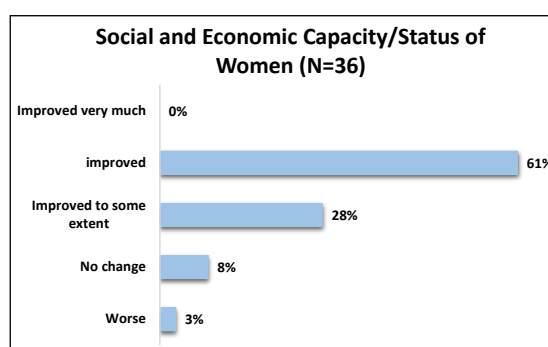


Figure 9: Improvement of Social and Economic Capacity/Status of Women

Specifically, the women were more self-confident and motivated to learn and have more opportunities to participate in economic activities and decision-making. For example, one woman who joined the SHG had never been to a bank before, but after opening an account for the first time and learning to manage funds in a bank account, she now uses the bank on a daily basis. In addition, the women in the villages were mostly low caste, illiterate, and did not have the habit of expressing their opinions in public. However, through participating in JFMCs, EDCs, and SHGs, they were assigned important roles, and thus became more self-confident and able to speak openly in village meetings and to government officials. Furthermore, as women gained means to earn income and economic power through SHGs, they gained a voice in the household and their participation in decision-making increased. In contrast, two JFMCs and one SHG (8% of the respondents) saw no change, and one SHG (Murtiha Indira Nagar village in the North Kheri Forest District) answered that the situation had worsened. Shared factors among these groups include low participation of women in SHGs and issues in sustainability of the organization after project completion.

<sup>14</sup> The Women Empowerment Index is a measure of inequality in male and female opportunities in a country, combining inequality in three areas: 1) Political participation and decision-making, 2) Economic participation and decision-making, and 3) Power over economic resources.

### (3) Poverty reduction

As referred to in “3.3.1.2 Qualitative Effects (Other Effects)”, this project has had a certain positive effect on improving the income of residents in the targeted area. According to the end-term impact assessment of the project, at the start of the project, about 12.3% of households had problems with food shortages and difficulties in preparing and providing meals for their families for two to four days a year. At the time of project completion, the proportion of such households decreased to 8.4%.

In the interviews conducted in this ex-post evaluation with 12 JFMCs, six EDCs, and 18 SHGs in four forest divisions and two wildlife divisions, 89% (32 groups) of the respondents recognized some improvement in the poverty situation (Figure. 10). Specific examples included increased income, increased employment opportunities, expansion of village electrification, improved school access for children, and changes in awareness of education. In addition to this project, various government poverty assistance measures: such as those based on the Mahatma Gandhi National Rural Employment Guarantee Act<sup>15</sup> (MGNREGA): were undertaken in the targeted areas of the project, and these measures have also contributed to poverty alleviation to a certain degree. Meanwhile, two JFMCs and two SHGs (11% of the respondents) found no change, and three of these groups are the same groups that indicated “no change” or “worsened” regarding the improvement of the social and economic capacity/status of women. No specific reasons were given.

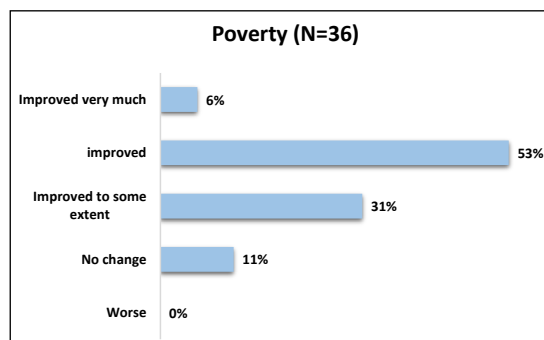


Figure 10: Poverty Reduction

### Interviews with Village Organizations



JFMC  
Pukhradh village, Mirzapur district



EDC  
Badholi village, Mirzapur district



SHG  
Siddhi village, Mirzapur district

<sup>15</sup> A poverty alleviation act that guarantees 100 days of employment (unskilled and manual labour) for every rural household. The core business is infrastructure development such as irrigation facilities and road maintenance.

### 3.3.2.2 Other Positive and Negative Impacts

#### (1) Impacts on the natural environment

In the *Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Consideration* (2002), this project was judged to have no significant environmental impact in light of sectoral, project or regional characteristics, and thus falls under category B. Preparation of an Environmental Impact Assessment (EIA) report and the acquisition of environmental clearance related to the project were not obligatory under the domestic law of India. This project focuses on afforestation and regional development/livelihood improvement activities, and although it included the construction of office facilities for the executing agency and the construction of small-scale infrastructure such as farm roads, it did not involve the construction of large-scale infrastructure that would place a heavy burden on the environment. According to EFCCD, it did not observe any negative impacts on the natural environment through this project. Therefore, no negative impact on the natural environment due to the project was observed.

#### (2) Resettlement and land acquisition

This project was carried out in a national forest, and therefore the resettlement of residents and land acquisition were not expected at the time of appraisal. In the ex-post evaluation, it was confirmed that the resettlement of residents and land acquisition by this project did not occur.

Summarizing the above, it is concluded that the operation and effect indicators have been achieved or mostly achieved, except for two out of the ten indicators (survival rate and production of forest products). Qualitative effects such as water and soil conservation, biodiversity conservation, improvement of residents' income, promotion of CDM tree planting projects, and improvement of environmental awareness among schools and local residents through CFP were also recognized. In addition, this project has made a certain contribution to the improvement of women's social and economic capacity/status in the target villages, such as improvements in the literacy rate and self-confidence of women, and increased opportunities for women to participate in financial activities and decision-making. Furthermore, it was confirmed that this project contributed to the reduction of poverty of residents by creating jobs, diversifying livelihoods, and increasing income. However, it can be said the external factors such as the poverty alleviation measures of the Indian government also contributed to poverty reduction. No negative impact on the natural environment was observed, and resettlement of residents and land acquisition did not occur through this project.

As mentioned above, this project has mostly achieved its objectives. Therefore, effectiveness and impacts of the project are high.



### 3.4 Sustainability (Rating: ②)

#### 3.4.1 Institutional/Organizational Aspects of Operation and Maintenance

[EFCCD]

The operation and maintenance agency of this project is the Environment, Forest and Climate Change Department (EFCCD), Uttar Pradesh State. Forest conservation and management, wildlife conservation and management, supervision, and support of village organizations such as JFMC and EDC in 15 forest divisions and five wildlife divisions targeted by this project are led by the staff in charge at each level, based on the jurisdiction of each forest administration level (Table 12).

Table 12: Roles and Responsibilities at Each Forest Administrative Level

Administrative Level	Roles and responsibilities	Supervisors in charge
State	Giving directions and supervising the entire state	Principal Chief Conservator of Forest (PCCF) and Head of Department Additional Principal Chief Conservator of Forest (APCCF)
Zone	Supervision of circle and region	Chief Conservator of Forest
Circle / Region	Supervision of multiple forests and wildlife divisions	Conservator of Forest
Division	Overall management of each forest and wildlife division	Divisional Forest Officer
Range	Management of forest and wildlife division at the range level of responsibility Supervision and support of JFMC, EDC	Range Forest Officer
Beat	Management of forest and wildlife division at the beat level of responsibility Supervision and support of JFMC, EDC	Forester, Forest Guard (cum Secretary of JFMC, EDC)

Source: Documents provided by EFCCD

Note 1: Division is an administrative unit that may or may not cover an area that spans multiple districts.

Note 2: Range is a unit of area into which each forest division and wildlife division is divided.

Note 3: Beat is an area that covers multiple villages within a range.

Note 4: Uttar Pradesh has 9 zones, 14 circles, 4 regions, and 77 divisions.

A Divisional Forest Officer is assigned to each forest division and wildlife division in the state, under which a Range Forest Officer is positioned to manage each range (a unit of forest area divided into several sections). In addition, a Forester and a Forest Guard are assigned each beat (a group of multiple villages). It is the Foresters who support resident organizations such as JFMC and EDC, and they also serve as the secretaries (steering committee members) of JFMC and EDC in the villages under their jurisdiction.

According to EFCCD, staff in the department are on average in their 50s, half of the posts of the Divisional Forest Officer remain vacant, and there is a constant shortage of management staff. In addition, although efforts are being made to hire Range Forest Officers, a lack of candidates and budgetary constraints are the main concerns. Furthermore, the number of Foresters is also insufficient.

[Village Organization]

The main role of JFMC is to work with EFCCD to protect forests from illegal logging and wildfires, to plant trees and to manage non-timber forest products such as livestock feed and fruits. In addition, it supervises and supports the organizational and financial management of SHGs and also provides small loans to SHGs. A JFMC Steering Committee consists of about 10 to 15 members, including the chairman, vice chairman, and secretary, who are elected by residents. Women are required to participate in the steering committee. The secretary is also a Forester of EFCCD, which has jurisdiction over the target villages. The functions, authority, scope of work, operation methods, etc. of JFMC are stipulated in the JFM guidelines.

The main role of EDC is to manage national parks and wildlife sanctuaries, and conserve biodiversity in cooperation with EFCCD. In addition, it supervises and supports the organizational and financial management of SHGs and also provides small loans to SHGs. The EDC organization, like JFMC, operates under a steering committee elected by residents based on the EDC guidelines.

SHG are resident groups consisting of about 10 to 20 members that carry out various livelihood improvement activities.

Regarding the interviews with 12 JFMCs, six EDCs, and 18 SHGs conducted in this ex-post evaluation, although a simple comparison cannot be made due to the different number of samples, when comparing self-evaluation results regarding the institutional and organizational aspects of operation and maintenance, 50% of JFMCs and EDCs responded that they were good, while only

Table 13: Self-Evaluation on Institutional / Organizational Aspects of Operation and Maintenance by Village Organizations

	Good	Limited	Bad
JFMC (N=12)	58%	25%	17%
EDC (N=6)	50%	50%	0%
SHG (N=18)	22%	56%	22%

Note: "Good" includes "Very good," and "Bad" includes "Very bad."

about 20% of SHGs responded positively (Table 13). JFMCs, which responded to the interview, have continued its activities, such as the patrols of forest divisions and common forests, and repairs of damaged boundary pillars and stone walls. EDC activities such as patrols of national parks and wildlife sanctuaries are also ongoing. Regarding SHGs, some groups are continuing their activities at the time of ex-post evaluation, while others have not been active since the project completion. A common feature among the JFMCs, EDCs, and SHGs is that many groups have not held regular meetings (annual assemblies, monthly meetings, etc.) with official records, which were required by the institution since the project completion; however, some groups have informal meetings between members. After project completion, some found issues in organizational management and accounting without the involvement of the Forester, who supported the organizational and financial management as a secretary. According to EFCCD, the 800 JFMCs and 140 EDCs established in this project remain active at the time of ex-post

evaluation. On the other hand, although most of the 2,680 SHGs are still active, some SHGs have suspended livelihood improvement activities.

From the above, some issues can be observed in the institutional/organizational aspects of the operation and maintenance system.

### 3.4.2 Technical Aspects of Operation and Maintenance

[EFCCD]

EFCCD has experience in forest resource development, social forestry projects, joint forest management projects, etc. with the support of this project and the World Bank. In addition to their original role of protecting and managing forests and wildlife, it has many other achievements in joint forest management. EFCCD has a Forest Training Institute in Kanpur, where it provides education and training on the basics and expertise of forest conservation management including joint forest management and wildlife conservation management for foresters and forest guards. According to EFCCD, Range Forest Officers visit villages on a regular basis, attend JFMC and EDC annual assemblies, provide technical assistance, and coordinate the equitable distribution of benefits from forest product sales (benefit sharing) among members.

[Village Organization]

After the completion of the project, JFMC's daily work mainly consists of patrolling the forest areas under joint forest management and common forests of the villages and repairing damaged boundary pillars and stone walls. However, due to the budgetary constraints of EFCCD, no new trees have been planted. These current activities do not require advanced technology. After the project completion, EDC's daily work mainly includes patrolling the wildlife conservation forest areas, watch towers, check posts, drinking fountains, and guiding ecotourism. These activities also do not require advanced technology.

Regarding the interviews with 12 JFMCs, six EDCs, and 18 SHGs conducted in this ex-post evaluation, although a simple comparison cannot be made due to the different number of samples, when comparing self-evaluation results regarding the technical aspects of operation and maintenance, 50% of JFMC and EDC answered that they were good, while only 30% of SHG answered positively (Table

Table 14: Self-Evaluation on Technical Aspects of Operation and Maintenance by Village Organizations

	Good	Limited	Bad
JFMC (N=12)	50%	17%	33%
EDC (N=6)	50%	33%	17%
SHG (N=18)	33%	50%	17%

Note: "Good" includes "Very good," and "Bad" includes "Very bad."

14). What is common to both JFMC and EDC is that it is difficult for the members to keep records of regular meetings and to manage accounts without the help of a secretary (who also

serves as a Forester). In addition, JFCMs and EDCs are supposed to provide technical support to SHGs for operation and accounting management, but as there are few personnel who have such ability in JFCMs and EDCs, sufficient support to the SHGs in terms of organizational management has not been provided since the project completion. Meanwhile, some SHGs are highly motivated and have steadily continued and expanded their livelihood improvement activities even after the project completion. Among the SHGs interviewed, one group marketed themselves and started producing flowers to sell in front of a temple gate. On the other hand, some groups have stopped the livestock activities that they started at the beginning of the project due to the death of livestock from disease. However, among the SHGs interviewed, including those that have suspended activities, many voiced their willingness to expand their existing livelihood improvement activities and to take on new activities, and thus there is a strong need to conduct training for that purpose.

As seen above, some issues can be observed in the technical aspects of the operation and maintenance system.

### 3.4.3 Financial Aspects of Operation and Maintenance

[EFCCD]

The budget and execution amounts of EFCCD for the past three years are unknown due to difficulties in obtaining the information from the EFCCD. At the time of ex-post evaluation, the budget allocation from the state government to support new tree planting and community organization activities was limited. However, in addition to the budget allocation from the state, the EFCCD also has its own financial resources such as forest products and seedling sales, fines, and sales from ecotourism. These financial resources are also used as part of the funds for operation and maintenance activities.

Table 15: EFCCD's Own Financial Resource

Unit: 1,000 rupees

Item	2014/15	2015/16	2016/17
Revenue	4129,225	6293,995	2592,616
Expenditure	3252,200	3607,600	7312,700

Source: Documents provided by EFCCD

[Village Organization]

JFMC's financial resources include profits from the sale of forest products and fines for illegal forest activities, and there is no financial support such as subsidies from EFCCD, with the exception of wages for planting trees. Activities are usually volunteer-based. As an incentive, the use of forest products and non-forest products (fruit trees, feed for livestock, and dead trees for fuel) obtained from forests and the common forests of villages is permitted.

EDC's financial resources partially come from wildlife sanctuary admission fees and ecotourism guide fees, but there is no financial support such as subsidies from EFCCD. Most activities are usually volunteer-based. The financial resources of SHG are the income from sales of the products from livelihood improvement activities.

Regarding the interviews with 12 JFMCs, six EDCs, and 18 SHGs conducted in this ex-post evaluation, although a simple comparison cannot be made due to the different number of samples, when comparing self-evaluation results regarding the financial aspects of operation and maintenance, 80% of EDCs answered that they were good, while only 30-40% of JFMCs and SHGs answered positively

Table 16: Self-Evaluation on Financial Aspects of Operation and Maintenance by Village Organizations

	Good	Limited	Bad
JFMC (N=12)	33%	58%	8%
EDC (N=6)	83%	0%	17%
SHG (N=18)	39%	50%	11%

Note: "Good" includes "Very good," and "Bad" includes "Very bad."

(Table 16). Many of the EDCs interviewed have pooled the collected loans from SHGs, and because loan management has been relatively good, 80% of the groups consider their financial capacity as good. As for JFMCs, activity funds were provided from the project budget and wages for tree planting activities were paid during the project implementation. However, since the project completion, activity costs have not been subsidized by EFCCD. The types and quantities of forest and non-forest products that can be harvested vary from region to region, and the revenue that can be obtained from benefit sharing is also limited. In the SHGs, there is a system where members make monthly reserves and use these funds to fund livelihood improvement activities and make small loans to members, but six SHGs interviewed in the Mirzapur district had stopped monthly reserves after the project completion. On the other hand, some SHGs which continue their activities are making stable profits by selling products. Some SHGs continue to repay small loans from JFMCs and EDCs.

As seen above, some issues can be observed in the financial aspects of the operation and maintenance system.

#### 3.4.4 Status of Operation and Maintenance

No major problems were observed in the operation and maintenance of the facilities such as forest divisions, wildlife divisions, the office buildings of executing agencies, communication/surveying instruments, vehicles, and other facilities developed in this project.

Based on the above, some minor problems have been observed in terms of the institutional/organizational aspect, technical aspect, and financial aspect. Therefore, sustainability of the project effects is fair.

## **4. Conclusion, Lessons Learned and Recommendations**

### **4.1 Conclusion**

The objective of the project was to restore degraded forests, to augment forest resources and to improve the livelihoods of, and empower, local people dependent on forests by promoting sustainable forest management, including the Joint Forest Management (JFM) plantation and community/tribal development, in the state of Uttar Pradesh in north India, thereby promoting regional environmental improvement and poverty alleviation. The relevance of the objective is high, as it was consistent with India's development policy and development needs, as well as with Japan's ODA policy at the time of appraisal and ex-post evaluation. Although the project cost was within the plan, the project period exceeded the plan, and therefore the efficiency is fair. The reason for extension of the project period was the additional activities regarding capacity strengthening of the executing agency and village organizations from the viewpoints of expansion of project effects and enhancement of sustainability. All but two of the 10 operation and effect indicators achieved or almost achieved their target values. Through the sustainable forest management, regional development/livelihood improvement activities, supporting activities, etc. implemented by this project, forest restoration in the target area, biodiversity conservation awareness among residents, and an increase in the wildlife population were recognized. Therefore, it was confirmed that the project had a certain effect on water and soil conservation and biodiversity conservation. In addition, improvements in the living environment and diversification of the means of livelihood led to increases in the income of local residents. Furthermore, this project has made a certain contribution to the improvement of women's social and economic capacities in the target villages by improving literacy rate and self-confidence of women and increasing their opportunities to participate in financial activities and decision making as well as poverty reduction by increasing their income. However, there were factors affecting poverty reduction other than this project, such as poverty alleviation measures by the Government of India. No negative impact on the natural environment was observed, and resettlement of residents and land acquisition did not occur through the project. Therefore, the effectiveness and impacts are high. After the completion of the project, the operation and maintenance system was taken over by the executing agency, the Uttar Pradesh Environment, Forest and Climate Change Department (EFCCD), and village organizations established in this project, such as the Joint Forest Management Committees (JFMCs), Eco-Development Committees (EDCs) and Self Help Groups (SHGs). EFCCD faces issues such as labor and budget shortages. Village organizations also have some issues with the organizational, technical, and financial aspects of each organization. Therefore, the sustainability is evaluated to be fair.

In light of the above, the project is evaluated to be satisfactory.

## 4.2 Recommendations

### 4.2.1 Recommendations to the Executing Agency

#### (1) Sharing Project Information and Knowledge within EFCCD

In this project, Foresters of EFCCD also serve as secretaries of JFMCs and EDCs to support organizational and accounting management as executive members of the Steering Committee, while also playing a key role in strengthening the capacity and promoting the activities of each organization, such as communication and coordination between EFCCD and JFMCs/EDCs. However, since the completion of this project, the involvement of Foresters in JFMCs and EDCs has declined, which has had a negative impact on the activities of JFMCs and EDCs. This is due to the constant shortage of personnel and the budgetary constraints of EFCCD, which makes it difficult to allocate sufficient personnel to support JFMCs and EDCs. In addition, Foresters rotate every few years, making it difficult to build close relationships with each village in a short period of time. The role of Foresters in the operation and management of JFMCs and EDCs is important for the effective continuation of community-based forest management, and the active involvement of EFCCD is required to continue.

It is also important that JFMCs and EDCs, which are in the position to supervise and support SHGs, play a role in continuing the activities of SHGs under their umbrella. The livelihood improvement activities of SHGs in villages where the organization is properly managed in accordance with JFMC and EDC rules tend to be relatively successful. This suggests that JFMC/EDC's support for SHGs is more likely to reach in villages where the level of ownership of JFMC and EDC executive members is high and the organization is operated in a participatory manner.

For these reasons, it is recommended that EFCCD shares information such as the purpose, content and approach of the project, with its staff, so that they can reaffirm and deepen their understanding of the importance of the role of Foresters in JFMCs and EDCs. Furthermore, it is also recommended that education and support for JFMCs and EDCs be continued, so that JFMCs and EDCs can deepen understanding of JFMC and EDC rules and manage the organization in accordance with those rules.

#### (2) Support to Ensure the Sustainability of SHGs by Utilizing Existing Government Poverty Alleviation Support Schemes

In this project, 2,680 SHGs were organized, their capacities were strengthened, and various livelihood improvement activities were carried out in the target villages. As a result, diversification of livelihoods and improvement of incomes were observed, and certain contributions were also made to improving women's social and economic capacities and to reducing poverty. It was expected that the technical support for SHGs from partner NGOs hired in the project would end when the project was completed, and that after project completion,

EFCCD would play a central role in continuing support for SHGs. However, due to personnel and budget constraints, EFCCD has no choice but to concentrate on its original duties of sustainable forest management and wildlife conservation management. In addition, it lacks the technical know-how needed to support the livelihood improvement activities of SHGs, and therefore it has not been able to provide sufficient technical support since the project completion. However, the members of SHGs, including those that are currently inactive, are highly motivated to learn new skills and knowledge related to livelihood improvement activities (product development, production methods, sales and marketing methods, etc.) and organizational management, including accounting management, and there is a great demand for support for these activities.

Therefore, it is recommended that EFCCD utilize existing government support schemes (e.g., the National Rural Livelihood Mission<sup>16</sup>) aimed at supporting and improving the capacity of SHGs, as well as cooperating and coordinating with related ministries and agencies so that SHGs can continue and further develop livelihood improvement activities.

#### 4.2.2 Recommendations to JICA

None

### 4.3 Lessons Learned

#### (1) Creating a Mechanism to Ensure the Continuation of Self-Help Group (SHG) Activities after Project Completion

As the original duty of EFCCD was sustainable forest management, it does not have the sufficient technical know-how to support the livelihood improvement activities of SHGs, and due to personnel and budgetary constraints, it has not been able to provide support to SHGs since the project completion. In order for SHGs to continue their activities after project completion and to sustain the effects and impacts of the project, JICA should have fully discussed and coordinated with EFCCD, state government agencies, and NGOs during the implementation of the project on the support mechanism for the SHGs after the completion of the project, including the utilization of existing government support schemes as mentioned in the above “4.2.1 Recommendations to the Executing Agency” (2).

#### (2) Internalization of Monitoring and Evaluation Activities of the Target Project

This project conducted regular monitoring/evaluation (monthly, quarterly, and yearly), baseline surveys, mid-term/final project impact assessments, etc. as part of the project components. These

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<sup>16</sup> NRLM (National Rural Livelihood Mission): A poverty alleviation program implemented by the Ministry of Rural Development of the Government of India, that promotes self-employment and income-generating activities through organizing SHGs, training and capacity building, the provision of subsidized loans, and technical assistance.



results were very helpful in conducting this ex-post evaluation. In order to understand not only the effectiveness and impacts on the natural environment, such as “water and soil conservation”, “biodiversity conservation”, and “improvement of the natural environment”, but also the effectiveness and impacts on the socio-economic aspects, such as “increased income”, “improvement of women's social and economic capacity/status”, and “poverty reduction”, it is important to conduct the end-term impact assessment based on the baseline survey and to analyze the effectiveness and impacts of the project comprehensively. In this project, such monitoring and evaluation activities were internalized as part of the project scope, and such project design should be recognized as good practice and used as a reference for other similar projects.

End

## Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1. Project Outputs (1) Forest Conservation and Management		
a) Department Forest Area Development and Management	<ul style="list-style-type: none"> <li>• Total intervention area for forest development (20,200 ha)</li> <li>• Fixing forest boundary pillars (1,120 km)</li> <li>• Fire line establishment (2,225 km), Fire fighting equipment (93 sets)</li> <li>• Drainage line treatment (16,500 ha)</li> <li>• Renovation of permanent nursery (118 units), Establishment of clonal nursery (2 units)</li> <li>• Establishment of NWFP Research Centre (2 units)</li> </ul>	<ul style="list-style-type: none"> <li>• As planned</li> <li>• As planned</li> <li>• As planned</li> <li>• 17,515 ha</li> <li>• As planned</li> <li>• As planned</li> </ul>
b) JFM Forest Area Development and Management	<ul style="list-style-type: none"> <li>• Total intervention area for forest development (60,300 ha)</li> <li>• Fire line establishment (6,635 km)</li> <li>• Drainage line treatment (28,600 ha)</li> <li>• JFM nursery establishment (289 units)</li> </ul>	<ul style="list-style-type: none"> <li>• 60,495ha (mostly as planned)</li> <li>• 4,524 km</li> <li>• 9,833 ha</li> <li>• 118 units</li> </ul>
c) Wildlife Conservation and Management	<ul style="list-style-type: none"> <li>• Soil and water conservation work for wildlife divisions <ul style="list-style-type: none"> <li>➢ National park (1 location)</li> <li>➢ Wildlife sanctuary (6 locations)</li> <li>➢ Check dams (8 units)</li> <li>➢ Gully plugs (132 units)</li> <li>➢ Fixing forest boundary pillars (325 km)</li> <li>➢ Check posts, watch towers, and watering place</li> </ul> </li> <li>• EDC activities</li> <li>• Ecotourism (4 sites)</li> <li>• Community reserve establishment (2 locations)</li> <li>• Fuel wood/fodder community plantation (700 ha)</li> </ul>	<ul style="list-style-type: none"> <li>➢ As planned</li> <li>➢ As planned</li> <li>➢ 13 units</li> <li>➢ 114 units</li> <li>➢ 197 km</li> <li>➢ As planned</li> <li>• As planned</li> <li>• As planned</li> <li>• As planned</li> <li>• 268 ha</li> </ul>
(2) Community Development and Livelihood Security Enhancement		
a) Procurement of external organizations	<ul style="list-style-type: none"> <li>• 20 NGOs and supporting organizations</li> <li>• 96 partner NGOs</li> </ul>	<ul style="list-style-type: none"> <li>• As planned</li> <li>• 56 partner NGOs</li> </ul>
b) Community organizing	<ul style="list-style-type: none"> <li>• Establishment of JFMC (140 groups)</li> <li>• Establishment of EDC (800 groups)</li> <li>• Support for 940 village animators</li> </ul>	<ul style="list-style-type: none"> <li>• All as planned</li> </ul>
c) Micro planning	<ul style="list-style-type: none"> <li>• 940</li> </ul>	<ul style="list-style-type: none"> <li>• As planned</li> </ul>
d) SHG organizing	<ul style="list-style-type: none"> <li>• Establishment of SHG (2,680 groups)</li> <li>• Support for establishment of 20 SHG consortia</li> </ul>	<ul style="list-style-type: none"> <li>• All as planned</li> </ul>
e) Income-generating activities (IGAs)	<ul style="list-style-type: none"> <li>• 50 activities</li> <li>• Support for 940 micro businesses and SHGs in the target village</li> </ul>	<ul style="list-style-type: none"> <li>• 54 activities (mostly as planned)</li> <li>• As planned</li> </ul>

Item	Plan	Actual
f) Entry point activities (EPAs)	<ul style="list-style-type: none"> <li>• Small infrastructure development such as renovation of school building, construction of community hall, link road, water supply, etc.</li> <li>• Provision of health services, micro credit, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• All as planned</li> </ul>
(3) Supporting Activities a) Preparation works	<ul style="list-style-type: none"> <li>• Creation of autonomous PMU, 20 Division Management Units (DMUs) and 101 Field Management Units (FMUs)</li> <li>• Soil survey (30,500 ha)</li> <li>• Village selection</li> <li>• Preparation of guidelines, manuals, and handbooks.</li> </ul>	<ul style="list-style-type: none"> <li>• 106 FMUs (mostly as planned)</li> <li>• As planned</li> <li>• As planned</li> <li>• As planned</li> </ul>
b) Strengthening of project implementation bodies	<ul style="list-style-type: none"> <li>• Training of staff members of PMU/DMUs/ FMUs</li> <li>• Improvement of infrastructure: PMU/DMU/FMU office building, DMU/FMU staff quarters, Forest Training Institute (FTI) building</li> <li>• Augmentation of office facilities including communication equipment and planimeter</li> <li>• Procurement of vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• As planned</li> <li>• As planned except construction of PMU office and FIT</li> <li>• As planned</li> <li>• As planned</li> </ul>
c) Capacity building of NGOs/JFMCs/EDCs/SHGs	<ul style="list-style-type: none"> <li>• Training for members of partner NGOs, JFMCs/EDCs/SHGs</li> </ul>	<ul style="list-style-type: none"> <li>• As planned</li> </ul>
d) Monitoring and Evaluation	<ul style="list-style-type: none"> <li>• Project monitoring: periodic monitoring and evaluation (monthly, quarterly, annually)</li> <li>• Baseline survey, mid-term evaluation, end-term impact assessment</li> <li>• Establishment of GIS and Management Information System (MIS)</li> </ul>	<ul style="list-style-type: none"> <li>• All as planned</li> </ul>
e) Communication and publication	<ul style="list-style-type: none"> <li>• Publications (newsletter, leaflets, annual report, etc.)</li> <li>• Public relations and public awareness regarding environmental conservation inside and outside the project target area using publications.</li> <li>• Implementation of Children's forest program (CFP) for 650 schools in six major cities (e.g., Noida, Agra, Lucknow) as part of environmental education and school tree planting (CFP is implemented in collaboration with Japanese NGOs in some areas.)</li> </ul>	<ul style="list-style-type: none"> <li>• All as planned</li> <li>• CFP for 1,000 schools in 13 districts</li> </ul>
f) Phase-Out/Phase-In works	<ul style="list-style-type: none"> <li>• Issuance of project completion certificate</li> <li>• Preparation of Phase-Out/Phase-In plan of JFMCs, EDCs and SHGs</li> <li>• Integration of PMU, DMUs and Forest Development Agencies (FDAs)</li> </ul>	<ul style="list-style-type: none"> <li>• All as planned</li> </ul>

Item	Plan	Actual
g) Survey and research	<ul style="list-style-type: none"> <li>• Survey and research for forest development and management</li> <li>• Research on biodiversity conservation</li> <li>• Research on A/R-CDM</li> </ul>	<ul style="list-style-type: none"> <li>• All as planned</li> </ul>
(4) Consulting Services	<ul style="list-style-type: none"> <li>• Technical assistance for PMU</li> <li>• Assistance for PMU in tender</li> <li>• Assistance for PMU in financial management, establishment of annual implementation plan, and preparation of reports</li> <li>• Assistance for PMU in review and preparation of JFMC operation manual</li> </ul> <p>(Work volume)</p> <ul style="list-style-type: none"> <li>• International consultants: 100 M/M</li> <li>• Local consultants: 162 M/M</li> </ul> <ul style="list-style-type: none"> <li>• Supporting staff: 642 M/M</li> </ul>	<ul style="list-style-type: none"> <li>• All as planned</li> </ul> <p>(Work volume)</p> <ul style="list-style-type: none"> <li>• International consultants: 92 M/M</li> <li>• Local consultants: 254 M/M</li> <li>• Supporting staff: 535 M/M</li> </ul>
2. Project Period	March 2008 – March 2016 (97 months)	March 2008 – December 2017 (118 months)
3. Project Cost		
Amount Paid in Foreign Currency	972 million yen	610 million yen
Amount Paid in Local Currency	15,426 million yen (5,413 million rupees)	8,559 million yen (4,729 million rupees)
Total	16,398 million yen	9,169 million yen
ODA Loan Portion	13,345 million yen	7,404 million yen
Exchange Rate	1 rupee = 2.85 yen (As of October 2007)	1 rupee = 1.81 yen (Average between 2008 and 2017)
4. Final Disbursement	December 2017	