



1. Project Data

Project ID P127015	Project Name BD: Afforestation/Reforestation Project
Country Bangladesh	Practice Area(Lead) Environment & Natural Resources

L/C/TF Number(s) TF-14026	Closing Date (Original) 31-Dec-2016	Total Project Cost (USD) 35,000,000.00
Bank Approval Date 07-Feb-2013	Closing Date (Actual) 31-Dec-2016	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	33,800,000.00	33,800,000.00
Revised Commitment	33,800,000.00	33,800,000.00
Actual	32,679,048.81	32,665,664.02

Prepared by Richard L. Berney	Reviewed by Ridley Nelson	ICR Review Coordinator Christopher David Nelson	Group IEGSD (Unit 4)
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2. Project Objectives and Components

a. Objectives

The project development objective is to reduce forest degradation and increase forest coverage through participatory planning and monitoring and to contribute in building the long-term resilience of selected communities in coastal and hilly areas to climate change. The project development objective will be achieved by: (i) establishing newly afforested and reforested areas using climate resilient species to work as windbreak against cyclones; (ii) strengthening and diversifying alternative livelihoods of forest-dependent communities; and (iii) improving the institutional capacity of the forest department to sustainably manage forest resources in the face of the climate change.(Grant Agreement page 6 and ICR page 5)



b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Will a split evaluation be undertaken?

No

d. Components

Component 1: Afforestation and Reforestation Program (The Bangladesh Climate Change and Resilience Fund - (BCCRF): US\$20.90 million at appraisal; US\$21.26 million at completion). The objective of this component was to increase the afforested/reforested areas through participatory forestry and co-management approach in the degraded forestland, marginal, fallow, and newly accreted land in coastal and hilly areas. In achieving the target of participatory afforestation and reforestation, the component also supported the rehabilitation/reconstruction of the existing field offices of the BFD.

Component 2: Alternative Livelihoods to Support Forest Communities (BCCRF: US\$3.80 million & the Arannayk Foundation (AF): US\$0.19 million at appraisal; BCCRF: US\$5.00 million & AF: US\$0.19 million at completion respectively). The objective of this component was to improve and diversify non-forest-based livelihood opportunities of poor forest-dependent households in selected forest communities.

Component 3: Capacity Development for Forest Resource Planning and Management (BCCRF: US\$5.23 million at appraisal; US\$5.77 million at completion). The objective of the component was to improve the technical knowledge base on forest resource assessment, program monitoring, and long-term planning for the sustainable development of the forest sector.

Component 4: Project Management (BCCRF: US\$3.37 million; Borrower: US\$1.00 million at appraisal; US\$2.97 million & US\$ 1.2 million at completion respectively).

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Project Costs: The ICR Annex 1 shows the project cost as US\$36.29 million, but that only US\$33.49 million was expended up to the date of project closing.

Financing: The Bank project provided US\$ 35 million through the Bangladesh Multi-Donor Trust Fund for Climate Change.

Borrower Contribution:The borrower contributed US\$1.2 million for project management plus US\$0.19 million through the Arannayk Foundation (The Foundation)

Dates: Project was approved by the Board on 2/8/2013. It was closed, without extension, on 12/31/2016. There were two level 2 restructuring, essentially for reallocating funds between project components.

3. Relevance of Objectives & Design



a. Relevance of Objectives

Bangladesh’s forests play a crucial role in the livelihoods of associated communities and in protecting these communities from increasingly severe weather patterns. Because degraded forests are most vulnerable to climate change, afforestation and reforestation of Bangladesh’s coastal and hilly areas are essential elements in meeting the increasing climate challenges. A major challenge of these programs is in ensuring proper management and monitoring of these forest resources.

The project objectives, to reduce forest degradation and increase forest coverage and to contribute in building the long-term resilience of selected communities was in line with the second pillar of its Country Assistance Strategy (CAS) 2011–2014): Reducing Environmental Degradation and Vulnerability to Climate Change and Natural. These objectives continue to be relevant to the 2016-2020 CPF, which attributed importance on enhancing rural income opportunities for the poor rural households, and on increasing the population’s resilience to natural disasters in coastal areas.

Rating

High

b. Relevance of Design

The project components, which focused on afforestation and reforestation investments, support for programs to establish local forestry related enterprises, and strengthening forest resource planning, were all well designed to meet the project's objectives. All the indicators played an important role, either in judging the project’s actual outcome benefits or in laying the conditions for continued future benefits. The Project Development Outcome indicators, area restored or re/afforested, direct project beneficiaries, and the increase in household income of beneficiaries all provide a clear causal linkage to the project objectives, as do the decrease in the number of cases of non-sustainable and illegal use of forest resources and the forest coverage through strip plantations, which were listed as intermediate development indicators. This distinction would also suggest that the number of forest users trained would be better classified as an Intermediate Indicator, along with the number of officials trained on participatory processes, and the revision of the Forest Master Plan.

Rating

Substantial

4. Achievement of Objectives (Efficacy)

Objective 1
Objective



To increase forest coverage.

Rationale

Outputs:

- Multispecies plantations were established. The selection of species was based on their resilience in the specific area being re-afforested.
- Climate resilient species to work as windbreak against cyclones in strip plantations;

Outcomes:

- About 2,080 hectares (ha) of new strip-plantation forest coverage were established, 125% of the target of 1,670 ha. The two year survival of strip plantation seedlings ranged between 87-100%.
- About 17,500 ha of forest land was restored and/or re-afforested, which is about 4% above the target of 17,000 ha.
- Survival percentage was found within the range of 66-100 percent for project plantations and 72-99 percent for plantations outside the project during the three planting years. Although the mean survival rates were not presented in the ICR, additional information provided by the TTL indicated that the overall average survival percentage was 85-95% substantially above the average tropical forests survival percentage of 70% in similar types of projects.
- In about a quarter of the non-project planting areas, serviced by the same Forestry Department officials staff and workers as those in the project areas, survival rates were also very high.

Rating

High

Objective 2

Objective

To reduce forest degradation

Rationale

Output:

- Several capacity building programs and trainings for the BFD and Ministry of Environment and Forests (MoEF) were supported to improve management of forest resources,.
- A total of 76 priority Forestry Department field office sites were rehabilitated and/or reconstructed, well above the appraisal target of 43 existing field-level offices.
- About 436 management and staff were trained in participatory processes, comanagement, climate change impacts on forest and biodiversity, which was about 10% above the project's original target.



- Improved forest assessment and monitoring systems were implemented;
- The Forest Master Plan and the National Forest Policy were updated.
- Community group ownership was instituted for the plantations established in the buffer zone. and community inspection groups were established for the continuous surveillance of the these forests.

Outcome:

- The local communities have, for the most part, not found it necessary to harvest forest resources to meet their livelihood and income needs. As a result, the objective of reducing forest degradation was achieved, with the number of cases of non-sustainable and illegal use of forest resources reduced by 57% over the project period, almost double the target of a 30%, compared to the more typical outcome of 10% in the reduction in forest offences from previous social forestry projects in Bangladesh.
- These results support the ICR's observation of both anecdotal and documented evidence that demonstrated that the project was successful in transforming the attitudes of forest users on the significance of sustainable forest management. and in strengthening their capacity for limiting deforestation and forest degradation,

Rating

High

Objective 3

Objective

To contribute in building the long-term resilience of selected communities in coastal and hilly areas to climate change:

Rationale

Output:

- The project supported the formation and strengthening of 55 Union Federations, including the training of federation leaders in financial and management functions;
- It distributed 16 types of vegetables seeds, about two million fruit and timber saplings, and 21,000 baby chicks and ducklings;
- It supported improvements in the value chain for beef and milk cattle and fish farming.

Outcome:

- Of the 6,000 households in the targeted census, covering the project's 200 targeted poor forest-dependent communities, 88% strengthened and diversified their incomes by at least 30% (with an average increase of these families of 38%). For the targeted communities as a whole, the average annual



family income increased in real terms by about 32%, from the baseline of about BDT 85,000, to about BDT 112,500.

- The development target indicator was to increase individual household income of 70% for beneficiaries participating in alternative income generating activities. The improvement for these households averaged 88%. The ICR notes, however, that the sample group included only those households that had increased their income as a result of project-financed alternative income generating activities.

Rating

Substantial

5. Efficiency

Project effectiveness was delayed by the need to reconcile the operating guidelines of the various agencies and the Government's standards processes. These problems delayed implementation of the project's forest rehabilitation planting component by a full year from the original project design. As a result, the project was reduced from three to two full planting seasons. The implementation status reports reflected the effects of these delays in their Moderately Satisfactory ratings throughout the first two years of the project period. The ICR provided a detailed economic and financial analysis of the project. Its estimation of the benefits, which is given in an annex, includes wood and non-wood forest products and fisheries, as well as the value of protection against extreme weather events. The estimates of value of wood extracted from strip plantations, including that used for poles, cut lumber, and fuel-wood (starting in year 10) are based on a study in Thailand. In hilly areas, forests in Bangladesh provide many non-wood forest products NWFPs, including food, medicine, honey, essential oil, spice, resin, gum, latex, fiber and floss, bamboo and cane, mushrooms, and tamarind. Although they generate only about 6 percent to 8 percent of the resident's total revenue, they support the economic activities of at least 600,000 people. A detailed review of these benefits in India estimated a value of US\$200 per hectare. The value of mangrove forest, in serving as breeding and feeding grounds to support offshore fishers, was estimated in a study in Thailand at an average of US\$45 per hectare of mangrove. Protection against extreme weather events, including storm protection in coastal areas and landslides in hilly areas was estimated based on studies in Indonesia at US\$34 per hectare of new forest coverage. Assuming that forests are maintained during and after the end of the project, for a period of at least 25 years, the resulting IRR for the coastal areas was calculated at 18%, and for hilly areas 14%, with an average IRR of 14.6%. The financial IRR is 41% compared to the appraisal estimate of 36%.

Efficiency Rating

Substantial



a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	12.00	72.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	14.60	74.00 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

The project's objectives were highly relevant to Bangladesh's need to improve the livelihoods of populations that are affected by adverse weather phenomena. The design had some significant shortcomings related, primarily, to timing of the implementation period. Overall, the project substantially achieved its objective of improving the livelihoods of affected populations while reducing the economic impact of extreme weather events. The efficacy of achieving two of the direct project development objectives, the reduction of forest degradation and an increase in forest coverage, were rated High. The rating for the third, higher level objective of building the long-term resilience of these communities was Substantial. Since Efficiency is rated as Substantial, the overall Outcome rating is Satisfactory.

a. Outcome Rating

Satisfactory

7. Rationale for Risk to Development Outcome Rating

The ICR evaluates the risk of reversing or losing the institutional and community capacity for anticipating and managing forest degradation and deforestation, as well as climate impact, as Moderate.

The main risk foreseen in maintaining forest integrity is that the loss of immediate income of forest-dependent communities could reduce their support for maintaining and monitoring the forest plantations established by the project. The project has mitigated this risk by working to instill a sense of ownership in forest-dependent communities and local Forestry officers. The Foundation has committed its own resources to support livelihood activities of the communities to help mitigate this risk, but the Government has provided only 5 percent of the funding needs identified by the Forestry Department for this purpose. The TTL has added the information that they Government has officially approved for the 2018-2019 fiscal year. A second World Bank operation has been proposed.

Climate change could lead to an increase the incidence of cyclones that reduce plantation yields, particularly in the coastal areas. This risk is significantly mitigated by the establishment of forest plantations as a green belt to provide protect the plantations established behind it. This protection has already been demonstrated by the fact that the recent major cyclone (Cyclone Ruano) caused relatively minor damage in many of the project's the well



established plantations, thus confirming that the green belt is able to provide significant protection for future cyclone events.

a. Risk to Development Outcome Rating

Modest

8. Assessment of Bank Performance

a. Quality-at-Entry

The design of the project was appropriate and realistic, and fully appropriate for meeting the project's development objectives. The appraisal team maintained a consistently good working relationship with the grantee and its institutions during preparation and appraisal. However, the delays created by the need to reconcile the requirements of various implementing agencies, which might have been identified at appraisal, caused the project implementation to miss the first planting season. It was not possible to extend the closing date to accommodate this delay in effectiveness, because the Bank had agreed with the multiple donors of the Trust Fund that this Fund was to be closed by the end of FY2017. Earlier recognition of this problem might have led to remedial action.

Quality-at-Entry Rating

Satisfactory

b. Quality of supervision

Seven supervision missions were undertaken over the three and a half years of project implementation. The implementation status report ratings on implementation progress towards achievement of the project development indicators were realistic. The concerned Ministries were informed when issues emerged during these supervisions, which enabled them to take prompt corrective action. The midterm review identified the need for additional indicators to adequately evaluate the project's outcomes, and requested that the implementing agency include it in their information gathering process, which they did.

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Satisfactory

9. Assessment of Borrower Performance



a. Government Performance

The Government demonstrated firm commitments and strong support through its provision of appropriate counterpart funding and its support for the resolution of issues when they arose. The Ministry of Environment and Forests demonstrated strong ownership of the project and provided effective leadership in project implementation. It played an active role in project implementation through the Project Steering Committee.

Government Performance Rating

Satisfactory

b. Implementing Agency Performance

The Project Implementation Unit and Forestry Department provided the necessary support for financial management, procurement, and safeguards. The staff of the field offices of the 10 targeted forest divisions played a key role in ensuring successful project implementation. The Foundation and its partner agencies effectively managed their project component, thereby insuring that the project's outcome targets were over achieved.

Implementing Agency Performance Rating

Satisfactory

Overall Borrower Performance Rating

Satisfactory

10. M&E Design, Implementation, & Utilization

a. M&E Design

The Outcome Indicators of the Results Framework were designed mostly to respond to component-level output objectives rather than measure the project's outcomes. The output oriented proxy indicators that were used were inadequate for reporting on and demonstrating convincingly the achievement of the project's development objectives. The indicator on 'Reforms in forest policy, legislation, and other regulations supported' was too broadly defined to be useful for evaluating changes that would have a positive impact on the project's development objectives.

The MTR identified two specific areas for further quantitative assessments to provide additional evidence of project development outcomes by assessing the impact of improved alternatives on reducing forest degradation and assessing the resilience impact on local communities and the resilience impact on climate change of the afforestation/reforestation. The former was evaluated in terms of how well the plantations would be expected to withstand higher wind speeds, higher rain and inundation, or higher temperature and dry conditions. The technical indicators that were used were the increase in the diversity of trees, the increased share of native species, and the associated ability of these species natural regeneration of saplings and trees. associated with the project's support for afforestation/reforestation activities. The latter



were measured in terms of the extent to which the alternative income generating activities: (i) increase family (disposable) income; (ii) shifted forest communities activities towards lesser use of water, and lower biomass consumption; (iii) reduced their dependence on extracting forest timber, either for fuel or for generation of income. These are indicators (among these, some supplementary indicators) the project monitored.

b. M&E Implementation

The monitoring responsibilities were carried out by the Project Implementation Unit, the Fund, the Forest Directorate, and an independent monitoring group. Reporting was done through quarterly and annual progress reports that described the progress on physical outputs, site-specific activities and their progress, status of civil works, implementation of safeguard instruments, updated on technical studies and training, and significant issues, including those related to procurement and financial management.

The Foundation undertook all the necessary actions to fulfill M&E requirements as described in the design, including developing and utilizing the methodology for surveys for reporting on alternative livelihoods and income. However, because the Independent Monitoring Agency used a different methodology than that used by the Foundation for collecting baseline data and monitoring results, it has not been possible to reconcile their outcome results.

The Bank was able to confirm through the third-party M&E program that there was a substantial level of community involvement in plantation site selection, species choice, and protection programs for the renewed plantations.

c. M&E Utilization

The data and information collected by the third party monitoring consultant was found to be of good quality, but because of the delays in producing and reviewing it, the project managers were unable to utilize it for project implementation decision-making. However the internal data collection and monitoring by the Forestry Department, the Foundation, and the PMU was fully adequate for project implementation decision making. The data generated from the additional indicators established in the mid-term review were very helpful in establishing the logical chain from project activities to outcomes. Consolidated M&E reports were prepared and submitted bi-annually by the PMU. The latter reports effectively utilized the generated data to confirm the project's significant achievements This information was an important element in securing the Government's commitment to obtain additional future funding of participatory forest management and climate change risk management.

M&E Quality Rating

Substantial

11. Other Issues



a. Safeguards

The project was designated as an Environmental Assessment Category 'B'. It triggered safeguard policies on Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04), Forests (OP/BP 4.36), Indigenous Peoples (OP/BP 4.10), and Involuntary Resettlement (OP/BP 4.12), with risks associated with the site clearance of plantations, species selection, minor construction-related disturbances, and community-level livelihood options. An Environmental Management Framework and a Social Management Framework, which also included an Indigenous Peoples Planning Framework, were prepared in consultation with stakeholders. Although, the project was to use pesticides in the plantation program, Pest Management (OP/BP 4.09) was not triggered but relevant processes to address potential negative impacts were included in the environmental safeguard instrument.

There were no significant safeguard issues encountered during project implementation. There were no involuntary resettlements and no recorded negative impacts toward indigenous communities. There were, however, some conflicts involving the selection of participating communities, due primarily to the differences between the criteria used by the Forestry Department and those of the Foundation, as well as some inconsistencies in how these criteria were applied. As a result, during the first half of project implementation, safeguards were rated as Moderately Satisfactory, due primarily to delays in setting up the Grievance Redress Committees and inadequacies in timely submission of reports. The safeguards rating was upgraded to Satisfactory during the second half of the project, after all the actions required by the Environmental and Social Management Frameworks were implemented. Only 30 complaints were received during the lifetime of the project, involving only about 0.1 percent of the targeted communities.

b. Fiduciary Compliance

During the first two years of the project, the fiduciary performance was rated Moderately Satisfactory, particularly related to procurement management. This rating was due to delays in getting procurement staffing and challenges in retaining them. Actions taken by the implementing agencies during the project's last year resulted in an upgrading of the rating to Satisfactory. There were no issues related to the submission of interim unaudited financial reports and annual audit reports and no reported misprocurement of activities.

c. Unintended impacts (Positive or Negative)

The project also provided the project households with improved cooking stoves which reduced fuelwood consumption, sanitary latrines to help maintain sanitary conditions, and tube wells for improved access safe drinking water. The reduction in fuelwood consumption has also reduced the pressure on other non-project forest areas.

The mapping of the potential green belt within the coastal zone of Bangladesh, which was introduced during the MTR as a request from the Government, was instrumental in opening the dialogue within the Government on investing in a green belt, which, once established, could provide significant protection from cyclones and storm surges by reducing wave energy and inland wind velocity, reducing erosion and enhancing accretion by trapping sediments.



Many of techniques established for this project were taken up by reforestation activities undertaken by the Bangladesh Forestry Department outside the scope of this project, which substantially improved their performance, (see section 4.1)

d. Other

12. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	---
Risk to Development Outcome	Modest	Modest	---
Bank Performance	Satisfactory	Satisfactory	---
Borrower Performance	Satisfactory	Satisfactory	---
Quality of ICR		Substantial	---

Note

When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.

The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

13. Lessons

The ICR points out several; important lessons derived from this project

- Attention needs to be given in afforestation projects to the issue of the timing of project effectiveness in relation to the need to start before the planting season begins, for the same reason, delays in project processing that might delay effectiveness need to be addressed quickly.
- Forest rehabilitation projects need to be designed to ensure short-term livelihood incentives for forest communities. The quick realization of these benefits is an important element in facilitating the adoption of effective forest resource management practices.
- A sustained project implementation period is needed for keeping forest-dependent communities engaged in an afforestation activity since it takes time to change attitudes and build ownership in the management of forest resources.
- Since plantation maintenance after an afforestation project closes is essential for sustaining early achievements, it is important to confirm early in the project planning process government's commitment to



continue support.

- Community afforestation support selection criteria need to be consistent. In this project, conflicts arose as a result of different selection methodologies used by the Foundation and the Forestry Department. This could have been avoided if all participating institutions had agreed to utilize the same methodology for the selection of beneficiary communities.
- Allowing limited harvesting of forest products (as opposed to total protection) provides forest-dependent communities with a stake in the benefits and an incentive to participate.

14. Assessment Recommended?

No

15. Comments on Quality of ICR

The ICR was well written overall. The analysis was internally consistent, and based on the evidence provided, and the lessons were well thought out and justified on the basis of the evidence provided in the body of the ICR. It would have been useful to have included a discussion of how the different methodologies used for choosing the beneficiary communities actually impacted the distribution of benefits between better off and less well off communities. Some clarification in the meaning of specialized terms, such as “resilience impact” in section 10a on M&E Design would have also been useful.

a. Quality of ICR Rating Substantial