ICR Review

Operations Evaluation Department

Report Number : ICRR11101

1. Project Data:		Date Posted : 11/12/2001		
PROJ ID : P001682			Appraisal	Actual
Project Name :	Household Energy Project	Project Costs (US$M)	10.5	8.23
Country :	Mali	Loan/Credit (US$M)	2.5	2.5
Sector(s):	Board: ENV - General industry and trade sector (50%), Central government administration (20%), Forestry (15%), Sub-national government administration (15%)	Cofinancing (US$M)	7.3	5.26
L/C Number :				
		Board Approval (FY)		95
Partners involved :	Government of Netherlands	Closing Date	12/31/1999	12/31/2000

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2. Project Objectives and Components

a. Objectives

As outlined in the GEF project document, the project's objectives fall within three categories :
(1) The long-term development objectives are: (i) the reduction of C02 emissions, (ii) the abatement of forest resources depletion, and (iii) increased participation of the private sector in the management of the household energy sector.
(2) The main implementation objectives are to promote (i) popular participation in household energy activities, (ii) rational use of household energy resources, and (iii) improved end-use of household fuels.
(3) The specific objectives are to (i) create an enabling regulatory and policy environment for project implementation; and (ii) provide technical assistance and training to peasants, charcoal makers, producers and sellers of stoves, and urban consumers to, respectively, efficiently harvest and carbonize fuelwood, manage the natural forest in a sustainable manner, effectively market new energy end-use equipment, and rationally use improved biomass and kerosene stoves.

b. Components

(1) Woodfuel Demand . The identification, design and assistance for implementation of a marketing program for the sale of improved biomass and kerosene stoves. This includes the importation of 17,000 kerosene stoves and the local manufacturing and sale of 65,000 charcoal stoves, 60,000 fuelwood stoves, and a combined version of charcoal and fuelwood stoves. Subsidies would be made available on a temporary basis to reduce the market price of these stoves.
(2) Woodfuel Supply . This component consisted of: (i) design of four woodfuel supply master plans for the main towns and determination of the maximum annual sustainable wood supply in the catchment areas; (ii) preparation and assistance to implement village forest management plans in about 260 villages; and (iii) identification, design and implementation of an improved carbonization program for 400 full-time charcoalers and assistance to interested local private entrepreneurs to carbonize and compress cotton stalks to replace charcoal .
(3) Energy Sector Institution Building . Provision of institutional support to: (i) central and local governments to help with project management; (ii) the private sector to produce and sell improved stoves; and (iii) rural communities to assist in implementing their forest management plans.
(4) Information, Education and Communication (IEC) Program. This included two parts: (i) IEC and systematic consumer consultation, executed by private sector operators and focused on the importance of the rational use of energy through the proper use of improved stoves; and (ii) launching of a comprehensive training and client consultation program on forest management tailored to village communities and the creation of rural fuelwood markets.

c. Comments on Project Cost, Financing and Dates

Total project costs were US$8.23 million compared to US$10.5 million at appraisal. The GEF grant of US$2.5 million

was fully disbursed. The Government of Netherlands provided US$2.5 million in co-financing. It should be noted that the cost estimates in para 5.4 Costs and Financing of the ICR do not correspond with those in Annex 2: Project Costs. The Bank-managed GEF grant is US$2.5 million while Annex 2 shows Bank financing as US$5.5 million. The project closed on 12/31/2000, a year later than scheduled.

3. Achievement of Relevant Objectives:

[To better assess achievements against project objectives, overlapping project objectives in Section 2 above have been combined and are in bold below.]

(i) Reduce C02 emissions: At project closure, CO2 emissions are estimated to be reduced by 130,000 tons per year as a result of reduced firewood consumption from the use of improved stoves. This estimate does not take into account changes in emissions from changes in the production and use of charcoal which emits 2.5 times more CO2 than kerosene and natural gas and 3.6 times more than wood. The project supported the more efficient conversion of wood into charcoal through modernization of 100 kilns but it also subsidized the sale of about 100,000 charcoal stoves to primarily new users who would otherwise be using wood.

(ii) Abate forest resources depletion : The promotion of improved stoves is expected to lead to a reduction in firewood consumption by 400,000 tons per year, compared to 330,000 tons at appraisal. However, a control system for regulating the cutting, transporting and monitoring of harvested fuelwood is not fully operational and only collects about 10% of total potential taxation. A decree governing taxation rates for charcoal and fuelwood was issued in 1999, about three years later than planned under the project, and is not adequately enforced to provide sufficient incentive for slowing or preventing the depletion of forest resources.

(iii) Increase participation of the private sector in the management of the household energy sector : Two hundred village rural markets were created via sub-contracts with private businessmen for the sale of sustainably harvested woodfuel products. Eighteen forestry contracts were issued to private operators. The private sector alone with NGOs implemented the IEC program.

(iv) Create an enabling regulatory and policy environment for project implementation : Prior to project implementation, the Government restructured the National Waterways and Forests Department and adopted a number of laws and regulations to encourage local villages to manage their natural resource base. The Forest Service has assumed a new role as supervisor of actions implemented jointly by the Forest Service and the local participants. The fuelwood fiscal policy has been revised to provide tax incentives to exploit forest resources for fuelwood where it is more economically viable and environmentally sound.

(v) Provide technical assistance and training to peasants, charcoal makers, producers and sellers of stoves, and urban consumers to, respectively, (a) efficiently harvest and carbonize fuelwood, (b) manage the natural forest in a sustainable manner, (c) effectively market new energy end -use equipment, and (d) rationally use improved biomass and kerosene stoves :

(a) One hundred efficient charcoal kilns, compared to 400 at appraisal, were converted to the improved Casamance kiln. The ICR does not discuss achievements of project assistance to local private entrepreneurs for compressing and carbonizing cotton stalks to replace charcoal.

(b) Woodfuel supply master plans were prepared for five major towns and were used to determine the most appropriate household energy strategy for each town. Village forest management plans in 200 villages, covering 320,000 ha in total compared to 720,000 ha at appraisal, were prepared. Two hundred thousand tons of dead wood were supposed to have been harvested under the project. However, most of the dead wood was spontaneously cut by villagers during the project's lifetime as a result of the project's IEC program and the creation of rural markets.

(c) and (d) A marketing program for the sale of improved biomass and kerosene stoves was designed and implemented. This marketing program led to the sale of 150,000 improved wood stoves (compared to 160,000 at appraisal), 100,000 improved charcoal stoves (compared to 68,000 at appraisal), and 10,500 kerosene stoves (compared to 17,000 at appraisal). Subsidies were made available on a temporary basis (the GEF project document anticipated a subsidy of up to 50% on the import and sale of the kerosene stoves, the local production of charcoal stoves, and modernization of the charcoal kilns).

The Information, Education and Communication (IEC) Program, implemented by local NGOs and private sector operators, educated villagers on forest management and raised awareness of stove users of the importance of the rational use of energy through the use of improved stoves.

4. Significant Outcomes/Impacts:

(1) The project was a Poverty Targeted Intervention. The ICR anticipates that the project will increase household incomes through improved living standards from improved forest management, stabilized employment in the fuelwood trade, and savings in energy expenditures from the use of improved stoves. Nonetheless, with respect to household expenditures on charcoal, savings by low-income groups needs further analysis. As stated in the GEF project document, switching from wood to charcoal is considered a luxury, "reserved for an elite group of small, relatively well-to-do households, because of its perceived higher cost." The subsidy may have helped reduce the costs of the charcoal stoves for low-income users but charcoal is still 1.3 times more expensive than wood. Little substantiating data on the project's poverty impacts is provided in the ICR.

5. Significant Shortcomings (including non-compliance with safeguard policies):

(1) Enforcement of sustainable fuelwood management, including the decree on taxation of fuelwood and charcoal, continues to be unsatisfactory.

6. Ratings:	ICR	OED Review	Reason for Disagreement /Comments
Outcome:	Satisfactory	Satisfactory	
Institutional Dev .:	Substantial	Substantial	The most significant ID achievements occurred prior to project approval. Board presentation was delayed by two years to ensure that the Government undertook necessary institutional, policy, and regulatory reforms to encourage sustainable wood harvesting and promote local participation in forest management.
Sustainability :	Likely	Likely	Sustainability has been rated likely, based on the ICR's assertions that the sale of improved stoves has continued after project closure. However, further analysis is needed of other determinants of sustainability, not adequately discussed in the ICR: enforcement of the fuelwood flow control system, including collection of taxes and fines; the continued operations of the village woodfuel markets; the continued private sector participation in the absence of subsidies; and decentralization of forest management through revision of current forestry laws to recognize village level rural markets. Moreover, the Borrower's Comments indicate doubts about the sustainability of the legislative and fuelwood management activities supported by the project. Hence, as indicated in Section 8, an audit of this project is of high priority.
Bank Performance :	Satisfactory	Satisfactory	Bank performance is satisfactory although the many objectives of the project, covering outputs and outcomes and varying time horizons, is confusing and points to a lack of project focus.
Borrower Perf .:	Satisfactory	Satisfactory	
Quality of ICR :		Satisfactory	

NOTE: ICR rating values flagged with ' * ' don't comply with OP/BP 13.55, but are listed for completeness.

7. Lessons of Broad Applicability:

(1) As learned in prior forestry projects in Mali and applied in this project, project success is conditional on first establishing an appropriate regulatory framework that will foster an enabling environment for sustainable forest management and greater private sector participation in household energy activities .

(2) The establishment of such a regulatory framework must be accompanied by the development of sufficient institutional capabilities for enforcement of new rules and regulations on sustainable forestry management . Otherwise, there may not be sufficient incentive for users to abide by these . Although the private sector could be effective in collecting fuelwood and charcoal taxes, the Government may be reluctant to relinquish control of this regulatory function.

(3) Villagers are more likely to participate in the project and play an active role in the sustainable management of the forests if they are given exclusive user rights over the forest resources .

8. Assessment Recommended? ● Yes ○ No

Why? Project design is especially innovative in its approach for increasing private sector participation in household energy and promoting the rational use of household energy resources . An audit could provide lessons learned in areas inadequately discussed in the ICR: (i) the targeting of subsidies; (ii) the sustainability of private involvement in the absence of subsidies; (iii) the project's impact on the poor to test the hypothesis at appraisal that charcoal stoves used mainly by the elite would become marketable to poorer consumers; and (iv) the project's impact on the forest resources covered by the village forest management plan . It would also be a building block towards a forthcoming OED study on community based development and an ongoing study on private sector development in energy.

9. Comments on Quality of ICR:

The ICR adequately covers the relevant issues . However, there are inconsistencies between the project costs in para 5.4 of the ICR text, Annex 2 Project Costs and Financing, and the estimated project costs at appraisal, outlined in the GEF project document. The layers of project objectives, differentiated by their time horizon but sometimes overlapping, seemed to have hindered a more pointed analysis of project achievements and outcomes .