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PROJECT PERFORMANCE ASSESSMENT REPORT

MALI

HOUSEHOLD ENERGY
(TF 28304-ML)

June 23, 2003

Sector and Thematic Evaluation Group
Operations Evaluation Department

Currency Equivalents (annual averages)

Currency Unit = CFA Franc (CFAF)

1988	US$1.00	298.00
1989	US$1.00	319.00
1990	US$1.00	272.00
1991	US$1.00	282.00
1992	US$1.00	265.00
1993	US$1.00	283.00
1994	US$1.00	555.00
1995	US$1.00	499.00
1996	US$1.00	512.00
1997	US$1.00	584.00
1998	US$1.00	590.00
1999	US$1.00	616.00
2000	US$1.00	712.00
2001	US$1.00	733.00

Abbreviations and Acronyms

CAS	Country Assistance Strategy
CBD	community-based development
CDD	community-driven development
ESMAP	Energy Sector Management Assistance Program
GEF	Global Environment Facility
ICR	Implementation Completion Report
MTR	mid-term review
NEAP	National Environmental Action Program
OED	Operations Evaluation Department
PAD	Project Appraisal Document
PPAR	Project Performance Assessment Report
PTI	Program of Targeted Intervention

Fiscal Year

Government: January1 – December 31

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

About this Report

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

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

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

About the OED Rating System

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

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

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

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

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

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

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

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

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This report was prepared by Nalini Kumar, who assessed the project in October 2002. The report was edited by William Hurlbut. George Garner Woodall provided research support. Soon won Pak and Helen Joan Mongal provided administrative support.

Principal Ratings

	*ICR**	*ES**	*PPAR*
Outcome	Satisfactory	Satisfactory	Moderately Unsatisfactory
Sustainability	Likely	Likely	Non Evaluable
Institutional Development Impact	Substantial	Substantial	Substantial
Bank Performance	Satisfactory	Satisfactory	Unsatisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

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

Key Staff Responsible

Project	*Task Manager/Leader*	*Division Chief/ Sector Director*	*Country Director*
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Preface

This is the Project Performance Assessment Report (PPAR) for the Household Energy Project, for which a Global Environment Facility (GEF) grant for US$2.5 million (SDR 1.6 million) was approved in June 1995. The grant became effective in October 1995 and closed in December 2000, one year behind schedule. An Implementation Completion Report (ICR; Report No. 22473) was submitted by the Africa Region on July 17, 2001.

This report was prepared by the Operations Evaluation Department (OED) based on the ICR, the GEF Project Document (Report No. 14350, June 1995), review of Bank files and a survey of relevant literature. An OED mission traveled to Mali in October 2002 where it discussed the project with Bank staff, relevant government officials, nongovernmental organizations, beneficiaries, donors, consultants, and academics. The cooperation and assistance of all stakeholders and government officials is gratefully acknowledged as is the support of the staff of the World Bank Country Office in Bamako. The visit by the OED mission to Bamako coincided with that of a team evaluating the transitional phase of support by Netherlands for Mali's Household Energy Strategy. This report benefited tremendously from discussions with that team and the draft report produced by them. The report also benefited from the preliminary findings of a desk review carried out in OED *Community-Driven Development: Lessons from the Sahel-An Analytical Review*. Since the project involved participation of village communities in forest protection and management, the assessment findings will inform a forthcoming OED evaluation of Community-Driven Development (CDD).

Following standard OED procedures, the draft PPAR was sent to the borrower for comments before being finalized. Borrower comments are reflected as footnotes throughout the report and also included as Annex B.

Summary

This is the Project Performance Assessment Report (PPAR) prepared by the Operations Evaluation Department on the Household Energy Project in Mali for which a Global Environment Facility (GEF) grant for US$2.5 million was approved in June 1995. The grant became effective in October 1995 and closed in December 2000, one year behind schedule.

One of the most important causes of Mali's serious environmental problems has been over-exploitation and indiscriminate destruction of its forest resources. As in most Sahelian countries, fuelwood and charcoal meet 90 percent of the domestic energy needs of the country. The overarching objective of the Household Energy Project was to improve the management, and promote rational use, of energy resources. GEF involvement was to help support the environmental policy objectives of the Government of Mali with particular emphasis on the reduction of CO_2 emissions and abatement of forest resource depletion. Lessons learned from the IDA-financed Forestry I and II projects in Mali and the Household Energy project in Niger informed the project design, although not as thoroughly as they might have. The project design was ambitious and complex, even though there were essentially only two main components, one related to household energy demand and the other to household energy supply. On the demand side, the private sector was to play the lead role in marketing a variety of fuel-efficient stoves, and the project was to provide support for the identification, design, and implementation of a marketing program. The supply component was to focus on mobilizing popular participation in the management of the natural forests and in restructuring the fuelwood trade so that traders increasingly got their suppliers from managed forests.

The project was co-financed by GEF and the Netherlands, while Germany and France provided parallel financing. The project's objectives were sound and relevant for the household energy sector. The PPAR rates outcome as moderately unsatisfactory rather than satisfactory because, although reasonable success was achieved in meeting several of the quantitative targets, several fundamental issues that are crucial to efficient fuelwood supply management were not thoroughly addressed, and there were significant shortcomings on the demand side. It is also difficult to say how much of the long-term development objective of reducing CO_2 emissions was achieved. Though the project was designated a Program of Targeted Interventions (PTI), it is also difficult to tell how much the project actually improved the living standards of the urban/rural population, particularly of the poor, as there were no indicators to measure changes in living standards.

The PPAR rates sustainability as non-evaluable at this stage. The project closed in December 2000. The Netherlands provided funding for a transitional phase. However, several challenges, such as establishing effective monitoring and control of fuelwood markets, harmonization of the village level rural markets with the decentralization framework, remain, and if they are not addressed appropriately sustainability will be unlikely. A follow-on Bank project has been prepared (expected to go to the Board in June 2003); this will provide an opportunity for the Bank to address the shortcomings. Institutional development impact is rated substantial. Bank performance is rated unsatisfactory because project design had significant shortcomings despite the long

preparation period, and supervision was also wanting on several fronts. Borrower performance is rated satisfactory.

The PPAR reports on several important design and implementation issues that need more attention in such an operation. In addition, since the project design incorporated a participatory approach, the design and implementation of the demand and supply components have also been assessed on their Community Based Development (CBD) and Community Driven Development (CDD) aspects. The experience of the Household Energy Project also offers several important lessons for similar interventions in Mali and elsewhere:

- The importance of budgeting adequate time and resources in a follow-on project to consolidate the achievements and overcome the challenges of the predecessor project cannot be overemphasized. Issues that need urgent attention have been highlighted throughout the report. Unless this is done effectively the gains made in setting the pieces of a sound strategy in place may be lost.

- It is important that appropriate incentives are provided to Bank and Borrower project teams to design performance indicators that monitor outcomes. Only then can effective results be achieved. Unless outcome is emphasized, during implementation, project teams become preoccupied with meeting output targets, and progress on outcome gets neglected.

- Given the poverty alleviation mandate of the Bank, in a PTI intervention it is important that development objectives are framed partly in terms of poverty reduction. This should be done in a way that is monitorable and should be backed up in design by a monitoring and evaluation system capable of measuring poverty impact.

Gregory K. Ingram
Director-General
Operations Evaluation

1. Background

1.1 Mali is a large, landlocked country in Sahelian West Africa. With an annual per capita income of US$240, it is one of the poorest countries in the world with some of the worst social indicators.[1] More than 60 percent of its population of about 10 million lives below the poverty line. Though poverty is primarily a rural phenomenon in Mali, it is also on the increase in urban areas.

1.2 Agriculture and livestock together provide livelihood to about 80 percent of the population and account for nearly 50 percent of the country's GDP. Agro-industries (75 percent of industrial GNP) dominate the industrial sector.[2] Less than a third of the country's land area is arable. Desert or semi-desert conditions are prevalent in much of the northern part of the country. Here pastoralism is the dominant production activity. The rapidly rising population in the country has put increasing pressure on the fragile natural resource base, and, along with recurring droughts, has contributed to the process of desertification in the Sahel region. Agricultural production, even in the southern part of the country, where rainfall is relatively abundant but variable, is constrained by a poor road network and market infrastructure, inadequate storage and processing facilities, high exposure to climatic risks, weak institutional and legal environment, and inadequate technical skills. Agriculture production—of yams, cassava, maize, sorghum, groundnut, and beans—is also largely rain-fed. The country has significant irrigation potential but little of it has been tapped. Rice remains the principal irrigated crop in Mali. Commercial crops, mainly cotton, are primarily grown for export. The importance of gold as a source of export revenue has increased tremendously in recent years.

1.3 As in most Sahelian countries, fuelwood and charcoal meet 90 percent of the domestic energy needs of the country. The modern energy sector is largely undeveloped. The household sector is the largest energy consumer representing about 88 percent of total energy demand. The high demand for fuelwood energy puts a tremendous strain on the wood resources of the country. Mali is lightly forested with around 9 percent forest cover and an additional 14 percent of other wooded land.[3] There are wide variations in the distribution of the forest/tree cover. Some areas in the southern part of the country, like the Sikasso and Koulkoro regions, are quite heavily forested, whereas a large part of the north is semi-desert or desert with sparse or no vegetation. The use of charcoal as an energy source has been expanding rapidly, primarily in the urban areas. The increasing demand for charcoal from major cities has created pockets of deforested areas around urban centers and along access roads in the southern part of the country.

1.4 Forest resources in Mali are the property of the State, their exploitation governed by a restrictive Forestry Code. The Malian Forest Service was created in 1935 to protect the local forest resources against the destructive activities of the local people through various control instruments (for example, permits and fines). But forest legislation

1. The UNDP 1995 Human Development Report ranked Mali 172 out of 174 countries.

2. As noted in *Future Energy Requirements in Africa's Agriculture*, an FAO contribution to the African Energy Program of the African Development Bank.

3. FAO Web site: http://www.fao.org/forestry/fo/country/index.jsp?geo_id=68&lang_id=1

enforcement was heavy-handed and the under-staffed and under-equipped forest service had little success in enforcing the Forestry Code and adequately managing the forest resources. The repressive measures also created frustration and resentment in the local populations.[4] The local population had no control over whom the forestry agents gave official permission to exploit the local forest resources, and hence had little incentive to use the resources in a sustainable manner themselves. The overall result was uncontrolled exploitation of forest resources.

1.5 In the past two decades, and especially since the popular uprising of March 1991, which toppled the former single-party regime of President Traoré, there has been growing interest in decentralization (which is also considered a crucial step in the fight against poverty) and greater willingness to encourage participation of communities in forest resource protection and management. Given the fragile ecosystem, the government attaches high priority to environmental protection and is attempting to reorient forestry and household energy laws and strategies toward greater participation of the rural population with the assistance of the World Bank and other donors.

1.6 The government formulated a comprehensive household energy strategy with assistance from the Energy Sector Management Assistance Program (ESMAP) in 1992. This strategy was to be part of the National Plan to Prevent Desertification, which was initiated in 1987. The strategy aimed to facilitate access of both the urban and rural population to modern forms of energy and protect the natural environment against uncontrolled and damaging exploitation of biomass. The Household Energy Project under assessment was based on this strategy and was prepared by the government with funds available under a previous credit, the Second Power Project (Credit 1998).

1.7 The overarching project objective was to improve the management of and promote rational use of energy resources. This primary objective was categorized into *long-term development* objectives, *implementation* objectives, and *specific* project objectives. The *long-term development* objectives were reduction in CO_2 emissions, abatement of forest resource depletion, and increased participation of the private sector in the management of the household energy sector. A Global Environment Facility (GEF) grant in the Climate Change focal area was to help support the environmental policy objectives of the Government of Mali with particular emphasis on the reduction of CO_2 emissions and abatement of forest resource depletion The main *implementation* objectives were to promote popular participation in household energy activities, rational use of household energy resources, and improved end use of household fuels. *Specific* objectives were to create an enabling environment for project implementation, provide technical assistance and training to peasants, charcoal makers, producers, and sellers of stoves, and urban consumers to efficiently harvest and carbonize fuelwood, manage the

4. “Bush fires were entirely forbidden although fires at the start of the dry season have been widely regarded as favourable to pasture development and the flowering of certain trees. When a forestry agent detected a bushfire the entire village was punished and had to pay a fine. Villagers often recount how their ‘chef de village’ was humiliated and jailed until the village paid the fine. The relationship between the Forestry Service and villagers has been very poor due to the way the laws have been enforced. Villagers found forestry agents very repressive, and are still suspicious of programmes that increase the presence of forestry agents in their village.” IIED 1998.

natural forest in a sustainable manner, effectively market new energy end-use equipment, and rationally use improved biomass and kerosene stoves.

2. Project Design and Implementation

PROJECT DESIGN

2.1 The project design was ambitious and complex, even though there were essentially two main components, one related to the demand and the other to the supply of household energy. On the demand side, the private sector was to lead in marketing a variety of fuel-efficient stoves and the project was to support the identification, design, and implementation of a marketing program. The demand component was to support a comprehensive information and education program on the rational use of energy, as well as temporary subsidies to assist consumers in overcoming market barriers. By reducing the market price of improved kerosene and charcoal stoves, the project hoped to overcome consumer perception that the new product was financially out of their reach. This was expected to increase consumer demand for the stoves, which was in turn expected to induce a production increase. Information campaigns and price monitoring were to ensure that the subsidy was passed on to stove buyers. While the kerosene stoves were to be imported, charcoal and fuelwood stoves were to be locally produced and the project was to train local blacksmiths in their manufacture. The government was to provide the supportive environment for private sector entrepreneurs to produce and sell improved stoves.

2.2 The supply component was to focus on mobilizing popular participation in the management of the natural forests and in restructuring the fuelwood trade so that traders increasingly got their supplies from managed forests. It was to support the design of fuelwood supply master plans for five towns, assist the preparation and implementation of village forest management plans in about 260 villages, and support the design and implementation of a carbonization program. The component was to also provide institutional support for central and local government authorities to help with project management and assistance for rural communities in implementing their management plans. Comprehensive training, client consultation, and an information and education program on forest management was also to be supported. The concept of a rural fuelwood market was first developed under the Niger Household Energy Project in 1989 and the idea was replicated in the project in Mali. The fuelwood market concept is an innovative approach to sustainable management in the sector. These markets were to serve the need of the urban areas and were to be located around major cities such as Niamey and Bamako and along the main fuelwood supply routes (SOS Sahel 2000). Responsibility for managing the forest areas was transferred to the communities. The supply component was the larger component accounting for 70 percent of the planned resource allocation.

2.3 In addition to the national objectives, GEF involvement gave the project a global environmental focus. Since net CO_2 emissions from charcoal are considerably higher than kerosene, the GEF grant was to be used to reduce the cost and market entry barriers for first-time purchasers of kerosene stoves or cotton stalk briquettes instead of charcoal.

Moreover, the improved carbonization techniques were to increase the yield and quality of charcoal produced.

2.4 The project was a Program of Targeted Interventions (PTI) and was expected to improve living standards of the rural populations in affected areas. Improved stoves were expected to also reduce the cost of cooking for low-income consumers. The project was classified as environmental category C. Use of improved wood, charcoal and kerosene stoves was to also contribute significantly to reduced indoor environmental pollution as well as help achieve the government's long-term goals (see para. 1.7).

2.5 Lessons learned from the IDA-financed Forestry I and II projects in Mali and the Household Energy project in Niger informed the project design (though in reality to a somewhat limited extent, as discussed later in para. 3.6). The experience of the earlier projects highlighted the importance of policy and institutional reform to the success of such interventions. The government introduced several reforms during project preparation to help build a policy and regulatory environment conducive to the implementation of project activities. These reforms consisted of (a) a law regulating the transfer of forest resources control and management from the State to village management associations; (b) a decree transforming the Forestry Department from a policing institution into a technical assistance organization; and (c) a law governing the fiscal and regulatory framework for fuelwood trade.

PROJECT FINANCING PLAN

2.6 At appraisal, total project cost was US$11.2 million. US$5.5 million was to be co-financed by GEF (US$2.5 or 22 percent of project cost) and the Netherlands (US$3.0 million). The remaining amount was to be provided in the form of parallel financing by France and Germany. The government was to contribute US$1.2 million. The GEF grant was to finance the import and sale of kerosene stoves at reduced retail price, including information campaigns aimed at consumers and retailers, the purchase of equipment to modernize kilns and training of charcoalers, the purchase of equipment, and training of operators to carbonize and compress cotton stalks into briquettes. The Netherlands was to co-finance the preparation and implementation of the urban fuelwood supply master plan, the plan for recovery of dead wood reserves and the development and implementation of forest management plans outside the Bamako and Sikasso areas. Germany was to finance all wood stove activities, including promotional and marketing activities, the M&E system for stove dissemination training and technical assistance. France was to finance the design, development, and implementation of village management plans in the gazetted forests around Bamako as well as in the Sikasso area.

2.7 Actual project cost was US$8.23 million. Only 16 percent of the estimated amount was spent on the carbonization program. Expenditure on skills development and public awareness was also significantly lower than estimated. The Netherlands funds and the GEF Grant were fully disbursed. The Government of Mali contribution is reported to be as planned—partly provided in funds and partly through waivers of taxes, customs duties, and other fees and tariffs. GTZ provided support for an improved wood stove program (about 2 million Deutch Marks). Coopération Français provided support for forest control in the third region of the country (US$0.27 million), and AFD financing

was available for the management of classified forests around Bamako between 1996–2000 (US$2.2 million).

PROJECT IMPLEMENTATION

2.8 Project preparation began in 1991 and was carried out in close collaboration with the government and representatives of the private sector, NGOs, and consumers through client consultation as well as donor meetings with the co-financiers and parallel financiers. The project was approved in June 1995 and became effective in October of the same year. The preparation period was long because the Bank required that major structural, policy, and institutional changes be introduced up front. The mid-term review (MTR) was held in December 1997. The project closed in December 2000, one year behind schedule.

2.9 A Project Steering Committee composed of staff from the Ministries of Energy and Rural Development was responsible for overall project coordination. Day-to-day coordination and management was the responsibility of a Project Coordination Unit, which also comprised members from both ministries. Several factors delayed the start up of the project. Most of the project vehicles were to be procured in the first year of the project but arrived in June 1998. There was delay in recruiting for technical assistance, insufficient counterpart funds, and delayed adoption of the fuelwood taxation decree. The implementing agency's unfamiliarity with Bank procurement rules also delayed start up. The long project preparation period should have ensured that these key issues received attention earlier. The project was extended by one year to make up for the slow start during the first year of implementation. The rising US $/CFAF exchange rate adversely affected the importation and sale of kerosene stoves. There was considerable NGO participation in the promotion, production, and commercialization of charcoal and kerosene stoves, in identifying and establishing rural fuelwood markets and village forest management systems.

3. Analysis

RELEVANCE

3.1 Project relevance is rated **substantial**. The project's objectives were sound and relevant for the household energy sector. One of the most important causes of Mali's serious environmental problems has been over-exploitation and indiscriminate destruction of its forest resources. Project objectives were in keeping with the Bank's Country Assistance Strategy (CAS; January 1995), the ESMAP household energy strategy and the National Environmental Action Program (NEAP), under preparation at the time of project approval. The project concentrated on three important aspects: environment, private sector, and community participation—all recognized as important in the CAS. As also acknowledged in other evaluations, the concept of the rural fuelwood

market is very relevant to the economic and political situation of Mali.[5] Implementation of the improved stove program was also expected to contribute to reduced indoor pollution, thereby improving working conditions for women.

EFFICACY

3.2 Efficacy is rated **modest**. As Box 1 notes, it is difficult to tell how much progress was achieved on several of the objectives. The discussion in the rest of the report explains why this is so. The project was reasonably successful in meeting several of its quantitative targets. But several fundamental issues that are crucial to efficient fuelwood supply management were not solved. In addition, there were significant shortcomings on the demand side.

Box 1: Project Objectives and Progress on their Achievement

Objectives	Achievements
Long term development objective: • reduction in CO_2 emissions; • abatement of forest resource depletion; • increased participation of the private sector in the management of the household energy sector;	• Not clear how much the objective of reduction in CO_2 emissions was achieved. • No reliable data available to show how project investments may have reduced fuelwood harvesting and use. • Difficult to say how much of the increased participation in household energy activities can be attributed to the project.
Implementation objectives: • promote popular participation in household energy activities; • rational use of household energy resources; • improved end use of household fuels;	• largely achieved; • not clear how much achieved; • not clear how much achieved
Specific objectives: • create an enabling environment for project implementation; • provide technical assistance and training to peasants, charcoal makers, producers and sellers of stoves and urban consumers to efficiently harvest and carbonize fuelwood; • manage the natural forests in a sustainable manner; • effectively market new energy end-use equipment and rationally use improved biomass and kerosene stoves.	• Partial achievement—monitoring and control of fuelwood markets not handled; • Largely achieved; • Not clear how much achieved; • Partial achievement

5. « La mission d'évaluation trouve le concept 'Marché Rural' très pertinent dans le cadre politique du Mali et notamment de la Lutte Contre la Pauvreté. Le concept 'Marché Rural' a des synergies importantes avec la décentralisation et la bonne gouvernance. Premièrement, le Marché Rural contribue à la responsabilisation et à l'organisation villageoise à travers la SRG, la comptabilité interne et externe, la négociation, la protection et la valorisation d'une ressource commune. Deuxièmement, le Marché Rural commence à contribuer aux ressources de la Commune Rurale par le biais de la fiscalité. »

"The evaluation mission finds the 'Rural Market' concept very relevant in the political framework of Mali and in particular for the Fight Against Poverty. The "Rural Market" concept has significant synergies with decentralization and good governance. Firstly, the Rural Market contributes to responsabilization and village organization through the SRG, internal and external accountancy, negotiation, protection and valorization of a common resource. Secondly, Rural Markets are beginning to contribute to the resources of the Rural Commune by means of taxation." Kerkhof Paul and Brehima Beredogo 2002.

3.3 More than 100,000 improved stoves (against an original target of 60,000) were sold. There is no longer any direct subsidy on charcoal stoves and a large number of improved wood and charcoal stoves are now manufactured locally indicating that there has been success in promoting increased private sector participation in household energy activities.[6] However, it is difficult to say exactly how much of the increased participation can be attributed to the current project as other donor-assisted projects also supported improved stoves programs in the country.[7] Less success was achieved in promoting increased use of kerosene stoves and briquette production, promotion of which was considered the most important factor in reducing CO_2 emissions.[8] The imported kerosene stoves were not a commercial success for several reasons: (a) their high price because of the rising US$-CFAF exchange rate; (b) the increase in the price of petroleum products; and (c) technical problems encountered with some stoves.[9] It is disconcerting that these problems were not anticipated and adequately dealt with. Especially with such a long project preparation period, it should have been possible to plan for such contingencies. For example, a sensitivity analysis on the potential increases in petroleum product prices would have given private investors a clear perception of the risks involved in entering the market. With research, field testing, and demonstration the technical problems encountered could have easily been dealt with. It is also not clear from project documents whether the project design had unambiguously laid out responsibility for bearing the price risk.

3.4 On the supply side, fuelwood master plans were prepared for Bamako, Mopti, Koutiala, Segou, and Kayes and were used to establish appropriate household energy strategies for each town. Among other things, these plans were to also determine the maximum annual sustainable wood supply in the catchment areas of the concerned towns. A significant number of communities were mobilized and 200 village forest management plans were produced and an equal number of rural fuelwood markets (instead of the 260 planned at appraisal) were created. A substantial number of

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[6] The Borrower in its comments clarifies that the private sector played a significant role in all project activities. They note that all physical realizations of the project were executed by the private sector. On the demand side, all distribution, manufacturing, importing, sales, maintenance, training, animation and information acts were undertaken by the private sector (artisans, smiths, commercemen, import-export, NGO, communication professionals, etc).

[7] The Borrower in its comments clarifies that no other stove distribution program was in progress at the same time as the project. However they do note that there have been other stove distribution programs supported in the past.

8. “In particular, GEF support for this project will focus on reducing the first cost and market entry barriers for consumers who wish to start using kerosene or briquets instead of charcoal.” Para 19, page 6 Project Document, Global Environment Facility June 1995.

[9] The Borrower in its comments notes that the diffusion of kerosene stoves did in fact have a lot of problems, such as: (i) the difficulty in getting well functioning stoves; (ii) the increase in the value of the dollar as the stoves were imported, (iii) the increase in the cost of kerosene. They clarify that towards the end of the project a well functioning stove was identified and imported. The project had planned on distributing 20,000 kerosene stoves and it was able to distribute about 10,000. The Borrower further notes that the increase in the value of the dollar and the price of kerosene (160 CFA at the beginning against more than 400 towards the end of the project) effectively altered the distribution of the stoves. But this situation cannot be blamed on the project which has no competencies in this regard. It was impossible for the project to forsee this situation.

charcoalers were trained in improved techniques and numerous campaigns to sensitize villagers to use wood resources in an efficient manner were held. However 320,000 hectares (against the planned 720,000 hectares) were brought under improved forest management and the planned deadwood recovery did not take place.

3.5 The centerpiece of the supply strategy was the development of rural fuelwood markets. Under this concept, a local community is given formal control over the area of natural woodland that is traditionally recognized to be in its jurisdiction. Along with control, the community is given exclusive rights to the sale of fuelwood produced from that area in return for an agreement to manage the woodland sustainably. A rural market for the sale of fuelwood from the area is established.

3.6 Crucial to the efficient functioning of fuelwood markets is an effective control and monitoring system. Without such a system the fuelwood markets cannot be made competitive. If dealers can cut wood from uncontrolled areas without penalty they will have no incentive to go to fuelwood markets. Though the project helped establish 200 rural markets, the essential conditions for their effective operation—the monitoring and control system—could not be established under the project. A higher taxation rate had been established for wood coming from uncontrolled areas to encourage traders to get their wood supplies from controlled areas where the rate was lower.[10] In theory, this strategy prevents indiscriminate exploitation of natural woodlands. In practice, however, such a strategy is very difficult to implement. Shortage of personnel and vehicles and tight budgets make it difficult for forest agents to monitor the movement of wood from uncontrolled forest areas. Moreover, it has been pointed out, that one of the reasons for taxing wood is to get revenues for the government and since fuelwood markets operate in definite areas, it is easier for forest agents to track wood coming from them and hence fulfill any revenue earning quotas.[11] Significant corruption and fraud in terms of payments by transporters to forest agents have also been reported. The actual application of the differentiated taxation rates in Mali has skewed the competitive balance against rather than in favor of controlled markets (Foley, Kerkhof and Madougou 2002). It is now widely accepted that the system does not provide the incentives to make the village wood management system a sustainable activity. The importance of monitoring and control was clearly recognized by a joint UNDP/World Bank report on the Niger Household Energy Project on which the Mali project was modeled.[12,13] Since the Mali

10. In a controlled area a detailed management forest management plan has been prepared and agreed between the community and the concerned government entity. Such a plan divides the wooded area for a community into parcels, specifying clearly the order in which the parcels can be harvested and laying down annual harvesting quotas.

11. Even then, the woodflow control system currently collects only about 10 percent of the potential revenues.

12. “It was clear, however, that simply setting up such rural markets would achieve little in itself. Fuelwood dealers, for example, would not willingly buy their supplies from markets run by well-organized local communities if they could obtain the fuelwood they wanted more cheaply from areas where control over cutting and the amounts harvested was weak or nonexistent. They would require financial incentives to use the markets rather than the open woodlands, and controls and penalties would be needed to ensure that the new system was not abused. In short, successful implementation of the rural market system required a comprehensive planning, monitoring, taxation, and control system that covered the entire fuelwood

project was replicating the fuelwood market model developed for Niger, Bank staff should have been aware of the significance of the shortcoming. Further, although supervision missions recognized the problem, the importance of working out an urgent solution apparently was not fully appreciated.[14] Currently, lack of adequate monitoring and control is having a large negative impact on the functioning of the rural markets in Mali. An independent evaluation notes that already more than half the rural markets established under the project are no longer functional.[15]

EFFICIENCY

3.7 A qualitative assessment of efficiency supports a rating of **modest**. No economic rate of return was calculated for the project at either the appraisal or the completion stage. The ICR notes that this was because of the innovative and learning nature of the project. Neither was any other measure of efficiency provided. This is a significant shortcoming and an attempt at calculating an economic rate of return should have been made at least at the ICR stage, particularly since the main parameters of the project are quantifiable.

3.8 The kerosene stoves were not a commercial success and it is difficult to say how much of the success on the improved wood and charcoal stoves was because of the current project as other donor and NGO efforts have also attempted to promote an improved stove program in the country. The supply component was the larger of the two components with 70 percent of resources going to it, and as already noted (para. 3.6), crucial supply issues relevant to establishing sustainable resource management and abatement of forest resource degradation have not been tackled. Though 320,000 hectares were brought under improved management, 200,000 tons of deadwood that was supposed to have been harvested during the lifetime of the project was not. In addition, the improved carbonization program and the success in the promotion of improved charcoal stoves may well have increased tree harvesting for increased production of charcoal. No

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catchment zone of each major urban area." The Niger Household Energy Project World Bank Technical Paper No. 362. Energy Series. Joint UNDP World Bank ESMAP. April 1997.

13. Effective control over fuelwood transport was the key to the proposed new system. If there were substantial loopholes, enabling dealers to evade the taxes on wood from uncontrolled areas, the competitive position of the new markets would be undermined. The answer was to upgrade the existing, largely ineffectual, control system. The Niger Household Energy Project World Bank Technical Paper No. 362. Energy Series. Joint UNDP World Bank ESMAP. April 1997.

14. "It is now agreed that the taxation system will not provide the incentives to make the village wood management systems a sustainable activity, and that this should be changed." PSR 08/21/2001

15. « La présente évaluation s'est limitée pour l'essentiel aux Marchés Ruraux créés ou finalisés pendant la phase transitoire ; les Marchés Ruraux qui fonctionnent depuis 1997 n'ont pas été enquêtés. Malgré cette limitation, plusieurs paramètres étudiés par la mission semblent coïncider avec ceux des Marchés Ruraux créés dans la première phase. D'ailleurs, les difficultés vécues par les Marchés Ruraux de la première phase sont mises en évidence par le constat que la moitié n'est plus fonctionnelle. »

"The present evaluation is limited essentially to Rural Markets created or finalized during the transitional stage; Rural Markets which have functioned since 1997 were not surveyed. In spite of this limitation, several parameters studied by the mission seem to coincide with those of the Rural Markets created in the first phase. Also, the difficulties experienced by Rural Markets from the first phase are highlighted by the observation that more than half are no longer functional." Final Report of the Transitional Phase. Paul Kerkhof and others. November 2002.

reliable data are available to show how project investments may have reduced fuelwood harvesting and use.

OUTCOME

3.9 On balance the assessment rates outcome **moderately unsatisfactory**. OED rates outcome as moderately unsatisfactory when a project is expected to achieve its major relevant objectives but with major shortcomings. The shortcomings outlined under efficacy are significant.

3.10 It is also difficult to say how much of the long-term development objective of reducing CO_2 emissions was achieved. The ICR reports that 130,000 tons of CO_2/year were abated (ICR, Annex 1) and claims that the global objective of reducing CO_2 emissions was achieved through the introduction, sale, and use of improved fuelwood and charcoal stoves (ICR para 4.1 page 4). It is not clear from the ICR how the amount of CO_2 abated per year was calculated. While introduction of improved stoves will no doubt result in fuelwood saving, the current assessment has concerns about whether overall project activity did result in CO_2 abatement on the order claimed for several reasons. **First**, a significant part of the GEF grant was to promote use of kerosene stoves to substitute for the use of charcoal (Footnote 8). However, the kerosene stove promotion part of the project was the least successful subcomponent. **Second**, the project was successful in promoting fuel-saving charcoal stoves. Though the ICR estimates this, there is no reliable data to show how much saving in wood fuel harvesting and use was actually achieved.[16] Moreover, researchers argue that the link between fuel-saving stoves and prevention of woodland depletion is very weak.[17] **Third**, the promotion campaigns supported under the project helped increase the use of improved charcoal stoves and hence increased charcoal consumption in the cities.[18] Data supplied by the Household Energy Unit shows that charcoal consumption has increased substantially in the major cities. The percentage of households using charcoal in the city of Bamako increased from 3 percent in 1978 to over 60 percent in 2000. Charcoal use in the city increased from

[16] The Borrower in its comments claims that data exists at the project level to show the real savings in fuel consumed and reduction in CO2 caused by improved stoves. The assessment does not deny the existence of data. It notes that the ICR provides an estimate on the amount of saving in woodfuel harvesting and use and assumes that the ICR estimate is made on the basis of the available project level data. However the assessment has concerns about the reliability of the data especially since the ESMAP study shows that the link between woodland depletion and stove use is tenuous.

17. "Any connection between woodland depletion and stove use is, however, at best, tenuous. There are so many variables affecting woodfuel use in any particular area that pinning down the effect of a certain number of improved stoves is virtually impossible without impracticably detailed surveys over a considerable period. Most deforestation, in any case, is a result of clearing land for agriculture rather than woodfuel harvesting." ESMAP 2001

[18] The Borrower in its comments notes the following: "Il est indéniable que les fourneaux améliorés économisent beaucoup plus de charbon que les fourneaux traditionnels et pour les mêmes quantités de bois les meules améliorées produisent beaucoup plus de charbon. Le projet n'a pas encouragé les producteurs de charbon à produire beaucoup plus, c'est la demande des consommateurs qui en est le principal moteur." (It is undeniable that improved stoves save much more coal than traditional stoves and for the same quantities of wood the improved charcoaling techniques produce much more coal. The project did not encourage coal producers to produce much more, it is the demand of consumers which is the principle engine).

15,800 tons in 1990 to 80,000 tons in 2000. Other studies have also reported the increased use of charcoal in cities in Mali.[19] While the improved stove designs may be promoting efficiency in charcoal use, increased use of stoves increases overall charcoal consumption. Researchers note that this can have a negative impact on the process of promotion of alternate sources of energy.[20] **Fourth**, as noted by an independent evaluation, the life of the improved charcoal stoves is between 2 to 4 years. It is not clear how many of the improved stoves that were marketed were used to replace units that had broken down.[21] [22]**Fifth**, through the improved carbonization program the project led to improvement in the yield quality of charcoal. This may have encouraged full-time charcoalers to produce more rather than less charcoal.

3.11 The ICR claims that the project benefited women in a major way both in the urban and rural areas—in the urban areas directly because of the cleaner cooking environment fostered through the improved stoves and indirectly because improved stoves reduced energy expenditures allowing more income for meeting other household needs. In the rural areas it is argued that since women are often major actors in the wood fuel chain they have benefited from the creation of fuelwood markets and the improved charcoaling techniques. However, monitoring indicators did not track how the project may have benefited women. Some studies have actually shown that women are often losers when a fuelwood market is established.[23] [24]Though the project was a PTI, it is also

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19. "The urban shift from fuelwood to charcoal is illustrated by the case of Bamako, Mali where in 1990 over 85 percent of families used wood as their everyday household fuel. The figure is under 50 percent today, and in 1997 charcoal (which had previously been kept for such special uses as tea-making and barbecuing) replaced wood as the primary fuel in Bamako." Unasylva 2002. The Borrower in its comments however notes that the tremendous increase in demand of wood charcoal consumption was not due to the project and that this phenomenon has been present in cities (particularly Bamako) before the project.

20. "Improved charcoal stoves, for example, may encourage greater use of charcoal and slow the shift to alternative fuels." ESMAP 2001.

21. « En ce qui concerne la réduction de l'émission en CO_2 par les foyers améliorés, il reste à montrer quelle proportion des foyers améliorés diffusés grâce au projet représentent une augmentation du nombre total, par rapport aux foyers améliorés qui remplacent les unités amorties à la fin de leur vie utile. C'est la condition de 'permanence' de l'UNFCCC qui est important : si les fourneaux améliorées ne sont fonctionnels que pendant 2, 3 ou 4 ans, il manque de la permanence. »

"Concerning the reduction of emissions in CO_2 by the improved stoves, it remains to be seen which proportion of the improved stoves distributed during the project represent an increase in the total number, compared to the improved stoves which replace units at the end of their service life. It is the condition of 'permanence' of UNFCCC which is significant: if the improved stoves are functional only for 2, 3 or 4 years, it lacks permanence." Kerkhof and Beredogo 2002.

22 The Borrower in its comments does not agree with the findings of the independent evaluation. It notes that the assertion does not have any basis. According to them the reality is that the only part of the improved stoves that deteriorates quickly is the grill (combustion chamber). The element is simply replaced by blacksmiths in the event of deterioration for a few hundred CFA and the stove can continue to be used for long periods.

23. Thus, for example, the document by Foley and others (2002) summarizes the verbal responses of affected people that were interviewed. The women's response: "The men get their money, and marry new wives. We have to walk longer distances to gather firewood. Some of us even made some money from firewood collection but this no longer happens. And then there is the gum collection which earned us cash. But now the gum tree is being cut for firewood and we are left without."

difficult to tell how much the project actually improved the living standards of the urban/rural population, particularly of the poor, as there were no indicators to measure changes in living standards. Studies do show that the charcoal sector has considerable importance as a source of livelihood in several West African countries. However, at the time of project launch—as acknowledged in project documents—for most Malian households the shift from wood to charcoal was considered a luxury. It is not clear how many of the lower-income urban and rural dwellers switched to charcoal as a result of the project-supported information, education, and communication program and because of the available subsidy.

SUSTAINABILITY

3.12 On balance, sustainability—the resilience to risk of net benefits over time—is rated **non-evaluable**. The project closed in December 2000. The Netherlands provided funding for a transitional phase.[25] However, several challenges remain, and if not addressed appropriately, will make sustainability unlikely. A follow-on project supported by the Bank has been prepared (expected to go to the Board in June 2003) and provides an opportunity for the Bank to address the shortcomings. The Household Energy and Universal Rural Access project intends to support the Government of Mali's efforts to increase access to energy services to help achieve its poverty reduction targets including those linked to the Millennium Development Goals. Besides providing support for accelerating the use of modern energy in rural and peri-urban areas and energy sector reform processes, the project envisages building on the achievements of the recently completed Household Energy Project. However, it is not clear from the available project documents how much the emphasis in the household energy sector will be on "scaling up" versus dealing with critical constraints. If project implementation does grapple with the major constraints, sustainability will become likely. It would be important for the region or ESMAP to study the Household Energy Sector in Mali on completion of the new project.

3.13 Some of the most significant issues for sustainability are raised here. **First**, the mere passing of policies and laws does not ensure sustainability of project results and it is necessary to grapple with the constraints that hinder implementation. Differential tax rates on wood coming from controlled and non-controlled markets have been established. However, monitoring and control has to be made effective to allow the markets to function effectively. An evaluation recently carried out on the transitional phase shows that the issue

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[24] The Borrower in its comments does not accept the fact that women could be losers. They note that carbonization activities are generally undertaken by women and a study was done to appreciate the role of women in the functioning of rural wood markets. According to the Borrower this study showed that all the small needs of villagers are satisfied by the sale of fuelwood and charcoal. This assessment does not deny the important role that women could play in the creation and working of fuelwood markets. It simply notes that monitoring indicators did not track how the project may have benefited them and it quoted a study that noted that women may have actually lost out. Conversation with women during field visits also confirmed that the benefits to them may have been limited.

25. The support from Netherlands was for an initial transitional phase of 15 months from January 2001 to March 2002. However, the period was extended by three months until June 2002.

did not get as much attention as it deserves in the transitional phase either.[26] The government lacks the budgetary resources to enforce monitoring and control. The possibility of making a private entity responsible for monitoring and control is being explored. It is not clear how this would work and whether this proposal adequately considers the implications of putting the private sector in a policing role. Some donors favor the establishment of a cooperative system. However, there is still no consensus. A challenge for the Bank would be to ensure that coordination among donors helps build a consensus toward an effective solution.

3.14 **Second**, responsibility for managing wood resources is being moved to the communities. However, unless they have a stake in managing the forest lands there is a possibility that they may lose interest. Conversation with village communities during the assessment mission found that at present the returns in terms of increased prestige for communities in managing their wood resources may be significant, but economic returns are low.

3.15 **Third**, though fuelwood supply master plans were prepared for each of the five towns, little has been done to ensure that these strategies are continuously updated. Since these documents were to be used for planning the establishment of the rural fuelwood markets and for setting annual supply quotas it is imperative that they be updated regularly. The preparation of these plans required a significant amount of fieldwork and data analysis. Budgetary resources and technical expertise would also be required for updating them. However, despite accounting for about 28 percent of total project cost, foreign technical assistance in the Household Energy Project was not provided in a way that it would result in sufficient transfer of capacity to the country level to make this possible. A critical challenge for the Bank during the implementation of the new project is to ensure that local technical capacity does get built and a strategy for updating fuelwood supply master plans on a continuous basis is established.

3.16 **Fourth,** as recognized by the ICR itself, the harmonization of village-level rural markets with the decentralization framework still remains to be done. Most fuelwood markets exist at the village level and the basic unit of local forest management is generally a village whereas under the decentralization framework the rural communes and not the villages are the lowest level of administration. Analysts note that though legislation allows the commune to delegate management of natural resources to the village if a rural commune decides to maximize income from levies on resource exploitation against the conservation goals of a particular village, there is little that the community can do.

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26. « La CCL n'a guère contribué à l'amélioration de la réglementation, de la fiscalité et du contrôle forestier. Elle a effectué trois missions de contrôle forestier selon les rapports disponibles à la mission, un niveau d'activité que nous estimons largement insuffisant pour une période de 15 mois. »

"The CCLs (Wood Fuel Cell Offices) hardly contributed to the improvement of regulation, taxation and forest control. It carried out three forest control missions according to reports available to the mission, a level of activity which we consider largely insufficient for one 15 month period." Final Report of the Transitional Phase. November 2002.

3.17 While diversifying into wider energy issues in the new project may have its advantages, given the limited institutional capacity in the country it is important for the Bank to be aware that there could be some critical challenges. ***First***, such an effort may overtax the limited institutional capacity of the government. ***Second***, attention to issues like effective monitoring and control could be diluted. ***Third***, as a consequence less attention could be given to crucial second-phase challenges. For example, during the first project fuelwood markets were established only in those areas where there were no boundary conflicts over areas of natural woodlands. Although more than 300,000 hectares are under village management, this is less than 15 percent of the total forest area in the country. During the second phase it will also be important to explore whether the concept can be applied in those areas where conflict and disagreement over boundaries between communities exists. In Mali, boundaries and rights over woodland have traditionally been determined generally by customary rules. Woodland limits are rarely codified in the Sahel and there are no maps or boundary markers (SOS Sahel 2000).

INSTITUTIONAL DEVELOPMENT IMPACT

3.18 Institution development impact is rated **substantial**. The project provided institutional support to central and local government with project management, the private sector received support for the production and sale of improved stoves and considerable capacity was built in the communities to implement their forest management plans. Prior to project implementation a substantial number of legal and policy changes were introduced. Responsibility for control and management of the natural forests has been transferred from the State to the villagers in several communities; a regulatory framework has been put in place which, at least on paper, penalizes the purchase of wood and charcoal that was obtained from unmanaged forests. Fuelwood supply master plans for five towns were developed and 200 rural fuelwood markets were created. NGOs helped with the identification and creation of fuelwood markets. The project experience has made it clear that large-scale management of woodlands through sharing of responsibilities between the government, the communities, and the private sector is possible. However, substantial challenges remain as already noted on both the demand and supply fronts.

BANK PERFORMANCE

3.19 Bank performance is rated **unsatisfactory.** Several important factors did not receive the attention they deserved.

3.20 **First**, there were some fundamental weaknesses in design as noted by paragraphs 4.10 to 4.13.

3.21 **Second,** Bank performance was wanting in adequately transferring the lessons of experience from Niger to Mali. This was especially important given that the OED Evaluation Memorandum on the ICR rated the outcome of the Niger Energy Project unsatisfactory and its sustainability unlikely. Other reports on the experience of the Niger project also showed that control was key to effective supply management (footnote 12 and 13). Even before the fuelwood markets were created, the underpaid and understaffed Forestry Service in Mali had little success in enforcing the Forestry Code and adequately

managing the existing forests. Monitoring and control had always been a weakness. It is unfortunate that the importance of strengthening monitoring and control to allow for effective functioning of fuelwood markets was not adequately emphasized. Bank supervision missions recognized that monitoring and control was a major issue yet did little to push for a solution.

3.22 **Third,** despite the significant amount of project resources that were devoted to technical assistance, domestic technical capacity was not sufficiently developed.[27] Transfer of knowledge to local counterparts should have been an important part of the technical assistance component. If the issue was not given sufficient attention at the time of project design, it should have at least been emphasized and corrected during supervision.

3.23 **Fourth**, despite the long preparation period, key aspects of project preparation were neglected, such as timely recruitment for technical assistance, lining up of counterpart funds, and strengthening procurement capabilities.

BORROWER PERFORMANCE

3.24 On balance, borrower performance is rated **satisfactory** even though there were some issues that affected implementation as noted in paragraphs 2.8 and 2.9. Though some responsibility for the lack of an effective control and monitoring system is the Borrower's, it is important to remember that the concept of fuelwood markets was new to Mali and the implementing agency was looking to the Bank for direction, guidance and technical expertise. The emphasis in the project and the message from Bank supervision missions was on outputs and not outcomes (see paragraphs 4.2 and 4.3 for a detailed discussion). Mission conversations with government and implementing agency officials in Bamako revealed that the importance of efficient monitoring and control to the functioning of fuelwood markets is now well appreciated. The officials are keen that the new project consolidate the gains of the Household Energy Project.

3.25 All goods, works, and services procured were in compliance with IDA procurement procedures. The government passed the necessary policies and laws as required before the project became effective.

4. Evaluation Findings

4.1 The assessment notes several important issues that merit consideration. In addition, since the project design incorporated a participatory approach, the design and implementation of the demand and supply components have also been assessed on their Community Based Development (CBD) and Community Driven Development (CDD)

27. As planned, technical assistance and consultancies were to account for 16 percent of total costs. Actual expenditure on these was much higher—28 percent of total costs. A significant percentage of technical assistance was provided through international experts. Conversations with government officials revealed that despite considerable amount of resources being spent on it, foreign technical assistance did not result in sufficient transfer of knowledge to the local counterparts.

aspects. Box 2 describes the use of the CBD and CDD terminology and the various levels of participation as outlined in a recent OED report.

OUTPUTS VERSUS OUTCOME

4.2 The project experience shows that despite the emphasis on results in the Bank, greater emphasis was placed in project design on achieving *outputs* than *outcomes*. The emphasis in monitoring was also on physical output targets—number of fuelwood markets formed, number of hectares brought under improved forest management, number of stoves marketed, etc. It is not surprising, therefore, that though several physical targets were achieved, it is difficult to say how far the project was successful in promoting the rational use of energy resources or abating forest resource depletion in Mali. Undoubtedly, the project had the potential to help the country build a system that can promote rational use of energy resources, but since the focus of implementation remained on achievement of outputs, progress on outcome, crucial to building such a system, did not receive the attention required. The underlying assumption seems to have been that achievement of outputs would somehow result in achievement of effective outcomes. The follow-on project has to avoid being caught in the same trap.

4.3 Analysts might argue that, on the demand side, increased private sector participation was an outcome that was achieved. However, as already noted, since no baseline was constructed it is difficult to tell how much of the achievement on this objective was because of the current project.

COMMUNITY-BASED DEVELOPMENT/COMMUNITY-DRIVEN DEVELOPMENT ASPECTS OF THE PROJECT

4.4 Both the demand and the supply components incorporated a participatory approach. On the demand side the emphasis was on *consultation* and *information* sharing. The preparation phase involved field surveys, client consultations, and consumer testing. Programs of radio advertisements in local languages and demonstrations of energy-efficient appliances were executed by NGOs and private sector operators.

4.5 On the supply side, the central idea was transfer of control and responsibility over local resources from the forest service to the local communities—a *collaborative* arrangement between the Forest Department and the communities in the management of natural resources. In the pre-1990 era, village communities, no matter how concerned they were about destruction of the forests in their neighborhood, had no legal rights to control or direct the fuelwood harvested. With collaboration, the boundary of the natural woodland over which village jurisdiction was exercised was agreed between the village and the government authority and the local community had exclusive rights to the sale of fuelwood produced from it. The forest service could no longer give out permits to traders as in the past and played no direct role in policing the forest area. The forest area was to be managed in accordance with a management plan agreed between the community and the government. The experience of the project shows that the principle of subsidiarity (delegating control to the lowest appropriate level) appears to have been applied very realistically—the State leading in such matters as demarcation and planning, and

preparation of fuelwood master plans for the towns, and leaving local management to the local population.

Box 2. Community-Based Development and Community-Driven Development

No clear distinction between CBD and CDD approaches exists either in the literature or in the Bank. In the mid-1990s the terms were used interchangeably. Again, though it is not stated anywhere, there is increasing consensus within the Bank that projects with higher levels of participation—those that give control over resources and decisions to communities (that is, those that collaborate and empower or are substantially "driven" by the community)—are now understood to be CDD and distinguished from CBD, which gives less control over decisions and resources but is nevertheless participatory. Bank experience shows that during the early years of experimentation with the participatory process, in the 1980s and early 1990s, lower levels of participation (information sharing and consultation) were more common. The latest CDD projects put greater emphasis on empowerment, as it is believed that when communities are in charge of their own development the considerable potential and social capital at the grass-roots level can be harnessed to improve the livelihood of the people. The World Development Report 2000/2001 defines empowerment as the strengthening of the capacity of poor people to affect decisions that have a bearing on their lives, and removing barriers that prevent them from engaging effectively in political, social, and economic activities. In the past, CBD was used as a broader term that covered all four levels of participation (information sharing, consultation, collaboration, and empowerment).

Source: Community-Driven Development: Lessons from the Sahel An Analytical Review. The Operations Evaluation Department 2003.

4.6 For such collaboration to work effectively both the parties should have an incentive to participate. For the Forest Department, reduced direct control over forest resources also meant diminished responsibility for directly patrolling the forest areas. For the communities, direct responsibility for managing the forests was a new experience. For them the very idea of keeping traders out, selling fuelwood at a price determined by the villagers themselves, and collecting taxes on behalf of the government brought a kind of power and prestige. Moreover, analysts argue that communities are likely to be more inclined to regulate their own use of forest resources if they know that they have power to control access and the level of use by others.[28] However, several issues that remain unsolved have implications for the incentives of the communities to manage the woodlands.

4.7 **First**, as noted in para. 3.16, and as recognized by the ICR (para. 5.2), in the current decentralization framework, the commune is the lowest level of administration whereas most rural markets are at the village level. From the villagers' viewpoint the implication is that in case of a legal dispute the court would be unable to recognize the right of the village community.

4.8 **Second**, villagers met during field visits voiced concern about the excessive rates of taxation that leave little financial incentives for them to manage the forests. As noted by several reviews, unlike in Niger, in Mali a much greater proportion of the tax collected

28. "Villagers are increasingly convinced that resource use must be regulated. However, they are unlikely to exercise restraint in their own use of resources, when they have no power to control access and levels of use by others. This implies in the Malian context that villagers want an official recognition of their local regulations and need to receive assistance with their enforcement." IIED 1998.

from fuelwood markets goes to the central government. Although a portion of the tax going to the central government was intended to be invested in forest management, the details of these arrangements have yet to be worked out (Foley, Kerkhof and Madougou 2002). Currently the villagers are hopeful of benefits materializing in the near future. Some villagers met by the mission expressed the desire to be able to market the wood products themselves so that they could receive the profits currently going to intermediaries. But it is easy to see that if they do not gain materially in a short time villagers may loose interest in managing the forest area collaboratively.

4.9 **Third,** as analysts note, the issue of sharing of benefits within a village community also needs adequate attention. As noted by a recent report on local forest management in the Sahel where there are socioeconomic and ethnic differences in a village attention may need to be given to drafting of sharing mechanisms for usufruct and management (SOS Sahel 2000).

PROJECT DESIGN ISSUES

4.10 Though it built on the experience of earlier projects in Mali and to a limited extent on the Niger Household Energy project, ex-post analysis reveals several fundamental weaknesses in project design.

4.11 ***First***, the project portrayed the transfer of forest management responsibility to village communities, and increased participation of the private sector, as a reduction in the role of the government. Since monitoring and control of supplies from fuelwood markets was left with the government, in effect, the policing role of the Forest Department was changed from that of patrolling the forest areas to patrolling the supply of fuelwood coming from controlled and uncontrolled forest areas. The government was entering into a partnership with the communities and the private sector in managing forest resources. This was a *different* role to the one that they had played in the past, but it was not exactly a *reduced* role. The emphasis in the Bank on private sector development may have been responsible for this interpretation. But, the fact remains, that since the project design emphasized the idea of a reduction in the role of the government, adequate attention was not given to the critical issue of strengthening the capacity of the government to adequately control and monitor the fuelwood trade. Moreover, since the project projected the change in role as a reduced role for the government there was natural resistance from the government officials to the change.

4.12 ***Second***, the ambitious project design was not grounded in reality and quality at entry was unrealistic. Even before the project with the restrictive forestry code the major problem was poor enforcement as the means available to the Forest Service were meager. At project design, thought should have been given to how such an under-staffed and under-equipped department would be able to effectively control the fuelwood trade. In addition, in the case of imported stoves, the project design should have given careful attention to the issue of who would bear the price risk.

4.13 ***Third***, as analysts note the emphasis of this Bank project, like that of several others, was on fuelwood production and harvesting to the neglect of other forest uses.[29] Communities generally rely on forests and woodlands to meet a variety of needs. The emphasis on fuelwood alone may bring about significant changes in the socioeconomic fabric of society. With the emphasis on forest protection and management for fuelwood production, nomadic pastoralists may lose out. Where fuelwood is given priority, production and harvesting of non-timber forest products may receive less attention, negatively affecting the income of certain sections of the village community (footnote 23). In other cases, fuelwood harvesting may be at the expense of valuable construction timber, which may have been the main source of livelihood for another section of the community.[30] Greater attention and care is needed in project design and implementation to how the emphasis on fuelwood might effect the different benefits that villagers get from a forest land and if necessary provide adequate safety or buffer mechanisms.

5. Lessons

Lesson I. The importance of budgeting adequate time and resources in a follow-on project to consolidate the achievements and overcome the challenges of the predecessor project cannot be overemphasized. Issues that need urgent attention have been highlighted throughout the report (see paragraphs 3.6, 3.13 for example). Unless this is done effectively the gains made in setting the pieces of a sound strategy in place may be lost.

5.1 Putting the policy and legal framework in place, transferring forest management to communities, and establishing rural markets is only the first phase. The more important and possibly more difficult second phase is to consolidate the gains—ensure that the fuelwood markets function effectively, and the communities have a vested interest in managing the forest resources and can see benefits flowing to them. The follow-on energy project does intend to build on the achievements of the household energy project, but since it is also diversifying into wider energy issues it is not clear how much attention will be given to effectively consolidating gains and addressing the shortcomings.

Lesson 2. It is important that appropriate incentives are provided to Bank and Borrower project teams to design performance indicators that monitor outcomes. Only then can effective results be achieved. Unless outcome is emphasized, during implementation,

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29. "Many donor interventions have focused, for example, upon fuelwood production as the primary goal of woodland management, but while this may be the most important source of income in some areas, in others it is not. Moreover, the relative importance attached to fuelwood production in comparison with agriculture, cattle rearing and other activities in any particular area can vary greatly with time and circumstances. Livestock rearing, which is often neglected, or regarded as a problem to be dealt with in woodland management projects, can play a particularly important role." SOS Sahel 2000.

30. "Equally resource exploitation may be biased towards one use such as firewood –production at the expense of valuable construction poles or high quality fodder, because the management institution is dominated by commercial firewood interests. This is particularly the case when urban commercial firewood interests are supported and protected by the forest service." SOS Sahel 2000.

project teams become preoccupied with meeting output targets, and progress on outcome gets neglected.

5.2 In the Household Energy Project monitoring indicators were defined in terms of the number of operational fuelwood supply master plans, number of improved cook stoves sold, number of rural markets established, and number of charcoalers trained. This diverted attention from more important outcome issues like whether the established rural markets were functioning effectively or not, whether moving forest management responsibility to the communities actually resulted in improved protection, and whether selling efficient stoves actually led to fuelwood saving and increased incomes.

Lesson 3. Given the poverty alleviation mandate of the Bank in a PTI intervention it is important that development objectives are framed partly in terms of poverty reduction. It is necessary to do this in a way that is monitorable and back it up in design by a monitoring and evaluation system capable of measuring poverty impact.

5.3 The Household Energy project was a PTI and was expected to improve living standards of rural populations in affected areas and stabilize employment opportunities in the fuelwood trade. Low-income consumers were also expected to benefit from the increased and proper use of kerosene and charcoal stoves. However it is not possible to assess how far it was successful in improving rural living standards as there were no monitoring indicators established to do so.

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Annex A. Basic Data Sheet

MALI HOUSEHOLD ENERGY PROJECT

Key Project Data *(amounts in US$ million)*

	Appraisal estimate	*Actual or current estimate*	*Actual as % of appraisal estimate*
Total project costs	11.2	8.23	73 %
GEF Grant amount	2.5	2.5	100%
Cofinancing (Netherlands)	3.5	3.5	100%
Parallel Financing			
Cancellation			
Institutional performance			

Project Dates

	Original	*Actual*
Appraisal		05/08/1995
Board approval	06/22/1995	
Signing	07/24/1995	
Effectiveness	12/31/1995	10/27/1995
Closing date	12/31/1999	12/31/2000

Staff Inputs (staff weeks)

	Actual Weeks	*Actual US$ 000*
Preappraisal	78.0	292.0
Appraisal/Negotiations	27.8	73.9
Supervision	135.5	584.1
ICR	8.0	35.3
Total	249.3	985.3

Mission Data

Types of problems	*Date (month/year)*	*No. of persons*	*Specializations represented*	*Performance Rating*	
				Implementation Progress	*Development Objectives*
Identification/ Preparation	10/1993	3	Sr. Energy Planner, Sr. Energy Specialist, Financial Analyst	S	S
Appraisal	05/1994	3	Sr. Energy Planner, Sr. Energy Specialist, Financial Analyst	S	S
	05/1995	3	Sr. Energy Planner, Sr. Energy Specialist, Financial Analyst	S	S
Supervision	11/1995	2	Sr. Energy Specialist, Sr. Energy Planner	S	S
	05/1996 06/1996 12/1996	3	Sr. Energy Planner, Sr. Energy Specialist, Financial Analyst	S	S
	06/1997 11/1997	3	Sr. Enbergy Planner, Sr. Energy Specialist, Financial Analyst	S	S
	11/1998 04/1998	3	Sr. Energy Planner, Sr. Energy Specialist, Financial Analyst	S	S
	02/1999	3	Sr. Energy Planner, Sr. Energy Specialist, Financial Analyst	S	S
Completion	10/2000	2 1	Sr. Energy Planner (2x) Consultant	S	S

Other Project Data

Borrower/Executing Agency: Govt. of Malai/Min. Energy & DNEF
Other Partners: Netherlands (Cofinancier)

FOLLOW-ON OPERATIONS

Operation	*Credit no.*	*Amount (US$ million)*	*Board date*
Household Energy and Universal Access Project (FY03)			

Annex B. Borrower Comments

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