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**Report No.: 40206**

**PROJECT PERFORMANCE ASSESSMENT REPORT**

**MALI**

**NATIONAL AGRICULTURAL RESEARCH PROJECT  
(CREDIT 25570–ML)**

**AGRICULTURAL TRADING AND PROCESSING PROMOTION PILOT  
PROJECT  
(CREDIT 27370–ML)**

**PILOT PRIVATE IRRIGATION PROMOTION PROJECT  
(TF N0210–ML)**

**June 25, 2007**

*Sector, Thematic and Global Evaluations  
Independent Evaluation Group (World Bank)*

## Currency Equivalents (annual averages)

*Currency Unit = CFA Franc (CFAF)*

1993	US\$1	283
1994	US\$1	555
1995	US\$1	499
1996	US\$1	512
1997	US\$1	584
1998	US\$1	590
1999	US\$1	616
2000	US\$1	712
2001	US\$1	733
2002	US\$1	697
2003	US\$1	581
2004	US\$1	528
2005	US\$1	528
2006	US\$1	525 (October 2006)

## Fiscal Year

Government: January 1 to December 31

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

### **About this Report**

The Independent Evaluation Group 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, IEGWB annually assesses about 25 percent of the Bank's lending operations through field work. 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.

To prepare a Project Performance Assessment Report (PPAR), IEGWB staff examine project files and other documents, interview operational staff, visit the borrowing country to discuss the operation with the government, and other in-country stakeholders, and interview Bank staff and other donor agency staff both at headquarters and in local offices as appropriate.

Each PPAR is subject to internal IEGWB peer review, Panel review, and management approval. Once cleared internally, the PPAR is commented on by the responsible Bank department. IEGWB incorporates the comments as relevant. 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 IEGWB Rating System**

IEGWB's use of multiple evaluation methods offers both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. IEGWB evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (additional information is available on the IEGWB website: <http://worldbank.org/ieg>).

**Outcome:** The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is 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). Relevance of design is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is 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. The efficiency dimension generally is not applied to adjustment operations. *Possible ratings for Outcome:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

**Risk to Development Outcome:** The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings for Risk to Development Outcome:* High Significant, Moderate, Negligible to Low, Not Evaluable.

**Bank Performance:** The extent to which services provided by the Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan/credit closing, toward the achievement of development outcomes. The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings for Bank Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

**Borrower Performance:** The extent to which the borrower (including the government and implementing agency or agencies) ensured quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development outcomes. The rating has two dimensions: government performance and implementing agency(ies) performance. *Possible ratings for Borrower Performance:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.



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This report was prepared by Jumana Farah (consultant) under the supervision of Chris Gerrard (task manager), who assessed the projects in October 2006. Rose Gachina provided administrative support.

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## Principal Ratings

<b>NATIONAL AGRICULTURAL RESEARCH PROJECT (CREDIT 25570–ML)</b>			
	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Satisfactory	Moderately Satisfactory	Satisfactory
Institutional Development Impact**	Modest	Modest	
Risk to Development Outcome***			Moderate
Sustainability	Likely	Likely	
Bank Performance	Unsatisfactory	Unsatisfactory	Moderately Satisfactory
Borrower Performance	Unsatisfactory	Unsatisfactory	Moderately Satisfactory
<b>AGRICULTURAL TRADING AND PROCESSING PROMOTION PILOT PROJECT (CREDIT 27370–ML)</b>			
	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Satisfactory	Moderately Satisfactory	Moderately Satisfactory
Institutional Development Impact**	Modest	Modest	
Risk to Development Outcome***			Significant
Sustainability	Likely	Likely	
Bank Performance	Satisfactory	Unsatisfactory	Moderately Satisfactory
Borrower Performance	Unsatisfactory	Unsatisfactory	Unsatisfactory
<b>PILOT PRIVATE IRRIGATION PROMOTION PROJECT (TF N0210–ML)</b>			
	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
Institutional Development Impact**	Negligible	Negligible	
Risk to Development Outcome***			Significant
Sustainability	Unlikely	Unlikely	
Bank Performance	Unsatisfactory	Unsatisfactory	Moderately Unsatisfactory
Borrower Performance	Unsatisfactory	Unsatisfactory	Highly Unsatisfactory

\* The Implementation Completion Report (ICR) is a self-evaluation by the responsible Bank department. The ICR Review is an intermediate IEGWB product that seeks to independently verify the findings of the ICR.

\*\* As of July 1, 2006, Institutional Development Impact is assessed as part of the Outcome rating.

\*\*\* As of July 1, 2006, Sustainability has been replaced by Risk to Development Outcome. As the scales are different, the ratings are not directly comparable.

## Key Staff Responsible

<b>NATIONAL AGRICULTURAL RESEARCH PROJECT (CREDIT 25570–ML)</b>			
<b><i>Project</i></b>	<b><i>Task Manager</i></b>	<b><i>Division Chief/ Sector Manager</i></b>	<b><i>Country Director</i></b>
Appraisal (1993)	J. Weijenberg	Salah Darghouth	Katherine Marshall
Completion (2001)	Agadiou Dama	Joseph Baah-Dwomoh	A. David Craig
<b>AGRICULTURAL TRADING AND PROCESSING PROMOTION PILOT PROJECT (CREDIT 27370–ML)</b>			
<b><i>Project</i></b>	<b><i>Task Manager</i></b>	<b><i>Division Chief/ Sector Manager</i></b>	<b><i>Country Director</i></b>
Appraisal (1995)	Chantal Dejou	Randolph Harris	Jean-Louis Sarbib
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<b>PILOT PRIVATE IRRIGATION PROMOTION PROJECT (TF N0210–ML)</b>			
<b><i>Project</i></b>	<b><i>Task Manager</i></b>	<b><i>Division Chief/ Sector Manager</i></b>	<b><i>Country Director</i></b>
Appraisal (1997)	Anne Mossige	Jean-Paul Chausse	Hasan Tuluy
Completion (2003)	Patrick Labaste	Mary Barton-Dock	A. David Craig

## Abbreviations and Acronyms

AGMK	Association des groupements maraîchers de Kati (Kati Market Gardening Association)
AMADIP	An association of irrigation professionals
AMELEF	Association malienne des exportateurs de légumes et fruits (Malian Association for the Development of Fruit and Vegetable Exporters)
APCAM	Assemblée permanente des chambres d'agriculture du Mali (Permanent Assembly of Malian Chambers of Agriculture)
APROFA	Agence pour la promotion des filières agricoles (Agricultural Supply Chain Promotion Agency)
ATPPP	Agricultural Trading and Processing Promotion Pilot Project
BNDA	Banque nationale de développement agricole (National Rural Development Bank)
CAS	Country Assistance Strategy
CECI	Centre canadien d'étude et de coopération internationale (Canadian Center for International Studies and Cooperation)
CFAF	CFA Franc — the currency of the West African Monetary Union
CIDA	Canadian International Development Agency
CMDT	Compagnie malienne pour le développement des fibres textiles (Malian Company for the Development of Textile Fibers)
CNRA	Conseil national de la recherche agricole (National Agricultural Research Council)
CNU	Comité national des utilisateurs de la recherche agricole (National User Committee)
COPROMANGUE	An association of farmers/producers of mangoes in the Bamako area
CPS	Cellule de la planification et de la statistique (Planning and Statistics Unit)
CRA	Chambre régionale d'agriculture (Regional Chamber of Agriculture)
CRRA	Centre regional de la recherche agricole (Regional Center of Agricultural Research)
CRU	Comité regional des utilisateurs de la recherche agricole (Regional User Committee)
DO	Development Objective
ERR	Economic Rate of Return
FAO	United Nations Food and Agricultural Organization
FFA	Framework for Action
ICR	Implementation Completion Report
IDA	International Development Agency
ITF	International Trust Fund managed by the World Bank
IEG	Independent Evaluation Group of the World Bank
IER	Institut d'économie rurale (Institute of Rural Economy)
MDRE	Ministère du développement rurale et de l'environnement (Ministry of Rural Development and Environment)
MOA	Ministry of Agriculture
MPRD	Master Plan for Rural Development
MTR	Mid-term Review
NARP	National Agricultural Research Project (Projet national de la recherche agricole)
NDA	National Directorate of Agriculture (Direction nationale de l'agriculture)
NGO	Non-Governmental Organization
ON	Office du Niger
PASAOP	Projet au support des services agricoles et organisations paysannes (Agricultural Services and Producer Organizations Project)
PCDA	Projet de la compétitivité et la diversification agricole (Agricultural Competitiveness and Diversification Project)
PNVA	Programme national de vulgarisation agricole (National Agricultural Extension Program)

PPAR	Project Performance Assessment Report
PPF	Project Preparation Facility
PRSP	Poverty Reduction Strategy Paper
PPIP	Pilot Private Irrigation Promotion Project (Projet pilote de promotion de l'irrigation privée)
QAG	Quality Assurance Group
SAR	Staff Appraisal Report
SPAAR	Special Program for African Agricultural Research
SPNAR	Strategic Plan for National Agricultural Research
TEM	The biggest mango exporter association in Sikasso
TOR	Terms of reference
USAID	U.S. Agency for International Development

## Preface

This is the Project Performance Assessment Report (PPAR) prepared by the Independent Evaluation Group (IEG) for three projects in Mali: The National Agricultural Research Project (NARP), the Agricultural Trading and Processing Promotion Pilot Project (ATPPP), and the Pilot Private Irrigation Promotion Project (PIIP).

The NARP was approved in FY94 for a credit of US\$20.0 million. Other donors, mainly USAID and Dutch Cooperation, promised independent parallel financing of US\$68.1 million. At closing on schedule in December 2001, total project costs were US\$57.2 million compared with the appraisal estimate of US\$111.7 million. Only US\$19.2 million, or 28 percent, of the anticipated donor parallel financing was provided.

The ATPPP project was approved in FY95 for a credit of US\$6.0 million. At completion, one year and 9 months behind schedule in December 2002, total costs were US\$5.1 million, 74 percent of the appraisal estimate of US\$6.9 million. Cofinancing was US\$0.1 million. Unanticipated funds for technical assistance from Japan and Canada were channeled through the project after its start.

The PIIP was approved in FY97 for a credit of US\$4.2 million from an Interim IDA Trust Fund. At completion, 9 months behind schedule in March 2003, total costs were US\$2.4 million, 52 percent of the appraisal estimate of US\$4.7 million. US\$2.0 million were cancelled.

This report is based on the Implementation Completion Reports (ICRs) prepared by the Africa Region, the Credit Agreements, Staff Appraisal Reports, project documents and files, and discussions with Bank staff and other stakeholders, including the Government of Mali, project implementing agencies, donors, the private sector, NGOs, and beneficiaries. An IEG mission visited Mali in October 2006. The cooperation and assistance of central government and regional officials and staff, non-governmental stakeholders, donors, and other interested parties are gratefully acknowledged.

These projects were selected for a PPAR because of their support for complementary aspects of agricultural development in Mali, because of their innovative approaches to assisting the government's policy of disengaging from the provision of services and forging a strong partnership with the private sector, and because of some disagreements with the Africa Region about the initial ratings of the three projects. The timing of the PPAR was opportune since the Government is about to issue its new Poverty Reduction Strategy Paper and IEG is preparing a Country Assistance Evaluation for Mali. The PPAR was also to answer some questions raised in the ICR Reviews such as why private sector activity did not develop as anticipated, and why committed donor financing did not materialize even though all donors involved in the design had agreed to coordinate and consolidate their financing.

Following standard IEG procedures, the draft of this PPAR was sent to the borrower for comments before it was finalized. In accordance with the Bank's disclosure policy, the

final report will be available to the public following submission to the World Bank's Board of Executive Directors.

## Summary

1. With a per capita income of US\$300 in 2004, Mali is one of the world's poorest countries. The rural sector dominates Mali's economy and social structure — accounting for about 80 percent of the country's population of 13.5 million and engaging about 70 percent of the country's labor force. Poverty in Mali is primarily a rural phenomenon, with more than 70 percent of the rural population being poor. Fighting poverty means providing economic opportunities to rural dwellers to improve their incomes and livelihoods.
2. The Government of Mali and the World Bank concur that agricultural development — from production to marketing — is an essential ingredient of the overall rural development effort. The Bank's Country Assistance Strategy for the period 2004–2006 incorporates the recommendations of Mali's 2002 PRSP, which in turn reflect the aspirations of Government's Master Plan for Rural Development. The Government's 2007–2011 PRSP, which is about to be approved by the Council of Ministers, emphasizes the important role that the modernization of agricultural production and supply chains play in accelerating economic growth and poverty reduction.
3. The **National Agricultural Research Project (NARP)**, which was approved in December 1993, was the largest of the three projects reviewed in this PPAR with a total cost of US\$57.2 million at completion. Its objective was to improve the performance of the National Agricultural Research System (NARS) through institutional and procedural reforms and through implementing the guiding principles to revitalize research that had been issued by the Special Program for African Agricultural Research (SPAAR). The project represented the implementation of the first six-year phase of Mali's Strategic Plan for National Agricultural Research (SPNAR), which aimed to ensure that adequate technology would become available to farmers in order to increase agricultural growth and reverse the decline in the productive capacity of the natural resource base.
4. The **Agricultural Trading and Processing Promotion Pilot Project (ATPPP)**, which was approved in June 1995, and the **Pilot Private Irrigation Promotion Project (PIPP)**, which was approved in May 1997, were pilot projects of a much smaller size. Both projects aimed, in their respective subsectors, to assist the Government in implementing its policies of (a) disengaging from the provision of services, (b) forging a new and strong public-private partnership, (c) providing the basic enabling environment for the development of private sector-led agricultural development, and (d) encouraging agricultural diversification. Both were implemented by the Agricultural Supply Chain Promotion Agency (APROFA) — an agency created initially under the tutelage of the Permanent Assembly of Malian Chambers of Agriculture (APCAM) to implement the ATPPP, and later entrusted by the Government to implement the PPIP against the Bank's wishes. The total costs at completion were US\$5.1 million and US\$2.4 million, respectively, for ATPPP and PPIP, and the closing dates for the two projects were extended by 21 months and 9 months, respectively.
5. This PPAR rates the overall outcome of NARP as **satisfactory**, based upon its substantial relevance, efficacy, and efficiency. The project achieved its immediate

objective of a better performing national agricultural research system through institutional and procedural reforms that have improved research coherence, quality, relevance and accountability for results. These include separating programming, coordination, funding and oversight functions from research implementation, and restructuring the National Agricultural Research Council (CNRA) and the Institute of Rural Economy (IER) — the principal implementer of agricultural research in Mali which is now fully autonomous in terms of financial and administrative management. Its personnel are now better paid and more motivated than before, and its researchers can now plan, budget, and monitor their programs.

6. The PPAR rates the overall outcome of ATPPP as **moderately satisfactory**, in spite of a number of accomplishments, due to deficiencies in the preparation and design of the project. The ATPPP has had a marked impact on private sector development since it contributed significantly to increasing the volumes of marketed production to both internal and external markets. The ATPPP put the focus on the production-to-marketing chain with an accent on diversifying production, processing and marketing through private sector partnerships, thereby breaking the traditional state-centered agricultural model, fostering private sector development, and promoting the commercialization of a more diversified agricultural production. It enabled Mali to see its potential for competing on international markets and encouraged the transition from subsistence farming and artisanal agro-processing to a more professional practice. Producers and traders had to form and regroup, and to work in a professional manner in order to benefit from ATPPP's activities.

7. The PPAR rates overall outcome of PPIP as **highly unsatisfactory**. The project resulted in only 10 ha of irrigated land being rehabilitated and no new investments in small-scale irrigation schemes, compared with the expectation that the project's technical assistance efforts would induce on-farm investments leading to the rehabilitation of 400 ha of irrigated land and the establishment of 600 ha of newly irrigated land. This unsatisfactory outcome was mainly caused by the unwillingness of financial institutions to finance small-scale irrigation, and by the non-conclusive testing of new irrigation and crop husbandry technologies. No low-cost technology capable of increasing the income of small-scale irrigation farmers was validated.

8. Several lessons of both a substantive and procedural nature have emerged from this review:

- (1) **Meeting the challenge of pro-poor agricultural growth requires addressing a number of institutional constraints that farmers in Mali face in relation to rural finance, land titling, and the provision of public services such as wholesale market facilities.** The need for potential beneficiaries to have greater access to credit in order to magnify the scale of project benefits was a common denominator in all three projects. More secure land titles (which are not customary to have in Mali's land tenure system) are also a prerequisite for many farmers to invest in their land. And the Government should not disengage from providing public services such as the construction/rehabilitation of wholesale market facilities.

- (2) **Ambitious and unrealistic development objectives and project design complicate implementation and supervision.** Two out of the three projects (ATPPP and PPIP) tried to do too much. It would have been better for both ATPPP and PPIP to concentrate their activities on the learning experience, rather than conducting the projects as full fledged investment operations, and spreading them too thinly over many activities.
- (3) **Effective stakeholder representation in decision making and in validating results is important to the success of public-private partnerships.** It is also important to broaden the participant base of the producer and community-based organizations that represent stakeholders in order to ensure effective representation of all potential beneficiaries.
- (4) **Overestimating the readiness of the Borrower to implement a project leads to unavoidable implementation delays and costly changes in project design.** For the NARP, Bank management decided to declare the project effective even though the conditions of project effectiveness were not met. These conditions were only fulfilled in their entirety towards the end of the project, which resulted in the satisfactory achievement of the development objectives by the end of the project, but unnecessarily delayed project implementation at the beginning and prompted a threat of suspension around the middle of the project. Dated covenants and conditions of effectiveness and disbursements did not prove effective in keeping the Government to its pledges on a timely basis, and the Bank was viewed as having backed down on its conditionalities.
- (5) **For projects supporting private sector development, implementing agencies need to have a results-oriented culture and should sub-contract the management and implementation of certain activities to private service providers, including NGOs.** Public sector agencies do not generally have all the required skills, the results-oriented culture, or the efficiency for directly managing all the interventions ranging from civil works to capacity-building activities, which APROFA, the implementing agency, chose to do itself under PPIP. Contracting out the management of these activities to private sector providers and other entities such as NGOs would have resulted in a more efficient delivery of services to the private sector, including farmers.

Vinod Thomas  
Director-General  
Evaluation



## 1. Background

1.1 Both the Government of Mali and the World Bank view the development of Mali's agricultural sector as an essential ingredient in the country's overall rural development effort. The Government's Master Plans for Rural Development (1992 and 2001), the Government's Poverty Reduction Strategy Papers (2002 and 2007), and the Bank's Country Assistance Strategy (2003) all emphasize the important role that the modernization of the agricultural production, from production to marketing, must play in accelerating economic growth and poverty reduction. The World Bank has been strongly supporting the implementation of the Government's agricultural and rural development strategies through its portfolio of investment and adjustment operations.<sup>1</sup>

1.2 Rural areas account for about 80 percent of the country's population of 13.5 million, agricultural activities occupy about 70 percent of the labor force, and agricultural production contributes more than 40 percent of GDP. The devaluation of the CFA Franc in 1994 increased the competitiveness of Mali's agricultural products on international markets (for mangoes, beans, and sweat peas) and on regional markets (vis-à-vis imports such as potatoes from Europe). But the rate of growth of the agricultural sector declined from an average of 3.5 percent a year from 1987–1993 to an average of 2.6 percent per year from 1994–2004, and land productivity remains low and essentially unchanging. Some horticultural crops such as onions and tomatoes, whose production grew by over 200 percent and 100 percent respectively from 1999–2004, are an exception to these overall trends, but these still represent a very small — albeit growing — share of agricultural value added.

1.3 The **National Agricultural Research Project (NARP)**, which was approved in December 1993, was the largest of the three projects being reviewed in this PPAR. Total costs were US\$57.2 million at completion. The project aimed to restructure and improve the performance of the National Agricultural Research System in order to ensure that adequate technology would become available to farmers in order to increase agricultural growth and to reverse the decline in the productivity of land and other natural resources.

1.4 The **Agricultural Trading and Processing Promotion Pilot Project (ATPPP)** approved in June 1995, and the **Pilot Private Irrigation Promotion Project (PIIP)** approved in May 1997, were pilot projects of a much smaller size. Total costs were US\$5.1 million and US\$2.4 million respectively. Both projects aimed to assist the Government in implementing its policies of (a) disengaging from the provision of services, (b) forging a new and strong public-private partnership, (c) providing the basic enabling environment for the development of private sector-led agricultural trade, processing and small-scale irrigation, and (d) encouraging agricultural diversification.

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1. See Annex B for a more detailed presentation of trends in Mali's agricultural sector and government priorities for agricultural development.

## 2. The National Agricultural Research Project (NARP)

### Objectives

2.1 The National Agricultural Research Project (NARP) represented the first six-year phase of the implementation of the Strategic Plan for National Agricultural Research (SPNAR), which had been presented to a donor roundtable in 1992. The long-term objective of the Strategic Plan was to ensure that adequate technology would become available to farmers in order to increase agricultural growth and to reverse the decline in the productive capacity of the natural resource base. The specific objective of the NARP was to improve “the performance of the national agricultural research system, by improving research coherence, quality, relevance and accountability for results through institutional reforms.”<sup>2</sup>

2.2 The SPNAR also drew on the guiding principles in the Strategic Framework for Action (FFA) to revitalize agricultural research in the Sahel, which had been prepared jointly by the Institut du Sahel (INSAH), the Special Program for African Agricultural Research (SPAAR), and the national agricultural research institutions of the CILSS countries.<sup>3</sup> Mali and Tanzania were selected in 1991 as pilot countries for the implementation of the FFA guiding principles, which the SAR grouped as follows:

- Establishing **regional collaborative research programs** to be implemented by lead national agricultural research systems (“**research poles**”)
- Revitalizing the national agricultural research through **institutional reforms** to:
  - (i) better define agricultural research policy and improve donor coordination through the introduction of **consolidated funding mechanisms**; (ii) make national agricultural research institutions more dynamic and accountable for results by granting them financial and administrative management **autonomy**; and (iii) promote **greater institutional diversity** in the implementation of research.

### Design and Implementation

2.3 The NARP was composed of four components:

- (a) **Institutional development** (US\$2.7 million at appraisal, 2 percent of project costs):<sup>4</sup> Restructuring the National Agricultural Research Council (CNRA) and the Institute of Rural Economy (IER) in order to separate research funding, coordination, and screening from research implementation. Integrating user representatives into decision making at the CNRA. Transforming IER into an autonomous institution with an independent board of directors, and decentralizing its research activities closer to the users.

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2. Staff Appraisal Report, page 14.

3. *Comite Inter-Etats pour la Lutte contre la Sècheresse dans le Sahel* — Inter-State Committee for Drought Control in the Sahel.

4. Actual project costs by component were neither presented in the ICR nor available to the IEG mission. These are only available by expenditure category: works, goods, services, etc.

- (b) **Technology transfer and user participation** (US\$ 26.8 million at appraisal, 24 percent of project costs): Developing interactive processes between farmers, extension agents, and researchers to enhance farmer participation in setting research objectives and evaluating results. Establishing a pilot User Research Fund for research users (farmers and processors) to contract for specific research topics of interest to them.
- (c) **Research program implementation and management** (US\$ 37.3 million at appraisal, 33 percent of project costs): Improving research relevance and quality by improving research programming, monitoring and evaluation, enhancing user participation, and research contracting. Strengthening external linkages with regional and international collaborative research programs.
- (d) **Resource development and management** (US\$ 44.8 million at appraisal, 40 percent of project costs): Improving management of research stations. Strengthening human resource development. Rehabilitating research stations and equipment.

2.4 The principal risks identified by the SAR were (a) implementation delays as a result of profound institutional reforms; (b) slowness in changing scientists' attitudes towards participatory research and collaboration with extension services; (c) weak research management; and (d) possible government reluctance to rely on regional collaboration. The Bank addressed these risks through numerous conditionalities for effectiveness, and through implementation measures such as introducing contractual arrangements for research funding, improving staff training, and providing funds for Mali's participation in regional collaborative research.

2.5 The Quality Assurance Group (QAG) judged quality at entry to be marginally satisfactory, and project design as satisfactory overall, but determined that Bank management had overestimated the Government's readiness. In retrospect, if the Bank had insisted on basic organizational and administrative arrangements being in place at the time of credit approval, or at least at effectiveness, some of the issues that delayed project implementation — the adoption of the revised statutes, funding for increased salaries, and transfer of land titles to the Institute of Rural Economy (IER) — would have been resolved earlier.

2.6 A number of factors hampered the implementation of the project:

- Delays in ratifying institutional reforms, such as the official adoption of the National Agricultural Research Council (CNRA) and IER statutes, only completed in 2001, five years into the project, even though these were conditions of effectiveness.
- Slow release of counterpart funds due to the devaluation of the CFAF in 1994, which significantly increased project costs in local currency equivalents and coincided with lower government revenues due to low cotton prices.
- Insufficient government budget allocations — for the increased salaries of researchers after adoption of the new IER statutes, which resulted in the departure of high caliber staff, and for agricultural extension after the Bank's National Agricultural Research and Extension project (PNVA) closed in 1998, which hampered dissemination of research results.

- Frequent turnover of decision makers which resulted in the deferral of politically sensitive decisions such as approving land titles for IER research centers and stations.
- Failure of the IER to implement the career development plan for its staff, thereby causing some discontent.
- The drastic unilateral reduction in the size of the Sotuba Regional Research Center in which the Government expropriated 80 percent of its land for urban development. This caused the displacement of several research programs and incurred unexpected expenses to enclose the remaining land at the high cost of US\$0.55 million.

Nonetheless, in spite of these initial implementation delays, the NARP closed in December 2001 as scheduled, having achieved its development objectives.

2.7 A much lower than expected contribution by other donors — only US\$19.2 million, or 28 percent out of the pledged US\$68.1 million by Dutch Cooperation and USAID — led to the decisions not to rehabilitate laboratories and replace equipment, and to cut the funding for several research activities (including four programs in their entirety). Although the Dutch concurred with the project concept, they expressed some discontent at the slow pace of implementation due to the Bank's conditionalities and complicated project modalities<sup>5</sup> which prevented them from disbursing at the level they had programmed. Instead, they decided to adopt the client approach and to channel financing directly to IER, the Malian Company for the Development of Textile Fibers (CMDT), and the Office du Niger (ON). USAID started downsizing its operations in 1995, reducing its support to agriculture in general, changing the direction of its aid strategy from capacity building to market development, and funding market chain development rather than research for the sake of research.

## Outcome

2.8 NARP achieved its specific objective of a better performing national agricultural research system through institutional and procedural reforms that have improved research coherence, quality, relevance and accountability for results. These include separating programming, coordination, funding and oversight functions from research implementation, and restructuring the CNRA and the IER. IER personnel are now better paid and more motivated than before, and its researchers can now plan, budget, and monitor their programs. The overall project outcome is rated **satisfactory**.

**Table 1. Development Objectives and Outcome of NARP**

Development Objective	Relevance	Efficacy	Efficiency
Improve the performance of the national agricultural research system, by improving research coherence, quality, relevance and accountability for results through institutional reforms.	Substantial	Substantial	Substantial
Overall Project Outcome	<b>Satisfactory</b>		

5. The NARP financed IER research proposals one at a time and instituted a long evaluation process which took up to two years to approve IER proposals because, as expressed by the National Agricultural Research Council (CNRA), the IER did not always produce the proper justification pieces due to its weak fiduciary management.

## RELEVANCE

2.9 The project development objective was complex and thus, the appraisal team amplified it in different sections of the SAR.<sup>6</sup> The project was somewhat ambitious in aiming to achieve both major institutional reform and major research impacts within the time frame of a seven-year project. In places, the appraisal document seemed to expect that there would be a significant impact on increasing the productivity of small farmers and reducing rural poverty within this time frame, when more realistically the planned institutional reforms could only enable such impacts in the future. The stated objective of the project was well imbedded in both Government and Bank strategies at the time, which emphasized institutional development; improving agricultural productivity, and greater decentralization and more active participation of the population in decision making, all in the spirit of poverty alleviation. The Government's Master Plan for Rural Development (MPRD) in 1992 included several priority action programs addressed by NARP such as support to agricultural services and producer organizations; intensification and diversification of agricultural production; and enhancing food security. Project preparation preceded the first Bank Country Assistance Strategy (CAS) for Mali, which was issued in 1994 and emphasized poverty alleviation and sustained broad-based economic growth. The agriculture sector was viewed as the main driver of economic growth at the time, and agricultural research was viewed as an important element in increasing agricultural productivity, reducing poverty, and enhancing food security.

2.10 The objective of the project remains relevant today. The Government's updated MPRD in 2001 continues to emphasize agricultural services, productivity, food security, and diversification. The Bank's 2003 CAS supports the implementation of the Government's 2002 Poverty Reduction Strategy Paper (PRSP) which seeks to reinforce institutional capabilities and improve public sector management through modernization and reform; and aims for a diverse and competitive primary sector. Mali's 2007 PRSP emphasizes the need for an agricultural research/extension service that is guided by users and market demand.

2.11 The project's design fully supported the institutional reform agenda to position the NARS to perform more efficiently. The project's activities were intended to foster the reorganization of the system; to strengthen technical and administrative management and funding coordination; and to enable the integration of research users into the research programming to validation cycle. But the project's design suffered from a number of shortcomings:

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6. **Paragraph 1.01:** "During the Special Program for African Agricultural Research (SPAAR) membership meeting in May 1991 in Abidjan, Mali and Tanzania were selected as pilot countries for the implementation of FFA recommendations."

**Paragraph 2.21:** "The present project intends to support IER's participation in regional collaborative programs and to adapt the institutional reforms recommended by the FFA to conditions in Mali and implement them, including the introduction of a consolidated funding mechanism to strengthen donor coordination under Government lead." **Paragraph 3.02:** "In addition to institutional reforms and in view of persistent limitations in the availability of resources, NARP was to help focus the national research effort on the priorities set in the SPNAR. In doing so, NARP emphasized (a) the testing of technologies developed elsewhere (to the extent possible, minimizing fundamental research); (b) expanding farmer participatory research and moving faster towards on-farm testing (strengthening internal linkages); and (c) seeking regional collaboration in adapting promising technologies to local circumstances (strengthening external linkages), thereby avoiding expensive duplication of effort and seeking economies of scale through collaborative research." **Annex 13:** "As a pilot project for both the SPAAR initiative and for innovative approaches to improve research - farmer - extension linkages."

- Failed to include the reorganization and strengthening of a number of other actors in the NARS — the Faculty of Agriculture at the University of Bamako, the Rural Polytechnic Institute (IPR), the Central Veterinary Laboratory (LCV), the Training and Applied Research Higher Institute (ISFRA), and the Agricultural Mechanization Division (DMA) of the Ministry of Rural Development — thereby causing awkward interfaces with the reformed CNRA and IER<sup>7</sup>
- Fell short of strengthening farmers' organizations as a precursor to strengthening the research users base
- Neglected to flag, if not address, the need to help farmers access credit so that they could adopt new technologies that required new investments on the part of farmers
- Did not earmark specific funds for the implementation of one of SPAAR's guiding principles to revitalize research in the Sahel — "research poles"<sup>8</sup>
- Failed to cost the project properly.<sup>9</sup>

2.12 The design of the project did not include a logical framework, since project preparation preceded the adoption of this practice at the Bank. The Implementation Completion Report (ICR) mentions, and this PPAR concurs, that the project should have been retrofitted in 1997 when a logical framework became a requirement. Nonetheless, the correlation between project activities and development objective is straight-forward and high. The indicators selected were a mix of input and output indicators which did not reflect the project's development objective nor were they time-bound. The risks identified in the SAR were on target. The mitigating measures included in the project's design did little to minimize the impact of these risks when they materialized. The project team also failed to identify the risk of donors not living up to their commitments to parallel financing.<sup>10</sup>

2.13 In light of the above, and in spite of the shortcomings in project design, the PPAR rates relevance as **substantial**.

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7. The Borrower has commented that Mali did not have a national agricultural research system (NARS) at the beginning of the project. IER was the main research institution at the time, which collaborated with IPR, LCV and ISFRA.

8. SAR, paragraph 3.28: "Under the project, funding has been included for Mali's participation in regional collaborative research programs. For the components to be implemented by IER, the costs are included in the research and station budgets, but not separately identified, since these are the normal costs of the national programs".

9. It was judged, a posteriori, that project costs at appraisal were inflated due to lack of accurate data.

10. The Dutch told the IEG mission that, with hindsight, it was too early at project preparation in the early 1990s to consolidate donor funding and rather that this should have been a process. One government official related that donors were not really interested in putting funds into a common pot of money: USAID did not really want to contribute but bowed down to the Bank's wishes during preparation, and the Dutch were frustrated at all the attention focused on satisfying the Bank's demands. It did not help either that the Bank attempted to manage the parallel financing as if it were actual project cofinancing, as this official put it. In any event, consolidated donor financing proved impossible to achieve at the time. Donors wanted visibility. And they had different interests, reflecting their own priorities, whether geographic or disciplinary. The government had proposed during preparation that it would be better instead to have a donor group meet periodically to review of the government's financing needs, and then pledge support. But this proposal was not pursued.

## EFFICACY

2.14 The NARP succeeded in reforming and energizing the NARS, and positioning it to perform better and more efficiently. It implemented significant **institutional and procedural reforms**, most of which are irreversible:

- Separated programming, coordination, funding, and oversight functions from research implementation: The organogram for the NARS is now clear, and participating agencies have clear and coherent mandates. CNRA is now at the apex of the NARS, with the mandate of overseeing the implementation of the SPNAR.
- Restructured CNRA and IER: An autonomous CNRA, separate from IER and attached to the Ministry of Agriculture (MOA),<sup>11</sup> has been established. The IER has been restructured, and is also fully autonomous in terms of financial and administrative management.
- Established the practice of contracting out results-oriented research to the best bidder.
- Brought research closer to its users by helping IER regroup its capital assets, decentralize research to regional centers, and relocate its personnel to the regions.
- Integrated the research users as full partners in the NARS by creating a National User Committee (CNU), as well as Regional User Committees (CRUs) in order for research users to participate in the programming to evaluation and validation cycle:<sup>12</sup> Due to the training received, and experience acquired by farmers under NARP, farmers were prepared to make a relevant input to the design of the Bank's follow-on Agricultural Services and Producer Organizations Project (PASAOP).
- Strengthened research-extension-farmer linkages, resulting in the willingness of researchers to talk and discuss directly with farmers.
- Instituted periodic independent external financial and technical evaluations.
- Included research entities other than IER in competing for research contracts in order to foster a more institutionally diverse NARS.
- Enhanced the credibility and visibility of the Malian NARS, and increased transparency in financial management.

2.15 All stakeholders that the IEG mission consulted concurred that, if NARP had not existed, the NARS' organogram would still be nebulous with no clear vision and proficient tools to allow CNRA and IER achieve their mandates; CNRA would not have attained its present level of governance; IER would still be a heavily centralized structure dependent on uncertain budgetary transfers, with unmotivated staff (low salaries, no staff management, no control of their budgets, and not able to plan their work); research users would have no role at all in the process of programming and evaluating research; and research would be carried out with no accountability for results.

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11. The Ministry of Rural Development and Environment (MDRE) became the Ministry of Agriculture (MOA) in 2004.

12. The example of the Ségou CRU is cited here: It was founded in 1994 with 15 members which swelled to 60 in 1998-2001, and are at 80 presently. The CRU membership is composed of producers and processors. They conduct extension services to their members and non-members. They meet regularly among themselves. From 1998 to 2001, they collected membership fees in a bid for financial sustainability, which amounted to 15 percent of their operational costs. This ended unfortunately with the closure of NARP. They have expressed their satisfaction at the exchange of ideas they were exposed to, and confirmed that having a CRU has given them a larger latitude to adopt research results.

2.16 The **coherence** of agricultural research has now been strengthened by entrusting the CNRA with the implementation of SPNAR. CNRA ensures alignment with SPNAR and no duplication of research proposals. This enables a clear vision for all research activities. The **quality** of the research portfolio has greatly improved. This starts with better quality research proposals in order to win research contract bids. The better quality research proposals have been confirmed by the tri-annual external reviews and by the declining rejection rate of IER's proposals from 80 percent when contracting out research was first implemented at mid-project, to 30 percent at project closure in 2001, and to a current 18 percent, while CNRA's vetting process became increasingly more stringent. Regional and international collaboration, under which twelve IER programs are being executed, has also helped improve research content and results by adapting promising technologies and by information exchanges.

2.17 The overall **relevance** of IER's research results has been mixed. On the positive side, their research has been credited with helping raise rice yields by 30 percent, and wheat/barley yields by 24 percent. IER has also increasingly responded to research users' requests.<sup>13</sup> All of this indicates the relevance of the improved technologies to end-users' needs. On the negative side, the general impression is that the adoption rate of improved technologies has been low, blamed by IER on a weak extension system. The fact remains that the majority of the technologies being generated are more accessible to better-off farmers since these call for the use of modern inputs (such as fertilizers, irrigation water, animal traction, plows, or a cart) which in the absence of a well-performing agricultural credit system, are beyond the financial capacities of the majority of farmers. Better-off farmers constitute only 20 percent of the farming population, while the remaining 80 percent are classified as poor. Thus, IER's research has been perceived as serving the better-off farmers, and has not been pro-poor.

2.18 The impact of the project on **accountability** to achieve results with the funds allocated has so far been weak and is not fully in place. Although CNRA has been reported to cut funding of non-performing programs, it does not seem to have held IER accountable for not producing technologies that are better targeted to poor farmers. However, due to the nature of research, producing technologies that are socio-economically viable in a set time frame may not be possible either. This aspect could have been thought out better.

2.19 The results of the implementation of the **SPAAR/FFA principles** were mixed as well. On the one hand, the NARS was revitalized through successful institutional and procedural reforms, the granting of financial and administrative autonomy to CNRA and IER, and the inclusion of several research institutes in the implementation of the SPNAR. On the other hand, the Research Poles and the consolidated funding experiments were not successful. Before NARP, a commodity network was operating in the subregion with the CGIAR institutions taking the lead. The sorghum program in Mali evolved as a pilot for SPAAR/FFA, but was not accompanied by earmarked funding. USAID subsequently expressed interest to contribute to the sorghum research pole and enlarge it to all of West Africa, at which time, Nigeria, the most important producer of sorghum, questioned Mali's lead of the sorghum program. The implementation of the "research poles" principle ended with this and the system reverted back to the commodity network. And, as explained above,

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13. Several examples exist: (a) When IER introduced a new variety of sorghum in 2002 which did not conserve well when processed, IER produced an improved variety at the request of farmers which resolved the problem. (b) IER was contracted to produce a feed supplement for a feed agro-processor whose project proposal was approved by the Pilot User Fund.

the consolidated funding mechanism principle proved to be too early to implement, and possibly impractical due to different donor strategies, priorities, and methods of operation.

2.20 Based on the above, and despite the noted shortcomings, this PPAR rates efficacy as **substantial**.

### **EFFICIENCY**

2.21 The SAR did not estimate the economic or financial rate of return for the project. Instead, it referred to the Bank's Sector Policy Paper on Agricultural Research, dated June 1981, which had concluded that investments in agricultural research in both developed and developing countries had generated high economic rates of return, exceeding 40 percent in many cases. As was common with other agricultural research projects being prepared at the time, no indicators were defined with which to track information on cost-effectiveness.

2.22 As part of project's monitoring and evaluation, IER conducted impact assessments in 2001 to estimate the economic and financial impact of technologies developed and disseminated during the NARP. These studies showed the highest rates of return to be 120 percent for improved maize technologies adopted, high rates of return of 66, 62, and 50 percent, respectively, for improved millet, rice and sorghum technologies adopted, and lower rates of 28 and 22 percent, respectively, for improved cotton and groundnut technologies adopted. The same studies also found the highest rates of adoption of improved technologies to be 92 percent, 55 percent and 45–78 percent, respectively, for cotton, rice, and maize. The adoption rate of the other improved technologies were 22 percent and below. However, these results are indicative only, since the studies' sample sizes were too small to make an extrapolation of impact.

2.23 On the other hand, a healthy organization of the institutional and procedural framework for research, accompanied by proficient tools to ensure quality and relevance, is a necessary precursor for efficient research and the release of sound technologies. NARP's main concern was to improve the institutional efficiency of the NARS, and its contribution in this respect was substantial. Therefore, this PPAR places most of the emphasis on the improvements in institutional efficiency that have been achieved and rates the overall project efficiency as **substantial**.

### **Risk to Development Outcome**

2.24 Most of the reforms are by their nature hard to reverse. The Government has not given any indication that it intends to willingly reverse them in the future. However, the IER has expressed frustration at the long review and vetting process before it receives funds from CNRA, which might be a threat. In the opinion of this PPAR, a concerted effort to improve the IER's financial management would help to shorten this frustratingly long process.

2.25 As to financial sustainability, the NARP never sought to achieve this in the time frame of one project. So far, many of the activities financed by NARP have been sponsored by follow-on Bank projects — such as the PASAOP and its sequel, under preparation — as well as other donor funding such as the Dutch PAPIER and the French FPS. For the long term, Government is seeking to enhance financial sustainability by having research users and other beneficiaries pay for the programs that interest them, and it is already working on

establishing a National Fund for Agricultural Research for strategic research with a public interest. Overhead costs of IER would be included in the research contracted, as recommended by PAPIER. In the meantime, the IER has already made significant progress in securing an increasing proportion of its revenue from domestic sources through contractual research arrangements with large companies such as CMDT and ON; development projects/NGOs/producer organizations; and the sale of base seed<sup>14</sup> and research related production. The share of these types of revenues as a percent of IER's overall budget increased from 25 percent in 1994 to 49 percent in 2001, and 67 percent in 2004.

2.26 In view of the irreversible nature of the institutional reforms, and the increasing financial sustainability of the NARS, the risk to development outcome is rated **moderate**.

## Bank and Borrower Performance

### BANK PERFORMANCE

2.27 The quality at entry is rated **moderately satisfactory**. Project preparation was based on a comprehensive sector study and took account of Government's own strategy. The project design incorporated SPAAR's guiding principles, and incorporated lessons learned from past successful and failed operations in agricultural research. Fiduciary and implementation aspects were well addressed, and related guidelines were well detailed. Gender and equity aspects were taken into account,<sup>15</sup> but transition arrangements were not mentioned.<sup>16</sup> And the Bank decided to declare the project effective even though the Borrower had not satisfied all the conditions for project effectiveness, in particular, resolving the crucial issue of secure land titles for IER research centers and stations.

2.28 The quality of supervision is rated **moderately satisfactory**. The project was supervised with a satisfactory skill mix, except in relation to fiduciary aspects during the initial stage.<sup>17</sup> The aide-mémoires were detailed, focused on development impact, realistic in appraising implementation progress toward achieving the development objective, and made pertinent recommendations. Bank staff rightly requested the intervention of the Regional Vice President with the President of Mali to resolve the land titling issue for IER research centers and stations. On the other hand, the ambitious design of the project, with its focus on both institutional strengthening and improved research results, made the project difficult to supervise. Supervision became almost exclusively focused on slow implementation and problem solving. The project was not retrofitted with a logframe and the implementation

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14. The National Seed Service (SSN) pays for the direct production costs of base seed since 2004. In 2006 IER negotiated a contract with SSN to cover direct and indirect costs and was granted an activity budget.

15. Several adjustments were made for gender and equity reasons: (a) Research on low-land rice and groundnuts, which are basically women's activities, and which had been placed under the second phase of the Strategic Plan were brought forward. (b) The fifth regional center in Kayes, which is a poor enclave region with agricultural potential that has received little attention so far, would be opened as early as the first phase of the Plan to continue groundnut research (which is located solely in Kayes) and to transfer small ruminant research away from Sotuba.

16. It was understood that there would be a follow-on operation: The PASAOP was approved in December 2001.

17. Following a discontinuity in the assignment of a financial management specialist to Mali, and the difficulties in coordinating the visits of financial management specialists with supervision missions, the Bank decided to strengthen the Country Office in this area, and the situation improved.

indicators were not revised when the Bank adopted the practice. As a result, the deficiencies in the functioning of project monitoring and evaluation were never satisfactorily addressed. The implementation of important Bank decisions that would have reinforced the institutional reforms were not made in a timely manner. The project team, backed by the Sector Manager, suggested in 1996 that the Bank should advance the mid-term review (MTR) because the anticipated statutes had not yet been adopted, when these should have been done before credit effectiveness. The Bank's Regional management did not support this recommendation, causing delays in adopting the revised statutes, which eventually led to a threat of suspension.

2.29 In light of the above, the overall Bank performance is rated **moderately satisfactory**.

### **BORROWER PERFORMANCE**

2.30 The performance of the Government is rated **moderately unsatisfactory**. The Government has adequately encouraged stakeholder/beneficiary involvement and consultations through the creation of the CRUs, and helped to ensure adequate transition arrangements by actively participating in the preparation of PASAOP. However, it was slow in releasing its counterpart contributions; it did not adopt the revised statutes for CNRA and IER until it was threatened with suspension; and delayed releasing funds for the increased salaries of IER research staff, which led to discontent and the departure of some high caliber staff. The planned activities to upgrade the capabilities of the research laboratories, centers, and stations could not be completed because the Government did not provide the IER with acceptable land titles until too late in the project, this being a condition for disbursement. In addition, the Government appropriated 80 percent of the Sotuba Regional center lands for urban development, which led to increased and unplanned investments at this site (for fencing) to the detriment of others, and to the relocation of research programs. These actions gave the impression that Government did not have sufficient ownership of the project and was not committed to achieving NARP's development objective.

2.31 The performance of the implementing agencies is rated **moderately satisfactory**. The IER, the principal implementing agency, and the CNRA, were highly committed and instrumental in preparing their staff for the proposed institutional reforms. The IER also successfully decentralized its operations, moving research staff from its headquarters in Bamako to the regional centers, reducing its staff, etc. However, the IER was not as successful in improving its financial management, which prompted long delays in disbursement, nor in fully implementing the electronic M&E system. The CNRA satisfactorily performed its role of coordinating and ensuring quality control of national agricultural research activities, and introducing contractual research.

2.32 In spite of Government's performance shortcomings, overall Borrower performance is rated **moderately satisfactory**, due to the good efforts of the IER and CNRA.

### **Monitoring and Evaluation**

2.33 The overall quality of project monitoring and evaluation is rated **modest**, based on substantial, modest, and negligible ratings for design, implementation, and utilization,

respectively.<sup>18</sup> The SAR provided guidelines and the NARP instituted an M&E system to assess the overall performance of the NARS, which the project aimed at improving. The NARP also provided training on impact evaluation. The M&E process was well imbedded institutionally since it was part of the ratified institutional reforms, covered several aspects of M&E, and is still in practice up to the writing of this PPAR. The SAR also included a list of project implementation progress indicators for a number of inputs and outputs, but with no quantitative and time-bound targets, and which did not fully reflect the project's development objective.

2.34 In spite of this good start, the implementation of M&E was mixed, and there is no evidence that M&E results were utilized to cause shifts in the implementation of the project. Although the joint impact assessments (with the extension service and research users) were not carried out, many M&E components were. The planned baseline, or inventory and description of technologies available, was not done during the life of the project, although such a document has now been prepared under the follow-on project, PASAOP. The M&E of research measured implementation progress, recorded some research results, and prompted the CNRA to stop financing a number of research projects that were not achieving any results after several years of implementation. But this did not adequately measure the adoption of technologies or their economic viability. For the most part, M&E findings have not been utilized to influence either decision making with the NARP, or subsequent operations.

### **3. The Agricultural Trading and Processing Promotion Pilot Project (ATPPP)**

#### **Objectives**

3.1 The ATPPP was a five-year pilot project to address key sectoral constraints to private investment in agricultural processing and marketing in Mali, focusing on building capacity and transferring know-how to the private sector by means of information networks, training, specialized technical assistance, and study tours. The development objective was "to improve the technical and managerial capacities of producers, traders, exporters and agro-processing entrepreneurs with a view to inducing sustained growth in the Borrower's agricultural trading and processing subsector."<sup>19</sup>

#### **Design and Implementation**

3.2 The project adopted a two-pronged approach to achieve this objective: first, the provision of generic support in three high potential regions to all profitable agro-processing private entrepreneurs, upstream and downstream of agricultural production, and second, the transfer of specialized expertise to enterprises operating in product lines with a high potential for international export that required high quality standards. The project had four components:

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18. See Annex C for a more detailed assessment of project monitoring evaluation for all three projects.

19. Development Credit Agreement, Schedule 2.

- (a) **The operation of the implementing agency's (APROFA) three regional branches in the Sikasso, Ségou and Mopti regions** (US\$ 2.5 million at appraisal, 48 percent of project costs):<sup>20</sup> Promotional and technical assistance; training and information services; construction and rehabilitation of wholesale market facilities; individualized on-demand technical assistance to entrepreneurs; institutional strengthening of Regional Chambers of Agriculture.
- (b) **Support packages to subsector professional associations** (US\$ 1.4 million at appraisal, 27 percent of project costs): Institutional strengthening of professional associations; construction and rehabilitation of collective facilities.
- (c) **APROFA's operations and management, and the establishment and operation of an agricultural processing and marketing information exchange network** (US\$ 1.1 million at appraisal, 21 percent of project costs): Market studies and consumer surveys; establishing and maintaining a roster of consultants and a data bank of information market prices, product quality standards, post-harvest technologies, and marketing techniques.
- (d) **Access to credit** (US\$ 93,000 at appraisal, 1.8 percent of project costs): Workshops, meetings, training, and study tours to bridge the gap and facilitate cooperation between processing and marketing enterprises on the one hand and banking and financial institutions on the other.

3.3 The ICR rated project design as satisfactory, while noting several shortcomings, including the lack of a formal set of agreed-upon performance indicators, and the inadequate institutional interface between the Ministry of Rural Development and Environment (MDRE) and the Assembly of the Chambers of Agriculture (APCAM). The Government had entrusted the project implementation to APCAM, which had in turn set up an agency in 1995, the Apex Organization of Agro-business Associations (APROFA) for the promotion, processing and marketing of agricultural produce, which became the project's implementing agency. However, the hierarchy of reporting and supervision was fuzzy and this institutional arrangement proved not to be practical. Although APROFA was created under the tutelage of APCAM, APROFA's director general was appointed by and reported to the Minister of Rural Development. On the other hand, the MDRE, which was responsible for overall project supervision, decided not to interfere with the day-to-day management of APROFA.

3.4 Two of the three risks identified at appraisal — weak APROFA-APCAM linkages, and poor management and misuse of its autonomy by APROFA — turned out to be impediments to smooth project implementation. APROFA worked in isolation and showed weaknesses in financial management which were never corrected. It failed to give adequate attention to M&E and information dissemination. Its website, which was to include comprehensive documentation and analysis on markets, export standards, prices, the results of studies, etc., never became operational, and many market studies were not distributed to

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20. Actual project costs by component are not available since the software, SAARI, that was used by the implementing agency, APROFA, to manage its accounting system was not conducive to monitoring expenditures by component but only by expenditure category. Thus actual project costs are only available by expenditure category: works, goods, services, etc.

the clients. It put up strong resistance to the transfer of its monitoring/control responsibilities to APROFA-Association,<sup>21</sup> and in so doing derailed the mechanism that might have sustained its activities.<sup>22</sup> In 1999, APROFA's staff was dismissed, bringing the project to a standstill until a new management team took over in 2001, which was no more successful in executing the project. Both failures may be attributed to the lack of effective institutional guidance to APROFA. The project closing date was extended by a year and nine months to make up for the lost time between the two APROFA management teams, and to build on the successes which the project had achieved in spite of the implementation deficiencies.

## Outcome

3.5 The ATPPP has had a marked impact on private sector development since it contributed significantly to increasing the volumes of marketed production to both internal and external markets. The ATPPP put the focus on the production-to-marketing chain with an accent on diversifying production, processing and marketing through private sector partnerships, thereby breaking the traditional state-centered agricultural model, fostering private sector development, and promoting the commercialization of a more diversified agricultural production. It enabled Mali to see its potential for competing on international markets and encouraged the transition from subsistence farming and artisanal agro-processing to a more professional practice. Producers and traders had to form and regroup, and to work in a professional manner in order to benefit from ATPPP's activities. In spite of these accomplishments, this PPAR rates the overall outcome of the project as **moderately satisfactory** due to deficiencies in the preparation and design of the project.

**Table 2. Development Objectives and Outcome of ATPPP**

Development Objective	Relevance	Efficacy	Efficiency
Improve technical and managerial capacities of producers, traders, exporters and agro-processing entrepreneurs with a view to inducing sustained growth in the Borrower's agricultural trading and processing subsector	Modest	Substantial	Substantial
Overall Project Outcome	<b>Moderately Satisfactory</b>		

## RELEVANCE

3.6 The statement of the development objective in the DCA is concise and to the point. By comparison, that in the SAR is long and unfocussed, and lists a mix of activities and building blocks which taken as a whole only hints at the objective which the DCA states more clearly. The development objective was too ambitious and unrealistic, especially since the project design did not address crucial elements such as credit and market facilities.

21. This was an association which represented agricultural producers and entrepreneurs and which was a spin-off of the 2001 Sélingué workshop where the 2001 implementation plan was agreed.

22. However, ex-post, APROFA-Association proved not to be a suitable heir since its ranks were divided nor a good representative of a cross section of stakeholders.

3.7 Nonetheless, the development objective was consistent with the Government's policy orientations and the Bank's 1994 CAS, both of which adopted a public-private partnership approach to economic and social development. Both aimed to: (a) enhance business opportunities for the private sector and encourage disengagement of the State from commercial activities; (b) improve technical support to producers to boost and diversify production, and improve the international competitiveness of Malian exports; (c) promote active participation of rural groups in the design and implementation of rural development activities; and (d) promote private investment in agricultural trading and processing. The development objective remained consistent with the Government's current policy to support agro-processing and to facilitate trade and transport systems, and the Bank's development assistance strategy in its 2003 CAS which focused on helping Mali tap into the country's important agricultural potential and trade opportunities, and its 2007 PRSP which also focuses on increasing the role of trade in the economic and social development of Mali.

3.8 Although the project's design addressed the requisites for achieving its development objective, the IEG mission to Mali identified a number of weaknesses in the design of the project which had an adverse impact on the magnitude, sustainability, and reach of the project's benefits, especially to women agro-processors and to a large portion of the relatively poorer private sector, producers as well as exporters.

3.9 Project design did not make a provision for credit to beneficiaries — whether farmers for expanding planted areas and producing better quality crops using modern agricultural inputs, exporters for packaging for exports, or women agro-processors for purchasing packaging material or for acquiring agro-processing equipment. ATPPP only provided for training the banking sector in the economic evaluation of requests for loans related to crop production and exports, which never took place. The Bank and the project presumed that once an enabling environment was created, private investment would not be in short supply. But this presumption did not prove correct for Mali. The project's long-term shot at alleviating poverty,<sup>23</sup> did not materialize since those producers and entrepreneurs who benefited from the project's activities were better off to begin with. The project included financing the construction of wholesale markets and conservation facilities. However, it became obvious during implementation that the costs of this activity were not adequately appraised, which resulted in its cancellation. The project design also failed to make explicit arrangements for transferring to beneficiaries at project closure APROFA's physical and acquired assets such as agro-processing equipment, the data bank and study results, computers and equipment, and vehicles — causing a loss of capital and a marked unsustainability of benefits.

3.10 A logical framework was not developed at appraisal since this was not yet a required practice at the Bank at the time. However, the project was retrofitted with a logframe in 2001, when the project team took the opportunity of a change in APROFA's management to revamp the implementation plan and produce a logframe. While this logframe included a clear statement of the development objective, this did not conform to the wording in either the DCA or the SAR. It lumped outputs and outcomes together with no clear logic; missed some important intermediate outcomes (e.g., areas planted, increased production, export contracts signed, increased export volumes); included outcomes that were not part of the

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23. SAR, page 11, paragraph 4.01 (b)

project (e.g. APROFA becoming a well-performing implementing agency, professional, self-managed and on its way to becoming a permanent structure); and included time-bound targets only at the development objective level and not at the outcome/output level. It is difficult to the uninformed reader to understand the inferred chain of causality. The logframe mentioned some baseline information as well as production and export targets for the years to come. The IEG mission could not confirm the baseline figures since these did not agree with statistics given in the ICR or from other sources. However, it was clear that the project team attempted to retrofit the project to the best extent possible.

3.11 This PPAR rates the relevance of ATPPP as **modest** in view of the deficiencies in the statement of the development objective and in the design of the project.

### **EFFICACY**

3.12 Almost four years after the project closed, the impact of ATPPP is still showing. On the capacity building side, several farmers and entrepreneurs organizations were formed and strengthened:

- The APROFA-Association was created under ATPPP and saw its membership grow from 11 members when it was created in 2001, to 2,000 at project closure in 2002, and to 3,000 in 2006.
- Several associations of farmers and mango pickers were trained on crop husbandry practices and equipped with sprayers and adequate harvesting baskets which contributed to a substantial reduction in pre- and post-harvest losses of mangoes, and an increase in their quality for export
- Several women associations were created and strengthened, in Niono for onion processing and storage, and in Sikasso for fruit and vegetable processing and wide-scale marketing, whose membership grew from 40 in 1995 to about 250 in 2001.
- The RCAs beneficiaries of ATPPP acquired a high level of organization and ability to make decisions beneficial for their members and to provide them with services such as fairs, study tours, and extension, which is now being financed by PASAOP.

3.13 On the production and marketing side, ATPPP had a direct impact on increasing the production, marketing, and export of mangoes, potatoes, sweet peas and onions. It opened the internal market for mangoes which are now transported by refrigerated trucks and sold in the eastern and northern parts of the country (Mopti-Gao, Tombouctou-Diri; Nara; Nioro). COPROMANGUE reported that these markets have grown with time. As a result, its members' mango production grew from 2,000 tons in 1995 to a current 15,000 tons.

3.14 Mangoes are now the focus of Mali's exports in international markets, and are being exported to several European countries, and the Western Africa Region, in increasing quantities. The ICR reported that exports grew by 72 percent at project closure. USAID's TradeMali project reports that exports increased three folds since then. This growth has been greatly facilitated by the multimodal export route introduced by ATPPP which cut the traditional export route out of Sikasso by half. AGMK, an association of fruits and vegetable producers in Kati, has reported a spectacular increase in areas planted to mango planted from 10 ha in 1996 to 500 ha in 2006. ATPPP was also instrumental in improving the quality of mango production by training and equipping the mango picker associations. Harvest and

transport losses were reduced from 40 percent to 10 percent with ATPPP, which reduced the debts owed to exporters.<sup>24</sup>

3.15 Potato production, marketing, and exports have also increased as a result of ATPPP. The area planted to potatoes and potato exports doubled and quadrupled, respectively, between 1996 and 2002, while potato production and quantities marketed increased by 21 percent. ATPPP helped entrepreneurs test a new export market in Côte d'Ivoire in 2001 (to substitute for Dutch potato imports), after which they received several purchasing requests. ATPPP's introduction of improved traditional storage houses has also increased potato production, marketing and exports by cutting storage losses due to rotting from 40 to 20 percent, by increasing storage time from 3 months to 5 months, and by enabling exports to the West African Region during the most lucrative period from July to August. Potato producers reported that ATPPP helped increase their revenues two-fold.

3.16 The sweet pea market chain did not experience the same success as mangoes and potatoes. Planted areas in Sikasso increased by 60 percent at project closure, but exports which had increased by more than 2-fold in 1999 (the peak year), subsequently dropped in 2002 to 86 percent of the quantities exported at project start. This decline though was not a failure on the part of ATPPP, but the result of the decision of the main Malian exporter who destroyed, at least temporarily, the whole export potential in a business move<sup>25</sup> to short-circuit the established marketing chain to Spain, the main importer of sweet peas.

3.17 In Ségou, the main production area for onion, the area planted and production increased a two and a half fold with ATPPP. The IEG mission was told that these increases have been sustained and that production is now at 135 thousand tons compared to 106 thousand tons at project closure in 2002. This spectacular increase seems to be due to the wide adoption of the drying and improved traditional storage technologies disseminated by ATPPP which enabled a longer marketing interval. ATPPP also opened an export route for tamarind juice and concentrate to Mauritania, and bissap (Oseille de Guinée) to Senegal.

3.18 Merchants highly praised ATPPP's collection and weekly dissemination of producer prices of horticultural crops over the radio. They knew what the price was and what margins they could get, they could not be cheated, and they conducted better negotiations. ATPPP influenced OMA, APCAM's Observatory of the Agricultural Market, to adopt this practice (for wholesale prices though). Before ATPPP, it had only published cereal prices.

3.19 ATPPP's impact on women agro-processing associations was spectacular. It provided them with training and the opportunity to use a processing unit to dry agricultural produce

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24. Before ATPPP, the Cooperative for Marketing Fruits and Legumes of Mali (CCFL) would give 80,000 CFAF in credit to pickers at the beginning of every harvest and export campaign. The pickers would return with mangoes worth only 60,000 CFAF due to losses in harvest and transport. The pickers were 5 million CFAF in debt to CCFL in 1998. After ATPPP's training and equipment, losses became minimal and this debt was closed.

25. The main Malian exporter decided to bypass the Spanish middlemen and to do business directly with the Spanish importers. This did not go well since the containers of sweet peas exported to Spain were returned to the Malian exporter unopened. After this, rumors circulated that Malian sweet peas were not packaged according to international hygiene standards, which caused the development of a carcinogenic toxin. Spain, the main Malian sweet pea importer stopped importing directly from Mali.

and another to make juices and jams, and instilled in them sound financial management. They participated in fairs and shows where they sold their products and received awards for sweet potato processing. This generated an independent source of income and improved the overall family standard of living. The women developed a sense of business and started a relationship with food stores that sold their products on consignment.

3.20 On the negative side, the approach taken by the project to help provide farmer credit was inadequate. The banks viewed agriculture as high risk and requested high collateral (a land title in most instances, which it is not customary to have in Mali's land-ownership system), while being stringent on loan terms.<sup>26</sup> Although the ATPPP helped entrepreneurs put together 154 proposals for loans, only 40 proposals were financed for CFAF 265 million, representing 22 percent of the demand. The failure to build wholesale markets as provided for in the SAR had a negative impact on producers and traders alike by limiting the flow and marketing of extra production.

3.21 In addition to the IEG mission findings mentioned above, Government, donors, and beneficiaries all credited the ATPPP with a number of achievements, with which the IEG mission concurs:

- Being a pioneer in raising awareness and revealing the marketing potential, as well as the benefits of agro-processing
- Connecting Malian exporters with European importers of fruits and vegetables, resulting in export contracts that have been sustained
- Putting a focus on the production-to-market chain of agricultural products by implementing activities up-stream and down-stream of production
- Organizing and professionalizing producers and entrepreneurs
- Regularly disseminating producer prices for horticultural crops
- Boosting exports of mangoes through successfully testing an alternative multimodal export route which cut the customary land (truck)/sea export journey in half
- Professionalizing the mango pickers' associations
- Opening up internal markets for mangoes, and improving the potato seed market
- Significantly reducing potatoes and onions losses while in storage through scaling up improved artisanal conservation structures
- Reportedly creating jobs for seasonal agricultural labor, building and maintenance of store houses for onions and potatoes, and agro-processing.

ATPPP was the first donor-supported project in this area, and other donors have followed suit.<sup>27</sup> If ATPPP had not existed, none of this would have occurred although donors would have eventually financed partial activities.

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26. One example is the experience of an entrepreneur in Ségou who benefited from a trial on onion conservation from ATPPP the first year after he built a storage house on his own expense. The second year, he borrowed money from the bank to buy onions. The bank lend him money on short term. Thus he had to return the loan before he could take full advantage of the activity which only realizes benefits in the medium term, when onion prices go up. He had to sell at a lower price than potential and lost money. Therefore, he decided not to repeat the experience and abandoned this investment altogether.

27. In particular, USAID financed the Centre Agro-Entreprise project (CAE), from 1998 to 2003, with objectives and activities similar to ATPPP's. Then USAID followed CAE with three other projects: TradeMali which financed technical

3.22 Taking all these factors into consideration, this PPAR rates efficacy as **substantial**.

### EFFICIENCY

3.23 No economic or financial performance targets were specified in the SAR.<sup>28</sup> Nor was an ERR calculated in the ICR as no reliable economic or financial performance could be calculated due to the non-performance of the M&E system. The project's impact on producers was not systematically evaluated by the implementing agency, and available statistics from other sources — the National Agriculture Directorate (NAD), the Planning and Statistics Unit (CPS), and other donors' projects such as USAID's TradeMali — do not agree with each other except for the increasing trends in mangoes and onions. The ICR presented some tables on area planted, production, quantities marketed and exported. However, a closer look reveals that these figures are somewhat lacking and interchangeable,<sup>29</sup> and they could not be reproduced.

3.24 Nonetheless, the empirical evidence gathered from producer associations during the IEG mission showed a marked increase in the farm-gate prices for the targeted crops, which reflects an increase in product quality.<sup>30</sup> For example, mangoes sold for 60–90 CFAF/kg before the project and for 100–200 CFAF/kg mid-project and onwards; and good quality onions sold for 15 CFAF/kg and 125 CFAF/kg, respectively. The revenues of potato producers in Sikasso increased two fold, and the revenues of women's associations in Sikasso who processed and sold their produce on the market peaked at 4 million CFAF in 2000 solely due to the equipment which the project put at their disposal.<sup>31</sup> These represent substantial monetary gains for the individuals involved, if not for the overall economy. The ATPPP succeeded in demonstrating that its activities are highly remunerative. The PPAR gives more weight to the impact on individuals than on the overall economy because the project was a pilot project, and therefore rates efficiency as **substantial**.

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assistance and export tests from 2003 to 2006, FinanceMali which facilitated access to credit from 2004 to 2006, and PRODEPAM which is providing TA on production technologies and producer organizations management from 2004 to 2009. Both CAE and TradeMali adopted activities introduced by ATPPP such as export tests and the provision of harvest baskets and spraying equipment to mango picker associations. CIDA also followed suit with PACCEM from 1997 to 2002, which focused on the commercialization of cereal surpluses, the organization of producers, and the provision of credit. The Dutch have recently financed several agro-processing units and placed them at several CRRAs for the benefit of women's agro-processing associations.

28. The ICR attributes this shortcoming to the fact that ATPPP was designed as a pilot operation. ICR, page 20.

29. For example, the portion of the production that is exported is really the portion which is marketed (presumably both internally and externally), and marketed quantities often exceed produced quantities. (It is assumed that the units for the quantities marketed should be tons and not thousands of tons as presented in the ICR).

30. This is attributable, in turn, to training on improved husbandry practices, the use of modern agricultural inputs for those who could afford them or to whom they were provided, the availability of export markets, and knowledge of the relationship between quality and price, all of which are direct consequences of project activities.

31. This revenue would not have accrued if ATPPP had not existed since the project introduced the concept of drying and processing fruits and vegetables in order to expand their shelf life and provided the necessary training and equipment to the women's associations.

## Risk to Development Outcome

3.25 The sustainability of the benefits resulting from the ATPPPP varies widely according to type. Several types of benefits have shown to have been sustainable ex post: (a) The tests for opening new internal markets for mango which have become established markets, and the alternative multimodal transport route for mango exports which is in practice up-to-date by the biggest mango exporter, TEM; and (b) the improved traditional storage models for onion and potatoes which adoption spread quickly and widely in Niono and Sikasso. The services provided through APROFA such as training, fairs, and study tours are being sustained because subsequent Bank and donor projects are financially supporting these activities. Similarly, the growth in agricultural trade and exports is being sustained for the most part by continued external financing, such as by USAID.

3.26 On the other hand, the project failed to make arrangements for the appropriate transfer of APROFA's assets — such as office equipment and furniture, vehicles, databank and study results, showcases and internet cafés, and a processing unit — and failed to ensure the continuity of the weekly broadcasting of producer prices started during the project, all of which represent glaring and unnecessary risks to the sustainability of the project's benefits. The office equipment, furniture and vehicles, which were valued at 50 million CFAF in October 2003, are not being utilized for the most part. The data bank and the results of the studies conducted by APROFA have not been disseminated and therefore have not benefited the intended beneficiaries.

3.27 The showcases and internet cafés have been shut down, except for the Bamako showcase which has been leased since 2004 to FINATRA (the National Federation of Agricultural Processors). The weekly broadcasting of producer prices for fruits and vegetable stopped altogether, which is still lamented by many traders. The fruits and vegetables processing unit used by the women associations in Sikasso was dismantled and stored away. The activities and revenues of these women associations were drastically curtailed at a time when no alternatives were available through other projects. This situation is particularly unfortunate since the women were forced to revert back to their traditional and unsanitary ways of processing agricultural products. The lack of wholesale market facilities and the difficulties in accessing credit have also affected the ability of producers and entrepreneurs to benefit from and build on the services provided through APROFA to sustain the growth in the trade and export sector. Overall, the risks to development outcome are **significant**.

## Bank and Borrower Performance

### BANK PERFORMANCE

3.28 The quality at entry, as described under “Relevance”, is rated **moderately unsatisfactory**. Project design took gender aspects into consideration and the agro-processing activity benefited women directly. Implementation arrangements were well addressed and detailed. The assessment of risks was on target, with two out of three materializing during project implementation. The SAR did not provide for the realistic transfer of responsibilities for services provided through the project. Although it mentioned that a gradual transfer would be made to the RCAs and some professional associations, it made no mention of potential sources of financing. Fortunately, this has been taken care of

by subsequent Bank operations such as PASAOP and the Agricultural Competitiveness and Diversification Project (PCDA). On the other hand, the project design suffered from several deficiencies which hampered project implementation. Regarding fiduciary standards, the SAR did not provide for training of APROFA's staff on Bank financial management and procurement procedures, but only made provision for project staff to receive guidance regarding procurement at the project launch workshop.<sup>32</sup>

3.29 The quality of supervision is rated **moderately satisfactory**. During the last three years of the project's implementation, supervision missions consisted of four to ten experts, reflecting the Bank's focus on helping ATPPP through its implementation difficulties. The Bank belatedly recognized the implementation errors by the implementing agency and took responsibility for addressing the shortcomings.<sup>33</sup> As a result, APROFA's staff were replaced in 2001, and a logframe and a new implementation plan were launched at a workshop held in Sélingué. The Bank responded to the deficiencies in financial management by requesting the Minister of Finance in December 2002 to take corrective action, but with not much success. Bank supervision failed to ensure that APROFA's acquired capital was passed along to the beneficiaries. Finally, it was not clear to the IEG mission whether the Bank properly advised APROFA concerning the rules governing the grace period after project closure.<sup>34</sup>

3.30 Overall, the PPAR rates the Bank's performance as **moderately satisfactory**.

#### **BORROWER PERFORMANCE**

3.31 The performance of the Government is rated **unsatisfactory**. Government stuck by its new policy of encouraging public-private partnerships, created APROFA, followed through on its pioneering decision to entrust the management of a Bank Credit to the private sector (APCAM and APROFA), participated actively in project preparation supervision missions, and replaced APROFA's non-performing staff in 2001 which temporarily improved the quality of technical implementation, but not of financial management or M&E. However, Government did not follow through with several supervision recommendations, e.g. APROFA-Association should take over implementation and M&E of the project, and did not address effectively the inadequacies in APROFA's financial management and M&E.. Government and beneficiary contributions were minimal compared to the agreed-upon counterpart funding at appraisal.<sup>35</sup> In addition, Government did not make any decisions

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32. The SAR, page 26: "Procurement and Use of Consultants".

33. The Borrower has commented that the Bank changed task managers many times and each new one brought in new approaches, new procedures, and new methodologies.

34. APROFA submitted a package of invoices and justification of expenses for services rendered up to project closure to the Bank Office in Bamako two days before the grace period ended. APROFA did not hear back and the expenses were never reimbursed, although it is likely that at least part of the expenses would have been eligible. APROFA clearly did not understand that this package had to be received at the Bank's headquarters in Washington by the end of the grace period and not the Bank's office in Bamako. The time required to pouch the request for reimbursement put it beyond the grace period.

35. The Bank ICR mentions two contradictory figures: 168 million CFAF on page 11, para. 5.4, and US\$0.06 million, equivalent to 37 million CFAF in 2003, in Annex 2. The Government ICR mentions a contribution of 138 million CFAF. Notwithstanding which figure is correct, the SAR had specified a counterpart contribution of US\$0.8 million, equivalent to 424 million CFAF in 1995, and the highest of the contributions mentioned equals only 40 percent of this.

related to transferring APROFA's capital (equipment, vehicles, and databank and study results), which remains unused to this date curtailing the sustainability of benefits.

3.32 The performance of the implementing agency was also **unsatisfactory**. APROFA made arrangements with selected partners (CMDT, ON, etc.) to implement the project's activities, and achieved many targets relating to the project components. It facilitated meetings with banking institutions to enable the provision of credit to several entrepreneurs. However, it performed poorly in managing the project's finances. It engaged in undocumented spending, overspent, and never developed an accounting system that could document how funds were allocated to project activities. Understandably, the Bank did not reimburse non-qualifying expenses — resulting in an accumulated government debt of 202 million CFAF, and a list of persistent creditors, attributable to APROFA's ill spending. The change in management in 2001 did not resolve the problem of weak financial management. The Agency put up strong resistance to a transfer of its monitoring/control responsibilities to APROFA-Association. It was very slow in filling staff positions. It never filled the position of internal auditor, and filled the M&E position only two months prior to project closure. As a result, spending against categories was never checked, and proper monitoring and evaluation never took place. These weaknesses were repeatedly flagged during Bank supervision missions, but not corrected.

3.33 Overall, this PPAR rates Borrower performance as **unsatisfactory**.

## **Monitoring and Evaluation**

3.34 The overall quality of project monitoring and evaluation is rated **negligible**. As designed at the outset, the M&E system could only provide decision makers with information on the status of inputs and outputs and not on outcomes or impacts. While the SAR included a table of key performance indicators to be monitored per location and per year, these indicators were a mix of input and output indicators that would be of little value in determining whether the theory of change or the causal logic of the project was sound or in demonstrating whether a pilot project such as ATPPP was achieving its development objective in a systematic manner. The SAR also assigned responsibility for M&E and provided a detailed outline of the semi-annual reports to be prepared, but it did not specify the sources from where this data would be collected nor the sampling process to be applied.

3.35 The project was not able to make its M&E unit operational and the baseline beneficiary survey foreseen in the SAR was not conducted. APROFA's regional branches in Sikasso and Ségou monitored their activities and submitted periodic reports which served as the basis for the project's annual reports. The outcome and impact data in the ICR were reconstructed at the end of the project on the basis of data provided by the regional branches, and by the M&E officer who was hired only two months before project closure. The IEG mission consulted different data sources outside the project for information on the impact of the project on production and trade in the agricultural products targeted by ATPPP. Attempting to triangulate the different sets of data during the preparation of the PPAR showed the weaknesses and unreliability of the various data sources.

## 4. The Pilot Private Irrigation Promotion Project (PPIP)

### Objectives

4.1 The PPIP was a four-year pilot project, mainly providing technical assistance to address the key constraints in developing the small-scale irrigation sector in Mali.<sup>36</sup> The long-term development objective was to improve and induce, through capacity building activities, an expansion of investments in small-scale irrigation, which would contribute to increased on-farm diversification of investments, productivity, and food security. The specific objective was “to increase the delivery of technical and managerial services to small-scale irrigation producers, in order to improve their capacity to (a) identify the most cost-effective investments in irrigation equipment and infrastructure; (b) properly operate and maintain such equipment; (c) prepare requests for loans from financial institutions and increase their access to credit for investments in irrigation; (d) improve the security of their assets including land holdings; and (e) capacity building of producer groups and individual producers in organizational, financial, and micro-enterprise management.”<sup>37</sup>

### Design and Implementation

4.2 The project was conceived as a research, development and capacity building initiative to improve the technical capacities of private sector institutions to provide support for and financing of investments in small-scale irrigation. The project had seven components:

- **Support to the implementing agency** (US\$ 480,000 at appraisal, 14 percent of project costs)<sup>38</sup>
- **Technical and managerial services and training** (US\$ 1.09 million at appraisal, 31 percent of costs)
- **Legal services and technical studies** (US\$ 440,000 at appraisal, 13 percent of costs)
- **Testing of irrigation equipment** (US\$ 710,000 at appraisal, 21 percent of costs)
- **Capacity building** (US\$ 170,000 at appraisal, 5 percent of costs)
- **Environmental monitoring and mitigation** (US\$ 180,000 at appraisal, 5 percent of costs)
- **Surveys and studies to monitor the incentive environment** (US\$ 400,000 at appraisal, 11 percent of costs).<sup>39</sup>

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36. (a) Use of primitive technology and inefficient design and management of equipment; (b) farmers' limited access to technical and managerial support services; (c) producers' marginal access to credit; (d) limited formal land tenure arrangements; and (e) limited number of technically skilled private consultants and consulting firms.

37. Staff Appraisal Report, page 9.

38. Actual project costs by component are not available since the software, SAARI, that was used by the implementing agency, APROFA, to manage its accounting system was not conducive to monitoring expenditures by component but only by expenditure category. Thus actual project costs are only available by expenditure category: works, goods, services, etc.

39. Percentages do not add up to 100 percent.

During implementation, after a supervision mission in 2001, the “testing of irrigation equipment” component was revised to include an activity on demonstrations of production technologies and varieties (referred to as intensification testing).

4.3 Funding for the PPIP came from an International Trust Fund (ITF) which supplied funds for the first year of the IDA11 period of FY97-99, the year PPIP was approved by the Bank’s Board of Directors. The United States, and few other countries including Israel, did not participate in the ITF, and thus were excluded from the list of countries PPIP could procure goods and services from. During implementation, this posed a problem since the most qualified outfits to implement the irrigation testing component in Mali were American and Israeli, but were not eligible to bid on the irrigation testing contract. The contract then was awarded to the best eligible bidder, but the winner proved not to have sufficient knowledge and capacity to implement the contract.

4.4 The SAR identified three risks: (a) the potential lack of willingness of investors to invest in small-scale irrigation, and of financial institutions to provide medium-term loans for investments in the sub-sector; (b) poor management by APROFA; and (c) a potential reversal by the Government of its current private sector approach to development. The project design minimized the risks by including provisions for capacity building of selected Malian banks staff; stringent management rules and procedures; an intensive supervision; and a gradual implementation.

4.5 Although the project’s preparation studies had proposed that project implementation be entrusted to an association of irrigation professionals, AMADIP, the Bank went along with Government wishes to entrust APROFA with implementation in the hopes of fostering better synergies between ATPPP and PPIP. QAG carried out a quality-at-entry review of the project in May 1998, and rated the project design as marginal because the project concept and objectives were unclear, the technical soundness was not well established, and beneficiaries were primarily the non-poor, as considerable equity capital would be needed for irrigation investments, APROFA’s poor management capacity, and a weak monitoring and evaluation system. Unfortunately, implementation problems occurred early on as APROFA was unable to meet the challenge of managing two pilots, especially since the participation of beneficiaries in decision making and monitoring of activities was not built into the design. A project strategy or a business plan to help systematize implementation were not clearly defined by APROFA. Farmers lost interest in the project once they realized that PPIP’s primary purpose was not land titling per se, and PPIP came to be perceived as targeting only those farmers who either had a land title, or who farmed their own family land.

4.6 It took nearly a year to recruit PPIP staff for APROFA’s central and regional offices. Due to APROFA’s poor performance, its staff were dismissed in December 1999, and the project stood at a standstill until a new team took over 11 months later. Project activities were resumed in March 2002 when a rural engineer and an agricultural economist were recruited. The agricultural intensification component did not start until December 2001, and the irrigation equipment testing until October 2002 — respectively, 9 months and 18 months before project closure (the project was granted a nine-month extension to March 31, 2003). The anticipated cooperative agreements were signed in 1998 with most of the entities involved in irrigation (i.e., IER, DNAMR, DNAER, and PSPHR), but were not actually implemented.

## Outcome

4.7 The project resulted in only 10 ha of irrigated land being rehabilitated and no new investments in small-scale irrigation schemes, compared with the expectation that the project's technical assistance efforts would induce on-farm investments leading to the rehabilitation of 400 ha of irrigated land and the establishment of 600 ha of newly irrigated land. The impact on private sector development was also insignificant since financial institutions did not show a willingness to finance small-scale irrigation. The PPAR thus rates overall project outcome as **highly unsatisfactory**.

**Table 3. Development Objectives and Outcome of PPIP**

Development Objective	Relevance	Efficacy	Efficiency
Improve and induce, through capacity building activities, an expansion of investments in small-scale irrigation, which would contribute to increased on-farm diversification of investments, productivity, and food security	Modest	Negligible	Negligible
Overall Project Outcome	<b>Highly Unsatisfactory</b>		

## RELEVANCE

4.8 The project's development objective was complex and expressed in a compounded and overlapping way in the SAR.<sup>40</sup> These composite objectives became confusing, ambitious and untargeted, complicating the implementation of a pilot operation. Nonetheless, PPIP's stated objectives meshed well with the Government's 1992 Master Plan for Rural Development, updated in 2002, which called for the provision of capacity building to producers' organizations (POs), government withdrawal from and the promotion of private sector involvement in commercial activities, and investments in rural development programs; the Bank's 1994 CAS which promoted both agricultural and private sector development; and the Government's irrigation strategy, updated in the early 2000s, which aimed at stimulating private investments in small-scale irrigation. The project's development objective remained consistent with the Bank's 2003 CAS, which focused on helping to implement the first PRSP of 2002, which in turn calls for better water management as a key to rural development, along with pilot actions and operations to expand small-scale irrigation. In addition, the 2007 PRSP promotes improved irrigation water management and increased adoption of production intensification technologies by facilitating access to equipment, modern agricultural inputs, and credit.

4.9 In principle, the project design included the ingredients necessary for achieving its objectives, although some of these (access to credit and land titling) would have been better addressed in a separate, and not a pilot operation. If implementation had taken place as intended, there would likely have been an expansion of investments in small-scale irrigation. But the project had too many components (seven) for a pilot operation. Project design also attempted to address two issues — access to credit and land tenure — that were too complex

40. Including an overall development objective, a specific medium-term objective with several targets, and objectives of training.

to be resolved in a pilot operation and really required a stand-alone operation to be effectively addressed. No logframe was developed and no coherent chain of causality was established. A list of monitoring indicators with yearly targets was agreed upon at negotiations, but it was composed mostly of input and output indicators, falling short of measuring some project impacts such as profitability of investments; impact on production and on income and employment generation; etc.<sup>41</sup> An environmental analysis was conducted and the project design included a detailed environmental mitigation plan with technical, institutional, and legislative measures.

4.10 In conclusion, project design was overly complex which led to insurmountable implementation problems. This PPAR rates the overall relevance of the objectives and the design of the project as **modest**.

### EFFICACY

4.11 The PPIP failed markedly in achieving its objectives. Compared with the expectation that the project's technical assistance efforts would induce on-farm investments leading to the rehabilitation of about 400 ha of irrigated land and the establishment of about 600 ha of new irrigated land,<sup>42</sup> the project resulted in only 10 ha being rehabilitated and no new investments in small-scale irrigation schemes. The PPIP never reached full development following an apparent systemic breakdown, and the constraints of the irrigation subsector were not alleviated.<sup>43</sup>

4.12 The testing of irrigation equipment and agricultural intensification took place only towards the end of the project, did not incorporate any assessment of economic viability, and were inconclusive because results could not be validated over several cropping seasons. No low-cost technology capable of increasing the income of small-scale irrigation producers was validated. Farmers did not have sufficient time within the life of the project to adopt the equipment and technologies which showed positive results. The two firms selected to perform the irrigation equipment tests (after a lengthy selection procedure lasting over two years) proved not to have the requisite skills.<sup>44</sup>

4.13 The impact on private sector development was insignificant. Entrepreneurs and service providers were no better able to draw up investment plans, nor financial institutions willing to finance small-scale irrigation. Due to the poor training and capacity building of the consulting firms that were to help entrepreneurs prepare loan applications, the proposals were

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41. These were mentioned under section D, "Reporting, Monitoring, Supervision and Evaluation", SAR page 25.

42. SAR, "Project Objectives", page 9.

43. As mentioned in the SAR, para. 1.21: "The key constraints in the sub-sector include: (a) use of primitive technology and inefficient design and management of equipment; (b) farmers' limited access to technical and managerial support services; (c) producers' marginal access to credit; (d) limited formal land tenure arrangements; and (e) limited number of technically skilled private consultants and consulting firms."

44. American and Israeli firms, which were the most competent in this area, were ineligible due to the type of funding for the project, and it was not possible to change the source of funding mid-project for procedural reasons. IDA's Interim Fund excluded procurement from non-contributing countries, which included Israel and the United States.

not of sufficient quality. Only one loan request was approved.<sup>45</sup> Training was infrequent, inadequately supervised, not of good quality for the most part, and not sufficiently integrated into a training plan suited to the farmers' and entrepreneurs' needs, although some specific training had positive impacts, as discussed below. Only 20 producers' groups of 70 planned, obtained legal status, but their financial, managerial, and O&M capacities were not improved, except in relation to maintaining pumps. The 20 groups remained at the fledgling stage without the capacity to provide services to their members without further assistance. No significant transfer of knowledge or expertise took place since a databank and market studies results remained on file at APROFA and were not disseminated to the intended users.

4.14 Few farmers adopted the new small-scale irrigation technologies, and private suppliers and manufacturers of irrigation equipment did not experience an increased demand for their services. Indeed, no market for irrigation equipment exists in the regions where PPIP was implemented (Kati, Ségou, Sikasso). A limited selection of equipment and spare parts can only be found in Bamako. Only one other private small-scale irrigation development activity was implemented during the time of PPIP, which also faced issues of farmers' access to credit similar to PPIP.<sup>46</sup>

4.15 On the other hand, the project had some minor achievements which could ultimately translate into higher incomes for farmers, and improvements in their ability to select and maintain irrigation investments. The preliminary results of the agricultural intensification testing were promising, and a highlight of the project,<sup>47</sup> but these results did not lead to increased investments and their economic sustainability could not be established within the project's life. The training of farmers on O&M enabled a few of them to maintain their water pumps, without always having to hire a mechanic.<sup>48</sup> The testing of irrigation equipment has optimized the usage of equipment power per surface area under flood irrigation agriculture. (This showed that a 5 KVA motor pump should be used for a 0.25 ha surface, compared with the previous farmer practice of using a 5 KVA pump for a surface of 1 ha or more.) One irrigation technique that was tested, namely the simplified drip system using locally available materials, showed promise in reducing both labor costs and fuel costs for pumping but was not adopted because farmers could not access credit for investments in small-scale irrigation. And an irrigation prototype (termed "exhaure sur arrosoir" by APROFA) that was fashioned

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45. Thirty seven loan applications were prepared out of 330 anticipated. Only seven applications were submitted and one was approved — a 1.5 million CFAF loan — compared to the 920 million CFAF anticipated at appraisal.

46. This was supported by the Peri-Urban Project financed by French Cooperation, which included a small private irrigation component to help private irrigators obtain credit. This project distributed free pumps to those who had a land title, and provided access to modern inputs. The scope of the component was limited and less than 10 out of the 25 submitted loan applications were approved. The component was not considered a success and was closed shortly afterwards.

47. In Kati for example, farmers were able to get better yields (3–4 times higher) on fruits and vegetables in season, and to plant vegetables out of season in the winter months, a practice introduced by PPIP (a result of better husbandry in addition to irrigation). The cultivated area under vegetables increased 3-fold. Farmers now use phytosanitary products adapted to vegetable production and not home remedies such as gasoline and bleach. Vegetable production has moved from subsistence to commercial because of these successes and the ability to plant twice a year. With irrigation and the opening up of markets, millet production — which used to be the production of choice before PPIP (and ATPPP) — is gradually disappearing and being replaced by tomato and other vegetable production.

48. Hiring a mechanic can cost 500 to 2,000 CFAF depending on the diagnosis, while farmers spend less and repair things faster if they can do the maintenance and repairs themselves.

with existing traditional irrigation equipment was manufactured by local artisans trained through PPIP and adopted by few farmers.

4.16 The IEG mission was told by donors, NGOs, and beneficiaries that PPIP was important in exploring the concept of small-scale private irrigation in Mali. The project created the desire to move from the traditional to the modern, provided elements to enable a year-round and diversified production, and showed the results that are possible if all necessary requisites come together — such as a better adapted irrigation system, modern inputs, financing, and a land title or secure tenure. The knowledge about small-scale irrigation in Mali would not be at its current level without PPIP. But the PPIP did not remove the key constraints in the small-scale irrigation sector, and its failures far overshadowed its successes, which were too diluted and scattered. Thus, this PPAR rates efficacy as **negligible**.

#### **EFFICIENCY**

4.17 The ICR was not able to perform a cost-benefit analysis<sup>49</sup> on the basis of the demonstrations and tests that were performed alone, but gives examples of how farmers' income could benefit from PPIP's activities. For example, using the simplified drip system tested by PPIP and for an investment of CFAF 400,000/ha (about US\$ 700), producers could achieve a 60 percent reduction in labor costs and a 40 percent reduction in fuel costs for pumping in the first year, while at the same time ensuring more uniform watering that should generate higher yields over the medium term. The ICR concluded that such equipment could pay for itself as early as the first year by the reduced labor and fuel costs. As a second example, the agricultural intensification tests showed yield increases ranging from 25 to 75 percent, and even more than 100 percent in some cases.

4.18 The PPAR obtained anecdotal evidence, based on discussions with beneficiaries, which concurs with the ICR findings. A beneficiary in Ségou adopted the recommendations of a technico-economic study done by PPIP to modernize his irrigation system and plant oranges instead of bananas. He reported that his return was 7.5 million CFAF on 2.5 ha in 2004, compared to only 1.5 million CFAF if he had kept his banana plantation and his traditional irrigation system. This led him to replicate the system on another 3 ha already, and to envisage replicating on an additional 4 hectares. Another beneficiary in Sikasso installed an irrigation system on 2 ha of his fields after he saw the results of the irrigation tests because this would triple the revenue from his banana fields. One hectare of irrigated bananas brought in 1.5 million CFAF, compared to 500,000 CFAF without irrigation. He also adopted double cropping due to the results of the agricultural intensification testing. Planting maize with bananas brought in an additional 300,000 CFAF/ha. Farmers who plant vegetables out of season in Kati can sell their tomatoes at the farm-gate price of 200 to 240 CFAF/kg, compared with the price of 30 CFAF/kg for the in-season production. Consequently, such farmers are reported to make three times more money and to enjoy a higher standard of living now than when they practiced only subsistence farming before PPIP.

4.19 These results are also due to the increased opportunities for marketing agricultural products resulting from the ATPPP, and due to other donor interventions which supplied

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49. This was presumably due to the lack of information and reliable data on which to base the calculations.

modern inputs and micro-credit through NGOs. The results of PPIP cannot be separated from these other interventions, but the PPIP did add the focus on irrigation. Although some positive results have occurred, these are rare — such as the farmers who invested in the rehabilitation of 10 ha of small-scale irrigation schemes, and the very few who adopted improved technologies through their own investments — and do not justify a government investment of US\$2.21 million. Therefore, the PPAR rates efficiency as **negligible**.

## Risk to Development Outcome

4.20 The project design did not make any provision for transfer of responsibilities after project closure. However, during implementation, the project did make an attempt to foster the sustainability of PPIP's anticipated benefits by commissioning an institutional organization study which recommended the creation of an APROFA-Association, that would represent beneficiaries, participate in decision making and supervise project activities, thereby fostering a greater sense of ownership on the part of beneficiaries to sustain the project's interventions. However, this recommendation was not implemented.

4.21 On the positive side, the IEG mission to Mali collected evidence that the program of intensification testing (which was the main success of the PPIP) was being sustained in two localities, Ségou and Diawara, at the request and expense of farmers. The Kati Market Gardening Association (AGMK) reported that laborers who worked in the vegetable fields in Kati had taken the technologies to their villages, and those who had access to credit and modern inputs were adopting them. A farmer in Ségou, who had rehabilitated his irrigation system and planted orange orchards instead of bananas on 2.5 ha, has already replicated this on another 3 ha and envisages doing so on his remaining 4 ha of land. The neighbors of a farmer in Sikasso, who had adopted irrigation technology on bananas, replicated this on 10 ha at their own expense. However, this evidence suggests only localized, as opposed to widespread adoption of successful activities, and only when the requisite complementary elements were available (such as land ownership and financial resources). Therefore, the PPAR rates the risk to development outcome as **significant**.

## Bank and Borrower Performance

### BANK PERFORMANCE

4.22 The quality at entry is rated **unsatisfactory** as described under "Design and Implementation", the development objective was relevant but complex as stated under "Relevance", and four successive task managers handled project preparation. The quality of supervision was **moderately satisfactory**: the Bank's supervision team exhibited continuity, a proactive approach, flexibility in addressing issues in a changing environment; focused on the adequacy of Bank and government inputs for implementation and on the achievement of development impacts; provided detailed advice for correcting shortcomings and improving implementation performance; introduced a new activity — the intensification tests — to magnify the benefits under the "testing" component; and attempted to remedy APROFA's implementation deficiencies by commissioning an institutional organization study. However, the Bank should have followed up more forcefully on its own recommendations. The Bank team was not always realistic in rating project performance; and belatedly rated the project as a "problem project" in December 2000 and drew up an action plan to restore it to normal

status. In addition, it was not clear to the IEG mission whether the Bank properly advised APROFA concerning the rules governing the grace period after project closure.<sup>50</sup> Overall, the Bank's supervision missions did little to improve the project's operations or the achievement of its objectives. Thus, the PPAR rates overall performance as **moderately unsatisfactory**.

## **BORROWER PERFORMANCE**

4.23 The performance of the Government is rated **unsatisfactory**. The Government actively participated in project preparation, launch workshops, and supervision missions. However, the Government insisted on entrusting project implementation to APROFA, and did not accompany this decision with proper oversight of APROFA's activities. This decision backfired and hindered the achievement of the project's objectives due to poor activity implementation and fiduciary management. The Government did not follow up on the Bank's recommendation to transfer implementation responsibility to APROFA-Association and actively involve it in decision making and project implementation. This compromised the transition arrangements (belatedly agreed upon in 2001) and the sustainability of the services provided through the project. The assets and equipment acquired by APROFA were not transferred to beneficiaries and the irrigation and well-digging equipment have remained with APROFA and stored away to this date.<sup>51</sup>

4.24 The performance of the implementing agency is rated **highly unsatisfactory**. Some key staff were hired only few months before project closure. Beneficiary participation and consultation did not take place. The agency put up strong resistance to the transfer of monitoring/control to the APROFA-Association, whose involvement would have facilitated beneficiary participation and might have sustained the provision of services after project closure. The agency failed to create synergies with other sector institutions, or even between the two projects it was managing. APROFA's fiduciary management was also weak. Procurement and contract management were done according to government processes and not according to Bank procedures agreed-upon in the DCA, which entailed a lengthy process, taking up to two years for some contracts, and delayed the implementation of components. Several contracts were procured contrary to Bank procedures, thereby resulting in ineligible expenses and the accumulation of a number of persistent creditors. APROFA handled its cash flow and disbursement requests poorly, thereby causing delays in budget replenishment and frequent postponement of seasonal activities. It did not follow through on Bank recommendations for improving its management. The disbursement rate was low and only 53 percent of the credit was spent at project closure. Finally, no monitoring and evaluation of the project's outcomes and impacts were done, so that decision making was not made on the basis of systematic data.

4.25 Taking everything into account, the PPAR rates overall Borrower performance as **highly unsatisfactory**, compared to the ICR rating of unsatisfactory. The cumulative poor performance of the Government and the implementing agency had a major negative impact on the achievement of the project's objectives.

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50. See footnote 32 on page 21.

51. This was except for some irrigation equipment used by CECI, the NGO which conducted pretests for the Agricultural Competitiveness and Diversification Project (PCDA).

## Monitoring and Evaluation

4.26 The overall quality of project monitoring and evaluation is rated **negligible**. Project appraisal gave due attention to M&E in terms of the establishment of performance indicators, the assignment of responsibilities, frequency, and the collection process. However, the performance indicators were not sufficiently detailed for a pilot operation. These were mostly composed of input and output indicators that were not conducive to helping decision makers in interpreting project results and in steering or amending project activities.

4.27 Socioeconomic surveys were conducted during project preparation to set a baseline for the project. Some activity reports were produced during project implementation. Input data, and some output and outcome data were collected at the regional level, but this took place outside any integrated M&E and at ICR preparation. The planned studies and surveys on monitoring the incentives for private irrigation development, on impact evaluation, and on the taxation and supply of inputs and spare parts were not carried out. The M&E system was not well-embedded institutionally, did not have sufficient stakeholder ownership, and functioned only intermittently, reflecting the apparent disinterest of the implementing agency and the Government. It was simply unable to alert project management of the need to amend activities or the direction these activities should take.

## 5. Other Issues (Safeguards, Fiduciary, Unintended Outcomes — Positive and Negative)

### National Agricultural Research Project (NARP)

5.1 One unintended project outcome was the motivation it created in other Malian institutes, and research institutes in neighboring countries, to copy the reforms implemented through the project. Other entities that worked on administration in general or research in particular started to think of about transforming themselves into an autonomous body, to evaluate the status and capacity of their staff, and to give them TORs or letters of mission. For example, the Malian National Council for Scientific and Technical Research, which is responsible for science policy, started to copy CNRA's reforms. And agricultural research institutes in Benin, Gambia, and Guinée have visited and consulted the IER on their own reforms.

5.2 The NARP strengthened financial management with the introduction of new software that allowed for improved analysis of expenditures through greater coding flexibility. The CNRA made research available on the basis of research contracts, and cut funding when the respective contracts did not perform. However, IER researchers complained bitterly to the IEG mission that research proposals had taken too long to be approved — up to two years in some instances — and the funds had been released tardily. The CNRA responded that the IER had often failed to produce justifications for their expenditures in a timely fashion. In fact, IER's financial management was weak during the project due to inadequately trained personnel, and poor internal audit capacity. The 2000 audit of IER's statement of expenditures underscored this and raised questions regarding the appropriateness of recorded transactions. This also prompted USAID, at the time, to manage its assistance to IER directly through setting up its own office on IER premises. At present, as a result of technical

assistance provided by several donors, the IER has improved its financial management so that the management of its finances has no longer been overseen by expatriates since 2003.

### **Agricultural Trading and Processing Promotion Pilot (ATPPP)**

5.3 The SAR stated that “although no negative environmental impact is likely, environmental concerns will be addressed during project implementation as they arise, and during the mid-term review.” However, the wide adoption, as result of the ATPPP, of the improved artisanal conservation cases for onions in the Ségou region presented a negative environmental impact which was neither noted nor addressed by the MTR or later. A CIDA study showed that about half a ton of locally-harvested wood was used for the construction and maintenance of a single conservation case. A mitigation plan should have been adopted to plant trees to replace those that were cut, or would be cut in the future, since the area is noted for its scarcity in wooded lands. On the other hand, the processing of agricultural products, encouraged and enabled through ATPPP, reduced the incidence of solid waste — a positive unintended outcome, since solid waste disposal management is lacking in Mali.

5.4 ATPPP missed an opportunity in not constructing wholesale market facilities in Bamako, Ségou and Sikasso, where opportunities for domestic and export markets abound. As a result, producer associations reported insufficient marketing opportunities for their produce and subsequent losses of revenues, especially during the peak harvest time. They also cited hardships due to makeshift sale points subject to weather extremes.

5.5 The software, SAARI, that was used by APROFA to manage its accounting system was not conducive to monitoring expenditures by component but only by expenditure category. When APROFA’s financial audits of 2002 and 2003 were completed in February 2004, these showed a satisfactory result with no qualifications, and confirmed APROFA’s debts at CFAF 202 million (30 percent of which was due to ATPPP) including staff indemnities, consultant fees, training, studies (40–50 percent of the total), and operational costs. The Government took the decision to pay back the debt in August 2006.

### **Pilot Private Irrigation Promotion (PPIP)**

5.6 Assisted by FAO-CP, the Government conducted an environmental analysis and prepared a mitigation plan in compliance with Bank safeguards. However, the mitigation plan was not implemented since no significant expansion in small-scale irrigation took place.

5.7 As mentioned before, procurement and contract management were done according to Government processes (and not according to Bank procedures as had been agreed upon in the DCA), which entailed a lengthy process, taking up to two years for some contracts and delaying the implementation of components.<sup>52</sup> Several contracts were procured contrary to established Bank procedures, entailing ineligible expenses and the accumulation of a number of persistent creditors. The implementing agency had great difficulty planning its purchases and organizing them into a regularly updated procurement plan. APROFA handled its cash

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52. The delivery of irrigation equipment was considerably delayed due to the procurement procedures followed, but also due to the political unrest in Côte d’Ivoire. The irrigation equipment was delivered in September 2002, six months before the project’s extended closing date.

flow and disbursement requests poorly, which caused delays in budget replenishment and frequent postponements of seasonal activities. When the audit reports for 2002 and 2003 were completed in February 2004, these confirmed APROFA's debts at CFAF 202 million (70 percent of which was due to PPIP).

## 6. Lessons and Considerations for Future Development

6.1 Several lessons of both a substantive and procedural nature have emerged from this review:

- (1) **Meeting the challenge of pro-poor agricultural growth requires addressing a number of institutional constraints that farmers in Mali face in relation to rural finance, land titling, and the provision of public services such as wholesale market facilities.**

6.2 The need for potential beneficiaries to have greater access to credit in order to magnify the scale of project benefits was a common denominator in all three projects. Agricultural production and related activities such as irrigation, trading, and processing are viewed as high risk, especially for perishables and high-end exportable products such as mangoes. In Mali, the formal financial sector is almost completely absent from the rural economy because banks are not generally interested in accepting the high risk, the low levels of collateral, and the high transaction costs involved in lending to smallholders or community groups. The inability of most rural dwellers to invest from their own resources in modern agricultural inputs, small-scale irrigation equipment, small-scale processing, and storage infrastructure hinders them from expanding their productive investments or entering into new forms of productive endeavors. Unless there is greater access to credit, agricultural development programs and projects will continue to bypass the 80 percent of farmers who are poor and serve primarily the 20 percent who are better off as well as a small percentage of the agriculture-related entrepreneurs (agro-processors, transporters, traders, exporters).

6.3 More secure land titles (which are not customary to have in Mali's land tenure system) are also a prerequisite for many farmers to invest in their land. Under customary law, a farmer cannot plant trees on land allotted to him that does not belong to him or his family (since this is considered to be staking a claim on the land). This makes it more difficult for farmers to invest in small-scale irrigation and to engage in high end crops such as oranges, bananas, and mangoes since these involve the planting of fruit trees. Having a land title would make it more feasible for farmers to invest in these more profitable crops and magnify their revenues.

6.4 The experience with ATPPP also showed that the Government should not disengage from providing public services such as the construction/rehabilitation of wholesale market facilities. In the absence of a "sponsor," less well-to-do farmers, or those who did not live in large agglomerations, were unable to access the makeshift structures of these agglomerations and therefore benefit from the extra production fostered under ATPPP and PPIP.

**(2) Ambitious and unrealistic development objectives and project design complicate implementation and supervision.**

6.5 Two out of the three projects (ATPPP and PPIP) tried to do too much. Each of their designs comprised several components and subcomponents. The ATPPP, which was a pilot, aimed to improve the production-to-marketing chains of several products, as well as agro-processing, and its development objective suggested that the project would bring about a sustained growth in the agricultural trading and processing sectors at the national level. The PPIP, which was also a pilot, comprised seven components and aimed to address two issues — land titling and access to credit — which were clearly beyond the scope of a pilot project and which warranted separate and specific operations.

6.6 It would have been better for NARP to concentrate, first, on the major and difficult institutional reforms — which were brutal and swift, and prompted a lot of complaints from IER staff — while also including the other research institutions in the reform process, and only second, on research relevance and quality. It would have been better for both ATPPP and PPIP to concentrate their activities on the learning experience, rather than conducting them as full fledged investment operations, and spreading them too thinly over many activities. The unrealistic objectives and design necessitated a scaling back of activities under ATPPP — such as refocusing on only four crops rather than the large array in the SAR, and project implementation in only two regions rather than three — and caused confusion in understanding what and how things should be done in the case of PPIP, thereby contributing to its systemic breakdown.

**(3) Effective stakeholder representation in decision making and in validating results is important to the success of public-private partnerships.**

6.7 This lesson has been incorporated into the design of the follow-on projects, PASAOP and PCDA. Stakeholders must be engaged early on in public-private partnerships, and kept engaged in order to ensure effective ownership and sustainability of results. As the project's clients, beneficiaries should be able to influence the project's work program and spending decisions, and should cosponsor certain project activities. However, it would be necessary to broaden the participant base of the respective producer and other community-based organizations in order to ensure effective representation of all potential beneficiaries. Although the NARP made huge steps towards involving research users in programming and validating research results, if the beneficiaries had been fully represented and involved in validating IER's technologies, this would have pressured the IER to reorient its work to benefit the majority of farmers who are poor and less able to invest in modern inputs. More effective beneficiary representation would have enhanced the pro-poor focus on the project.

**(4) Overestimating the readiness of the Borrower to implement a project leads to unavoidable implementation delays and costly changes in project design.**

6.8 For the NARP, Bank management decided to declare the project effective even though the conditions of project effectiveness were not met. These conditions were only fulfilled in their entirety towards the end of the project, which resulted in the satisfactory achievement of the development objectives by the end of the project, but unnecessarily delayed project implementation at the beginning and prompted a threat of suspension around

the middle of the project. These conditions involved the legal establishment of CNRA and IER as autonomous bodies independent of the MDRE; the transfer of ownership of vast plots of productive land from the Ministry of Finance to IER in a country where land pressures are increasing; and the loss of control by different Ministries on a large employer, the IER. In such an environment, the Bank overestimated the Government's readiness, ownership, and willingness to implement these hard political decisions, and the Bank's acquiescence led to the cancellation of some important activities that influenced the sustainability of benefits, and the need to spend more in one location to the detriment of others. Dated covenants and conditions of effectiveness and disbursements did not prove effective in keeping the Government to its pledges on a timely basis, and the Bank was viewed as having backed down on its conditionalities.

- (5) For projects supporting private sector development, implementing agencies need to have a results-oriented culture and should sub-contract the management and implementation of certain activities to private service providers, including NGOs.**

6.9 This lesson has been incorporated into the design of the follow-on project, PCDA. Both the ATPPP and PPIP suffered from having an implementing agency that was not attuned to the private sector development nature of the two projects, that did not respect the Bank's fiduciary processes, and that did not conform to a culture of accountability. While intensive training in the Bank's fiduciary processes could have alleviated the fiduciary compliance issue, public sector agencies such as APROFA do not have all the required skills, the results-oriented culture, or the efficiency for directly managing all the interventions ranging from civil works to capacity-building activities, which APROFA, the implementing agency, chose to do itself under PPIP. Contracting out the management of these activities to private sector providers and other entities such as NGOs would have resulted in a more efficient delivery of services to the private sector, including farmers. This has been well demonstrated by the only successful activity of PPIP — the intensification tests — which were contracted out to an NGO, CECI.



## Annex A. Basic Data Sheets

### NATIONAL AGRICULTURAL RESEARCH PROJECT (CREDIT 25570-ML)

#### Key Project Data (amounts in US\$ millions)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
IDA Credit	20.0	19.6	98%
Country contribution			
Government	17.9	17.7	99%
IER	0.8	0.7	88%
Private sector	4.9	-	0%
Parallel financing	68.1*	19.2	28%
Total project costs	111.7	57.2**	51%

\* The project team informed the IEG mission that parallel financing was revised down to 36.9 US\$M during implementation

\*\* The Bank ICR estimates actual project costs at 56.6 US\$M, which does not take into account IER's contribution of 0.7 US\$M, mentioned in the Government ICR

#### Cumulative Estimated and Actual Disbursements

	<i>FY94</i>	<i>FY95</i>	<i>FY96</i>	<i>FY97</i>	<i>FY98</i>	<i>FY99</i>	<i>FY00</i>	<i>FY01</i>	<i>FY02</i>	<i>FY03</i>
Appraisal estimate (US\$M)	0.7	2.8	8.4	12.4	16.4	18.8	19.6	20.0	-	-
Actual (US\$M)	-	2.9	5.0	7.6	10.8	13.2	16.8	19.3	19.5	19.6
Actual as % of appraisal*	-	104%	59%	61%	66%	70%	86%	97%	98%	98%

Date of final disbursement:

April 11, 2002

\* Percentages for FY02, and FY03 refer to cumulative disbursements versus total appraisal estimate of 20.0 US\$M

#### Project Dates

	<i>Original</i>	<i>Actual</i>
Initiating memorandum (PCD)		02/27/1990
Appraisal		03/25/1993
Board approval		12/16/1993
Effectiveness	June 1994*	11/10/1994
Mid Term Review	12/31/1997	11/28/1997
Closing date	12/31/2001	12/31/2001

\* As anticipated in SAR

## Staff Inputs

	<i>No. of Staff Weeks</i>	<i>US\$'000</i>
Identification/ Preparation	22.5	*
Appraisal/Negotiations	45.0	397,871.4
Supervision	114.3	471,313.5
ICR	22.0	45,400.0
Total	203.8	914,584.9

\* The ICR mentions that "Detailed budgets do not allow for a distinction between preparation and appraisal. All preparation costs are put under "Appraisal."

## Mission Data

	<i>Date (month/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Implemen- tation progress</i>	<i>Develop- ment objectives</i>
Identification/ Preparation	01/1991	2	1 Agr. Research Specialist, 1 Economist		
	06/1991	5	1 Agr. Research Specialist, 1 Economist, 1 Agr. Services Specialist, 1 Research infrastructure Specialist 1 Infrastructure Specialist		
Appraisal/ Negotiations	03-04/1993	8	1 Agr. Research Specialist, 1 Economist, 1 Agr. Services Specialist, 1 Research infrastructure Specialist, 1 Infrastructure Specialist, 1 FMS, 1 Procurement Specialist, 1 Sociologist		
Supervision 1	08/28/1994	4	1 Agr. Services Specialist, 1 Agriculturalist, 1 Sociologist, 1 Research Specialist	S	HS
Supervision 2	12/21/1994	2	1 Agr. Services Specialist, 1 Agr. Research Specialist	S	HS
Supervision 3	06/23/1995	1	1 Agr. Research Specialist	S	HS
Supervision 4	11/23/1995	2	1 Agr. Services Specialist, 1 Agr. Research Mgt. Specialist	S	S
Supervision 5	11/23/1996	4	1 Agr. Services Specialist, 1 Agr. Research Mgt. Specialist 1 NGO Specialist, 1 Consultant	U	U

	<i>Date (month/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Implemen- tation progress</i>	<i>Develop- ment objectives</i>
Supervision 6	02/25/1997	3	1 FMS, 1 Agr. Services Specialist, 1 Research Specialist	U	U
Supervision 7	07/11/1997	2	1 FMS, 1 Agr. Services Specialist	U	U
Supervision 8	11/25/1998	4	1 Farmers Organization Specialist, 1 FMS, 2 Agr. Services Specialists	U	U
Supervision 9	02/26/1999	1	1 Agr. Services Specialist	U	U
Supervision 10	05/28/1999	3	1 FMS, 2 Agr. Services Specialists	S	S
Supervision 11	02/10/2000	8	2 Agr. Services Specialists, 1 Livestock Specialist, 1 FMS, 1 Agr. Research Specialist, 1 Soil Fertility Specialist, 1 Farmers Organization Specialist 1 Procurement Specialist	S	S
Supervision 12	02/26/2001	3	1 Agr. Services Specialists, 1 Agr. Research Specialist, 1 Livestock Specialist	S	S
ICR	03/11/2002	9	1 Agr. Research Specialist, 1 Economist, 2 Agr. Services Specialists, 1 M&E Specialist, 1 Research Infrastructure Specialist, 1 Infrastructure Specialist, 1 FMS, 1 Procurement Specialist, 1 Project Assistant, 1 Technical Assistant	S	S

This table is adopted from the ICR, but some mission dates are noted not to be correct.

## AGRICULTURAL TRADING AND PROCESSING PROMOTION PILOT PROJECT (CREDIT 27370-ML)

### Key Project Data *(amounts in US\$ millions)*

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
IDA Credit	6.0	5.08	85%
Government	0.8	0.06	7.5%
Cofinancing			
CECI NGO	0.1	0.09	90%
CIDA*	-	0.3	-
Japan*	-	0.1	-
Total project costs	6.9	5.1	74%

\* The contributions from CIDA and Japan were not originally included in project costs and are thus not taken into consideration into computing Total Actual project costs but are listed here to inform the reader about contributions from other donors denoting interest in joining forces with the Bank on ATPPP.

### Cumulative Estimated and Actual Disbursements

	<i>FY96</i>	<i>FY97</i>	<i>FY98</i>	<i>FY99</i>	<i>FY00</i>	<i>FY01</i>	<i>FY02</i>	<i>FY03</i>	
Appraisal estimate (US\$M)	1.9	2.6	4.1	5.1	6.0	-	-	-	
Actual (US\$M)	0.2	1.0	1.9	2.8	3.5	4.2	5.0	5.1	
Actual as % of appraisal*	11%	38%	46%	55%	58%	70%	83%	85%	
Date of final disbursement:								July 29, 2002	

\* Percentages for FY01, FY02, and FY03 refer to cumulative disbursements versus total appraisal estimate of 6.0 US\$M

### Project Dates

	<i>Original</i>	<i>Actual</i>
Initiating memorandum		08/30/1991
Appraisal		11/07/1994
Board approval		06/01/1995
Effectiveness	September 1995*	04/30/1996
Mid Term Review	08/01/1998	08/17/1998
Closing date	03/31/2001	12/31/2002

\* As anticipated in the SAR

## Staff Inputs

	<i>No. of Staff Weeks</i>	<i>US\$'000</i>
Identification/ Preparation	56.9	117.1
Appraisal/Negotiations	45.1	102.0
Supervision	124.4	158.0
ICR	12.5	12.0
Total	238.9	389.1

## Mission Data

	<i>Date (month/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Implemen- tation progress</i>	<i>Develop- ment objectives</i>
Identification/ Preparation	06/20/1993	4	1 Economist, 3 Ag. Services Specialists		
	10/25/1993	1	1 Economist		
	03/22/1994	1	1 Economist		
	06/21/1994	1	1 Economist		
Appraisal/ Negotiations	11/15/1994	2	1 Economist, 1 Ag. economist		
	03/05/1995	2	1 Economist, 1 Ag. economist		
Supervision 1	04/13/1996	1	1 Ag. economist	S	S
Supervision 2	11/17/1996	2	1 Ag. economist, 1 Economist, Res. Mission	S	S
Supervision 3	06/21/1997	2	1 Ag. economist, 1 Economist	S	S
Supervision 4	03/03/1998	2	1 Sr. Ag. economist, 1 Rural Sociologist	S	S
Supervision 5	08/17/1998	2	1 Sr. Ag. economist, 1 Bank Res. Rep.		
Supervision 6	10/25/1999	4	1 Sr. Ag. economist, 1 Economist, 1 Rural Credit Specialist, 1 Operations Analyst	S	S
Supervision 7	02/11/2000	2	1 Sr. Ag. economist, 1 Operations Analyst	S	S

	<i>Date (month/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Implemen- tation progress</i>	<i>Develop- ment objectives</i>
Supervision 8	05/15/2000	6	1 Sr. Ag. economist, 1 Ag Intensification Specialist, 1 Implementation Specialist, 1 Ag. Services Specialist, 1 Procurement Specialist, 1 Financial Analyst	S	S
Supervision 9	10/16/2000	4	1 Sr. Ag. economist, 1 Irrigation Engineer, 1 Ag. Economist, 1 Ag. Services Specialist	U	S
Supervision 10	10/16/2000	8	1 Sr. Ag. economist, 1 Operations Officer, 1 Ag. Services Specialist, 1 Procurement Specialist, 1 Irrigation Engineer 1 Agronomist, 1 Irrigation Specialist, 1 Financial Management Sp.	S	S
Supervision 11	03/30/2002	11	1 Operations Officer, 3 Ag. Services Specialists, 1 Irrigation Engineer, 1 Agronomist, 1 E&S Safeguards Specialist, 1 Procurement Specialist, 1 Financial Management Sp., 1 Team Assistant, 1 M&E Specialist	S	S
Supervision 12	11/16/2002	10	1 Sr. Operations Officer, 1 Ag. Services Specialist, 2 Sr. Rural Dev. Specialist, 1 Sr. Ag. Ext. Specialist, 1 Procurement, 1 Financial Management Sp., 1 Program Assistant, 1 Irrigation Engineer, 1 Ag Marketing Specialist	S	S
ICR	03/28/2003	6	1 Sr. Operations Officer, 2 Sr. Rural Dev. Specialist, 1 Procurement Specialist 1 Financial Management Sp., 1 Team Assistant		S

## PILOT PRIVATE IRRIGATION PROMOTION PROJECT (TF N0210-ML)

### Key Project Data (amounts in US\$ millions)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
IDA Credit	4.20	2.21	53%
Beneficiaries	0.47	0.20	43%
Total project costs	4.67	2.41	52%

### Cumulative Estimated and Actual Disbursements

	<i>FY98</i>	<i>FY99</i>	<i>FY00</i>	<i>FY01</i>	<i>FY02</i>	<i>FY03</i>
Appraisal estimate (US\$M)	1.0	1.9	2.9	3.9	4.2	
Actual (US\$M)	0.01	0.79	1.11	1.28	1.51	2.21
Actual as % of appraisal	1%	42%	38%	33%	36%	53%
Date of final disbursement:						June 12, 2002

\* Percentage for FY03 refers to cumulative disbursement versus total appraisal estimate of 4.2 US\$M

### Project Dates

	<i>Original</i>	<i>Actual</i>
Initiating memorandum		03/13/1987
Appraisal		03/17/1997
Board approval		05/30/1997
Effectiveness	04/22/1998	04/22/1998
Mid Term Review	05/15/2000	05/15/2000
Closing date	06/30/2002	03/31/2003

### Staff Inputs

	<i>No. of Staff Weeks</i>	<i>US\$'000</i>
Identification/ Preparation	135*/	132.2*/
Appraisal/Negotiations	58*/	99.3*/
Supervision	87	168.4
ICR	7	5.5
Total	287	405.4

\* These figures are taken from the ICR. A QAG document prepared in May 1998 puts preparation costs at US\$485,000 from Bank budget (BB) and US\$750,000 from the Project Preparation Facility (PPF), amounting to US\$1.2 million.

## Mission Data

	<i>Date (month/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Implemen- tation Progress</i>	<i>Develop- ment Objectives</i>
Identification/ Preparation	02/14/1992	6	1 Team Leader, 2 Agronomists, 1 Sociologist, 1 Hydrogeologist, 1 Consultant		
	11/15/1993	4	1 Team Leader, 1 Jurist, 1 Financial Analyst, 1 Irrigation Specialist		
Appraisal/ Negotiations	10/20/1994	4	1 Team Leader, 1 Irrigation Specialist, 1 Ag. Services Specialist, 1 Jurist		
	08/15/1995	2	1 Socioeconomist, 1 Ag. Services Specialist		
	11/16/1995	4	1 Team Leader, 1 Irrigation Specialist, 1 Ag. Economist, 1 Ag. Services Specialist		
	03/13/1997	4	1 Team Leader, 1 Jurist, 1 Ag. Services Specialist, 1 Operations Support		
Supervision 1	06/08/1998	1	1 TTL – Sr. Ag. Economist	S	S
Supervision 2	03/01/1999	7	1 TTL – Sr. Ag. Economist, 1 Irrigation Specialist, 1 Sociologist, 1 Ag. Services Specialist, 1 Operations Support, 1 Financial Analyst, 1 Procurement Specialist	S	S
Supervision 3	10/28/1999	7	1 TTL – Sr. Ag. Economist, 1 Irrigation Specialist, 1 Rural Credit Specialist, 1 Ag. Services Specialist, 1 Farmers Org. Specialist, 1 Procurement Specialist, 1 Financial Analyst	S	S

	<i>Date (month/year)</i>	<i>No. of persons</i>	<i>Specializations represented</i>	<i>Implemen- tation Progress</i>	<i>Develop- ment Objectives</i>
Supervision 4	05/15/2000	4	1 TTL – Sr. Ag. Economist, 1 Ag. Intensification Specialist, 1 Operations Specialist, 1 Ag. Services Specialist		
Supervision 5	10/14/2000	6	1 TTL – Sr. Ag. Economist, 1 Irrigation Specialist, 1 Ag. Economist, 1 Ag. Services Specialist, 1 Procurement Specialist, 1 Financial Mgt Specialist	U	S
Supervision 6	06/16/2001	8	1 TTL – Sr. Ag. Economist, 1 Co-TTL, 1 Ag. Services Specialist, 1 Irrigation Specialist, 1 Agronomist, 1 Procurement Specialist, 1 Irrigation Engineer, 1 Financial Mngt. Specialist	S	S
Supervision 7	03/15/2002	11	1 TTL – Sr. Ag. Economist, 1 Co-TTL, 1 Ag. Inst. Dev. Specialist, 1 Ag. Services Specialist, 1 Procurement Specialist, 1 Safeguards Specialist, 1 Irrigation Engineer, 1 Agronomist, 1 M&E Specialist, 1 Financial Mngt. Specialist, 1 Team Assistant	S	S
Supervision 8	11/02/2002	10	1 TTL – Sr. Ag. Economist, 1 Co-TTL, 1 Agronomist, 1 Rural Dev. Specialist, 1 Rural Inst. Specialist, 1 Procurement Specialist, 1 Ag. Economist, 1 Irrigation Engineer, 1 Financial Mngt Specialist, 1 Team Assistant	S	S
<b>ICR</b>	11/02/2002	6	1 TTL – Sr. Ag. Economist, 1 Economist, 1 Civil Engineer, 1 M&E Specialist, 1 Operations Analyst, 1 Team Assistant		U

## Annex B. Mali's Agricultural Sector

With a per capita income of US\$300 in 2004, and per capita agricultural income at US\$124 in 2002, Mali is one of the world's poorest countries. The rural sector dominates Mali's economy and social structure: rural areas account for about 80 percent of the country's population of 13.5 million, and agricultural activities occupy about 70 percent of the country's labor force. Small-scale traditional farming dominates the agricultural sector and subsistence farming (primarily of sorghum, millet, and maize) accounts for more than 70 percent of the 4.6 million hectares of land under cultivation. Only 82 thousand hectares of land are irrigated compared to Mali's estimated irrigable potential of 1 million hectares. Poverty in Mali is primarily a rural phenomenon, with more than 70 percent of the rural population being poor. Fighting poverty means providing economic opportunities to rural dwellers to improve their incomes and livelihoods.

Although the agricultural sector is mainly oriented to the domestic market, agricultural exports were the main foreign exchange earner (up to 80 percent) in the 1990s, until gold exports became more important in the early 2000s. The main agricultural exports in 2004 were cotton fiber (30 percent of total exports), which is exported to Europe, and livestock (4 percent), which is exported to West Africa, especially Côte d'Ivoire. Hides and skins accounted for just under 1 percent of exports, while other agricultural exports — such as shelled groundnuts, fish, cotton threads and materials, cottonseed oil, and mangoes — each accounted for 0.5 percent or less.

Agriculture contributed an average of 46 percent to GDP during the period 1987–1993, declining slightly to an average of 43 percent from 1994 to 2004, the year in which the CFA Franc was devalued. At that time, the share of the secondary sector (notably gold) began to rise. Nonetheless, agriculture is still the largest sector of the economy and the devaluation increased the competitiveness of Malian products on international markets (for mangoes, beans, and sweet peas) and on regional markets (*vis-à-vis* imports such as potatoes from Europe). The agriculture sector grew at the average rate of 3.5 percent per year during the period 1987–1993, declining to 2.6 percent per year from 1994 to 2004 due to the low productivity growth associated with the continued use of traditional technologies, and low and irregular rainfall. Agricultural growth was led by the expansion in rice production at 9.3 percent per year — grown mainly for domestic consumption as a substitute for imported rice — and in cotton production at 6.3 percent per year, grown mainly for export.

The average annual growth in real GDP was 3.0 percent during 1987–1993 and 5.7 percent from 1994 to 2004. Taking into account population growth of 2.7 percent per year, real GDP per capita grew at 3.3 percent from 1994 to 2004. However, this growth has not resulted in a matching decrease in rural poverty, which has remained at around 73 percent since the first Poverty Reduction Strategy Paper (PRSP) was issued in 2002, due to the inequitable distribution of the benefits of growth.

Increases in the agricultural production of marketable crops (notably rice and cotton) and subsistence crops (notably millet, sorghum, maize) have occurred since 1994. These increases have strengthened Mali's food security and enabled the country to become substantially self-reliant in basic foodstuffs — decreasing the need, for example, to import

rice. Liberalizing the marketing of cereal crops in the late 1980s, in a program viewed as a model in West Africa, removed restrictions on transporting cereal crops across regions and improved food distribution throughout the country.

## The Priority Placed On Agriculture

The Government of Mali and the World Bank concur that the development of the agriculture sector — from production to marketing — is an essential ingredient of the overall rural development effort. The Bank's Country Assistance Strategy (CAS) for the period 2004–2006 incorporates the recommendations of Mali's 2002 PRSP, which in turn reflect the aspirations of Government's Master Plan for Rural Development.<sup>53</sup> All these strategies aim to accelerate broad-based growth by tapping more systematically into the country's important agricultural potential and by strengthening capacities of the private sector to seize market opportunities. The Bank has been strongly supporting the implementation of Government's rural development strategy through its portfolio of investment and adjustment operations.<sup>54</sup>

The Government's 2007–2011 PRSP, which is about to be approved by the Council of Ministers, emphasizes the important role that the modernization of agricultural production and supply chains play in accelerating economic growth and poverty reduction. The PRSP aims to achieve this through increased private investment and access to credit to modernize production, better land and water management to minimize vulnerability to climatic fluctuations, improved access to markets, the provision and utilization of information on markets and technological advances, and the creation of a coherent institutional and incentive framework to foster the professionalization of rural actors.

## Challenges and Opportunities

The Bank's latest Country Economic Memorandum for Mali, in draft and due to be published in 2007, notes worrisome trends in the agriculture sector: agriculture's declining average annual growth and contribution to GDP growth, and its low and essentially unchanged land productivity (except for rice), with overall yields increasing an average of only 1 percent a year. An analysis conducted using a social accounting matrix to understand the links between the sectors in Mali's economy suggests that agricultural growth would have the largest positive impact on rural households, which are among the poorest. The failure to improve agricultural productivity would hinder efforts to reduce poverty, since growth in agricultural

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53. The Government's Master Plan for Rural Development, elaborated in 1992 and updated in 2001, included several priority action programs that were integrated into the Government's 2002 PRSP: (a) support for agricultural services and producer organizations; (b) development of rural infrastructure and farming equipment; (c) promotion and improvement of the competitiveness of agricultural supply chains; (d) stimulation of exports of agricultural, forestry, livestock and fishery products; (e) intensification and diversification of agricultural production; (f) reinforcement of food security; (g) promotion of financing of the rural sector and rural credit; and (h) management of natural resources to sustain rural development.

54. In addition to the three projects being reviewed in this PPAR, this includes the Agricultural Services Project (FY91, US\$24.4 million), the Natural Resources Management Project (FY92, US\$20.4 million), the National Rural Infrastructure Project (FY00, US\$115.1 million), the Structural Adjustment Credit 3 (FY02, US\$85.0 million), the Agricultural Services and Producer Organizations Project (FY02, US\$43.5 million), the Agricultural Competitiveness and Diversification Project (FY06, US\$46.4), and the Rural Community Development Project (FY06, US\$60.0 million).

productivity is an important prerequisite for general economic development, employment growth, and poverty reduction.<sup>55</sup> In the same study, a cross-sectional analysis of data from the World Development Indicators found that a 10 percent increase in crop yields could lead to a 6 to 12 percentage point reduction in poverty (defined as the share of the population living on less than \$1 a day). From a pro-poor perspective, with over 80 percent of Mali's population depending on agriculture and with its comparative advantage residing in agriculture and allied activities, declining agricultural growth and stagnant agricultural productivity growth are of great concern.

Opportunities to reverse these trends, which also emerged as important factors in this PPAR, tend to fall into four broad areas:

- *Access to modern inputs, including irrigation, in an organized input supply system* to improve productivity and enable output growth over two cropping seasons rather than the traditional one cropping season.
- *Access to a reliable market* (domestic, external, and agro-processing), which comes from improved market information; better organization and coordination of producers, processors, and traders; and a dependable logistics and infrastructure system (such as rural roads, wholesale markets, conservation and cold storage, sorting and packing facilities, refrigerated trucks, etc.).
- *Access to quality information* on improved technology (including more suitable varieties, husbandry practices, water management, post-harvest handling, and processing), which is related to the quality of research and extension services as well as research-extension-farmer linkages.
- *A strong institutional and incentive framework* at all levels of the production, processing and marketing chain, with proper attention to product quality, land tenure and property rights, and access to credit.

Some horticultural crops may represent an exception to the overall trends in agricultural growth and productivity. The production of onions and tomatoes increased by over 200 percent and 100 percent, respectively, during the period 1999–2004 through a combination of area expansion and yield increases, but this subsector represents a very small — albeit growing — share of agricultural value added. Horticulture is an important exception because it represents diversification away from an agricultural production system based on cotton and traditional subsistence crops such as millet and sorghum, and because it expands the export base. Horticultural crops are also a common aspect of two of the three projects (ATPPP and PPIP) that this PPAR covers, while the third project (NARP) provides a basic service (research). Nonetheless, studies have shown that constraints to increasing horticultural growth and productivity also exist, including:

- Lack of timely research and extension programs for these crops to improve crop varieties, farm-level techniques (including irrigation), and processing and marketing capabilities

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55. C. Thirtle et al., 2001, *Relationship Between Changes in Agricultural Productivity and the Incidence of Poverty in Developing Countries*, (UK) DFID Report No. 7946.

- Poor access to credit for agriculture and agribusinesses, which could provide demand-pull benefits for the performance of agricultural activities
- Lack of logistics arrangements such as wholesale market facilities, cold storage and other conservation technologies, and refrigerated transport
- Lack of good processing capabilities to reduce losses and increase returns from fresh produce by lowering the price risk of market gluts
- Insufficient access to information on prices and markets
- Underdeveloped input supply markets such as commercial supply systems for pumps and other irrigation equipment, fertilizers, and seeds
- Uncertain land tenure arrangements/property rights that limit small farmers' willingness to invest in their farms.

## Annex C. Monitoring and Evaluation in the Three Projects

### National Agricultural Research Project

#### DESIGN

The project design did not include a logical framework. Nonetheless, the correlation between project activities (institutional reform and research impact) and the development objective is straightforward and high. The SAR included detailed guidelines on the process of monitoring and evaluation of financial management, relevance, coherence, quality and impact of research programs, at both the CNRA and IER levels.<sup>56</sup>

The NARP instituted a monitoring and evaluation system of the technical and financial aspects of research that was composed of a multitude of checks and balances at all levels, which if used according to plan, would have given decision makers sufficient information to reorient research programming and financing. The NARP also provided training on impact evaluations. The process was well imbedded institutionally since it was part of the ratified institutional reforms, covered several aspects of M&E, and is still in practice up to the writing of this PPAR, although the economic evaluation of technologies has been lacking which has hampered its utility. Not much thought was given to demonstrating attribution of results to the project, except that it was understood in general terms that the proposed institutional reforms under NARP could not but positively influence research programming, implementation, and results. Data for evaluations was to be collected directly by external reviewers through interviews with researchers and beneficiaries and reviews of research results, by CNRA staff through periodic visits to the CRRAs and the field, and by the researchers themselves conjointly with extension agents.

The SAR included a list of implementation progress indicators for a number of inputs and outputs (e.g. intermediate institutional reform checks) but with no quantitative and time-bound targets and which did not fully reflect the project's development objective. With respect to a baseline, the NARP did highlight the need to take stock and evaluate all past research results in order to constitute a data base to better design research and extension activities. Only some, but incomplete information was available at the time.

Despite the weaknesses in the implementation progress indicators listed in the SAR, the strong design of the M&E system warrants a rating of **substantial** because its objective was

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56. This included (a) independent external reviews of ongoing research programs with reviews of proposed adjustments, commissioned by CNRA; (b) ad-hoc visits by CNRA's Scientific Commission and IER's science coordinators to the CRRAs, and monitoring and evaluation of research under implementation; (c) periodic independent financial and scientific audits for all donors, including the Government, commissioned by CNRA; (d) key indicators (bench marks) as part of IER research proposals submitted for financing; (e) annual reviews of research results by the Regional Technical Committees, which would then be transmitted to the Program Committee; (f) small ad hoc impact evaluations of research on beneficiaries conducted by teams of IER researchers and extension agents; and (g) research results presented in national dialect to, and validated by, the CRUs at the annual regional research programming sessions.

the monitoring and evaluation of the overall performance of the NARS, which the project aimed at improving.<sup>57</sup>

## IMPLEMENTATION

The baseline, or inventory and description of technologies available, was not done during the life of the project. However such a document now exists, prepared under the follow-on project, PASAOP. During the implementation of the NARP, more input and output indicators were added to the original list but these did little to better represent the development objective. Both the original and extended lists of indicators were measured and the data was presented in the ICR.

The implementation of the monitoring and evaluation of research was mixed. Although the joint impact assessments (with the extension service and research users) were not carried out, most components were carried out:<sup>58</sup>

- Two independent external reviews were done as anticipated
- Twelve impact assessments were conducted
- The annual financial audits were carried out
- The evaluation of research proposals by CNRA was done, as well as the monitoring of implementation and progress towards results, in accordance with the research programming cycle
- Research proposals included key indicators, drawing on the work done through the Dutch PAPIER project
- Research results were presented in the national dialect to, and validated by, the CRUs at the annual regional programming sessions.

Monitoring data has been analyzed to some extent since the CNRA has reported that it stopped financing a number of research projects because no results were achieved after several years of implementation. On the other hand, CNRA has also reported that some projects have not been stopped at the expressed requests of farmers, even though these have not shown results for several years.

The software SAC (Suivi-Appui-Conseil), which was financed by PAPIER and allowed tracking of research activities and results, was installed only towards the end of NARP — too late to properly evaluate project outputs. IER researchers at the Niono CRRA reported to the IEG mission that SAC was not much utilized in any case. They had been furnished with only one computer and researchers were constrained to taking turns feeding data into the system. There were no designated data processors at the level of the regional centers, and the computer capacity was inadequate to handle the software operation, causing more stress to the scientists. In addition, there was a general sense of mistrust and unwillingness to expose

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57. It should be noted here that the evaluation of PAPIER's outcome found that the M&E system was rather heavy and inefficient, absorbing too much energy from the researchers, but without elaborating further. In the opinion of this PPAR, it was necessary to install a rigorous system of checks and balances in order to sensitize the stakeholders to the need to do research for results and to instill a culture of accountability, which had not been the practice in Mali's NARS in the past.

58. ICR, page 13.

research results to others before these had been published because of intellectual property concerns.

However, the IER has monitored the implementation of its research contracts, but not evaluated their results in terms of economic viability. Similarly, the CNRA has monitored disbursements and not the profitability of research projects. It was clear to the IEG mission though that CNRA was well involved in M&E, but the IER was less interested. It will probably take more time to instill the culture of accountability in researchers compared to administrative personnel.

The trustworthiness of data collected, and the financial and economic impact of technologies developed and disseminated during NARP, cannot be validated on a large scale, as mentioned above under “Efficiency”. The ICR points out that these impact assessment results are only indicative only since the studies’ sample size was too small to extrapolate impacts and no other studies have been undertaken to measure the cost-effectiveness of research before and after the project.

The sustainability of the instituted M&E system is good at the moment because of the continued financing by PASAOP and other donor projects, for whom M&E is of high value. However, it is not likely that M&E functions will continue being implemented at the same rate in the absence of external funding. The implementation of the M&E system is rated **modest** in view of the partial collection of impact data, and the lack of evaluation of economic viability.

#### UTILIZATION

There is no evidence that the M&E results were utilized to cause shifts in the implementation of NARP. As mentioned above, the implementation progress indicators measured only some input and output indicators.

The M&E of research measured implementation progress, recorded some research results, and prompted the CNRA to cut funding for some non-performing research projects after several years of implementation. But this did not adequately measure the adoption of technologies or the financial impact on farmers, and there is no evidence that this was triangulated with other available evidence. No economic evaluation of technologies was done to enable a classification of technologies by types of farmers (wealthy, medium, and poor) in order to focus research on poor farmers.

The experience of the NARP has had an impact on subsequent interventions. The follow-on PASAOP has incorporated several lessons from the NARP in relation to (a) research-extension linkages; (b) the User Research Fund; (c) facilitating users’ participation in technology generation, dissemination and M&E; (d) developing technologies that correspond to the diversity of socio-economic and agro-ecological constraints; and (e) involving Community-Based and Producer Organizations in designing both technology generation and transfer programs and in making the public and private entities involved in agricultural services more accountable to the beneficiaries.

However, the only direct influence of the implementation progress indicators in the NARP's SAR on the design of PASAOP has been on the monitoring of the number of research contracts funded under the pilot User Research Fund (the number and value as percentage of total initial fund). Under the NARP, the User Research Fund was utilized at only 20 percent of anticipated levels due to several factors: (a) the duplication of requests through the CRUs and the User Research Fund; (b) the difficulty for research staff to translate the needs of beneficiaries into fundable proposals; (c) the lack of tools to assist beneficiaries in planning, implementing, and monitoring research activities; and in many cases (d) the submission of proposals which were more of a request for funding inputs. A major criticism of the Fund has been its distance from users. Thus PASAOP has incorporated financing for regional demand-driven research and development subprojects submitted by beneficiaries and focusing on resolving constraints to small-farm productivity and income generation.

Thus, for the most part, the M&E findings have not been utilized to influence either decision making within the NARP, or subsequent operations. The PASAOP has benefited from the expressed opinions of government officials and other stakeholders who worked on the NARP and helped in the PASAOP's preparation, but not from any written M&E reports. Therefore, the M&E utilization is rated **negligible**.

Based on the ratings of substantial, modest, and negligible for the design, implementation, and utilization of the M&E system, respectively, the overall M&E quality is rated **modest**.

## **Agricultural Trading and Processing Promotion Pilot Project**

### **DESIGN**

The design of the ATPPP predated the Bank requirement for a logframe. However, the SAR did state that "monitoring and evaluation will focus on: (a) the effectiveness of services provided to private entrepreneurs, either by the Agency or by other institutions; (b) the extent to which the project has improved the technical and management performance of agro-processing entrepreneurs and that of their professional organizations; and (c) the project's impact on agricultural processing activities and entrepreneurs." The SAR also presented a table of key performance indicators to be monitored per location and per year. But these indicators were a mix of input and output indicators which could not effectively measure what the SAR had mentioned, nor the extent to which the benefits of the project accrued to beneficiaries in order to assess the achievement of development objective in a systematic manner.<sup>59</sup> Therefore, the relevance of the M&E system is considered minimal.

The SAR mentioned that a baseline beneficiary survey would be conducted prior to project start-up. It also assigned responsibility for M&E and mentioned the process to be followed.<sup>60</sup>

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59. For example, the number of study tours conducted was measured without considering whether export contracts were signed, how many were signed, or their volume over time.

60. APROFA would be responsible for M&E, and MDRE and the Bank for ensuring proper project supervision. APROFA's regional branches, the professional associations receiving support, and the Agency would submit semi-annual progress reports. Based on these reports, and on regular visits by the monitoring and evaluation specialist, APROFA's General Manager would prepare a semi-annual consolidated progress report to be submitted to IDA, MDRE, and the Consultative Committee.

In order to facilitate monitoring, the appraisal team provided a detailed outline of the semi-annual reports to be prepared, including a long list of performance indicators (again a mix of input and output indicators) to each component, which was agreed upon during negotiations. However, the SAR did not specify the sources from where this data would be collected nor the sampling process to be applied.

In short, the design of the M&E system could only provide decision makers with information on the status of inputs and outputs and not on outcomes or impacts. This would provide little value for a pilot project such as ATPPP in demonstrating whether the project was succeeding in inducing sustained growth in the agricultural trading and processing sector, as stated in the development objective. Therefore, this PPAR rates the M&E design as **negligible**.

### IMPLEMENTATION

The project was not able to render its monitoring and evaluation unit operational and the baseline beneficiary survey foreseen in the SAR was not conducted. APROFA's regional branches in Sikasso and Ségou monitored their activities and submitted periodic reports which served as a basis for the project's various annual reports. The statistics made available to the ICR mission were prepared ex post, on the basis of data provided by the regional branches, and by the M&E officer who was hired two months before project closure. The absence of systematic monitoring clearly contradicts the SAR's provision for "close monitoring of management performance, intensive technical supervision, and regular evaluation of the beneficiaries' response". During the IEG mission, different data sources outside the project were consulted for information on the impact of the project on production and trade in the agricultural products targeted by ATPPP.

A logframe was developed in 2001 to compensate for the lack of it at appraisal. But for the uninformed reader, the chain of causality in the logframe is neither clear nor convincing. Some of the indicators identified reflected the achievement of the development objective (e.g., the product marketing chains targeted by APROFA should show an increase in revenues of no less than 5–10 percent annually), while others (e.g. APROFA is an autonomous and reliable implementing agency) did not. A separate table for indicators was also elaborated as an attachment to the logframe. This mentioned some baseline information and targets for production and exports for future years. The IEG mission could not confirm the baseline figures as these did not concord with statistics given in the ICR or from other sources. Beneficiaries did not seem to have been much involved in defining target indicators and in assessing their achievement.<sup>61</sup> The M&E system was not conducive to sustainability or replicability since most indicators were specific to the inputs and outputs of ATPPP.

In conclusion, input and output data were collected during the course of the project, but the outcome and impact data put together at the end of the project are not very reliable although they generally show a positive trend. There is no evidence that the data were analyzed in a methodologically sound manner. Thus the PPAR rates M&E implementation as **negligible**.

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61. Unless one counts APROFA Association, representative of beneficiaries, who was created at the same workshop during which the logframe was developed, and thus, could have participated in defining the indicators.

## UTILIZATION

As shown above, the M&E system only measured inputs and outputs, and not the outcomes or impacts on beneficiaries, and thus could not assess whether the theory of change or the causal logic of the project was sound. The decision to change APROFA's management team did not occur because of M&E results showing the non-performance of APROFA, but because of the slow disbursement and activity implementation. The experience with ATPPP has influenced the design of at least one follow-on project, namely, the Bank-financed Agricultural Competitiveness and Diversification Project (PCDA). While ATPPP tried to facilitate access to credit by training bank officials on appraising loan requests, the PCDA provides for a matching fund and a partial guarantee fund to help entrepreneurs access credit as well as the construction of commercial infrastructure such as export facilities, cold chain equipment, storage facilities, pack houses, and wholesale markets. Even this did not materialize from the M&E results, but from observations made during the implementation of ATPPP, and beneficiary complaints during the preparation of PCDA. The ATPPP made no attempt to triangulate different M&E evidence since outcomes and impacts were not measured (or rather reconstructed) until the end of the project in order to accommodate the preparation of the ICR. Attempting to triangulate the data during the preparation of the PPAR showed their weaknesses and unreliability. Therefore, the PPAR rates M&E utilization as **negligible**.

Based on the negligible ratings for the design, implementation, and utilization of the M&E system, respectively, the overall M&E quality is also rated **negligible**.

## Pilot Private Irrigation Promotion Pilot

### DESIGN

Project appraisal gave proper attention to M&E in terms of establishing performance indicators, the assignment of responsibilities, frequency, and the collection process, while emphasizing the monitoring of the incentive environment, financial monitoring, and environmental monitoring and mitigation. Section D of the SAR on "Reporting, Monitoring, Supervision and Evaluation" set forth an ambitious monitoring and evaluation agenda which focused on:

- The effectiveness of services provided to producers
- The sustainability of services
- The extent to which women irrigators as well as other categories of beneficiaries benefit from the various project interventions
- The extent to which the project improves irrigation producers' access to credit and the technical and management performance of investments in irrigation
- The profitability of these investments
- The project's impact on irrigated production and on income and employment generation
- The extent to which the project has facilitated the formalization of land tenure arrangements and the creation of legally registered producer groups
- The impact on strengthening the institutional and organizational capacities of producer organizations

- The impact on strengthening the local banks' skills in appraising investment projects in small-scale irrigation
- The environmental impact of project interventions, including the impact on human health
- The implementation of the cost-recovery scheme.

However, this agenda was not accompanied by a logframe or a matching set of performance indicators. The indicators presented in the SAR and agreed-upon at negotiations were not sufficiently detailed for a pilot operation, were mostly composed of input and output indicators, and fell short of measuring most of the project's outcomes that the SAR aimed to evaluate. While the indicators reflected the development objective by including such indicators as the area rehabilitated or put under new irrigation each year, they were not location-specific, nor conducive to help decision makers in interpreting project results and in steering or amending project activities.

Socioeconomic surveys were conducted during project preparation, setting a baseline for the project. The SAR made provision for annual beneficiary assessments to collect and analyze data on the performance indicators, to update the baseline, to assess progress in relation to project objectives, and to identify serious implementation problems. However, the M&E design was not well-embedded institutionally and did not have sufficient stakeholder ownership. Therefore, the M&E design is rated **modest**.

## IMPLEMENTATION

Socioeconomic surveys were conducted during project preparation to set a baseline for the project. Some activity reports were produced during project implementation. Input data, and some output and outcome data were collected at the regional level, but this took place outside any integrated monitoring and evaluation framework. Environmental monitoring received no follow-up. The planned studies and surveys on monitoring the incentives for private irrigation development, on impact evaluation, and on the taxation and supply of inputs and spare parts were not carried out.<sup>62</sup> Beneficiaries were not involved in any decision making or monitoring of project activities. Indeed, the M&E functioned only intermittently, reflecting the apparent disinterest of the implementing agency and the Government, and it was unable to alert project management of the need to amend activities or the direction these activities should take.

The quality at entry review had pointed out the weak initial reporting and monitoring documents prepared by the Government, which modeled annual work programs and budgets and which had no key indicators. The review had recommended that an appropriate project logical framework should be formulated, key performance indicators selected, and monitoring processes better defined. However, there is no indication that a logframe was developed, or that the M&E was revised or improved during implementation. As to the sustainability of the M&E system, some elements (such as loan requests submitted/approved,

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62. The ICR mentions that only a few studies were carried out, including the updating of baseline studies. However the IEG mission did not see evidence of this unless the ICR means the measuring of surfaces under irrigation which is a performance indicator and was actually measured at the end of the project.

areas irrigated, and cropping intensity) could be used in a better formulated M&E framework in future similar activities. Therefore, the M&E implementation is rated **negligible**.

#### UTILIZATION

Input data and some output and outcome data were collected, but mostly outside the project M&E system and at ICR preparation. In the absence of a logframe and an established chain of causality, project management could not locate the gaps or assess the soundness of the theory of change adopted during project preparation. Slow disbursement and activity implementation, and not the M&E system, became the main indicators of problems with the project, prompting the redirection of activities at the MTR such as the inclusion of the new subcomponent the “intensification testing”. The PPIP’s experience has influenced at least one follow-on project, the Bank-financed PCDA. While PPIP tried to facilitate access to credit by training bank officials on appraising loan requests specific to small-scale irrigation, the PCDA includes provision for a matching fund and a partial guarantee fund to help entrepreneurs access credit, and contracts out the implementation of selected project activities to private operators, both general and specialized. But this arose from observations made during PPIP’s life and from beneficiary complaints during PCDA’s preparation, not from the M&E analysis of PPIP. Therefore, the M&E utilization is rated **negligible**.

Based on the negligible ratings for the design, implementation, and utilization of the M&E system, respectively, the overall M&E quality is also rated **negligible**.

## Annex D. Agencies Consulted

Agency		Location
AFD	The French donor	Bamako
AGMK	Kati Market Gardening Association	Kati
AMELEF	Malian Association for the Development of Fruit and Vegetable Exporters	Bamako
APCAM	Permanent Assembly of Malian Chambers of Agriculture	Bamako
APROFA-Agency	Agricultural Supply Chain Promotion Agency	Bamako
APROFA-Association	Agricultural Supply Chain Promotion Association	Bamako
Beneficiaries of PPIP	Producers of oranges, bananas, potato	Ségou and Sikasso
BNDA	Rural Development Bank	Bamako
CCFL	Coopérative de Commerce de Fruits et Légumes	Sikasso
CECI	NGO – Canadian Center for International Studies and Cooperation	Bamako
CIDA	Canadian Aid Agency	Bamako
CMDT	Malian Company for the Development of Textile Fibers	Sikasso
CNRA	National Agricultural Research Council	Bamako
CPS	Planning and Statistics Unit	Bamako
CRU	Regional Research Results Users Committee	Ségou and Sikasso
Dutch donor	The Dutch donor	Bamako
Entrepreneurs	Operators of onion conservation cases	Ségou, Niono
FSC	Food Security Commissariat	Bamako
IER	Institute of Rural Economy	Bamako, Niono, and Sikasso
MOA	Ministry of Agriculture (previously Ministry of Rural Development and Environment)	Bamako
NDA	National Directorate of Agriculture	Bamako
Nieta Conseil	Local NGO	Niono
ON	Office du Niger	Ségou
PNIR	National Rural Infrastructure Project	Bamako
Producer Organizations	Farmers of potato, onion, mangoes	Ségou and Sikasso
RCA	Regional Chamber of Agriculture	Ségou and Sikasso
TradeMali	USAID's project similar to ATPPP	Bamako
USAID	The US Aid Agency	Bamako
Women Association	Association for the Processing of Agricultural Products	Sikasso

## Annex E. Borrower Comments

MINISTRE DE L'ECONOMIE  
ET DES FINANCES

07/07  
06  
Yacouba  
IRIS  
REPUBLIQUE DU MALI  
Un Peuple - Un But - Une Foi

*Secrétariat Général*

N° 01467  
/MEF-SG

Bamako, le

07 JUN 2007



**Le Ministre de l'Economie et des Finances**

à

**Monsieur le Représentant Résident  
de la Banque Mondiale.**

**BAMAKO**

**OBJET :** rapport d'évaluation rétrospective de Projets Mali :

- Projet National de la Recherche Agricole- PNRA (Crédit 25570- ML)
- Projet Pilote d'Appui à la Valorisation et à la Commercialisation des Produits Agricoles- PAVCOPA (Crédit 27370- ML)
- Projet Pilote d'Appui de Promotion de l'Irrigation Privée- PPIP (TF N0210- ML).

**Monsieur le Représentant Résident,**

En réponse à votre correspondance en date du 23 avril 2007, j'ai l'honneur de vous faire parvenir ci-joint, les observations suscitées par l'examen du document visé en objet.

Veillez agréer, Monsieur le Représentant Résident, l'expression de ma haute considération.

## OBSERVATIONS SUR LE RAPPORT D'ÉVALUATION RETROSPECTIVE DU PROJET MALI

**PROJET NATIONAL DE LA RECHERCHE AGRICOLE  
(CREDIT 25570-ML)**

**PROJET PILOTE D'APPUI A LA VALORISATION ET A LA  
COMMERCIALISATION DES PRODUITS AGRICOLES  
(CREDIT 27370-ML)**

**PROJET PILOTE DE PROMOTION DE L'IRRIGATION PRIVEE  
(TF N0210-ML)**

### I. OBSERVATIONS D'ORDRE GENERAL :

- 1.1. Malgré toutes les démarches effectuées auprès de la représentation de la Banque Mondiale à Bamako pour entrer en possession de la version française du rapport principal, seule la version française du résumé du rapport a été mise à notre disposition. Cette situation a considérablement réduit notre capacité d'analyse du rapport d'évaluation.
  
2. Des efforts importants ont été fournis par les consultants pour faire l'état des lieux des acquis du PNRA. Le rapport donne des informations très intéressantes à prendre en compte pour la pérennisation de ces acquis.  
Cependant, il serait bon d'expliquer comment les différents résultats atteints ont été mesurés. Il est difficile de faire la différence entre les niveaux « satisfaisant » et « modeste ». Quelle est la différence entre « insatisfaisante » et « modérément satisfaisante » ? Cf. tableau v sur les indices principaux. Il est donc nécessaire de mieux décrire la méthodologie de l'étude et de donner des orientations concernant la méthode de mesure des indicateurs.  
Par ailleurs, si les résultats du PNRA sont dans leur ensemble notés satisfaisants, c'est grâce aux efforts de la BM, du gouvernement et de l'IER. A ce titre, les performances de la BM et de l'emprunteur devront refléter cet effort et notées satisfaisantes.
  
3. Concernant le PAVCOPA, l'analyse faite par les consultants offre l'opportunité de consolider des acquis du PAVCOPA dans le contexte actuel de développement des filières agricoles porteuses pour lesquelles une politique nationale a été définie.  
Si les résultats sont notés modérément satisfaisants, il va de soi que la BM et l'emprunteur reçoivent tous la notation « modérément satisfaisant » car les deux constituaient une équipe de projet. A ce moment, l'emprunteur ne peut pas être noté seul « insatisfaisant ». Il est à signaler que les multiples changements de Task Managers ont amené le plus souvent des changements dans les démarches ou approches,

4. Au sujet du PPIP, l'examen par composantes a montré que les contraintes du sous secteur de l'irrigation n'ont pas été levées bien que certains résultats positifs aient été obtenus dans le cadre des démonstrations de techniques de production. Ces résultats sont cependant arrivés trop tard pour être diffusables. Dans ce cadre, la performance de la BM ne peut être notée « modérément satisfaisante », alors que l'emprunteur et les résultats du projet sont notés très insuffisants. Par ailleurs, il est difficile de comprendre que l'APROFA se soit vu confier le PPIP à l'encontre des souhaits de la BM,

1.5. Les leçons qui se dégagent de l'analyse faite par les consultants doivent constituer des sources de réflexion, voire d'inspiration pour la formulation et la mise en œuvre de nouveaux projets/programmes.

#### **IL. OBSERVATIONS D'ORDRE SPECIFIQUE :**

- 2.1. Chapitre 2.5 : Le groupe d'assurance qualité a jugé l'inscription budgétaire de légèrement satisfaisante et le dispositif de satisfaisant, mais affirme que la Banque a surestimé la lisibilité gouvernementale. Il est nécessaire de donner des précisions à cette affirmation. Est-ce une erreur de jugement ? En quoi le gouvernement n'a pas pu honorer ses engagements ?,
- 2.2. Chapitre 2.11: A la page 5 Il est indiqué que le projet a souffert d'un certain nombre d'avènements .Il faut savoir à cette époque que le Mali n'avait pas de système national de recherche. L'IER était la principale institution de recherche qui a conclu des accords de collaboration avec l'IPR , le LCV et l'ISFRA,
- 2.3. Chapitre 2.12 : Les indicateurs choisis doivent être mieux commenté pour assurer une bonne lecture du niveau d'atteinte des objectifs et des progrès réalisés.
- 2.4. Chapitre 2.18 : La comptabilité a été jugée comme étant le maillon faible du système. Expliquez en quoi repose ces affirmations. Aucun document d'audit n'a révélé une telle insuffisance.
- 2.5. Chapitre 2.30 : La performance du gouvernement a été jugée insatisfaisante. Il serait indiqué de bien argumenter les commentaires de ce chapitre. En réalité les CRU ont bien fonctionné mais il y a eu effectivement des difficultés pour la nomination d'un Président du CNRA.

Ministère de l'Économie et des Finances  
Un Peuple - Un But - Une Foi  
LE SECRÉTAIRE GÉNÉRAL

Le Ministre P.O.  
Le Secrétaire Général

  
Sambou WAGUE

(Unofficial translation)

**OBSERVATIONS ON THE MALI PROJECT  
PERFORMANCE ASSESSMENT REPORT**

**NATIONAL AGRICULTURAL RESEARCH PROJECT  
(CREDIT 25570–ML)**

**AGRICULTURAL TRADING AND PROCESSING PROMOTION PILOT PROJECT  
(CREDIT 27370–ML)**

**PILOT PRIVATE IRRIGATION PROMOTION PROJECT  
(TF N0210–ML)**

**I. GENERAL OBSERVATIONS:**

- 1.1 Despite many attempts via the World Bank Country Office in Bamako (Mali) to get the full PPAR (Project Performance Assessment Report) in French, only the French Executive Summary was available for the Government of Mali, which in effect considerably reduced the capacity to analyze and comment on this IEG Report.<sup>63</sup>
- 1.2 Tremendous efforts were made by the consultants in order to determine the outcomes of the NARP (National Agricultural Research Project). The IEG report provides some interesting information that is very useful to sustain these outcomes.

Nevertheless, IEG does not explain clearly how the outcomes were measured and rated. There is no clear definition, and it is difficult to understand the difference between “substantial” and “modest”. What is the difference between “unsatisfactory” and “moderately satisfactory”? It would be very helpful for IEG to describe explicitly the methodology for this PPAR and to be clear about the measurement methods and ratings.

Overall, if IEG finds that the results and the outcomes of the NARP (National Agricultural Research Project) are satisfactory, the reason for this rating should be translated into an equally “satisfactory” rating for both the Bank Performance and the Borrower Performance, because all these entities contributed to the good overall performance.

- 1.3 Concerning the ATPPP (Agricultural Trading and Processing Promotion Pilot Project), the analysis from the consultants provides an opportunity to consolidate the outcomes of this project in the broader context of the national agricultural policy. If IEG rates the project “moderately satisfactory”, it would be more understandable if in the same logic, both the Bank Performance and the Borrower Performance were rated

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63. IEG provided a complete French translation of the main text of the PPAR to the Bank’s country office on May 22, 2007, which was forward to the Government of Mali on May 23. The Borrower’s response is dated June 7, 2007.

with this same rating. Both partners worked together and constituted one team for the execution of this project. There is no rationale for rating only the Borrower Performance “unsatisfactory”. In addition, the Bank changed the task managers many times and each new one brought in new approaches, new procedures and methodologies.

- 1.4 Concerning the PPIP (Pilot Private Irrigation Promotion Project), the evaluation revealed that the constraints at the irrigation sub-sector level were never overcome, nevertheless, some positive results were obtained during the experimental production phase. Unfortunately, these results were too late to be disseminated effectively. Therefore, we do not agree with the Bank’s Performance rating being “moderately satisfactory” on the one hand, and both the Borrower Performance and the overall outcome rating for the project being “highly unsatisfactory” on the other hand. In addition, it is difficult to understand and believe that APROFA received the execution contract for the PPIP (Pilot Private Irrigation Promotion Project) without the consent of the World Bank.
- 1.5 These lessons from the analysis of the consultants should be reflected upon and inspire the design and the execution of upcoming similar new projects and programs.

## **II. Specific Observations:**

- 2.1. Paragraph 2.5: The Quality Assurance Group judged quality at entry to be “marginally satisfactory” and the overall project design as “satisfactory”, but stated that the Bank overestimated the Government’s readiness. Was this an error of judgment? It would be helpful to be very specific about the nature of these comments. What is the reason for this comment if the Government of Mali complied with its obligations? (Did the Government of Mali miss or not comply with any of its obligations?)
- 2.2. Paragraph 2.11: It is stated that the project suffered from a number of events. Please, note that at the time of the execution of the project, Mali did not have a national agricultural research system. IER was the main research institution at that time, which collaborated with IPR, LCV and ISFRA.
- 2.3. Chapter 2.12: The chosen performance indicators should be more explicit to allow for a better monitoring of the attainment of the objectives and of the progress.
- 2.4. Chapter 2.18: The accounting system was described as the weaker link without any argument or document to substantiate this statement. No audit document revealed such a weakness. Please, explain this above statement.
- 2.5. Chapter 2.30: The government performance was rated “moderately unsatisfactory”. It would be good to better substantiate this statement with some evidence. The reality is that the CRU performed well although it was difficult to nominate a president for the CNRA.