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PERFORMANCE ASSESSMENT REPORT

ETHIOPIA

PEASANT AGRICULTURAL DEVELOPMENT PROJECT I

CREDIT No. 1956-ET

June 13, 2002

Sector and Thematic Evaluation Group
Operations Evaluation Department

Currency Equivalents (annual averages)

Currency Unit = Birr

Appraisal (1988)	US$1 = 2.07 Birr
At Completion (2000)	US$1 = 6.51 Birr

Abbreviations and Acronyms

AIDB	Agricultural and Industrial Development Bank
AISCO	Agricultural Inputs Supply Corporation
AISE	Agricultural Inputs Supply Enterprise (formerly AISCO)
AMC	Agricultural Marketing Corporation
ANRAB	Amhara National Regional Agricultural Bureau
CAS	Country Assistance Strategy
CIF	Cost, insurance and freight
DA	Development Agent
DAP	Di-ammonium Phosphate
EAL	Ethiopian Amalgamated Limited
E.C.	Ethiopian calendar (currently eight years behind the Gregorian calandar)
EEC	European Economic Community
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
ICB	International competitive bidding
ICR	Implementation Completion Report
IDA	International Development Association
ILO	International Labour Organization
M&E	Monitoring and evaluation
MOA	Ministry of Agriculture
NAES	National Agricultural Extension Service
OED	Operations Evaluation Department
PA	Peasant Association
PADEP	Peasant Agricultural Development Project
PADETES	Participatory Demonstration and Training Extension System
PCMED	Project Coordination, Monitoring & Evaluation Department
PDRE	People's Democratic Republic of Ethiopia
PPAR	Project Performance Assessment Report
PSPI	Price Studies and Policy Institute
TA	Technical assistance
TGE	Transitional Government of Ethiopia
USAID	United States Agency for International Development
VCR	Value/cost ratio

Fiscal Year

Government: July 8 — July 7

Director-General, Operations Evaluation	:	Mr. Robert Picciotto
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The World Bank
Washington, D.C. 20433
U.S.A.

Office of the Director-General
Operations Evaluation

June 13, 2002

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Performance Assessment Report on Ethiopia
Peasant Agricultural Development Project I (Credit 1956-ET)

The Peasant Agricultural Development Project (PADEP), supported by an IDA credit of US$85.0 million, was approved in 1988. After a two-year extension, the project was closed in June 1997 and US$7.4 million was cancelled.

The objectives were to increase foodgrain production, productivity, and peasant incomes in the highlands of northwest Ethiopia. This was to be achieved through five components aimed at improving the efficiency in the management and delivery of agricultural services and technology available to farmers, and producers' incentives. The bulk of the credit (about 80 percent) was for procurement of about 242,000 tons of fertilizer, the balance was to support institutional development. Nationally, the project was to strengthen the Ministry of Agriculture's project coordination, monitoring and evaluation, and financial controls. Particular emphasis was given to pricing policy analysis, grain reserve management, and expanding sectoral capacity for technological improvements, field testing, and promotion. Support for service delivery by government and parastatals covered extension services, cooperative development, soil conservation management, improved input supply, and credit.

Initially, in 1982, the socialist Provisional Military Administrative Council of Ethiopia, known at the Derg, requested the Bank to finance PADEPs for three zones. For the Bank the most important agricultural reforms were removal of restrictions on inter-regional grain trade, allowing farmers to sell their surplus grain on the open market, and liberalization of input supply through the introduction of private sector participation. Lack of agreement with Derg on the basic policy issues affecting agricultural development — primarily because the government put "social engineering first and efficiency and production second" — prevented Board approval until liberalizing reforms were made in December 1987 soon after the formation of the People's Democratic Republic of Ethiopia. Given the political environment, Bank management classified PADEP as an "unusually risky" project.

Implementation was fraught with difficulty primarily owing to extensive political upheaval in 1990-91, introduction of a federal system of administration, and decentralization of agricultural development activities to new regional governments. During the first 18 months civil unrest and war slowed progress in the field, and during decentralization it came to a halt. Following review in 1994, PADEP was restructured and extended for two years to provide institutional support to the new Amhara Regional Agricultural Bureau.

Despite the difficulties, the overall outcome of the project was satisfactory. The Bank's policy dialogue during appraisal, and conditions that were met before Board presentation, stimulated substantial institutional reform of agricultural sector policies. Reform and liberalization of the fertilizer import, distribution, and pricing system was achieved — a substantial improvement over what went before, even though there are problems to overcome before the input market is fully free and transparent. Aggressive promotion of fertilizer achieved input targets and substantially increased agricultural productivity — incremental grain output from increased fertilizer use was almost a million tons — and the benefit/cost it ratio is in the range 2 to 2.5. A private sector — albeit nascent — has emerged. In contrast, these

improvements highlight needed improvements in rural credit institutions. More recently, fertilizer subsidies have been removed and retail prices deregulated: reform continues.

Institutional development is rated substantial. Institutions conducive to private sector involvement have been established, responsibility has been devolved to the regions, their extension systems strengthened, and service delivery improved. The project catalyzed development of a trained cadre of agricultural development agents who have been relieved of irrelevant political and administrative responsibilities, and are now closer to their client farmers and thus more effective in the field. The accountability of service cooperatives was strengthened and they are effective in assisting delivery of credit and other input services. While there was clearly inadequate progress on environmental management issues, support of women in development, and improving the effectiveness of agricultural research and its linkage with extension, it is unreasonable to expect everything can be done at once. PADEP was there when needed, kept many doors open during turbulent times, and ushered in the next wave of institutional development.

Sustainability is likely. High client ownership and the development of strong partnerships with Ethiopia's development partners are now firmly rooted and have expanded the agricultural reform agenda. Government, for example, introduced the Participatory Demonstration and Training Extension System (PADETES) in 1994/95, which merged PADEP's training-and-visit system with the technology diffusion experience of the Sasakawara Global 2000 program. There is concern, however, about the financial sustainability of a more intensive extension service, particularly in the regions, and the means to achieve this are not yet clear given other pressing development priorities.

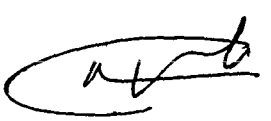
Bank and borrower performance is rated satisfactory.

There are three major findings:

- Tenacity pays off. The Bank did not relax its tough ex-ante policy conditionality and stayed the course over a long period on what was regarded as an unusually risky venture. Even though there were marked differences with government's policy perspective, the Bank remained a steadfast advocate of reform and was thus well-positioned when reform and liberalization eventually occurred.

- Not everything can be done at once — limit objectives and package carefully. Appraisal developed a complex project that would have diffused the reform effort. Fortunately, Bank management cut the project scope to focus on what was essential and phased related objectives under separate and later credits. This avoided a large and difficult comprehensive agricultural development project that would have been difficult to manage. This same approach was not followed at project reformulation in 1995 and some components that failed to deliver were not a high priority among the development challenges facing the fledging Amhara Regional Agricultural Bureau.

- In-country economic and sector work carried out during implementation builds local capacity, keeps policy dialogue up-to-date, and informs and builds country partnerships. The assessment found that some donors (USAID) established grant-funded in-country policy support units to provide feedback on sectors in which they operated and keep policy dialogue active. This built strong, interactive partnerships with the borrower, supported development of local expertise, deepened donors' understanding of the evolving development process at the grass roots level, and provided development of invaluable databases to monitor and evaluate progress. More important, day-to-day policy dialogue with trusted experts built confidence on both sides and ensured shared objectives. Thus, depending on circumstances, grants are an effective way to support this dialogue and build effective monitoring and evaluation capacity.



Attachment

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

About this Report

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

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

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

About the OED Rating System

The time-tested evaluation methods used by OED are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. OED 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 (more information is available on the OED website: http://worldbank.org/oed/eta-mainpage.html).

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

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

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

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

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

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

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

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

Contents

This report was prepared by Mr. George Keith Pitman (Task Manager) and Ms. Senait Seyoum (Consultant) who evaluated the project in March 2001. Mr. William Hurlbut edited the report. Ms. Soon-Won Pak provided administrative support.

Preface

The Peasant Agricultural Development Project, supported by an IDA credit of US$85.0 million, was approved in 1988. After a two-year extension, US$82.4 million was disbursed by project closure in June 1991. However, because of appreciation of the SDR against the US$, US$7.4 million was canceled in May 1998.

The PPAR presents the findings of an Operations Evaluation Department (OED) mission to Ethiopia in March 2001. The findings are based on project documents and files, field visits to the project, and discussion with officials of the government of Ethiopia and respective government departments, and officials and staff of the Amhara Regional Government and its Bureau of Agriculture, Adet Research Station, and Woreta Training Centre. In addition, the mission met with several Peasant Associations and Peasant Cooperatives, visited a number of *woreda*-level agricultural extension demonstration areas, and met with farmers and extension agents.

The Peasant Agricultural Development Project was assessed to learn lessons for the Bank's assistance to agriculture following Ethiopia's transition from a socialist to a market-linked economy, and decentralization of implementation to the newly established Amhara regional government.

Following standard OED procedures, the draft PPAR was sent to the borrower for comments before being finalized. No comments were received.

Principal Ratings

	ICR	*ES**	*PAR*
Outcome	Satisfactory	Satisfactory	Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development	Substantial	Modest	Substantial
Borrower Performance	Satisfactory	Satisfactory	Satisfactory
Bank Performance	Satisfactory	Satisfactory	Satisfactory

* The Evaluation Summary is an intermediate OED product that seeks to independently verify the findings of self-evaluation by the Bank's operational divisions.

Key Staff Responsible

	Task Manager	*Division Chief*	*Country Director*
Appraisal (Sept 1988)	Frank Byamugisha	J. Shivakumar	Callisto Madavo
Midterm (April 1995)	Lorenzo Marchesini	Sushma Ganguley	Oey Astra Meesook
Completion (Dec 1997)	Lorenzo Marchesini	Joseph Baah-Dwomah	Oey Astra Meesook

1. Background

1.1 Ethiopia's population of about 63 million is the second largest in sub-Saharan Africa, and its per capita income of US$100, the second lowest. Forty-five percent of its population lives below the poverty line, and it has the highest incidence of malnutrition in Africa. Agriculture provides about half of GDP, 90 percent of export earnings, and 85 percent of employment. Crop production accounts for about two-thirds of agricultural value added, livestock production for about one-third, and in most areas they are interdependent. In the ten years to 1985, annual population growth at 2.9 percent outpaced GDP growth of 2.5 percent, and real value in agriculture grew by only 1.1 percent. While large and central to national well-being, the agriculture sector remains highly vulnerable to droughts, the worst of which caused a decline in agricultural value by 25 percent in 1984 and famine in many areas of the country.[1]

1.2 During the 1980s Ethiopia was estimated to have a structural food deficit of about 15 percent, or one million metric tons equivalent per year.[2] Much of this was because inadequate technology, weak extension services, and extremely poor communications hindered agricultural production. After the overthrow of the monarchy in 1974, the revolutionary Derg government introduced radical agrarian reform that abolished private ownership of land and its transfer by sale, lease, or mortgage.[3] Organized into about 20,000 Peasant Associations (PAs), farmers were given permanent land-use rights with areas based on family size, but at the same time, they lost autonomy.[4] Subsequently, the Derg organized farmers into producer cooperatives and expanded large-scale state farms. And to induce membership, producer cooperatives received highly preferential access to credit, channeled donor support, and extension services. Despite these changes, production continued to lag for lack of incentives.

1.3 Peasants were required to sell a fixed proportion of their produce to the Agricultural Marketing Corporation (AMC), which sold 73 percent to prescribed organizations — and prices paid were below free-market levels.[5] Seasonal quotas were set by government for each administrative level down to the Peasant Association and were fixed on a quantity per family basis. Any surplus above this quota could be sold on the open market, but inter-regional private trade was prohibited. While private merchants were generally required to deliver half their purchase to AMC with a small fixed markup irrespective of marketing costs, in the Gondar,

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1. In the five years to FY85, food crop production averaged 6.9 million tons/year. In the droughts of 1984 this declined to 4.5 mt/year. International donors responded and provided 1.4 mt of emergency food supplies in 1985-86.

2. World Bank. 1987. Ethiopia: Agriculture — a Strategy for Growth, a Sector Review. World Bank Report No. 6512-ET June 30, 1987.

3. Formed in June 1974 and known at first as the Coordinating Committee of the Armed Forces, Police, and Territorial Army, after September 1974 it was known as the Provisional Military Administrative Council (PMAC), or simply as the Derg (Amharic for "committee" or "council"), a term derived from Gi'iz and little used before the 1974 revolution. The Derg lasted officially from June 1974 to September 1987, when the People's Democratic Republic of Ethiopia came into being. Even so, the Derg maintained full political control until a new constitution was adopted in 1984.

4. Pausewang, Siegfried, Fabtu Cheru, Stefan Brune and Eshetu Chole (eds). 1990. *Ethiopia: Options for Rural Development.* Zed Books Ltd., London and New Jersey. Peasant Associations represented the lowest level of government administration and were responsible for processing and interpreting national policies, maintaining law and order, and planning and implementing certain local development policies. By 1989 their activities were directed and overseen by the center.

5. AMC sales were restricted to Addis Abbaba (34 percent), state-owned flour mills (27 percent), and the military (12 percent). See: Molla, Daniel, Hagos Gebre, T.S. Jayne and James Shaffer. 1995. *Designing Strategies to Support A Transformation of Agriculture in Ethiopia.* Grain Market Research Project. Working Paper 4. Ministry of Economic Development and Cooperation, Addis Abbaba.

Gojam, Arsi, and parts of the Shewa zones (which produced 40 percent of the nation's food grain) AMC required merchants to sell 100 percent of their purchases. In consequence, these zones supplied more than 85 percent of AMC's stock. Thus, reform of production incentives and grain marketing necessarily focused on the northwest geographic region.

1.4 To assist development of a peasant agricultural development program strategy for the whole country, the Bank supported a Ministry of Agriculture task force that, in 1982, proposed Peasant Agricultural Development Projects (PADEP) for each of the eight agricultural development zones of Ethiopia.[6] The government then issued a Ten-Year Prospective Plan in 1984 that emphasized the importance of the peasant sector and implementation of PADEPs in the drive to attain self-sufficiency in food grain production and expand agricultural exports. Initially, the Bank was requested to finance PADEPs for three zones and undertook preparation missions, but lack of agreement with government on the basic policy issues affecting agricultural development — primarily because the government put "social engineering first and efficiency and production second" — prevented IDA proceeding to appraisal until 1986.[7]

1.5 Within the Bank there were strong and divergent views about lending to the Derg. Some staff thought that the government intended to step-up its efforts to socialize Ethiopia over the next decade, a major component of which was achieving soviet-style collectivized farming through the producer cooperatives and a program of "villagization" which was started in 1985 with the objective of achieving economies of scale in the provision of social services.[8] Citing the adverse outcome of villagization in Tanzania, the antagonists felt that Bank support would only help perpetuate unsustainable agricultural land management policies.[9] Thus, they argued that the Bank should either halt all lending until the outcome of the villagization program was known, or make cessation of villagization a condition of approval. Bank management, while recognizing that the PADEP was "unusually risky," decided to go ahead with the project because they believed that Bank actions would be unlikely to deter government's continuation of villagization, which was only one element of a policy set that included improved marketing and pricing incentives. Indeed, they stated that if improved policies were adopted, this would tend to counter the potentially negative effects of the villagization program.[10]

1.6 At regional vice-president's review it was agreed that government should be asked to maintain the land cultivation practices that were then in place (i.e., individual cultivation of plots), thus maintaining relative security of land rights under the framework of the Peasant Associations.[11] Through this means the Bank believed that production surpluses would accrue to individuals once the specific level of price and quotas had been agreed and thus retain the incentives for higher productivity agriculture. In essence, they saw villagization as an alteration to village structure and not to the structure of agriculture, a position taken with the Loan Committee. While accepting this, the Loan Committee cautioned that the social changes and bureaucracy involved in implementing the villagization program would severely strain administrative capacity

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6. This Task Force was financed from IDA Credit 1088-ET, the Second Minimum Package Project, which closed in December 1985.

7. Memorandum Wiehen to Jaycox, February 18, 1986.

8. "Villagization" is defined as "the grouping of population into centralized planning units." Survival International 1988. In Ethiopia it began in 1985 and was applied nationwide from 1987. It was revoked by President Mengistu in 1990. The objective of villagization varies from country to country where it was practiced.

9. Ethiopia — Villagization. 1986. Memorandum prepared by Ridley Nelson to G. Edward Schuh. August 1, 1986.

10. Decision Memorandum. PADEP. August 4, 1986.

11. Regional Vice President's Review of PADEP. August 21, 1986.

and stressed the importance of adequate institutional arrangements to back up the proposed policy package.

1.7 Eventually, as democratic reform swept through the communist world, it became evident that the Derg no longer could rely on its allies for support. Accordingly, the Derg introduced liberalizing reforms in December 1987.[12] For the Bank, the most important agricultural reforms were removal of restrictions on inter-regional grain trade allowing farmers to sell their surplus grain on the open market. The Bank's condition for approval had been met. However, given the delays, the Bank decided that focus and simplicity were key to making progress and trimmed the scope of PADEP I to cover only pricing, marketing, and delivery on inputs/outputs. A later PADEP II could deal with issues of the seed industry, while other issues (land tenure and villagization) could be dealt with by the Agricultural Resource Conservation Project and National Smallholders Coffee Development Project. It was agreed that PADEP I would finance 242,000 tons of fertilizer, or 40 percent of Ethiopia's incremental demand over five years, and EEC, Italy, and the government of Ethiopia would finance national fertilizer needs not met by IDA. On this basis, PADEP was approved by the Board in October 1988 and became effective in April 1989.

OBJECTIVES

1.8 The project's objective was to assist Ethiopia to increase foodgrain production, productivity and incomes in the peasant sector, with a focus on the northwest highlands. This goal was to be achieved though meeting three secondary objectives: improving efficiency in the management and delivery of agricultural services; improving technology available to farmers; and further improving incentives for producers while minimizing adverse impacts on consumers.

Table 1: Project Objectives and Components

Component	Cost US$ million	
	Appraisal	Actual
Strengthen Ministry of Agriculture's management of sectoral services: project coordination, monitoring and evaluation, financial controls, production of extension materials and development of extension and cooperatives	8.2	4.0
Expand sectoral capacity to test technology improvements in: national field trials and rural technology promotion	4.3	1.8
Support delivery of services in the NW Zone: extension services, cooperative development, soil conservation, watershed management	12.2	7.9
Improve supply of inputs: increased farm inputs, improved delivery by the state agricultural input supply corporation (AISCO), and better credit support from the state agricultural and industrial development bank (AIDB)	93.4	74.0
Support the Price Studies and Policy Institute: to ensure continuous policy analysis and grain reserve management	0.6	0.08
Total	**118.6**	**87.8**

1.9 It was expected that project activities would initially focus on 27 *woredas* with high levels of development potential in the Gojam and Gondar administrative regions and

12. On September 10, 1987, after 13 years of military rule, the nation officially became the People's Democratic Republic of Ethiopia (PDRE) under a new constitution providing for a civilian government. In June of that year Ethiopians had elected the National Shengo (National Assembly), a parliament. Despite these changes, members of the now-defunct Derg still ran the government but with different titles.

progressively expand over five years to 40 *woredas*.[13] Five components were designed to achieve these objectives over six years at a total cost of US$118.6 million assisted by an IDA credit of US$85 million, as elaborated in Table 1. By project closure (June 1997), the Bank had disbursed US$82.4 million, while government contributed US$5.4 million, or 16 percent of its appraised amount.[14]

IMPLEMENTATION ARRANGEMENTS

1.10 Arrangements were complex. Overall coordination of all PADEP projects was through a Coordinating Committee established by the Ministry of Agriculture. The committee was chaired by the Minister of Agriculture and comprised the four MOA Vice Ministers, the General Managers of the Agricultural Input Supply Corporation (AISCO), Agricultural and Industrial Development Bank (AIDB), Commercial Bank of Ethiopia, Institute of Agricultural Research, and the Ethiopia Seeds Corporation. The head of the MOA's Project Coordination and Monitoring and Evaluation Department (PCMED) was PCC secretary and project coordinator. Management of the project was split among the MOA, AISCO, AIDB, and the Price Studies and Policy Institute (PSPI). At the zone level, the Zonal General Manager was the Project Manager while the Head of the Agricultural Extension Team was the Zonal PADEP Coordinator.

1.11 There was a direct line of technical command for extension from MOA headquarters through the Zonal Extension Coordinator to the *awraja* and *woreda* Extension Coordinators and the Development Agent (DA) who worked with the farmers. Field trial data would be collated by MOA's subject matter specialists at the *awraja* level and transmitted back to the center where it would feed into decisions on technology development and adaptive research. The national research extension and liaison committee would review the scientific and trial evidence and make recommendations on the most cost-effective fertilizer to be imported by the project in consultation with the National Crop Improvement Committee, Institute of Agricultural Research, and National Field Trails Program.

1.12 AISCO was responsible for the preparation of annual peasant sector fertilizer procurement needs and their scheduling, and foreign exchange required from the IDA credit. PSPI was responsible for appraising data collected by FAO on food stocks, conducting periodic reviews on agricultural prices, and providing advice to government on price policy and prices for government grain procurement through the Agricultural Marketing Cooperation.

1.13 Credit for improved supply of inputs — estimated at US$62.3 million or 73 percent of the IDA credit at appraisal — was on-lent by government to AIDB and then on-lent first to AISCO to finance the foreign exchange costs of annual fertilizer purchase. As loans were repaid by AISCO, AIDB used them to provide production and development credit to the peasant sector on a revolving basis.[15] Main beneficiaries of these loans were the fully registered Service Cooperatives that provided credit to Peasant Associations and, through them, to individual farmers.

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13. The *woreda* is an administrative unit equivalent to a district or county.

14. The appraised government contributing was US$33.6 million. In constant (1988) Birr terms government actually contributed US$25.5 million, but devaluation of the Birr by almost 50 percent over the life of the project and lack of funds reduced the overall contribution to US$5.4 million.

15. IDA credit on-lent by government to AIDB was at 2 percent per annum with repayment of principle within 15 years including three years of grace. AIDB on-lending to AISCO was for one year at 6 percent. Repayments by AISCO were recycled by AIDB on-lending to service cooperatives was at 5 percent and they on-lent to peasant associations at 7 percent. Foreign exchange risks were borne by government.

1.14 To facilitate extension, credit, and cooperative development, MOA and AISCO were responsible for design of annual training programs, including overseas fellowships, and the recruitment of national and international long-term technical assistance (TA) staff. Credit and input delivery was monitored by the concerned agencies. Project monitoring and evaluation was managed nationally and in the northwest zone by the MOA, and zonal management supervised monitoring and evaluation (M&E) activities to the *woreda* level.

2. Implementation

2.1 Political upheaval, several reconstructions of the administration, and civil war, made implementation difficult for the first five years. Reorganization during 1988/89 changed the four-tier administrative system (zone, region, *awraja,* and *woreda*) to a two-tier system based on 25 regions and 354 *woredas*. Following the proclamation of a mixed economy in 1990 and the dissolution of Peasant Producer Cooperatives, civil strife led to the overthrow of the Derg government in May 1991. With the formation of the transitional government there was further reorganization of the national administrative system into a three-tier system (14 regions, 54 zones, 655 *woredas*). The Ministry of Agriculture and Natural Resources was split into two ministries in 1992 but later reamalgamated into the Ministry of Agriculture in 1995. Each of these changes caused significant redistribution of staff, a task made more onerous by the 1992 regionalization and restructuring, which devolved responsibility for project implementation from the center to the Amhara Regional Agricultural Bureau (ANRAB), a task that was only completed in 1994.

2.2 The project made good progress on institutional strengthening objectives until the civil war caused suspension of field activities and disbursement in 1991. Most of the extension subject matter specialists were posted and quickly became active.[16] Project coordination and M&E systems were established and effective even though 50 percent staffed. Training and cooperative development got off to a good start even though a marked shortage of counterpart funds hindered recruitment of consultants. Agricultural credit started flowing to service cooperatives and farmers. But procurement proved problematic. Deliveries to project sites took a year from placement of orders due to unfamiliarity with Bank international competitive bidding (ICB) procedures, and bottlenecks imposed by the lack of transport and port congestion. AISCO inefficiencies increased fertilizer prices 50–100 percent above CIF prices (compared with expected distribution margins and marketing costs of 15–30 percent) and reduced demand. In consequence, only 73,000 tons of fertilizer was imported in the first three years.

2.3 Over the period 1991–92 most extension and marketing activities were hampered by civil strife, and project activities were restricted to procurement. Within the project area, agricultural input stores were destroyed and fertilizer sales fell, while key institutional elements — producer cooperatives — were dissolved and their physical assets were destroyed by farmers so they could not be reimposed. Given other priorities, counterpart funds from the center slowed, and those funds that were available were used for routine expenditures (such as salaries) and not project activities. At the same time, privatization of grain marketing made the PSPI redundant and the gradual growth of private fertilizer sales agents reduced the demand for AISCO's services. The dissolution of producer cooperatives and reorganization of the service cooperatives reduced the need for technical assistance. In consequence, in early 1992 the Bank restructured the project to emphasize economic recovery, strengthen the new administration, improve governance, and reorient activities toward a market-based system. Thus, it was agreed to cancel construction of

16. By August 1990, 28 of 29 subject matter specialists were recruited and posted to regions, 147 SMSs of 165 to the *awrajas*, and 326 of the 365 Development Agents enabled extension to about 16,000 contact farmers.

AISCO fertilizer stores, the remaining technical assistance for project coordination and agricultural information systems, and support to PSPI. The funds freed were added to the unallocated credit to cover a shortfall in foreign exchange. The US$30 million reallocated allowed accelerated procurement of 130,000 tons of fertilizer and US$5 million was spent on emergency import of veterinary drugs. This reallocation supported the transitional government's emergency package to mitigate the effects of the 1991 drought which seriously cut agricultural production in the northern zones.

2.4 Despite restructuring, project activities slowed further because federalization led to decentralization of the administration to Regional Councils, drastic downsizing of the MOA, and transfer of PADEP I management from the center to the region in March 1993. In February 1994, Region 3 — eventually the Amhara Regional State — agreed to build on the philosophy of PADEP I while cutting budgetary support to the MOA and AISCO, and concentrating its efforts on strengthening the Region 3 Agricultural Office and Zonal Bureau. Additionally, the geographic coverage of the project was increased slightly to cover 61 of the 136 *woredas* of Region 3. Following a 1994 review mission, the Bank agreed in April 1995 to a reformulation of project components and extension of closing by a year, and maybe a second year, if performance was satisfactory.

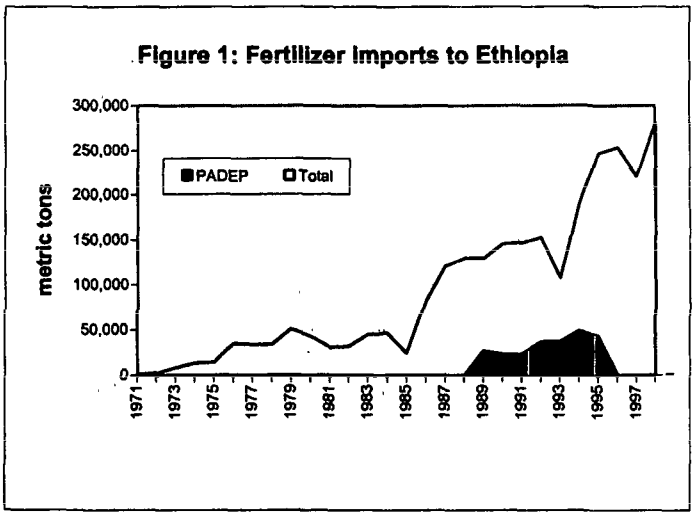
2.5 The major issue had been the lack of qualified and experienced staff at the regional/zonal level under the new administrative arrangements. While international procurement remained with MOA at the center, local procurement and disbursement became the responsibility of Region 3 and led to problems of accountability for funds received. This delayed replenishment of the special account, and undermined grass-roots activities. Thus, the restructured project focused on capacity-building and institutional strengthening of the Amhara Regional Agricultural Bureau (ANRAB) with emphasis on financial management and accounting; strengthening of regional research and research/extension linkages; development of the cooperative sector; and grass-roots activities in the area of women in development, field trials and crop development, rural technology promotion, and training. Project implementation was helped by a new Cooperative Law, which allowed the establishment of financially sound agricultural cooperatives based on internationally accepted principles, and agreement that fertilizer distribution in Region 3 would be by the private sector.

2.6 By mid-1996, ANRAB had established a basic management system, rural technology, including fertilizer, was available off-the-shelf, and recovery of input loans increased significantly. However, strengthening of ANRAB was considerably slower than anticipated, partly owing to a "seemingly endless restructuring process" and the "lack of qualified local manpower."[17] The most notable casualty was the women in development component. While accountability improved, the earlier cuts to MOA reduced its ability to process ANRAB's IDA accounts, and this slowed disbursement for training and field activities. However, given the commitment of ANRAB to PADEP, the Bank extended to project for a second year to June 1997, when it closed.

2.7 Despite its turbulent history, PADEP delivered on most of its quantifiable inputs as indicated in Annex C. The project financed the procurement and distribution of 242,000 metric tons of fertilizer as planned (Figure 1). Production credit provided to service cooperatives and on-lent to farmers from the proceeds of fertilizer sales was about US$29 million or 93 percent of

17. Supervision Aide Memoire. April 1996.

local currency targets.[18] Loan recovery increased from 56 percent in 1994 to more than 75 percent; and outstanding loan recovery from 1994 eventually exceeded 90 percent. The planned number of agricultural technology promotion centers and service stations was established, and field trials to link research and extension reached 95 percent of targets by 1997. While capital investment in zonal and *woreda* extension department offices and houses exceeded targets, extension training and field visits to staff achieved less than half appraisal targets, while field contact with farmers was particularly deficient (19 percent of target). About half the planned training to upgrade financial management of service cooperatives was implemented. In response to budgetary constraints and restructuring, the women in development component was reduced and failed to deliver. The following chapter evaluates the development impact and outcome of these inputs.



3. Ratings

OUTCOME

The outcome criteria take into account the extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently.

3.1 **The assessment rates outcome satisfactory.** The project was highly relevant at appraisal and remains so, efficacy was substantial, and economic efficiency is substantial.

RELEVANCE

Were the project objectives right? Relevance 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.

3.2 **The project objectives were highly relevant** at appraisal and remain so. It is clear from the earlier discussion (para. 1.2 to 1.8) that improved incentives covering better agricultural inputs (credit, fertilizer), open markets, improved technology, and upgraded extension services were absolutely essential to revitalizing Ethiopia's agriculture in the late 1980s. The emphasis on fertilizer — rather than foodgrain — imports was relevant: it is much more expensive to import foodgrain, and it does not distort incentives for local foodgrain production. The 1995 CAS reaffirmed the relevance of project objectives in the post-Derg period, and PADEP objectives resonate with the transitional government's *An Economic Development Strategy for Ethiopia* (1994). Given the importance of agriculture in the economy, this strategy proposed "Agricultural-Development-Led Industrialization" which identified agriculture as the primary stimulus to

18. The Agricultural and Industrial Development Bank (renamed the Development Bank of Ethiopia in 1994), provided production credit of Birr 78.8 million (about US$19 million) from the proceeds of fertilizer sales and, over the period 1993-97, the Commercial Bank of Ethiopia provided Birr 57.3 million (about US$ 10 million).

generate employment and incomes for the poor, and as a springboard for development of other sectors. PADEP objectives were among the goals of ADLI. Indeed, the government replicated PADEP I in five other regions with support from other donors. And in 1995 the Bank approved a National Fertilizer Project aimed at accelerating policy reform and institutional development, promoting increased fertilizer use, and ensuring sound environmental management.

3.3 World Bank assistance proposed in the 1997 CAS saw support for environmentally sustainable agricultural development and productivity growth as "central to accelerating economic growth and reducing poverty." Even so, OED's 1999 County Assistance Evaluation noted that while the Bank's support to agriculture appears to have been a notable success, a general decline in sector lending should be reviewed given its importance to the economy. The Bank's Interim Support Strategy (2000) to assist Ethiopia's recovery from the Eritrea-Ethiopia war (1999–2000) emphasized the importance of food security and further improving agricultural productivity. The strategy advocated support for incremental fertilizer imports and consideration of a government proposal for an integrated land husbandry management program to ensure sustainable yields. As in 1989, measures to improve competitiveness in input distribution, credit provision, and extension to a still-dormant private sector are high on the list of development priorities. Thus, the objectives of PADEP are currently relevant.

3.4 Questions have been raised about the relevance of PADEP I to meeting poverty alleviation objectives. During the evaluation mission to Ethiopia, some government officials, ANRAB officials, and technical experts, expressed concern that PADEP I was geographically focused on the higher-productivity, surplus-producing areas, neglected the adjacent poorer and drought-prone areas, and was not particularly directed at the most needy peasants. The view of this evaluation is that the primary objective — to increase foodgrain production, productivity, and incomes in the peasant sector — was best met by targeting the areas of unrealized high-potential rainfed production: the northwest region. Even in this region, alleviating rural poverty was an issue, and increased productivity would also have downstream benefits to the economy and national poverty alleviation objectives. Thus, selecting a better agro-climatic zone leveraged the impact of PADEP and ensured that there would be a steady demand for its inputs. As the region was already a surplus producer, basic infrastructure (roads and storage) existed and would not be a constraint on marketing. And all of these factors provided incentives for private sector engagement. Investment in adjacent areas would have added to the substantial political risks surrounding PADEP. Apart from infrastructure constraints, innovations that do little to mitigate higher natural risks — particularly droughts — deter costly innovations such as fertilizer packages.

3.5 Peer review of this report asked if there was any evidence that a stronger Bank objection to the villagization process – and a delay in approving the project – would have made the project more relevant. Villagization swiftly gathered momentum following initiation in 1985 and by the time the Board approved the project in 1988, about 12 million people had been villagized. An Oxfam review (Lorgen 1999) of the literature and its staff covering the period 1985-91 highlights almost universal condemnation of enforced resettlement, the disregard for cultural assets, the loss of agricultural production during the transition, and financial cost to families (who had to pay for building their new homes.) The Bank's pragmatic decision to alleviate the worst effects of villagization on agricultural productivity was probably correct, given that villagization could not be undone because abandoned houses were demolished. The outcome vindicates the Bank's decision: cereal production - despite the upheavals – increased from about 6.5 million tons in 1988 to about 9.5 million tons in 1995 (Molla et al., 1995). The counterfactual – delay – would have reduced the productivity gains and had a chilling effect on other donors who were prepared to act in concert with the Bank and urge reform of agricultural policies.

3.6 The Oxfam review also indicates that the longer-term outcomes of villagization were frequently beneficial although the process was brutal. "Villagization was seen as a way of improving productivity of farmers. It was seen as a way to facilitate the delivery of services, such as health care and education, with which people living in scattered homesteads had been harder to reach. Villagization often had a political agenda, ranging from an ideological framework to the need to control counter-insurgency. It also tended to have a modernizing agenda." [19] Recent empirical studies (see para 3.14) clearly demonstrate that one of the largest components of poverty reduction in rural areas is proximity to market and transport infrastructure – one of the original objectives of villagization. Indeed, ILO (2001) attributes the relative success of poverty alleviation in Ethiopia (compared with the rest of Sub Saharan Africa) to equitable land reforms under the Derg, and the removal of compulsory procurement and other discriminatory practices which suppressed gains from these reforms.

EFFICACY

Did the project achieve its stated objectives? Efficacy is a measure of the extent to whictheelms01roject's objectives were achieved, or expected to be achieved, taking into account their relative importance.

3.7 **Efficacy is rated substantial** based upon achievement and relative importance of the development objectives (Table 2) as detailed below.

Table 2: The Extent to Which the Project's Development Objectives were Achieved

Objective	Relative Importance	Achievement
Primary: Increase foodgrain production, productivity and incomes of the peasant sector	High	Substantial
Secondary: Improving incentives for producers while minimizing any adverse impact on consumers	High	Substantial
Secondary: Improving efficiency in the management and delivery of agricultural services	Substantial	Modest
Secondary: Improving technology available to farmers	Substantial	Substantial

Foodgrain production, productivity and incomes of the peasant sector improved

3.8 Government substantially increased fertilizer imports from 1986, and the project gave this a modest boost, accounting for about 20 percent over the period 1989–96 (Figure 1). PADEP I included a sophisticated input/output monitoring and evaluation system using specialist technical assistance, initially for the central implementing agencies, and later for ANRAB, but this was not taken up by either the central or regional government. Thus, there were no project data linking Bank-financed fertilizer import to delivery and production impact at field level, and the Implementation Completion Report (ICR) assumed an incremental production impact of five times the unit weight of inputs, the basis developed at appraisal. In consequence, the estimated incremental foodgrain production induced by fertilizer imports financed from the credit was 1.2 million metric tons (mt), worth US$137 million at 1997 prices. Almost three-quarters of the

19. (Lorgen, 1999: page 20)

fertilizer was distributed in the Amhara region, the balance being distributed nationally. There were no estimates of the project's impact on peasant sector incomes.

Table 1: Incremental yield due to fertilizer in 1995

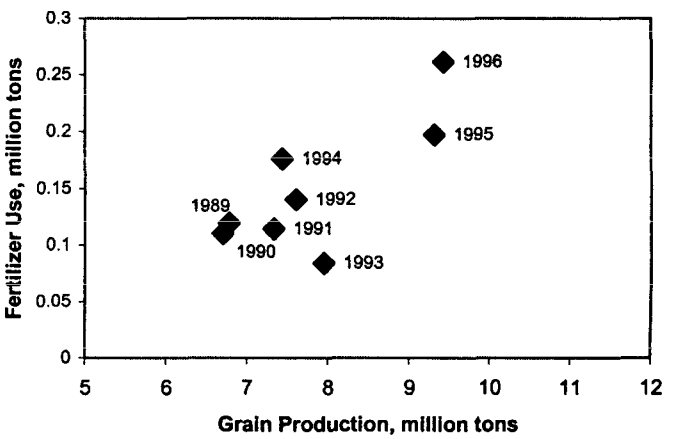
Crop	Percent of Fertilized area	Incremental Yield Tons per ton of DAP	
		National	Amhara Region
Teff	58	3.9	3.0
Maize	24	7.0	6.0
Wheat	10	4.9	4.9
Barley	8	5.1	3.6

Source: Grain Market Analysis Note #3, Grain Market Research Project. January 1997.

3.9 **Empirical data confirm a significant production impact.** National grain production increased by 40 percent, or 2.7 million tons, between 1989 and 1996, partly in response to increased fertilizer use (Figure 2), better extension, and improved cultivation practices. However, given the absence of project data and the large number of exogenous factors affecting grain production, the assessment relied heavily on various non-Bank donor-assisted policy, monitoring, and evaluation programs to determine productivity and production impacts.[20]

3.10 The Ministry of Agriculture's recommendations that fertilizer dose should be 100 kilograms of Di-ammonium Phosphate and 50 kilograms of urea (Ammonium Nitrate) per hectare was adopted by PADEP I but proved difficult to achieve, because farmers made adaptations based on local conditions, costs, and benefits. The area fertilized in the Amhara region was 7 percent less than the national average of 37 percent in 1995/96, and total fertilizer applied averaged 75 kilograms per hectare in the Amhara region compared with 95 kilograms per hectare nationally — even so, this was six times the application rate in 1988.[21] Nationally, the balance of diammonium phosphate to urea also improved from about 7:1 in 1988 to 5:1 in 1996 and this partly rectified the serious shortage of nitrogen in the soil. The yield response of grain crops to fertilizer was significant and varied by crop type (Table 1). Using these data and cropping statistics (Annex B), the assessment estimates that incremental crop production attributable to PADEP I was about 970,000 tons, or 20 percent less than the ICR estimate. Slightly over two-thirds was produced in the Amhara region, the balance nationally.

Figure 2: Grain production and fertilizer use 1989-96



3.11 **Farmers' incomes increased.** The most commonly applied measure to estimate the profitability of fertilizer use is the incremental value/cost ratio (VCR). As most farmers factor in risks, and make allowances for extra labor (for additional weeding, harvesting, interest) and transaction costs, a VCR greater than 2 is generally reckoned to give an acceptable return on fertilizer and provide incentives for use (Heisey and Mwangi 1996). Early in the project, VCRs were highly attractive

20. The Grain Market Research Project, a joint collaboration between Ministry of Economic Development and Cooperation, USAID and Michigan State University, USA; Réseau Européen de Sécurité Alimentaire financed by the EC; UNDP Emergencies Unit for Ethiopia; and the Centre for the Study of African Economies, University of Oxford, UK.

21. Central Statistical Authority, Ethiopia. 1996. Agricultural Practices, Bulletin No.152.

both nationally and within the Amhara region (Gojjam *awraja*) as shown in Table 2. Part of this was because fertilizer prices were subsidized until 1997 by 20 to 39 percent, depending on location. Since then there was a general decline below the "critical" level of 2 for three of the four crops, although marginal benefits still exceed marginal costs. And the reason for the decline in the VCR is that fertilizer prices increased and grain prices fell. However, almost half the farmers interviewed in a field survey of high-output areas said that even if fertilizer prices rose substantially they would "buy as much [fertilizer] as the money on hand permits" (Demeke et al. 1997). Continuous cropping makes fertilizer use essential to maintain even normal production — and without fertilizer some households would go hungry. Farmers who adopt fertilizer are likely to use substantially more of it (23 percent) in the second year of use, but thereafter they tend to tailor use to a lower level as they understand its effects (Croppenstedt and Demeke 1996, Howard et al. 1999).

Table 2: The value/cost ratio of fertilizer use by region over time

Crop	National			Gojjam		
	1992	1996	1997	1992	1996	1997
Teff	3.74	2.09	1.69	3.66	1.6	1.66
Maize	4.24	1.8	1.41	2.24	2.08	1.41
Wheat	3.75	2.70	1.95	4.59	no data	2.35
Barley	4.16	2.20	2.22	no data	2.07	no data

Data sources: 1992 and 1997 data from Demeke, M. et al. 1998, Grain Market Research Project, Working Paper #10. January 1988. 1996 data from Demeke, M. et al. 1997. Grain Market Research Project, Working paper #5, March 1997.

3.12 Farm income analysis of typical farms for 1994 in the Gojjan and Gondar *awrajas* of Amhara region showed that use of fertilizer and extension increased net farm income by 60 percent in Gojjam but by only 47 percent in more drought-prone Gondar.[22] It also showed that there was still sufficient cash surplus for fertilizer purchase provided self-consumption did not exceed 80 percent of production.

3.13 Analysis of returns to teff and maize farmers from sample sites across the country that used an improved fertilizer and seed package, found the profitability "extremely robust" when output prices changed (Howard et al. 1998).[23] Net income per hectare and per labor day remain positive even when output prices fell by 25 percent, while a 50 percent drop still returns a positive net income per hectare cultivated. Incomes could also be improved — by as much as 40 percent — if farmers could store grain to avoid the January marketing glut and protect it from insects and pests. Teff grain prices rose by 23 percent and straw prices doubled between January and August 1998; maize prices rose by 72 percent in the same period. Even if insecticide use reduced storage losses by only half, incomes increased by 9–17 percent.

3.14 **Poverty Impact.** While there is some debate about the link between poverty alleviation and agricultural reforms — including those embodied in the PADEP Board presentation conditionality — Dercon (2001) estimated that the rural poverty gap decreased by 29 percent between 1989 and 1995 on the basis of 10 factors affecting the agricultural economy.[24] While

22. World Bank. 1995. Ethiopia : National Fertilizer Sector Project. Annex 10. Staff Appraisal Report.

23. The improved input package was the Sasakawa Global 2000 approach established in 1986 to increase food production in Africa. It was formed by R. Sasakawa of Japan in partnership with Global 2000 under the leadership of former President Jimmy Carter. Nobel laureate Dr. Norman Borlaugh provided technical leadership and guidance. Global Sasakawa programs were initiated in Ethiopia in 1993 under MOA's Department of Extension and Cooperatives and had reached 3,500 farmers in four regions by 1995.

24. In Dercon's (2001) econometric study, poverty is indicated by the normalized Watts index, which measures the poverty gap using the log of real income as the welfare measure. The ten factors were: increase in land; increase in

road infrastructure/location reduced the poverty gap by 21 percent, eliminating compulsory grain purchase and market liberalization allowed crop production price increases, which raised incomes and reduced the poverty gap by 19 percent. Increases in productive land reduced it by another 9 percent, and other factors 3 percent. The counterfactual — rainfall variability, illness shocks, change in household size and no reforms increased the poverty gap by 23 percent over the 1989 base. In summary, Dercon (2001) concluded that growth in the sample villages was largely fuelled by the agricultural sector reforms and locational advantage. These results build on earlier research that showed that growth was highest, and poverty declined most, for those with better-endowed households (in terms of land and oxen) with higher human capital located near good roads (Dercon and Krishnan 1998).[25] Data from the Amhara region show that farmers using fertilizer over the period 1991–95 cultivated an average area of 1.92 hectares compared with non-user's area of 1.09 hectare (Demeke 1998). From these data and findings, the assessment infers that PADEP made a substantial impact on poverty alleviation, but that this impact was skewed toward the relatively better-off farmers.

Incentives for producers and traders were mixed

3.15 Trade liberalization and privatization of the agricultural sector is not yet complete, and incentives for producers and traders are mixed. Most farmers met by the assessment mission acknowledged that there has been a great improvement in timeliness of fertilizer distribution but complained of high input prices, and difficulties in accessing credit and marketing their grain. These concerns echo those in the literature and indicate systemic problems (Shank 1996, Demeke et al. 1998, Howard et al. 1998, ARD-Raise 2000).

3.16 **Retail markets are poorly developed and major distributors and wholesalers enjoyed almost monopolistic control.** Before 1996, AISCO dominated the scene and there was virtually no private distributor of fertilizer in Ethiopia. In later years, the dominance of AISCO (renamed the Agricultural Supply Input Enterprise in 1992) declined and its 229 marketing centers were handed over to the "private" sector. Only two main private distribution agents emerged, Ethiopian Amalgamated Limited (EAL) and Fertiline. Owned by the Amhara Regional Government, Ambassel Trading House Private Limited Company started trading in 1994, primarily as a wholesale and distribution agent for AISE. In 1996, Ambassel was appointed sole distributor and wholesaler for AISE in the Amhara region, and with EAL, it imported over a third of all fertilizer, aided by foreign exchange allocated by government. The regional governments of Orimiya and Tigray set up their own parastatals (Dinsho and Guna) in 1996 and 1997, in these and other regions the parastatals do not have the same degree of monopoly control and the private sector is more active.

Table 3: Fertilizer market shares by agency (percent)

Distributor	Status	1996	1997	1998	1999	2000
AISE	Parastatal	4	-	17	65	31
Ambessel	Parastatal	90	99	80	-	68
Guna	Parastatal	-	-	-	3	-
EAL	Private	6	1	2	32	1

Source: AISE and figures for 1998-2000 from ANRAB

3.17 Not surprisingly, in the Amhara region the quasi-monopoly by Ambassel and AISE has squeezed out competition from the private sector and provides few incentives to reduce costs (Table 3). In 1997, Ambassel's direct

adult labor; changes in returns to land (technical); changes in returns to educated adults; illness shocks; rainfall shocks; returns to road infrastructure/location; change in adult equivalent units; and residual. The study surveyed 354 households in the center and south of the country.

25. Contrarily, Asmeron and Alber (1994) found that fertilizer use did not significantly depend on farm resources (land and capital) and their results have been challenged in the literature.

sales to farmers and cooperatives at wholesale prices accounted for 91 percent of total sales, and small wholesalers only received 3 percent. Small wholesalers were at a disadvantage as they do not have preferential access to either credit or well-established sites, and their profit margin and overheads makes then less competitive than cooperatives, which only added local transport costs and a small service charge. Indeed, EAL claims that all credit sales in the Amhara region are directed at Ambassel (Demeke 1998). Faulty demand forecasts also created problems for the private sector, and over-supply in the late 1990s pushed up storage costs and led to price cutting by parastatals to deplete stocks.

3.18 **Credit institutions are controlled and unwilling to share risks with borrowers.** In 1996/97 the responsibility for credit distribution was transferred from the banks to the regional governments who estimate fertilizer credit requirements. In the Amhara region, government processes and administers credit requests through the *woreda* Finance Bureau, which relies on screening and recommendation for credit on the Peasant Associations and service cooperatives. Once a credit is approved, the *woreda* administration nominates a supplier of inputs and the cooperative signs a loan agreement and places a 25 percent down payment. Repayment is due at harvest-time (January) and there is no provision to either negotiate delayed payments so that grain can be sold at higher prices later (see para. 3.11), or to take account of crop failure due to drought or pests. In consequence, only those farmers with disposable assets (such as oxen) are willing to take loans as the authorities enforce credit recovery by property seizure and penalize the service cooperatives when members default. While this explains the high loan recovery rates (para. 2.7), it also explains why resource-poor farmers do not use fertilizer or improved seeds.

The efficiency of management and delivery of agricultural services improved

3.19 Aimed at the central and northwest region, achievements were modest primarily because of the extensive reorganization owing to political change, decentralization, and reduction of staff numbers at the center. This displaced the human capital created through the extensive training enabled by PADEP I, and disrupted systematic strengthening and coordination of research support and service delivery functions from the center to the field. Some aspects relating to fertilizer and credit inputs have been described; the following section focuses on the extension service.

3.20 **The central institutions withered.** At the center, the National Agricultural Extension Service (NAES) was significantly reduced in size and status when responsibility for extension was given to the regions (Jackson 2000). A major remaining function is organization of the collection of information on the annual agricultural inputs, required so that the center can sanction the imports required. However, given the time-consuming nature of this task in a non-automated bureaucracy, forecasts are frequently incorrect; this results in either over- or under supply of inputs (see para. 3.15). The NAES has proved adept at evaluating regional-level extension activities (but not the data) twice a year, and coordinating assembly of training and outreach packages by the federal research organizations for the regional-level subject matter specialist. Similarly, NAES's policy support and advocacy for upgrading qualifications of the field-based agricultural development agents and their service conditions has improved the development agents' (DA) effectiveness and numbers in the field. A notable reform achieved by NAES was the simplification of the DA's job by removing responsibility for non-extension activities, for example, debt collection and other party activities required by the former Derg local administration. However, funding constraints have reduced NAES from a proactive organization to one that provides training and other services on demand and payment by the regional bureaus of agriculture.

3.21 **But regional centers expanded rapidly as development plans evolved.** Within the Amhara region, PADEP I components were repackaged in the last two years of the project to meet needs and match the capabilities of the ANRAB. But the repackaging underestimated the dearth of skilled staff, thus it only partially implemented the formidable agenda agreed with the Bank. Training was and remains a big issue: from only 10 staff in 1995, ANRAB grew to 200 by project end (1997) and 300 in 2001. Unfamiliarity with Bank procurement procedures delayed the arrival of many items of equipment until after the project was closed — and most vehicles supplied by the project are out of order for want of adequate maintenance. Thus, reduced mobility of headquarters Bahir Dhar staff to communicate with the field extension staff reduces effectiveness.

3.22 PADEP I built a strong foundation for subsequent improvement. Most notably, provision of housing for DAs in the places they work. This allowed their field presence to be strengthened, particularly in the more remote areas, and ensured secure accommodation for the growing number of female DAs.[26] Helped initially by PADEP support, but latterly by strong commitment and financial support from the central and regional governments, the ratio of DAs to farmers in the Amhara region has declined from about 1:1500 to 1:700 in 2001, but this is straining resources. One factor driving the desire for a smaller ratio is the low level of farmer literacy that, in government's view, requires face-to-face contact for effective extension. Formerly, DAs had worked from their urban bases and commuted to their rural clients using project vehicles. Now, DAs spend almost all their time in the field. However, more than a quarter of DAs have no transport and walk their rounds, thus restricting dissemination of extension services. Most DAs interviewed were highly motivated to improve farmers' productivity and felt that the upward links to ANRAB provided effective extension support. Overall, extension at the field level has become more effective in reaching more farmers — but as the priority for DA posting is the surplus *woredas*, there is a marked differential impact on poverty alleviation.

3.23 The Amhara regional government supports three training centers and provides induction training and a three-year course leading to a diploma. About 2,400 DAs were trained since 1997 — but judging from the curriculum and interviews at *Woreta*, the assessment mission found the course to be somewhat academic and biased. Farmers and experienced DAs interviewed stated that livestock is as important as crops in most communities, yet the focus of training is on crops. *Woreta* aimed to have a 60:40 ratio of practice to theory, but lack of resources on campus reduced the practical content to 30 percent, a deficiency that delays achievement of full field effectiveness. Accountancy training for service cooperatives — provided by PADEP I — while meeting about half the target, appears to have paid off. Service cooperatives visited by the assessment team had excellent records and accounts — and summary accounts and status were regularly updated and pasted on the wall of the cooperative for all to see. With all the attention given to building ANRAB's capacity and ensuring financial accountability, attention and resources for farmer and field staff training was totally neglected and the outcome of this component is negligible.

3.24 **Technological promotion was modest.** PADEP I's support for formal agricultural research and extension provided physical assets but did not appear to catalyze applied research. At the Adet research center, for example, the research agenda appeared to be supply-driven and had little practical relevance to the needs of subsistence farmers in the drought-prone northern parts of the region. None of the researchers interviewed worked with farmers. Horticultural demonstration and nursery sites developed by PADEP I are functioning and distribute free samples to farmers, the major exception being coffee demonstration from which plants are sold

26. In 2000, almost a quarter of development agents were female compared with 18 percent in 1998; and their numbers increased from 663 to 1,046 in the same period.

for nominal sums. As with much of the extension effort, only the richer farmers and better agro-climatic areas seem to benefit.

3.25 **Women were marginalized in the development effort.** There does not appear to have been any effective gender targeting. The supposed project beneficiaries were very broadly defined, no distinction being made between farmers in general (wealthy or poor, surplus or deficit producing) and women farmers or rural women, in particular. How appropriate or effective micro-projects on bee-keeping, goat/sheep rearing, cattle fattening, and vegetable growing, were is not exactly known. Whether the procurement of mules and bicycles for the Rural Women Affairs Division (limited as it was), or the contents of the workshops and training courses carried out, were of any practical use to women in the PADEP I intervention areas remains unclear.

3.26 As part of Ethiopia's structural adjustment, government (pressured by the IMF and the Bank) reduced staff expenditures. The ANRAB Rural Women Affairs Division was a casualty and it was abolished in 1995/96, its activities being absorbed by the extension department. Equipment originally intended for Rural Women Affairs Division's home agents was given to development agents who usually have very limited contact with rural women. Lacking capacity, staff, and financial resources to additionally cope with women in development activities, little was done and the impact was negligible.

EFFICIENCY

Was the project cost effective? Efficiency is a measure of 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 with alternatives.

3.27 The operation was effectively a multiple-tranched adjustment credit because the bulk of the credit was support for fertilizer imports. **Given the ease of disbursement and high returns** from fertilizer, the project was efficient. Based on the methodology in the ICR, and adjusting ICR benefits downward by 18 percent to match the assessment's value, yields a benefit-cost ratio between 2 and 2.5. The ratio would be higher if the poverty reduction benefits and those generated by the use of rural credit, recycled from fertilizer sales, could be captured.

3.28 The efficiency of the institutional development components (which cost US13.8 million) is rated as modest. Clearly many of the benefits of the US$4 million spent on the Ministry of Agriculture were lost when it was downsized following regionalization, and the amount spent of field trials was only partially effective. The efficiency of US$8 million spent on supporting delivery services in the Amahra region was reduced by late procurement and misallocation.

INSTITUTIONAL DEVELOPMENT

Has the project led to better management of human and financial resources? This is a measure of the extent to which a project improves the ability of a country or a region to make more efficient, equitable, and sustainable use of its human, financial, and natural resources through better definition, stability, transparency, enforceability, and predictability of institutional arrangements.

3.29 **Institutional development is rated substantial.** Policy dialogue during appraisal and conditionality for Board presentation leveraged substantial institutional reform of agricultural sector policies. The removal of state monopoly and liberalization of the fertilizer import, distribution, and pricing system was a substantial improvement over what went before even though there are unresolved problems — parastatal quasi-monopolies — to be overcome before the input market is fully free and transparent. Aggressive promotion of fertilizer has substantially

increased agricultural productivity, although starting from a low base — there is still a long way to go. A nascent private sector has emerged. In contrast, these improvements highlighted needed improvements in rural credit institutions (which was not a project objective). More recently, fertilizer subsidies have been removed and retail prices deregulated: reform continues.

3.30 Despite almost continuous reorganization, project support catalyzed development of a trained cadre of agricultural development agents who have been relieved of irrelevant political and administrative responsibilities, and are now closer to their client farmers and, thus, more effective in the field. The accountability of service cooperatives was strengthened and they are effective in assisting delivery of credit and other input services. Within the Amhara region, the extension of the project provided essential and timely support at the inception of ANRAB, and government's devolution of responsibility for the extension service to the regions has improved service delivery. While there was clearly inadequate progress on environmental management issues, supporting women in development, and improving the effectiveness of agricultural research and its linkage with extension, it is unreasonable to expect everything can be done at once. PADEP I was there when needed, kept many doors open during turbulent times, and ushered in the next wave of institutional development.

SUSTAINABILITY

Are the results likely to last? Sustainability is evaluated by assessing the resilience to risk of net benefits flows over time

3.31 **Sustainability is likely** because of high client ownership and the development of strong partnerships with Ethiopia's development partners, which have firmly rooted and expanded the reform agenda. Many of the reforms introduced during PADEP I were stepping-stones to more sophisticated institutions that followed completion of the political transformation process. Thus, for example, the PADEP I train-and-visit extension package offered to farmers was a marked improvement over that of the Derg and provided a base on which to build. Subsequently, government improved on this with its Participatory Demonstration and Training Extension System (PADETES) in 1994/95 which merged the train-and-visit system with the technology diffusion experience of the Sasakawara Global 2000 program. The main elements of this new package are fertilizer, improved seeds, pesticides, and better cultivation practices. Government is concerned that the more intensive extension service becomes financially sustainable, particularly in the regions, but the means to achieve this are not yet clear given other pressing development priorities.

BANK PERFORMANCE

This is a measure of the extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project).

3.32 **Bank performance was satisfactory.** Despite the high political risks surrounding agricultural policy reform, the Bank remained a reliable partner during the long and trying period between the identification mission in 1982 and completion in 1997. Appraisal and reappraisal was extremely thorough and eventually even the Derg perceived the necessity of free markets and for relaxation of their central command and control approach to agriculture. The Bank was extremely flexible during the period of intense administrative reorganization and continued to provide support until other development partners reentered the arena in the early 1990s. Subsequently, the Bank developed parallel seed and fertilizer development projects, and a social rehabilitation fund to support rural infrastructure including small-scale irrigation (which are ongoing). These ensured

coherent and comprehensive policy and financial support for ongoing institution building and reforms in the agricultural sector, and helped to address some of the problems highlighted by PADEP I.

BORROWER PERFORMANCE

Borrower performance is rated by the extent to which borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development objectives and sustainability.

3.33 **Borrower performance was satisfactory.** Despite considerable political turmoil, the government followed through on the agreed agricultural reform program and undertook further reforms, such as decentralization, which increased the effectiveness of regional development agencies. While there were problems with replenishment of special accounts because of poor accounting practices in the newly emerged regional authorities, these were to be expected given the rapid pace of reform and devolution.

4. Findings and Outlook

4.1 There are three major findings:

- **Tenacity pays.** The Bank did not relax its tough ex-ante policy conditionality and stayed the course over a long period on what was regarded as an unusually risky venture. Despite marked differences with government's policy perspective, the Bank remained a steadfast advocate for reform and was well-positioned when reform and liberalization eventually occurred.

- **Not everything can be done at once — limit objectives and package carefully.** Appraisal developed a complex project that would have diffused the reform effort. Fortunately, Bank management cut the project scope to focus on what was essential and phased related objectives under separate and later credits. This avoided a large and difficult comprehensive agricultural development project that would have been difficult to manage. This same approach was not followed at project reformulation in 1995 and some components that failed to deliver, while desirable (for example, women in development), were not a high priority among development challenges facing the fledging Amhara Regional Agricultural Bureau.

- **In-country economic and sector work carried out during implementation builds local capacity, keeps policy dialogue current and informed, and builds country partnerships.** Most Bank economic and sector work is carried out at headquarters as part of project preparation and is hardly ever used during implementation to adjust project objectives and components in response to evolving country circumstances. Thus, once appraised, the policy content of projects becomes moribund. The assessment found that some donors (USAID) established grant-funded in-country policy support units to provide feedback on sectors in which they operated and to keep policy dialogue active. This built strong, interactive partnerships with the borrower, deepened the donor's understanding of the evolving development process at the grass-roots level, and provided development of invaluable databases to monitor and evaluate progress. More important, day-to-day policy dialogue with trusted experts built confidence on both sides and ensured shared objectives. Thus, depending on circumstances, grants 4are an effective way to support this dialogue and build effective monitoring and evaluation capacity.

OUTLOOK

4.2 **Regional conflict stalled the economy and the reform agenda.** The outbreak of the Eritrea-Ethiopia conflict in 1999 undercut the impressive gains in national productivity and sound macroeconomic management since 1991. The fall of the Derg had enabled reaping of the peace dividend as military expenditures were slashed and resources redirected to the social and other high priority, pro-poor sectors, such as agriculture. After PADEP-I, the Bank supported three agricultural projects which addressed several of the problems noted in this assessment, and all of these are on-going. A National Fertilizer Sector Project (World Bank 1995a) aimed at fostering greater private sector competition, addressing supply-side constraints, and ensuring sound environmental practice and management through a US$120 million credit. Subsequently, a US$22 million Seeds System Development Project (World Bank 1995b) attempted to lay the foundation for a broad-based and competitive seed industry. And in 1998, the Bank approved a credit for US$60 million towards an Agricultural Research and Training Project. Even so, OED's Country Assistance Evaluation (OED, 1999) highlighted the apparent dichotomy between the centrality of the agricultural sector to Ethiopia's well-being and poverty alleviation, and declining Bank lending to the sector. Areas of concern were the balance of investment in agriculture, distorted land use caused by restrictive leasing policies, land use degradation (nutrient depletion and soil erosion), and inadequate attention to redressing the pervasive gender bias, particularly in rural development efforts.

4.3 The 1999 conflict again plunged Ethiopia's economy into dire straights – not helped by a severe drought similar in magnitude to that of 1984-84. The imperative to address demobilization, meet emergency needs and reconstruction, and stabilize the economy while re-starting the reform agenda, was a major challenge, and government called upon the Bank to assist development of a Post-War Recovery Program. The resulting Interim Support Strategy (World Bank, 2000) aimed at addressing immediate needs, tackling the weaknesses of the IDA portfolio, and focused on providing longer-term assistance to bolster food security, slowing the spread of HIV/AIDS and addressing systemic weaknesses in the production and delivery of essential services.

4.4 It is clear, however, that while the conflict reduced the impact of PADEP because fertilizer sales contracted in part due to reduced private traders' stocks and war-constrained rural credit, it reemphasized the importance of support to the agricultural sector. Just as in 1987, a key components of the Interim Support Strategy is a Fertilizer Supplemental Credit (US$55 million), providing inputs for the 2001 and 2002 crop seasons, and accelerating the recovery program. A full Country Assistance Strategy is planned for FY02 and it is anticipated that additional support for agriculture will be programmed. In doing so, the following issues may be considered:

4.5 **Service delivery is still a problem.** Ethiopia's short-term strategy for agricultural growth has been to focus on effective extension and improved input delivery, but this seems to have run out of steam. The assessment also found that most farmers wanted more comprehensive input packages that included support for crops and animal husbandry – the twin pillars of the rural economy. Although the fertilizer market has been liberalized and the use of improved seeds and fertilizer promoted, farmers are not adopting better input packages at the rate desired. This points to market failures in the input distribution system which, as currently structured, provides limited competition and few incentives to reduce overheads and prices.

4.6 Similarly, the apparent efficiency of the rural credit system, with its high repayment rate, overshadows fundamental problems with the way rural credit is organized and the lack of private sector involvement — most notably the willingness to innovate and take risks that could lead to improved marketing of outputs and better prices. The severity of uptake problem is amplified by

the fact that if the improved inputs do not appeal to the better-endowed farmers currently involved, then the prospects for improving the productivity of poor and marginal farmers, and those in drought-prone areas, are bleak. Land is still owned by the public sector and successful farmers cannot consolidate and diversify, thus providing secondary employment. Incentives for sound environmental management are similarly missing. Thus, policy dialogue needs to look more carefully at rural credit and land management issues.

4.7 **Fertilizer phasing.** There is need for an appropriate phasing of fertilizer imports in line with main sales off-take period so as to minimize inventories. Given the shortage of port facilities, clearing and handling, it might be sensible to organize advance stocking to meet fertilizer demand. With the secession of Eritrea in 1993, Ethiopia became landlocked and lost two of its traditional ports (i.e. Asseb and Massawa). Although there was an agreement between the two countries, regional tensions adversely affected fertilizer imports (fertilizer imports already in the pipeline were confiscated by Eritrean authorities and there were delays in developing workable arrangements for importation via Djibouti and Berbera). Since the intervention of the UN peace keeping forces, there has been talk about the USA negotiating a 30 years lease for Asseb port on Ethiopia's behalf, but this proposal remains unconfirmed. The timing of donor assistance for fertilizer credit should also be better coordinated with the import plans of the National Fertilizer Industry Agency (set up in February 1996), and delays would be reduced if inconsistent government and Bank procurement procedures are rationalized.

4.8 **Monitoring and evaluation needs attention.** It is important to further strengthen the special Project Co-ordination and Monitoring Office (PCMO) set up under the National Fertilizer Industry Agency (NFIA). At present, the office appears to be mainly involved in co-ordinating activities for the National Fertilizer Sector Project and ensuring compliance to IDA and National Fertilizer Industry Board reporting, procurement and disbursement requirements. But there is need for organizing the PCMO on firmer footing for it to be able to operate on its own after the Bank pulls out. Attention also needs to be paid to issues like the co-ordination between national and regional fertilizer institutions. Such linkages are not to strong at the moment, with the result that regional institutions have not greatly benefited from work done NFIA/PCMO. Important monitoring and evaluation activities include cost recovery, phased reduction in AISCO/AISE services, and the impact of fertilizer subsidies in relation to promoting sustainable growth and food security.

4.9 Strong national and regional fertilizer data bases are essential for food security, providing meaningful measures of fertilizer adoption, and demand forecasts to enable determination of procurement and import requirements. So far, the focus of the NFIA has been on compilation of aggregate level data, but the capacity of the agency to collect and analyze data on implementation progress, undertake surveys and establish benchmarks for monitoring and evaluation, needs to be upgraded. To this effect, technical assistance in M&E could be provided (e.g. twinning agreement with internationally reputed institutions), focusing on local capacity-building to assist build-up of management systems and the co-ordination of linkages with implementing (federal and regional) organizations.

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Annex A. Basic Data Sheet

ETHIOPIA— PEASANT AGRICULTURAL DEVELOPMENT PROJECT I (CREDIT 1956-ET)

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

	Appraisal estimate	*Actual or current estimate*	*Actual as % of appraisal estimate*
Total project costs	118.6	87.8	74%
Loan amount	85.0	82.4	96%
Cancellation	-	7.4*	-
Date physical components completed	6/30/95	6/30/97	

The cancellation is larger than shown by the final disbursement because of appreciation of the SDR against the US$.

Cumulative Estimated and Actual Disbursements

	FY89	*FY90*	*FY91*	*FY92*	*FY93*	*FY94*	*FY95*	*Fy96*	*FY97*
Appraisal estimate (US$M)	0.0	29.30	19.00	20.00	9.00	4.00	3.70		
Actual (US$M)	2.76	21.82	21.45	29.01	5.45	1.46	0.22	0.10	0.18
Actual as % of appraisal		84	95	110	104	101	97	97	97

Date of final disbursement: May 14, 1998

* Credit was extended beyond the original closing date of June 30, 1995 by two years. The above data is as of October 31, 1997. The final date of disbursement has been extended to December 31, 1997.

Project Dates

	Original	*Actual*
Identification	-	September 1982
Preparation	January 1983	June 1983
Appraisal	February 1985	May 1986 February 1988 (follow-up) June 1988 (completion)
Negotiations	September 1988	September 1988
Board approval	October 1988	October 18, 1988
Signing	November 1988	December 6, 1988
Effectiveness	January 1989	April 14, 1989
Project completion	June 30, 1995	June 30, 1997
Closing date	June 30, 1995	June 30, 1997

Staff Inputs (staff weeks)

	Actual Staff weeks	*Actual US$ (000)*
Preparation to appraisal	289.8	596.3
Appraisal	186.9	348.9
Negotiations through Board approval	10.3	25.6
Supervision	192.5	506.9
Completion	4.2	15.4
Total	683.7	1493.1

Mission Data

	Date (month/year)	*No. of persons*	*Staff days in field*	*Specializations represented*	*Performance rating*	*Rating trend*	*Types of problems*
Through appraisal	09/82-02/88	41	286	A,B,C,D			
Appraisal through Board approval	04/88-05/88	9	30	A,B,C,D			
Board through effectiveness	11/88	2	26	A,C			
Supervision	10-11/89	8	25	A,B,C,D,E	1	1	Grain pricing and marketing reforms.
	06-07/90	5	21	B,C,D,F	2	2	Admin.& lack of local funds.
	01/92	3	12	C	2	2	Restart project activities after the end of civil strife.
	02-03/92	1	16	A			Fertilizer proc. & disbursmnt.
	03/94	2	4	C, E	U	U	Poor performance of all components except inputs.
	04/95	5	27	B,C,D,G	U	U	Inadequate regionally focused activities.
	06/95	1	3	C			Special Accounts, IDA funds.
	12/95	2	16	C,E	S	S	PIU & recruitment M&E splst.
	04/96	4	15	B,C,E	S	S	Extension of closing date.
	10/96	2	14	C	S	S	Procurement, PIU, financial.
	05/97	1	4	C			Procurement, Borrower's ICR.
Completion	10/97	4	17	C,E			Evaluation for ICE preparation.

A=Agriculturist/Agronomist; B=Financial analyst; C=Economist; D=Extension specialist; E=Operations/Res. analyst; F=Soil & consv. spslt.; G=Women in development.

Other Project Data

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS

Operation	*Credit no.*	*Amount (US$ million)*	*Board date*
National Fertilizer Sector Development	C2740	120	1995
National Seed Systems Development	C2741	22	1995
Agricultural Research and Training	C3092	60	1998