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Report No. 40124

PROJECT PERFORMANCE ASSESSMENT REPORT

ETHIOPIA

SEED SYSTEMS DEVELOPMENT PROJECT
(CREDIT 2741)
NATIONAL FERTILIZER SECTOR PROJECT
(CREDIT 27400 & 27401)

June 21, 2007

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

Currency Equivalents (annual averages)

	Currency Unit	*Ethiopian Birr*
1995	US$1.00	$6.29
1996	US$1.00	$6.36
1997	US$1.00	$6.71
1998	US$1.00	$7.12
1999	US$1.00	$7.95
2000	US$1.00	$8.22
2001	US$1.00	$8.44
2002	US$1.00	$8.51

Abbreviations and Acronyms

AISCO	Agricultural Inputs Supply Corporation
AISE	Agricultural Input Supply Enterprise (formerly AISCO)
CAE	Country Assistance Evaluation
CAS	Country Assistance Strategy
CSA	Central Statistical Agency
EARI	Ethiopian Agricultural Research Institute
ESE	Ethiopian Seed Enterprise
ICR	Implementation Completion Report
IDA	International Development Association
IEG	Independent Evaluation Group
IEGWB	Independent Evaluation Group (World Bank)
FBSPMS	Farmer-based Seed Production and Marketing System
MOARD	Ministry of Agriculture and Rural Development
NAEIP	National Agricultural Extension Intervention Program
NFIA	National Fertilizer Industry Agency
NFSP	National Fertilizer Sector Project
NSIA	National Seed Industry Agency
NSRC	National Soil Research Center
PAD	Project Appraisal Document
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PPAR	Project Performance Assessment Report
SSDP	Seed Systems Development Project
SSMS	Secondary Seed Multiplication Scheme

Fiscal Year

Government: July 8 – July 7

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About this Report

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

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

Each PPAR is subject to internal IEGWB peer review, Panel review, and management approval. Once cleared internally, the PPAR is commented on by the responsible Bank department. IEGWB incorporates the comments as relevant. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

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Outcome: The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). Relevance of design is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. The efficiency dimension generally is not applied to adjustment operations. *Possible ratings for Outcome:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

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

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

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

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This report was prepared by Keith Oblitas, who assessed the project in November 2006. Rose Gachina provided administrative support.

Boxes

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Principal Ratings

SEED SYSTEMS DEVELOPMENT PROJECT

	*ICR**	*ICR Review**	*PPAR*
Outcome	Satisfactory	Moderately Unsatisfactory	Moderately Unsatisfactory
Institutional Development Impact**	Modest	Modest	n.a.
Risk to Development Outcome	n.a.	n.a.	Significant
Sustainability***	Likely	Likely	n.a.
Bank Performance	Unsatisfactory	Unsatisfactory	Moderately Unsatisfactory
Borrower Performance	Satisfactory	Satisfactory	Moderately Unsatisfactory

NATIONAL FERTILIZER SECTOR PROJECT

	*ICR**	*ICR Review**	*PPAR*
Outcome	Unsatisfactory	Unsatisfactory	Unsatisfactory
Institutional Development Impact**	Modest	Modest	n.a.
Risk to Development Outcome	n.a.	n.a.	Significant
Sustainability	Unlikely	Unlikely	n.a.
Bank Performance	Unsatisfactory	Unsatisfactory	Unsatisfactory
Borrower Performance	Unsatisfactory	Unsatisfactory	Unsatisfactory

* The Implementation Completion Report (ICR) is a self-evaluation by the responsible Bank department. The ICR Review is an intermediate IEGWB product that seeks to independently verify the findings of the ICR.
**As of July 1, 2006, Institutional Development Impact is assessed as part of the Outcome rating.
***As of July 1, 2006, Sustainability has been replaced by Risk to Development Outcome. As the scales are different, the ratings are not directly comparable.

Key Staff Responsible

SEED SYSTEMS DEVELOPMENT PROJECT

	Task Manager/Leader	*Division Chief/ Sector Director*	*Country Director*
Appraisal	Amarjit Sodhi	Sushma Ganguly	Francis Colaco
Completion	Berhane Manna	Karen Brooks	Ishac Diwan

NATIONAL FERTILIZER DEVELOPMENT PROJECT

Appraisal	Amarjit Sodhi	Sushma Ganguly	Francis Colaco
Completion	Eustacius Betubiza	Karen Brooks	Ishac Diwan

Preface

This is the Project Performance Assessment Report (PPAR) of two projects in the Federal Democratic Republic of Ethiopia: the Seed Systems Development Project (SSDP) and the National Fertilizer Sector Project (NFSP).

Both projects were approved on June 13, 1995. The SSDP received an IDA Credit (Credit 27410) of $22.0 million, of which $4.8 million was cancelled midway through the project. At project closure, 54 percent of the original credit had been disbursed. The project was closed in September 2002, 21 months behind schedule.

The NFSP received two IDA Credits (Credits 27400 and 27401) with a total value of $164.1 million. At project closure, 89 percent of the combined credits had been disbursed. The project was closed in June 2002, 18 months behind schedule.

The report presents findings based on review of the projects' implementation completion reports, appraisal reports, legal documents, sector reports, and other relevant material. In addition, an IEG mission to Ethiopia in November 2006, visited project sites and held discussions with government officials and agencies, project directors and staff, beneficiaries, key donors, and academia.

The projects were chosen for assessment for four reasons. First, Ethiopia's critical development situation—extreme poverty, low GDP growth, and high dependence on agriculture—calls for as much learning as possible from its agricultural development experience. Second, the findings of this assessment support IEG's review of agriculture in Africa, and the ongoing Country Assistance Evaluation for Ethiopia. Third, an overview of the projects together provides an opportunity to assess the relative merits of single projects compared with a more integrated sector-wide approach. Finally, these projects provide insight into why private sector participation was not successful. It is expected that the lessons from this assessment will be valuable for future rural development in Ethiopia and for other countries embarking on a privatization program. To these purposes, the PPAR has a *results-based approach*, reviewing the projects in a broader sectoral context.

Comments on the draft from the Bank's Africa Region have been taken into account. Following standard IEG procedures, copies of the draft PPAR were sent to the Government of Ethiopia for review, and the Government's comments have been taken into account in the text and are provided in full as Annex B.

Summary

This is the Project Performance Assessment Report (PPAR) of the Ethiopia Seed Systems Development Project (SSDP) and the Ethiopia National Fertilizer Sector Project (NFSP). The projects were simultaneously approved in June 1995 along with the 1995 Country Assistance Strategy. At that time, Ethiopia was struggling to rebuild itself after nearly two decades of Marxist rule, a civil war, and a series of droughts. Ethiopia had only a rudimentary institutional framework, a very limited private sector, and at all levels of governance, a marked lack of experience in modern economic and technical management. Poverty was, and remains, extreme. One of the poorest countries in the world, Ethiopia's per capita GDP is just $150 per year, and is growing at only 1.5 percent per year. Such slow growth is not enough for the country to emerge from its poverty trap. About 90 percent of the poor live in rural areas and the population of some 70 million is growing rapidly—at about 2 percent per year - and, if unchecked, would double by the mid-2040s (2006 CAS).

The 1995 and 2006 CASs, as well as the government's "Plan for Accelerated and Sustained Development to end Poverty" (2006) placed rural development as the fulcrum for faster and more equitable economic growth. The rural sector dominates the economy, contributing 40 percent of GDP, 90 percent of exports and 85 percent of employment. Per capita agricultural GDP has been largely stagnant since the early 1990s, even though the overall economy has been growing at 4 percent per year. All cultivatable land is now cropped. Thus, Ethiopia's imperative challenge is to *significantly enhance growth in agricultural productivity.*

Given the challenge to boost agricultural productivity, the overall aim of both projects is highly relevant. Each project aimed to strengthen institutions in its subsector; prioritize the development of competitive markets, including private sector participation; and promote efficient input use through the agricultural extension system. While sound in concept, the projects were unusual in that each addressed only a single aspect of Ethiopia's agricultural development needs, albeit an important one. This would have been justified if they had been closely coordinated with each other, and integrated with other rural sector needs, but this was not the case.

The Seed Systems Development Project's outcome is rated moderately unsatisfactory. SSDP successfully achieved its main objective to decentralize and strengthen the government seed-producing agency, the Ethiopian Seed Enterprise (ESE). However, it failed to achieve its secondary objective to promote seed production by private firms, and informal seed production by farmers; and ESE retains a nearly exclusive monopoly of seed production. Substantial performance improvements are still required to achieve project objectives. The performance of the Bank and borrower are both rated moderately unsatisfactory. Policies introduced independently by government at the beginning of the SSDP and NFSP actively discriminated against private seed production and the private retailing of both seed and fertilizer. The failure to improve private sector participation was the result of minimal attention by both the Bank and government to this aspect during supervision, a problem compounded by lack of effective

rural sector analysis and the absence of a comprehensive strategy. Risk to development outcome is rated significant.

The National Fertilizer Sector Project's outcome is rated unsatisfactory. The NFSP successfully assisted fertilizer sector institutions to strengthen capacity, but failed to achieve its main objective to create a competitive fertilizer market with private sector participation. Instead, the private sector left the market and the government became the monopoly supplier. The NFSP had some success via the agricultural extension system in promoting increased and efficient fertilizer usage by farmers—but the system's supply-driven approach limited the impact on agricultural productivity. Some $125 million of IDA funds (95 percent of the project's total disbursements) were used to finance fertilizer imports through a government-monopolized market. If budget support was needed, it would have been better to use a more appropriate financing vehicle, such as a structural adjustment operation rather than to risk perpetuating market inefficiencies.

Significant performance improvements are still required for NFSP to achieve a satisfactory outcome, hence risk to development outcome is rated significant. The performance of the Bank and borrower are both rated unsatisfactory. The primary weakness was that neither partner identified all of the factors required to liberalize the fertilizer market, or paid attention when progress was the opposite of intentions.

The experiences of SSDP and NFSP provide six main lessons:

1. **Strategically oriented sector work is essential as a base for a relevant and effective rural development program.** Given the critical need to increase the productivity of Ethiopia's rural sector, it was particularly important to have an effective rural strategy. Yet neither the Bank nor the government had this. For the Bank, there was no significant rural sector work during either preparation or implementation of the projects; a gap that was not addressed until 2005. The lack of sector analysis was a key contributor to the Bank's generally weak rural lending program in Ethiopia, in quality as well as quantity. Seven out of the 10 rural projects completed in the 1980s were rated unsatisfactory, and rural lending shrank from 44 percent of the Ethiopia portfolio in the 1980s to only 12 percent in the 1990s. The rural lending program also lacked a coherent overall thrust, comprising instead a scatter of largely unrelated projects.

2. **Better coordination and linkages are needed between projects and within the rural sector as a whole.** Although SSDP and NFSP went to the Board on the same day, there was minimal coordination between them in conceptualization, design, or implementation. Each project and supervision team operated in a "silo," with very limited links, not only with each other but also with related sectors such as agricultural extension. Rural development needs a comprehensive approach, integrating complementary actions between related programs. This unleashes natural synergies for a greater impact, as for example, the enhanced yield impact from using seed and fertilizer together.

3. **Development of a competitive fertilizer market requires actions beyond "Market Liberalization."** Although necessary policy reforms—comprising

elimination of subsidies, deregulation of prices and equal access to foreign exchange and short-term credit—were all implemented, these were not sufficient to achieve fair and open competition. Other constraints also needed removal: the private sector faced higher collateral requirements and interest rates than for the government agency, and more difficult access to foreign exchange and government storage facilities. As a result, the private sector left the market, and government became the sole fertilizer importer.

4. **Reliance on the public sector for input supply may create not only market inefficiencies but also a shortage of inputs.** Only government source inputs qualified for credit and were distributed by the extension service. The private sector could not compete against such discrimination and abandoned the wholesale and retail markets for agricultural inputs. Even so, ESE did not greatly increase production and met only a third of Ethiopia's potential demand for seed. The absence of a substantial private seed sector, and the resultant "seed gap," is likely to have had a significant negative influence on farm productivity.

5. **Institutional structures and processes can restrict private sector participation**. The new agricultural extension program, providing a package of seed, fertilizer, and credit exclusively through government's extension agents, limited the participation of private wholesalers and retailers in the fertilizer and seed markets. The revised seed production program left out the formerly envisaged informal seed production by farmers.

6. **A one-sized-fits-all agricultural extension system has limited impact**. Support services for farmers need to be tailored to local conditions and specific farmer needs. The government's package, with a fixed combination of fertilizer and seed, was a top down, supply driven, one-size-fits-all formula. The impact on agricultural productivity would have been greater with a more flexible demand-led extension service.

Recent developments since these projects closed (in 2002) have been more encouraging. The Bank and the government have substantially increased sector analysis over the past two years. Several policy actions that may reduce market bias against private fertilizer importers were taken in 2006. The agricultural extension service's linkage with research is being strengthened and a more demand-driven approach is being developed. In lending, the Rural Capacity Building Project (FY06) supports the broader development strategy derived from the sector analysis.

Vinod Thomas
Director-General
Evaluation

1. Project Objectives and Components

Ethiopia's Agricultural Productivity Challenge

1.1 The Seed Systems Development Project and the National Fertilizer Sector Project were both presented to the World Bank's Board of Executive Directors on June 13, 1995, together with the 1995 Country Assistance Strategy (CAS) for Ethiopia. At the time, Ethiopia was still struggling to recover from 17 years of Marxist rule under the Derg regime culminating in a protracted civil war and the ousting of the regime in 1991. The country had begun to rebuild itself but was suffering from severe droughts, and had been further set back by Eritrea's secession in 1993. At the time the seed and fertilizer projects were approved, a new Constitution had only recently been ratified (in 1994) and Ethiopia's first national elections had just taken place. Thus, the context for the 1995 CAS and the preparation of the two projects consisted of considerable social flux, a rudimentary institutional framework comprising substantial vestiges of the past, and a very limited private sector presence. Given this lack of experience in modern economic and technical management, Ethiopia and the Bank faced an enormous challenge.

1.2 The challenge was further accentuated by the country's stark poverty and underdevelopment. Ethiopia's per capita GDP of about $150 per annum and per capita GDP growth of only 1.5 percent put it among the poorest countries in the world. The country's high population growth of 2.2 percent per annum, if unchecked, will double the current population of 70 million by the mid-2040s.

1.3 The rural sector dominates the economy of Ethiopia, contributing 40 percent of GDP, 90 percent of exports, and 85 percent of employment. Ninety percent of the poor are located in rural areas. Thus, strong growth of the rural economy will be essential to help Ethiopia reduce its extreme poverty. However, heavy population pressure has resulted in practically all cultivatable land being farmed, eliminating expansion of cropped area as the main driver of agricultural growth, which had been the case in the 1990s. Yet per capita agricultural GDP has been largely stagnant since the early 1990s. This means that there is a critically important need to boost *agricultural productivity*.

Project Objectives

1.4 **Seed Systems Development Project.** SSDP's overall objective supported the productivity enhancement goal.[1] The objective, *to help increase the Borrower's agricultural production through the development of a broad-based and competitive seed industry* was to be achieved through four sub-objectives. These were: (i) capacity building through institutional strengthening and human resource development; (ii) restructuring and strengthening of the Ethiopian Seed Enterprise's organization,

1. The evaluated project objectives for both SSDP and NFSP are those in their respective Development Credit Agreements. The order of presentation of the specific sub-objectives is adjusted to facilitate the PPAR's later discussions of the projects' achievements by theme. For example, the first two sub-objectives of SSDP are both institution strengthening in nature; and NFSP's first listed sub-objective is also institutional.

management and operations; (iii) promotion of private sector participation in production, processing and marketing of seeds; and (iv) strengthening the Borrower's informal seed exchange system. These are listed in Table 1, along with summaries of the project's components and costs.

1.5 **National Fertilizer Sector Project.** NFSP also supported the agricultural productivity goal. The project's overall objective was: *"To achieve accelerated and sustainable growth in agricultural production with a view to improving food security and reducing poverty."* There were five sub-objectives: "(i) assistance to institutional strengthening and human resource development; (ii) support to policy reforms aimed at creating an enabling environment for a competitive fertilizer sector; (iii) promotion of efficient and environmentally safe use of fertilizers; (iv) removal of main fertilizer supply constraints; and (v) promotion of initiatives aiming at the improvement of long-term fertility of the Borrower's soil and environmental conservation." Each of these sub-objectives had a corresponding component (Table 1). The project's sub-objectives were not revised.

Institutional Arrangements

1.6 The institutional environment was extremely challenging for both projects. At the time the projects were appraised the government had embarked on a decentralization program in which Ethiopia's 14 administrative regions were reorganized into 9 geographically autonomous states in which the Central Government retained power only in certain subject areas. As part of this reform there was a massive shift of staff from Central Government to the regions. As noted at the time of presentation to the Board: "*such simultaneous handling of profound systemic change in the economic, political, administrative and institutional structure of Ethiopia is an effort of unprecedented magnitude. Inevitably it will take time to fully establish effective organizational structures and functional relationships to sustain high levels of economic performance in a democratic environment*."[2]

1.7 Responsibility for implementation of the SSDP was placed with the National Seeds Industry Agency and National Seeds Advisory Council that were set up one year before project approval to implement the 1992 National Seed Industry Policy. Prior to this policy the private sector had virtually no role in the production and marketing of seeds. NSIA's national role was to define the role of public and private sectors in seed industry development, and inter alia promote active farmer participation and ensure that seed prices are determined by market forces. Within the project NSAC provided policy advice while NSIA managed implementation and was responsible for all procurement in consultation with the Ethiopian Seed Enterprise, formerly the ESE Corporation. The Ministry of Agriculture had a supportive role to create awareness and ensure the activities of its agencies (such as the Secondary Seed Multiplication Scheme) were coordinated with NSIA's plans. Both NSIA and MOA had to establish collaborative arrangements with the newly formed regional agricultural bureaus.

2. SSDP's PAD paras 1.8 and 1.9; NFSP's PAD paras 1.7 and 1.8.

1.8 **NFSP.** The project was implemented by the newly- created National Fertilizer Industry Agency (NFIA) that was to coordinate fertilizer import and inland distribution operations. Until mid-1992 fertilizer import and marketing was fully state controlled and managed by the Agricultural Inputs Supply Corporation (AISCO), a monopolistic parastatal, in consultation with MOA. As with seeds the Central Government introduced a Fertilizer Policy in 1993 that authorized its New Marketing Strategy of 1992. Among other issues the policy encouraged full participation of the private sector in importation, distribution, wholesale and retail trade of fertilizer and set up AISCO to operate in a free market in competition with the private sector and cooperatives. The strategy stated that the private sector should supplement existing market arrangements and ensure a level playing field for cooperatives and private traders while liberalizing access to credit. Under these new arrangements NFIA would handle all supply-side issues and arrange for AISCO or other importers to fill any supply gaps. Fertilizer use promotion was to be handled by the MOA's Agricultural Extension Division (AED.)[3]

Project Components and Implementation

1.9 **SSDP.** The SSDP was primarily an institution strengthening project, and the bulk of expenditure was on strengthening public sector institutions. Over 40 percent of actual project expenditure was on the Capacity Building component, to strengthen seed sector related public agencies- through staff training, technical assistance, and additional equipment and facilities.[4] Additionally, under the ESE Restructuring component (about 25 percent of project costs), government's seed producing agency - the Ethiopian Seed Enterprise (ESE) - was decentralized and strengthened in facilities, equipment and staff capacity (para 3.9)

1.10 SSDP encountered greater difficulties with its last two components. Under the Private Sector Development component there was some training of small scale entrepreneurs, but no significant entry of private seed production firms.[5] A large part of this was because a new extension system – the National Agricultural Extension Intervention Program - was independently set up by government at the beginning of the project. The NAEIP was intended to provide a package of fertilizer, improved seed, and credit through the agricultural extension agents. However, under the NAEIP only ESE seed was distributed and eligible for credit. Private seed producers, wholesalers and retailers could not compete and the ESE became a virtual monopoly.[6]

1.11 SSDP's final objective - to develop the "informal" seed sector (through the project's Secondary Seed Multiplication Scheme component) - was effectively negated

3. AISCO is now named the Agricultural Inputs Supply Enterprise (AISE.) Since the project NSIA and NFIA have been merged and placed within MOA's Input Marketing Department.

4. The agencies were the National Seed Industry Agency (NSIA), the National Variety Release Committee (NVRC, Plant Quarantine Service, Plant Genetics Resource Center, Alemaya University of Agriculture, Ethiopian Institute of Agricultural Research, a new Quality Control and Seed Certification system and a National Seed Reserve.

5. This excludes farmers contracted to produce seed by ESE and the multinational firm (Pioneer).

6. In its comments, the Africa Region states that high collateral requirements were another barrier to private sector entry. Difficulties in finding land were another constraint.

Table 1. Project Objectives, Components and Costs

Objectives	*Components*	*Cost $ millions*	
		Entry	*Exit*
Seed Sector Development Project			
Overall Objective: To help increase the Borrower's agricultural production through the development of a broad-based and competitive seed industry: *through (sub-objectives):*	Capacity Building: Strengthening agencies involved with the seed sector (including NSIA, NVRC, PQS, PGRC and Alemaya University) through: (i) provision of equipment, materials, vehicles, technical assistance and training; and (ii) establishment of a national quality control and seed certification system, a strategic reserve for seed varieties, and additional breeder seed production stations.	13.8	9.0
Capacity building through institutional strengthening and human resource development			
Restructuring and strengthening of ESE's organization, management and operations.	ESE Restructuring: Upgrading of operational and management capacity of regional units through training; crop diversification, and developing brand names; developing contracts with private farmers, traders and cooperatives for seed production and marketing; establishment of a basic seed farm; upgrading ESE's seed processing and quality control infrastructure; training of ESE's staff in seed processing, packaging and labeling; and, provision of vehicles for ESE's marketing activities, and equipment as needed for all activities.	11.9	5.5
Promotion of private sector participation in production, processing and marketing of seeds.	Private Sector Development: assistance to private firms in the preparation, of feasibility studies and business plans for seed production and commercialization projects; advisory support to small and medium enterprises for seed production and distribution; and training of seed farmers, traders and enterprises in market promotion and seed processing.		
Strengthening the Borrowers informal seed exchange system.	Secondary Seed Multiplication Scheme: Training of farmers in improved seed production, cleaning and preservation; acquisition by farmers of basic equipment and materials; and strengthening the seed extension system through training of extension agents; and provision of vehicles, equipment, materials and technical assistance.	5.3	6.0
	Total	31.0	20.5
National Fertilizer Sector Project			
Overall Objective: To achieve accelerated and sustainable growth in agricultural production with a view to improving food security and reducing poverty; through (sub-objectives):	Capacity Building: Strengthening of fertilizer sector related agencies, through provision of technical assistance, equipment, machinery, workshops, vehicles and soil testing facilities; and human resource development through technical assistance, study tours and fellowships in fertilizer sector related disciplines and management information systems.	6.2	8.6
Assistance to institutional strengthening and human resource development	Fertilizer Policy Reforms: Elimination of fertilizer price subsidies; removal of direct and indirect subsidies to AISE; deregulation of retail and wholesale fertilizer prices; provision of equal access for public and private sector importers to any foreign exchange made available for fertilizer imports, and to credit for fertilizer importation and domestic marketing; and, representation of the private sector in all fertilizer sector committees.	Not costed	Not costed
Support to policy reforms aimed at creating an enabling environment for a competitive fertilizer sector.			
Promotion of efficient and environmentally safe use of fertilizers	Fertilizer Use Promotion: Training extension staff, farmers and fertilizer traders in productive fertilizer use; minikit fertilizer yield demonstrations; and strengthening regional extension services through provision of equipment, technical assistance and training. Fertilizer Supply Management: financing of incremental fertilizer imports and coordinating fertilizer importing and inland distribution.	215.4	404.0
Removal of main fertilizer supply constraints	Soil Fertility Management and Environment Conservation: Development and piloting technologies for using indigenous nutrient resources, biogas technology and biofertilizers, establishing regional soil testing laboratories and training of farmers, extension staff and traders in efficient use and safe storage and handling of fertilizers.	8.7	0.5
Promotion of initiatives aiming at the improvement of long-term fertility of the Borrower's soil and environmental conservation.			
	Total	230.3	413.1

due to a radical design change made by government at the beginning of the project. Under the SSMS, selected farmers were to undertake the last seed multiplication stage and then sell directly and informally to other farmers in the vicinity. The redesigned seed production program had ESE managing and marketing all seed production. [7]The project was not adjusted, even at Mid-Term-Review stage, to counter the difficulties experienced by the private sector and SSMS components.

1.12 The SSDP's lower than expected project cost was primarily due to lower expenditure on infrastructure and reduced expenditures on consultants. The project period was extended by 21 months, due to delays in contracting and general implementation. Project implementation progress improved after hire of a project coordinator. In February 2001, $4.8 million of the credit was cancelled, and at closure IDA disbursements were $11.8 million or 54 percent of the original credit of $22.0 million. IFAD cofinanced the project, contributing $2.5 million to the costs for seed cleaners, threshers, fertilizer and sacks. The government's counterpart funding amounted to $6.1 million or 30 percent of actual project costs.

1.13 SSDP's legal covenants were largely adhered to, but some were late due to the delay in establishing the project coordination unit. Annual progress reviews and the MTR were narrow in focus, lacked a strategic orientation and were slow to adjust to implementation problems. In particular, this may have contributed to the weak performance against the project's objectives to promote the private sector and involvement of farmers.

1.14 **NFSP.** Central to the NFSP's rationale was its Fertilizer Policy Reforms component, which comprised a group of policy actions intended to liberalize the fertilizer market, enabling fair competition for fertilizer importing, wholesaling and retailing between public and private actors, and, thereby, the promotion of the private sector. Institutional strengthening was supported by a Capacity Building component which financed upgrading of sector institutions and human resources through provision of equipment, vehicles, technical assistance, training and fellowships. The Fertilizer Use Promotion component supported agricultural extension service to promote technically sound and increased usage of fertilizer by farmers, on-farm demonstrations of fertilizer impacts, and strengthened the extension service through provision of equipment, vehicles and training. The Fertilizer Supply Management component financed imports of fertilizer, and technical capacity (consultancies, small equipment) to improve coordination of the national fertilizer distribution program. In financial terms, the imports dominated the project, representing over 95 percent of total project costs. A small Soil Fertility Management and Environmental Management component that piloted bio-fertilizers and other soil improvement actions, and the establishment of soil testing laboratories, was largely successful.

1.15 NFSP's's main implementation problem was with its Fertilizer Policy Reforms component because constraints to development of a competitive market were not taken

7. In its comments, the Region states that although the redesigned component was heavily dependent on government finance and not commercially oriented, it did have the merit of providing major training to government staff and the contracted seed growers.

into account. Hence, rather than enabling increased participation of private fertilizer importers, the reverse happened leaving a government monopoly of all fertilizer imports. Similarly, private wholesalers and retailers were driven out of the market because, as with the seed sector, the NAEIP distributed fertilizer to farmers with credit, which was not available for privately sold fertilizer.

1.16 The project's Capacity Building component was implemented well, and both the institutions and staff capabilities were improved. The Fertilizer Use Promotion component had positive impact in upgrading knowledge of extension staff and farmers for efficient use of fertilizer. But poor institutional coordination between fertilizer, seed, agricultural extension and research hampered full potential.

1.17 Project expenditure on incremental fertilizer imports was expected at appraisal to be about $215 million (93 percent of project costs). But additional financing from IDA and other donors raised fertilizer expenditures to $404 million (98 percent of actual project costs). A supplementary credit for financing additional fertilizer imports of $44.0 million was approved in May 2001, one year before the project closing date was extended by 18 months. The extension was to complete additional soil testing laboratories and to carry out studies on fertilizer use. The huge increase in project costs (from $230.3 million estimated at appraisal to $413.1 million at completion) was for the additional fertilizer imports. This was financed partly through the supplementary IDA credit and partly by an increase in government's contribution (from $20.4 million to $79.1 million), but the main increase in funding (from $89.8 million to $202.4 million) came from other donors.[8] Government's counterpart funding was expected at appraisal to be about eight percent of project costs, but increased to about 20 percent by project completion.

1.18 Although all legal covenants were reported to have been complied with, the agreed policy reform actions were incomplete and insufficient. The MTR did not restructure the project to resolve these problems.

Evaluation Approach

1.19 SSDP and NFSP provide a rich source of lessons, not only for the seed and fertilizer sectors themselves, but also for the future development of Ethiopian agriculture as a whole, not least for Ethiopia's challenge to increase agricultural productivity. To highlight the broader evaluation findings, this PPAR adopts a *results-based approach* with particular attention to the projects' most critical and cross-cutting issues (Section 2). These are presented before detailed discussion of project Ratings (Section 3) and Lessons (Section 4).

1.20 The PPAR, particularly in the discussion of ratings in Section 3, discusses issues under three themes corresponding to the major thrusts of both projects. The first theme is *Institutional strengthening* as both SSDP and NFSP have institution and capacity building objectives. The second theme is the key thrust to *Develop competitive input supply markets, including the private sector*. SSDP's objectives to develop the informal

8. Germany, the African Development Bank, Italy, Netherlands, European Union, Japan, Sweden and Norway.

seed sector and encourage development of the private sector, and NFSP's fertilizer policy reforms fit within this group. The third theme is *Promoting widespread and efficient input use.* It encompasses NFSP's objectives to promote increased and efficient fertilizer use, remove fertilizer supply constraints, and pilot soil fertility conservation

2. Cross-Cutting Issues

I. Sector Work is Essential to Increase Project Relevance

2.1 ***The Need for a Rural Strategy.*** Given Ethiopia's critical need for rural economic growth it was particularly important that the government and the Bank have an effective strategy for increasing agricultural productivity. The government, through its Agricultural Development-Led Industrialization strategy, placed agriculture at the center of its development. The main means of carrying out the policy was the National Agricultural Extension Intervention Program (para 1.10) and SSDP and NFSP were to be the operational centerpieces of the program. Both the government and the Bank assumed that greater use of seed and fertilizer would provide a major boost to agricultural productivity. But the means to ensure the effective delivery of these inputs, and the needs and implementation modalities for other rural services required for agricultural growth, were not comprehensively considered.

2.2 ***A Narrow Approach to Rural Development.*** Lack of sector analysis was a notable feature in the Bank's approach to Ethiopia's rural sector until nearly the mid-2000's.[9] The CAS series reflects this. The 1995 CAS saw fertilizer and seed as commodities, by themselves affecting productivity: *"the expansion in the use of fertilizer and improved seeds, supported by the IDA projects being presented with this CAS, could quickly bring about a visible increase in yields."* As recently as the 2003 CAS there was no great evolution in thinking, and even an appearance of satisfaction with the status quo – *"In the rural sector, agricultural research, and a fertilizer market support project (recently closed) have set the stage for productivity growth for subsistence farmers."*

2.3 ***A Historically Weak Lending Program.*** The quality and size of the Bank's portfolio of rural projects appears to mirror this limited strategic analysis. In the 1980s, of 10 completed rural projects, 7 were rated unsatisfactory on outcome. After FY88, until the SSDP and NFSP in FY96, no further rural sector projects were approved. The Independent Evaluation Group's (IEG) FY01 Country Assistance Evaluation (CAE) of the Bank's program in Ethiopia commented on the significant downturn in the rural lending program - from 44 percent of the Bank's projects in 1980-89 to just 12 percent in 1990-98. This was assessed to be a reflection of the bad project experience in the 1980s.

2.4 The scattered focus of the Bank's rural projects in Ethiopia might also be questioned. Rural projects approved between FY82 to FY89 (there were no subsequent

9. The 2001 PPAR on the Peasant Agricultural Development Project commented: that sector work was essentially confined to project preparation activities, and subsequently not used: "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."

projects until SSDP and NFSP) were a diversity of activities, each perhaps covering a need, but lacking in any discernible thrust. They covered a rural bank, coffee processing, agricultural research, forestry, irrigation, livestock and peasant agriculture. Taken overall, they do not appear to represent a concerted drive to tackle Ethiopia's most critical development issue – the need for a major increase in rural productivity.

2.5 *Much of the Bank's operational work in Ethiopia over the past 20 years had only peripheral relevance to Ethiopia's rural productivity challenge. The absence of an articulated rural strategy substantially contributed to this situation.*

2.6 ***Good Recent Initiatives.*** There has been a commendable increase in strategic analysis by both the Bank and government over the past two years. In 2006 the government issued its "Plan for Accelerated and Sustained Development to End Poverty" that included a more comprehensive discussion of plans for rural sector growth than in the past (although what to do with the fertilizer and seed sub-sectors was not spelled out). The Bank's sector analysis has also built up over the past two years.[10] Bank documents issued in 2006 have included a policy paper for pro-poor agricultural growth and a background paper for a Country Economic Memorandum and an Interim CAS.[11]

2.7 The translation of these policy documents into effective action is the new challenge. This will not be easy. A number of government officials and Bank staff interviewed by IEG commented that the *effective implementation* of new ideas has been a major difficulty for Ethiopia. The findings of this PPAR—especially regarding the lack of success in bringing the private sector into input markets—are consistent with this observation. SSDP and NFSP also illustrate that *continual strategic evaluation is needed during program implementation* to adjust the program as experience is gained. Hence, the strong recent sector analysis by the government and the Bank is only the beginning of the much needed strategic focus that should characterize the future development of Ethiopia's rural sector.

II. Better Coordination Is Needed

2.8 A feature of the two projects, in practically every aspect and across all involved parties, was a lack of inter-linkages and coordination; whether in conceptualization, design or implementation. This applied between the SSDP and NFSP; between the two projects and other sectors; within Government; and within the Bank. Government agencies and Bank staff repeatedly drew the IEG mission's attention to these issues, and the issues were also readily observable during field visits.

2.9 ***The Coordination Problem.*** Despite going to the Bank's Board of Directors on the same date, minimal reference is made in either appraisal report to the other project. Neither report considered how the seed and fertilizer projects would harmonize their

10. The beginnings of this buildup are also evident in the completion reports for the SSDP and NFSP, both of which include substantial strategic analysis.

11. The recently issued documents are :Ethiopia - Policies for Pro-Poor Agricultural Growth (World Bank, Africa Region, June 2006); and Ethiopia - Accelerating Equitable Growth, Country Economic Memorandum, chapter on the rural sector (World Bank, Africa Region, June 2006).

activities and there was little discussion of how the two projects would engage with other activities—such as agricultural extension, research, and credit—which would be needed to ensure that agricultural productivity was increased by the project activities.

2.10 The institutional base for the two sub-sectors reflects this. The umbrella agencies for the two projects—the National Seed Industry Agency (NSIA) for the SSDP and the National Fertilizer Industry Agency (NFIA) for the NFSP—had no institutional linkages.[12] Likewise, coordination was not considered important between the main fertilizer importer, the government's Agricultural Input Supply Enterprise (AISE), and the national seed supplier, the Ethiopian Seed Enterprise (ESE). Had the seed-fertilizer link been recognized during preparation of the two projects, their institutions and dimensions might have been more in harmony.[13]

2.11 The lack of coordination between SSDP and NFSP continued throughout the implementation period. The majority of Bank supervision missions for the two projects did not overlap. Bank staff in Ethiopia reported to IEG that SSDP and NFSP were seen as and managed as entirely separate programs. This was corroborated by former government personnel connected with each project. The government staff were just as candid when evaluating the degree of communication from the government side. They reported that formal communication between SSDP and NFSP staff was minimal, even though the management teams of the two projects were in the same building and had good personal relations.

2.12 A large contributor to the coordination problem in Ethiopia is the institutional culture. Institutions are operating in "silos," communicating vertically from top to bottom within an agency, but not horizontally across agencies. An additional factor in this problem is a tendency for centralized rather than localized decision making.

2.13 ***Consequences of Weak Linkages between Subsectors.*** As seed and fertilizer were mostly not supplied together the impact of the agricultural extension program was much reduced. Application of fertilizer without improved seed has little yield impact and may even reduce farm incomes.[14] The "seed gap" (the gap between effective demand for

12. Linkages between agencies at the regional agricultural offices also appear to have been weak and may have been as important a need as for the umbrella agencies.

13. Resolving coordination problems does not necessarily require merging; but, simply, inter-linkages and mutually beneficial cooperation to achieve common goals. SSDP and NFSP involved separate institutions and separate projects but this need not have prevented close interaction between the agencies and projects. What is important is to provide mechanisms, and to see that they are effective, where inter-linkages are important. Examples from this PPAR include: (i) extension and research to mutually inform each other of needs, results and experience, and the IEG mission's field observations that this was not happening (para 2.14); (ii) seed and fertilizer distribution to be closely integrated; (iii) the communication breakdown between ESE and research agencies noted in footnote 15; (iv) the need for soil testing to be linked with the extension system (Box 4); and (v) the largely successful coordination between NFIA, the PIU and regional governments for fertilizer distribution (para 3.19).

14. Improved seed and fertilizer should generally be applied together to achieve significant impact, and should be supported by agricultural extension and research. Further, under Ethiopia's high-risk climate, use of fertilizer without improved seed has little, and possibly negative, impact on factor productivity and farm incomes. As one government executive involved with NFSP commented, "Without seed, fertilizer application is meaningless."

seed and production of seed) might have received more attention if the necessary linkages between the two inputs had been given greater attention. Moreover, critical problems might have been avoided, such as in coordination of seed production between the Ethiopian Agricultural Research Institute and ESE.[15] Most importantly, the necessary connectivity between rural sector services was not there. The two input programs (seed and fertilizer) could have been closely linked and adjusted with a demand-responsive and technically adapted extension and applied research program. But this did not happen. Each project lost the opportunity for greater impact had such natural synergies been employed in harmony.

2.14 ***The Potential Gains from Improved Coordination.*** The coordination problem in Ethiopia, although unusually severe and particularly acute in the seed and fertilizer subsectors and related services, has a positive side—it presents a major opportunity for improvement. Better connectivity between rural sub-sectors has the potential to unleash a substantial increase in efficiency and productivity without significant increases in investment or operational costs.

2.15 Recent developments in Ethiopia are encouraging. The recently approved Rural Capacity Building Project (FY06) is supporting a broader approach to rural development, including linkages between agricultural research and extension. Senior extension and research government officials in Addis Ababa were specifically targeting the coordination of rural services. What still has to happen, however, is to put these ideas into effective practice, a goal that has still not been reached at field levels.[16]

2.16 The enhancement of coordination between activities in the rural sector is an area with likely high pay-off at low incremental cost. Hence, it would be a desirable front-line thrust in Ethiopia's rural development program.

III. Liberalization of the Fertilizer Market Remains Unfinished

2.17 The core objective of the NFSP was to undertake policy reforms to promote a competitive fertilizer market. The actual result was the reverse—the private sector, already operating in a concentrated and government-dominated market, was squeezed out, and fertilizer importing and distributing became an exclusively government domain.

2.18 ***The Fertilizer Market before the NFSP.*** At the beginning of the 1990s there were only two importers of fertilizer: one private company and one government importer, the

15. During a field visit, an SSDP-financed cold storage room at a regional branch of the Ethiopian Agricultural Research Institute (EARI) was found to have a broken air-conditioner; hence, it could not function as a germ plasm center. The germ plasm and breeder's seed that EARI is charged with producing is the base for ESE's seed multiplication. Despite the importance of the germ plasm, and the quite modest cost of a new air-conditioner, action to replace the equipment had not yet been taken; suggesting a gap in information and in the prioritization of activities and expenditures between agencies. In the ensuing discussion, lateral communication between departments at local levels was felt by regional staff of the various agencies present to need major improvement.

16. For instance, an extension team met by the mission in the field advised that they had minimal contact with researchers (one comment was "that only happens if you have personal relations with a researcher"); although the extension staff were keen to see such linkages happen.

Agricultural Input Supply Enterprise (AISE). The private company was accounting for about 15 to 20 percent of national fertilizer imports, with AISE importing the rest (Table 2.).[17]

Table 2. National Fertilizer Consumption (in '000 metric tons)

Year	*AISE*	*Private Sector*	*Trading Houses*	*Cooperative Unions*	*TOTAL*
1994/95	199	48	-	-	247
1995/96	153	43	58	-	253
1996/97	85	45	90	-	220
1997/98	108	54	119	-	281
1998/99	96	50	144	-	290
1999/00	91	47	160	-	298
2000/01	118	24	137	-	279
2001/02	124	-	108	-	232
2002/03	200	-	64	-	264
2003/04	204	-	118	-	322
2004/05	181	-	96	65	346
2005/06	81	-	32	196	376

Figures comprise DAP and Urea combined. Project Years Shaded Grey.
Source: Input Marketing Department, MOARD

2.19 ***The Liberalization Agenda.*** In response to the monopolistic government domination of fertilizer imports prevailing at the beginning of the NFSP, the Bank sought policy adjustments that would enable more open competition. To "liberalize" the sector, the following policy conditions were agreed under the NFSP credit:

- Elimination of all fertilizer price subsidies.
- Deregulation of retail and wholesale prices.
- Cessation of any direct or indirect subsidies to AISE.
- Equal access to foreign exchange for both public and private sector importers.
- Equal access to any credits available for fertilizer importation and domestic marketing.
- Private sector representation on committees related to the implementation of the NFSP.

2.20 At face value, these reforms would appear good features for open and fair competition and this was the sentiment at the time. The NFSP's PAD states, "By the end of the project period, it is envisaged that Ethiopia's fertilizer sector would have moved from a state controlled to a largely liberalized system with active participation of private sector importers, distributors, wholesalers and retailers in a progressively competitive price and trade environment."

17. For 2004/05 and 2005/06 there is a discrepancy between the total consumption figures provided by Government and the sum of the figures provided by sub-category. The totals provided by Government are the figures shown in the table (346,000 and 376,000 MTs respectively), while the sum by consumption category for the same years is 342,000 and 309,000 MTs respectively.

2.21 The project began with positive actions by the government, including implementation of the first two conditions and announcement of the other new policies. These steps were heralded by Bank and government policy makers as important achievements. The new policies were landmarks in stating the intention to pioneer deregulation toward a market-based economy. The reforms were also considered to provide a practical example for other sectors to follow.

2.22 ***The Regression of Market Competition.*** Despite these reforms, however, the fertilizer sub-sector became less rather than more competitive under the NFSP, both at the level of wholesalers and retailers, and for importers.[18]

- *The fertilizer wholesaling and retailing sector:* Before the project there were about 70 private sector wholesalers of fertilizer and some 2,300 private retailers. By the end of the NFSP both the wholesalers and retailers of fertilizer had virtually disappeared.
- *The fertilizer importing sector:* At the beginning of the NFSP (1996) there were five fertilizer importers: AISE, two private firms, and two government affiliated trading houses. By the end of the project (2002) there were only two importers—AISE and one trading house—and the private sector had left the market.

2.23 ***The Growth of Noncompetitive Markets.*** The reason for the reverse outcome was the presence of constraints to development of a competitive market that had not been foreseen at NFSP appraisal.

- *Wholesale and retail markets:* The NAEIP created an environment where private wholesalers and retailers could not compete with government distributed fertilizer provided on credit. Virtually all private wholesalers and retailers left the fertilizer business. This reversal of the intended outcome is salutary as it demonstrates the relatively higher level of influence the enabling environment can have compared with project actions. Under the NFSP, a commendable job was done to provide extensive training of existing or prospective wholesalers and retailers. Some 440 retailers and over 4,000 staff from cooperatives were trained in fertilizer marketing. The project also started in a favorable situation, with growing private sector participation—following issuance of the National Fertilizer Policy in 1992, by 1996 the market expanded to about 70 private wholesalers and more than 2,300 retailers; but in the ensuing several years the great majority closed down their fertilizer operations.

- *The import market.* The IEG mission found that stakeholders, decision makers, and implementers[19] identified a number of issues that contributed to a non-level playing

18. A comment made to the IEG mission was that some analysis had found that the farm gate price of fertilizer in Ethiopia was lower than the price in Kenya. A paper by Jayne et al confirms this, at least for 1999 when the data was collected. However, a breakdown of costs in that same paper found that internal marketing costs recorded for Ethiopia left out important costs born partially or totally by government, but which were included as part of costs for Kenyan importers and distributors. Ethiopia's hidden subsidies included: no tax requirements, storage and bagging costs a fraction of Kenyan costs, financing costs half of Kenya's, and lower recorded transport costs. (from "Fertilizer market development: a comparative analysis of Ethiopia, Kenya and Zambia" by T. S. Jayne, J. Govereh, M. Wanzala and M. Demeke, IFPRI, 2003)

field in the fertilizer import market. While the various parties differed on the degree, and sometimes even on the existence, of such constraints, most stated that more costly or onerous requirements had been placed on the private sector relative to the public sector.[20] The various constraints are detailed in Box 1.

Box 1. Cited Contributors to the Non-Level Playing Field for Fertilizer Importers

- **High collateral requirements:** Collateral requirements were 100 percent or more for private companies, whereas AISE and the trading houses were backed by guarantees from the central or regional governments, and collateral was either minimal or not required.
- **Higher interest rates:** The private sector had to pay rates of 7-10 percent whereas AISE paid lower or no interest.
- **Unfavorable access to foreign exchange:** Provision of foreign exchange was less predictable and sometimes late for the private sector. A competitive importer needs to be able to access foreign exchange immediately whenever it is necessary to take advantage of short-term variations in international prices.
- **Less access to storage facilities:** Government warehousing was owned by or provided to AISE, but was generally not available for private companies.
- **Nationality restrictions:** A private importer had to be either an Ethiopian or a joint Ethiopian/foreign venture.
- **Greater bureaucracy:** Alleged to be more complicated for private firms than for AISE.

2.24 ***Completing the Liberalization of the Fertilizer Market.*** Although these constraints were a major barrier to market entry during the NFSP period, recent initiatives look more promising. A workshop to discuss how to bring in the private sector was organized by the government in October 2006 comprising representatives of all sector stakeholders, including the public sector, AISE, the cooperatives, the private sector, and the trading houses. A number of ideas to improve the environment for full competition resulted. During discussions with Ethiopia's National and Commercial Banks, the IEG mission was informed of decisions about to be announced to reduce collateral, interest rates, and service charges, most at uniform levels for all importers.

2.25 While these steps appear to be in the right direction, care will be needed to ensure that these and other actions truly provide for equal treatment. For instance, under the October 2006 proposals, a reduction in Letter of Credit guarantees has a zero percent margin for "importers that have been in the business for more than five years and have a

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19. Agencies and individuals consulted included: the National Bank of Ethiopia, Commercial Bank of Ethiopia, Input Marketing Department, Ministry of Agriculture, AISE, private importers and wholesalers, Chamber of Commerce, NGOs and World Bank Staff. Reports from various sources were also reviewed, in particular, the NFSP ICR.

20. Government's comments on the draft PPAR in themselves illustrate the difference of views that may be found in Ethiopia. Thus, in its comments, the Government states that ….. *" we would like to bring to your attention that issues cited in Box 1 as contributors to the non-level playing field for fertilizer importers are far from truth. These include higher interest rate, higher collateral requirement, unfavorable access to foreign exchange, less access to storage facilities and greater bureaucracy for private companies compared with public enterprise."* This is inconsistent with IEG's findings based on consultation with a broad spectrum of stakeholders (refer footnote above); the great majority, including the private sector and Ethiopia's National and Commercial Banks, were in agreement on the main constraints. Further, the ongoing discussions led by Government on how to reduce such constraints (para.2.24) are a direct recognition that the constraints exist.

proven track record."[21] Other importers presumably do not have this concession. This could mean that AISE has a zero margin, while a new private importer faces a more costly situation.

2.26 Based on the lessons from the past, barriers to fair market competition are not necessarily obvious. To complete liberalization it would be important to continuously monitor the fertilizer market to ensure the conditions needed for open competition and private sector development. This could include holding open discussions on constraints and any unfair practices as they occur and adapting marketing regulations and incentives as experience is gained. The effects of sound market liberalization can be very positive as Kenya's experience demonstrates, Box 2.

Box 2. Market Liberalization for Fertilizer – Kenya's Experience

In the mid-1990s, Kenya liberalized fertilizer policies, encouraging private sector participation and eliminating explicit subsidies. In 1993, price controls on fertilizer were lifted and farmers came to rely almost exclusively on the private sector and cooperatives for fertilizer. The private sector responded rapidly to the new policy environment. By 2004, over 10 major importers, 500 wholesalers, and roughly 8,000 retailers were distributing fertilizer. Kenya now has a competitive and dynamic private sector fertilizer distribution system, the average distance of a farmer to a retailer has been halved to 4 kilometers, and inland marketing and distribution margins on fertilizer have fallen by 40 percent. Total fertilizer consumption increased from 281,000 tons per year in 1995 to 352,000 tons per year in 2005. The share of smallholders using fertilizer increased from 43 percent in 1995/96 to 69 percent in 2005/06. The presence of a dense network of small private dealers in Kenya as the vehicle for input supply has resulted in a more dynamic sector with significant benefits to farmers.

Source: Adapted from a draft Background Paper on the Agriculture Sector in Ethiopia for the Ethiopia Country Economic Memorandum, 2006. D. Byerlee et al., World Bank; based on Irogo, Jayne, and Nyoro, 2006.

IV. Barriers to Private Seed Production Have Exacerbated the "Seed Gap"

2.27 Ethiopia's seed sector is dominated by the public sector monopoly, the Ethiopian Seed Enterprise. The ESE produces some 90 percent of the country's seed that satisfies only about 30 percent of the country's effective demand, despite the institutional strengthening provided under the SSDP. Such a "seed gap", while its impact is not as severe as might be implied,[22] will have contributed to the constraints holding up Ethiopia's agricultural development. As in a number of other countries, private sector production and distribution of seed may be able to fill this gap. For Ethiopia, this could involve several areas of activity: formal production by private firms, informal production and distribution by farmers, and in the wholesaling and retailing business.

21. From the Minutes of the Executive Management Committee of the Commercial Bank of Ethiopia; October 24, 2006.

22. The term "effective demand" for seed means the demand if new seed is applied each year by farmers. In practice, it is common for farmers using improved seed to use their previous harvest as a source of seed, for possibly several years, before purchasing seed again. Yield potential will diminish for each season following the season when fresh seed was used, but some positive impact will be present meaning that the impact of the seed gap will be less than the 70% shortfall that the effective demand figure might suggest.

2.28 ***Seed Production by Private Firms.*** There is only one private firm which is a significant producer of seed – Pioneer. This was present when the SSDP began, and its production has since grown appreciably (Box 3.) Pioneer has a number of small private firms it hires on a contract basis.[23] Seed production by the private firms is almost entirely for hybrid maize, where the largest yield gains and profits can be made, and accounts for about 5-10 percent of national seed output.[24]

Box 3. Successful Private Sector Seed Production

The expansion of Pioneer Seed Company in the seed production business indicates that potential for greater private sector participation exists and that entrepreneurs could provide services as good as or better than those of the government. Pioneer's annual production of hybrid maize seed has increased from about 600 metric tons in the mid-1990s to 1,300 metric tons in 2005. Pioneer distributes as well as produces seed and provides accompanying technical advice. The firm's management advised the IEG mission that Pioneer staff visit groups of farmers several times a year. Seed quality appears to be good, despite a price for hybrid maize seed about 40 percent above the ESE price; farmers were buying Pioneer seed because they found that it give higher maize yields. However, Pioneer's success as a large firm has not been matched by significant market entry of smaller firms, suggesting that barriers to entry may still remain for companies that cannot afford the initial investment in land and equipment.

2.29 The SSDP had a modest impact on private sector seed production. Pioneer and one of its contracted seed producers (Zeway farms) advised the IEG mission that the government was generally helpful in resolving problems. Further, the SSDP had sponsored studies, training, and promotional activities for private sector participation. There has not, however, been a significant surge in Ethiopia of the number of private firms involved with seed production — certainly not on the scale of that found in Kenya for fertilizer (Box 2), or in India where nearly all seed production is private. Thus barriers to market entry may still be present for smaller firms with limited capital.[25]

2.30 ***Informal Seed Production by Farmers.*** The SSDP was not successful in promoting informal seed production by farmers. The original project design intended—through a Secondary Seed Multiplication Scheme (SSMS)—that the final stage of seed multiplication would be by more progressive farmers who would then sell the seed informally to other farmers. Instead, just after the SSDP began, a new seed multiplication system was introduced, replacing the SSMS with a program directly controlled by ESE using contract farmers. This program, the "Farmer Based Seed Production and Marketing System" (FBSPMS), completely stopped any progress toward informal seed production, and also meant that the quantity of seed produced depended almost exclusively on ESE's capacity.

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23. In its comments, the Government states that there are more than 30 registered private seed growers (Annex B). Most, however, are contracted growers for Pioneer and ESE.

24. Private seed production for traditional cereals such as tef may be much less attractive.

25. The Government considers that entry barriers are primarily due to classic infant industry constraints: In its comments, the Government states "*The main problem standing in the way of creating a competitive input market in Ethiopia is absence or lack of capable (in terms of capital, experience and entrepreneurship) and committed private sector. Efforts are underway by Government to support those who have interest and passion to engage in agricultural input business.*"

2.31 ESE's capacity constraint has been a significant drag on agricultural productivity. The SSMS can provide larger seed coverage than the FBSPMS as the final multiplication and distribution system is all done by farmers and is not also constrained by government distribution channels. While the FBSPMS reportedly produces better quality seed the SSMS could have supplemented this with substantial additional production.[26]

2.32 ***Private Wholesaling and Retailing.*** The SSDP was also unsuccessful in promoting private wholesaling and retailing. Due to the NAEIP's exclusive input-credit package, they could not compete and withdrew from the market.

2.33 ***An Enabling Environment for the Private Sector was Not Developed.*** Informal seed production by farmers did not develop under the project, private wholesalers and retailers left the market, and new seed businesses were not established.[27] Thus, there was no progress towards SSDP's objective. Successful seed sector privatization is feasible, and, indeed, appears essential if the shortfall in seed production is to be resolved. [28]

2.34 Based on the projects' experience, the following features appear to be needed to create an enabling environment for a private seed sector in Ethiopia:

- Remove barriers to private firms' entry into the seed business. As with the fertilizer sector, any "hidden" barriers need to be identified and removed.
- Ensure that input supply is de-linked from agricultural credit and agricultural extension to encourage private seed producers, wholesalers, and retailers.
- For informal seed production by farmers, the SSMS could be reinstated, operating in parallel with the FBSPMS.
- Financial incentives and other facilitating actions could be considered.

V. Input Productivity is Below Potential

2.35 Both the government and the Bank saw increased usage of fertilizer and improved seed as central to the achievement of increased agricultural productivity. Key questions for evaluation therefore are: (i) did the usage of improved seed and fertilizer increase? (ii) what was the effect on productivity? and, (iii) how can productivity further increase?

2.36 **Input Usage under the new Agricultural Extension Program**: A formidable array of constraints need to be tackled in Ethiopia if the full growth potential of the agriculture sector is to be realized. These include the need for improved marketing, access roads, credit, land, tenure security, technologies for enabling cultivation of marginal soils, liberalization of markets, agricultural extension, agricultural inputs, and applied research.[29] It was self-evidently beyond the scope of NFSP and SSDP to address

26. The IEG mission's visit with a contracted seed producing farmer found that growing conditions are monitored closely by ESE staff and seed cleaning is better with ESE equipment.

27. ie.Independent seed production businesses excluding growers contracted by Pioneer and ESE.

28. Finding land for the flower production industry has been successfully assisted by the government attesting that this constraint can be overcome. Ethiopia's burgeoning flower export industry is an example of successful privatization with proactive facilitation by government.

29. A comprehensive review of such constraints is provided in Ethiopia, Accelerating Equitable Growth, chapter of Country Economic Memorandum, 2006, World Bank.

all of these constraints. However, three closely integrated elements are needed if a program to increase agricultural productivity is to be successful – agricultural extension, applied research, and the availability of improved seed, fertilizer, and other inputs.

2.37 NFSP and SSDP supported improved agricultural extension (but without applied research) through NFSP contributions to the financing of the National Agricultural Extension Intervention Program. The NAEIP provided a "package" of services to farmers, consisting of fertilizer and improved seed (to the extent that seed was available), credit, and agricultural extension. The inputs and credit were distributed by the extension staff. Conceptually, the inclusion of extension under the fertilizer/seed program made sense, and marked the beginning of a more comprehensive approach to the agricultural sector. However, several flaws in the design and implementation of the NAEIP reduced its impact and the impact of the two projects:

- Soils and farmer needs are highly variable in Ethiopia, requiring agricultural practices and inputs tailored to local conditions (Box 4). Yield potential was thus reduced under NAEIP's "one-size-fits all" package approach.
- Because of the rigid one-formula combination of the type and quantities of fertilizer and seed applied, this still meant that the beneficial synergies from mutually supportive, flexible and demand-responsive services were only partially achieved;
- The extension staff, substantially occupied with their input and credit distribution responsibilities, had little time left for their intended advisory functions.[30]
- The lack of linkages between seed and fertilizer continued.

Box 4. Moving Beyond the "Package"—Demand-Responsive Soil Testing

In the view of several senior extension and research staff encountered by the IEG mission, the soil testing laboratories, currently being used for mapping, had the potential to offer a more demand-responsive service. Soil testing could, for a modest fee, be requested by a farmer (or group of farmers) on his own fields to determine the exact fertilizer balance best suiting his holding. The potential impact on productivity and farmer incomes could be significant as phosphate requirements are quite variable. In the case of soils with a low phosphate requirement, the farmer could reduce phosphate application and make a significant saving relative to his costs if he had followed the standard NAEIP fertilizer recommendation. Alternatively, in phosphate-deficient soils, higher phosphate applications might achieve better net returns than from the standard recommendation.[31]

2.38 The impact of the NAEIP and the two projects on the usage of fertilizer and improved seed was much below expectations. Annual input usage has been highly erratic reflecting vagaries of climate, but even as an overall trend, national fertilizer usage only

30. The mission found a wide range in the assessments of the extension staff time taken up by input distribution, ranging from minimal to nearly the total time. Based on the mission's discussions, between 30 and 60 percent might be a reasonable assessment. However, impact on the time for extension advice may have been less than these figures imply, as input distribution is mainly done before the crop season.

31. In its comments, the Government states that recent initiatives already embody this more soil-specific approach. Based on a soil acidity study, lime applications are being tried on farmers' fields, and it is intended to make the soil and seed testing laboratories fully operational.

increased by some 20 percent during the project period, and usage of improved seed shows no discernible upward trend (Table 3).[32]

Table 3. National Seed & Fertilizer Usage

Ethiopian Crop Year	*Seed Distributed ('000 Metric Tons)*	*Fertilizer Imports ('000 Metric Tons)*
1990/91	9.9	n.a.
1991/92	12.1	n.a.
1992/93	17.7	n.a.
1993/94	19.3	n.a.
1994/95	14.1	247
1995/96 P	12.2	253
1996/97 R Y	10.6	220
1997/98 O E	15.6	281
1998/99 J A	13.3	290
1999/00 E R	20.1	298
2000/01 C S	11.6	279
2001/02 T	4.5	232
2002/03	16.5	264
2003/04	21.7	322
2004/05	15.9	346
2005/06	22.5	376

***Sources and Notes**: Seed data from ESE (excludes private sector production). Fertilizer data from Input Marketing Data, Ministry of Agriculture and Rural Development. Seed distributed and fertilizer imported are each taken as proxies for usage.* The project Years are shaded grey.

2.39 **Constraints to Greater Input Usage:** Several factors constrained increased usage of seed and fertilizer:

- Under the NAIEP, linkage of fertilizer and seed sales with credit meant that farmers needed to reimburse the previous year's credit before they could get more credit, fertilizer, and seed.
- For fertilizer, the government had limited foreign exchange that it could provide for imports.
- ESE was not able to meet the effective demand for seed.
- Farmers get only a modest incremental profit by using a single agricultural input (such as fertilizer without improved seed, or vice versa). Yet the combined use of fertilizer and improved seed is the exception rather than the norm among Ethiopian farmers because of the highly variable rainfall that causes farmers to be risk averse.

32. There are significant differences in data on seed and fertilizer usage depending on source, and such differences are also manifest in the literature concerning the seed and fertilizer sectors, including Bank reports. The data presented here is from the original sources—ESE for seed and IMD for fertilizer. The ESE data excludes seed produced by the private sector, a relatively small share (about 5-10 percent of overall production).

incremental returns need to be significant to make up for the extra risk, with an obvious implication regarding the advantage of using inputs in combination.

2.40 **Impacts on Agricultural Productivity:** Viewpoints of the impact on agricultural productivity of the NAEIP and its associated inputs were quite variable.[33] The uncertainties arise from the lack of disaggregated field data that allow comparison of yields from improved and unimproved agriculture.[34, 35] In the last several months, however, disaggregated crop data for the 2005/06 crop season has become available from the Central Statistical Agency.[36]

2.41 Demonstration and farmers' yields provide some indication of NAEIP's potential and actual impact compared with traditional farming:

- Under NAIEP demonstration conditions the yield impact of fertilizer and seed when applied together shows a two- to three-fold yield increase compared with traditional practices (Table 4.)
- Under farming conditions yields of NAEIP farmers are 20 to 30 percent higher than those of traditional farmers.

Table 4. Comparing NAIEP Trial Yields with Traditional Yields; 1995 to 1998

Crop	*Yields under Traditional Production (tons/ha)*	*Yields of NAIEP's Extension Management Training Plots (tons/ha)*	*Percent Increase in Yields (Trials/traditional yields)*
Maize	1.6	4.7	294
Teff	0.7	1.4	200
Wheat	1.1	2.8	254
Sorghum	1.2	3.5	292

Source: From data provided to the IEG mission by the Technical and Vocational Training Department, MOARD.

2.42 With data for only one crop season, caution is needed in interpretation. Nevertheless, an increase in yields through NAEIP is consistent with the views of government officials interviewed by IEG. The general view was that NAIEP, for which seed and fertilizer are the major features, has made a yield difference. One commentator

33. Views of NAEIP's impact tended to be more positive from government sources, but considered with greater caution in the Bank.

34. Even where disaggregated, measurement reflects the combined impact of all inputs and improved agronomic practices. Attributing productivity changes solely to one input would not take account of the other inputs and of other influencing factors. Nevertheless, the combined productivity impact of the NAEIP, wherein the seed and fertilizer programs were key elements, is a useful yardstick.

35. At the national level, average Ethiopian cereal yields have remained largely stagnant over time. For the more limited purpose of assessing how NAEIP farmers have fared compared with traditional farmers, the data has limited utility. A number of variables are at play here, and NAEIP's specific impact on productivity cannot be deduced from such aggregate data.

36. The description of the two farm types in CSA's dissaggregation is "households that are and that are not participants of [the] extension program." Thus, extension program participants are a proxy rather than an exact interpretation of the term "NAEIP farmers" used in this PPAR.

also drew attention to changes noticeable in the countryside: where NAIEP was present, there was a greater prevalence of tin rather than thatched roofs.

2.43 **The NAEIP's Limitations.** Even though it had a positive impact on the productivity of the farmers participating in the program, NAIEP was a blunt instrument for increasing agricultural productivity. It was a supply-driven "one size fits all" program; it made very incomplete use of the synergies available from flexibly coordinating applied research, extension and the two project inputs together, and the impact of the NAEIP could have been substantially greater.

2.44 Much of the cause lay within the evolving political environment (para 1.6.) Multiple actions were needed to move the nation's rural sector forward, development experience was limited, and institutional networks were rudimentary at best. In the words of two senior government officials: *"the extension service was the only network available to distribute inputs…we didn't have anything else" and "Everything was new to us then—everything was an experiment*."

Table 5. Comparing Traditional and NAEIP Farmer Yields (2005/2006 crop season)

Ethiopian Crop Year	***Yields under Traditional Production (tons/ha)***	***Yields when receiving Agricultural Extension Support. (tons/ha) % increase***	
Maize	1.9	2.9	53%
Teff	0.9	1.1	22%
Wheat	1.4	1.9	36%
Sorghum	1.5	1.9	27%

Source: Central Statistical Agency, Ethiopia Agricultural Sample Survey, Volume I; Report on Area and Production of Crops for 2005/2006. July 2006.

2.45 Significant change is now occurring. As part of the Plan for Accelerated and Sustained Development to End Poverty (PASDEP), the government has targeted the extension system for major improvement. Additional agricultural colleges are being established, starting educational levels of extension staff are rising, and a concerted drive is underway to recruit and train additional agents to increase the density of the extension network. The objective is to go from 1,500 farmers per agent to about 800 farmers and possibly lower. Extension agents have mostly been divested of their input supply functions, which are increasingly being taken over by cooperatives. Senior agricultural extension and research staff also briefed the mission on their hopes of improving research-extension linkages. The number of technical packages used by the extension service is also being increased. How successful these initiatives will be remains to be seen, but the plans appear in the right direction, providing that the PASDEP emphasizes demand-driven approaches.

3. Ratings

3.1 This section provides the stuctured assessment of SSDP and NFSP against standard IEG criteria. Table 6 provides the projects' objectives, the ratings of relevance, efficacy and

efficiency, and outcomes. To facilitate comparison between the projects the objectives are grouped under the three themes: (i) Institutional strengthening; (ii) Developing competitive markets including the private sector; and (iii) Promoting widespread and efficient input use.

Relevance

3.2 ***Relevance of Project Objectives.*** The two projects addressed Ethiopia's overarching rural development need. Effective use of fertilizer and improved seed could significantly change agricultural production functions, boosting agricultural productivity to a substantially higher plane.

3.3 The 2006 Interim CAS and the government's "*Plan for Accelerated and Sustained Development to End Poverty*" (October 2005) emphasized the need for a rural growth strategy focused on agricultural productivity. The Interim CAS also considered building private seed and fertilizer markets to be the main agricultural priority. Increasing agricultural productivity was also highlighted in the 1995 CAS presented to the Board along with the SSDP and NFSP. The importance of seed and fertilizer was also recognized, although the two inputs tended to be described in isolation rather than linked with other services. Given the consistent (and appropriate) priority placed on agricultural growth and the seed and fertilizer sectors, the "overall objective" of each project had *substantial* relevance.

Relevance of Project Designs.

3.4 Shortcomings in the projects' designs, and in their implementation, substantially impaired achievements.

3.5 *Institutional strengthening*. The corresponding sub-objectives for both projects, the strengthening of institutions and human resources; and for SSDP also the restructuring of ESE - were highly relevant. But, in the projects' detailed designs, institutional linkages were not established between SSDP and NFSP and with other actors in the rural sector (paras 2.8 to 2.12). Overall relevance of the institutional sub-objectives of both projects is thus rated *substantial*.

3.6 *Developing Competitive Markets and Including the Private Sector*. Moving away from monopolistic government supply is central to effective supply of inputs, and the relevance of the projects' sub-objectives at approval is rated as *high*. But not all constraints were considered (Box 1, paras 2.23 – 2.29.) Even then the efficacy of these sub-objectives were undercut by government policies and actions independent of the components and their relevance declined throughout implementation to *negligible*. This could have been addressed at mid-term review but it was not.

3.7 *Promoting Widespread and Efficient Input Use:* This group of objectives most directly responded to Ethiopia's rural productivity challenge. However, revisions in the design of the input supply and agricultural extension system at the beginning of the projects through NAEIP reduced achievement. The relevance of the design was *modest* for both projects. The one exception was the objective to promote initiatives to improve long-term soil fertility. This is a clear need, and the NFSP's design enabled its achievement (para 3.16). Relevance was *high*.

Table 6 The Projects' Development Objectives and Outcome

Development Objectives	*Relevance*	*Efficacy*	*Efficiency**
OVERALL OBJECTIVE			
SSDP To help increase the Borrower's agricultural production through the development of a broad-based and competitive seed industry. ***NFSP*** To achieve accelerated and sustainable growth in agricultural production with a view to improving food security and reducing poverty.		.	
SPECIFIC OBJECTIVES			
Institutional Strengthening ***SSDP*** • Capacity building through institutional strengthening and human resource development • Restructuring and strengthening of ESE's organization, management and operations ***NFSP*** • Assistance to institutional strengthening and human resource development	 Substantial Substantial Substantial	 Substantial Substantial Substantial	
Developing Competitive Markets & Including the Private Sector *SSDP* • Promotion of private sector participation in production, processing and marketing of seeds. • Strengthening the Borrowers informal seed exchange system. *NFSP* • Support to policy reforms aimed at creating an enabling environment for a competitive fertilizer sector.	 Negligible Negligible Negligible	 Negligible Negligible Negligible	
Promoting Widespread and Efficient Input Use *SSDP* • Implicitly, as above *NFSP* • Promotion of efficient and environmentally safe use of fertilizers • Removal of main fertilizer supply constraints • Promotion of initiatives aiming at the improvement of long-term fertility of the Borrower's soil and environmental conservation.	 Modest Modest Modest High	 Modest Modest Substantial High	
Overall Rating	***Relevance***	***Efficacy***	***Efficiency***
SSDP:	Modest	Modest	Modest
NFSP:	Modest	Negligible	Modest
Outcome: *SSDP:* **Moderately Unsatisfactory** *NFSP:* **Unsatisfactory**			

* Under IEG procedures, efficiency is rated for the project overall, and not by objective.

3.8 ***Overall Relevance.*** While the overall objective and sub-objectives of the two projects were relevant, weaknesses in design significantly reduced performance. For both projects, overall relevance is rated *modest*.

Efficacy

Institutional Strengthening

3.9 ***SSDP.*** The predominant emphasis of the SSDP and 70 percent of project costs was institutional and human capacity building. The main institutional objective was to

restructure and decentralize the ESE to create a commercially-oriented agency. The mission found some success with this: ESE's six regional centers have substantial autonomy, though the decentralization program is not yet complete. The ESE's financial situation is satisfactory—it has consistently made a profit, including in the years after the project. There has been substantial training, and field facilities and equipment have been augmented. This included upgrading of all ESE processing plants and a six-fold increase in capacity for seed quality testing. The SSDP's other institutional objective was for capacity building more generally. Under its corresponding project component other seed sector agencies were strengthened through training and additional equipment, especially the National Seed Industry Agency.[37] The efficacy of SSDP with its two institutional strengthening objectives was *substantial*.

3.10 ***NFSP.*** The institutional strengthening objective of the NFSP was also *substantially* achieved. The new National Fertilizer Industry Agency (NFIA), several departments of the Ministry of Agriculture, the National Soil Research Center, the Ethiopian Quality and Standards Authority, and the regional agricultural bureaus were all strengthened through provision of equipment, technical assistance, workshops,[38] and a major training program. There were 151 local training programs, and various study tours and international training courses. In all, over 6,000 persons participated in NFSP training.

Developing Competitive Markets and Including the Private Sector

3.11 ***SSDP.*** The SSDP was to develop the "informal" seed sector and encourage entry of the private sector in the formal seed production and marketing business.

3.12 *Informal seed production and sales.* This objective became automatically unattainable at the beginning of the project period when the government decided, with the Bank's acquiescence, to replace the original design of the component (the SSMS, which informally involved farmers in seed production and marketing) with the entirely differently designed FBSPMS (paras 2.30 to 2.34), exclusively managed by ESE. The ESE became the only significant seed producer in the country, but could not satisfy the country's seed requirements. The opportunity cost of the resultant foregone yield increase is likely to be substantial. Hence, the efficacy of SSDP's informal seed sector objective was *negligible.*

3.13 *Private wholesalers and retailers.* Under the NAEIP, private sector seed had to be sold without credit, and without assistance of the extension system. Given these disadvantages, private distributors could not compete with the public sector and closed down. The project's impact was negative.

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37. The Institute for Biodiversity Conservation and Research, the EARI, Alemaya Agricultural University, and the National Variety Release Committee also benefited. Additionally, a seed regulation system was established in 1997 and a seed certification agency in 2000.

38. A highly positive initiative under the NFSP was the holding of annual workshops to discuss policy issues. These had wide participation across the fertilizer sub-sector, including the government agencies, regional agricultural bureaus, NGOs, the private sector, and others. However, at the level of government decision makers, the workshop discussions appear to have seldom resulted in corresponding policy changes, and the workshops were terminated when funding was no longer made available after the project period.

3.14 *Private seed producers.* The SSDP sponsored studies, training, and promotional activities for private sector participation. However, private seed production is still primarily from one firm, and contributes only 5 to 10 percent of national production (paras 2.27 to 2.29) A notable increase in private sector seed production has not occurred, hence, efficacy is rated *modest*. Taking account of both private seed producers and private wholesalers/retailers, the efficacy of SSDP's privatization objective is rated *negligible*.

3.15 ***NFSP*** supported policy reforms aimed at creating an enabling environment for growth of a competitive fertilizer sector. The "liberalization" agenda was intended to provide a "level playing field" for open competition both at the wholesale and retail level as well as for fertilizer imports. The reforms were all implemented, but a number of other constraints to open competition were not identified. Given that the opposite of what was intended happened—the fertilizer import sector became a government monopoly; and the majority of private wholesalers and retailers closed their fertilizer operations—efficacy is rated *negligible*.

Promoting Widespread and Efficient Input Use

3.16 ***Promotion of efficient and environmentally safe use of fertilizers.*** This objective was central to the overarching goal to increase agricultural productivity.[39, 40] It was to be supported by a component in NFSP to help strengthen agricultural extension activities. This could benefit both projects, though such mutual interactions were not articulated in the project appraisal reports. The original component design was straightforward—strengthening the existing extension service, using demonstration mini-kits of fertilizer on farmers' fields, and leaving fertilizer to be sold to farmers by the existing and growing private retailer network, with initial training provided to the retailers. A telling gap, however, was that the mini-kits included fertilizer, but not improved seed.

3.17 The de facto absorption of this component by the NAEIP shortly after project effectiveness meant a substantial alteration in design. The NAIEP's "package" approach, providing a "one-size-fits all" combination of fertilizer, seed, and credit, all distributed by the extension service, had a number of drawbacks (para 2.37). These included the rigidity

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39. This was specifically stated as an objective for the NFSP. The SSDP did not specifically articulate a corresponding objective, and did not have a supporting project component, but the same intent is clear in the SSDP's overall objective. That was, in common with the NFSP's overall objective and stated in both appraisal documents—to increase "agricultural *production* and *productivity*." The combined impact of the two projects was the key need. Hence, the SSDP's contribution to increasing agricultural production and productivity is also assessed here.

40. It would probably not have been desirable for both projects to support such activities as agricultural extension. The need was that: (i) agricultural extension (and other closely linked services such as applied research) should be supported by some program, as an integral part of the national program to increase agricultural productivity; and (ii) that agricultural extension be in synergy with input supply. In the case of the fertilizer/seed programs, the decision that one, but only one, of the projects should provide extension services was appropriate. Agricultural extension was not well developed at that time, and the extension gap needed to be filled. It would have been desirable, however, for the NFSP appraisal report to have reviewed how the project's extension program fitted in with the national agricultural extension/research program, and with SSDP. The SSDP appraisal exercise would similarly have benefited from consideration of such complementary needs.

of the technical formula, thus forgoing the potential benefits of a more adaptive and demand-responsive extension system; and the demands of input supply, rather than advisory activities, in an extension agent's time, leaving little time for his advisory functions.

3.18 Nevertheless, the NAEIP had some impact on agricultural productivity (para 2.42). The yields for NAEIP farmers increased, but yields could have been higher with an improved NAEIP design. For both projects, efficacy was positive, but is rated *modest* relative to potential.

3.19 ***Removal of main fertilizer supply constraints.*** This objective was to ensure that fertilizer was distributed to reach farmers in the quantities needed and at the time needed. The NFSP's ICR states that the percentage of farmers complaining of late fertilizer delivery dropped substantially—from about 75 percent in 1995 to 30 percent in 2001. The coordination activities of the NFIA and Project Coordination Unit were at the heart of this success. The efficacy of this objective is rated *substantial*.

3.20 ***The NFSP's Fiscal Support Agenda.*** The NFSP's component to address supply side constraints was accompanied by major financial support for fertilizer imports. Project expenditure on fertilizer amounted to over $400 million, with IDA funding $125.4 million, or 95 percent of total IDA disbursements.

3.21 The apparent rationale for these financial transfers was balance of payments support, a critical need for Ethiopia. The question arises, however, as to why an investment project was used as the vehicle for such financial support rather than a Structural Adjustment Credit or other balance of payments support project. The less conventional choice of the NFSP for such financial transfers risked perpetuating market inefficiencies. Bank experience is that in concentrated markets such as Ethiopia's fertilizer import sector, prices are higher than the prices resulting from open competition.

3.22 ***Promotion of initiatives to improve the long-term fertility of soils.*** The component supporting this objective was implemented by the National Soil Research Center (NSRC) and was *highly successful*. Indigenous organic fertilizers were piloted and were subsequently manufactured by a private firm; rhizobium-based bio-fertilizer was also successfully piloted; and 17 soil testing laboratories (Box 4) were established.

3.23 ***Overall Efficacy of SSDP and NFSP.*** Both SSDP and NFSP were successful in their institution strengthening objectives, although impact could have been greater had intersectoral linkages been better. Neither project fulfilled its objectives to create competitive markets including private sector participation. There were no additional private seed producers, and private importers and distributors of fertilizer left the market. Promotion of input use and productivity made some progress under the NAEIP, but less than would have been possible with a more demand-responsive extension and research program interlinked with the inputs. NFSP's soil fertility pilot program went well, but was very small.

3.24 The overall efficacy of SSDP is rated *modest* because, although SSDP's achievement of competitive markets was minimal, it had some success with its primary objective to strengthen the sector's institutional capacity.

3.25 NFSP's overall efficacy is rated *negligible* as it failed to create competitive markets. Further, over 90 percent of NFSP's project costs were for fertilizer imports.

Efficiency

3.26 ***SSDP.*** Without a tangible base for measuring benefits, reliable estimation of an ERR is not feasible. Instead, the efficiency of the SSDP has to be primarily assessed against the achievement of its dominant objective—institutional development and capacity building—which comprised 70 percent of project expenditures.[41] Although a competitive input market including private sector participation was not established, the ESE and other public sector seed institutions were strengthened. Taking account of SSDP's institutional achievements but minimal achievement promoting the private sector, overall efficiency is rated *modest*.

3.27 ***NFSP.*** There would have been some net benefits from the combined effect of the incremental fertilizer made available under NFSP and the impact on productivity of its application through the NAIEP package. The ICR estimated an economic benefit-cost ratio for NFSP of 3.6 (an ERR was not calculated). While the reliability of data is uncertain, a positive benefit-cost ratio can be expected, though likely lower than this value, as the actual incremental yields from fertilizer application may have been smaller than assessed at project completion.[42] The cost-effectiveness of the NAEIP package was low relative to what could have been achieved. Given this, the NFSP's efficiency is rated *modest*.

Outcome

3.28 Both the SSDP and the NFSP were broadly relevant to Ethiopia's critical need to increase agricultural productivity. But both projects had design and implementation weaknesses, especially with regard to the competitive market and productivity enhancement objectives. The SSDP made no headway developing an informal seed production sector, and only modest impact in its private sector objectives. Under NFSP, the fertilizer import market became more rather than less concentrated. The NFSP made a

41. The ICR appropriately emphasized the institutional development nature of the project, and questioned the relevance of attempting to calculate an ERR, as had been done at appraisal. However, it assessed that if an ERR was recalculated it might be negative if the institutional benefits were not included. IEG agrees with the ICR's key point—the need to focus on the project's institutional achievements. But attempting to quantify benefits for this particular project is difficult, even more so given the uncertain data available. Given this, the results of any ERR calculation that includes all SSDP costs but excludes benefits from the 70 percent of expenditures allocated to institution building has limited utility. In these circumstances, the effectiveness of SSDP expenditures is a better measure of efficiency.

42. According to some sources (Ethiopia, Accelerating Equitable Growth, Country Economic Memorandum, 2006, chapter on the rural sector, World Bank), the viability of fertilizer application can be marginal and in poor-yield years returns can be negative. This underscores the importance of applying technologies with greater demand-responsiveness (and yield impact) than the NAEIP has to date.

positive contribution to the extension activities of the NAEIP, but the rigidities of the NAEIP resulted in lower productivity enhancement than might have been possible. The projects also supplied the two primary inputs for the NAEIP, hence contributing an "enabler" role for its continuation. In management and practically all activities, each project operated in a silo, with minimal connections between them and with other related agricultural services. Both projects had some success with their institutional objectives, but this could have been larger if there had been better connectivity.

3.29 The overall outcome for the SSDP is rated *moderately unsatisfactory*, compared with ratings in the ICR and ICR Review of satisfactory and moderately unsatisfactory respectively.

3.30 The NFSP's overall outcome is rated *unsatisfactory*, the same as in the ICR and ICR Review.

3.31 The primary reason for this assessment's lower rating for the NFSP than for the SSDP is the particular importance of NFSP's objective to create a competitive market, and the highly disappointing result. Creating a competitive fertilizer market was the fulcrum of NFSP, while, for SSDP, institutional development was the primary goal.

Risk to Development Outcome

3.32 For both SSDP and NFSP institutional development is the most vulnerable objective. The capacity of the ESE, Input Marketing Department, and other specialized institutions strengthened under NFSP and SSDP will erode with staff turnover. [43] Nevertheless, despite significant staff turnover already, the agencies of both projects are continuing to function. A second risk might be shortfalls in government funding of the agencies. However, some annual provisions have been provided in the past, even in difficult years.

3.33 The minimal achievement in development of competitive markets only provides opportunity to change for the better. There is also good opportunity for improving the NAEIP, and the government and the Bank have already taken some actions in the extension and research fields. Notwithstanding, the key consideration is that substantial improvements across most objectives are required to make the projects' outcomes satisfactory. Thus the risks of not achieving a satisfactory development outcome remains *significant* for both projects.

43. Both projects have been affected by the government's practice of frequent rotations of staff between departments and agencies. One source commented that, only four years after NSFP was closed, the majority of project staff had transferred to other departments. The heads of other agencies met held similar views regarding their institutions. A high staff turnover rate is a general problem in many countries. But the mission observed that in Ethiopia the issue is particularly acute. Resolution of this problem would clearly be desirable. However, as concerns the SSDP and NFSP, the project institutions are continuing to function, although capacity would be better with a lower staff turnover.

Project Monitoring

3.34 ***Monitoring and Evaluation.*** The key weaknesses in the projects' M&E systems were that strategic objectives were not monitored, despite the high strategic content of both SSDP and NFSP. This gap applied for all aspects of M&E—design, implementation, and utilization.

3.35 ***Design.*** Both SSDP and NFSP developed data collection and reporting systems that could track physical progress (such as fertilizer and seed distributed, training courses arranged, and equipment purchased), and the mission found adequate data of this nature both at regional and national levels. A basic management information system (MIS) was thus established for both projects. But the monitorable indicators and the results frameworks of both projects contained very little to enable the measurement of policy and strategic achievements, in particular, their impact. For instance, the part of the logframe for NFSP that was intended to assess the results of fertilizer reforms only referred to the agreed policy announcements or actions. All were achieved, and are duly recorded as such, but the intended effects of the reforms were not.

3.36 ***Implementation.*** Basic data collection (MIS) was satisfactory. Field surveys investigating matters such as farmer views on seed and fertilizer use, yields, and incomes under different technologies and input quantities, and on how inputs and input services could be improved, would also have been useful.

3.37 ***Utilization.*** M&E utilization for SSDP and NFSP was a product of the type of information and analysis that the M&E systems provided. Several agency managers in both sectors acknowledged the usefulness of the largely MIS-type data, which is still being regularly collected. However, the near absence of more qualitative and impact-oriented M&E, would have likely added to the orientation of the implementers of both projects toward physical targets rather than strategic objectives.

3.38 ***Rating.*** Overall, while development and usage of the MIS systems were good achievements, the inadequacies regarding the M&E of strategic objectives and outcomes significantly pull down the quality of M&E. For both projects, M&E is rated *modest*.

Safeguards

3.39 ***Safeguard compliance, fiduciary compliance, and unintended positive/negative impacts.*** There were no significant negative safeguard issues for either project. There were several minor positive impacts relative to Ethiopia's severe land erosion and soil degradation problems. The NFSP's Soil Fertility Management and Environment Conservation component successfully piloted use of organic fertilizers and bio-fertilizers, and introduced soil testing laboratories to improve nutrient recommendations for different soils. The SSDP provided funding to the Institute for Biodiversity Conservation and Research, enabling better preservation of genetic resources.

3.40 ***Fiduciary compliance.*** Under SSDP there were 12 audits each of ESE and NSIA. All reports were acceptable. There was one qualification concerning an accounting discrepancy for NSIA in 1999 of $177,475. Late receipt of audit reports was a problem:

five of ESE's audit reports were late by over three months, and another four were late but by less than three months. There are no outstanding special opinions. Under NFSP, NFIA had 14 audits, all of which were acceptable. There was one special opinion regarding a transfer of $50,000 to NFIA's operations account, and misprocurement was declared on one contract of $76,000, which was thus made ineligible for Bank financing. Ten audits were received late, but all by less than 3 months.

Bank Performance

SSDP

3.41 ***Quality at Entry.*** Project preparation was strong in technical aspects and the design of the SSDP's components provided potential for achieving the project's overall objective to "lay the foundation for the development of a broad-based and competitive seed industry." The main weakness was the absence of institutional and operational linkages between the SSDP and NFSP, and with their agricultural service cousins—extension and research. This justifies the rating of *moderately satisfactory* on quality at entry.

3.42 ***Quality of Bank Supervision.*** Supervision missions had staff strength in technical, procurement, and other operational areas, but strategic thinking was limited, and outcome focused M&E was not established. The Bank acquiesced to the government's replacement of the SSMS by the very different FBSPMS, without critical analysis of what this would mean—the end of the informal seed sector. Another strategic issue was the demise of seed retailers and wholesalers because of the NAIEP. The NAEIP could have been redesigned to reduce such negative impacts.[44] Also, only modest effort was applied to encourage private sector seed production. The mid-term-review was not used for a major rethink of the project. Supervision is rated *unsatisfactory.*

3.43 Considering the Bank's performance both at project design and during implementation, the Bank's overall performance for SSDP is rated *moderately unsatisfactory*. The ICR and ICR Review rated the Bank's performance as unsatisfactory.

NFSP

3.44 ***Quality at Entry.*** The Bank performed much better than it did for SSDP in defining the NFSP's overall concept and development objectives. The Bank also had a stronger strategic orientation during project preparation, emphasizing market liberalization, and was firm in insisting that new policies for liberalization of the fertilizer sector were declared prior to commencement of the project. However, two issues bring down this otherwise good performance. First, the additional barriers to market entry by the private sector were not comprehensively identified. Second, the NFSP was not an ideal vehicle for what was effectively a major foreign exchange transfer program—through the mega-financing of fertilizer imports. A more suitable financing vehicle for

44. For instance, provision of credit under the NAEIP could have been for all inputs whether through the government system or purchased from private vendors. (This observation applies to both seed and fertilizer.)

foreign exchange transfers, such as a Structural Adjustment Credit, could have been chosen, especially given the price inefficiencies likely to have characterized this market. Given these issues, the NFSP's quality at entry was *moderately unsatisfactory*.

3.45 ***Quality of Bank Supervision.*** Project supervision was thorough with a balance of disciplines including in management, policy, and institutional areas. But the Bank's actions to address the key fertilizer importing, wholesaling, and retailing issues that developed under the project were ineffective. Efforts appear to have been made by supervision missions to address these issues. However, the bottom line is that the fertilizer market became less rather than more liberalized. Senior-level dialogue with the government on marketing policy appears to have only begun in October 2000, when a high-level workshop was held. This was four and a half years after the project's effectiveness.[45] Even the workshop was ineffective; it was decided that studies would be undertaken, after which more comprehensive actions would be taken.

3.46 Another concern is the project's rating. Other than in the second supervision mission, all Implementation Progress and Development Objective performance ratings are graded "satisfactory." This may have contributed to the apparent lack of urgency characterizing the Bank's focus on the project's strategic issues. An M&E system to monitor outcomes and strategic issues was not established. The mid-term-review did not result in major changes to a project that needed significant revamping. Supervision performance is rated *unsatisfactory*. The Bank's overall performance for NFSP is also rated *unsatisfactory*, the same rating as assessed by the ICR and the ICR Review.

Borrower Performance

SSDP

3.47 ***Government Performance.*** The government's commitment to the SSDP was strong. During project preparation it developed a new market-oriented seed policy. During implementation it financed the project's recurrent costs to enable more IDA funds for investment (though substantial IDA funds remained at credit closure); and seed sector financing has been continued after SSDP's closure. However, during implementation, strategy received only limited attention, which contributed to the project shortfalls in achieving its objectives, especially regarding market liberalization. Monitoring was weak, and problems such as the unintended impacts from the redesigned seed production program, were not effectively addressed. Overall, the government's performance was *moderately unsatisfactory*.

3.48 ***Implementing Agency's Performance.*** The performance of the implementing agencies was *moderately satisfactory*. The main institutions involved, NSIA and the ESE, performed reasonably well, especially in their institutional achievements. Nevertheless, these agencies were most directly in contact with the project's policy issues, and strategic attention could have been better. Taking the performance of the government and of the implementing agencies together, the borrower's overall performance for the SSDP was

45. In its comments, the Region states that Bank supervision missions tried to organize such senior-level dialogues prior to the October 2000 workshop.

moderately unsatisfactory. The ICR and ICR rated borrower performance as satisfactory. The downgrade is due to a closer examination in the PPAR of performance against the project's strategic objectives.

NFSP

3.49 ***Government Performance.*** The government's commitment was strong during project preparation. The new policy for the fertilizer sector, and the announcement or implementation of the policy actions as agreed with the Bank were done before commencement of the project (although additional policy changes were eventually needed).

3.50 The government's performance during project implementation was much weaker. The side-effects of the NAEIP's package extension approach were not addressed. Most importantly, the government was the most direct actor, and clearly had the most responsibility, for implementation of the reforms in the fertilizer import market, but the constraints were not addressed. This failure effectively annuls the very positive policy reforms made during preparation. The government's overall performance was *unsatisfactory*.

3.51 ***Implementing Agencies' Performance.*** The NFIA, the Project Coordination Unit, the regional Implementation Coordination Units, and the NSRC were, in most respects, good implementers of the project's physical targets. The most deleterious performance area was, as for the government, the lack of attention to overall sector performance and progress against the project's objectives. While the government was the senior policy maker, the implementing agencies were closest to the ground; yet there appears to have been quite limited attention to the issues, to monitoring, and to provision of information and analysis to the government. Overall, the performance of the implementing agencies could be considered *moderately unsatisfactory*, their good performance against physical targets brought down by the strategic gaps. Taking account of both the government's and the implementers' performances, and, in particular, the failure of the market liberalization program, Ethiopia's' overall performance for NFSP is assessed *unsatisfactory*. The ICR and ICR Review also rated borrower performance unsatisfactory.

4. Lessons and Opportunities

4.1 The main lessons from the experience of SSDP and NFSP are described below. With the possible exception of lesson 6, applying these lessons would cost the government very little.

1. **Strategically oriented sector work is essential as a base for a relevant and effective rural development program.** Given the critical need to increase the productivity of Ethiopia's rural sector, it was particularly important to have an effective rural strategy. Yet neither the Bank nor the government had this. For the Bank, there was no significant rural sector work during either preparation or implementation of the projects; a gap that was not addressed until 2005. The lack of sector analysis was a key contributor to the Bank's generally weak rural lending program in Ethiopia, in quality as well as quantity. Seven out of the 10

rural projects completed in the 1980s were rated unsatisfactory, and rural lending shrank from 44 percent of the Ethiopia portfolio in the 1980s to only 12 percent in the 1990s. The rural lending program also lacked a coherent overall thrust, comprising instead a scatter of largely unrelated projects. The Bank's and government's approach to SSDP and NFSP exemplified these weaknesses; in particular concerning the projects' limited focus on sector coordination, on fertilizer and seed marketing issues, and on agricultural services such as extension and research.

2. **Better coordination and linkages are needed between projects and within the rural sector as a whole.** Although SSDP and NFSP went to the Board on the same day there was minimal coordination between them: in conceptualization, design, or implementation. Each project operated in a "silo," with very limited links, not only with each other but also with related sectors such as agricultural extension. Bank supervision teams also operated separately. Rural development needs a comprehensive approach, integrating complementary actions between related programs (such as extension, research, and inputs). This unleashes natural synergies for a greater impact, as for example, the enhanced yield impact from using seed and fertilizer together. But only 30 percent of fertilized land in Ethiopia is sown with improved seed.

3. **Development of a competitive fertilizer market requires actions beyond "Market Liberalization."** A group of policy reforms under NFSP was intended to liberalize the fertilizer import market, creating open competition and participation by the private sector. The reforms—comprising elimination of subsidies, deregulation of prices and equal access to foreign exchange and short-term credit—were all implemented, and were considered at the time to be a comprehensive package for achieving fair and open competition. Even so, there were further constraints adversely affecting private sector participation and open market competition that were not considered: higher collateral requirements and interest rates than for the government agency, and more difficult access to foreign exchange and government storage facilities. As a result, the private sector left the market, and government became the sole fertilizer importer. The market reforms had seemed to be a classic and comprehensive "liberalization" agenda, borrowing from successes elsewhere; but the full reform needs were substantially more.

4. **Reliance on the public sector for input supply may create not only market inefficiencies but also a shortage of inputs.** Policies introduced independently by government at the beginning of the SSDP and NFSP actively discriminated against private seed production and the private retailing of both seed and fertilizer. Only government sources of the two inputs received credit and were distributed by the extension service. The private sector could not compete against such discrimination and abandoned the wholesale and retail markets for agricultural inputs. For seed, there was an additional opportunity cost going beyond the market inefficiencies that can be expected from monopolized supply. Seed production itself is likely to have suffered. ESE was unable to appreciably increase seed production and produces only about 30 percent of Ethiopia's effective demand for seed. ESE's limitations suggest that the public sector can

only be part of national seed production, and probably a minority part. The absence of a substantial private seed sector, and the resultant "seed gap," is likely to have had a significant negative influence on farm productivity.

5. **Institutional structures and processes can restrict private sector participation**. The new agricultural extension program, providing a package of seed, fertilizer, and credit exclusively through extension agents, limited the participation of private wholesalers and retailers in the fertilizer and seed markets. The revised seed production program left out the formerly envisaged informal seed production by farmers.

6. **A one-size-fits-all agricultural extension system has limited impact.** Support services for farmers need to be tailored to local conditions and specific farmer needs. The NAIEP package, with a uniform combination of fertilizer and seed, was a top-down, supply-driven, one-size-fits-all formula. The impact on agricultural productivity could have been greater with a more flexible demand-led extension service.

7. **A strategy-focused program requires performance indicators, monitoring, and an adaptive approach, reflecting the strategic objectives and outcomes relative to these objectives**. Hence: performance indicators should reflect the strategy and project objectives; there needs to be continuous monitoring of progress, especially regarding outcomes, against these indicators; and there should be a propensity to make changes to a project or policies whenever events show this is needed.

4.2 Recent developments since these projects closed are more encouraging. The Bank and the government have substantially increased sector analysis over the past two years. Several policy actions that may reduce market bias against private fertilizer importers were taken in 2006. The agricultural extension service's linkage with research is being strengthened and a more demand-driven approach is being developed. In lending, the Rural Capacity Building Project (FY06) supports the broader development strategy derived from the sector analysis.

Annex A. Basic Data Sheet

SEED SYSTEMS DEVELOPMENT PROJECT (C2741)

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

	Appraisal estimate	*Actual or current estimate*	*Actual as % of appraisal estimate*
Total project costs	31.0	20.5	66
Credit amount	22.1	11.8	53.4
Cofinancing	0.0	2.5	n.a.
Cancellation	n.a.	4.8	n.a.
Institutional performance			

IFAD provided additional funding of $2.5 million.

Cumulative Estimated and Actual Disbursements *(US$ million)*

	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04
Appraisal estimate	5.0	11.5	15.9	19.1	21.1	22.0	22.0	22.0	22.0
Actual	0.0	16.9	3.4	5.8	8.8	10.6	12.3	12.4	12.4
Actual as % of estimate	0.0	147	21	30	42	48	56	56	56

Project Dates

	Original	*Actual*
Initiating memorandum (PCD)	n.a.	01/15/1991
Appraisal	n.a.	02/10/1992
Board approval	n.a.	06/13/1995
Signing		
Effectiveness	11/01/1992	06/26/1996
Closing date	12/31/2000	09/30/2002

Staff Inputs

	No. of Staff Weeks	*US$'000*
Identification/ Preparation	103	154
Appraisal/Negotiations	100/31	220/76
Supervision	174	249
ICR	N/A*	N/A*
Total	408	697

* Not Available

Mission Data

	Date (month/year)	***No. of persons***	***Staff days in field***	***Specializations represented***	***Performance rating*** (Implementation Performance followed by Development Objectives)	***Rating trend***	***Types of problems***
Identification/ Preparation	10/1990	4	n.a.	E, Ag, F, M,			
Identification/ Preparation	02/1991	6	n.a.	E, F, M, I, E,			
Identification/ Preparation	03/1992	9	n.a.	E, S, Ag, Env, WID, Proc, F, F, Op			
Identification/ Preparation	07/1994	6		Op, E, Se, M (2), I			
Appraisal	02/1995	6	n.a.	Op, E, Se(2), M, I			
Supervision	11/1996	5	n.a.	TTL, Op, Int, Se, I,	S, S	n.a.	
Supervision	04/1997	2		Se, TTL	S, S	Same	
Supervision	03/1998	6		Ag, Proc, E, Op, Disb, F,	U, U	Down	
Supervision	07/1998	3		Ag, Op, Ag	U, U	Same	
Supervision	07/1999	5		TTL,Op, Ag, F, Proc	U, S	Up	
Supervision	03/2000	9		Ag(2), OP(2), Proc, F, Ag(2), IF	S, S	Up	
Supervision	11/2000	5		Ag, Op(2), F, Proc	S, S	Same	
Supervision	06/2001	4		TTL, Op, Ag(2), Proc	S, S	Same	
Completion	04/2002	2		E, Ag	S, S	Same	

E=Economist; Ag=Agriculturalist; F=Financial specialist; I=Institutional specialist; M=Marketing specialist; Se= Seed Specialist; WID=Gender specialist; Proc=Procurement specialist; Op=Operations Officer; TTL=Task team Leader; Disb=Disbursement specialist; Int=Intern, Inf=Informatics specialist. IF=IFAD. Performance ratings comprises Implementation Progress (IP) and Development Objectives (DO). Ratings are Satisfactory (S) or Unsatisfactory (U).

Other Project Data

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS

Operation	*Credit no.*	*Amount (US$ million)*	*Board date*
Rural Capacity Building Project	4201-ET	54.0	FY06
Pastoral Communities Development – APL 1	TF050614	30.0	FY03
Agricultural Research and Training	3092-ET	60.0	FY98

NB: 1) The pastoral communities development is a Trust Fund
2) These are the projects approved since approval of SSDP and NFSP

NATIONAL FERTLIZER SECTOR PROJECT (CREDIT 2740)

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

	Appraisal estimate	*Actual or current estimate*	*Actual as % of appraisal estimate*
Total project costs	230.3	413.1	179%
Loan amount	120.2	131.6	109%
Cofinancing	89.8	202.4	225%
Cancellation	-	-	
Institutional performance	-	-	

Additional financial allocations for fertilizer imports were made by Germany ($$54.4 million, the African Development Bank ($48.2 million), Italy ($34.9 million), Netherlands ($21.8 million), European Union ($21.8 million), Japan ($14.1 million), Sweden ($4.0 million), and Norway ($3.7 million).

Cumulative Estimated and Actual Disbursements *(US$ million)*

	FY96	FY97	FY98	FY99	FY00	FY01	FY02	FY03
Appraisal estimate	4.0	14.7	32.8	60.4	98.4	120.0	120.0	120.0
Actual	21.9	29.0	38.8	67.3	92.7	107.1	146.2	148.3
Actual as % of estimate	548	192	118	112	94	89	122	123

Project Dates

	Original	*Actual*
Initiating memorandum (PCD)	-	10/31/1991
Appraisal	-	06/05/1993
Board approval	-	06/13/1995
Effectiveness	12/28/1995	02/16/1996
Closing date	12/30/2000	06/30/2002

Staff Inputs

	No. of Staff Weeks	*US$'000*
Identification/ Preparation	56.9	147.8
Appraisal/Negotiations	87.8	254.9
Supervision	242.7	730.9
ICR	7.0	35.0
Total	394.4	1,168.6

Mission Data

	Date (month/year)	*No. of persons*	*Specializations represented*	*Performance rating*	*Rating trend*	*Types of problems*
Identification/ Preparation	03/1993	6	I(2), E(2), M, Ag			
Appraisal	06 & 07/1993	7	I(2), E(3), Ag, WID			
Negotiation	01/1995	8	I, F, Disb, Lw, Op(2), Proc(2)			
Supervision	06/1996	3	I(2), Ag	HS, HS		
Supervision	10/1996	5	I(2), E, Ag, Op	S, U		Down
Supervision	04/1997		I(2), E, Ag, Op	S, S		Up
Supervision	10/1997		I(2), E, Op	S, S		Same
Supervision	06/1998		Op(3), I, Proc, M, E, Cr, Ag	S, S		Same
Supervision	09/1998	7	I, Op(2), F(2), Ag, Disb	HS, S		Up
Supervision	06/1999	8	I(2), Ag, F, Inf, Op(2), Proc,	S, S		Down
Supervision	12/1999	7	I(2), Op(2), Ag, F, Proc	S, S		Same
Supervision	10/2000	10	I(2), Op(2), Ag(2), Inf, Proc(2), F	S, S		Same
Supervision	06/2001	7	I(2), Ag, E(2), Op(2),	S, S		Same
Supervision	01/2002	4	I, Ag, Proc, F	S, S		Same
Supervision	06/2002	8	Ag(2), Proc, F, I, E, Op(2)	S, S		Same
Completion						

E=Economist; Ag=Agriculturalist; F=Financial specialist; I=Institutional specialist; M=Marketing specialist, WID=Gender specialist; Proc=Procurement specialist; Op=Operations Officer; TTL=Task team Leader; Disb=Disbursement specialist; Int=Intern, Inf=Informatics specialist. IF=IFADg.

Other Project Data

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS

Operation	*Credit no.*	*Amount (US$ million)*	*Board date*
Rural Capacity Building Project	4201-ET	54.0	FY06
Pastoral Communities Development – APL 1	TF050614	30.0	FY03
Agricultural Research and Training	3092-ET	60.0	FY98

NB: 1) The pastoral communities development is a Trust Fund
2) These are the projects approved since approval of SSDP and NFSP

Annex B. Borrower Comments

Date: 06/05/2007 06:54 AM
To: koblitas@worldbank.org
cc: abarbu@worldbank.org
From: Techane Adugna <tadugna2002@yahoo.com>
Subj: Comments

Dear Mr.Oblitas,

Please find attached our comments on the SSDP & NFSP Project Performance Assessment Report.

Regards,

Techane Adugna,
Head Agricultural Inputs Market Dpartment
Ministry of Agriculture & Rural Development

Comments on the Project Performance Assessment Report

Although this report is prepared after about five years of project completion during which relevant documents might have been misplaced and staffs working on these projects have transferred to other places, we have the impression that it has captured significant information that can serve as a tool to learn from past experience. With this background we forwarded our comments on major issues as follows:

1. Issues related with policy reform and competitiveness

As per the agreement with IDA the government has taken significant policy reforms to allow more open competition in fertilizer and seed marketing including liberalizing the market, deregulation of prices, elimination of subsidy and creating equal access to foreign exchange for both public and private importers.

As reported in PPAR, incomplete and insufficient policy reform is the main constraint to the development of competitive input market. But, we have the feeling that this problem is rather associated with lack of proper assessment of the sector during the project design so as to identify potential constraints that would undermine the impact of policy reforms and propose measures to mitigate them during project implementation.

Field assessment reports have shown that limited participation of the private sector is mainly associated with lack of capital, lack of experience and poor market infrastructure (in terms of roads and stores). These issues should have been considered either during project preparation or detected early by the supervision mission to rectify them.

In this connection we would like to bring to your attention that issues cited in Box 1 as contributors to the non-level playing field for fertilizer importers are far from truth. These include higher interest rate, higher collateral requirement, unfavorable access to foreign exchange, less access to storage facilities and greater bureaucracy for private companies compared with public enterprise.

In general in a country where the agriculture sector is the backbone of economy, that is dominated by subsistence farmers scattered all over the country, with limited access to marketing infrastructure and input credit, careful actions are required as to how sustainable input supply system should develop to better serve the interest of smallholder farmers.

In order to fill the gap created between farmers and financial institutions and to ensure availability of inputs for farmers in remote areas where the private sector are not interested to operate, the regional governments have taken the initiative of coordinating inputs and credit distribution. This should be

considered as a temporary gap filling exercise and should not be taken as the governments interest to monopolize input market by public enterprises. Had it not been for government intervention (when required) fertilizer and seed consumption would have significantly decreased instead of the registered increasing trend.

As cited on page 15 in box 3 Pioneer Seed Company is one of live example that is successful in seed production and marketing in Ethiopia. The lesson from Pioneer's success is that there is no any policy barrier on private sector participation rather their problem is associated with lack of generating initial investment, inability to equip themselves with the necessary manpower and materials.
There is high level of government commitment to bring about a healthy, vibrant, sustainable and competitive input supply system. This can be explained by policy reforms made during the project period and continuous efforts to identity and eliminate barriers to market entry by the private sector including introducing merchandise loan credit system so as to solve problem associated with collateral and distributing public basic seeds to private seed companies and facilitating their participation to directly distribute their seeds to farmers.

The main problem standing in the way of creating a competitive input market in Ethiopia is absence or lack of capable (in terms of capital, experience, entrepreneurship) and committed private sector. Efforts are underway by government to support those who have interest and passion to engage in agricultural input business. As a result currently there are more than 30 registered private seed companies engaged in seed business.

2. Issues Related with Capacity Building and Soil Fertility Management

- The capacity building component could be scored as a successful with the exception of the enablement of soil testing laboratories. The construction of the soil testing laboratories was completed within an acceptable range. Nevertheless, no single laboratory was sufficiently furnished to carry out soil testing within the project period. There was a problem in backstopping for the laboratories with lab equipments and technical support.

- The soil fertility management and environmental conservation part was also incomplete. The use of bio-fertilizers, use of indigenous nutrient resource and the soil test based calibration and recommendation of fertilizers was discontinued at its infant stage. These could have augmented the major objective of achieving an accelerated and sustainable growth in agricultural production.

- Similarly most of the equipments purchased for seed cleaning and threshing were not fully utilized.
- One recent development worth mentioning is the study conducted by the Ministry of Agriculture and Rural Development on the acidity problems of Ethiopian soils. Based on the recommendation of the study activities are under way to apply lime to the affected farmlands. In addition, efforts are being made to make the Federal and regional soil and seed testing laboratories fully operational.

3. Editorial

- On page 10 paragraph 2.18 it is reported that the number of private importers at the beginning of the 1990's was two. However, there was only one private company at that time namely, Ethiopia Amalgamated Limited.

- The data shown in Table 2 is not fertilizer import data. It is fertilizer consumption data with correction on data for 2004/05 and 2005/2006. The total consumption data for years 1994-2003/04 are correct, while the data for year 2004/05 and 2005/2006 should be adjusted as 346 and 376 thousands tones respectively. The same correction should be made for the data shown in Table 3.

- Similarly, seed consumption data for year 2000/01-2005/06 shown in Table -3 should be corrected as follows.

Seed Consumption in '000 Metric Tones

2000/01	11.65
2001/02	4.5
2002/03	16.47
2003/04	21.70
2004/05	15.92
2005/06	22.53