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PROJECT PERFORMANCE ASSESSMENT REPORT

REPUBLIC OF ESTONIA

AGRICULTURE PROJECT
(LOAN 3983)

June 28, 2004

Sector and Thematic Evaluation Group
Operations Evaluation Department

Currency Equivalents (annual averages)

Currency Unit = Estonian Kroon (EEK)

1996	US$1.00	12.034 EEK
1997	US$1.00	13.882 EEK
1998	US$1.00	14.074 EEK
1999	US$1.00	14.678 EEK
2000	US$1.00	16.969 EEK
2001	US$1.00	17.478 EEK
2002	US$1.00	16.612 EEK

Abbreviations and Acronyms

AICC	Agriculture Information Coordination Centre
ARAE	Association of Rural Advisors in Estonia
CAS	Country Assistance Strategy
CAU	Contract Administration Unit
ECA	Europe and Central Asia Region
ERC	Estonia Environmental Research Center
ERR	Economic Rate of Return
ES	Evaluation Summary
EU	European Union
EU-PHARE	EU's Assistance Program to Central Europe and the Baltic Countries
GOE	Government of Estonia
ICR	Implementation Completion Report
LWA	Land and Water Association
MOA	Estonia Ministry of Agriculture
MOE	Estonia Ministry of Environment
MOF	Estonia Ministry of Finance
NAETF	National Agriculture Extension Task Force
NLB	Estonia National Land Board
OED	Operations Evaluation Department
PASDF	Private Advisory Services Development Fund
PIU	Project Implementation Unit
PPAR	Project Performance Assessment Report
PSC	Project Steering Committee
RIC	Rural Information Center
SAR	Staff Appraisal Report

Fiscal Year

Government: January 1 – December 31

Director-General, Operations Evaluation	:	Mr. Gregory K. Ingram
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OED Mission: Enhancing development effectiveness through excellence and independence in evaluation.

About this Report

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

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

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

About the OED Rating System

The time-tested evaluation methods used by OED are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. OED evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (more information is available on the OED website: http://worldbank.org/oed/eta-mainpage.html).

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

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

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

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

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

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

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

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

Contents

This report was prepared by Terry Scott and Hartley Furtan (Consultants) under the supervision of Christopher D. Gerrard (Task Manager), who assessed the project in September 2003. The report was edited by William Hurlbut, and Rose Gachina provided administrative support.

Principal Ratings

	*ICR**	*ICR Review**	*PPAR*
Outcome	Highly Satisfactory	Highly Satisfactory	Highly Satisfactory
Sustainability	Highly Likely	Highly Likely	Likely
Institutional Development Impact	Substantial	Substantial	High
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

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

Key Staff Responsible

Project	*Task Manager/Leader*	*Division Chief/ Sector Director*	*Country Director*
Appraisal	Brian Berman	Geoffrey Fox	Basil Kavalsky
Completion	Gotz Schreiber	Laura Tuck	Roger Grawe

Preface

This Project Performance Assessment Report (PPAR) assesses a World Bank loan to the Republic of Estonia for an Agriculture Project (Loan 3983).

The loan was approved by the Bank's Executive Board on March 5, 1996, became effective on March 4, 1997, and closed on June 30, 2002. Not including beneficiary contributions, the total project cost was US$ 22.2 million, of which 51 percent was financed by the Bank, 47 percent by the Government of Estonia, and 2 percent by the European Union (EU).

At the request of the Government, the World Bank loan was denominated in German marks (DM 22 million), since the Estonian Kroon was pegged to the German mark. The 42 percent depreciation of the German mark (from 1.385 DM/US$ at appraisal to 1.961 at closing) reduced the total cost of the project in U.S. dollars from US$ 27.1 million to US$ 22.2 million, even though the actual project costs in German marks exceeded appraisal estimates by 7 percent because of significantly greater government contributions to the food quality control and veterinary laboratory component. Compared to the initial commitment of US$ 15.3 million, the Bank's actual disbursements were US$ 11.3 million.

The Agriculture Project was the first Bank-supported agricultural project in Estonia and among the first generation of agricultural investment (as opposed to adjustment) projects in the ECA region. The project was an innovative project in a number of areas such as public support for the development of a private agricultural extension system. OED selected the project for a PPAR in order to confirm the numerous achievements highlighted in the Implementation Completion Report (ICR) and to discern best practices that could be applied in other countries in the ECA region. The PPAR has paid particular attention to the agricultural advisory services and farm drainage rehabilitation components of the project.

This PPAR has been prepared by Terry Scott and Hartley Furtan (consultants) under the supervision of Chris Gerrard (OED task manager). It is based, among other things, upon the ICR, the Staff Appraisal Report (SAR), the loan agreement, a World Bank Country Study for Estonia, the Country Assistance Strategy (CAS) for Estonia, discussions with World Bank staff in Washington, D.C., and a mission to Estonia in September 2003.

In Estonia, the consultants interviewed government officials, policy strategists and program administrators from the Ministries of Agriculture, Environment, and Finance. The consultants also met with non-governmental organizations which handled specific program delivery responsibilities; with beneficiaries of farm drainage rehabilitation and agricultural advisory services; and with operators of the food, veterinary and environmental laboratories.

OED gratefully acknowledges the full cooperation of all government officials visited and consulted during the mission. Following standard OED procedures, the draft PPAR was sent to the borrower for comments before it was finalized. No comments were received.

Summary

The overall objectives of the Estonia Agricultural Project were to increase rural incomes and to stimulate the rural economy through rural entrepreneurship. To achieve these objectives, the project focused on improving the total factor productivity and competitiveness of the agricultural sector – as the largest source of income in the rural areas – by providing assistance for (1) the privatization of agricultural land, (2) the privatization and rehabilitation of farm drainage systems, (3) the introduction of new farming technologies consistent with private agricultural production, (4) the improvement of human resource and entrepreneurial skills, and (5) the improvement in food quality. Relative to these objectives and to the objectives of these project components, the **overall outcome** of the project is **highly satisfactory**. This overall rating is based on ratings of high for relevance, high for efficacy, and substantial for efficiency.

Project objectives were highly relevant given the depressed state of Estonia's rural economy, the ongoing reform of the agricultural policy framework, and the desire for entrepreneurial revitalization in the transition to a market economy. Given the many factors that influence agricultural productivity, the government's decision to pursue the project's objectives through several related components was sound, although this increased the project's complexity. Simultaneous progress in a number of areas was necessary to achieve the desired impacts on rural incomes and entrepreneurship.

The project substantially achieved its objectives in each component, thereby contributing to the achievement of the overall project objectives. In land reform, a geodetic network was completed and excellent progress was made in surveying and registering land in a modern cadastre, thus facilitating the operation of a private land market and enabling Estonian farmers to make better use of credit markets. Major progress was made in rehabilitating drainage systems to bring unutilized fertile land into production. Extension services were established, including a network of private sector advisors, in order to strengthen the business and farm management skills of Estonian farmers. Laboratory equipment and training of food and veterinary laboratory staff have helped Estonian laboratories achieve EU accreditation, thereby opening new market opportunities and raising agricultural incomes by increasing exports.

The project's outcomes were generally achieved efficiently, with the ERR for the overall project expected to exceed 10 percent by a considerable margin. However, some uncertainty regarding the economic return to the direct investments in drainage rehabilitation (about one-third of project expenditures) leads to an overall rating of substantial rather than high for efficiency. A more in-depth benefit/cost analysis than either the Implementation Completion Report or OED were able to conduct would be needed to determine more conclusively the precise rate of return to these particular investments.

Experience with this project confirms a number of OED lessons:

*(1) **Effective operational linkages between related project components help improve project outcomes.*** The aim of the farm drainage rehabilitation component was to bring flooded land back into farm production. In addition, drainage rehabilitation was also used successfully to promote privatization by requiring recipients of drainage assistance to

cross-comply with the privatization objectives under land reform. Farmers had to buy or sign long-term lease agreements on state-owned land in the drainage area and had to accept responsibility for future drainage costs. Setting these conditions established a "give and take" approach which ensured that farmers both contributed and were committed to the drainage objectives and to the privatization objectives under land reform. This served to advance more than one objective with the same investment of resources under the project.

(2) ***A private sector delivery system for extension services can be an effective alternative to public sector delivery, provided that there are appropriate incentives, financial controls, and audit procedures.*** The circumstances in Estonia made it desirable to deliver agricultural advisory services through a private delivery system. Knowledge requirements were high during the economic transition, meeting these requirements was urgent, and the information and advice required were very diverse. Private delivery (i) allowed swift implementation, (ii) avoided the future costs of having to dismantle a public delivery system after having met transition requirements, (iii) contributed to developing a base of private sector expertise to meet the long-term aim of having the market provide certain extension services on a user-pay basis, (iv) recognized the private sector's capacity for providing a diversity of extension expertise, and (v) respected the preferences of farmers for less government involvement in their business affairs. The project demonstrates that a private delivery system is a workable alternative when there are appropriate incentives and controls in place to prevent program abuse. This alternative can be particularly valuable in situations where public sector delivery has shortcomings relative to the objectives to be achieved or to the environment for delivering the extension services.

(3) ***In identifying projects for development assistance, the Bank should pay close attention to those where the borrower is likely to take strong ownership, responsibility and control of the project, because such conditions contribute significantly to achieving positive project outcomes.*** The Estonian Agriculture Project is an excellent example where the borrower possessed a strong desire to own the project from the beginning to the end. This contributed greatly to a project likely to generate highly positive benefits for the Estonian agricultural and rural economies. Based on the Estonia example, indicators to look for in identifying a borrower likely to take and maintain ownership and responsibility include (i) a strong sense of policy direction when entering into discussions with the Bank; (ii) already taking steps within its means toward realization of the policy direction; and (ii) exhibiting a desire to disengage from the Bank's assistance as soon as possible. Each of these indicators were very much in evidence with respect to the Estonia project.

Gregory K. Ingram
Director-General
Operations Evaluation

1. Background and Overall Outcome

BACKGROUND

1.1 The Republic of Estonia had a population of 1.36 million and GDP per capita of US$ 4,100 in 2001. The largest contributor to Estonia's GDP is manufacturing at 18.9 percent of total GDP, followed by transportation and communications at 16.1 percent, retail and wholesale trade at 14.8 percent, and real estate, renting, and business activities at 11.3 percent. Agriculture, hunting, and forestry combined account for 5.4 percent of Estonia's GDP.[1]

1.2 Estonia proclaimed its independence from the Soviet Union in 1991, which began the transition to a market economy after fifty years of operating under a centrally planned system. This has required considerable economic adjustment, including the overhaul of public and private sector institutions and a wide-ranging re-allocation of physical and human resources.

1.3 The agricultural sector has faced one of the most demanding adjustments to a market economy. During the Soviet era, agricultural production was organized into 350 large-scale state and collective farms, each cultivating about 3,500 ha and employing about 300 persons. Estonia became an exporter of livestock products based on the import of inexpensive feed grains from other parts of the Soviet Union. After Estonia gained independence, these inexpensive feed grains were no longer available to its livestock subsector. Also, government supports of various kinds were removed. Agricultural output fell by 50 percent in the 1990s. The number of cattle on Estonian farms fell by 60 percent and hog numbers declined by two-thirds between 1990 and 1998.

1.4 Additional problems faced by the Estonian agricultural sector were the Soviet imposition of import tariffs, EU trade barriers which restricted access to western European markets, and declining domestic demand for livestock products due to low consumer incomes in Estonia. The restitution of farmland to the pre-1940 owners and their heirs also had far-reaching implications for the ownership of land and the structure of agricultural production – resulting in the break-up of the 350 state and collective farms into a much larger number of small-scale production units.

1.5 While the restitution and privatization of farmland was a vital step toward establishing an agricultural market economy based on private ownership of land, this resulted in the first instance in the proliferation of small landholdings that were neither efficient nor viable as stand-alone production units. At loan appraisal in June 1995, after the restitution and break-up had occurred, the farm structure in Estonia consisted of 3,500 multiple-owner companies, cooperatives, and partnerships which held 70 percent of the farm land; 10-15 thousand private family farms averaging 24 hectares in size which held 17 percent of the farmland; and 130 thousand plots averaging 1.7 hectares which held the remainder of the farm land. At appraisal, the Government of Estonia expected the number of private family

1. Source: Statistical Office of Estonia

farms to increase as individuals continued the process of withdrawing their land from the 3,500 multiple-owner enterprises.

1.6 Notwithstanding the decline in dairy and livestock production that had occurred after independence, at project appraisal the government viewed dairy and livestock production as offering the greatest potential comparative advantage for building and sustaining an agricultural industry in Estonia. The crop sector would focus on supplying the necessary feed grain inputs. Targeting the livestock and dairy sectors as the most likely areas upon which to build a competitive and viable industry was an appropriate decision, given Estonia's northern climate and the susceptibility of Estonian farm land to flooding. Relative to other crops, forage and pasture for livestock better withstand flooding impacts.

1.7 Developing a livestock-based agricultural market economy required substantially different public sector policies and programs from the Soviet era. In the first half of the 1990s, the government had begun to respond in areas such as agricultural research and extension, farm finance, and the privatization of agro-processing activities. However, the government's fiscal resources were inadequate to meet the needs of the agricultural sector, given the enormous overall budgetary demands on the government resulting from the transition to a market economy. Therefore, the government approached the World Bank for support, which ultimately led to the Agriculture Project.

SUMMARY ASSESSMENT OF THE OVERALL OUTCOME

1.8 The overall objectives of the project were to increase rural incomes and to stimulate the rural economy through rural entrepreneurship. To achieve these objectives, the project focused on improving the total factor productivity and competitiveness of the agricultural sector – as the largest source of income in the rural areas – by providing assistance for (1) the privatization of agricultural land, (2) the privatization and rehabilitation of farm drainage systems, (3) the introduction of new farming technologies consistent with private agricultural production, (4) the improvement of human resource and entrepreneurial skills, and (5) the improvement in food quality. Relative to these objectives and to the objectives of these project components, the **overall outcome** of the project is **highly satisfactory**. This overall rating is based on ratings of high for relevance, high for efficacy, and substantial for efficiency discussed in greater detail in subsequent sections of this report.

1.9 Project objectives were highly relevant given the depressed state of Estonia's rural economy, the ongoing reform of the agricultural policy framework, and the desire for entrepreneurial revitalization in the transition to a market economy. Given the many factors that influence agricultural productivity, the government's decision to pursue the project's objectives through several related components was a sound one, although this increased the project's complexity. Simultaneous progress in a number of areas was necessary to achieve the desired impacts on rural incomes and entrepreneurship.

1.10 The project substantially achieved its objectives in each component, thereby contributing to the achievement of the overall project objectives. In land reform, a geodetic network was completed and excellent progress was made in surveying and registering land in a modern cadastre, thus facilitating the operation of a private land market. With a private land market, Estonia farmers could make better use of credit markets and enjoy the

incentives of ownership, both of which contribute to entrepreneurship and increased incomes. Major progress was made in rehabilitating drainage systems to bring unutilized fertile land into production. The addition of this land to the production base directly improved income potential. Extension services were established, including a network of private sector advisors, to strengthen the business acumen and technical skills of Estonian farmers, thereby preparing them better for an agricultural system where success depends upon entrepreneurship and making farm management decisions which reduce production costs and increase market returns. Laboratory equipment and training of food and veterinary laboratory have helped Estonian laboratories achieve EU accreditation, thereby opening new market opportunities and raising agricultural incomes by increasing exports.

1.11 The project's outcomes were generally achieved efficiently, with the ERR for the overall project expected to exceed 10 percent by a considerable margin. However, some uncertainty regarding the economic return to the direct investments in drainage rehabilitation (about one-third of project expenditures) leads to an overall rating of substantial rather than high for efficiency. A more in-depth benefit/cost analysis than either the Implementation Completion Report or OED were able to conduct would be needed to determine more conclusively the precise rate of return to these particular investments.

2. Project Components

2.1 The project pursued its broad objectives of increasing rural incomes and stimulating rural entrepreneurship through sub-objectives in each of five major components (actual costs for each component, not including beneficiary contributions, shown in parentheses):

- **Land reform** – to achieve privatization of agricultural lands (US$ 2.61 million)
- **Farm drainage rehabilitation** – to rehabilitate and privatize selected rural infrastructure (US$ 7.15 million)
- **Land use management** – to promote environmentally sustainable agricultural production, focused particularly on drainage areas (US$ 0.66 million)
- **Agricultural advisory services** – to improve human resource skills and utilize new farming technologies (US$ 4.57 million)
- **Food quality control and veterinary laboratory** – to improve food quality and safety and to protect the health of livestock (US$ 6.99 million)
- **Project management** (US$ 0.21 million).[2]

2.2 The land reform component aimed to accelerate the development of a private land market by completing the national geodetic network, conducting land surveys and cadastre registration, and financing a rural land disposal study. These were critical to achieving agricultural entrepreneurship and improved rural incomes. By owning their land, farmers would have an incentive to invest in their operations and the ability to offer their land as collateral to obtain mortgage loans to make the investments, leading ultimately to higher farm incomes. Land reform would also hasten the consolidation of land into viable production units, which was required in order to reduce costs and improve incomes.

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2. Estonia Agriculture Project, *Implementation Completion Report*, December 24, 2002, p. 26.

2.3 The farm drainage rehabilitation component was intended to restore drainage systems whose maintenance had been neglected for many years, as a result of which, fertile farm land had gone out of production. Restoring these systems would bring land back into production, raise agricultural productivity and boost agricultural incomes. Keys to this component were both physical rehabilitation and privatization of the drainage systems through land and water associations (LWAs). The LWAs would assume responsibility for operation and maintenance as well as future rehabilitation. Research programs at the Institute of Water Management at the Agriculture University would also be restructured and aimed at reducing the operation and maintenance costs of drainage systems in order to maximize the contribution of the drainage systems to improving the incomes of farmers within the drainage areas.

2.4 The land use management component was closely tied to farm drainage rehabilitation. This included a wetlands study to assist in prioritizing drainage projects, environmental monitoring of drainage sites, and environmental studies to determine alternative land use for certain lands undergoing drainage. While this particular project component was not directly tied to project objectives of improving rural incomes and entrepreneurship, it was very important to achieving a *sustainable* agriculture, in order to sustain income gains achieved by the project.

2.5 The agricultural advisory services component aimed at providing the advice and information agricultural producers needed in order to operate effectively in a market environment. This was tied to the overall project objectives through the impact that better human resource skills, knowledge, and information would have on the efficiency of farm management decisions. With appropriate skills, knowledge and information farmers would be better prepared to operate as effective entrepreneurs, to minimize production costs, to manage the risks of a market economy, and to increase their economic returns. The agricultural advisory services component had three subcomponents.

- The first subcomponent dealt with the most viable farm businesses. Private extension advisors were contracted to provide advice and information to these farmers. A Private Advisory Services Development Fund (PASDF) was set up under the project to assist farmers in paying private advisors for their services. The assistance was available only to producers contracting with advisors who were certified by the MOA. The strategic aim was to initiate a private advisory system and convince farmers of the value of utilizing and paying for its services. Over a period of years the subsidy would be phased out, hopefully leaving a viable private advisory network based on farmers' willingness to pay for the services.

- The second subcomponent of advisory services consisted of public extension, targeted at a "middle category" of farms, viewed as needing more general information and advice in order to *become* viable (e.g., improvement of production practices). The plan was to fund this subcomponent of advisory services from public resources on an ongoing basis.

- The third subcomponent of advisory services was to strengthen the capacity of Rural Information Centers (RICs) to assist non-viable farmers to obtain alternative employment. This activity would also be publicly funded on an ongoing basis.

2.6 The food quality control and veterinary laboratory component aimed to improve food quality and safety, to protect the health of livestock, and to obtain EU accreditation of Estonian state laboratories in order to access EU markets. Without export markets and without the ability to assure Estonia's domestic consumers of safe food products, the returns to other projects investments would be less. This component set out to implement reliable monitoring and testing to ensure food quality and safety and to monitor and detect livestock disease. The project assisted the purchase of new lab equipment to test for food contaminants and livestock disease, as well as training of laboratory staff in use of the new equipment.

2.7 During negotiation of the World Bank loan, consideration was given to including a farm credit component in the project. A credit component would have provided funds for farmers to invest in machinery, equipment, and livestock. Such an initiative might also have accelerated development of farm mortgage lending in Estonia. The government (particularly the MOF) felt that other factors of production and various policy and program institutions were more important to develop and that farm mortgage lending would not develop properly without attending first to these other factors and institutions (e.g. land reform and human resource capabilities). Therefore, a credit component was not included as part of the project.

3. Project Implementation

3.1 Project management was carried out under the broad direction of a Project Steering Committee chaired by the Minister of Agriculture (MOA), with key members drawn from the Ministries of Agriculture, Environment, and Finance, and from municipalities and farm organizations. A Project Implementation Unit (PIU) within the MOA reported to the Project Steering Committee and coordinated the line agencies responsible for delivering the various project components. In the beginning, the PIU was essentially an expanded version of the implementation unit for EU-PHARE – the EU's assistance program for Central Europe and the Baltic Countries – which was already in place at the start of the World Bank project.

3.2 The MOA Land Amelioration Unit and regional Amelioration Bureaus delivered the drainage rehabilitation component, in coordination with MOE. Rehabilitation work focused on main channels, collector drains, and pipe outlets for drainage projects that met program selection criteria. In order to receive assistance, farmers in the drainage area had to set up a land and water association (LWA). The LWA had to contribute "in-kind" an amount equal to 20 percent of the cost of the rehabilitation and then assume future rehabilitation costs as well as the operation and maintenance costs for the system. In the case of state-owned agricultural land in the drainage area, farmers had to buy or sign long-term lease agreements before drainage rehabilitation would commence under the project.

3.3 The MOA implemented the agricultural advisory services component, with initial participation of a stakeholder-based National Agricultural Extension Task Force (NAETF). The NAETF later became an informal advisory committee. The PASDF was delivered through MOA county extension offices. The MOA operated a certification system for private sector advisors. The Association of Rural Advisors in Estonia (ARAE) handled professional development requirements for the advisors. The Farmers' Federation delivered some of the public extension services under the project, such as group advisory meetings and publication of an agricultural magazine. An Agricultural Information Coordination Centre (AICC) was

connected to RICs through an internet information network and enabled MOA to transfer information to various locations in rural Estonia.

3.4 The delivery of some extension services through private agricultural advisors was an innovative element of the project. The approach adopted was a publicly subsidized and privately delivered service, unlike the more traditional experience with World Bank projects that have promoted public provision of agricultural extension. Key to the initiative was a network of private advisors capable of providing a range of specialized advice tailored to the individual needs of the most viable farmers. The PASDF provided a subsidy for farmers to use private advisors to acquire production and business management advice. The intent was to stimulate a market for private advisory services. To ensure advisors had the necessary competencies, the MOA required certification as a condition of receiving the subsidy. The MOA prepared framework contracts with private advisors which included a zero rate of value added tax on the services.

3.5 Each advisor and farmer negotiated the specific advisory services to be transacted, based upon the particular needs of the farmer. The advisor then drafted a contract for provision of the services, which was reviewed by county officers to ensure that the farmer, the advisor, and the services were eligible for the subsidy. Once the services were provided, the advisor submitted a report, signed by the farmer, outlining the services supplied. The farmer paid the advisor directly for that portion of the cost the farmer was required to pay. The advisor then submitted an invoice for the remainder of the cost, along with the report on services provided, to a county officer who would then check with the farmer to ensure that services had been provided as indicated in the report. When in doubt, the officer would visit the farmer in the field. After verification was complete, the State Treasury paid the invoiced amount directly to the advisor for the services rendered.[3] The MOA required field checks on about 5 to 10 percent of the contracts as part of its annual internal audit. This audit resulted in a number of farmers being disqualified from future participation and in a number of advisors losing their certification and ability to participate in the PASDF subsidy.

3.6 The State Veterinary Department within MOA administered the food quality and veterinary laboratory component activities of the project. Delivery involved equipment installation and training at the central laboratory in Tartu and at regional and specialized laboratories at various locations in Estonia.

3.7 The MOE was responsible for ensuring that environmental requirements were met for all project activities. This included coordination with MOA, environmental screening of drainage projects, and provision of information to producers on sound environmental practices. The Estonia National Land Board (NLB), which is part of the MOE, delivered the land reform component of the project. This included completion of the geodetic network, cadastral mapping and registration, contracting for survey work, and coordination with Title Book Offices. Private surveyors were contracted through the Contract Administration Unit (CAU) of NLB to complete the surveying required for registering land in the cadastre.

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3. Recent changes have been made to the method of payment so that the farmer pays the entire amount of the costs of advisory services and is then reimbursed through the program. However, during the period of the WB project, the subsidy was actually paid directly to the private sector advisor, with the farmer therefore receiving the subsidy indirectly through reduced fees.

4. Ratings: Overall Outcome

RELEVANCE: WERE THE PROJECT'S OBJECTIVES RIGHT IN THE LIGHT OF CURRENT PRIORITIES?

4.1 The project is rated **high** in terms of **relevance**. The two main objectives – to increase rural incomes and to stimulate the rural economy through rural entrepreneurship – remain highly relevant in relation to current priorities and strategies of the Government of Estonia and the World Bank, these having remained fundamentally unchanged since the preparation of the project.

4.2 The government aimed to build a productive and competitive agriculture sector in order to enhance incomes in rural Estonia. Acceleration of land reform, rehabilitating rural infrastructure, developing an effective and efficient agricultural advisory service, and meeting EU food quality standards are all important contributors to agricultural productivity and competitiveness. Hence, the project is highly relevant to government objectives.

4.3 The project is also highly relevant in relation to the Bank's 1993 country study and 1994 CAS for Estonia. The overarching goal of the CAS was to relieve pockets of poverty associated with Estonia's transition to a market economy, and the 1993 country study had determined that to address poverty in rural Estonia, it was necessary to reestablish the incentives and institutions necessary for rational economic decision making, both at the level of the producer and marketing enterprises. That required transparent and tradable property rights, privatization of a major share of the agricultural land, and the establishment of competitive markets and trading systems.[4]

4.4 The CAS also highlighted the need for public infrastructure investment, the development of private sector leadership, and public services to support an agricultural industry based on private enterprise as fundamental ingredients of Estonia's long-term economic strength and sustainability. Rehabilitating drainage systems contributed to the public infrastructure objectives of the CAS. Promoting rural entrepreneurship through the agricultural advisory services and privatizing rural lands through land reform and drainage rehabilitation supported the private sector agriculture envisioned in the CAS. Investing in food and veterinary laboratories, public extension services, land surveying and registration, and environmental controls were all among the public services identified in the CAS to support Estonian farmers in an environment governed by rational economic decision-making.

4.5 Agriculture emerged as a pocket of poverty in Estonia during the transition. The project addressed this poverty problem through a sector-wide strategy, reflecting the fact that poverty was an overall issue during the transition period and not a concern restricted solely to a disadvantaged subset of the agricultural population. The sector-wide approach was the most likely approach to succeed in lifting significant numbers of rural Estonians out of poverty on a sustainable basis. In addition to the approach taken, the project also addressed the needs of farmers facing a greater degree of poverty than the norm in the industry. Farmers who lacked potential for economic viability due to inadequate resources and/or skills were provided

4. *Estonia – The Transition to a Market Economy*, March 31, 1993, p. xxv.

counseling and advice in relation to alternative job opportunities through the Rural Information Centers (under the agricultural advisory services component). This however was a relatively small part of overall project efforts.

4.6 While the project's focus on improving the productivity and competitiveness of the agricultural sector was appropriate in Estonia's transitional situation, considerable segments of the rural population in Estonia remain in poor economic circumstances. The extent of the adjustment required can be deduced from the sheer magnitude of the transition taking place in agriculture and from a few selected economic indicators. The share of Estonia's working population employed in agriculture and hunting dropped from 16.6 percent in 1990 to 8.0 percent in 1996 to 5.1 percent in 2001. The actual number of persons employed in agriculture and hunting fell more than 75 percent from 136,800 in 1990 to 31,600 in 2001. Total rural employment fell from 243,000 to 178,500 over the same period.[5] While the secondary and service sectors have employed a substantial number of the displaced rural workforce, the rural unemployment rate has exceeded 10 percent for almost all of the last five years and was nearly 15 percent for two of those years.[6] Wages in agriculture remain less than two-thirds of the average Estonian wage. Only 15 percent of rural residents had secondary plus post-secondary education as of 2001, compared with 28 percent of urban residents.

4.7 Although the project is highly relevant to the objective of improving rural incomes and stimulating the rural economy through rural entrepreneurship during the transition period, the question of income distribution *within* the agriculture sector received relatively little attention within the context of the project. There was no specific monitoring of the project's impact on rural income distribution.[7]

4.8 A final point regarding the relevance of the project relates to the government's objective of joining the European Union. On the one hand, some of the initiatives undertaken in the project have assisted Estonia's preparations for EU accession. On the other hand, Estonian farmers will now become part of the Common Agricultural Policy, which entails a degree of market protection in relation to world prices of agricultural products. The World Bank's view on this issue has been that supporting improvements in agricultural productivity in order to maximize the cost-effective utilization of a country's agricultural resources is a desirable objective in and of itself regardless of the price regime, and that aligning domestic prices with the Common Agricultural Policy is, in any event, a moving target. Therefore, joining the Common Agricultural Policy does not detract from the project's relevance, as long as the project is enhancing the cost-effective utilization of Estonia's agricultural resources, given the new price regime.

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5. Estonia Ministry of Agriculture, *Agriculture and Rural Development, Overview* 2002/03, p. 128.

6. Estonia Ministry of Agriculture, *Agriculture and Rural Development, Overview* 2002/03, pp. 20, 123, 125.

7. For a more thorough discussion of the manner in which poverty is and is not addressed in Europe and Central Asia projects of the World Bank, see, John Heath, *Agriculture Policy Reform in the ECA Transition Economies, 1991-2002*, 2003, pp. 17-18 (OED Working Paper Series).

EFFICACY: DID THE PROJECT ACHIEVE ITS STATED OBJECTIVES?

4.9 This section has six subsections – one section corresponding to each of the five project components and the sixth section assessing the overall efficacy of the project. The approach taken to assessing the project's efficacy is first to assess to extent to which each project component achieved its objectives and then to assess how these achievements contributed to the achievement of the overall project objectives, recognizing the linkages between the individual components and overall objectives described in previous sections of this PPAR.

4.10 The project is rated **high** with respect to overall **efficacy**. The objectives were fully met, or met with only minor shortcomings, in all project components. This is commendable considering the scope and diversity of the project. The combined effect of the various project components contributed toward the overall project objectives of improving rural incomes and stimulating the rural economy through rural entrepreneurship.

Land Reform

4.11 With respect to land reform, the objective was to privatize agricultural lands by accelerating development of a land market that would facilitate (1) land restitution and privatization, (2) the use of land for collateral for mortgage lending, and (3) entry into and exit from farming.

4.12 A private land market requires a land survey and registration system capable of defining private property rights and recording transactions associated with land sales and purchases. Mortgage lending requires a similar system to register security. Under the project, the geodetic network was completed, and the cadastre survey and registration activity significantly surpassed appraisal targets at project completion – 169,943 ha. of agricultural land being registered in the cadastre compared to the appraisal target of 150,000 ha. (Table 1). About 70 percent of Estonia's total land area was registered in the cadastre at project completion. At the time of the OED mission, it was reported that 75 percent of all land was registered, indicating continued progress toward completion of a modern cadastre system.

4.13 Despite the progress, specific barriers have delayed realization of full benefits. One barrier is the slow speed of the land restitution process. Not all individuals with restitution rights have taken the necessary steps to acquire their land, in part to avoid paying land taxes. Individuals with outstanding restitution entitlements have not been strongly encouraged through specific restitution policy incentives to complete land acquisition. Other individuals who have acquired small holdings have not been willing to sell to larger holders of land, due partly to an anticipated increase in land prices with EU accession. Small landholdings have slowed the development of a farmland mortgage market, because these holdings cannot efficiently use the modern machinery and equipment purchased with borrowed money. Several individuals interviewed by the consultants described the interest of commercial banks in agriculture lending as quite low, other than for very large farm operations. Credit initiatives through the government's Rural Development Foundation as well as leasing arrangements have filled some of the lending gap (these initiatives were not part of the World Bank project).

Table 1. Indicators of Achievement for Project Component Objectives

Project Component	Projected at SAR	Actual/Estimate at ICR
Land Reform:		
Area registered in cadastre (ha.)	150,000	169,943
Drainage Rehabilitation:		
Area rehabilitated (ha)	60,000	81,035
LWAs (no.)	60	104
Advisory Services:		
PASDF Contracts (no.)	10,000	13,572
Farmers served (no.)	5,000	10,515
Food Quality and Veterinary:		
Food samples analyzed ('000)	1,334	1,585
Total analyses ('000)	4,813	5,876
Accredited methods	190	180

Source: Implementation Completion Report and Project Implementation Unit.

4.14 In spite of the slowness in realizing the full benefits of land reform, a solid land policy and program infrastructure has been laid as a result of the project. Without these achievements a private land market would not be possible, in which case the incentives for farmers to invest in their businesses and the ability to borrow funds to invest would be seriously curtailed. Without investment incentives and borrowing ability, rural entrepreneurship and incomes would be inhibited. Furthermore, income generating benefits of other project components would also be limited, because many of these cannot be realized in the absence of investment by farm businesses. A good example would be application of a new technology (e.g. better fertilizer placement) which requires capital investment by the farm business in a new seeding system.

Farm Drainage Rehabilitation

4.15 The objective of farm drainage rehabilitation was to rehabilitate and privatize farm drainage systems and, secondarily, to re-target research activities to support efficient drainage systems. The objective was fully met. By project completion, drainage systems containing 81,035 ha. were rehabilitated, surpassing the appraisal target of 60,000 ha. (Table 1). The drainage component was directly responsible for bringing an additional 8,200 hectares of agricultural land into production. This land produces an estimated US$ 2.3 million of additional gross income annually for rural Estonia based on pre-project average gross income per hectare for drainage area farm land. This represents a contribution to improving rural incomes in Estonia for farmers operating in drainage areas.

4.16 Privatization of drainage systems was accomplished through a network of 104 LWAs (several new associations having been established between project completion and the OED mission). LWAs have accepted responsibility for operation, maintenance, and future rehabilitation of drainage systems, indicating the emergence of entrepreneurial attitudes on the part of Estonia's farmers. Foresight was used in designing the farm drainage rehabilitation component in a way that would promote objectives of other components of the

project. Recipients of assistance had to comply with land reform objectives by purchasing state land in the drainage area or by leasing it on a long-term basis. This advanced the privatization objective and contributed to bringing the additional land into production, thus contributing to improved incomes.

Land Use Management

4.17 The objective of the land use management component was to strengthen environmental controls in agricultural production activities with a view toward minimizing negative impacts of agricultural production on the environment. The objective was fully met. A wetlands management strategy and studies to prioritize drainage projects for their environmental benefits were completed. No major environmental problems came to the consultants' attention in relation to drainage projects. The Estonian Environmental Research Centre (ERC) received equipment to carry out the necessary testing to ensure water safety. The equipment for water testing and analysis received under the project has enabled the ERC to obtain EU accreditation and thereby increase its commercial business.

Agricultural Advisory Services

4.18 The agricultural advisory services component was aimed at improving human resource skills and the use of new farm technology and pursued this objective through subcomponents (private advisory services, public extension, and Rural Information Centers) focused on transfer of technology; mobilizing and organizing farmers, rural groups and communities; and building capacity to generate and transfer information. Objectives were largely achieved.

4.19 Promoting the delivery of agricultural extension through a system of private advisors was an innovative aspect of this component. These privately delivered and, for the most part, publicly funded services have made a substantial contribution. According to interviewees, these private advisory services were instrumental in establishing more open attitudes on the part of commercially-oriented farmers toward using extension services. Prior to the project, many of the farmers with the most potential for commercial success were not inclined to seek independent advice, thinking that they had little to gain from outside advice and counseling. The private advisory services, encouraged by the subsidy incentive provided by PASDF, served to break down this attitudinal barrier.

4.20 The private advisory services were well utilized, as more than 13,500 contracts between farmers and private advisors were administered by the completion of the project, which exceeded the appraisal target of 10,000 (see Table 1). The shift in farmer attitudes because of the project can be demonstrated by comparing the number of farmers now using some form of advisory services to the situation prior to the project. At the time of the OED mission, program administrators estimated that, post project, 250 to 300 farmers in Harju County use advisory services compared to only 20 to 40 farmers prior to the project. The contribution made by the project to this change in farmer attitudes regarding extension services is further evidenced by the high level of satisfaction expressed by farmers with the quality of the services provided by the private sector advisors under the project. In quality control surveys, more than 85 percent of the farmers surveyed expressed either general or

complete satisfaction with the private advisory services. These indicators suggest a strong impact on farm income, as farmers would not use the advisory service if such use failed to improve their bottom line income.

4.21 The private advisory services have also made a significant contribution to the objective of building capacity for the generation and transfer of agricultural information and technology, including contributing to the rural entrepreneurship - a prime objective of the project. Under the PASDF, a network of private sector advisors certified by the MOA was created with the ability to deliver knowledge and information to farmers. While there were fewer advisors certified and participating in the subsidized program at the end of the project than at the peak of the project activity (69 advisors in 2002 compared to 189 in 1997), many of the advisors have taken jobs with agri-business where their capacity developed through the project certainly should prove beneficial for the agricultural sector. Other advisors continue to provide advice as independent consultants to farmers but no longer through the subsidized program. These are positive outcomes, in light of the project objective of evolving toward a self-sustaining entrepreneurial private advisory services system paid for by farmers using the services.

4.22 Despite the overall success of private advisory services, certain funding decisions during the course of the project probably impeded the transition to the entrepreneurial and user-pay system envisioned at the outset of the project. The original plan was to gradually reduce the PASDF subsidy by 10 percentage points a year from 90 percent in 1996 to zero percent in 2004, so that farmers would take full responsibility for paying for private advisory services by the latter date. This planned rate of subsidy reduction was not adhered to, falling by only 20 percentage points to 70 percent in 2001. The reason given by government officials for not adhering to the planned reduction was poor farm incomes during some years of the project and a desire not to increase farmers' costs under these circumstances. Despite the subsidy being maintained at a higher level than planned, the number of farmers utilizing the PASDF fell from a peak of 2,894 in 1998 to 1,410 in 2001.

4.23 Given the factors that contributed to the decline in PASDF utilization, the decline is more likely a sign of success than of failure. Many farmers acquired a level of skills and knowledge in early years of the PASDF and did not need assistance in later years. Other farmers were gradually increasing their use of private advisory services *outside of* PASDF. (Industry sources estimate 30 percent of private advisory services in Harju County are now obtained without subsidy.) The fact that Estonian farmers have become more self-reliant in obtaining extension services and that many advisory services are now provided by rural entrepreneurs without subsidy is precisely what the project set out to accomplish. This has clearly contributed to a key project objective, which perhaps could have been even more progressive had the original schedule for subsidy reduction been implemented as planned.

4.24 There have also been successes in the public extension aspects of agricultural advisory services component. Interviewees highlighted better quality content in public extension materials, increased use of the internet to disseminate information, and increased job and career planning capacity through Rural Information Centers as evidence of positive outcomes. The outcomes sought through the project have generally been accomplished.

Food Quality Control and Veterinary Laboratory

4.25 The food quality control and veterinary laboratory component objective was to improve food quality and safety and protect animal health, thereby meeting domestic consumer requirements but also meeting standards necessary to access foreign markets. Equipment purchases and training activities were completed and objectives were fully met. EU accreditation of state laboratories was achieved, allowing Estonia to meet accession requirements and sell to EU markets. The accomplishments in this project component will contribute to entrepreneurial opportunity in the food and livestock industries through the creation of additional market opportunity. Work remains to be done within agro-processing facilities to consistently achieve the standards administered by the State Food and Veterinary Department. Completion of this work will assist in realizing the full income-enhancing benefit of this component of the project.

Achievement of Overall Project Objectives

4.26 To assess the achievement of the overall project objectives, it is important to understand the context of the project. A dramatic economic adjustment was occurring in Estonia's agriculture sector prior to the project and continued to occur during the implementation of the project. During the five years leading up to the project, which began in 1997, crop production declined by 14 percent, livestock production by 26 percent, and overall gross agricultural by 21 percent (Table 2). During the same time period, employment in agriculture and hunting[8] declined by 51 percent and total rural employment by 15 percent (Table 3). Also noteworthy, the share of agriculture in rural employment declined from 44 percent in 1993 to 25 percent in 1997.

4.27 Judging the success of the project in improving rural incomes and stimulating the rural economy through rural entrepreneurship under such conditions of change is difficult,

Table 2. Gross Agricultural Output, 1993-1997 (at 1995 prices, EEK millions)

	1993	1994	1995	1996	1997	1993-97
Crop Production	3,116	2,641	2,847	2,725	2,669	- 14.4 %
Livestock Production	3,820	3,315	3,120	2,864	2,836	- 25.8 %
Gross Agr. Output	6,936	5,957	5,968	5,589	5,506	- 20.6 %

Source: Statistical Office of Estonia

Table 3. Number of People Employed in Rural Estonia, 1993-1997 (annual average)

	1993	1994	1995	1996	1997	1993-1997
Agriculture & Hunting	91,900	75,900	55,500	52,100	44,800	- 51.3 %
Rural Employment	207,500	201,100	177,500	176,200	177,100	- 14.7 %
% Rural Employment	44 %	38 %	31 %	30 %	25 %	

Source: Statistical Office of Estonia

8. Hunting is a very small factor in the total agriculture and hunting statistics. For the purposes of this analysis, the agricultural and hunting figure can be considered as agriculture employment.

particularly when the true value of the project is likely to register not immediately but over a number of years. While one approach might be simply to determine whether the downward trends in agricultural output (as a measure of gross income) were reversed during the period of the project, this approach has obvious shortcomings. The Bank-supported Agriculture Project was only one factor, and maybe not even the most significant factor, affecting such aggregate indicators. It would be tenuous to credit the project with a turnaround in output trends or to judge the project a failure if there were no turnaround to this point. For the same reasons, while agricultural and rural employment are indicators of whether or not the rural economy was stimulated during the period of the project, these are not particularly reliable indicators of whether the project itself succeeded or failed in contributing to the desired objective.

4.28 Despite the limitations of drawing conclusions based on the trends in aggregate agriculture and rural sector indicators over the project period, it is worth noting from a contextual perspective what did occur with respect to these key aggregate indicators during the project period. One key indicator is agricultural sector value added in fixed prices (not including value added industries based on raw agricultural products). This declined by roughly 20 percent between 1997 and 2001 from 4.4 percent of GDP in 1997 to 3.0% in 2001 (Table 4).

Table 4. Value Added for Estonia Agriculture, 1997-2001 (at 2000 prices)

	1997	1998	1999	2000	2001	1997-2001
Value added by agriculture	3,029	2,908	2,681	2,683	2,433	- 19.7 %
Percentage of total GDP	4.4 %	4.0 %	3.7 %	3.4 %	3.0 %	

Source: Statistics Office of Estonia

4.29 Table 5 provides more detail about this decline in agriculture value added. Cultivated land fell from 861,000 hectares in 1998 to 644,000 hectares in 2001, while remaining at about the same level in 2002. While the numbers of cattle and poultry fell by 18 and 22 percent respectively over the time period, the numbers of pigs and sheep increased by 6 and 13 percent, respectively.

4.30 Table 6 shows that agricultural employment continued to decline during the project period, although less dramatically than during the previous four years – a 30 percent decline between 1997 and 2001 compared to the 51 percent between 1993 and 1997. Rural employment actually increased marginally (by 0.8 percent) between 1997 and 2001, compared to the 14.7 percent decline between 1993 and 1997. While the share of agriculture in total rural employment continued to decline in relation to secondary and tertiary employment, the increase in overall rural employment may be a sign that Estonia's rural economy has finally gone through the worst of the adjustment process to a market economy, and is experiencing a revival.

4.31 While these aggregate indicators paint a broad picture of the direction of agriculture and rural Estonia, the key questions from the perspective of this PPAR are what difference did the Bank's agriculture loan made to this overall picture and what difference can the project be expected to make going forward. Clearly, the project did not bring about an

Table 5. Selected Agriculture Economic Indicators for Estonia, 1998-2002

	1998	1999	2000	2001	2002	1998-2002
Cultivated Land ('000 ha.)	861	819	810	644	641	- 25.6 %
Cattle ('000 hd.)	307	267	253	261	253	- 17.6 %
Poultry ('000 hd.)	2,636	2,462	2,366	2,295	2,091	- 21.7 %
Pigs ('000 hd.)	326	286	300	345	345	+ 5.8 %
Sheep & Goats ('000 hd.)	31	31	32	32	35	+ 12.9 %

Source: Statistics Office of Estonia

Table 6. Agriculture and Rural Employment in Estonia, 1997 to 2001

	1997	1998	1999	2000	2001	1997-2001
Agriculture & Hunting	44,800	43,500	38,200	31,500	31,600	- 29.5 %
Rural Employment	177,100	183,500	181,100	177,400	178,500	+ 0.8 %
% of Rural Employment	25	24	21	18	18	

Source: Statistics Office of Estonia

immediate turnaround in all the aggregate economic indicators. The rate of decline in agricultural production and employment has slowed down, and rural employment has actually reversed its downward spiral. While the project probably did contribute to these positive trends, the question of magnitude of the project's influence remains.

4.32 The ICR attempted to assess the role that the project played in achieving project objectives by looking specifically at how the project influenced farm incomes in the farm drainage areas. To do so, the ICR identified with and without project incomes and costs of production for the drainage areas. Ignoring the efficiency side of this equation, which is the subject of the next section of this PPAR, a number of conclusions can be drawn regarding the ICR analysis. First, the ICR identifies some increased income that can be attributed to the project. This includes the US$ 2.3 million increase in annual gross income identified in paragraph 4.15 above for the farmers in drainage areas, both from increased land under crop production and from increased crop yields in the drainage area. The ICR estimated that net farm income rose by 35 percent for a model dairy farm.

4.33 It is safe to conclude, based on a review of the ICR methodology, that farm incomes did increase significantly in the drainage areas as a result of the combined influence of the various project components. However, except for the direct impact of drainage rehabilitation on the number of hectares under cultivation, the ICR provides little discussion of how the various project components individually or collectively contributed to increased yields or lower costs, and thereby to increased gross and net farm incomes in the drainage areas. While the ICR correctly identifies the difficulty in isolating the impacts of individual project components, it does not follow through with a discussion of how the project components collectively influence yields and costs. Nevertheless, based on a review of historical yields in Estonian agriculture undertaken by this PPAR, the projected increases in yields are

reasonable. The yields seem within reach considering those achieved by Estonian farmers historically.[9]

4.34 In focusing increased incomes in the drainage areas, the ICR provides a valuable estimate of the income-enhancing effect of the project. As will be seen in the discussion of efficiency in the next section, the ICR concludes that the rate of return to the investments in the drainage areas alone justifies the investments in the entire project. However, it is important to be mindful of the limitations of the ICR analysis. The analysis was performed on drainage areas only, which represent only about 10 percent of Estonia's farmland. The ICR made no attempt to quantify the project's impact on the 90 percent of Estonia's farmland which lies outside of the drainage areas. The impact on this additional 90 percent is potentially much larger, in aggregate, if not on a per hectare basis.

4.35 Gross revenue per hectare was estimated in the ICR to rise by 30 percent in the drainage areas, while net income was estimated to rise by 35 percent. While production conditions outside of drainage areas are different from within the drainage areas, if net income rose by even 10 percent outside of the drainage areas through the effect of increased yields and improved market access brought about by the other components of the project (land reform, advisory services, and better food safety and quality), this would represent a tremendous effect on overall incomes. A 10 percent increase in net income per hectare on 573,500 hectares of cultivated land outside of drainage areas would increase net farm income by 155.1 million EEK or US$ 9.3 million annually. Adding this to the increased net income of 86.7 million EEK or US$ 5.2 million in the drainage areas yields an overall increase in net income of US$ 14.5 million annually. A 10 percent increase in net revenue per hectare in non-drainage areas seems reasonable and probably conservative, based on increases in net income per hectare projected for the drainage areas.

4.36 A shortcoming of the ICR is the assumption that the increased annual return of US$ 5.2 million can be sustained every year for 25 years, without further incremental costs. It is unlikely that the benefits gained through other project components, including the advisory services component, can be sustained on this basis. Knowledge, for example, becomes obsolete over time as new production opportunities and problems confront farm business entrepreneurs. A depreciation index should be applied to the incremental net income projected in the ICR both for the draining and non-drainage areas. Applying a five percent straight-line annual depreciation rate beginning in 2006 results in a present value of net income benefits for drainage and non-drainage areas combined of US$ 99.8 million.[10]

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9. Yields for many crops grown in Estonia were generally higher prior to Estonia's transition to a market economy. Given the challenges associated with transition, it may not be surprising that yields would fall for a period of time. The challenge for the Agriculture Project was first to assist Estonian farmers to get back to the yields they once experienced and then to continue to improve yields and productivity. For details on long term crop yields, refer to Statistical Office of Estonia.

10. This estimated present value is also based on a five percent real discount rate to reflect the time value of money.

EFFICIENCY: WAS THE PROJECT COST-EFFECTIVE?

4.37 The project is rated **substantial** in terms of **efficiency**. The ERR for the project is expected to exceed the opportunity cost of capital. However, uncertainties about the economic return to drainage investments specifically, combined with the importance of drainage in the overall project (about one-third of the project dollars), result in a substantial instead of high efficiency rating.

4.38 The ICR's attempt to estimate the economic returns to the project within the drainage areas is commendable, given the difficulties associated with measuring and projecting benefits from investments in drainage projects and from investments in other components of the project. A number of variables are difficult to predict and can alter the estimated returns considerably depending upon each variable's magnitude. An obvious shortcoming is the lack of data on investments made by farmers themselves, which contribute to the returns, and their omission therefore causes too much of the return to be attributed to the project, thus pushing in the direction of *overstating* project returns. Lack of data also led to the use of crop values instead of livestock values in measuring incremental revenues from drainage. This shortcoming pushes in the direction of *understating* project returns because the value added to the livestock is not included in the analysis.

4.39 The criteria for selecting agricultural land to drain helped ensure that the drainage initiatives offering the most favorable returns were included in the project. Criteria included land fertility, intensity of land use, favorability for drainage, and technical feasibility of rehabilitation. However, despite careful selection, the drainage component, in isolation of the impacts of other project components, appears to offer relatively modest and uncertain economic returns. Based on the ICR analysis, 8,200 new hectares were brought into production through drainage rehabilitation. The gross revenue on drainage area land is estimated at US$ 282 per hectare. With production costs (variable costs) of US$ 120 per ha, this produces value added of US$ 162 per ha or US$ 1.3 million annually on 8200 ha. Allowing a 10 percent yield improvement as suggested for most crops in the ICR analysis (which actually may be more a result of agricultural extension than of drainage), the increased value added reaches US$ 1.5 million annually for the drainage component. The project invested US$ 8.6 million in drainage rehabilitation activity, an investment which reportedly must be repeated every 10 years. The benefit/cost ratio, *before* discounting the future benefits and *before* considering operation and maintenance costs, is already less than 2 to 1 ($15 million/$8.6 million). Based on operating and maintenance costs for drainage area land obtained from the MOA, US$ 1.0 million can be added to the US$ 8.6 million cost of rehabilitation. This further squeezes the return to the project's drainage investments.

4.40 Despite modest returns from direct investments in drainage rehabilitation, the ERR for the overall project should still be strong. Against incremental net income of $99.8 million in present value terms estimated in paragraph 4.38 are project costs of $US 21.8 million on a present value basis. This translates to a benefit/cost ratio of 4.6 to 1.0 or an internal rate of return equal to 32 percent. This considerably exceeds the 14.6 percent ERR in the ICR which captured the benefits of increased production from drained land, but excluded benefits outside of drainage areas.

4.41 A still higher return might have been achieved by investing relatively more in non-drainage activity and it is this factor which leads to the rating of substantial for efficiency rather than the high rating which might seem to be implied by the expected strong overall return for the project. Investments in development of human skills are likely to produce very high returns given that many Estonian farmers were on the steep portion of the learning curve where marginal returns to learning are expected to be high. Investments in these areas may considerably exceed the somewhat modest returns to investment in drainage activity.

4.42 A further way of viewing project cost-effectiveness is to compare project expenditures to the number of project beneficiaries and the economic value of Estonia's agriculture sector. Expenditure amounts in relation to the number of beneficiaries and the economic value of agriculture are at best crude comparisons, meaningful only in the context of the demands associated with the particular stage of development or transition of the agriculture sector itself. Clearly, the demands for policy and program infrastructure in land reform, human resource development, physical infrastructure and food safety and quality were considerable and had to be met if Estonia was to achieve a successful transition to a market economy. Initial development of institutions, rejuvenation of infrastructure, and building of human resource capacity inevitably required large lump sum investments.

4.43 Considering the context, project expenditures do not appear excessive in relation to the size of the agriculture sector or in relation to the number of individuals expected to benefit from the project. The US$ 22.2 million of total project expenditures over five years is only five percent of the value of Estonia's agricultural output for just one year based on 2002 figures. Based on 31,600 persons employed in agriculture, the project expenditures of US$ 22.2 million amount to US$ 700 per person in total over five years. This is a relatively small public investment in terms of modern-day agriculture. Also, project outcomes will be felt well beyond individuals employed directly in primary agriculture. The influence of project investments in food and veterinary laboratories extends into secondary sectors of agriculture. The food industry alone employs 15,200 people and accounts for 22 percent of Estonia's total industrial output based on 2002 figures. Livestock-based food production, which is part of the food industry most affected by the project, represents about one-half of the food industry's output.

4.44 On a final point regarding cost effectiveness, no serious administrative problems emerge as having created cost inefficiency in the project. Delays in implementation may have increased costs to some degree. Project preparation took longer than anticipated and land reform activities failed to move ahead on schedule because of tendering problems and initial confusion about survey standards. However, these types of problems did not greatly reduce cost-effectiveness.

5. Ratings: Institutional Development Impact and Sustainability

INSTITUTIONAL DEVELOPMENT IMPACT

5.1 All components of the project had key institutional objectives. The project is rated **high** for **institutional development impact**. It is expected to make a critical contribution to the effective use of human, financial and natural resources.

5.2 In land reform, the project helped establish the geodetic network and land registration system necessary to support a private land market as well as farm mortgage lending. Without these achievements under land reform the enabling environment would not exist to allow farmers to borrow effectively to invest for the purpose of improving productivity; neither would necessary rules exist to facilitate land exchange necessary to consolidate farmland holdings and thereby improve resource use efficiency. Certain features of land restitution policy have slowed consolidation, but the framework for a land market established under the project is yielding strong short-term benefits, with prospects for generating greater benefits in the long term. In establishing the land system, the project also had the secondary benefit of assisting the development of a private surveying industry. This promoted privatization – a primary institutional objective of the project.

5.3 Land and water associations (LWAs) were established to manage farmland drainage system assets and to finance the operation, maintenance, and future rehabilitation of the drainage systems. State land within drainage areas had to be bought or leased by farmers on a long-term basis as a requirement for receiving drainage assistance, thus further contributing to private enterprise objectives. Some LWAs have become a focal point for community planning, thus demonstrating their importance as an institution beyond their primary mandate for drainage system management. The LWAs are a new structure in which farmers interact to collectively plan and finance a shared input of production.

5.4 Land use management created guiding policies, strengthened environmental regulation, and enhanced the capacity of the Environmental Research Center in monitoring and testing for water safety and quality around agricultural production sites. The policies and regulations define the rules within which individuals and organizations will be governed with respect to protecting the environment and provides checks and balances to ensure all resource use interests have a voice in determining how resources are used. Skills have been developed in resource use management, specifically in prioritizing alternative resource investments, and balancing on an equitable basis the competing interests relating to natural resources. Research efforts have been re-oriented to support production practices which improve farm returns but also which protect the environment and contribute to resource sustainability.

5.5 A certified, professional private sector advisory network to advise and supply information to farm businesses was developed under the agricultural advisory services component. This network represents a new system of delivering a public service, in essence defining a new system of service exchange between advisors and farmers. Accountability and transparency were effectively built into the subsidy administration associated with the service. The Association of Rural Advisors in Estonia (ARAE) serves the professional development

needs of the agricultural advisors. This organization builds capacity in its advisor membership which contributes to the more efficient use of human, financial and natural resources through sound advice offered to farmers. Institutional results fell short on cost recovery of private advisory services, but this is regarded as a minor shortcoming for reasons described earlier in this report. The Agricultural Information Coordinating Center (AICC) and an internet-based system for transferring information to farmers are important institutional achievements. The Center provides the hub for a system based on electronic communication, providing farmers with a system of interaction with government specialists and others where they can acquire basic information efficiently and effectively. The Farmers Federation has strengthened its role in the delivery of public extension services, in effect giving farmers additional voice in the delivery of a service of significance to them and contributing to delivery transparency.

5.6 The agricultural advisory services component has resulted in farmers becoming more receptive to using extension services. Before the project, farmers are reported to have often dismissed the notion of receiving advice and information from extension service providers. This practice has changed and many farmers now actively seek extension services. The new practice is expected to make a substantial difference in the efficiency of resource use because farmers will have better knowledge upon which to base farm management decisions. The use of private sector advisors by the project at a time when farmers preferred less government involvement in their business affairs played an important part in shifting attitudes about the worth of extension services to farm profitability.

5.7 The project helped state laboratories improve food safety and livestock disease testing and monitoring and thereby strengthened very critical institutions from the perspective of international trade. The central MOA laboratory in Tartu and regional laboratories received modern equipment and staff received training. This produced better capacity to monitor and detect problems with food quality and safety and the presence of disease in Estonia's livestock, which in turn provides transparency demanded by importers of Estonia's agriculture and food products and leads to predictability of markets for Estonian farmers and food processing firms. The project's contribution helped Estonia to achieve EU certification of MOA state food and veterinary laboratories, a major factor in defining the institutional relationship between Estonia and European markets and allowing buyers and sellers to interact in the marketplace. This in turn affects the efficiency with which Estonia's agricultural resources can be employed.

5.8 On a general level, the project strengthened MOA strategic planning capabilities. This contributes to the likelihood of government policies, programs and incentives in the future which will promote efficient and sustainable use of agricultural resources. Involvement of agricultural stakeholders in overall guidance of the project helped build stakeholder planning capacity, promoted transparency and generally has served to foster a democratic approach to public policy making and program implementation. International procurement expertise has been developed within MOA as a result of the project and this capacity has now been applied in other areas of government procurement activity. This should lower procurement costs, thus allowing a more efficient use of Estonia's resources.

5.9 The rating of **high** for institutional development impact is above that in the ICR. The project is heavily focused on institutional development, with all components achieving numerous very significant institutional objectives. Given the central role of institutional development in the project, the ICR rating of substantial for institutional development impact

seems at odds with the highly satisfactory rating the ICR grants for overall project outcome. The ICR contains language such as "instrumental" and "remarkable" in describing specific institutional achievements.[11] At the same time, no shortcomings are identified in the ICR in relation to institutional objectives. The project warrants a rating of high with respect to achievements relating to institutional development.

SUSTAINABILITY

5.10 **Sustainability** is rated **likely.** EU accession will contribute in at least two ways to sustainability. The first is through funding to continue specific project activities. Second is the anticipated improvement in farm incomes following closer integration with the EU, which will enhance the ability of farmers to self-finance some of the activities initiated under the project. Aside from EU impacts on sustainability, the government appears committed to activities initiated under the project and is likely to ensure that gains achieved are not lost over time. Despite the positive factors contributing to sustainability, an expectation of the project is for farmers to pay for future drainage system rehabilitation and operation and maintenance costs. The sustainability of this particular aspect of the project is questionable and in light of this a rating of likely for sustainability is more realistic than the highly likely rating in the ICR. The following assessment focuses first on the sustainability of the achievements of the five project components, and second on the sustainability of the gains relating to the overall project objectives of improving rural incomes and stimulating the rural economy through rural entrepreneurship.

Sustainability with Respect to the Five Project Components

5.11 The land reform achievements are expected to continue on a sustainable basis. The geodetic network and re-engineering the National Land Board into a modern day cadastre entailed large up-front costs. With the system now being in place, maintenance and upgrading should be manageable. Also, there is scope for some cost recovery if public resources are not available to finance ongoing costs. Technical expertise should be relatively easy to sustain; the government is committed to maintaining the system; and stakeholders will demand sustainability. Given the likelihood that the progress will be sustained, the impact of that progress on rural income and rural entrepreneurship are very likely sustainable.

5.12 Sustainability of the farm drainage rehabilitation activities is less certain. Technical expertise, environmental monitoring and control, as well as institutional support have developed, and it is likely these will be sustained. LWAs have taken responsibility for operation and maintenance of the area-specific drainage systems and, according to project intent, are expected to pay for required future rehabilitation of these systems. Intentions are positive, which certainly bodes well for sustainability. Ongoing operation and maintenance costs for drainage systems are now being handled through many LWAs. Nevertheless, the financial resilience of drainage rehabilitation will not be known with much certainty until rehabilitation work which must be paid for by LWA members is actually undertaken. This will not happen for 10 years, at which time an estimated investment of 3000 to 3500 EEK (roughly US$ 200) per ha. will be required of project beneficiaries.

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11. Source: Estonia Agriculture Project, Implementation Completion Report, December 24, 2002, page 13.

5.13 There is reason to question the long-term financial resilience of drainage rehabilitation in these circumstances. Agricultural producers were not required to contribute beyond in-kind resources to initial rehabilitation costs. The extent of producers' willingness to contribute monetarily to rehabilitation has therefore not been tested. In discussions with at least one Estonian farmer, it was certainly not clear that drainage system investment is a high priority for producers' own resources. The producers' ability to pay for rehabilitation costs was seen by some interviewees as depending very much upon how well Estonian farmers do inside the EU common agricultural policy. Given the uncertain economic returns from drainage and the financial expectations of farmers whose resources may be limited, there is reason for concern about the sustainability of the drainage work carried out under the project and its contribution to enhanced incomes for agricultural producers.

5.14 Under the agricultural advisory services component, there has been good progress in development of technical knowledge, building stakeholder ownership (e.g., Farmers' Federation) and putting in place required institutional supports (e.g., private advisory network, AICC, RICs). There also appears to be a firm government commitment to advisory services, as evidenced by the certification system for private advisors, the MOA role in delivery of services, and the plans to negotiate EU funding support for extension services. It is highly likely these positive sustainability factors will continue, thus extending project benefits well into the future. In terms of financial resilience, ongoing EU support is probable and it is also apparent producers are willing to contribute at least some resources toward the purchase of extension services. Perhaps most important, it is reported by extension specialists in Estonia that farmers have adopted a positive attitude toward the learning process and to the value of extension services. An open mind toward learning is an extremely important determinant of whether gains in income and rural entrepreneurship are sustained, particularly given that knowledge and information must be continually upgraded to deal with new challenges in production, marketing and other areas of farm business management.

5.15 Within the food quality control and veterinary laboratory component, technical expertise developed through training initiatives as well as ongoing capital equipment replacement are highly likely to continue into the future. Regular upgrades of laboratory testing and analysis equipment and staff re-training will be required, which will involve costs. It is highly likely the government will, one way or another, ensure financial resources are available, since these activities are essential to food safety and to EU accreditation. This will serve to sustain the income gains that have been made possible as a result of better access to markets.

Sustainability with Respect to the Overall Objectives

5.16 Taken together, with the exception of the financial sustainability of drainage activity, the sustainability factors relating to the various project components are generally positive, meaning that gains that have been realized with respect to incomes and rural entrepreneurship should not be at significant risk in the future. The likelihood of sustainability should be substantial. In the larger picture, EU accession and participation in the EU common agriculture policy will serve to solidify the expected income gains. Also of note is that the Estonian agriculture economy has restructured and downsized dramatically since independence and is now operating at a much more sustainable level of production based upon the quality of its agricultural resources and the realities of a liberalized economy. Production units have consolidated rapidly as the land restitution process has unfolded,

resulting in many efficient and competitive farm enterprises with good prospects for sustaining the income gains generated by the project. There remains a good deal of restructuring yet to occur to achieve the most economically resilient industry possible, but Estonia has demonstrated its ability to absorb resources displaced by agriculture adjustment in other areas of the economy.

6. Ratings: Bank and Borrower Performance

BANK PERFORMANCE

6.1 The Bank's overall performance is rated **satisfactory**.

6.2 Bank performance is rated satisfactory for overall quality at entry. Development objectives were realistic. The choice of instruments was generally appropriate with good balance between public and private sector delivery. The Government of Estonia was engaged in preparation of the project and stakeholder groups were consulted.

6.3 Technical, economic and financial aspects were adequately assessed at the beginning of the project. Environmental impacts were evaluated and measures taken to deal with them, particularly with respect to drainage activity.

6.4 It is debatable whether the Bank paid adequate attention to the various dimensions of the poverty situation confronting rural Estonia in preparing and supervising the project. In broad terms, poverty reduction was addressed through a sector-wide strategy aimed at improving productivity and competitiveness. The sector-wide approach taken was the correct approach in the circumstances, but more attention to the income distribution pattern within the agricultural industry might have improved performance vis-à-vis the Bank's overriding mission of poverty reduction.

6.5 The Bank and the government successfully identified institutions to assist in project implementation, including, for example, the land and water associations, the Agricultural Information Coordinating Center, the Farmers' Federation, and the Project Steering Committee. Financial systems were adequately prepared. Some frustration arose because of prolonged project negotiations, including some concern regarding an overly bureaucratic approach by the Bank. However, the Bank's firmness at times led to the right course of action.

6.6 Bank performance is rated satisfactory for overall supervision during the project. Regular supervision missions were conducted and technical review missions undertaken. The Bank worked cooperatively in a business-like fashion to deal with problems as they arose, in spite of government concern at times about slowness of the Bank administration. Delays in the procurement process and in payment disbursement by the Bank were identified as problematic on some occasions. The Bank is credited by some government representatives for having the wisdom to build on what was already in motion in Estonia rather than trying to radically transform policies, programs and implementation vehicles. Plans were already in motion in areas such as land reform, farm drainage, and agricultural extension prior to the project. Overall, the Bank's level of technical support to the project was adequate.

6.7 The ICR is of sound quality and makes a commendable effort to estimate expected returns to the project based on the drainage areas. The ICR could have been strengthened by clear discussion of how the various project components contribute individually or collectively to the projected increases in economic returns. It would also have been valuable to state more clearly the limitations of the estimation methodology, including which benefits are included in the analysis versus those which are not. It is quite likely the overall project benefits considerably exceed the benefits actually captured by the ICR analysis. Discussion of methodology limitations would have provided a better perspective within which to view the ICR results.

6.8 During the OED mission to Estonia, government officials' respect and appreciation for Bank staff was evident, even though it was apparent there had at times been differences of views. The Bank's performance seemed particularly appreciated by the government officials in the later stages of the project and for the provision of technical expertise to keep the project on track. A project with as many successes as this one suggests solid performance by all parties, and the performance of Bank staff is no doubt one important reason for the project's success.

BORROWER PERFORMANCE

6.9 Borrower performance overall is rated **satisfactory**. The Borrower took responsibility for preparation and implementation of the project and has behaved in a manner consistent with achieving project objectives.

6.10 In preparing for the project, the Borrower worked effectively with the Bank, demonstrating a strong sense of Estonia's economic development priorities. Stakeholders were engaged and efforts were made to set realistic objectives given economic, financial, and other considerations.

6.11 During implementation, Borrower performance was also satisfactory. Some difficulties arose with respect to inadequate resources for the Contract Administration Unit of the National Land Board. There was a significant disruption in the PIU when EU funding for the PIU ended. These matters were resolved and did not put at risk the achievement of the overall objectives. Based on the success of the project, the Borrower succeeded in ensuring that competent staff were in place to manage, administer, coordinate, and deliver various project activities. The Borrower also successfully involved beneficiaries in the overall direction of the project and involved numerous stakeholders in program delivery.

6.12 No significant shortfalls came to the consultants' attention in terms of the Borrower failing to meet commitments under the project. Minor shortfalls were apparently addressed in a spirit of cooperation and to the satisfaction of the Bank. During the mission, the consultants found government representatives to be professional, forthright, and highly motivated and to possess a satisfactory grasp of the workings and implications of the overall project.

7. Lessons

7.1 Experience with this project confirms a number of OED lessons:

*(1) **Effective operational linkages between related project components helps improve project outcomes.*** The aim of the farm drainage rehabilitation component was to bring flooded land back into farm production. In addition, drainage rehabilitation was also successfully used to promote privatization by requiring recipients of drainage assistance to cross-comply with the privatization objectives under land reform. Farmers had to buy or sign long-term lease agreements on state-owned land in the drainage area and had to accept responsibility for future drainage costs. Setting these conditions established a "give and take" approach which ensured that farmers both contributed and were committed to the drainage objectives and to the privatization objectives under land reform. This served to advance more than one objective with the same investment of resources under the project.

*(2) **A private sector delivery system for extension services can be an effective alternative to public sector delivery, provided that there are appropriate incentives, financial controls, and audit procedures.*** The circumstances in Estonia made it desirable to deliver agricultural advisory services through a private delivery system. Knowledge requirements were high during the economic transition, meeting these requirements was urgent, and the information and advice required were very diverse. Private delivery (i) allowed swift implementation, (ii) avoided the future costs of having to dismantle a public delivery system after having met transition requirements, (iii) contributed to developing a base of private sector expertise to meet the long-term aim of having the market provide certain extension services on a user-pay basis, (iv) recognized the private sector's capacity for providing a diversity of extension expertise, and (v) respected the preferences of farmers for less government involvement in their business affairs. The project demonstrates that a private delivery system is a workable alternative when there are appropriate incentives and controls in place to prevent program abuse. This alternative can be particularly valuable in situations where public sector delivery has shortcomings relative to the objectives to be achieved or to the environment for delivering the extension services.

*(3) **In identifying projects for development assistance, the Bank should pay close attention to those where the borrower is likely to take strong ownership, responsibility and control of the project, because such conditions contribute significantly to achieving positive project outcomes.*** The Estonian Agriculture Project is an excellent example where the borrower possessed a strong desire to own the project from the beginning to the end. This contributed greatly to a project likely to generate highly positive benefits for the Estonian agricultural and rural economies. Based on the Estonia example, indicators to look for in identifying a borrower likely to take and maintain ownership and responsibility include: (i) a borrower with a strong sense of policy direction when entering into discussions with the Bank; (ii) a borrower already taking steps within its means toward realization of the policy direction; and (iii) a borrower exhibiting a desire to disengage from the Bank's assistance as soon as possible. Each of these indicators were very much in evidence with respect to the Estonia project.

Annex A. Basic Data Sheet

ESTONIA: AGRICULTURE PROJECT (LOAN 3983)

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

	Appraisal estimate	*Actual or current estimate*	*Actual as % of appraisal estimate*
IBRD Loan	15.3	11.29	74
Cofinancing	0.5	0.47	94
Government	11.3	10.44	92
Total Project Costs	27.1	22.2	82

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

	FY96	*FY97*	*FY98*	*FY99*	*FY00*	*FY01*	*FY02*
Appraisal estimate	0.6	3.5	6.7	10.4	15.3	15.3	15.3
Actual	0	0.4	2.7	5.9	7.9	10.1	11.5
Actual as % of estimate	0	11	40	57	52	75	75

Project Dates

	Original	*Actual*
Identification/Preparation		December 1993
Appraisal/Negotiation		June 1995
Approval		March 5, 1996
Effectiveness	December 7, 1996	March 4, 1997
Mid-term review	June 30, 1998	October 9, 1999
Credit closing	December 31, 2001	June 30, 2002

Staff Inputs *(staff weeks)*

	Actual weeks	*Actual US$000*
Through appraisal	n/a	784
Negotiations to Board	n/a	425
Supervision	n/a	383
Completion	n/a	353
Total	n/a	1,845

Mission Data

	Date (month/year)	No. of persons	Specializations represented	Performance rating	
				Implementation status	Development objectives
Identification/ Preparation	October 1992	1	AE		
	November 1993	2	AE, DC		
	May 1994	3	AE, E, CS		
	September 1994	10	TM, FS, AE, FE, DS, RIS, LES, LRS, RCS, LWAS		
	November 1994	2	TM, FS		
	January 1995	5	TM, ES, RCS, E, PS		
	March 1995	1	E		
	June 1995	3	TM, E (2), AEX		
Appraisal/ Negotiation	June 1996	15	TM, E, ES, NRS, F, AE, EN, DS, FS, LRS, PS, LWAS, RCS (2)		
Supervision 1	August 1996	4	TM, MES, ES, PS	S	S
Supervision 2	April 1997	4	DIS, PS, TM, LRS	S	S
Supervision 3	October 1997	4	LRS, EN, TTL, OO	S	S
Supervision 4	June 1998	2	TTL, ES	S	S
Supervision 5	December 1998	2	TTL, LWE	S	S
Supervision 6	June 1999	1	TTL	S	S
Supervision 7	November 1999	7	TTL, PS, OS, FMS (2), ES, LRS	S	S
Supervision 8	April 2000	3	TTL, FMS, LRS	S	S
Supervision 9	July 2000	1	ES	S	S
Supervision 10	August 2000	1	LRS	S	S
Supervision 11	October 2000	5	TTL, FMS, LRS, EX (2)	S	S
Supervision 12	June 2001	4	TTL, PA, LRS, FMS	S	S
Supervision 13	October 2001	5	TTL, FMS, LRS, ES, AE	S	S
Supervision 14	April 2002	5	TTL, FMS, LRS, EX, AE	HS	HS
ICR	October 2002	2	TTL, E	HS	HS
Supervision 1	August 1996	4	TM, MES, EX, PS	S	S

Specializations represented: AEX=Agricultural Extension; AG=Agricultural Economist; DC=Division Chief; CS=Credit Specialist; DIS=Disbursement Specialist; DS=Drainage Specialist; E=Economist; EN=Environmental Specialist; ES=Extension Specialist; F=Forester; FE=Forestry Economist; FMS=Financial Management Specialist; FS=Forestry Specialist; LES=Livestock and Extensions Specialist; LRS=Land Reform Specialist; LWAS=Land and Water Associations Specialist; MES= M&E Specialist; NR=Natural Resources; OO=Operations Officer; OS=Operations Specialist; PA=Program Assistant; PS=Procurement Specialist; RCS=Rural Credit Specialist; RIS= Rural Institutions Specialist; TM=Task Manager; TTL= Task Team Leader; RCS=Rural Credit Specialist.

Performance ratings: HS: Highly satisfactory; S: Satisfactory.