Public Disclosure Authorized

Public Disclosure Authorized

Document of
The World Bank

FOR OFFICIAL USE ONLY

Report No: 26799-TP

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED TRUST FUND FOR EAST TIMOR GRANT

IN THE AMOUNT OF US$ 3.0 MILLION

TO THE DEMOCRATIC REPUBLIC OF TIMOR-LESTE

FOR A

THIRD AGRICULTURE REHABILITATION PROJECT

OCTOBER 7, 2004

Rural Development and Natural Resources Sector Unit
East Asia and Pacific Region

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization

CURRENCY EQUIVALENTS

(Exchange Rate Effective as June 2003)

Currency Unit = US Dollar
Local Currency = USD 1

1 USD = 1 EUR
1 EUR = 1 USD

FISCAL YEAR

July 1 — June 30

ABBREVIATIONS AND ACRONYMS

Aldeia	Sub-Village (Hamlet)
ACIAR	Australian Centre for International Agricultural Research
ARP	Agriculture Rehabilitation Program
ARP III	Third Agriculture Rehabilitation Project
ARP II	Second Agriculture Rehabilitation Project
ARP I	(First) Agriculture Rehabilitation Project
AusAID	Australian Agency for International Development
ASC	Agriculture Services Centres
CARITAS	Catholic Relief, Development and Social Service Organization
CAS	Country Assistance Strategy
CEP	Community Empowerment Project
CFET	Consolidated Fund for East Timor
CFO	Chief Financial Officer
CGIAR	Consultative Group of International Agriculture Research
CIDA	Canadian International Development Agency
CPP	Community Participation Procedures
CQS	Selection Based on Consultants' Qualifications
DAC	District Agriculture Coordinator
DAO	District Agriculture Offices
DFO	District Finance Officer
DIO	District Irrigation Officers
DoE	Division of Environment
EC	European Commission
ENSO	El Niño Southern Oscillation
EOP	End-of-Project
ERR	Economic Rate of Return
ETADEP	Ema Matan Dalan ba Progresu (People Leading Towards Progress)
EUR	Euro
€	Euro
FA	Financial Advisor
FAO	Food and Agriculture Organization (of the United Nations)
FAT	Fundasaun Amizade de Timor (Timor Friendship Foundation)
FMR	Financial Monitoring Report
FY	Fiscal Year
GDP	Gross Domestic Product
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Society for Technical Cooperation)
Ha	Hectares
IAPSO	Inter-Agency Procurement Services of the United Nations
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
ICT	Information and Communication Technology

IDA	International Development Association
IT	Information Technology
IRR	Internal Rate of Return
JICA	Japan International Cooperation Agency
LCS	Least Cost Selection
MAFF	Ministry of Agriculture, Forestry and Fisheries
MDE	Ministry of Development and Environment
M&E	Monitoring and Evaluation
MOA	Memorandum of Agreement
NDP	National Development Plan
NGO	Nongovernmental Organizations
NCB	National Competitive Bidding
NPV	Net Present Value
NRM	Natural Resources Management
OALGD	Office of Administration and Local Government and Development
OIE	Office Internationale des Epizooties
OP	Operational Policy
OXFAM	Oxford Famine Relief
PMU	Project Management Unit
PPPS	Planning, Policy and Program Services (of MAFF)
PSW	Procurement of Small Works
ROC	Return of Capital
SA	Social Appraisal
SBD	Standard Bidding Documents
SCDO	Sub-District Community Development Officers
SDO	Sub-District Development Officer
SEAFMD	Southeast Asia Foot and Mouth Disease
SIL	Specific Investment Loan
SMEC	Snowy Mountains Engineering Cooperation
SOE	Statement of Expenses
SSB	Single-Side Band (radio)
SSS	Single Source Selection
Suco	Village
TFET	Trust Fund for East Timor
TOR	Terms of Reference
US$	United States Dollar
USAID	United States Agency for International Development
USD	United States Dollar
UNDP	United Nations Development Programme
UNOPS	United Nation Office of Project Services
UNTAET	United Nations Transitional Administration in East Timor
VLW	Village Livestock Workers
WFP	World Food Programme
WUA	Water Users' Association
YAYASAN HAK	Rights Foundation

Vice President:	Jemal-ud-din Kassum, EAPVP
Country Director:	Xian Zhu, EACNF
Sector Director:	Mark D. Wilson, EASRD
Sector Manager:	Hoonae Kim, EASRD
Task Team Leader:	Sofia Bettencourt, EASRD

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not be otherwise disclosed without World Bank authorization.

TIMOR-LESTE
THIRD AGRICULTURE REHABILITATION PROJECT

CONTENTS

	Page
A. Strategic Context and Rationale	1
1. Country and Sector Issues	1
2. Rationale for Bank Involvement	1
3. Higher Level Objectives to which the Project Contributes	1
B. Project Description Summary	
1. Project Instrument	2
2. Project Development Objective and Key Indicators	2
3. Project Components	3
4. Lessons Learned and Reflected in the Project Design	4
5. Alternatives Considered and Reasons for Rejection	5
C. Implementation	
1. Partnership Arrangements	6
2. Institutional and Implementation Arrangements	6
3. Monitoring and Evaluation of Outcomes/Results	7
4. Sustainability	7
5. Critical Risks and Possible Controversial Aspects	8
6. Grant Conditions and Covenants	9
D. Appraisal Summary	
1. Economic and Financial Analyses	10
2. Technical	11
3. Fiduciary	12
4. Social	12
5. Environmental	13
6. Safeguard Policies	14
7. Readiness and Compliance	15
Technical Annexes	
Technical Annex 1: Country and Sector Background	16
Technical Annex 2: Major Related Projects Financed by the Bank and Other Agencies	25
Technical Annex 3: Results Framework and Monitoring	26
Technical Annex 4: Detailed Project Description	35
Technical Annex 5: Project Costs	51
Technical Annex 6: Implementation Arrangements	54
Technical Annex 7: Financial Management and Disbursement Arrangements	65
Technical Annex 8: Procurement	74
Technical Annex 9: Economic and Financial Analysis	84
Technical Annex 10: Safeguard Policy Issues	95
Technical Annex 11: Social Analysis	122

Page

Technical Annex 12: Environmental Analysis 130
Technical Annex 13: Technical Evaluation 140
Technical Annex 14: Project Preparation and Supervision 154
Technical Annex 15: Documents in the Project File 157
Technical Annex 16: Statement of Loans and Credits 158
Technical Annex 17: Country at a Glance 160

Map IBRD no. 30626R1

TIMOR-LESTE
THIRD AGRICULTURE REHABILITATIONPROJECT

Project Appraisal Document

East Asia and Pacific Region
EASRD

Date: October 7, 2004	**Team Leader:** Sofia U. Bettencourt
Country Director: Xian Zhu **Sector Director:** Mark D. Wilson **Sector Manager:** Hoonae Kim **Project ID:** P079320 **Lending Instrument:** Specific Investment Loan (SIL)	**Sector(s):** General agriculture, fishing and forestry (30%); Irrigation and drainage (30%), General information and communication (15%), Animal production (20%), Agriculture marketing and trade (5%) **Theme(s):** Water resource management (P), Other rural development (P), Participation and civil engagement (S) **Environmental Screening Category:** B **Safeguard Screening Category:** S2

Project Financing Data

[ ] Loan [ ] Credit [X] Grant [ ] Guarantee [ ] Other:

Financing Plan (US$m equivalent):

Source	Local	Foreign	Total
DEMOCRATIC REPUBLIC OF TIMOR-LESTE	1.5	--	1.5
EUROPEAN COMMISSION (Administered by IDA)	2.6	4.3	6.9[1]
SPECIAL FINANCING (TFET)	1.4	1.6	3.0
Total:	5.5	5.9	11.4

Recipient: DEMOCRATIC REPUBLIC OF TIMOR-LESTE
Responsible agency: MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES

Estimated Disbursements (Bank FY/EUR m)[2]: European Commission

FY	*04*	*05*	*06*	*07*
Annual	0.0	2.3	3.2	1.4
Cumulative	0.0	2.3	5.5	6.9

Estimated Disbursements (Bank FY/US$m): TFET

FY	*04*	*05*	*06*	*07*
Annual	0.9	1.5	0.5	0.1
Cumulative	0.9	2.4	2.9	3.0

Project implementation period: January 15, 2004-December 30, 2006
Expected effectiveness date: January 25, 2004
Expected closing date: June 30, 2007 (TFET Grant); December 31, 2007 (EC Grant)

[1] – The precise amount of the EC contribution is *€ 6,854,530*. Figures in the PAD are shown rounded for consistency.

[2] – The PAD assumes a parity exchange rate, *1€ = 1 US$*, taking into consideration recent fluctuations.

Does the project depart from the CAS in content or other significant aspects? *(See Section A.3)*	○ Yes	● No
Does the project require any exceptions from Bank policies (See Section D.6) Exception to notification requirements under International Waterways policy (OP 7.50)	● Yes	○ No
Have these been approved by Bank management? Approved September 17, 2003	● Yes	○ No
Is approval of any policy exception sought from the Board?	○ Yes	● No
Does the project include any critical risks rated "substantial" or "high" ? *(See Section C.5)*	● Yes	○ No
Does the project meet the Regional criteria for readiness for implementation *(See Section D.7)*	● Yes	○ No

Project development objective *(See B.2, Technical Annex 3)*

The project aims to strengthen the capacity of the Ministry of Agriculture, Forestry and Fisheries (MAFF) and its development partners to assist rural communities in increasing their production and income in a sustainable way.

Project description *(See Sections B.2 and B.3, and Technical Annex 4)*

Component 1, *Participatory Development and Natural Resources Management*, will support MAFF's main program of assistance to upland and coastal communities, aiming to strengthen their resilience and make them less vulnerable to external shocks.

Component 2, *Irrigation Rehabilitation and Management,* will support MAFF's main program of assistance to rural communities in lowland irrigated areas.

Component 3, *Services to Farmers,* will help institutionalize three essential services to farmers: (a) information; (b) animal health; and (c) agri-business support.

Component 4, *Program Management,* will assist MAFF in developing key national policies, strategies, and legislation, strengthen its managerial and technical capacity, and carry out project management.

Which safeguard policies are triggered if any? *(See Section D.6, Technical Annex 10)*

Policy	Triggered
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	**Yes**
Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	**Yes**
Forests (OP 4.36, GP 4.36)	**Yes**
Pest Management (OP 4.09)	**Yes**
International Waters (OP 7.50)	**Yes**
Involuntary Resettlement (OP/BP 4.12)	**Yes**

Significant, non standard conditions: *(See Section C.6) :*

Grant effectiveness (TFET grant only): Appointment of MAFF staff for procurement, financial management, and monitoring and evaluation, and advisors for project management, procurement, and financial management.

Condition of Disbursement (EC grant only): Rehabilitation of Caraulun irrigation scheme would be subject to adoption of a Ministerial Order defining responsibilities of Government and communities for the Caraulun irrigation operation and maintenance, a topographic survey, establishment of Water User Associations and agreement on land use, and assignment of staff for construction and supervision.

Article II: The Recipient shall make no withdrawals from the TFET Grant Account for expenditures financed, or to be financed, by the EC Grant. Similarly, under the EC Grant Agreement, the Recipient shall make no withdrawals from the EC Grant Account for expenditures financed, or to be financed, by the TFET Grant.

Covenants applicable to project implementation See Section C.6.

A. Strategic Context and Rationale

1. Country and Sector Issues: *(see Annex 1)*

Timor-Leste faces the double challenge of cementing its new political and socio-economic structure while meeting the rising expectations of its people. Nearly 40 percent of the population remains poor, and some 50-70 percent of the rural households suffer from chronic food insecurity. These problems are partially natural – caused by periodic droughts and floods – and partially institutional; a legacy of the disempowerment and dependency that prevailed during the Indonesian administration. Despite rehabilitation of much of the infrastructure destroyed in 1999, employment in rural areas remains scarce (especially for the youth), markets are under-developed, and prices have fallen for major agriculture commodities such as rice and coffee. This places considerable pressure on the new Ministry of Agriculture, Forestry and Fisheries (MAFF) which currently operates with a staff of 180 and an annual budget of just US$1.8 million.

MAFF's goals are closely aligned with those of the 2002-07 National Development Plan (NDP): *to reduce poverty in all sectors and regions, and to promote equitable and sustainable growth.* In order to halve poverty within 25 years, Timor-Leste will need to achieve agricultural growth rates close to 6 percent a year, promote broad-based participation in economic opportunities, and reduce population growth. To address these challenges and encourage further national stability, MAFF prioritized all its programs in 2003 according to the "*Road Map for Implementation of NDP Programs*". The Road Map assigned highest priority to policy development; natural resources legislation and strategies; support to rural communities; information services; and coordination with donors and nongovernmental organizations (NGOs). The Third Agriculture Rehabilitation Project (ARP III) was designed in accordance with these priorities as well as lessons learned from previous ARP implementation phases.

2. Rationale for Bank Involvement: *(see Annex 1)*

This project is the third phase of the Agriculture Rehabilitation Program in Timor-Leste (ARP), a US$17.8 million grant from the multi-donor Trust Fund for East Timor (TFET) executed by MAFF and supervised by the International Development Association (IDA). ARP has been the major program of donor assistance to MAFF since 2000, starting with the then-Division of Agriculture Affairs. By emphasizing flexibility and periodic adjustments based on lessons learned, ARP helped MAFF adjust to the challenges posed by the reconstruction phase (ARP I), transition phase (ARP II) and now the sustainability phase of post-conflict recovery (ARP III).

Since early 2001, donors such as AusAID, UNDP/UNOPs, FAO, Portugal, Japan, GTZ, CIDA and USAID initiated programs in rural development, specializing by district and/or topic, and operating generally within a programmatic framework discussed annually during Joint Donor Missions. Total donor disbursements to rural development in FY04 are estimated at US$14 million. This provided needed supplement to MAFF's limited budget (US$1.8 million in FY04), but also stretches its capacity and raised the need for further donor coordination. By pooling European Commission (EC) and TFET resources under the ARP program umbrella, the project will further help build staff capacity, coordinate donor assistance, and institutionalize key priority programs within the Ministry.

3. Higher Level Objectives to Which the Project Contributes *(see Annex 3)*

Timor-Leste's agriculture goals are (a) *to attain food security and improve self-sufficiency; and* (b) *to generate rural employment and increase income, through farming system diversification and agro-industrial development.* The project will contribute to these goals by strengthening MAFF's main programs of assistance to rural communities, while delivering essential services in the areas of agriculture information, animal health, and agri-business support. Together with other donor-funded projects, ARP

III will also help MAFF develop key agricultural and natural resources policies needed to clarify the roles of the government, rural communities and civil society in the sustainable management of the sector.

Although no Country Assistance Strategy exists yet for Timor-Leste, the project is consistent with the 2000 Transitional Support Strategy (IDA/R2000-193), which recommended a short-term focus on social safety nets, agricultural recovery, and local ownership at all levels. It also follows closely the conclusions of the 2002 Joint Donors Agriculture Mission, which recommended strengthening community-based organizations and farmers' associations, further integrating MAFF services and policies, improving coordination, and promoting environmental sustainability and natural resources management.

B. Project Description Summary

1. Project Instrument

The project will follow a Specific Investment Loan (SIL) instrument, disbursed as a grant. This instrument was selected because the current IDA-managed Transitional Support Program, which provides budgetary support to the Government, contributes relatively little to the agriculture sector (MAFF received less than 2.5 percent of the total public expenditures – US$74 million in FY04). At the same time, a sectoral investment instrument would have duplicated the role of the Transitional Support Program, and it would not have sufficiently targeted the MAFF programs which ARP supports.

2. Project Development Objective and Key Indicators *(see Annex 3)*

The first Agriculture Rehabilitation Project (ARP I; 2000-02; US$6.8 million from TFET) focused primarily on the rapid restoration of agriculture assets, irrigation infrastructure and restoration of vaccination services.

The Second Agriculture Rehabilitation Project (ARP II; 2002-2004; US$8.0 million from TFET) continued irrigation rehabilitation, but also piloted a program of assistance to upland and coastal farmers, and expanded services to farmers in information dissemination, animal health and farmers associations. It also supported policy studies and capacity building for MAFF staff.

The proposed Third Agriculture Rehabilitation Project aims to *strengthen the capacity of the Ministry of Agriculture, Forestry and Fisheries and its key development partners to assist rural communities in increasing their production and income in a sustainable way.* The project was designed as ARP's consolidation phase, with an emphasis on sustainability of activities, impact of achievements, and quality of outputs. The estimated total costs are US$11.4 million equivalent, including € 6,854,530 (US$6.9 million equivalent) from the EC, US$3.0 million from TFET, and US$1.5 million from the Government of Timor-Leste. Key project outcomes will be measured through the following major impact indicators:

- All major project activities integrated into MAFF programs and funded by the Government by the end of the project.
- Average rice yields in rehabilitated irrigated areas increasing from 1.5 to 2.0 metric tons per hectare per crop by the end of the project (EOP). Cropping intensity in Caraulun scheme at 160% by 2008.
- 70 percent of farmer beneficiaries satisfied with the services received.

The sustainability and integration of project activities into MAFF will be assessed through the FY08 budget allocation. MAFF is conducting a crop yield survey which will serve as a baseline to determine the impact of rehabilitated irrigation schemes. MAFF will also design a farmer servicing survey to measure farmers' satisfaction for services provided.

3. Project Components *(see Annexes 4 and 5)*

The project will include four major components:

- Participatory Development and Natural Resources Management (US$1.3 million)
- Irrigation Rehabilitation and Management (US$3.5 million)
- Services to Farmers (US$4.2 million)
- Program Management (US$2.4 million)

The first component will be funded fully by TFET. The remaining components will be co-financed by EC and TFET (see Annex 5, and Tables B and C, Annex 7).

Component 1 – Participatory Development and Natural Resources Management, will support MAFF's main assistance program to **upland and coastal communities**. It will promote improved self-reliance and natural resources management to strengthen communities' resilience and make them less vulnerable to external shocks (such as periodic droughts and chronic food insecurity). It targets an estimated 50 villages in seven districts[1] – Dili, Lautem, Liquiça, Manufahi, Covalima, Baucau, and Oecussi, or approximately 10,000 rural households (8 percent of Timor-Leste's rural families). About 30 percent of direct beneficiaries will be women.

The project will finance small group grants, services, training for farmer groups, MAFF staff, facilitators, and partner NGOs, workshops and cross visits, vehicles, office equipment, and incremental operating costs in support of the following activities:

- Continuing technical and facilitation support to 30 pilot villages initiated during ARP II;
- Expansion to about 20 new villages, including provision of grants to small groups of farmers.

Component 2 – Irrigation Rehabilitation and Management, will support MAFF's main assistance program to farmers in **lowland irrigated areas**, based on procedures developed during ARP I and II. The component will target about 4,000 rural families in all 13 districts. About 20 percent of members of Water User Associations (WUAs) are expected to be women.

The project will finance civil works, construction supervision, services, training, cross visits, farming inputs, office equipment, vehicles, and incremental operating costs in support of:

- Community rehabilitation of small irrigation schemes and rural access roads;
- Rehabilitation of the Caraulun irrigation scheme in Manufahi district;
- Support to Water User Associations (WUAs) and capacity building for MAFF staff;
- Survey and mapping of selected irrigation schemes.

Component 3 – Services to Farmers, will help institutionalize three basic MAFF **services to farmers**: Information, Animal Health, and Agri-Business support.

Sub-Component 3.1. Information to Farmers, will increase MAFF's capacity to provide information to farmers (targeting most of the 450,000 people with radio access), and foster two-way communication with rural areas. The project will fund technical assistance, information materials and programs, equipment, small works, training and cross visits, translation services, and incremental operating costs in support of:

- Information programming, including face-to-face communication and mass media;
- Support to MAFF's Liaison Secretariat with the Consultative Group of International Agricultural Research (CGIAR) and other international centers of expertise;
- Pilot community-based information networks at the district level;
- Rehabilitation of a network of automated agro-meteorological stations and rain gauges.

[1] UNDP/UNOPs, AusAID and Portugal are implementing similar programs in the remaining six districts.

Sub-Component 3.2. Sustainable Animal Health Services, will target the estimated 567,000 rural people living in households which own livestock, a major determinant of rural incomes. The project will finance technical assistance, vaccines and veterinary supplies, equipment, vaccination campaigns, vehicles, training and cross visits, and incremental operating costs for:

- National vaccination campaigns
- Replacement of cold chain equipment;
- Training and regulatory support to a network of private Village Livestock Workers (VLWs);
- Capacity building for livestock staff.

Sub-Component 3.3. Support to Agri-businesses, will strengthen MAFF's advisory services to rural producer organizations, as well as help promote key niche markets targeting some 1,200-1,500 grain seed growers (mostly rice and maize), and about 210 farming families involved in niche market commodities (such as candlenut and coconut oil production). The project will finance technical assistance, small works, agriculture and office equipment, farm inputs, training, and incremental operating costs for:

- Support to seed producers;
- Support to priority niche market commodities;
- Strengthening of agri-business support services in MAFF.

Component 4 – Program Management, will help MAFF to **manage the project**, continue to develop **key national policies**, and strengthen the Ministry's managerial and technical **capacity**.

Sub-Component 4.1. Policy and Strategy Development, will fund high-level advisors and consultative workshops to help MAFF develop priority sectoral and institutional policies and strategies. These are expected to include an exit strategy for the ARP program (see Annex 1).

Sub-Component 4.2. Project Management and Capacity Building, will provide technical assistance, office, computer equipment and furnishings, workshops, training, study tours, and incremental operating costs in support of the following activities:

- Priority equipment and furnishings for District, Regional, and Central Agricultural Offices;
- Priority management and technical training for MAFF staff; and
- Project management support, including auditing of project accounts.

Though the project is complex, the activities are for the most part a consolidation of previous ARP phases, for which there is already experience in MAFF. Continuation of support is justified given the long lead-time needed to institutionalize programs within an emerging institution.

4. Lessons Learned and Reflected in the Project Design *(see Annex 1)*

ARP III is based on key lessons from ARP I and II and from the reconstruction period (2000-01):

- *The need for flexibility and periodic evaluations.* In a fluid, post-conflict environment, there is a need to adopt a phased, flexible approach to implementation, with periodic evaluations to document lessons of experience and adjust the program to emerging conditions.
- *A 'Farmer First' approach.* Since the needs of rural households are diversified and not focused on any single sub-sector, service delivery must respond to their multiple needs in a timely and effective manner. This 'farmer first' approach emphasizes inter-sectoral, demand-based assistance, and further strengthening of farmers' groups and community-based organizations. As an example, rehabilitation of larger irrigation schemes under ARP I and II proved insufficient to raise yields without parallel WUA and extension support to farmers.
- *Balanced investments between irrigated and upland areas.* While ARP I focused primarily on irrigated areas, subsequent assessments stressed the need to also assist upland areas and promote food security through farm system diversification and strengthened self-reliance.

- *Direct grant assistance to communities.* During the rehabilitation phase (2000-01), MAFF faced major difficulties distributing a small number of valuable inputs to a large number of needy farmers. By contrast, community irrigation, which relied on contracts with farmers' groups, was well received and helped foster local ownership. The 2001 Donors' Mission recommended a shift from input provision to direct grant assistance to rural communities.
- *Ensuring sustainability.* Many donor-funded projects during the rehabilitation phase paid high wages for rural labor. While this may have been necessary to help create cash-earning opportunities in rural areas, it also promoted further dependence on external assistance. Lessons learned point to a need to promote further community self-reliance, and not pay for activities that communities are expected to maintain or support on their own once the project ceases.
- *Policy and strategy support.* ARP II has proved the value of reserving a pool of funds for MAFF to contract high-level policy advisors. However, the scope of advisory services needs to remain flexible to meet evolving needs.
- *Monitoring droughts and floods.* The chronic effects of droughts and floods on food security makes it important for MAFF to collect reliable agro-meteorological data and strengthen its contacts with international monitoring systems, as well as promote 'no regrets' adaptation[2] practices amongst vulnerable communities.
- *Capacity building.* Lessons from ARP I and II indicate that foreign advisors may be needed for longer periods than originally envisaged, particularly in specialized fields such as project management, procurement and financial management. In addition, capacity transfer cannot be ensured by single training events, as staff turnover is high. Sectoral and farmer training are also best left to MAFF divisions to closely integrate with their operational programs.

5. Alternatives Considered and Reasons for Rejection

The following alternatives were considered and rejected by the project:

- *Government vs. communities' implementation.* Direct implementation of many project activities by MAFF - such as provision of inputs to farmers - was rejected in favor of shifting responsibilities to farmers' groups and private operators (such as VLWs). MAFF capacity – in both number of staff and training – will remain limited in the near term. A community-based approach, on the other hand, will help farmers participate more actively in matching project assistance to their specific needs.
- *Continued focus on irrigated areas.* A continued focus on irrigated areas, as initiated under ARP I, was rejected due to emerging evidence that upland areas tend to be the poorest and most vulnerable. Hence, the project continues to support the *Participatory Development and Natural Resources Management* piloted under ARP II for upland and coastal areas.
- *Investment on low-cost, high maintenance solutions.* Low investment cost options for communications and agro-meteorological units – such as posters and manual data collection - were considered and rejected due to the need to involve a large number of staff and difficulty of access to remote areas. Instead, the project will invest in suitable mass media technology (radio and e-mail) and automated systems to minimize the recurrent costs to MAFF.
- *Capacity building through long-term training.* The project considered the option of providing degree training to enhance long-term MAFF capacity. However, this was rejected in favor of short-term training due to the project duration, current staff limitations, and the need to establish solid criteria to ensure the return of trained staff to the civil service.

[2] - 'No regrets' adaptation are measures – such as watershed management – that decrease local vulnerability against climatic events, and which are beneficial regardless of the exact impact of the event in that location.

- *New activities vs. consolidation.* Consideration was given to supporting new activities, such as research. However, this was rejected in favor of consolidation of activities already started under ARP II, to help build upon lessons of experience and ensure sustainability. The only new activities – irrigation survey, support to agri-businesses, pilot community information, and agro-meteorology network – build upon previous components supported under ARP II (Irrigation, Agriculture Service Centers, and Information to Farmers). Given that private retailers are becoming active in rural areas, investment in new Agriculture Service Centers was no longer considered necessary.

C. Implementation

1. Partnership Arrangements *(See Annex 6)*

The project will be co-financed by the European Commission and TFET and supervised by IDA. The EC has negotiated an Administration Agreement with the World Bank under the *Trust Fund and Co-financing Framework Agreement between the Commission and the World Bank*, signed on November 8, 2001 and revised on March 17, 2003. IDA will then negotiate separate Grant Agreements for the TFET and EC grants with Timor-Leste.

The project will promote several partnerships: MAFF will involve NGOs in implementation of *Participatory Development and Natural Resources Management* component, and establish an Advisory Committee with interested donors and NGOs to share lessons of experience. An Irrigation Network will be also promoted to share experiences in irrigation. Under *Information to Farmers,* MAFF will further strengthen partnerships with international research organizations and re-activate an Information Forum; under *Support to Agri-Business,* MAFF is expected to partner with ACIAR/Seeds for Life for provision of certified seeds, and with GTZ for support to coconut and candlenut oil production. A Policy Advisory Group and Livestock Network are also expected to be established with interested partners. A project indicator has been developed to monitor the progress of these partnerships (see Annex 3).

2. Institutional and Implementation Arrangements *(see Annexes 6, 7 and 8)*

MAFF will be the executing agency. Project components are already being implemented by different MAFF Divisions, thus reducing the number of activities each Division is responsible for. The only new activities considered (see above) will be contracted out or, in the case of agri-business support, implemented by trained MAFF staff and advisors.

To further institutionalize the program, the Project Management Unit formed under ARP I and II will be absorbed into the MAFF structure. The Project Director (currently the Permanent Secretary of MAFF) will be responsible for project management and coordination, supported by a Project Management Advisor, and Financial and Procurement Advisors assisting the MAFF's Budget and Procurement Units. The MAFF Management Team (comprising all Director Generals and Directors) will continue to be responsible for policy and managerial decisions.

Project activities will be implemented at 3 levels: at the **village level**, by the village/sub-village *(suco/aldeia)* and farmers' groups; at the **district level** by district agricultural staff and their partners (e.g. NGOs and facilitators); and at the **central level** by the MAFF divisions responsible for each program (see Annex 6).

MAFF has recruited 180 national and district staff, and plans to increase its staff to 261 in 2004-05. Many have received training under various donor-funded projects. However, their capacity needs to be further strengthened, particularly in technical, managerial and facilitation skills. To supplement their capacity, international advisors will be contracted in specialized areas, and evaluated periodically with emphasis on their effectiveness in capacity transfer. Annex 6 includes a capacity analysis matching project requirements with the available staff, and identifying areas for future strengthening.

The financial management, fund flow, procurement and reporting will follow Government and IDA procedures already tested and established during ARP I and II, with further refinements to reflect lessons of experience (see Annexes 7 and 8). MAFF has recruited full-time financial and procurement staff, and will appoint a monitoring and evaluation specialist prior to project effectiveness.

3. Monitoring and Evaluation of Outcomes/Results *(see Annex 3)*

The MAFF Divisions implementing project components will prepare Quarterly Project Monitoring Reports, using simple monitoring forms and field data checklists updated from ARP II. MAFF's Monitoring and Evaluation officer, assisted by the Project Management Advisor, will integrate the reports into 6-monthly Progress Reports as an input to supervision missions.

During ARP I and II, MAFF Divisions have developed some capacity for field monitoring the technical aspects of the program. However, this needs further strengthening during ARP III to shift attention from physical outputs to quality and impact monitoring. The project will also seek to institutionalize quarterly program reviews, to enable MAFF to assess past effectiveness and plan the next quarter of activities.

Most project indicators are baseline-independent and will be monitored quarterly. For impact indicators requiring a baseline, MAFF will carry out a benchmark study prior to the start of the field activities, and commission an independent impact study at the end to determine project outcomes. MAFF will also organize a project launch, mid-term review and participatory impact evaluation workshops, involving national and district agriculture staff, NGOs, donors and community representatives.

4. Sustainability *(See also Section D.1 and Annexes 1 and 9)*

MAFF designed the project based on its past ARP experience and its emerging priorities. The Ministry earmarked US$1.5 million in counterpart funding to the project (about 29% of its annual budget) as a sign of its continuing commitment and integration of ARP activities in its core programs. Recurrent costs were realistically estimated and agreed with MAFF management (Annex 9).

The project was designed with a focus on sustainability. Grant funding for national vaccination campaigns, community irrigation and roads, and incremental operating costs will be progressively phased out: EC/TFET will fund them at a declining rate of 75%, 50% and 25%, during years 1 to 3 of the project, with the Government funding the remaining expenditures. Component 1, though initially reliant on contracted facilitators, will carry out a review at mid-term to evaluate the options to progressively devolve responsibilities to field staff, partner NGOs and regional government staff under the new governance structure. Reliance on external technical assistance is also expected to decline as the pilot projects mature and technical manuals are prepared. The budget for the component is consistent with a planned post-project expansion of 10-13 villages a year (1 per district).

Component 2 places a strong emphasis on WUAs to help ensure future operation and maintenance (O&M). Rehabilitation of the major irrigation scheme will only proceed after a network of WUAs is established. The O&M burden to the Government is being incorporated into forward budget estimates.

Component 3 was designed to meet MAFF's severe extension constraints. By training a network of private VLWs to provide simple animal health services to farmers for a fee, MAFF will help address its critical staff shortages. By establishing partnerships with CGIAR centers and investing in radio and e-mail communication, MAFF hopes to access global specialized advice on a least-cost basis. Fully automated agro-meteorological equipment was selected to minimize operating costs.

Sub-component 4.1 (Policy and Strategy Development) will help MAFF formulate a long-term sectoral strategy and exit strategy for the ARP program (see Annex 1). Reliance on foreign advisors remains a risk to sustainability, but the project will invest heavily on capacity building and on-the-job training of counterpart staff.

5. Critical Risks and Possible Controversial Aspects

As a project operating in a fluid post-conflict environment, ARP III entails substantial risks but also potentially high benefits. To address these risks, the project will follow a programmatic, flexible implementation, with an intensive supervision schedule and a 11 % contingency rate on expenditures. This will facilitate periodic evaluations and adjustments to emerging risks.

There are no major controversial aspects associated with the project. Most activities are a consolidation of those started under ARP I-II. However, two activities merit close monitoring:

Rehabilitation of Caraulun Irrigation Scheme. At 1,030 hectares (ha), Caraulun is the second largest irrigation scheme in Timor-Leste. Even though the rehabilitation works are technically simple and the project will re-establish pre-existing infrastructure and WUAs, many farmers have since left the area due to the damage to the scheme. About 291 ha of land have unclear land ownership status: 64 ha were used by Indonesian transmigrants which have now left the area; 165 ha were used by the church for a now discontinued youth program; and 62 ha were government land currently used by local farmers. The project will address this issue by carrying out a detailed survey of farmer plots, and requiring customary land use agreements as part of re-establishing the WUAs prior to the commencement of the rehabilitation works. Any tertiary canals proposed by communities will follow the mechanisms for voluntary land donation applicable to the rehabilitation of community irrigation and roads, specified in the land Policy Guidelines for ARP III. In the unlikely event that the Government would need to acquire land to rehabilitate the scheme, the provisions for compensation under the Guidelines would apply (Annex 10).

Village Livestock Workers. The private VLWs network started during ARP II is still new to Timor-Leste. Possible controversial aspects include farmers' ability to pay for VLW's services, and MAFF's capacity to adequately oversee the quality of the services. The project has considered this by ensuring that the VLW program is introduced gradually, and as a complement (rather than a replacement) of essential vaccination campaigns, which would continue to be funded by the Government. MAFF will also help establish a National VLW Association to ensure adequate certification and service quality monitoring.

Risks	*Risk Mitigation Measures*	*Risk Rating w/ Mitigation*
To project development objective:		
Occurrence of major natural disasters (e.g. major droughts, floods or pest infestations) of unusual scale or severity	Information services, agro-meteorology and strengthening of self-reliance will contribute to risk management and proactive adaptation at the farm level.	S
Farmers lack the right macro-economic and social incentives to increase their production following project assistance	Project will encourage farm system diversification to decrease vulnerability to market shocks, and strengthen self-reliance amongst farmers groups.	S
To component results		
Farmers do not change their current practices following irrigation rehabilitation	Project will strengthen WUAs prior to proceeding with Caraulun rehabilitation. Community irrigation schemes remain fully viable under current yields and practices	S
MAFF staff lacks the capacity to ensure that agricultural information is conveyed in a timely manner, accurately, and effectively	Project will provide communications expert to train local counterparts, and develop a feedback mechanism to improve information effectiveness	S
Rice seed producers may not be able to produce good quality seed and/or oil mills may become unprofitable	Project will help train and certify seed growers to help ensure quality; feasibility study for oil mills will be carried out prior to investment	M
Trained counterparts fail to apply new skills effectively or move on to other positions	All training will comply with a Training Plan approved by the Minister. Foreign advisors will be evaluated by their capacity transfer skills.	M
Overall Risk Rating		**S**

6. Grant Conditions and Covenants

For TFET Grant:

Condition of Effectiveness: Appointment of MAFF staff for procurement, financial management and monitoring and evaluation, and advisors for project management, procurement and financial management.

Article II: The Recipient shall make no withdrawals from the TFET Grant Account for expenditures financed, or to be financed, by the EC Grant.

Remedies of Trustee: The Grant will be suspended, cancelled or terminated if the EC Trust Fund Grant Agreement does not become effective by March 1, 2005, unless IDA establishes that this is not due to failure by the Recipient to perform its obligations, or alternative funding is found

For EC Grant:

Condition of Disbursement: Disbursement of Civil Works for rehabilitation of Caraulun shall be subject to (a) a Ministerial Order defining the responsibility of Government and communities in irrigation O&M at Caraulun; (b) completion of a detailed topographic survey, design and bill of quantities; (c) WUA establishment and signed agreement on land use; and (d) assignment of staff for construction supervision, satisfactory to IDA. The agreed action plan to comply with these requirements is included in Attachment A, Annex 13.

Withdrawal of Grant Proceeds: The Recipient shall make no withdrawals from the EC Grant Account for expenditures financed, or to be financed, by the TFET Grant.

Implementation Covenants (for TFET Grant and EC Grant Components):

- In carrying out Component 1 and Rehabilitation of Community Irrigation and Roads, the Recipient will apply the Operational Manuals for these components, and shall not amend its provisions without IDA's prior agreement.
- The Recipient will adopt and apply the Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III, ensure that land for Component 1 and Community Irrigation and Roads Rehabilitation is voluntarily provided by landowners, and take measures to avoid or minimize the acquisition of land or assets. Where this is unavoidable for the rehabilitation of major irrigation schemes, it shall ensure that any displaced persons will be provided with compensation in accordance with the Guidelines.
- In carrying out Component 2, the Recipient shall follow appropriate environmental procedures acceptable to IDA, including carrying out preliminary screening and implementing any environmental mitigation measures that may be required.
- If the proposed community-based irrigation scheme is located on international waterways, the Recipient will, in consultation with IDA, select schemes that involve only minor additions or alterations to existing schemes, will not adversely change the quality or quantity of water flows to other riparian state, or be adversely affected by other riparian possible water use. The Recipient will also comply with the provisions of any international agreements that may govern the waters of a selected community irrigation scheme.
- In carrying out support to agri-business under Component 3.3, the Recipient will ensure that any provision of pesticides will follow IDA's Operational Policy 4.09, and that appropriate training is provided to farmers on the safe use of pesticides.
- Training under the project will be carried out in accordance with a training program acceptable to IDA. Training evaluation procedures will be adopted by June 30, 2004.

D. Appraisal Summary

1. Economic and Financial Analyses *(see Annex 9)*

Economic Analysis

The project's total economic rate of return (ERR) is estimated conservatively at 17.7% with a net present value (NPV) at 12% of US$2.32 million. The economic analysis is a combination of cost benefit and cost effectiveness. Each component was assessed independently. The estimates were then combined to produce an overall rate of return. Potential social and environmental benefits, as well as benefits resulting from strengthening MAFF's capacity to implement future projects, were not included in the analysis.

Participatory Development Natural Resource Management. The computations were based on the expected Small Group Grants (US$200,000), and theoretical analyses of similar projects in Timor-Leste, where ERRs range from negative to in excess of 100%. An average ERR of 15% was assumed. In practice, some projects (e.g. vegetable gardens) may deliver high benefits immediately, while others (e.g. agro-forestry) may take much longer.

Irrigation Rehabilitation and Management. Community irrigation schemes involve the rehabilitation of schemes that have fallen into disuse. Based on experience from ARP I-II, limited investment will be required to bring previously irrigated land back into production for potentially large returns. The combined ERR for community irrigation and roads is estimated at about 47%. This assumes (conservatively) an average yield of 1.8 MT/ha/crop, a single crop, and a price of US$130/MT of paddy rice. Rehabilitation of the Caraulun irrigation scheme will potentially benefit an area of 1,030 ha. The economic analysis for this scheme estimates an ERR of 20% for an investment of US$1.6 million (about US$932/ha). The current yields are about 1.9 MT/ha with a single crop. The with-project benefits assume two crops a year (160% cropping intensity) with yields increasing to 2.5 MT/ha for the first crop, and 2.0 MT/ha for the second crop after five years. A price of US$130/MT of paddy was assumed.

Information to Farmers. The benefits of information through mass media cannot be easily measured due to the lack of baseline data. Using a cost-effectiveness analysis (based on an alternative of more extension officers for face-to-face communication) the estimated ERR is 17% for mass media and 22% for community-based information services.

Animal Health Services. Provided MAFF can sustain funding for vaccination campaigns or farmers are prepared to pay for future vaccination, the ERR of vaccinating pigs, chickens or cattle/buffalo against common diseases could reach 234% because the main capital outlay (cold chain upgrading) is relatively small compared to the benefits.

Agri-Business Support. The specific benefits of seed multiplication and niche market processing will be evaluated through a planned feasibility study. ARP I and II gave significant assistance to agriculture associations, and while they have yet to break even, they have only been trading for a year and further technical advice to these and other farmers' organizations is considered justified.

Program Management. The benefits for this component were not assessed, though they could be substantial through new policies and training. The costs were included in the overall ERR.

Sensitivity Analysis. The overall ERR is robust to changes in most project assumptions. The ERR sensitivity is highest for changes in rice prices, as well as prices of vaccinated pigs. World rice prices are currently at low levels and are projected to increase by about 10% over the next decade. A 20% increase in rice prices above the base price would increase the overall ERR to 20.5%, while a 20% decline in rice prices would result in an ERR of 14.6%. A 20% decline in the price of pigs would reduce the ERR to 14.6%. If farmers in Caraulun failed to increase their yield above 1.9 MT/ha or plant a second crop, the project ERR would be reduced to 15.6% (the ERR for Caraulun would fall to 8.1%). Similarly, if community information services failed, the ERR would decline to 16.3%.

Financial Analysis. The financial rate of return for the project is the same as the ERR (17.7 %) as existing tariffs on agriculture products have little effect on prices of domestically produced commodities. The estimated recurrent cost associated with the ARP program are about US$737,000 a year, excluding staff costs (see Annex 9). This is equivalent to 26% of MAFF's forward budget estimates for FY07. Given the high degree of integration of ARP III with MAFF's programs, this is considered sustainable. The major recurrent costs are the annual vaccination campaigns (US$310,000 a year), and O&M for the 16,500 ha of irrigated land served by schemes which will have been rehabilitated under ARP I-III by 2007 (US$234,000 a year).

2. Technical *(see Annex 13)*

The *Participatory Development and NRM Component* relies on a 'farmer first' approach, based on well tested principles of collaborative natural resources management, community-driven development, and 'no regrets' adaptation. It is also consistent with the Government's focus on strengthening local governance. The approach relies on direct grants to farmer groups to carry out their own proposals. The revised positive list of potential activities (see Annex 4) offers technically simple options – such as forage production, higher yielding staple crops, and simple agro-forestry – designed to promote community resilience to food insecurity, droughts and floods. It also introduces NRM principles which take into account farmers' economic needs.

The community rehabilitation of *small-scale irrigation schemes and access roads* will follow the established technical standards developed during ARP I and II. The investment costs – US$160/ha for community irrigation schemes and US$3,200 per km for access roads – compare favorably with similar schemes in the region. The importance of these works for food security was shown in 2003, when they helped boost the rice harvest by 12% at the same time as the yield of other staple crops (maize and cassava) declined due to drought. Amongst the four major-damaged irrigation schemes in Timor-Leste, the repair of Caraulun proved the most viable (Annex 13). The proposed rehabilitation (US$598/ha for headworks and US$335/ha for canals) involves a free intake with flume, enabling the scheme to work as originally designed and thus minimizing the risk of failure. Works in Caraulun will only proceed after WUAs are established. To help ensure O&M, the project will also invest on strengthening existing WUAs and on organizing one WUA per district amongst community schemes with highest demonstration value.

Information to Farmers will build upon past ARP lessons, experience from other developing countries, and the urgent need to strengthen two-way communication between MAFF, district staff, and farmers in remote areas. The project will promote face-to-face contact with farmers and mass media (particularly radio) which have proven the most efficient communication methods in the past. The CGIAR Liaison Secretariat at MAFF will develop a rapid response system for most frequently asked questions, and help MAFF liaise with international centers of excellence in a cost-effective manner. In addition, ARP III will pilot e-mail communication with district centers opened to local agricultural stakeholders, based on the successful experience of the People First Network in remote areas of the Solomon Islands.

MAFF will continue to support the *vaccination campaigns* started during ARP I, to prevent outbreaks of the most common diseases - Hemorrhagic Septicemia amongst cattle and buffaloes, hog cholera amongst pigs, and Newcastle disease amongst chickens. The Government's decision to continue to provide free vaccination over the short-term is based on the inability of very poor households to pay for vaccines, which could place the livestock population at risk.

The *Village Livestock Workers* program started under ARP II – based on the successful Cambodian model of village para-veterinarians - will be expanded under ARP III to help address the severe shortage of trained veterinarians in Timor-Leste. At full implementation, the program will train 265 VLWs (two per three villages), covering all 498 villages in Timor-Leste. To ensure regulatory control, the project will provide refresher training bi-annually, help establish a National Association to certify VLWs, and help them procure veterinary supplies in bulk.

The project will also help strengthen *agri-business support* services in MAFF to meet the increasing demand from farmers' associations for technical advice and regulatory support. It will support two promising niche markets: (a) certified seed production; and (b) small-scale processing (expected to focus on candlenut and coconut oil). Farmers in rice producing areas are constrained by the availability of certified seed, which is now obtained primarily from Surabaya (Indonesia). MAFF – through key partners - will help key farmers test new varieties suitable to Timor-Leste, and help establish a Seed Growers' Association. Based on the results of a feasibility analysis conducted by GTZ and IDA's ongoing niche market study, the project will also help farmers develop priority niche markets, e.g. by providing small oil mills and helping link processors of candlenut and coconut oil with retail outlets. The oil mills will be provided to an established farmer association or directly to farmer groups with a lease-to-buy option.

3. Fiduciary *(see Annex 7 and 8)*

The financial management system and procedures are satisfactory and adequate for the project implementation. MAFF's Finance and Budget Support Services will be responsible for financial management. Accounting, internal controls and audits will build upon ARP I and ARP II procedures which have been progressively strengthened over the last 3 years. MAFF's Finance and Budget Support Services maintain an adequate accounting system to record project resources and expenditures. The annual financial statements for ARP I and II have been unqualified, with no significant irregularities or fiduciary accountability issues. Previous weaknesses – primarily on responsiveness of the accounting system to Freebalance (the accounting software adopted by the Government), lack of adequate fixed asset register, budget procedures to track expenditures against funds, delays in submission of quarterly Financial Monitoring Reports, and inadequate capacity transfer to Timorese counterparts – are being addressed. The Financial Advisor is expected to be appointed on a full-time basis as of February 2004.

The project will follow standard Bank procurement procedures. The procurement risk is high because of continuing weaknesses in Timor-Leste's counterpart procurement capacity. This risk will be partially mitigated by the appointment of an international procurement advisor on a full-time basis for at least 24-months (a condition for effectiveness). While the advisor will be responsible for processing procurement, his/her performance will be measured by success in capacity transfer. At present, MAFF has recruited a local procurement officer and a trained procurement consultant. The adequacy of these arrangements will be carefully monitored during implementation. The EC and TFET Grant Agreements will include, as an Annex to the Procurement Schedule, mandatory provisions for national competitive bidding.

4. Social (see *Annex 11)*

With the expected issuance of an Autonomy Law at the end of 2003, Timor-Leste is in the process of establishing its system of local governance from the districts to the village (*suco*) level. This presents an opportunity for MAFF to institutionalize community-driven approaches in agriculture, through the direct grant approach used in component 1 (for upland and coastal areas), and the community contracts used for small irrigation and road rehabilitation (for lowland areas). A potential risk in component 1 is the communities' capacity to absorb and manage small grants efficiently and sustainably. Based on ARP II experience, the project has reduced significantly the size of the grants and adopted tighter guidelines to ensure community in-kind contributions of free labor, land, and local materials.

ARP III reflects the combined experience of MAFF, as well as partner NGOs, farmers, and private service providers. MAFF incorporated this feedback during the ARP II Mid-Term Review, the evaluation of ARP I, a May 2003 stakeholder meeting to discuss component 1, and an ARP III stakeholder workshop in August 2003. An extensive social appraisal was also carried out in March 2003. These reviews

identified, among other issues, the need for further technical back-up to the pilot communities, and for greater participation and partnerships with civil society. In response, the project will strengthen post-grant technical assistance to community projects, involve NGOs in facilitation and external evaluations, and strengthen partnerships with other donors and NGOs in the areas of agriculture policy, NRM, irrigation, livestock, information, and agri-business. The VLW program will also respond to farmers' needs for further animal health services.

Beneficiary targeting remains unchanged from ARP II, focusing primarily on poor upland and coastal communities as well as lowland irrigated areas. Vaccination, VLWs, information, and agri-business support will be national in scope. Decisions over the use of grants in component 1 will be made collectively, with no benefit expected to accrue to particular individuals (in the ARP II pilots, the grants benefited on average 65 % of the village population). Women's participation has been strengthened by increasing the number of targeted women's group beneficiaries and women facilitators, training women to vaccinate chickens, and increasing the number of female VLWs. Vaccinators will record the levels and reasons for farmer non-participation in vaccination through a newly introduced voucher system, so the program can be adjusted progressively to achieve greater coverage.

During ARP II, questions were raised about community user rights over natural resources – reforestation activities in particular. Whilst no specific conflicts were reported – all activities are carried out in land which was voluntarily provided by their recognized owners – ARP III is expected to fund a study (under Component 4.1) to inform how natural resources management policies should address community user rights and traditional tenure in the future.

Social monitoring will be particularly important in component 1, and will be part of the regular monitoring carried out by project facilitators and district staff. Emerging issues should be discussed during monthly facilitator meetings and remedial action taken. Villages which breach financial management procedures, show a concentration of beneficiaries, or poor achievement of development targets will be identified, provided with remedial support, and excluded from the program if they fail to respond. Village leadership will be crucial in identifying negative social impact, providing guidance to facilitators in its resolution, and ultimately, deciding and applying sanctions (particularly in relation to traditional laws governing NRM). Importantly, selection of villages will include consideration of the strength of traditional leadership. The project will also contract out external evaluations to determine the desirability and optimal pace of expansion to new villages.

5. Environmental *(see Annex 12)*

During pre-appraisal, IDA conducted a field review to assess how environmental safeguards were applied to ARP II activities. ARP II also funded a major feasibility study in Caraulun, including an environmental and social analysis, which was reviewed by IDA at pre-appraisal. The environmental review confirmed the absence of major environmental impacts under past ARP projects and was used to adjust the environmental mitigation measures already adopted under the program, in order to improve their applicability (see Annex 12 and Section D.5). Based on this review, ARP III is not expected to have significant, complex, or irreversible adverse environmental impacts.

Both component 1 and 2 are expected to help reduce community vulnerability to environmental changes (floods and droughts). For component 1, simple best practices criteria (Annex 12, Table 1) will be followed and monitored for each small village grant, as specified in the Operational Manual and materials for community facilitators. Some of the NRM activities may include rehabilitating denuded communal areas within the villages, to ensure the quality and quantity of water supply for domestic and agriculture use, and this is expected to result in positive environmental benefits.

All irrigation and access roads rehabilitation will be carried out in pre-existing schemes, and no works will be supported inside critical or important natural habitats or protected areas. As part of the Operational Manual for community irrigation and roads, MAFF will monitor compliance with simple environmental best practices and, if required, organize simple training in environmental best practices to communities involved in the works. The rehabilitation of the Caraulun scheme will follow an environmental management plan, which includes mitigation measures and monitoring. These measures will be included in the terms of reference of the supervisory engineer.

MAFF will be responsible for supervising the environmental mitigation measures and social safeguards. The Division of Environment (DoE) will be consulted as required to advise on the effectiveness of mitigation measures and propose alternatives. The bi-annual progress reports will include a section on environmental and social issues, a copy of which will be provided to DoE.

6. Safeguard Policies *(see Annex 10)*

Policy	Triggered
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	**Yes**
Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	**Yes**
Forests (OP 4.36, GP 4.36)	**Yes**
Pest Management (OP 4.09)	**Yes**
Cultural Property (OPN 11.03, being revised as OP 4.11)	**No**
Involuntary Resettlement (OP/BP 4.12)	**Yes**
Indigenous Peoples (OD 4.20, being revised as OP 4.10)	**No**
Safety of Dams (OP 4.37, BP 4.37)	**No**
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	**Yes**
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)	**No**

The project's Safeguard Screening Category is **S2.** Some safeguard policies are triggered, but effects are limited in their impact and are technically and institutionally manageable. The project's Environmental Screening Category is **B** (see Annex 10 and 12).

Aside from OP 4.01 (Environmental Assessment), the project triggers the following safeguard policies: (a) Natural Habitats; (b) Forests; (c) Pest Management; (d) Involuntary Resettlement; and (e) International Waterways.

Natural Habitats: All community based irrigation and farm-to-market access roads proposed for rehabilitation under the project will be located outside protected areas (one of the criteria used in their selection). Component 1, however, may be carried out in and around natural habitat areas. The negative list excludes any activity which may impact adversely on important or critical natural habitats, including those at altitudes above 2000 meters, in mangrove areas, wetlands or coral reefs.

Forests: Component 1 will include community-based forest management activities, such as reforestation of community-owned forest land, and sustainable utilization of non-timber forest products in natural forests within village boundaries (e.g. bamboo or honey). It will not involve harvesting timber from natural forests.

Pest Management: This policy may be triggered in limited occasions. Under the Irrigation Rehabilitation component, and Agri-business support to seed producers, farmers may use limited amounts of pesticides to control pests or diseases. In case pesticides need to be provided by the project in support of these activities, MAFF will exclude all Class I toxic pesticides and Class II moderately hazardous pesticides (see Tables 2, Annex 12). MAFF will also provide training on Integrated Pest Management principles and safe disposal methods.

Involuntary Resettlement: No involuntary resettlement or land acquisition which results in loss of income is expected to take place as a result of project activities. However, as small amounts of community land may be required for community-based and owned activities under Component 1 and 2.1 (Community Irrigation and Roads) the Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III have been adopted to ensure that voluntary land donations are not made under duress, and that appropriate compensation is provided from within the community (Annex 10, Attachment 1). In the rehabilitation of the Caraulun scheme (sub-component 2.2) there is a remote possibility that small areas of land around the existing intake and canals may be acquired by the Government. Should this be needed, the Guidelines provide for state compensation. In case communities in Caraulun decide to establish tertiary canals under community irrigation contracts, the same process as for Sub-component 2.1 would apply. Agro-meteorological stations will be located in government land.

International Waterways: Some community irrigation schemes proposed for rehabilitation may be located in the six international waterways which Timor-Leste shares with Indonesia (see Annex 10). Given that the rehabilitation works will not involve any major additions or alterations of existing schemes, and that no impacts are foreseen on the quantity or quality of water to/from Indonesian riparians, an exception to the requirement to inform Indonesian riparians was granted on September 17, 2003. During implementation, any proposed community schemes that may potentially fall under the policy will be reviewed in consultation with IDA to ensure that they qualify for the exception. The need for notification will be reconsidered if required under future treaties with Indonesia.

The social appraisal and final Environmental Analysis have been provided to the InfoShop, and disclosed in-country. In addition, MAFF has confirmed disclosure of the Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III in Dili and the 13 district centers. Other assessments – including the Feasibility Study for Major Damaged Irrigation Schemes – are available at MAFF's office in Dili. Past ARP supervision reports are summarized in the publicly available TFET Report to the Trustee. MAFF will ensure adequate public disclosure of project activities, and availability of relevant documents in publicly accessible locations.

7. Readiness and Compliance

The project is ready for implementation, and complies with all applicable Bank policies. MAFF has completed a Project Implementation Plan which is satisfactory to IDA. Key fiduciary and implementation arrangements are in place. Project staff and key consultants have or are in the process of being mobilized, and sufficient counterpart budget is available to support FY04 activities. Crop yield baseline data for irrigation schemes are being collected and will be completed prior to the start of the works. Bidding documents will follow procedures and templates already established under ARP II, which are satisfactory to IDA. Operational Manuals for Component 1, Community Irrigation and Roads, and Procurement Manual, satisfactory to IDA, have been completed and adopted by MAFF, meeting the conditions for project negotiations.

An Administration Agreement between IDA and the European Commission has been signed for financing project components supported under the EC grant.

Technical Annex 1: Country and Sector Background

TIMOR-LESTE: Third Agriculture Rehabilitation Project

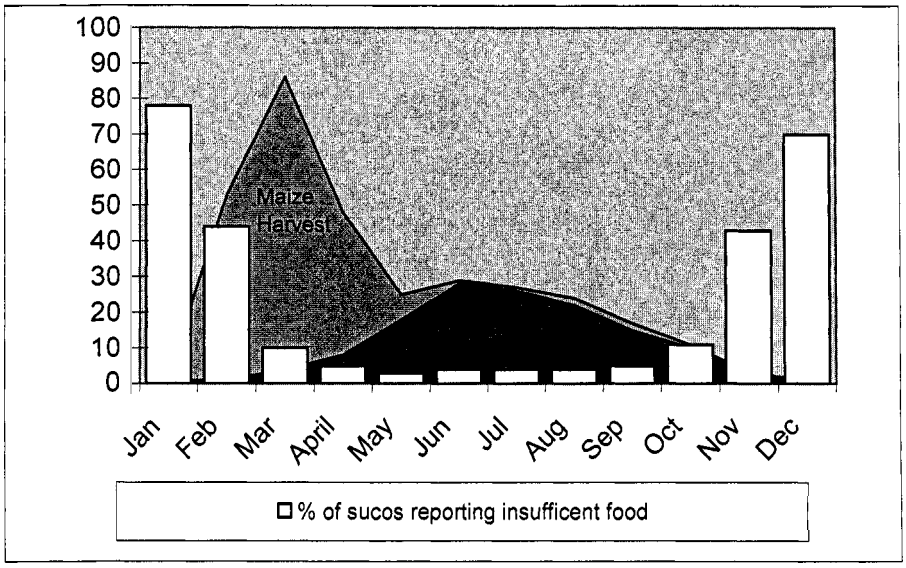
Timor-Leste – the world's newest nation (Population 925,000 in 2004) – faces the double challenge of and cementing its new political and socio-economic structures while meeting the rising expectations of its people. During the Indonesian administration period, agriculture and its support industries employed about 75 percent of the workforce, contributed to 26 percent of the Gross Domestic Product (GDP) and accounted for 90 percent of the foreign exchange. Exports included coffee, some sandalwood and live cattle. Government subsidies on fertilizers, fuel and rice helped low-lying rice producing areas, but little was done to assist the uplands where the majority of the rural poor live. The overstaffed and underpaid government service contributed to disempowerment and dependence of rural communities, with a heavy bias towards centralized and top-down planning. Traditional mechanisms of natural resource management and self-reliance, such as *tara bandu*, were actively discouraged.

In the violence that followed the August 30, 1999 referendum, over 75 percent of the population was displaced, and nearly 70 percent of the physical infrastructure was destroyed. Livestock (up to 29 percent of the buffaloes and 38 percent of the pigs), tools, and farm machinery were destroyed, and food and seed stocks were looted. Delayed maintenance resulted in damage to much of the 19 large and 346 small irrigation schemes in Timor-Leste, and the lack of road maintenance made it very difficult for farmers to move agriculture products to markets. As a consequence, the agricultural contribution to Gross Domestic Product (GDP) fell by 49 percent in 1999 relative to the previous year, with food crops, livestock and fisheries registering the most important losses. While upland farmers remained the poorest, lowland farmers suffered significant losses in assets.

The United Nations Transitional Administration and, after independence, the new Timor-Leste Government curtailed assistance to agriculture support services significantly. This was partially a strategic choice (to invest most public expenditures on health and education) as well as a fiscal necessity, given the expected size of domestic revenues. From a staff of 6,000 and an annual budget of about US$1.9 million equivalent during Indonesian times, the Ministry of Agriculture, Forestry and Fisheries (MAFF) now operates with a staff of 180 (expected to increase to 261 in FY04/05) and a budget of US$1.8 million. This operational budget is expected to level at around US$2.0-2.5 million a year over the short term. Pending further revenues from oil and gas, MAFF will need to rely on partnerships with the private sector, NGOs, rural communities, and bilateral donors operating at the district level for agriculture service delivery. Lessons from other developing countries indicate that such an approach will, over the long-term, be more effective than a heavy reliance on government subsidies and disempowerment of rural communities that characterized the Indonesian rule.

Some of the problems Timorese farmers face are chronic in nature. Geologically a very young island, Timor has a system of meandering rivers and frequent landslides that make it difficult to carry out traditional watershed management or sustain fixed irrigation structures. The island is also prone to periodic droughts and floods associated with El Niño Southern Oscillation (ENSO). These natural phenomena, accentuated by a loss in traditions of adaptation and self-reliance, contribute to chronic food insecurity. According to the 2001 village (*suco*) survey, about 70-80 percent of the *sucos* report having insufficient food during the traditional famine months (December and January), a period which follows the end of the rice harvest and precedes the maize harvest (Figure 1). As many as 30 percent of the households experience food shortages for up to 4 months a year. They cope with it by decreasing the amount of consumed food, switching to less desirable foods, and to a lesser extent by borrowing funds and selling livestock. Major diet deficiencies appear to be primarily in protein, fats and vitamins.

Figure 1. Proportion of Sucos Reporting Insufficient Food Relative to Rice and Maize Harvesting Season



Source: East Timor Transitional Administration et al. (2001) "The 2001 Survey of Sucos: Initial Analysis and Implications for Poverty Reduction". Timor-Leste.

The Agriculture Rehabilitation Program (ARP) started in 2000 as a US$17.8 million contribution from the multi-donor Trust Fund for East Timor (TFET), managed by the International Development Association of the World Bank. ARP phases were designed to respond to the evolving needs of the post-conflict situation:

- *Rehabilitation:* ARP I.
- *Transition:* ARP II
- *Sustainability:* ARP III

The Rehabilitation Phase and ARP I

The Rehabilitation Phase (2000-01) was characterized by a focus on restoration of assets and rapid rehabilitation of services, infrastructure and supplies to help farmers jump-start agricultural production. The first Joint Donors' Mission (November 1999) identified the following priority areas for agriculture rehabilitation: (a) support to vulnerable groups (including victims of violence and those who lost their productive assets); (b) restoration of basic agricultural infrastructure, including irrigation systems and access roads; (c) restoration of livestock; and (d) provision of agricultural services.

ARP I was designed to respond to these priorities. The project *(2000-2002; US$6.8 million from TFET)* financed the following:

- *Priority Productive Asset Restoration* – restoration of annual national vaccination campaigns for buffaloes, cattle, pigs and chickens, distribution of cattle and buffaloes to 2,552 farm families, and chickens to 14,134 families, and agriculture tools to 20,658 farm families.
- *Irrigation and Rural Infrastructure* – rehabilitation of 1,090 ha of land served by light-to-medium damaged irrigation schemes and 7,742 ha served by community schemes (equivalent to 37 % of the irrigated area in need of rehabilitation) and 109 km of farm-to-market access roads.

- *Pilot Agriculture Service Centers* – establishment of 3 pilot agriculture service centers in Bobonaro (specializing in rice), Aileu (coffee and maize), and Viqueque (candlenut and copra), distribution of 1,000 radios to communities in 4 districts, and design of soil analysis laboratory.
- *Project Management Unit Strengthening* – training of about 90 MAFF staff and district officers.

A joint evaluation by IDA and the Government in June 2002 rated the project outcome as Satisfactory. Major achievements included the restoration of vaccination programs, and improvements in farmers' livestock and irrigation assets. Overall, the project created an estimated 120,000 person-days of labor at a time of scarce cash opportunities for rural families, and helped place irrigated areas back into production. On the other hand, the chicken distribution was unsatisfactory due to high mortality, the pilot agriculture service centers were still at their early stages of implementation, and institutional development was viewed as marginal due to continued reliance on foreign and local consultants.

The rehabilitation phase and ARP I yielded the following key lessons:

- *Flexibility and Periodic Evaluations.* The rehabilitation phase demonstrated the value of a phased, flexible approach to program implementation, with time to study lessons of experience and adjust the program to emerging conditions.
- *Balanced Investments between Irrigated and Upland areas.* While ARP I was designed to focus primarily on irrigated areas, subsequent joint donors missions reiterated the need to also focus on upland areas and target the most vulnerable sucos to promote further food security through farm system diversification and self-reliance.
- *Direct Grant Assistance to Communities.* During the rehabilitation phase, the Government experienced major difficulties distributing a small number of valuable inputs to a large number of needy farmers. By contrast, the community irrigation schemes – relying on direct contracts with local communities to undertake the works – were well received and fostered local ownership. The Joint Donors Agriculture Mission of November 2001 recommended a shift from input provision to direct grant assistance to rural communities.
- *Ensuring Sustainability.* Many donor funded projects during the emergency phase paid high wages for rural labor and provided imported inputs and food. While this may have provided a much needed cash infusion into rural communities, it also promoted further community dependence. Lessons learned point to a need to promote community self-reliance, and not pay for activities that communities are expected to maintain themselves once the projects cease. The need to strengthen Water Users Associations in irrigated areas was also emphasized.
- *Stressing Inter-sectoral, Demand-based Assistance.* Joint donors agriculture missions repeatedly stressed the need for better integration of rural development efforts, both within MAFF, as well as with donors and civil society.
- *Establishment of Legislative and Regulatory Frameworks.* There was an urgent need to develop legislative and regulatory frameworks suitable to the conditions of Timor-Leste.

These lessons were taken closely into account in the design of ARP II.

The Transition Phase and ARP II

During the Transition Phase (2001-2002), donors focused on helping to establish essential agricultural and natural resources policies and regulations, and to smooth the transition from a heavily subsidized sector to one with limited government funding. ARP II (2002-2004, US$8.0 million from TFET) responded to the above needs through substantial design adjustments in its components:

- *Pilot Participatory Development and Natural Resources Management* – This new component, implemented by MAFF's Forestry and Fisheries Divisions, aimed to strengthen the resilience of upland and coastal communities to external shocks. It provided small grants and facilitated assistance to farmers' groups. The component focused first on 14 pilot villages in 7 districts, to be expanded to 30 villages after an evaluation of lessons learned. AusAID, UNDP/UNOPs and the Portuguese Government started similar community-based programs in the other 6 districts.
- *Rapid Infrastructure Rehabilitation* – This component targeted the rehabilitation of 7 light-to-medium damaged schemes, 2,100 ha of irrigated land covered by community schemes, 100 km of access roads, and establishment of Water Users Associations in all larger schemes.
- *Services to Farmers* – This new component included: (a) support to agriculture information programs and establishment of a CGIAR[3] Liaison Secretariat at MAFF; (b) continued support to vaccination campaigns, and establishment of a program of private Village Livestock Workers; and (c) continued support to farmers' associations, through the Agriculture Service Centers.
- *Program Management* – This component included (a) strategy and policy support to MAFF; and (b) capacity building and support to the Project Management Unit (PMU).

ARP II has been under implementation for 2 years, and has remained satisfactory. The mid-term review (January 2003) confirmed the continued validity of the project design. While the project met or exceeded most of its mid-term output indicators, further efforts were needed on strengthening its impact, quality and sustainability. Key lessons learned include:

- *The Need to Strengthen Assistance to Farmers.* The mid-term review stressed the need to strengthen the organization and training of farmers' groups, and sending inter-sectoral teams to the field. It recommended a stronger selection and training of facilitators in component 1, as well as an emphasis on technical backstopping. For component 2 (Irrigation) the review recommended improved assistance in crop production and strengthening of Water Users Association to enable farmers to increase crop yields following irrigation rehabilitation.
- *Monitoring ENSO Events.* In 2002-03, production of maize and other food crops declined due to a prolonged drought. This was partially offset by a 12 percent increase in rice production as a result of irrigation rehabilitation. Given the recurrence of ENSO events, the mid-term review recommended that MAFF strengthen its monitoring of drought and floods through its Agriculture and Geographical Information System and Information units, and liaise closely with the National Disaster Management Office on the need for targeted food distribution.
- *Institutionalize Information to Farmers.* The specialization of MAFF Divisions made the operation of the inter-sectoral information team particularly challenging. MAFF addressed this by placing the Information Team and the CGIAR Secretariat directly under the Director of Research and Extension Center. Continued feedback from farmers about the timeliness and appropriateness of the information material stressed the need for further communication training amongst the team.
- *Cold Chain Improvement for Vaccination Program.* The mid-term review identified the need to replace old cold boxes and invest in generator or solar-powered refrigerators at the district level to preserve the quality of vaccines, and to replace motorcycles damaged during previous vaccination seasons.
- *Expansion of Marketing Network.* The three pilot agriculture service centers are now active, but there is further need for training management committees, and expanding marketing networks with farmer members as well as between the centers to build economies of scale.

[3] Consultative Group on International Agriculture Research, now called Future Harvest.

- *Policy and Strategy Support.* ARP II has proven the value of having a pool of funds for policy and strategy support. However, the scope of advisory services needs to remain flexible to meet evolving needs. Moreover, any policy studies need to be extensively discussed with stakeholders prior to their formal adoption.
- *Capacity Building.* ARP I and II provided several key lessons on capacity transfer: first, foreign advisors may be needed for longer periods than originally envisaged, particularly in specialized fields and key areas such as project management, procurement and financial management. Second, capacity transfer cannot be ensured by training only a few staff, as they can easily move on to other posts. Third, MAFF management wisely lowered the fees for national consultants, effectively making it attractive for them to join the public service - many former consultants engaged under ARP I have now been hired by MAFF. Finally, centralizing training under MAFF's training unit has not been effective in the past – sectoral and farmer training are best left to MAFF Divisions to manage and closely integrate with their operational programs.

The Sustainability Phase and the Road Map

The Sustainability Phase (2002-now) focused on long-term sustainable agriculture and rural development, income generation and natural resources management. Assistance during this phase was to be targeted at participatory programs to encourage community self-reliance, provide options for diversified cash income sources, and enhance traditional institutional arrangements for natural resources management.[4] These principles were adopted in the design of ARP II and III, although ARP II also focused on transitional phase support (primarily through rapid infrastructure rehabilitation and the agriculture service centers).

The August/September 2002 Joint Donors Agriculture Mission agreed with MAFF on a policy of *self-reliance* for the agriculture sector, based on the principles that Timorese farmers should gain the economic means to be food secure – either by growing their own food or by being able to purchase it. A key to strengthening self-reliance and improving rural incomes was the further integration of MAFF's sub-sectors and promotion of a diversified, demand-driven approach. Developing linkages with partners working with community groups (e.g. NGOs) was to contribute to this goal, as was improved skills and effective communication between producer groups and MAFF.

Amongst the overarching recommendation of the mission was to adopt a 'farmers first' approach. Since the needs of rural households are diversified and not focused on any single sub-sector, service delivery must respond to these multiple needs in a timely and effective manner. This approach emphasized the role of key farmers in extension, collaboration between MAFF and other government agencies, and further strengthening of community-based organizations and farmer groups. A proper enabling environment with key policies in place was also seen as critical for environmental sustainability and natural resources management, with an emphasis on co-management approaches with local communities and traditional leaders. These recommendations were taken closely into account in the formulation of the Road Map (see below) and the design of ARP III.

The National Development Plan and Road Map

In 2002, Timor-Leste adopted its first 5-year National Development Plan, with two major goals:

- Reduction of poverty in all sectors and regions; and
- Promotion of economic growth that is equitable and sustainable, improving the health, education and well-being of everyone in Timor-Leste.

[4] The three phases of agriculture sector assistance to Timor-Leste were identified in the Joint Donors Agriculture Mission Report of March-April 2001.

MAFF's major goals of attaining food security, improving self-sufficiency, and generating rural employment are intrinsically linked with the National Development Plan.

The riots of December 4, 2002 highlighted the fragility of the social fabric in Timor-Leste, and the urgency of meeting immediate expectations for greater economic growth and employment, particularly among the youth. As a result, the Government adopted in January 2003 a Stability Program which emphasized strengthened governance and legal systems, job creation, a stronger focus on agriculture as a pillar for food security, and enhanced access to markets and distribution. Also emphasized was trade development through cooperatives.

In February-March 2003, all Government Ministries were asked to help develop the *Road Map*, a framework for the implementation of the National Development Plan. MAFF ranked all of its programs in accordance with the following criteria and weights:

Table 1. Criteria used by MAFF to Rank its Programs

Criteria	*Weights*
Relevance to National Development Plan Goals of Poverty Alleviation and Economic Growth	15%
Relevance to Stability Program Priorities	20%
Community Demand	10%
Sustainability	15%
Contribution to Inter-Sectoral Linkages	10%
Counterpart Financing Commitments towards Donor Programs	10%
Basic Functions of the Ministry	20%
Total Weights	100%

Source: Ministry of Agriculture, Forestry and Fisheries (2003). National Prioritization and Sequencing Submission, February 17.

The Third Agriculture Rehabilitation Project (ARP III)

With this background in mind, MAFF designed ARP III as the consolidation phase of the Agriculture Rehabilitation Program, following the key themes of *sustainability* of activities, *impact* of achievements, and *quality* of outputs. The project follows closely the priorities of the Road Map and National Development Plan, as well as lessons learned from ARP I and II. It aims to strengthen the capacity of the Ministry to assist rural communities in increasing agriculture production and income in a sustainable way – which are intrinsic to the sectoral and national objectives defined in the National Development Plan.

All ARP III activities – with exception of project management – are integrated into MAFF Road Map programs, and most rate relatively highly in MAFF's prioritization and sequencing (see Table 2, below). Activities which are identified as being of medium priority – such as village livestock workers, and agro-meteorological services – are expected to become increasingly important over the long-term.

In ARP III, special attention was given to Timor-Leste's low capacity and budget. Capacity building at all levels - from MAFF staff, to NGO partners, to farmers-beneficiaries – was therefore stressed. To address MAFF's acute staff shortage, community-based project planning and implementation were reinforced based on the principles of self-reliance and sustainability. The project also placed further emphasis on strengthening partnerships with alternative service providers (private village livestock workers, NGOs, and mass media for information dissemination), and on establishing networks with interested partners working in agriculture policy, natural resources management, irrigation, information, agri-business and livestock.

Table 2. Rating of ARP III Activities Against MAFF Priority Programs

ARP III Activity	*MAFF Program*	*NDP Goals*	*Stability Program*	*Community Demand*	*Overall Rating*
1. Participatory Development and Natural Resources Management	Support to Communities for Fisheries, Forestry & Watershed Management, Livestock, Food Production	High	High	High	High (83%)
2. Irrigation Rehab. and Devel.					
2.1. Community Irrigation and Roads	Support to communities on community irrigation and roads	High	Medium	High	High (89%)
2.2. Major Irrigation Schemes	Rehabilitation and maintenance of major schemes	High	Medium	High	Medium (62%)
2.3 Institutional Capacity Building	Water Users Associations	High	High	High	High (87%)
2.4. Survey and Mapping	Water Users Associations	High	High	High	High (87%)
3. Services to Farmers					
3.1. Information to Farmers					
3.1.1. Information Programming	Information	High	Medium	High	High (89%)
3.1.2. CGIAR Secretariat	Information	High	Medium	High	High (89%)
3.1.3. Community-based Information Services	Information	High	Medium	High	High (89%)
3.1.4 Agro-Meteorology	ALGIS and Agroclimatology	Low	Low	Medium	Medium (54%)
3.2. Animal Health Services					
3.2.1. Vaccination campaigns	Vaccination	High	Low	Medium	Medium (72%)
3.2.2. Cold chain improvement	Vaccination	High	Low	Medium	Medium (72%)
3.2.3. Village Livestock Workers	Village Livestock Workers and services for animal treatment	High	Medium	High	Medium (56%)
3.2.4. Capacity Building	Capacity building for Ministry staff	NR	NR	NR	NR
3.3. Support to Agri-Business	Support to farmers' associations	High	Medium	High	Medium (62%)
4. Program Management					
4.1. Policy and Strategy Develop.	Policy development and links with other Ministries	High	High	High	High (97%)
4.2. Project Management		NR	NR	NR	NR

Source: Ministry of Agriculture, Forestry and Fisheries (2003). National Prioritization and Sequencing Submission, February 17. Ratings were converted as follows: High (>75%); Medium (50-70%); Low (<50%). NR – Not rated.

The first component – *Participatory Development and Natural Resources Management* – will support MAFF's main program of assistance to communities in **upland and coastal areas**. It will help strengthen their self-reliance and make them less vulnerable to external shocks (such as droughts and floods and fluctuations in external markets) through improved natural resources management. The component builds upon well tested principles of community-based management, 'no regrets' adaptation, and community development assistance in the Asia-Pacific region. By institutionalizing this approach within MAFF, it is hoped that ARP III will help create an institutional shift towards integrated and demand-based assistance to farmers, and promote further partnerships with NGOs and local governance structures.

The component will build upon lessons of experience from pilots initiated under ARP II: MAFF has strengthened the selection and training of facilitators, and increased technical backstopping of small farmer groups. An experienced, full-time community development specialist was mobilized to strengthen community organization and facilitator training. MAFF will also form an inter-sectoral NRM team

composed of staff from other divisions such as livestock and crop production to help backstop community activities in these areas.

The second component – *Irrigation Rehabilitation and Management* – will support MAFF's program of assistance to communities in **low-land irrigable areas**. Similarly to component 1, it will rely on small contracts with community groups and strengthening of farmers' groups to maximize impact and sustainability. The project will continue to assist Water Users Associations (WUAs) in larger irrigation schemes, but support will be expanded to include advice on crop production and diversification, in accordance with lessons learned from ARP II. A crop production staff has been assigned to the Irrigation Division on a full-time basis to meet this need. MAFF will also help organize WUAs in community schemes selected in accordance with their demonstration value to surrounding areas. The community irrigation and road program – now in its 3rd year – will be gradually transferred to Government financing.

The third component – *Services to Farmers* – will support **three basic MAFF services** (Information, Animal Health Assistance, and Agri-Business support), while promoting partnerships with private sector, NGO and community associations to help ensure sustainability. The *Information to Farmers* sub-component will continue to strengthen MAFF's delivery of information programs through mass media (e.g. radio) and simple materials, while establishing networks with international centers of agriculture research (CGIAR). At the same time, it will strengthen the flow of information to farmers by promoting electronic networks at the district and community radio levels. This is based on successful pilots introduced in similar remote areas of the Pacific Islands to improve services to farmers. Particular attention will be paid to strengthening information timeliness and appropriateness, two weaknesses identified in prior ARP II reviews.

The *Sustainable Animal Health Services* sub-component will continue support for vaccination campaigns – to be funded by the Government on an increasing scale – while strengthening the cold chain and transportation of vaccines by investing in solar-powered refrigerators and replacement motorcycles (in accordance with ARP II lessons at the mid-term review). It will also expand the training of private Village Livestock Workers initiated under ARP II to cover all villages in Timor-Leste.

The *Support to Agri-Business* sub-component will institutionalize agri-business support services within MAFF, to help support farmers associations and cooperatives. It will also seek to promote further domestic production of grain seeds (particularly rice and maize), and promote marketing networks in priority niche market commodities (such as coconut and candlenut oil).

The fourth component – *Program Management* – will provide overall capacity building assistance to MAFF and help manage the project. The Policy and Strategy sub-component will support MAFF's new Policy, Planning and Program Services (formerly the Policy and Planning Unit), rated highest in priority in the Road Map, and allow MAFF to contract high caliber advisors without nationality restrictions. It will provide MAFF with key advisory services to help MAFF formulate a long-term sector strategy, as well as priority agriculture and natural resources policies and legislation. Building upon the lessons from ARP II, the range of policy studies has been left flexible to meet evolving policy needs.

The *Project Management and Capacity Building* sub-component will carry out overall project management, while supporting MAFF's core procurement, financial and monitoring units. In recognition of the integration of ARP activities within MAFF's programs, the Project Management Unit will be abolished. Instead, the project will continue to be managed by the Permanent Secretary of MAFF, and MAFF Directors responsible for the various components. In accordance with past lessons, all training related to specific project activities has been decentralized to the respective MAFF Divisions. A training evaluation process will be introduced in 2004.

Many ARP III activities are a consolidation of activities started under ARP I and ARP II. Hence, while the scope might be excessive in a new project, sufficient lessons, experience and staff capacity exist to

implement it within MAFF's programs. Moreover, the fact that project activities are clearly divided amongst established divisions within MAFF will help facilitate implementation, effectively limiting the number of activities that each division is responsible for. Mechanisms have been built into project design to ensure effective coordination of project management.

An Exit Strategy for the Agriculture Rehabilitation Program

Since ARP III will be the last agriculture project funded by TFET, extensive discussions were held during appraisal to assess how the project could help MAFF formulate a long-term strategy for the sector and prepare an exit strategy for the ARP program.

MAFF is in the process of preparing its Sectoral Strategy, with assistance from the German Government, USAID, AusAID, FAO, JICA, Oxfam, and EC/TFET (through ARP III). In addition to a summary sectoral strategy (including MAFF's vision, key sector indicators, and programs) the strategy is expected to include a public expenditure analysis, basic sector statistics, and a review of field experience. The strategy is expected to be finalized by June 30, 2004, serving as a useful input to strengthen donor coordination in the sector. It was agreed that ARP III would support (under the Policy and Strategy Development sub-component) the follow-up efforts of PPPS to develop and consolidate this strategy.

With the appointment of its first agricultural economist to head PPPS, MAFF is also keen to collect basic economic data on key crops. This is being proposed as a study under USAID and JICA financing, serving as a first step for MAFF to develop its future data analysis capabilities and potentially developing an agricultural census.

The exit strategy for ARP involves both preparation of post-program sector investments, as well as ensuring sustainability of field activities. ARP sustainability within MAFF is not a concern at this stage, given that program activities are already well integrated within the Ministry's structure (see Annex 6).

The strategy and policy studies funded by ARP III will be reviewed periodically to ensure a sound exit strategy for the post-ARP period. One option is that they would help support the preparation of relevant background studies for a Global Environmental Facility operation. Thus, the fisheries and land studies currently proposed by MAFF could be adjusted to cover marine biodiversity or land degradation assessments needed to prepare a follow-up operation in these areas. They could also be oriented towards future priority investments supported by other donors.

MAFF started using quarterly review workshops as a way to periodically review and adjust ARP. These review workshops – complemented by the partnership fora promoted by ARP III – will help MAFF gain lessons of experience and adjust project activities to help maximize their field impact and sustainability. Of particular importance will be a mid-term review of options to decrease reliance on hired facilitators, and align the program with the emerging regional governance structure.

MAFF designed ARP III based on a close assessment of lessons learned during the post-conflict period. At the same time, Timor-Leste remains a nation in transition, and this calls for a flexible, programmatic approach that can continue to be periodically evaluated and adapted. While the project design includes estimated targets, these will be examined during regular supervision missions and adjusted based on need. Contingencies of about 11.4 percent have been built into the project costs to permit such adjustments. Project activities will continue to be planned based on base costs, with project contingencies (reserved for unexpected cost increases, change in activity scope, or approved change in cost items) subject to approval by the Project Director and MAFF Management Team.

Technical Annex 2: Major Related Projects Financed by the Bank and Other Agencies

TIMOR-LESTE: Third Agriculture Rehabilitation Project

Sector Issue	Project/Area of Concentration	Latest Supervision (PSR) Ratings (Bank-financed projects only)	
Bank-financed		Implementation Progress (IP)	Development Objective (DO)
First Agriculture Rehabilitation Project	Priority Asset Replacement, Animal Health, Irrigation, Agriculture Service Centers, Capacity Building	S	S
Second Agriculture Rehabilitation Project	Pilot Participatory Natural Resources Management, Irrigation, Information, Animal Health, Agriculture Service Centers, Policy and Strategy, Capacity Building	S	S
Other development agencies			
ADB Water Policy Technical Assistance	Water policy and management		
ACIAR Seeds of Life Project	Introduction of high quality seeds		
AusAID East Timor Rural Development Project	Rapid impact and rural development projects in Bobonaro, Aileu, Viqueque		
AusAID Fisheries Management Capacity Building	Fisheries legislation and coastal		
Brazil Transfer of Coffee Growing Techniques	Coffee		
CARITAS/Australia Various Projects	Food security, income generation, reforestation		
CIDA Various Projects	Community-based NRM, livelihoods, water supply, aquaculture, food security		
EC Timor Leste Rural Development Programme[1]	Rural development		
FAO Various Projects	Capacity building, agro-economy, rice, soil analysis, post harvest and storage		
Germany BMZ/DW	Rural Development in Baucau Viqueque		
JICA Various Projects	Reforestation, Irrigation, Agriculture Policy		
New Zealand	Policy Advice (Agriculture Economics and Water Policy)		
Portugal Various Projects	Horticulture, coffee, reforestation, aquaculture in Ermera and Aileu		
Oxfam Various Projects	Rural Community Development, Training, Research (Oecussi, Liquica, Manatuto)		
UNDP/UNOPS	Ainaro/Manatuto and Oecussi Community Activation Program		
USAID Various Projects	Economic recovery, agro-industries, coffee		
World Vision	Food Security		

[1] – Includes ARP III and UNDP/UNOPS Oecussi Community Activation Program

Technical Annex 3: Results Framework and Monitoring

TIMOR-LESTE: Third Agriculture Rehabilitation Project

A. Results Framework Intervention Logic	Objectively Verifiable Indicators	Sources of Verification	Critical Assumptions
Overall Goal (MAFF): 1.To attain food security and improve self-sufficiency 2. To generate rural employment and to increase income, through farming systems diversification and agro-industrial development	**Sector Indicators:** ❑ 50% increase in average kilo-calories intake by rural households during scarcity months (Nov-Feb) by 2008 ❑ At least 5 % increase per year in agriculture gross domestic product ❑ At least 2.5 % increase per year in employment in agriculture and related agro-industries ❑ At least 3% improvement per year in the agriculture trade balance	**Sector/ country reports:** 2001 and 2005 Timor-Leste Household Poverty Surveys Central Statistics Central Statistics Central and Trade Statistics	
Project Development Objective (Purpose): To strengthen the capacity of the Ministry of Agriculture, Forestry and Fisheries and its development partners to assist rural communities in increasing their production and income in a sustainable way.	**Impact/Outcome Indicators[6]:** ❑ All major project activities that are adopted by MAFF fully funded by CFET at EOP. ❑ # of products resulting from small group activities that is (a) consumed; and (b) sold; % of small groups still active by EOP. ❑ Average rice yields in rehabilitated irrigated areas increasing from 1.5 to 2.0 tons/ha/year at EOP[6]. ❑ Cropping intensity in Caraulun increasing to 160% and in community irrigation schemes increasing to 100 by 2008. ❑ 65% of farmer respondents claiming increased knowledge of agriculture as a result of information provided ❑ 15% increase in production of farm animals; ❑ Monetized income obtained by VLWs for private services (in $) ❑ Amount produced and sold by RPOs assisted by MAFF's Agro-Business Unit. ❑ At least 70% of farmer-beneficiaries satisfied with the services received from MAFF and its partners by EOP.	Government FY07/08 budget Component 1 impact evaluation reports MAFF crop yield monitoring reports Information exit reports Livestock team monitoring reports Agri-business unit monitoring reports Farmers' satisfaction survey at EOP.	**(from Objective to Goal)** No major natural disasters occur (e.g. major droughts, floods or pest infestations) of unusual scale or severity Farmers have the right macro-economic and social incentives to increase their production following project assistance (e.g. favorable markets)

[5] Impact indicators per component will be field tested during the benchmark survey. Project indicators may be officially revised during supervision in agreement with IDA.

[6] End of project.

Results for each Component:	Result Indicators per Component: By End-of-Project	Sources of Verification	(from Outputs to Objective)
Component 1: **Participatory Development and Natural Resources Management**	**Component 1:** ❑ 30 pilot and 20 new upland and coastal villages fully assisted; at least 50% of community proposals involving women ❑ At least 200 community groups assisted by EOP; 30% are women's groups ❑ At least 3,000 farmers directly trained in agriculture and NRM activities	No. of community proposals approved and implemented Quarterly project monitoring reports Quarterly project monitoring reports	Farmers groups are able or willing to sustain alternatives promoted by the project
Component 2: **Irrigation Rehabilitation and Management**	**Component 2:** ❑ 3,000 ha. of irrigated area rehabilitated by communities ❑ 150 km. of existing farm-to-market roads rehabilitated by communities ❑ 1,030 ha. of major-damaged irrigation scheme rehabilitated ❑ 14 new Water Users Associations (WUAs) established (including a network of WUAs in major-damaged scheme), and 10 existing WUAs provided with advisory services and further training (including women)	Quarterly project monitoring reports and technical audit report Quarterly project monitoring reports and site visits Quarterly project monitoring reports and WUA reports	Water legislation is adopted to clarify government and community roles in O&M. Sufficient farming labor is available to farm the whole scheme. Rice prices do not decline further Farmers are willing to change their current practices (to increase yield and/or plant second crops) following irrigation rehabilitation Farmers are willing to maintain the rehabilitated canals and manage water resources in times of scarcity.
Component 3: **Services to Farmers** **3.1. Information to Farmers**	**Sub-Component 3.1** ❑ About 40 pre-tested information materials provided to communities through different media ❑ At least 10 cross-visits between CGIAR scientists and MAFF to provide advisory services and information support. ❑ At least 3 regional centers connected electronically and functional up to EOP ❑ At least 10 meteorological stations20 rain gauges and 4 hydro-stations established and functional by EOP	Quarterly project monitoring reports CGIAR scientists reports and MAFF staff reports Quarterly project monitoring reports Quarterly project monitoring reports and field visits	Farmers use information provided effectively. MAFF staff apply training received and convey agricultural information in a timely, accurate, effective manner Telecommunication system sufficiently developed to permit district connections.
3.2. Sustainable Animal Health Services	**Sub-Component 3.2:** ❑ At least 80% of adult cattle, buffaloes and pigs vaccinated on a timely manner ❑ 265 Village Livestock Workers trained (including women), and 70% actively providing services to villages ❑ National VLW Association established and organizationally functional up to EOP	Quarterly project monitoring reports VLW Association reports	Farmers continue to recognize the benefits of vaccination and bring their livestock to vaccination corrals. Farmers are satisfied and willing to start paying for treatments provided by VLWs.

Results for each Component:	Result Indicators per Component: By End-of-Project	Sources of Verification	(from Outputs to Objective)
3.3. Agri-Business Services	**Sub-Component 3.3:** ❑ Seed Growers' Association organized and functional up to EOP ❑ 30 ha. of seed farm established ❑ 12 village processing facilities established and functional by EOP ❑ MAFF agri-business unit established and operational by EOP	Association registration Quarterly project monitoring reports and field visits MAFF organization set-up	Seed producers are willing to produce good quality seed Oil mills become profitable under current market conditions
Component 4: Program Management **4.1. Policy and Strategy Develop.**	**Sub-Component 4.1:** ❑ Four agriculture policy studies/advisory services completed, discussed with key stakeholders, and accepted by MAFF	Advisors' reports and policy study reports	Government adopts the policies, promptly issues implementation guidelines, and monitors compliance.
4.2. Project Management and Capacity Building	❑ Advisory support to project management, finance, and procurement provided ❑ 100 person-days of training provided to MAFF staff and partners (including women)	Advisors' contracts Training reports	Trained counterparts remain in their positions and are able to apply their skills effectively. Counterpart budget sufficient to ensure project sustainability
General – Social and Environmental Indicators			
Partnership Arrangements	❑ At least 2 consultative meetings/year held by key partnership group where more than 60% of key stakeholders attend: - Policy Advisory Group - Natural Res. Management Adv. Committee - Irrigation Network - Information Forum - Livestock Network - Consultative Group on Agri-Business	Consultative meeting minutes and quarterly project monitoring reports	
Environmental Mitigation	❑ Level of compliance with environmental mitigation measures[7]: at least 90% of all community-based activities supported in components 1 and 2: - Do not require mitigation plan - Fully comply with mitigation plan; or - Partially comply with mitigation plan (and are receiving training to improve mitigation)	Quarterly project monitoring reports and field verification	
Land Policy Guidelines	❑ No. of community projects requiring land ❑ No. of grievances recorded and resolved (for components 1 and 2)	Quarterly project monitoring reports and field verification	

[7] This is an aggregate indicator for compliance with environmental mitigation measures for all community sub-projects. The mitigation measures are identified for each type of community sub-project (see Operational Manuals for Component 1 and 2.1). The indicator aims for 90 percent achievement in the number of community sub-projects that either do not require mitigation measures, fully comply with them, or partially comply with them but are receiving training to improve mitigation.

Activities per Component:	Inputs:	Costs:
Component 1: Participatory Development and NRM	6 pm NRM Advisor and 12 pm Community Dev. Specialist 14 Facilitators and 4 NGOs contracted Training of staff, facilitators, NGOs	$395,000 (TFET) $ 18,000 (CFET)
1.1 Support to pilot villages	64 Farmer training/technical back-up sessions Pilot villages evaluation Incremental operating costs (per diem and travel) for 35 staff 2 computer units	
1.2 Expansion to new villages	12 pm NRM Advisor and 12 pm Community Dev. Specialist 27 Facilitators and 6 NGOs contracted Training of staff, facilitators, NGOs 80 Farmer training/technical back-up sessions Small Group Grants to 20 villages Incremental operating costs for 43 staff	$770,000 (TFET) $133,000 (CFET)
Component 2: Irrigation Rehabilitation and Management **2.1.** Community Irrigation and Roads Rehabilitation	Contracts with about 24 community irrigation schemes Contracts with about 25 community-based access roads Technical audit of irrigation schemes Incremental operating costs (per diem and travel)	$579,000 (EC) $480,000 (CFET)
2.2 Major Irrigation Rehabilitation	Large civil works contract Engineering supervision contract 18 pm irrigation advisor Incremental operating costs	$1,875,000 (EC)
2.2 Capacity Building and WUA Support	Training of ca. 24 WUAs 4 Training courses for District Irrigation Officers Technical training for 15 irrigation staff 12 pm WUA Advisor and 6 pm Irrigation Advisor 4 Local WUA Consultants (108 pm) 2 motorcycles, 2 field vehicles, 2 computers Incremental operating costs	$259,000 (TFET) $64,000 (EC)
2.3 Survey and Mapping	Topographic Surveying services covering 12,500 ha Incremental operating costs	$190,000 (TFET) $ 44,000 (CFET)
Component 3. Services to Farmers **Sub-Component 3.1. Information to Farmers** **3.1.1** Information Programming	12 pm International Communication Expert 3 national radio and communication consultants and NGO contracts Digital video and small voice recording equipment Information programs and materials through media and radio Training of MAFF staff and partners in communications and radio Incremental operating costs	$67,000 (TFET) $279,000 (EC) $84,000 (CFET)
3.1.2 CGIAR Liaison Secretariat	CGIAR Liaison Specialist (funded by UNDP/EC) 24 pm local CGIAR Officer 11 pm of CGIAR expert visits Training in e-knowledge Cross-visits by MAFF staff to CGIAR Information materials from CGIAR centers Translation of CGIAR materials Incremental operational costs	$266,000 (EC)
3.1.3 Community-based Information Network	Single side band radio receivers for 13 districts and Dili Computers, HF transceiver, and generators for 3 pilot information units, expanding to 13 if successful at mid-term Small works (burglar-proofing rooms) Training of district staff and community radio stations 5 pm Information Technology Specialist, 18 pm IT assistants Incremental operating costs	$395,000 (EC)

3.1.4 Agro-Meteorological Network	2 pm hydro/agro-meteorological expert ICB contract for supply and installation of about 12 agro-meteorological stations, 20 rain gauges, and 4 hydrological stations Training for operators Incremental operating costs	$341,000 (EC)
Sub-Component 3.2. Sustainable Animal Health Services **3.2.1** Vaccination Campaigns	Annual vaccination campaigns for buffaloes/cattle, pigs, chicken Vaccines and specialized medicines 26 field motorcycles, 1 4-wd vehicle Incremental operating costs (monitoring)	$286,000 (TFET) $314,000 (EC) $500,000 (CFET)
3.2.2 Cold Chain Improvement	56 fridge-freezers, solar panels, and associated equipment and eskies/thermos for 13 districts and 41 sub-districts (for vaccines)	$356,000 (EC)
3.2.3 Village Livestock Workers	18 pm VLW advisor 2 local VLW consultants (48 pm) 85 VLW packs (w/ basic medications) 156 meetings and training of 85 VLWs VLW association support Incremental operating costs	$262,000 (TFET) $208,000 (EC) $73,000 (CFET)
3.2.4 Capacity Building	1 computer/printer unit Training of 14 MAFF/District Livestock staff (210 person-days of in-country training) Farmers training in forage development OIE membership and annual attendance at SEAFMD meetings	$25,000 (TFET) $111,000 (EC)
Sub-Component 3.3. Support to Agri-Businesses **3.3.1** Support to Seed producers	6 pm Seed Production Specialist 1 seed machinery and equipment Training of farmers: 30-45 seed growers Seed production inputs (registered seed) Training of 2 MAFF staff on seed production and certification Workshops for formation of a Seed Growers Association Incremental operating costs	$104,000 (TFET) $ 6,000 (CFET)
3.3.1 Support to Priority Niche Market Commodities	3 pm Oil Processing Specialist, 1 pm Oil Mill Specialist 6 pm Agri-business consultant 6 small processing mills and 12 small mill sheds (small works) Training of farmers: 12 oil mill farmer-cooperators Incremental operating costs	$304,000 (EC) $ 6,000 (CFET)
3.3.2 Support to Rural Producers' Organization	1 computer set Training of rural producers organizations 9 pm Agri-business consultant 3 local consultants (72 pm total) Incremental operating costs	$179,000 (EC) $ 15,000 (CFET)
Component 4. Program Management **4.1.** Policy and Strategy Development	12 pm Senior Agriculture Policy Advisor, 6 pm Legal Advisor 4 priority policy studies/advisory support Workshops Incremental Operating Costs	$118,000 (TFET) $423,000 (EC)
4.2. Project Management	Computer units and furnishings for 13 district/MAFF offices MAFF Training (including priority short-term training abroad) Project Review Workshops 30 pm Project Management Advisor; 24 pm Procurement Advisor; 24 pm Financial Management Advisor 3 pm Evaluation Experts and NGO Surveys (M&E) 18 pm local information technology Annual audits Incremental operating costs	$1,190,000 (EC) $498,000 (TFET) $178,000 (CFET)

B. Arrangements for Results Monitoring

Outcome Indicators	*Baseline*	*Data Collection and Reporting*					
		YR1	*YR2 (MTR)*	*YR3 (EOP)*	*Frequency and Reports*	*Data Collection Instruments*	*Responsibility for Data Collection*
• All major project activities that are adopted by MAFF funded by CFET at end of project.		---	50%	100%	Government FY2007/08 budget	Annual budget report	Project Director Finance Officer
• Average rice yields in rehabilitated irrigated areas increasing from 1.5 to 2.0 tons/ha/year at end of project;	1.5 tons/ha/year	---	1.8 tons/ ha/year.	2.0 tons/ ha/year	MAFF crop yield monitoring reports	Field surveys	Crop Production Division
Cropping intensity in Caraulun scheme increasing to 160% by EOP.	100%	---	100%	160% (by 2008)	MAFF crop yield monitoring reports	Field monitoring	Crop Production Division
• 70% of farmer beneficiaries satisfied with the services received by end-of-project	None	_____	Survey instrument pilot tested	70%	Farmers' satisfaction survey at end of project	Farmer-beneficiaries' survey	M&E Officer with Evaluation Consultant
Results Indicators for Each Component							
Component 1: Participatory Development and Natural Resources Management							
• 30 pilot and 20 new upland and coastal villages fully assisted; at least 50% of community proposals involving women	30 villages started under ARP II	20	30	50	Quarterly project monitoring reports and field visits	Field monitoring	Forestry Directorate Fisheries Directorate NRM-Management Team
• At least 200 community groups assisted by end of project; 30% women's groups	90 community groups assisted under ARP II	120	160	200	Quarterly project monitoring reports	Field monitoring	District Officers and NRM-Management Team
• At least 3,000 farmers directly trained in NRM activities.	About 450	1,000 (30% women)	2,500 (30% women)	3,000 (30% women)	Training reports	Training evaluation	Forestry Directorate Fisheries Directorate NRM-Management Team

Outcome Indicators	*Baseline*	*Data Collection and Reporting*					
		YR1	*YR2 (MTR)*	*YR3 (EOP)*	*Frequency and Reports*	*Data Collection Instruments*	*Responsibility for Data Collection*
Component 2: Irrigation Rehabilitation and Management							
• 3,000 ha. of irrigated area rehabilitated by communities	None	300 ha.	1,000 ha.	3,000 ha.	Quarterly project monitoring reports and field inspections	Field monitoring	Irrigation Division Irrigation Supervisors
• 150 km. of existing farm-to-market roads rehabilitated by communities	None	25 km.	50 km.	150 km.	Quarterly project monitoring reports and field inspections	Field monitoring	Irrigation Division Irrigation Supervisors
• 1,030 ha. of major-damaged irrigation scheme rehabilitated	Feasibility study completed under ARP II	---	Topographic survey completed	1,030 ha.	Quarterly project monitoring reports and site inspections	Field monitoring Monthly report of contractor	Irrigation Division Irrigation Supervisors Supervisory Consultant
• 14 new Water Users Associations (WUAs) established (including a network of WUAs in major-damaged scheme), and 10 existing WUAs provided with advisory services and further training (incl. women).	10 existing WUAs organized under ARP II	10	15	24	Quarterly project monitoring reports and field inspection	Field monitoring	Irrigation Division and WUA Team
					Training reports	Training evaluation	
					WUA reports	Certificates	
Component 3: Services to Farmers							
Sub-Component 3.1: Information to Farmers							
• About 40 pre-tested information materials (print, radio, video) provided to communities	Some info. materials from ARP II	13	25	40	Quarterly project monitoring reports and field visits	Field monitoring	Research and Extension Center Information Team
• At least 10 cross visits of CGIAR scientists to provide advisory services and information support	None	2	5	10	CGIAR Scientists' reports	Scientists' visits to Timor-Leste	Research and Extension Center
• At least 3 regional centers connected electronically and functional up to EOP	None	---	3	If 3 are successful, then up to 13	Quarterly project monitoring reports and field visits	Field monitoring	Research and Extension Center Information Team
• At least 10 meteorological stations, 20 rain gauges and 4 hydro stations established and functional by EOP	None	---	50% established	100% established	Quarterly project monitoring reports and field visits	Site visits	Research and Extension Center; ALGIS

Outcome Indicators	Data Collection and Reporting						
	Baseline	*YR1*	*YR2 (MTR)*	*YR3 (EOP)*	*Frequency and Reports*	*Data Collection Instruments*	*Responsibility for Data Collection*
Sub-Component 3.2: Sustainable Animal Health Services							
• At least 80% of adult cattle, buffaloes, and pigs vaccinated on a timely manner.	70% in ARP II	70%	80%	80%	Quarterly project monitoring reports and field inspection	Field monitoring	Livestock Division
• 265 Village Livestock Workers (VLWs) trained (including women) and at least 70% are actively providing services to villages	200 VLWs trained under ARP II	200	200 70% active	265 70% active	Quarterly project monitoring reports and field inspection Training reports	Field monitoring Training evaluation	Livestock Division VLW Team
• 1 National VLW Association established and functional up to EOP	None	---	1 National VLW Association established	1 Association established, and operational, with district sub-associations	Association registration	Network and Association meetings	Livestock Division VLW Team
Sub-Component 3.3. Support to Agri-Business							
• Seed Growers' Association organized and functional up to EOP	None	---	1	1	Association registration	Association meetings	Crop Production Division Agri-business Team
• 30 ha. of seed farm established	None	15	30	30	Quarterly project monitoring report and field monitoring	Field monitoring	Crop Production Division Agri-business Team
• 12 village processing facilities established and operational by EOP	None	Feasibility study	6	12	Quarterly project monitoring report and field monitoring	Field monitoring	Industrial Crops Unit
• MAFF Agri-business unit established and operational by EOP	None	---	Unit established	Unit operational	MAFF organizational set-up	MAFF meetings	Crop Production Division Agri-business Team

Component 4: Program Management							
Sub-Component 4.1: Policy and Strategy Development							
• 4 agricultural studies/advisors services completed, discussed with key stakeholders and accepted by MAFF	Continued from ARP II	2	2	4	Policy study reports Advisors' reports	Policy study reports Advisors' reports	Policy, Planning and Program Services MAFF Divisions Project Management Advisor
Sub-Component 4.2: Project Management and Capacity Building							
• Advisory support to project management, finance, and procurement provided	3 Advisors mobilized	3	3	3	Quarterly project monitoring reports	Advisors' contracts	Project Management Advisor
• 100 person-days of training provided to MAFF staff (including women)	None	20	50	100	Quarterly training reports	Training reports	MAFF Training Unit and Training Team
General: Social and Environmental Indicators							
• At least 2 consultative meetings/year held by key partnership group where more than 60% of key stakeholders attend	None or very few	1 meeting/yr (60% attendance)	2 meeting/yr (60% attendance)	2 meeting/yr (60% attendance)	Quarterly project monitoring reports	Meeting minutes	MAFF Division Partnership Groups
• At least 90% of community-based activities in components 1 and 2 complying with environmental mitigation measures	Unknown	----	75%	90%	Quarterly project monitoring reports and field verification	Monitoring reports	NRM Team and Irrigation Team with assistance from Department of Environment
• No. of community projects requiring land (for components 1 and 2)	Most	Number	Number	Number	Quarterly project monitoring reports and field verification	Monitoring reports Monitoring reports	NRM Team and Irrigation Team NRM Team and Irrigation Team with assistance from National Directorate of Lands and Properties
• No. of grievances recorded and resolved (for components 1 and 2)	None	Number	Number	Number	Quarterly project monitoring reports and field verification		

Notes: CGIAR means the Consultative Group for International Agricultural Research ; MAFF means the Ministry of Agriculture, Forestry and Fisheries; MTR means Mid-Term Review; EOP means End-of-project.

A. Project Summary

This Annex provides a description of the proposed Third Agriculture Rehabilitation Project (ARP III).

The project's objective (purpose) is *to strengthen the capacity of the Ministry of Agriculture, Forestry and Fisheries (MAFF) and its development partners to assist rural communities to increase their agriculture production and income in a sustainable way.* It consists of four major components:

- Participatory Development and Natural Resources Management (US$1.3 million)
- Irrigation Rehabilitation and Management (US$3.5 million)
- Services to Farmers (US$ 4.2 million)
- Program Management (US$2.4 million)

The estimated total costs of ARP III are US$11.4 million equivalent, including 5 percent price contingencies and 7 percent physical contingencies. About US$3.0 million will be funded by TFET, € 6.854 million by the European Commission (US$6.9 million equivalent), and US$1.5 million by the Government of Timor-Leste. MAFF will be fully responsible for project implementation and funding execution, under the supervision of IDA. The project duration is estimated to be 3.5 years, from January 2004 to June 2007.

B. Project Description by Component

Component 1. Participatory Development and Natural Resource Management

(TFET: US$1.2 million; CFET: US$0.1 million)

This component aims to increase community resilience to chronic threats to food security, through the promotion of sustainable natural resources management (NRM) and mechanisms of self-reliance. It targets an estimated 50 upland and coastal villages in 7 districts – Baucau, Lautem, Covalima, Dili, Liquiça, Manufahi and Oecussi – or approximately 10,000 rural households (8 percent of Timor-Leste's rural families). At least 30 percent of the direct beneficiaries are expected to be women. Subject to a favorable independent review and IDA's agreement, additional districts could be considered during supervision missions.

The component is a continuation of activities piloted during ARP II. It will build the capacity of MAFF, contracted facilitators, NGOs and local government to facilitate and provide technical support to *upland and coastal communities*. The target beneficiaries – Small Groups of farmers – will be assisted to identify their priority needs, manage small group grants, and implement their approved activities.

The project will include the following activities:

- Support to ARP II pilot villages
- Expansion to new villages

Component implementation will be guided by the *Operational Manual for ARP Participatory Development and Natural Resources Management*, which will be adjusted from time to time to take into consideration lessons learned.

Activity 1.1. Support to Pilot Villages *(TFET Grant only)*

This activity will continue MAFF's support to the 30 pilot villages targeted under ARP II. During 2002-03, MAFF provided small group grants to 103 farmers groups in 14 pilot villages (2 per district) to support local activities such as village nurseries, reforestation, fish ponds, live fences, and vegetable gardens. The pilot villages will continue to require technical support and capacity building during ARP III, as many of the activities are seasonal, and some involve multiple crop or breeding cycles. ARP III will also provide continued managerial support to ensure equitable distribution of the post-harvest benefits, as well as technical advice on marketing. ARP II will be extended for an additional year (to end-December 2004) during which activities will commence in the remaining 16 pilot villages.

ARP III will fund technical assistance, community facilitators, NGO involvement, training, workshops and study tours (for beneficiary farmers, MAFF staff, NGO partners and facilitators), computer equipment, minor inputs for demonstration plots, and incremental operating costs in support of the following tasks:

- Continued planning and implementation of Small Group Activities in the 30 pilot villages;
- Follow-up technical and management training
- Technical and managerial support to Village Implementation Teams and Small Groups;
- Monitoring and evaluation of the first pilots.

Funding for Small Group Grants for the 30 pilot villages is budgeted separately under ARP II.

Activity 1.2. Expansion to New Villages *(TFET Grant only)*

This activity will expand participatory development and natural resources management assistance to about 20 new villages in the seven districts. Thus, the program will be expanded to cover about 50 villages – an average of 7 per district.

The decision to expand to new villages will be made following a detailed participatory evaluation of the first 30 pilots conducted by an external evaluator, which will be discussed at a national workshop. At this stage, the number of Districts could also be re-considered. MAFF's NRM Management Team will prepare detailed terms of reference for this evaluation, which will include measurable indicators as benchmarks for success. These will take into account the activities' physical progress, the adequacy of financial and management systems and their related transparency, level of community participation, and (as far as possible) the technical soundness of the activities. This will determine the optimal number of new villages which can be supported before expanding. MAFF will then take into account lessons learned and recommended adjustments to the Operational Manual.

The project will fund technical assistance, community facilitators, NGO involvement, training, workshops and study tours, field vehicles, small group grants, minor agriculture inputs for small demonstration plots, and incremental operating costs in support of the following tasks:

- Formation of a Village Selection Team in each District
- Village selection
- Training on participatory rural appraisal
- Community organization
- Village data collection and analysis
- Participatory NRM planning and analysis of key natural resource and agriculture problems
- Activity Plan preparation by Small Groups
- Small Group Activity plan evaluation and approval by MAFF
- Provision of grants to Small Groups (Small Group Grants);

- Technical and management training for Small Groups;
- Implementation of activities (by Small Groups)
- Monitoring and evaluation

Implementation Responsibilities. The component is integrated into MAFF's Forestry and Fisheries National Directorates – specifically the *Divisions for Reforestation and Forest Rehabilitation*, and *Fisheries Resources and Marine Environment.* They will establish an *NRM Management Team* responsible for overall management and decision-making, as well as for developing policies in support of community-based natural resources management. In recognition of the need to broaden the component's focus to include sustainable food crops and livestock management, MAFF will form an *NRM Advisory Committee* with representatives from other MAFF Divisions (including Crop Production and Livestock), other Government agencies, and selected NGOs and donors active in natural resource management. Experience in other NRM projects will be shared through this forum at bi-annual meetings, and relevant members will be consulted on the technical aspects of the activity plan approval. It is anticipated that responsibility for the management and monitoring of community-based activities will be passed to the relevant MAFF divisions at project end to ensure they continue to receive the necessary support. MAFF will also continue to engage an NRM Advisor and a Community Development Specialist to improve participatory planning and provide training in community organization.

At the District level, implementation will carried out by a *District Implementation Team* headed by the District Agricultural Coordinator. The district will also establish an *NRM Advisory Panel*, consisting of staff from the District Administration, and representatives of NGOs and donors active in NRM. This panel will be responsible for selecting the pilot villages, and providing technical support and guidance.

Given the present scarcity of trained extension workers, MAFF will continue to rely on contracted facilitators to facilitate community activities. The facilitators (2 per district) will be selected following improved procedures developed under ARP II. Although quality recruits will be sought, facilitators are likely to continue to need a high level of support. MAFF will contract NGOs partners to supply and manage facilitation services, as well as provide technical back-up to the community groups. A target of 50 percent women facilitators has been set under ARP II, and its effectiveness will be monitored progressively. The facilitators will work as far as possible with the newly appointed Sub-District Development Officers and Forest guardian/Extension officers, who will also be trained in participatory planning. At mid-term, the relative effectiveness of using contracted facilitators, NGO partners, MAFF and District Administration staff as service providers will be assessed. Recommendations will then be made on a phase-out strategy for external facilitators aimed at maximizing the program's sustainability.

Village Selection. The criteria for the selection of new pilot villages by District teams will be as follows:

- Preference will be given to villages with degraded natural resources;
- Preference will be given to a mixture of the relatively poorest upland and coastal villages;
- The potential contribution of sustainable management of the resource to the development of the overall area;
- The potential of the location to serve as a pilot (accessibility);
- Strong local leadership; and
- Willingness to contribute voluntary labor, land and locally available materials.

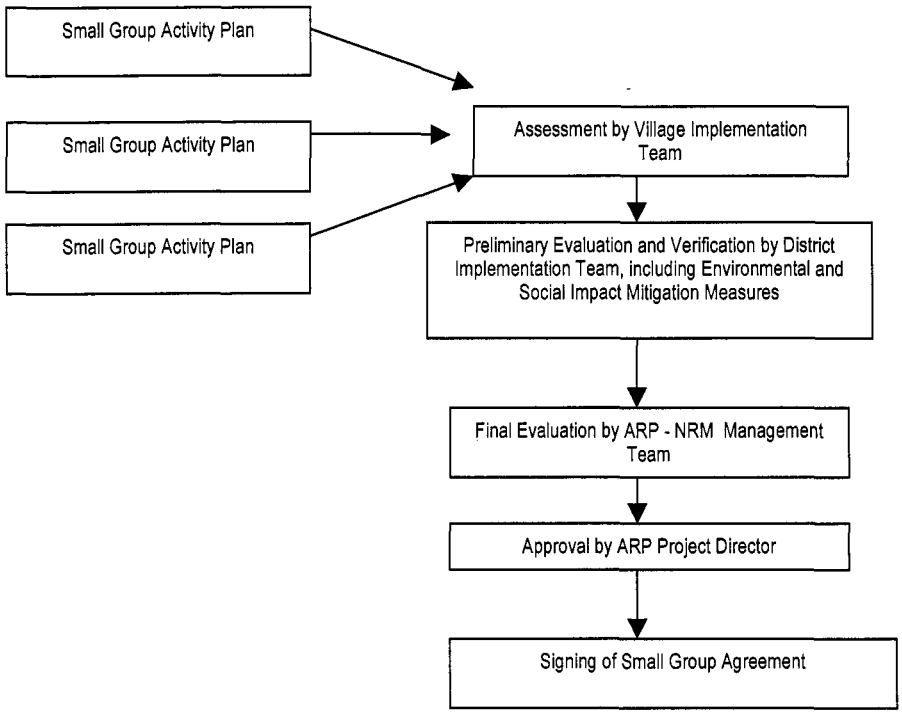
Small Group Selection Process. A balanced number of men's, women's and mixed farmer groups (Small Groups) will be selected at the hamlet (*aldeia*) level, the most culturally and geographically appropriate level for farmer collaboration in Timor-Leste. Approximately 5-8 Small Groups per village (*suco*) will be selected, averaging 25-30 households each. Group formation may vary between villages, with some electing to maintain existing groups (in the limited cases where they exist) or to form new ones. The advantage of forming new groups is that the inclusion of women and the poorest can be

promoted during the initial education and information campaign which will establish principles of gender participation and benefit sharing. The project will establish a minimum of one women-only group per village to improve women's management and leadership skills. Village leaders (Village and Hamlet heads and traditional leaders) will be encouraged to become group members to ensure support for activities (a lesson learnt from ARP II) but should not automatically become group leaders unless elected by their members. Small Group membership will be loosely defined for the initial planning and activity identification, but then formalized prior to activity implementation, where membership may be extended to households not thus far involved. Each group will elect a leader, treasurer and/or secretary to promote transparency and accountability (see Annex 7). Previous ARP II pilots benefited some 65 percent of the village population; hence elite capture of benefits is unlikely. At the village (suco) level, a Village Implementation Team will be established to provide overall coordination and monitoring support. Members will be nominated from each Small Group to ensure representativeness, with a minimum of three women per team.

Small Group Activity Plan Development and Approval Process. The Small Group Activity plans will be geared towards solving problems of resource management and vulnerability rather than overly focusing on income generation – with the exception of products that people can store for times of scarcity to strengthen food security. Project facilitators will raise environmental awareness, explain the project criteria (including the voluntary nature of land, local materials and local labor contributions) and facilitate data collection and participatory planning and proposal development at the Small Group level, using Participatory Rural Appraisal methods. This process is further detailed in the Operational Manual and training manual for community facilitators.

Small Group Activity plans will include a justification for the proposed activities relative to their contribution to vulnerability reduction and improved NRM; the inputs required; the communities in-kind contributions; the expected outcomes; implementation responsibilities; maintenance and monitoring plans; and mechanisms for distributing benefits amongst group members and ensuring sustainability. The approval process for Small Group Activity plans is described in Figure 1 below:

Figure 1. Evaluation and Approval of Small Groups' Activities



At each assessment stage, facilitators will assist the Small Groups in making any recommended improvements to their activity plans. The District implementation teams will play an important role in working with the communities and facilitators, and ensure that environmental and social mitigation measures are taken into account (including verifying that any land used by the Small Groups is provided voluntarily and against community-agreed compensation).

Table 1 shows the positive and negative list of activities that will guide the preparation and approval of the Small Group Activity plans:

Types of activities which the project will support	*Types of activities which the project will not support*
• Tree seedling propagation, reforestation and agroforestry • Sandalwood and fuel wood plantations • Catchment management planting • Management of natural forests • Mangrove rehabilitation • Processing and marketing of non-timber forest products • Fresh-water fish ponds • Processing and marketing of fish products • Extensive mariculture (sea weeds, green mussel, trepang etc) • Community-based coastal resources management • Increasing productivity of agronomic crops • Fruit tree orchard establishment • Vegetable production (especially new varieties) • Processing and marketing of agricultural products • Community-based seed multiplication and distribution • Rehabilitation/improved management of coffee, candlenut or coconut plantations • Post harvest storage to reduce crop losses, and management of crop residues • Forage grass and fodder legume cultivation • Multi-purpose living fences and animal sheds • Water harvesting and storing (including handpump sets for upland irrigation) • Activities which encourage adaptation to climatic variation (droughts and floods)	• Activities requiring any involuntary land acquisition • Salaries of any kind • Works for government administration or religious purposes • Inputs and materials available from within village boundaries (this should be part of in-kind contributions) • Inputs that benefit a few individuals only • Payment for attendance at workshops/training • Activities likely to have significant negative environmental or social impact such as: aggressive/invasive tree species propagation; establishment of mono-culture plantations; purchase of chemical fertilizers, pesticides or fungicides; chainsaws, explosives, asbestos, poisons and other harmful materials or equipment • Military or paramilitary equipment • Activities where funding is available from other sources, such as road/irrigation rehabilitation (funded under Comp.2) or income generating activities for which micro-credit is readily available • Activities which impact negatively on biodiversity • Activities which disrupt or damage cultural property • Activities which violate Regulation No. 2000/19 on Protected Places or are harmful to other important habitats such as high mountains (above 2000m), wetlands, mangrove areas and coral reefs.

Small Group Grants and Funds Disbursement. Each village (*suco*) will be eligible to receive grants of up to US$10,000, though this ceiling will need to be carefully explained to discourage the Small Groups from seeking to maximize their allocation through overly-ambitious proposals. At least half of the grants should go to groups which include women (they could be mixed groups). The Small Group Agreements will be signed directly between the Project Director and the Small Group representatives. The project will not pay for local materials (seeds, soil and building materials), local labor or compensation for land use – these will be part of the Small Groups' in-kind contributions, to promote greater ownership and planning at a manageable scale. Funds disbursement must take place at a time in the seasonal cycle when wet season planting can be effectively ensured. Once approved, funds will be transferred directly from the project's special account to the District Finance Offices for direct collection by the Village Implementation and Small Group Treasurers in accordance with the mechanisms specified in Annex 7. Each village will be required to submit their own plan for guaranteeing the transparency and security of the funds before the activity plans would be approved, with adherence monitored by facilitators and MAFF. Funds will be provided in several installments (advance, intermediary and final payment) in accordance with the agreed targets.

Capacity Building. A major focus of Component 1 is to build the capacity of MAFF staff, facilitators, and NGOs to identify and respond to farmers' needs. The project will assist farmers' groups in identifying problems and potential solutions specific to their resource base, and developing the technical and organizational skills to address them. Where technical capacity exists within MAFF, the project will conduct Training of Trainers courses to help them transfer technical skills to facilitators, or directly to farmers. MAFF's Research and Extension Division will help develop the training materials.

Where appropriate skills do not exist internally, MAFF will contract external trainers. A series of technical manuals will be developed for the most common types of projects proposed by communities (e.g. agro-forestry, nursery management, fish pond maintenance, vegetable gardens). The manuals will include, among others, impact indicators specific to each activity – such as survival rates for seedlings, or fish yield – and will be progressively updated based on lessons of experience in various geo-climatic areas. The bulk of farmer training should be delivered directly to farmers within their own village environment to avoid dilution of techniques and emphasize practical applications. Where promising environmental conservation or rehabilitation measures are identified by members of the advisory panels but not included in the Small Groups Activity Plans, MAFF may introduce them to model farmers and fund them as demonstration activities under a separate budget to the Small Group Grants. The project will also organize study tours to enable new pilot communities to learn from successful sites. MAFF staff and facilitators will be encouraged to attend key seminars on the principles of community-based NRM and 'no regrets' adaptation. Where possible, invitations to the various training events will be extended to partner NGOs to act either as resource persons or participants as part of overall capacity building efforts.

Component 2. Irrigation Rehabilitation and Management

(EC: € 2.5 million; TFET: US$0.4 million; CFET: US$0.5 million)

This component will support MAFF's program of strengthening rural communities' food security and sustainable economic development in *lowland, irrigated areas*. The project will rehabilitate community based irrigation schemes serving 3,000 hectares of irrigable land, and 150 kilometers of rural access roads; rehabilitate the major-damaged irrigation scheme in Manufahi (Caraulun) covering 1,030 hectares of irrigable land; and strengthen or establish about 24 Water User Associations (WUAs). All together, the component will target some 4,000 rural families, about 29 percent of the area in need of rehabilitation under small irrigation schemes, and 27 percent of the area covered by damaged large irrigation schemes in Timor-Leste. Some 20 percent of members of WUAs are expected to be women.

Component 2 will be implemented by the Irrigation and Water Management Division of MAFF. It will include the following activities:

- Community irrigation and roads rehabilitation
- Major irrigation rehabilitation
- Capacity building and WUA support
- Survey and mapping

Activity 2.1. Community Irrigation and Roads Rehabilitation *(EC Grant only)*

The activity will follow the successful model of community contracts started under ARP I and ARP II, and now institutionalized by MAFF. Since rehabilitation of community schemes is expected to be required for several years, it would be gradually transferred to full government financing by project conclusion. The EC Grant will support 75%, 50% and 25% of the costs of the schemes in years 1 to 3 of the project, respectively, with the Government funding the corresponding balance. The project will finance small civil works contracts with communities, technical audits of the works, and incremental operating costs in support of this activity.

Rehabilitation of Community-based Irrigation Schemes. This activity will continue the rehabilitation of small-scale irrigation schemes under ARP I and II that has brought about 9,900 hectares back into irrigated rice production. ARP III will target further rehabilitation of 3,000 hectares where productivity is affected by structural failures in all 13 districts.

Local communities will carry out the remedial works directly, following the model developed under ARP I and II, and in accordance with the *Operation Manual for Community Irrigation and Roads Rehabilitation* (which will be updated from time to time to incorporate lessons of experience). The project will sign a Memorandum of Agreement for the identified works with community-designated entities, who will be responsible for ensuring that the works are completed satisfactorily. The irrigation schemes will be selected annually from the submissions made by the scheme representatives, after scrutiny at the District level, and technical review by MAFF Irrigation staff. To ensure that rehabilitation works start in the early part of the dry season (May) the District Irrigation Officers will be encouraged to carry out early surveys of community proposals and maintain a pipeline of planned projects for follow-up seasons.

To encourage ownership and sustainability, beneficiaries will be required to contribute part of the total rehabilitation costs either in materials or labor, the amount contributed on each sub-project increasing gradually from 5% to 15% (or higher depending on experience). The overall procedures have been successfully tested by MAFF over three seasons of works, and are considered adequate for ARP III (see Annex 7). The project will also finance an independent technical audit of community irrigation schemes to provide lessons of experience to MAFF from which to further strengthen implementation strategies.

Rehabilitation of Community-based Access Roads. This activity will target the rehabilitation of a further 150 kilometers of minor access roads required by communities to link agricultural project areas and irrigation schemes to national or district roads. Communities will rehabilitate the roads using the same procedures for community contracting, payment and technical supervision as for the small irrigation schemes. The technical audit will include access roads rehabilitated under the project.

Activity 2.2. Major Irrigation Rehabilitation *(EC Grant only)*

Based on the detailed feasibility study carried out under ARP II, this activity will rehabilitate the Caraulun irrigation scheme in Manufahi District to provide controlled and equitable water supply to an estimated 1,030 hectares of land. In addition to civil works, the project will finance technical assistance, engineering supervision services, and incremental operating costs. With project assistance in re-establishing WUAs and MAFF extension inputs, the project should help ensure that farmers achieve rice production levels of 2.5 tons/hectare/crop by 2008 (from current levels of 1.9 tons/hectare), and increase their cropping intensity by producing two crops per year.

Due to the scope of the works, MAFF will contract out the rehabilitation to a qualified contractor. The head works and irrigation area is located in Betano village which has an estimated population of 3,930 or 810 households. Before the scheme was damaged by floods in December 2001, it had about 600 hectares under cultivation, with two crops produced each year over an estimated 25% of the area. About 14 Water Users Associations were active in the scheme before 2002. The civil works required for rehabilitation include the remodeling of the head works with a new approach channel and gates, irrigation intake works and repairs to structures and canals in the project area, including rehabilitation of the main, secondary and select tertiary canals and service roads within the Caraulun irrigation scheme. A detailed feasibility study, including social, economic, and environmental analysis, was completed under ARP II.

A number of preconditions must be fully satisfied before the works on Caraulun would be allowed to proceed (see Annex 13). These preconditions include (i) the issuance of a Ministerial Order defining the responsibilities of the Government and communities for operation and maintenance of irrigation schemes; (ii) completion of detailed topographic surveys, detailed designs, and bill of quantities for Caraulun; (iii)

re-establishment of local WUAs and agreement on land use; and (iv) adequate staff allocations from MAFF for construction supervision. Completion of these requirements would be necessary before the civil works could proceed and is a condition for disbursement under the EC Grant Agreement. A detailed action plan for these conditions is included as an Attachment of Annex 13.

At present, the rehabilitation plan only envisages work on the main canals. Once WUAs are re-established in Caraulun, if local farmers agree on the need for secondary or tertiary canals, they could carry out the works under separate community irrigation Memoranda of Agreement, using the processes adopted under the Community Irrigation and Roads Rehabilitation.

Activity 2.3. Capacity Building and Water User Associations' Support *(EC and TFET)*

The project will establish one pilot WUA per district (for a total of 13 WUAs) in small community-based irrigation schemes. The WUAs would be selected from amongst the schemes targeted under ARP III, as well as those already rehabilitated under ARP I-II, with a view of maximizing their success and demonstration value to other communities in the district.

The project will also provide further training and strengthening to the 10 WUAs formed under ARP II in rehabilitated light-to-medium damaged irrigation schemes, and increase extension support to crop production to stimulate improved productivity. Training will be provided in irrigation operation and maintenance as well as general agricultural production, if required. A small allocation has been budgeted for minor farm inputs (such as improved seed varieties) to help the WUAs optimize their yields. During the first year, the project will also support the establishment of a network of WUAs in Carulun. Four WUA local consultants will be mobilized to this end, covering the East, West, Central and Caraulun regions.

The project will finance vehicles, computer equipment, minor agriculture inputs, consulting services, and training, workshops and study tours, and incremental operating costs in support of this activity. ARP III will continue in-country training of MAFF staff in irrigation, focusing on design, construction supervision, operation and maintenance.

Activity 2.4. Survey and Mapping *(TFET Grant only)*

The project will contract a specialist survey firm to prepare detailed topographic surveys and mapping of up to 12,500 hectares of land, covering the Caraulun major irrigation scheme, as well as the light- to medium-damaged schemes rehabilitated under ARP I and ARP II and selected community irrigation schemes. The surveys will complement the detailed feasibility study of Caraulun completed under ARP II by enabling detailed designs for the command areas. It will include features such as roads, canals, drains, bridges, tube wells, urban development areas, and the location of villages.

Component 3. Services to Farmers

(EC: € 2.7 million; TFET: US$0.8 million; CFET: US$0.7 million)

This component aims to strengthen and institutionalize MAFF's service delivery to farmers in three key areas: (a) information services; (b) animal health services; and (c) agri-business support.

Sub-Component 3.1. Information to Farmers *(US$1.4 million)*

This sub-component aims to increase MAFF's capacity at the central and local levels to deliver timely and relevant information to farmers, and foster two-way communication flows.

In a country where 34 percent of the population is illiterate,[8] face-to-face information delivery is the preferred option for communicating with farmers, followed closely by the use of mass media such as the national public broadcaster and community radios. Latest estimates indicate that 60,000 radio sets have been distributed by various donors in Timor-Leste since 2000, covering some 450,000 people. Radio stations are concentrated in Dili, but there is now one operational community radio station per district. Most of them have a 30 km radius transmitter, but their coverage varies depending on topography.

Farmers have consistently identified access to appropriate and timely information as a major need, particularly in the present context where extension support is scarce. Better information also allows communities to participate in the planning and implementation of activities affecting their livelihood, thereby increasing their sense of ownership and the sustainability chances.

The project will support the following activities:

- Information Programming
- Strengthening of the CGIAR Liaison Secretariat
- Pilot Community-Based Information Service Network
- Agro-Meteorological Services

The sub-component will be implemented by the Research and Extension Center of MAFF and will be managed by the inter-sector Information Team established under ARP II.

Activity 3.1.1. Information Programming *(EC and TFET Grants)*

This activity will be a continuation of the information programming activity supported under ARP II, drawing on lessons from the previous project. The project will finance communication equipment, technical assistance, information programs and materials (including radio and television broadcasts), training and workshops for MAFF staff and local consultants, and incremental operating costs in support of this activity.

Key problems with past farmer information programs in Timor-Leste have included late delivery; non-responsiveness to farmer requests and feedback; irrelevant material; inappropriate communications channel; unclear printed material; lack of basic communication skills among MAFF staff; and weak planning, implementation, and monitoring. The project will focus on strengthening these aspects. Prior to implementation, the MAFF Information Team will incorporate lessons learned into a new communications strategy, including an appropriate monitoring and evaluation mechanism. The team will also re-establish an Information Forum to share past experiences with other partners involved in information and communications programs (see Annex 6).

[8] The Asia Foundation, National Survey of Voter Knowledge, 2001.

The project will support information campaigns that directly support other components and MAFF activities. Information campaigns will emphasize face-to-face, participatory communications in conjunction with paid community radio broadcasts, printed materials, television broadcasts, and mobile audio-visual van demonstrations. Traditional approaches of information delivery (i.e., farmer field days, key farmers, village meetings, market days, *Chefes do Suco*, church groups, schools, and others), utilizing available resources will be explored. This activity also aims to develop partnerships with other donors, NGOs and groups that can assist with information dissemination and monitoring, effectively maximizing options for face-to-face contact with farmers and allowing for external monitoring of activities.

Activity 3.1.2 Support to CGIAR Liaison Secretariat *(EC Grant only)*

This activity, already started under ARP II, will help MAFF's CGIAR Liaison Secretariat develop a rapid response system to provide agriculture staff —and farmers—with specific technical advice from CGIAR and other international centers of expertise. In a country with isolated rural communities and limited Government resources, electronic links with these centers will become increasingly important.

The project will develop an easy-to-access repository of most frequently asked questions and suggested solutions for use by MAFF staff, NGOs and interested stakeholders. In addition to online access, the database will be stored in Compact Disk and sent to the pilot community-based information service network for further dissemination. The project will also finance cross visits between CGIAR experts and MAFF staff, training, translation of relevant CGIAR materials into local language and continuous access to Internet. The CGIAR Liaison Secretariat will be assisted by an international advisor to be funded by UNDP/EC.

Cross-visits by MAFF staff to CGIAR or other centers of expertise will adhere to a strict criteria which will include approval of the Minister; clear identification of the activity as a high priority on the Road Map; short-term duration (i.e., a 1-4 weeks); cost-efficiency; lack of in-country opportunity; and an action plan to link the result of the cross-visits to practical recommendations and MAFF programs upon return.

Activity 3.1.3 Pilot Community-Based Information Service Network *(EC Grant only)*

This new activity aims to facilitate the information flow to and from the districts through point-to-point communications using affordable technology. It will promote decentralization of information services by building capacity at the district level, effectively locating the information and communication sources closer to farming communities. The technology is based on the well-documented and successful People First Network e-mail system in the Solomon Islands,[9] as well as case studies documenting the potential of community radio in rural areas and the increasing use of internet/e-mail facilities by farmer groups. The project will finance radio, office, computer and communications equipment, small works, training, technical assistance and incremental operating costs in support of this activity.

The project will first introduce pilot community-based information services at the three selected agriculture centers (likely to be the regional centers in Baucau, Same and Bobonaro). Each information service network office—comprising a secured room at or near the agriculture center —will be equipped with two desktop computers, software, e-mail facility, and peripherals. Due to the lack of a reliable power

[9] - The People First Network (PFnet) of the Solomon Islands is an e-mail system that permits remote locations on islands across thousands of square kilometers in the Pacific Ocean to have access to Internet e-mails using a simple computer, short-wave radio, and solar power. For more information, visit http://www.peoplefirst.net.sb.

supply, the equipment will be powered by solar-power[10] and/or generators. Small works will likely be required to increase security of the equipment in these offices. An assessment of equipment needs was completed at appraisal and is included in MAFF's Project Implementation Plan and detailed cost tables.

The office and e-mail will be available to district agriculture staff and community radio staff, NGOs, teachers, and farmers groups, on a regulated use basis. The offices will be manned by district agriculture staff, where IT capacity is expected to grow with training inputs. The project will finance the short-term inputs of an Information and Communication Technologies (ICT) Specialist who will help assess the most appropriate technology specifications and advise on a plan for cost recovery (based on payment for services rendered) once a critical mass of users is reached. Trained MAFF staff will monitor the use of e-mail and information dissemination activities. They will record the number and type of requests for agricultural information, develop profiles of e-mail users, and monitor the number of agriculture radio programs by community radios over time. The strategy will be to start with three pilot network offices, and then evaluate at mid-term review to determine whether an expansion is warranted, as well as how the services could be improved.

To overcome severe communication problems between MAFF and district agriculture offices, the project will also finance single-side band (SSB) radios connecting all 13 offices with Dili. These radios are designed primarily for long range voice communications (whilst short-wave radios can be efficient for data transmission but are not appropriate for rapid voice communication). The option of sharing radio networks with the Ministry of Health has been ruled out, as this network of fixed and mobile radios will be restricted to health posts, district health managers and ambulances and possibly the police on an emergency basis.

Activity 3.1.4. Agro-Meteorological Network *(EC Grant only)*

At present, Timor-Leste lacks the means to collect agro-hydro-meteorological data on such basic parameters as rainfall, temperature, humidity, evaporation, and stream water levels, which are key for monitoring areas vulnerable to droughts and floods. They are also necessary for planning agricultural programs: the design of irrigation systems, for example, requires data on long-term rainfall patterns and intensities. Under the Portuguese times, Timor-Leste had 64 rainfall and 7 climatology stations, but these fell out of use during the Indonesian occupation. A feasibility analysis was conducted during appraisal to determine the scope and potentially recommended locations of this network (details of the analysis can be found in MAFF's Project Implementation Plan).

The project will support the re-establishment of a national network of fully automated agro-meteorological stations in the 8 major agro-ecological zones of Timor-Leste. This is expected to include 12 meteorological stations and 20 automatic rain gauges to collect information such as rainfall, air temperature, evaporation, relative humidity, wind speed, barometric pressure, and soil temperature, and four hydrological stations in major rivers, measuring water levels and rainfall (and therefore capturing data on highest discharges and base flows).

A short-term technical advisor will work with the Agriculture Land Use and GIS Unit at MAFF (ALGIS) under the Research and Extension Center to assist in establishing the system and design simple data collection and interpretation procedures. The stations units will be re-established where possible in pre-existing sites and in government land close to the District offices. For the meteorological and rain gauge stations, the project will need to construct a small fenced area (about 9 m^2) to protect the units against vandalism. The project will finance small works, agro-meteorological equipment, consultant services, training for MAFF staff, and incremental operating costs in support of this activity.

[10] The use of solar-powered computers is well documented and developing countries have been using it for rural schools, distance learning, community centers, and tele- or multimedia centers.

Sub-Component 3.2. Sustainable Animal Health Services *(US$2.1 million)*

This sub-component – a continuation of ARP I and II - aims to provide sustainable animal health services to the estimated 567,000 rural people living in households owning livestock. It will continue to support essential annual vaccination campaigns, targeting 80 percent of the pig, cattle, and buffalo population, as well as some 500,000 chickens a year. It will also improve the cold chain network for vaccine storage, and continue support to the Village Livestock Workers (VLW) program initiated under ARP II.

MAFF's Livestock Division and District Livestock Officers will implement the activities. Both the vaccination and the VLW programs have been institutionalized within the Ministry.

The project will include the following activities:

- Vaccination Campaigns
- Cold Chain Improvement
- Village Livestock Workers
- Capacity Building

Activity 3.2.1. Vaccination Campaigns *(EC and TFET Grants)*

Project support for vaccination will continue under a three-year phasing-out formula (75% in the first year, 50% in the second year, and 25% in the third year), with progressive transfer of campaign financing to MAFF. This will help ensure sustainability following project completion. The annual campaigns will vaccinate about 300,000 pigs against Swine Fever, and up to 180,000 cattle and buffalo against Hemorrhagic Septicemia and Brucellosis. They will also distribute Newcastle Disease chicken vaccine to 200,000 farming families. District Livestock Officers and VLWs will train lay vaccinators at the village level to administer this vaccine three times per year. The project could also help support vaccination against emerging new animal diseases that are judged to pose public health concerns. Communities will be encouraged to build small corrals to facilitate the vaccination campaigns. The project will finance vehicles, vaccines, the costs of vaccination campaigns and monitoring, and incremental operating costs in support of this activity.

Activity 3.2.2. Cold Chain Improvement *(EC Grant only)*

In the past, vaccine quality has been undermined by frequent power outages in the districts, which operate the refrigeration (cold storage) network. The project will seek to maintain the quality of veterinary vaccines by procuring solar-powered refrigerators for 37 sub-districts and 13 districts. Replacement of cold boxes will also improve transport across mountainous terrain between sub-district cold storage and vaccination sites.

Activity 3.2.3. Village Livestock Workers *(EC and TFET Grants)*

This activity will continue to support the VLW Program, a privatized village livestock service modified from a similar program in Cambodia. ARP II supported the training of 200 Village Livestock Workers. Under ARP III, an additional 65 VLW will be trained (of which 5 percent are expected to be women). Together, the 265 trained VLWs are expected to cover all districts at a rate of 2 VLWs per three villages, providing simple treatment and advice at cost to livestock owners across the country. The project will finance veterinary equipment and medications, consulting services, training, workshops and cross visits, and incremental operating costs in support of this activity.

MAFF Livestock staff, assisted by an international advisor and qualified NGOs, will provide starter kits, refresher training, and technical and monitoring support to the VLWs in the field. MAFF will also help establish a VLW Association to certify and support its members, procure replacement medications, and

handle disciplinary matters. The VLWs will operate on a privatized fee-for-services basis, and may be contracted by MAFF to carry out vaccinations and other MAFF-directed programs. Monitoring and evaluation of the VLW program will be stressed throughout implementation to strengthen the program progressively based on lessons learned.

Activity 3.2.4 Capacity Building *(EC and TFET Grants)*

The project will support capacity building for MAFF Livestock Division staff, District Livestock Officers, and their Livestock Network partners. Identified areas for further in-country training include: (i) epidemiology to support the VLW program, (ii) community-based forage and legume development to backstop upland villages; (iii) abattoir management; and (iv) annual membership to the *Office Internationale des Epizooties (OIE)* and attendance of annual meetings of OIE Southeast Asian Foot and Mouth Disease sub-commission (SEAFMD). The project will provide computer and office equipment, training, workshops and study tours, and incremental operating costs in support of this activity.

Sub-Component 3.3. Support to Agri-Businesses *(US$0.6 million)*

This sub-component aims to strengthen and institutionalize MAFF's agri-business advisory services, in support of rural producer organizations (a key priority under the Stability Program). The project will promote key niche markets by targeting about 1,200-1,500 seed growers and 210 farming families involved in candlenut and coconut oil production, and continue to provide advisory services to emerging rural producer organizations.

The sub-component will be implemented by the Food Crops Division of MAFF.

The project will support three key activities:

- Support to Seed Producers
- Support to Candlenut and Coconut Processors
- Support to Rural Producer Organizations

Activity 3.3.1. Support to Seed Producers *(TFET Grant only)*

In Timor-Leste, rice farmers do not use certified seeds; they store their own seeds from previous harvests. Because of the repeated use of the same variety, the seeds lack vigor resulting in low germination and low resistance to disease. Procurement of imported certified seeds was attempted by ARP II under the Agriculture Service Centers, but this was unsuccessful due to high prices and low germination rates.

The project will build upon existing partnerships with the ACIAR-funded Seeds for Life Project, GTZ, the Agriculture Service Center in Bobonaro and the International Rice Research Institute (IRRI) to help establish a Seed Producer Association in the main rice growing areas of Timor-Leste, and train about 30-45 seed growers. MAFF will organize training, delivery of the initial registered seeds and minor agriculture inputs to the target farmers.

Rice seed growers in Bobonaro district are expected to use local machinery. However, this may not be available in more remote rice growing areas such as Viqueque. In that case, the project would help procure a set of rice seed production machinery (thresher, grain cleaner, and dryer), to be provided to a suitable organized farmers' group with a lease-to-own option. This would be carefully considered to avoid setting a precedent that could compete with micro-credit schemes. Marketing of the seeds is expected to be facilitated through existing outlets (such as the Agriculture Service Center in Bobonaro).

While the initial emphasis will be on rice seeds, the scope of this component also allows MAFF to assist corn seed or other priority grain seed producers. Target seed producers will be selected amongst those with extensive experience, in consultation with community leaders. MAFF will develop guidelines for the selection of seed producers and target locations, as well as any production agreements.

The project will provide technical assistance, seed processing equipment and machinery, training of farmers and of MAFF staff (to assist seed producers), and incremental operating costs in support of this activity.

Activity 3.3.2. Support to Priority Niche Market Commodities *(EC Grant only)*

A niche market study for Timor-Leste is currently being carried out with assistance from the World Bank. In addition, GTZ will be financing a feasibility study on candlenut and coconut oil processing. Based on the results of these studies, MAFF is expected to help promote the most promising niche market commodities by providing specialized technical assistance, training, and equipment to key farmer groups. Experience with the Agriculture Service Centers in ARP I and II points to the need to reach critical economies of scale in quantities traded, as well as control quality.

Two promising niche markets in the districts of Viqueque and Lautem are coconut and candlenut oil. To encourage value-added production and help generate local employment in these remote districts, the project will help establish about 6 small village type coconut oil mills and 6 candlenut oil mills, with an individual production capacity estimated at 16-48 liters of oil per day. This task will be carried out in partnership with GTZ, who is financing the initial feasibility study and could support future farmer training in Viqueque. The feasibility study will determine the economic viability and market outlet for the oil mills. Village mill operators will be trained on the oil processing, operation and maintenance. Depending on the results of the study, the small mills will be provided either to a large established farmer association, or directly to farmer operators with a lease to buy option, under clearly agreed terms. Short term specialists in oil mill and oil processing will assist MAFF in this activity.

The project will finance technical assistance, small works, agro-processing equipment, training of farmers, and incremental operating costs in support of this activity.

Activity 3.3.3. Support to Rural Producers' Organizations *(EC Grant only)*

This activity will support the institutionalization of agri-business support services within MAFF, to help strengthen rural producer organizations, and coordinate agri-business support. The activity will extend MAFF advisory and training support beyond the Agriculture Service Centers supported under ARP I-II to marketing and farmer organizations supported by AusAID, CIDA, FAO, GTZ, JICA, OTI, and UNDP/UNOPS. To share lessons of experience, MAFF will establish an Agri-Business Consultative Group with interested partners.

Advisory and training support to Farmers Organizations will be based on demand, and will cover primarily the following areas: (i) association formation, operation, and management, (ii) business planning and feasibility preparation, (iii) market analysis, (iv) business operation and management, (v) financial management, reporting and auditing. The project will finance office and computer equipment, training and workshops, technical assistance, and incremental operating costs in support of this activity.

To prevent potential conflicts of interest between its regulatory and operational roles, the Agri-Business Support Services will focus primarily on advising non-governmental or private Rural Producer Organizations, and its role is expected to become progressively regulatory in the future.

Project Component 4. Program Management

(EC: € 1.6 million; TFET: US$0.6 million; CFET: US$0.2 million)

This component will continue to assist MAFF in developing key organizational and sectoral policies, build further core skills amongst MAFF staff and their partners, and integrate ARP management fully within MAFF's organizational structure.

The project will include the following sub-components:

- Policy and Strategy Development; and
- Project Management and Capacity Building.

Sub-Component 4.1. Policy and Strategy Development *(US$0.5 million, EC and TFET)*

Among the most highly sought ARP II activities were its policy and strategy studies. ARP III will extend this support to enable MAFF to develop priority organizational, agriculture, rural development and natural resources policies and strategies, under its new Policy, Planning and Program Services unit.

The project will continue to provide the services of a Senior Agriculture Policy Advisor and Legal Advisor. In addition, it will support about four policy and strategy studies. To ensure flexibility and responsiveness to evolving needs, the subject of the studies will be confirmed further during implementation. At present, they are envisaged to include (a) support to MAFF's Long-Term Strategy; (b) a Community-Based Natural Resources Management study; (c) Livestock Industry Development; (d) Agriculture Land Use Policy; and (e) a Fisheries study. The studies will be prioritised based on MAFF management priorities, value added relative to other donor support, contribution to the ARP exit strategy (e.g. the extent to which they will help prepare a follow-up operation), and the willingness of the proponent Divisions to provide counterpart assistance.

MAFF will contract out high calibre policy advisors to manage the studies. Policy development would require extensive consultations with stakeholders (agriculture donors, key government departments, NGOs, district governments, farmer groups, and the church, among others). It is expected that the MAFF will adopt the relevant policy recommendations and integrate these into its policies and regulations. The project will finance technical assistance, studies, surveys and workshops in support of this activity.

Sub-Component 4.2. Project Management and Capacity Building

(US$1.9 million, EC and TFET Grants)

This sub-component will provide overall project management and coordination. It will also support capacity building of MAFF staff to increase their skills on relevant technical and management topics.

Program management will be coordinated by the ARP Project Director who is currently the Permanent Secretary of the Department of Agriculture and Livestock. The MAFF Management Team, consisting of the National Directors of the three MAFF departments and the Directors of Divisions involved in project, will continue to provide overall policy and decision-making to facilitate project implementation. To ensure sustainability, the Project Management Unit established under ARP I and II will be abolished, and the project will be absorbed into the existing structure of MAFF. Incremental operating costs will be progressively financed by MAFF at an increasing rate of 25% in year 1 to 75% in year 3.

Equipment Replacement. The project will provide minor replacement of computer equipment, vehicles, and furnishings for District Agriculture Offices, Regional Offices and the central MAFF office. To

improve office equipment maintenance, the project will also hire a full time Information Technology Specialist.

Management Training. MAFF staff continue to require skill improvements in key technical and management areas. A Training Plan has been completed for the project. In addition to farmers and technical training already budgeted under each component, the plan identifies the need for further training in procurement, financial management, monitoring and evaluation, and overall management. The Training Plan also includes provision for attendance by MAFF senior staff at priority international conferences or short-term courses not available in-country. The status of training will be assessed every six months and training courses will be continued or revised based on the results.

Core Support for Project Management. The Project Director and MAFF Management Team will be assisted by a full time Project Management Advisor in day-to-day project operations, a Procurement Advisor and a Financial Management Advisor, who will work with their respective government counterparts under the Finance and Budget Support Services Unit of MAFF. MAFF's Monitoring and Evaluation Officer (already trained under ARP II) will be responsible for the monitoring and evaluation of project activities, assisted by short-term monitoring and evaluation specialists at key stages of the project (benchmark study, mid-term review, and final evaluation).

In support of this sub-component, the project will finance office and computer equipment and furnishings, vehicles, workshops, training and study tours, technical assistance services, annual project audits, and incremental operating costs.

Technical Annex 5: Project Costs

TIMOR-LESTE: Third Agriculture Rehabilitation Project

Project Cost By Component	Local US $million	Foreign US $million	Total US $million
1. Participatory Development and Natural Resource Management	*0.82*	*0.35*	*1.17*
2. Irrigation Rehabilitation and Management	*1.76*	*1.28*	*3.04*
3. Services to Farmers			
3.1. Information to Farmers	0.48	0.78	1.26
3.2. Sustainable Animal Health Services	1.21	0.76	1.97
3.3. Support to Agri-Businesses	0.13	0.41	0.54
Sub-Total Services to Farmers	*1.82*	*1.95*	*3.77*
4. Program Management			
4.1. Policy and Strategy Development	0.00	0.47	0.47
4.2. Project Management and Capacity Building	0.61	1.04	1.65
Sub-Total Program Management	*0.61*	*1.51*	*2.12*
Total Baseline Cost	*5.00*	*5.09*	*10.09*
Physical Contingencies	0.32	0.45	0.76
Price Contingencies	0.23	0.31	0.54
Total Project Costs[1]	*5.54*	*5.85*	*11.39*
Total Financing Required	*5.54*	*5.85*	*11.39*

Project Cost By Category	Local US $million	Foreign US $million	Total US $million
Goods	0.43	1.43	1.87
Works	1.88	0.85	2.73
Services	0.70	3.53	4.23
Training	0.93	0.03	0.96
Small Group Grants	0.24		0.24
Incremental Operating Costs	1.10		1.10
Incremental Staff Salaries (under CFET)	0.24		0.24
Total Project Costs[1]	5.52	5.85	11.37
Taxes and Duties	0.02		0.02
Total Financing Required	*5.54*	*5.85*	*11.39*

[1] Identifiable taxes and duties are US$25.000 and the total project cost, net of taxes, is US$11.37 million.

Note: Numbers may not add up due to rounding.

COST TABLE SUMMARY - Base Costs Without Contingencies (in US$ equivalent)

OMPONENT/SUB COMPONENT/ACTIVITIES	TOTAL	BREAKDOWN BY FUND SOURCE			OVERALL
	(TFET & EC)	TFET	EC (EUR)	CFET	PROJECT COST
1 PARTICIPATORY DEVELOPMENT AND NRM					
1.1 Support to Pilot Villages	354,600	354,600	-	18,000	372,600
1.2 Expansion to New Villages	660,200	660,200	-	133,000	793,200
Sub total Component 1	**1,014,800**	**1,014,800**		**151,000**	**1,165,800**
2 IRRIGATION REHABILITATION AND MANAGEMENT					
2.1 Community Irrigation and Roads Rehabilitation	500,000		500,000	480,000	980,000
2.2 Major Irrigation Rehabilitation	1,560,640		1,560,640		1,560,640
2.3 Capacity Building and WUA Support	288,600	230,600	58,000	-	288,600
2.4 Survey and Mapping	165,000	165,000		44,300	209,300
Sub total Component 2	**2,514,240**	**395,600**	**2,118,640**	**524,300**	**3,038,540**
3 SERVICES TO FARMERS					
3.1 Information to Farmers					
3.1.1 Information Programming	304,535	60,060	244,474	84,000	388,534
3.1.2 Support to CGIAR Liaison Secretariat	224,250		224,250		224,250
3.1.3 Pilot Community-based Information Service Network	346,692		346,692		346,692
3.1.4 Agro-Meteorological Network	299,684		299,684		299,684
Sub total	**1,175,161**	**60,060**	**1,115,100**	**84,000**	**1,259,160**
3.2 Sustainable Animal Health Services					
3.2.1 Vaccination Campaigns	527,700	282,550	245,150	500,100	1,027,800
3.2.2 Cold Chain Improvement	324,800	-	324,800	-	324,800
3.2.3 Village Livestock Workers	420,510	236,940	183,570	72,600	493,110
3.2.2 Capacity Building	121,700	22,900	98,800		121,700
Sub total	**1,394,710**	**542,390**	**852,320**	**572,700**	**1,967,410**
3.3 Support to Agri-Business					
3.3.1 Support to Seed Producers	92,350	92,350		6,000	98,350
3.3.2 Support to Priority Niche Market Commodities	267,400		267,400	6,000	273,400
3.3.3 Support to Rural Producer Organisations	155,000		155,000	15,000	170,000
Sub total	**514,750**	**92,350**	**422,400**	**27,000**	**541,750**
Sub total Component 3	**3,084,620**	**694,800**	**2,389,820**	**683.700**	**3,768,320**
4 PROGRAM MANAGEMENT					
4.1 Policy and Strategy Development	470,000	105,000	365,000		470,000
4.2 Project Management and Capacity Building	1,472,165	444,835	1,027,330	178,200	1,650,365
Sub total Component 4	**1,942,165**	**549,835**	**1,392,330**	**178,200**	**2,120,365**
OTAL PROJECT	**8,555,825**	**2,655,035**	**5,900,790**	**1,537,200**	**10,093,025**

AGRICULTURE REHABILITATION PROJECT III
COST TABLE SUMMARY - Total Costs with Contingencies (in US$ equivalent)

COMPONENT/SUB COMPONENT/ACTIVITIES	TOTAL	BREAKDOWN BY FUND SOURCE			
	(TFET & EC)	TFET	EC (EUR)	CFET	OVERALL PROJECT COST
1 PARTICIPATORY DEVELOPMENT AND NRM					
1.1 Support to Pilot Villages	394,624	394,624	-	18,000	412,624
1.2 Expansion to New Villages	769,745	769,745	-	133,000	902,745
Sub total Component 1	**1,164,369**	**1,164,369**	**-**	**151,000**	**1,315,369**
2 IRRIGATION REHABILITATION AND MANAGEMENT					
2.1 Community Irrigation and Roads Rehabilitation	579,006	-	579,006	480,000	1,059,006
2.2 Major Irrigation Rehabilitation	1,875,359	-	1,875,359	-	1,875,359
2.3 Capacity Building and WUA Support	323,332	259,043	64,289	-	323,332
2.4 Survey and Mapping	190,064	190,064	-	44,300	234,364
Sub total Component 2	**2,967,761**	**449,108**	**2,518,654**	**524,300**	**3,492,061**
3 SERVICES TO FARMERS					
3.1 Information to Farmers					
3.1.1 Information Programming	345,695	66,620	279,075	84,000	429,695
3.1.2 Support to CGIAR Liaison Secretariat	265,516	-	265,516	-	265,516
3.1.3 Pilot Community-based Information Service Network	394,682	-	394,682	-	394,682
3.1.4 Agro-Meteorological Network	340,788	-	340,788	-	340,788
Sub total	**1,346,681**	**66,620**	**1,280,061**	**84,000**	**1,430,681**
3.2 Sustainable Animal Health Services					
3.2.1 Vaccination Campaigns	599,497	313,501	285,996	500,100	1,099,597
3.2.2 Cold Chain Improvement	355,802	-	355,802	-	355,802
3.2.3 Village Livestock Workers	469,387	261,478	207,909	72,600	541,987
3.2.2 Capacity Building	135,497	24,754	110,743	-	135,497
Sub total	**1,560,183**	**599,733**	**960,451**	**572,700**	**2,132,883**
3.3 Support to Agri-Business					
3.3.1 Support to Seed Producers	104,165	104,165	-	6,000	110,165
3.3.2 Support to Priority Niche Market Commodities	304,019	-	304,019	6,000	310,019
3.3.3 Support to Rural Producer Organisations	178,800	-	178,800	15,000	193,800
Sub total	**586,984**	**104,165**	**482,819**	**27,000**	**613,984**
Sub total Component 3	**3,493,848**	**770,517**	**2,723,331**	**683,700**	**4,177,548**
4 PROGRAM MANAGEMENT					
4.1 Policy and Strategy Development	541,552	118,445	423,107	-	541,552
4.2 Project Management and Capacity Building	1,687,000	497,561	1,189,439	178,200	1,865,200
Sub total Component 4	**2,228,552**	**616,006**	**1,612,546**	**178,200**	**2,406,752**
TOTAL PROJECT	**9,854,530**	**3,000,000**	**6,854,531**	**1,537,200**	**11,391,730**

Technical Annex 6: Implementation Arrangements

TIMOR-LESTE: Third Agriculture Rehabilitation Project

The Ministry of Agriculture, Forestry and Fisheries (MAFF) will be the executing and implementation agency for the project. This is the third ARP project executed by MAFF and its predecessor, the Division of Agriculture Affairs. The project will therefore benefit from accumulated implementation experience.

ARP III will be implemented at three levels: at the village level, by rural communities and farmers' groups; at the district level, by the District and Regional Agricultural Offices and their partners such as nongovernmental organizations (NGOs) and private suppliers (e.g. Village Livestock Workers); and at the central level, by MAFF Departments and Divisions responsible for the activities. Project implementation will be "embedded" into MAFF's organizational structure (see Figure 1). This was judged to be the most efficient arrangement to ensure ownership and sustainability of project activities.

Lessons learned from ARP I and II point to a need to strengthen inter-sectoral collaboration amongst MAFF Divisions to ensure that services to rural communities are integrated and demand-driven. It also identified a need to strengthen coordination across all levels – with other donors, NGOs and development partners, other government departments, and between Dili-based and district-based agriculture staff. ARP III will seek to strengthen these aspects: it will organize formal inter-sectoral teams and periodic consultation meetings to strengthen links between MAFF divisions, as well as facilitate partnership groups with NGOs, academic institutions and donors working on specific topics – such as natural resource management or agricultural policy (see Section C). This should contribute to further sharing of lessons of experience amongst MAFF development partners.

MAFF currently has 180 staff at the national and district levels. It expects to recruit an additional 81 staff in 2004-05, bringing the total number to 261. Many staff have undergone short-term management and technical training under past donor-funded projects. However, their capacity needs to be strengthened further to ensure sustainability. An initial capacity analysis was completed at appraisal, matching existing staff and skills with project needs, and assessing the technical assistance requirements (See Table 2). This analysis identified areas for further institutional strengthening and training. Given the need to strengthen coordination amongst MAFF divisions, it is a matter of concern that the National Directorate of Forestry, and the Divisions of Livestock and Irrigation have been temporarily moved to a different building from other MAFF Divisions, due to lack of space. This will need to be monitored very closely, with the objective of regrouping the Ministry in an alternative building as soon as possible.

Another great challenge faced by MAFF is its ability to coordinate the vast donor program in agriculture and rural development, amounting to close to US$14 million in FY04 – close to 8 times the level of its public expenditures (US$1.8 million). ARP III seeks to address this by working on MAFF's priority programs from within, effectively supplementing the Ministry's scarce budget. It will also help the Ministry develop a long-term strategy where donor-funded programs will be closely aligned with sectoral priorities (see Annex 1).

To enhance MAFF's implementation capacity, the project will continue to engage long-term technical and management advisors in the areas of natural resources management, community-driven development, irrigation, communication, livestock, agri-business, project management, financial management, and procurement. Short-term technical experts will also be contracted for specialized areas. These technical assistance requirements are summarized in the capacity analysis (Table 2). MAFF will evaluate all international advisors quarterly to determine their effectiveness at skill transfer to local counterparts. In addition, the project will seek to improve the English language skills of middle level management to strengthen their ability to negotiate with donors, access critical global information and communicate with international experts.

The project will continue to invest heavily on improving MAFF's capacity for project planning, implementation, and monitoring, as well as providing technical training according to needs. MAFF prepared a detailed Training Plan for each component as part of the Project Implementation Plan. To improve the effectiveness of training, MAFF will develop training evaluation procedures and invest in refresher training with immediate application on the ground.

In addition to technical assistance and training, MAFF staff limitations will be addressed through a higher reliance on NGOs and private partners, such as VLWs and facilitators, as well as community groups to carry out natural resource management and irrigation and roads rehabilitation. The growing capacity of these groups as partners are expected to be assessed periodically during the project reviews.

ARP III is expected to be jointly financed by the European Commission (EC) and the Trust Fund for East Timor (TFET). Similarly to TFET, EC funds would be managed by the International Development Agency (IDA) and executed by MAFF, although under separate Grant Agreements. Hence, project financial, procurement, and reporting will follow Government and IDA procedures. The financial management, procurement, and monitoring and evaluation systems established under ARP I and II will be further enhanced based on past experience.

A. Project Organization

The project will be implemented at three major levels, as outlined below.

1. Rural Communities

ARP III will continue to strengthen the ARP II strategy for participatory development. This will involve (i) Small Group Grants to upland and coastal communities under Component 1; (ii) direct civil works contracts with communities in lowland areas to rehabilitate irrigation schemes and access roads; (iii) extending the Village Livestock Workers program to cover all villages in Timor-Leste; and (iv) support to seed producers and priority niche market processors. Farmers groups and individuals (in the case of VLWs) will implement these activities, assisted by facilitators, partner NGOs and MAFF staff at the central and district levels. ARP III will target existing farmers groups or, if they do not exist, encourage their establishment according to the most appropriate socio-economic units: sub-village (*aldeia*) small farmers' groups are targeted under component 1, whilst Water Users Associations will be targeted under component 2.

MAFF will engage civil society groups in the monitoring of project activities. The experience with community-based activities will be discussed with other donors implementing similar programs, such as AusAID, GTZ, Portugal, UNOPs, Oxfam, CARITAS and CIDA. MAFF's Forestry Directorate is currently establishing a network to share lessons of experience in natural resources management.

The capacity of community small groups to undertake natural resource management activities (under Component 1) varies substantially across villages. In general, the mid-term review of ARP II concluded that technical support to community groups needed to be increased. ARP III has taken this recommendation on board: it will strengthen the technical training of community groups, and prepare technical manuals for the most frequently selected activities.

ARP I and II demonstrated the ability of communities to act as contractors in rehabilitating small irrigation and access roads. The first technical audit – conducted in mid-2002 – identified some technical weaknesses and recommended that MAFF revisit community schemes periodically to assess those in need of further assistance. As a result, MAFF provided extra support to about 15 percent of the schemes previously assisted. This process of revisiting technically weak communities will continue in ARP III.

2. District and Sub-District Level

MAFF's District Agricultural staff will provide technical backstopping and coordinate the implementation of project activities at the community and district levels. There are presently an average of six staff under the coordination of a District Agricultural Coordinator, including a District Irrigation Officer, a District Livestock Officer, a District Crops Officer, a District Forestry Officer, and a District Fisheries Officer. However, MAFF plans to optimize the deployment of field staff by creating three regional extension offices (in Baucau, Manufahi, and Bobonaro), though the precise staff assignation is still being discussed.

District officers will be responsible for specific components, in close collaboration with MAFF central divisions. For example, Component 1 will be the joint responsibility of Forestry and Fisheries Officers, with other staff assisting on an as-needed basis. Animal Health Services are the responsibility of Livestock Officers, and Irrigation Rehabilitation the responsibility of Irrigation Officers. The District Agricultural Coordinator will be responsible for ensuring integration of activities in the district, as well as for monitoring and reporting.

The District Agriculture Officers should coordinate closely with other partners active at the district level – NGO partners, church organizations, other donors, and Sub-District Development Officers (SDOs). The newly deployed SDOs, who are expected to work at the grassroots level, could facilitate the linkages between project beneficiaries and MAFF implementers, though their specific responsibilities need to be defined further when the new Autonomy Law comes into effect.

3. Central MAFF Departments and Divisions

MAFF has three national Directorates headed by National Directors under a Permanent Secretary, as well as twelve technical divisions headed by Directors. The different components of ARP III will be implemented by the Divisions that are responsible for the associated programs in MAFF (see Table 1). These same Divisions have implemented ARP II and their staff are already familiar with the implementation procedures. They will be assisted by technical advisors whose terms of reference have been expanded to include specialist advice to MAFF management on their areas of expertise (i.e. not only confined to project activities).

B. Project Implementation Arrangements

In ARP I and II, a Project Management Unit (PMU) was established to manage project implementation. This will be dissolved in ARP III and project management will be fully integrated into MAFF's organizational structure. Overall coordination will remain the responsibility of the Project Director, currently the Permanent Secretary of MAFF. He will be supported by an international Project Management Advisor. Based on the implementation experience in ARP II, a Deputy Project Director may also be appointed to carry out day-to-day project management on behalf of the Project Director. The Project Director will retain full signatory and supervisory authority over all MAFF units and staff involved in the project.

The ARP Management Team of ARP II, consisting of MAFF National Directors and Division Directors, will continue to be responsible for overall implementation achievements and decision-making.

MAFF's Finance Officers, trained under ARP II, will handle the project's financial management with the support of newly recruited financial staff and a full-time international Financial Advisor.

Monitoring and evaluation (M&E) and quarterly reporting will be the responsibility of MAFF's M&E Officer with support of an Assistant M&E Officer and the international Project Management Advisor.

Table 1. Project Implementation Responsibilities by MAFF Division

ARP III Component	*Responsible Department/Division*
Overall Project Coordination and Management	Project Director *(Permanent Secretary of MAFF)* MAFF Management Team
1. Participatory Development and NRM	Reforestation and Forest Rehabilitation Division (*Directorate of Forestry*) Fisheries Resources and Marine Environment Management Division *(Directorate of Fisheries and Marine Resources)*
2. Irrigation Rehabilitation and Management	Irrigation and Water Management Division *(Direct. of Agriculture and Livestock)*
3.1. Information to Farmers	Research and Extension Center *(Directorate of Agriculture and Livestock)*
3.2. Sustainable Animal Health Services	Livestock Division (*Directorate of Agriculture and Livestock)*
3.3. Support to Agri-Business	Food Crops Division (*Directorate of Agriculture and Livestock)*
4.1. Policy and Strategy	Policy, Planning and Program Service and MAFF Management Team
4.2. Project Management/Capacity Building	Project Director and MAFF Administration Units
Procurement and Financial Management	Finance and Budget Support Services (*MAFF Administration Directorate*)

MAFF's Procurement and Tender Services Unit will continue to be assisted by an international procurement advisor, working together with a full-time Procurement Officer and a contracted Procurement Specialist. The suitability of these arrangements will be monitored closely during supervision – if found lacking, IDA will seek assurances from the Central Procurement Office that they will second a qualified procurement officer to MAFF (see Annex 8)

Activities formerly under the PMU will now be institutionalized within the appropriate MAFF units:

- Coordination and supervision of component implementation will be transferred to the MAFF Management Team, under the oversight of the Project Director.
- Monitoring of field activities will fall under the responsibility of the respective MAFF Divisions. MAFF's Monitoring and Evaluation Officer (with assistance from the Project Management Advisor) will compile bi-annual progress reports as inputs to IDA's Supervision Missions.
- MAFF's Budget Services Unit will be responsible for managing disbursements and the project's Special Account, preparing withdrawal and replenishment applications, carry out assets accounting, and coordinate the preparation of annual project audits.
- The Procurement and Tender Services Unit will be responsible for preparation, advertisement, evaluation and awards of project-related procurement, with assistance from the Logistics and Equipment Unit.
- The Information Unit of the Research and Extension Center will be responsible for ensuring effective communication between the project's stakeholders.

C. Collaboration and Partnership Arrangements

A key lesson from ARP I and II is the need for MAFF Divisions to collaborate more closely in community-based activities such as Components 1 and 2, as well as in information dissemination. In addition, collaboration between MAFF and development partners at the national and district levels has remained informal until now. MAFF started to implement community-based activities, but it could gain further from lessons of experiences accumulated by international NGOs (such as ETADEP, Yayasan HAK, FAT), and other donor-funded development projects (such as GTZ, JICA, AusAID, ACIAR,

CIDA, FAO, UNDP/UNOPS, etc.). Most international NGOs, for example, already participate in a Sustainable Livelihood Forum, and MAFF has started liaising with NGOs, particularly in natural resource management activities. ARP III will seek to further strengthen collaboration with these partners and formalize networks where lessons of experience and information could be shared.

1. MAFF Inter-Sectoral Teams

Under ARP III, the following inter-sectoral teams will be strengthened:

- **NRM Implementation Team** (with assistance from staff from Crop Production and Livestock, in addition to Forestry and Fisheries)
- **Irrigation Team** (with assistance from staff from Crop Production)
- **Information Team** (with participation of staff from key Divisions involved in information programs)
- **Training Team**

These teams will need to be formally designated with a team leader, clear terms of reference, work schedule, and staff time allocation. Their effectiveness will be monitored during project implementation.

2. Partnership Groups

MAFF Divisions have committed to form the following network groups with interested partners:

- A **Policy Advisory Group**, led by MAFF's Policy, Planning and Program Services.
- **NRM Advisory Committee**, led by the Reforestation and Forest Rehabilitation Division and the Division of Fisheries and Marine Resources.
- An **Irrigation Network,** led by the Irrigation Division
- An **Information Forum**, led by the Research and Extension Center
- A **Livestock Network**, led by the Livestock Division
- An **Agri-Business Consultative Group**, led by staff from the Crop Production Division.

These partnership groups will meet at least bi-annually to exchange information and lessons learned. Their level of activity will be monitored under the project.

3. Collaboration with International Research Organizations

Under ARP II and the Seeds for Life Program, MAFF has established contacts with several CGIAR centers and specialized organizations. Several cross visits of CGIAR experts to Timor-Leste, and Timorese staff to the centers have taken place, and this collaboration will continue under ARP III. In the Support to Agri-business sub-component, MAFF is also expected to partner with IRRI, and ACIAR/Seeds for Life in obtaining rice foundation seeds. In addition, the Livestock Division has proposed membership for Timor-Leste in the Office Internationale des Epizootics (OIE) and its regional Southeast Asian Foot and Mouth Disease Sub-Commission (SEAFMD).

Ultimately, the project's sustainability will be measured by the degree to which activities are integrated into MAFF programs and delivered effectively to farmers. Special attention will therefore be paid to impact and quality aspects, using a programmatic approach that relies on learning-by-doing, periodic evaluations, and subsequent adjustments. Two key activities – vaccination and community irrigation – will be progressively transferred to MAFF financing as the project evolves. Other activities will be supported by increasing shares of counterpart operational funds to help ensure effective institutionalization.

Fig. 1. STRUCTURE OF THE MINISTRY OF AGRICULTURE, FORESTRY and FISHERIES (as of late 2003)

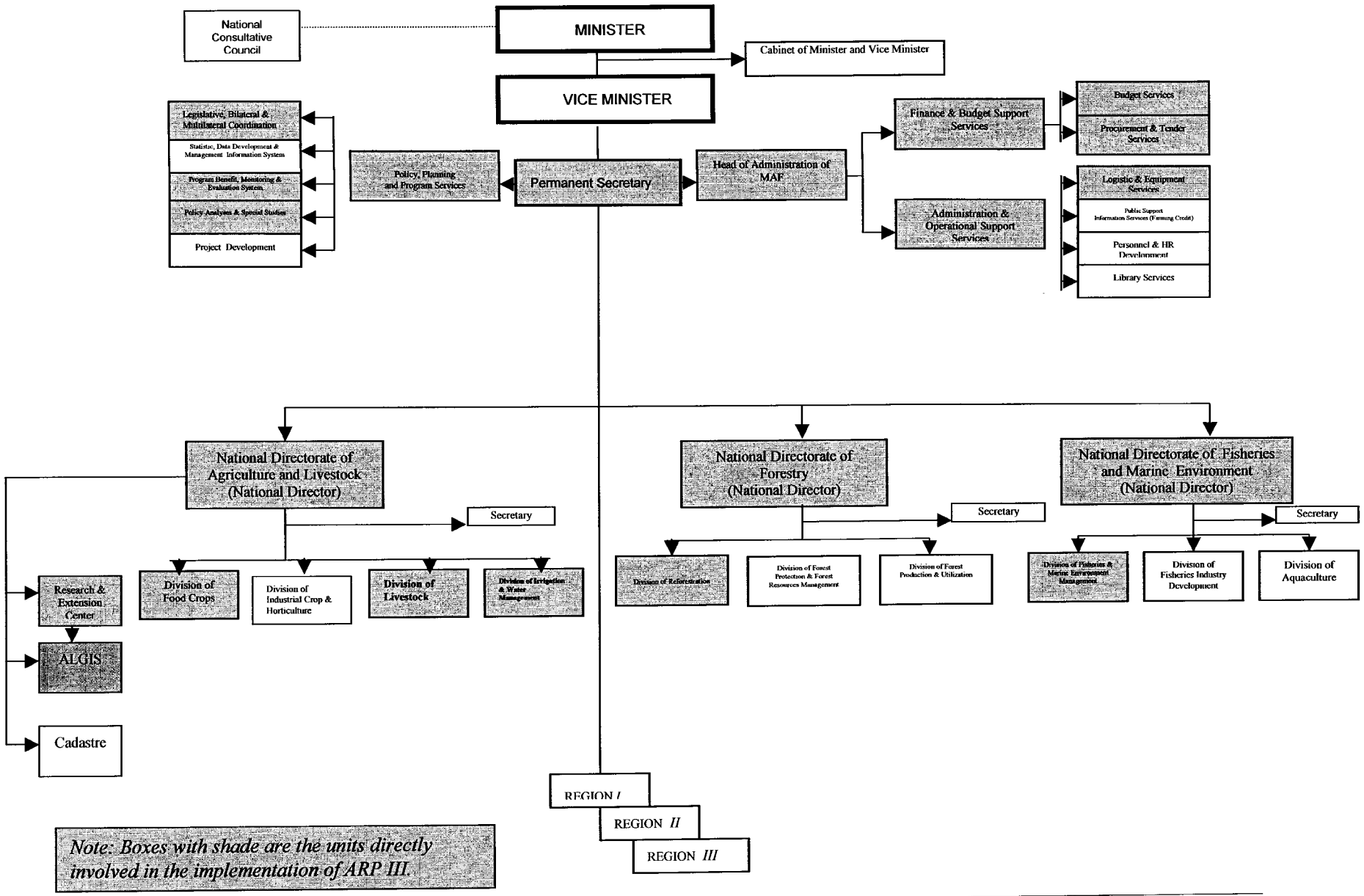


Table 2: Institutional Analysis of MAFF Capacity to Implement ARP III (as of late 2003)

FTE means Full Time Equivalent where one is equal to 100% or equivalent to one full time staff.

Component/ Sub-Component	*MAFF Staff Capacity, 2003*			*Project Personnel Needs*			*Comments/ Recommendations*
	Division/No. of Staff and Level	*Central Staff Involved in Project*	*District Staff Involved in Project*	*Central Staff Needed*	*District Staff Needed*	*Others*	
OVERALL	**Total No. Staff Permanent: 177 Temporary:**	**MAFF FTE Central and District: 50.65**		**Project FTE Central and District: 56.15**		In. Consult.: 258 pm **Lo. Consult: 234 pm**	-Need additional 6 FTE to implement the project; could be filled by recruitment. -Staff capacity improved through training under ARP I and II -Staff capacity needs further upgrading especially new staff -Partnership could strengthen MAFF capacity -Consultant should transfer skills to counterparts
		Inter-sectoral Teams FTE: 4.8					-Need to designate teams formally with clear TOR, work schedule and staff time allocation. -Strengthen collaboration among divisions
Component 1: Participatory Development and NRM 1) 30 pilot villages 2) 20 new villages	**Forestry Department: Reforestation and Forest Rehabilitation Division** **Total Staff: 30 Permanent** **2004 Planned: 27** 3 - Level 6 4 -Level 5 5 - Level 4 13 - Level 3 5 – Level 2 0 - Temporary	**MAFF TOTAL FTE: 5.25 (incl. NRM Team)** **MAFF FTE: 1.75 Central** Mario Ribeiro Nunes, Nat. Director/L6 and Luis Godinho, Director/L6 (Part time for coordination), Higino Travasso Correia Barros, L4 (100%), 2 add. Forestry staff, L5/L4, available based on need (25% each), Sergio Pereira, L3 (25%) for mangrove conservation **MAFF FTE: 0.80 team** **I-S NRM Team:** CPD: Justino do Santos (30%), LD: Antoninho da Costa Silva, L5/L4 (50%)	**MAFF FTE: 3.50 District** 13 District Forestry Officers (50%) equals 3.5 FTE for 7 districts -24 new Forest Guardians (70% for extension incl. NRM) not incl. in analysis	**PROJECT TOTAL FTE : 6.50** 2 Forestry staff plus inputs from NRM Team or 3.00 FTE	13 District Forestry Officers (50% time) in 7 districts covered or 3.5 FTE	In. Consult.: 42 pm 18 pm intern. NRM Advisor 24 pm int. Community Develop. Specialist 41 Facilitators 14 NGO contracts	**Adequate staff time allocation plus input from NRM Team (0.80 FTE).** Need: -Formal designation of inter-sectoral NRM Team with clear TOR, work schedule and staff allocations. -Intensive training of new staff on CB-NRM and special training for Forest Guardians in 7 districts. -Improved coordination with Fisheries Department for planning and implementation. -Organize an NRM Advisory Committee with key stakeholders' participation.

Component/ Sub-Component	*MAFF Staff Capacity, 2003*			*Project Personnel Needs*			*Comments/ Recommendations*
	Division/No. of Staff and Level	*Central Staff Involved in Project*	*District Staff Involved in Project*	*Central Staff Needed*	*District Staff Needed*	*Others*	
	Fisheries Department: Fisheries Resources and Marine Environ. Division **Total Staff: 31 Permanent** **2004 Planned: 19** 3 - Level 6 9 - Level 5 3 - Level 4 13 - Level 3 9- Temporary	**MAFF TOTAL FTE: 6.25** **MAFF FTE: 2.75 Central** Narciso Almeida de Carvalho, Director/L6 (Part time for coordination), **Coastal:** Acasio da Costa, L3 (100%), Lourenço dos Reis Amaral, L5 (50%), **Aquaculture:** Julio da Cruz, Director/L6 (Part time), Juvenal Maria da Silva, T (100%), Horacio Amaral dos Santos, L5 (50%)	**MAFF FTE: 3.50 District** 13 District Fisheries Officers (50%) equals 3.50 FTE for 7 districts	**PROJECT TOTAL FTE: 5.50** 2 Fishery staff or 2.00 FTE	13 District Fisheries Officers (50% time) in 7 districts covered or 3.5 FTE		**Adequate staff time allocation** **Need:** -Intensive training for new staff -Improved coordination with Forestry Department for planning and project implementation.
Component 2: Irrigation Rehabilitation and Management 1) Community Irrigation and Roads Rehab 2) Major Irrigation Rehab. 3) WUAs 4) Survey and mapping	**Irrigation and Water Management Division** **Total staff: 21 Permanent** **2004 Planned: 5** 1 - Level 6 2 - Level 5 6 - Level 4 12 - Level 3 5 - Temporary	**MAFF TOTAL FTE: 12.80 (incl. Irrigation Team)** **MAFF FTE: 6.00 Central** Florindo Barreto, Director/ L6 (Part time for coordination) **Comm. Irrig./Roads:** Francisco da Gusmao, L5 (100%), Dinys Pereira L4 (50%), Agostinho Menezes, L4 (50%), Napoleon da Cunha, L4 (50%) for supervision, **Major Irrig:** Martinho Soares, T (100%); **WUAs:** Vicente Guterres, L5 (100%), Juvenal Soares, L3 (100%); **Survey/mapping**: Diniz Ferreira, L4 (50%) **MAFF FTE: 0.80 Team** **I-S Irrigation Team:** CPD:Justino do Santos (30%), LD:Carlos Antonio Amaral, L5 (50%)	**MAFF FTE: 6.00 District** 12 District Irrigation Officers (50% or 70% where there are no other donor projects) equals 6.00 FTE (minimum)	PROJECT TOTAL FTE: 12.50 2 staff for Comm. Irrigation/Roads; 1.5 for WUAs, 2 for Major Irrigation, 1 for Survey/Mapping or 6.5 FTE.	13 District Irrigation Officers (50%) or 6.5 FTE	**In. Consult.: 36 pm** Lo. Consult.: 72 pm 24 pm intern. Irrigation Advisor 12 pm intern. WUA Advisor 2x36 pm WUA local consultants	**Adequate staff time allocation plus input from Irrigation Team (0.80 FTE).** **Need:** -Intensive training of new staff to catch up -Formal designation of inter-sectoral Irrigation Team with clear TOR, work schedule and staff time. -Improved coordination with Crop Production Division, Livestock Division and Research and Extension Center to improve production in rehabilitated irrigated areas. -Organize Irrigation Network with key stakeholders' participation.

Component/ Sub-Component	*MAFF Staff Capacity, 2003*			*Project Personnel Needs*			*Comments/ Recommendations*
	Division/No. of Staff and Level	*Central Staff Involved in Project*	*District Staff Involved in Project*	*Central Staff Needed*	*District Staff Needed*	*Others*	
Sub-Component 3.1: Information to Farmers 1) Info. Programming 2) CGIAR Liaison Secretariat 3) Pilot Info. Network 4) Hydro-met. Network Rehab.	**Research and Extension Center** **Total Staff: 8 Permanent** **Planned: 5** 1 – Level 6 4 - Level 5 3 - Level 4 5 - Temporary	**MAFF TOTAL FTE: 6.00 (incl. Information Team)** **MAFF FTE: 3.50 Central** Lourenço Borges Fontes, Director/L6 (Part time for coordination) Information: Guilherme da Quintao, L5 (50%), CGIAR: Fatima Real, L4 (50%), Info. Network: Fatima Real, L4 (50%), **Hydro-met:** Raimundo Mau, L5 (100%), Francisco Sarmento, L4 (100%) **MAFF FTE: 2.50 Team** **I-S Information Team:** Team Leader: Guilherme da Silva Quintao (100%) CPD: Americo de Britom, Claudino Ninas Nabais, L4 (50%), LD: Antonio do Carmo (50%), FoD: Hermenegildo de Granadeiro , L4 (50%), FiD: Antonio de Jesus, L4 (50%), ID: Dinis Quintao (50%)	No district officers	**PROJECT TOTAL FTE: 9.10** 2 Research and Extension staff for Information, 2 staff for Hydro-met or 4.0 FTE Information Team (50% each member) or 2.5 FTE	Need staff time from District Officers (20%) for information or 2.6 FTE	**In. Consult.: 38 pm** **Lo. Consult.: 42 pm** 18 pm intern. Communication Specialist 2 local communication consultants -- NGO contracts 24 pm CGIAR Secretariat local officer 11 pm intern. CGIAR experts 5 pm Info. Technology Specialist 18 pm local IT assistant 3 pm intern. Hydro-met Expert	Inadequate staff allocation even with input from Info. Team (2.50 FTE). Need: -Formal designation of inter-sectoral Information Team with clear TOR, work schedule and staff time. -Time allocation for District Agricultural Officers for information-related activities. -Intensive training of new staff to catch up -Monitor inputs from many consultants and Information Team. -Reactivate existing Information Forum with key stakeholders' participation.
Sub-Component 3.2: Sustainable Animal Health Services 1) Vaccination, 2) Cold chain 3) VLWs	**Livestock Division** **Total Staff: 23 Permanent** **2004 Planned: 1** 1 - Level 6 2 - Level 5 8 - Level 4 12 –Level 3 0 - Temporary	**MAFF TOTAL FTE: 10.10** **MAFF FTE: 2.60 Central** Jose Orlando Magno, Director/L6 (Part time for coordination), (50%); **Vaccination:** Domingos Gusmao, L5 (100%), Calisto da Costa Varera, L4 (30%); **VLWs:** Antoninho do Karmo, L4 (50%), Cesario de Sena, L 4 (30%)	**MAFF FTE: 7.50 District** 15 District Livestock Officers (50%) equals 7.5 FTE	PROJECT TOTAL FTE: 10.50 2 Livestock staff for Vaccination, 2 staff for VLWs or 4.00 FTE	13 District Livestock Officers (50%) or 6.5 FTE	**In. Consult.: 18 pm** **Lo. Consult.: 48 pm** 18 pm intern. Livestock Advisor 48 pm local VLW consultants	**Adequate staff time allocation** **Need:** -Intensive training of new staff to catch up -Organize a Livestock Network with key stakeholders' participation.

Component/ Sub-Component	*MAFF Staff Capacity, 2003*			*Project Personnel Needs*			*Comments/ Recommendations*
	Division/No. of Staff and Level	*Central Staff Involved in Project*	*District Staff Involved in Project*	*Central Staff Needed*	*District Staff Needed*	*Others*	
Sub-Component 3.3: Support to Agri-businesses: 1) Seed producers (3) rural producer organizations	**Crop Production Division** **Total Staff: 26 Permanent** **2004 Planned: 2** 2 – Level 6 5 - Level 5 4 - Level 4 15 - Level 3 0 - Temporary	**MAFF TOTAL FTE: 2.30** **MAFF FTE: 1.00 Central** Deolindo da Silva, Director/L6 (Part time for coordination) Gil Rangel da Cruz, L5 (50%), Claudino Ninas Nabais, L4 (50%),	**MAFF FTE: 1.30 District** 13 District Crop Production Officers (10%) or 1.3 FTE	PROJECT TOTAL FTE: 4.25 1 Crop Production staff (100%) or 1.0 FTE	13 Crop Production Officers (25%) or 3.25 FTE	**In. Consult.: 21 pm** **Lo. Consult.: 72 pm** 15 pm intern. Agri-business Consultant 6 pm intern. Seed Production Specialist 72 pm local consultants	Inadequate staff time allocation especially from district officers. Need: -Increase staff time of central staff and District Crop Production Officers to about 25%. -Intensive training of new staff.
2) Oil processing	**Industrial Crops Division** Total Staff: 8 Permanent **2004 Planned: 2** 3 - Level 5 3 - Level 4 2 - Level 3 2 -Temporary	**MAFF TOTAL FTE: 1.50 Central and District** Caetano dos Cristovao, Director/L5 (50%), Mario da Silva L3 (40%), Caetano Jose Soares L3, (10%)	1 District Industrial Crops Officer (50%)	PROJECT TOTAL FTE: 1.00 1 Industrial Crops staff from central level	Need district officers' input	In. Consult.: 4 pm 3 pm intern. Oil Processing Specialist 1 pm intern. Oil Mill Specialist	Adequate staff time from central staff but need district input. **Need:** -Allocate time from district staff for this activity. -Intensive training for new staff to catch up
Sub-Component 4.1: Policy and Strategy	**Policy Planning and Programs Services** **Total Staff: 3** 1 - Level 6 2 - Level 5 1 - Temporary	**MAFF TOTAL FTE: 1.20** **MAFF FTE: 1.20** Arcanjo da Silva, Director/ L6 (Part time for coordination) (50%), Gil Rangel , L5 (20%) and Cipriana Soares, L5 (50%)	No district staff	PROJECT TOTAL FTE: 0.50 1 Policy Services staff (50%)	None	In. Consult.: 18 pm 12 pm intern. Senior Agric. Policy Advisor 6 pm intern. Legal Advisor	**Adequate staff time allocation.** **Need:** -Designation of 1 Policy Services staff (50%) -Intensive training of new staff to catch up

Component/ Sub-Component	*MAFF Staff Capacity, 2003*			*Project Personnel Needs*			*Comments/ Recommendations*
	Division/No. of Staff and Level	*Central Staff Involved in Project*	*District Staff Involved in Project*	*Central Staff Needed*	*District Staff Needed*	*Others*	
Sub-Component 4.2: Project Management/Capacity Building	**Project Director and Administration Services** **Total Staff: 30 Permanent** **2004 Planned: 0** 1 - Level 6 12 - Level 5 4 - Level 4 3 - Level 3 6 – Level 2 4 – Level 1	**MAFF TOTAL FTE: 5.35 (incl. Training Team)** **MAFF FTE: 3.75 Central** Cesar Jose da Cruz Director Permanent Secretary/ Project Director (Part time for overall coordination) 1 Procurement staff, Edmundo da Costa, L5 (70%), 3 Finance staff, Belinha Paula (70%) Natalia Benevides, L3 (70%) and Maria Virginia Pereira Belo, L2 (70%), M&E Officer, Fernando dos Santos, L4 (70%), Egas Brites da Silva, L5/ (25%), Training Coordinator **MAFF FTE:1.60 Team I-S Training Team:** CPD: Claudino Ninas Nabais, L4 (10%), LD: Carlos Antonio Amaral, L5 (50%), FiD: Eduardo de Carvanlho L5(30%), FoD: Hermenegildo Granadeiro L4 (30%), ID: Diniz Ferreira L4 (50%)	13 District Agriculture Coordinators	**PROJECT TOTAL FTE 4.80** 1 Project Director (Part time) 1 Deputy Project Director (50%), 2 Procurement Officers (140%), 2 Finance Officers (140% each), M&E Officer (100%), Egas Brites da Silva, L5/Training Coordinator (50%)	13 District Agriculture Coordinators (25%) for district coordination or 3.25 FTE	In. Consult.: 81 pm 30 pm intern. Project Mgt Advisor 24 pm intern. Financial Mgt Advisor 24 pm intern. Procurement Advisor 3 pm intern. Evaluation Experts Auditor -- NGO contracts	**Adequate staff time allocation plus input from Training Team (1.60 FTE)** **Need:** **Central:** Deputy Project Director (from Project Development Service), Part time -1 Procurement Officer, L4 (50%, seconded) -1 M&E Officer (from Monitoring and Evaluation Service), 100% **-District:** Designate DAC for district coordination -Intensive training of new staff to catch up -Formal designation of inter-sectoral Training Team with clear TOR, work schedule and staff time.
Environmental Assessment and Monitoring	**Ministry of Development and Environment:** Department of Environment (DOE) **Total Staff: 13 Permanent** 1- Level 6 1 - Level 5 7 - Level 4 5 – Level 3 Relevant Units: Environmental Awareness (2 staff) and Environmental Impact Assessment (3 staff)	**DOE + MAFF TOTAL FTE: (proposed)** **DOE**: 2 Staff to provide technical advice/support to MAFF on environmental assessment and monitoring, L4 (50%) **Proposed** **MAFF**: 2 Forestry and Irrigation staff to coordinate environmental assessment and monitoring, L4 (100%) **Proposed**	No district staff	**PROJECT TOTAL FTE: 1.50** 2 Forestry and Irrigation staff to coordinate environmental assessment and safeguards compliance (100%) 2 D0E staff from EIA and EA, L4 (50%)		May need to contract local consultants if in-house capacity is limited	**Low capacity of DOE and MAFF; No staff time allocation** -Formalize collaboration with DOE with clear TOR and staff time required -Intensive specialized training of DOE and MAFF staff -Designate 2 MAFF staff as focal point for environmental and safeguards issues.

Technical Annex 7: Financial Management and Disbursement Arrangements

TIMOR-LESTE: Third Agriculture Rehabilitation Project

A. Financial Management Assessment

MAFF's Budget Services Unit will be responsible for the overall financial management of the project. This permanent MAFF Unit is a natural successor of the Project Management Unit (PMU) first established in 2000 for ARP I implementation. Accounting, internal controls and audit procedures for ARP III will thus be a continuation of systems which have evolved and been progressively strengthened over the last three years. The financial management of ARP projects has been supervised regularly in accordance with IDA procedures. Problems arising have been adequately identified and corrective actions followed up during supervision mission and documented in project files. Procedures and controls of project expenditures are set out in a Manual of Financial Procedures which is updated as required. These procedures have also been incorporated in to the Project Implementation Plan for ARP III.

The Budget Services Unit consists of three Timorese staff, assisted by a part-time Financial Advisor. The Financial Advisor undertakes all the tasks of a Chief Financial Officer of a project or an entity. In preparation for ARP III, the Financial Advisor will become available full time as of mid-October 2003.

Past problems in financial management have included: (i) modifications and improvements necessary to make accounting systems responsive to the requirements of Freebalance (the accounting software adopted by the Government for uniform application); (ii) lack of an adequate register of fixed assets financed by ARP funds and periodic physical verification of assets; (iii) modifications necessary in the budget procedures to enable each project component manager to follow expenditures against the funds allocated for each component; (iv) inadequate follow up of financial management procedures at Agriculture Service Centers; (v) delays in conforming to IDA's recent requirements for quarterly Financial Monitoring Reports (FMRs) and (vi) inadequate attention to training of Timorese financial staff. Since the arrival of Financial Advisor in February 2003, these issues are being addressed in a systematic manner. The conversion of the Financial Advisor to full-time basis is expected to further accelerate the process.

Project funds will be utilized either by direct payments, or through a Special Account at a local Bank, which will be replenished periodically by IDA. MAFF will open and manage separate Special Accounts for the TFET and EC grants. Direct payments will generally be for larger payments which exceed 20 % of the authorized allocation for a Special Account. The Budget Services Unit will be responsible for management of the Special Account in accordance with IDA procedures and as indicated under Section E below. All payments to suppliers of goods and services and beneficiaries will be effected by the Budget Services Unit in accordance with established procedures, including approvals of expenditures by MAFF managers responsible for the project components.

The Budget Services Unit maintains an adequate accounting system to record project resources and expenditures. The system has now been designed to generate data required for inputting in the computerized Government accounting system (Freebalance).

Annual financial statements of ARP I and II have been previously audited by an international firm (Ernst & Young, Darwin) with no significant irregularities or issues as regards fiduciary accountability reported. The latest audit report for year ended June 2002 contains an unqualified (clean) audit opinion. Several recommendations for strengthening of internal procedures are being addressed.

Financial Monitoring Reports (FMRs). The Finance Unit is now able to produce quarterly FMRs for ARP II in accordance with IDA guidelines. If the FMRs under ARP III are considered acceptable (and provided other requirements for adequacy of financial management for the project are satisfied), IDA may allow an option for the Government to switch ARP III disbursements on the basis of quarterly FMRs.

Based on the above and a specific assessment undertaken for ARP III, and taking into account the agreed corrective actions agreed, overall financial management systems and procedures are considered satisfactory and adequate for implementation of the project.

B. Financing Arrangements by Component

The flow of funds and financing arrangements by component are described briefly below.

Component 1 - Pilot Participatory Development and Natural Resources Management

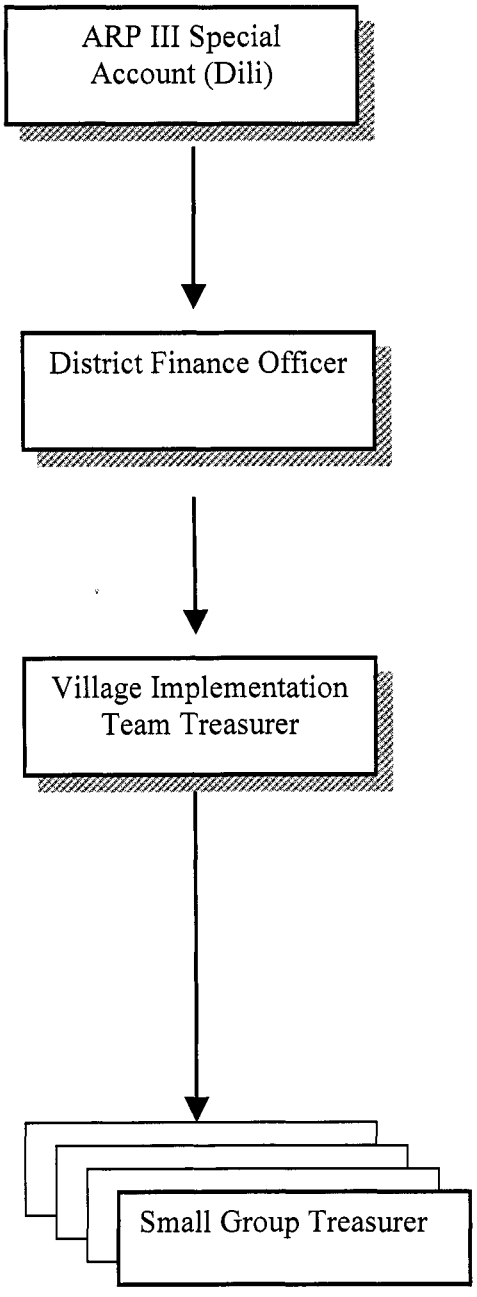
The financial and accounting procedures for this component will follow the process piloted under ARP II and the *Operational Manual for ARP Participatory Development and Natural Resources Management.* Payments under Small Group Grants for approved Small Group Activity plans will be in three installments: an advance of up to 30 percent, an intermediary payment upon verification of progress of activities, and a final payment upon verification of successful completion. Periodic monitoring will take place to ensure compliance with financial reporting requirements. The flow of funds and accountabilities for processing the Small Group Agreements is shown in Figure 1 below.

Component 2 – Irrigation Rehabilitation and Management

Community-based contracts will use the established procedures developed under ARP II. Memorandum of Agreements (MOAs) will be signed between the Project Director and a well-respected representative of the community undertaking the works, selected by the beneficiaries themselves (in some cases, this could include a member of the Church or NGOs, depending on communities' preference). The MOAs will be signed in the presence of community witnesses. The MOA will stipulate a mobilization advance of not more than 20 percent of the contract value. A 30 percent intermediary payment will be done based on certification of progress billings by MAFF irrigation construction supervisions or, if sufficient capacity exists, the district irrigation officer, reviewed by the Head of the Irrigation Division and approved by the Project Director. The final and full payment (50 percent) will only be made upon full completion of the works, certified, reviewed and approved in the same manner as the intermediary payment. The MOA accounts and weekly financial reports will be displayed publicly on a notice board at the community level. In addition, MAFF will undertake periodic technical audits of the community works. Upon the final payment of the community contract, MAFF and the community will sign a Memorandum of Turn-Over which states that MAFF officially turns over, and the community correspondingly accepts, responsibility for the O&M of the rehabilitated irrigation facilities or access roads. These procedures are detailed in the final *Operation Manual for Community Irrigation and Roads Rehabilitation.*

For larger irrigation works, payment will be in accordance with the terms stipulated in the contract. Following a standard mobilization payment, periodic payments will be based on certification of progress billings signed by Project Supervisors, e.g., the consulting firm engaged to supervise the works, and MAFF Irrigation staff. The certification will be reviewed by the Director of the Irrigation Division, and approved by the Project Director. Such progress billing shall include, among others, a detailed physical accomplishment report. The final payment shall be done upon 100 percent completion of the works as certified, reviewed and approved in the same manner as the progress billings. All payments shall be subjected to 5 percent retention. The total amount retained shall be paid to the Contractor when the Defects Liability Period, which will be defined in each contract, has passed and all defects that have been notified to the Contractor have been corrected. All other details specifying payment shall be stipulated in each specific contract.

Figure 1. Participatory Development and NRM Component
Fund Flow for Small Group Grants



Copy of the approval notice for the release of the Small Group Grants must be furnished to Sub-District Coordinator, District Agriculture Coordinator, District Forestry and Fisheries Officers, Facilitators and NGO Partners (where applicable)

Prior to the first release of the grant, each village must be required to develop and submit their own independent strategies for the transparency of the release of the grant.

In instances where the District Finance Officer finds it difficult to collect the money in Dili, the NRM Management Committee will mediate to speed up the flow of the fund

The Village Implementation Team Treasurer must be accompanied by the Leader of the Village Implementation Team and one other respected member of the Small Group. The money must be turned over immediately to the Small Group Treasurer as soon as it arrives in the village.

The receipt between District Finance Officer and Village Implementation Team must be noted by the District Forestry Officer and District Fisheries Officer and witnessed by Implementation Team Leader and accompanying member of small group.

The receipt between Village Implementation Team Treasurer and Small Group Treasurer must be noted by the Leader of the Village Implementation Team, Chefe do Suco and Chefe do Aldea and must be witnessed by at least 2 Traditional Leaders. As soon as the group receives the money, the group must conduct a meeting to announce the availability of the money. The Small Group Treasurer must coordinate closely with the Village Implementation Team Treasurer for the public posting of information related to the amount they received and the status of their expenses (in accordance with their agreed strategy)

The Small Group Grants will generally be released in 3 installments:

- 1st release 30%
- 2nd release 50%
- 3rd release..... 20%

of the approved grants for each activity.

Component 3 - Services to Farmers

This component will fund information to farmers, sustainable animal health services and agri-business support services.

3.1. Information to Farmers. Payments for information campaigns, information equipment, and CGIAR Liaison Secretariat's technical assistance will be in accordance with terms specified in contracts.

3.2. Sustainable Animal Health Services. Payment to private vaccinators for the implementation of vaccination campaigns will follow the system instituted during ARP II. Each District Livestock Officer will complete a standard budget estimate, detailing requirements for fuel, transport, materials, and contracting of private vaccinators (usually 8-12 per district). A 20 percent advance for vaccination expenses will be paid to a Campaign Coordinator (usually the District Livestock Officer) in the form of an *'Imprest'* for which he has to retire all documents. As the work progresses and accounts are retired, further payments will be made. Periodic payments to vaccinators will be made based on the certification by the Coordinator, and confirmed by the Head of the Livestock Unit as to the quantity and quality of the work done. ARP III will also introduce also a new system of vouchers requiring the signature or thumbprint of animal owners for all vaccinated livestock.

3.3. Agri-business Services. MAFF will procure the equipment, farming inputs, services and small works required by this sub-component. Payment will be made upon submission of invoices, purchase orders or contracts. During implementation, MAFF will explore the best way to provide a set of seed production machinery and village based oil mills to target beneficiary groups, avoiding potential inconsistencies with micro-credit schemes. Options include (a) providing it to an established farmers organization, such as the Agriculture Service Center or a church group; or (b) providing it directly to farmers' groups on a lease-to-buy option.

Component 4 - Program Management

Payment for experts' services under the Program Management component will be in accordance with the terms of their contract, based on the presentation of invoices for services rendered. The invoices will be authorized for payment by the Project Director prior to payment. Payments for goods will be rendered against purchase orders or invoices.

C. Action Plan for Financial Management

As indicated, actions necessary for strengthening of financial management have been identified through periodic supervisions and annual audits. This process will continue during implementation of ARP III. An important covenant included in the TFET and EC Grant Agreements is that any single project expenditure will only be charged to a single donor. In addition, MAFF will continue to use the same format for FMRs as adopted under ARP II, which is satisfactory to IDA, with changes that will be agreed with IDA. In particular (a) MAFF will include sufficient details in the FMR to identify separately the funds received from TFET and the EC, as well as their respective uses; and (b) the annual financial statements of the project – which include a statement on the Sources and Uses of Funds – will identify the sources and uses of funds separately for TFET and EC.

The only other specific action necessary to ensure adequate Financial Management will be for the Financial Advisor to become available full time, for a minimum period of 24 person-months. The appraisal mission has received assurances that this will take place around February 2004.

D. Audit Arrangements

As for previous ARP projects, annual financial statements will be audited by independent auditors and under audit terms of reference acceptable to IDA. In addition to opinion on financial statements the audit

will report on the use of Special Accounts, reliability of Statement of Expenses used as the basis for IDA disbursements, and provide a management letter with recommendations on improvements in internal controls and procedures. The auditors will be requested to ensure that their report conforms to IDA's recently revised policies for project audits "*Audit Policies and Practices for World Bank Financed Activities, July 1, 2003*". In addition, the Terms of Reference for audits will include a specific requirement to verify (a) that receipts and uses of TFET and EC funds are adequately reported; and (b) that no expenditure has been claimed from both sources of funds. Annual audit report will be due not later than six months after the end of each fiscal year.

E. Disbursements

The proposed project is expected to disburse over a period of 42 months from the date of effectiveness (expected to be January 2004) to closure (June 30, 2007). Disbursements may continue for an additional four months past June 30, 2007 for expenditures covering goods, services or works delivered to the project before the closing date of the Grant.

1. Special Account

MAFF will establish separate Special Accounts for the TFET and EC grants, denominated in US dollars under terms and conditions acceptable to IDA. An initial deposit of US$500,000 for the TFET grant, and US$750,000 for the EC grant will be made to facilitate project implementation. This could be reviewed during project implementation if disbursements accelerated beyond current plans. Replenishment applications should be submitted by MAFF on a monthly basis, or when the balance of the Special Accounts reaches 20 percent of the initial deposit, whichever comes first. The Special Accounts will be audited annually by independent auditors under terms of reference acceptable to IDA.

2. Use of Statements of Expenditures

Statement of expenditures (SOEs) will be used for:

- Contracts for works costing less than US$100,000 equivalent per contract (for EC grant only);
- Contracts for goods costing less than US$100,000 equivalent per contract (for EC and TFET);
- Small Group Grants (for TFET grant only);
- Incremental operating costs, such as reasonable expenditures incurred by MAFF under the project for travel costs and per diems for MAFF staff and partners; bank charges; communications and printing costs; consumables and supplies; internet links; information materials and radio and television broadcast fees; translation services; vehicle and office and field equipment operation and maintenance; and fees for contracted drivers (but excluding staff salaries and staff allowances) (for both EC and TFET grants);
- Training, workshops, and study tours (for both EC and TFET grants);
- Contracts with consulting firms costing less than US$100,000 equivalent per contract (for both EC and TFET grants); and
- Contracts with individual consultants costing less than US$50,000 equivalent per contract (for both EC and TFET grants).

All other disbursements will be fully documented under standard prior review procedures. Documentation supporting SOE disbursements will be retained by the MAFF Budget Support Unit for a minimum of one year after receipt by IDA of the audit report for the year in which the last disbursement was made.

3. Disbursement Schedule

Table A below shows the summary allocation of grant proceeds. Given that several components are co-financed by TFET and EC, Tables B and C show the separation of disbursements amongst the grants by project part (as defined in the Grant Agreements), or by cut-off date of incurred expenditures.

Allocation of Grant proceeds (Table A)

Table A: Summary Allocation of Grant Proceeds (see also Tables B and C and D)

Expenditure Category	*EC Grant Amount (EUR)*	*TFET Grant Amount (US$)*	*Financing Percentage*
Civil Works		--	100[1]
(a) Part B.2 of the Project	1,290,000		
(b) Other Parts	590,000		
Goods (including local transportation)	1,040,000	520,000	100%/100%/90%[2]
Small Group Grants	--	200,000	100%
Consulting Services and Studies	2,120,000	1,340,000	100%/96%[3]
Training, Workshops, and Study Tours	460,790	410,000	100%
Incremental Operating Costs	400,000	190,000	100%[4]
Unallocated	816,650	340,000	
Total Grant to Government	***6,717,440***	***3,000,000***	
IDA Administrative Fee (2%)	***137,090***	***3,000,000***	
Grand Total	***6,854,530***		

Notes :

[1] – Community irrigation and roads will be financed by the Government at 25% during the first year, 50% during second year, and 75% during the third project year. However, different community schemes will be financed separately by the EC and the Government. Hence, the EC-funded schemes will be funded at 100%.

[2] – 100% of foreign expenditures, 100% of local expenditures (ex-factory costs), and 90% of local expenditures for other items procured locally.

[3] – 100% for individuals, and 96% for firms.

[4] – 100% up to the amounts specified. The Government would be financing an increasing share of incremental operating costs equivalent to 25% during FY04/05, 50% during FY05/06, and 75% afterwards

Table B. Indicative Disbursements by Project Component (for TFET Grant, in US$'000)

Project Parts (as defined in Grant Agreement)	*Disbursement Account*						
	(1) Goods	*(2) Small Group Grants*	*(3) Consultant Services and Studies*	*(4) Training, Workshops Study Tours*	*(5) Incremental Operating Costs*	*(6) Unallocated*	*Total*
A.. Participatory Development and NRM							
Continuation in Pilot Villages	67.0	0	169.6	74.0	44.0		354.6
Expansion to New Villages	40.0	200.0	289.2	131.0	—		660.2
Total Part A.	107.0	200.0	458.8	205.0	44.0		1,014.8
B. Irrigation Rehabilitation and Management							
B.3(a) Vehicles, equipment, TA, WUA training, inputs	42.0	—	162.6	26.0	—		230.6
B.4. Survey and Mapping	165.0	—	—	—	—		165.0
Total Part B	207.0	0	162.6	26.0	0		395.6
C. Services to Farmers							
C.1. Information to Farmers							
C.1(a) Information Programming up (first year)	0.75	—	8.2	6.2	44.9		60.1
Total Part C.1	0.75	—	8.2	6.2	44.9		60.1
C.2. Animal Health Services							
C.2(a) Vaccination Campaigns (first year)	130.4	—	128.0	—	12.1		282.6
C.2(c) Village Livestock Workers (first year)	35.0	—	128.0	73.9	12.1		236.9
C.2(d) Capacity Building (first year)	4.7	—	—	18.2	0.1		22.9
Total Part C.2	170.1	—	256.0	92.1	24.2		542.4
C.3. Support to Agri-Business							
C.3(a) Support to Seed Producers	17.4	—	60.0	15.0	0.1		92.4
Total Part C.3	17.4	—	60.0	15.0	—		92.4
D. Program Management							
D.1. Policy and Strategy (first year)	—	—	105.0	—	—		105.0
D.2. Project Management (first year)	15.0	—	284.6	62.0	83.2		444.8
Total Part D	15.0	0	389.6	62.0	83.2		550.3
Contingencies						345.0	345.0
Total TFET Grant	*517.2*	*200.0*	*1,335.2*	*406.3*	*196.4*	*345.0*	*3,000.0*

Table C. Indicative Disbursements by Project Component (for EC Grant) - in EUR'000

Project Parts (as defined in Grant Agreement)	(1) Works	(2) Goods	(3) Consultant Services and Studies	(4) Training, Workshops, and Study Tours	(5) Incremental Operating Costs	(6) Unallocated	Total
B. Irrigation Rehabilitation and Management							
B.1. Community Irrigation and Works	480.0	5.0	15.0	—	—		500.0
B.2. Major Irrigation Rehabilitation	1,287.9	—	272.8	—	—		1,560.6
B.3(b). MAFF and DIO Training	—	—	—	58.0	—		58.0
Total Part B	1,767.9	5.0	287.8	58.0	—		2,118.7
C. Services to Farmers							
C.1 Information to Farmers							
C.1(a) Information Programming (second year onwards)	—	12.0	151.2	10.5	70.8		244.5
C.1(b) CGIAR Secretariat	—	—	94.0	34.3	96.0		224.3
C.1(c) Community-based Information Networks	24.7	227.4	55.4	7.0	32.2		346.7
C.1(d) Agro-Meteorological Network	28.0	235.9	20.0	1.8	14.0		299.7
Total Part C.1	52.7	475.3	320.6	53.5	213.0		1,115.1
C.2. Animal Health Services							
C.2.(a) Vaccination Campaigns (second year onwards)	—	60.8	136.0	—	48.4		245.2
C.2 (b) Cold Storage Equipment	—	324.8	—	—	—		324.8
C.2 (c) Village Livestock Workers (second year onwards)	—	23.8	67.0	92.8	—		183.6
C.2 (d) Capacity Building (second year onwards)	—	2.4	—	96.4	—		98.8
Total Part C.2	0	411.8	203.0	189.2	48.4		852.4
C.3. Support to Agri-Business							
C.3 (b) Support Priority Niche Market Commodities	60.0	60.0	123.4	12.0	12.0		267.4
C.3(c) Support to Rural Producer Organizations	—	3.0	111.6	20.0	20.4		155.0
Total Part C.3	60.0	63.0	235.0	32.0	32.4		422.4
D. Program Management							
D.1. Policy and Strategy (second year onwards)	—	—	365.0	—	—		365.0
D.2. Project Management (second year onwards)	—	87.0	712.0	124.0	104.3		1,027.3
Total Part D	—	87.0	1,077.0	124.0	104.3		1,392.3
Contingencies						953.7	953.7
Of which:							
Unallocated						816.65	
2% IDA Administrative Fee						137.09	
Total EC Grant	*1,880.6*	*1,042.0*	*2,123.4*	*456.7*	*398.1*	*953.7*	*6,854.53*

Table D. Indicative Allocation of Counterpart Budget by Project Component (for CFET Funds)

Project Parts (as defined in Grant Agreement)	Works	Goods	Operating Costs	Services	Staff Costs	Total
A.. Participatory Development and NRM						
Continuation in Pilot Villages			40.0		18.0	58.0
Expansion to New Villages					93.0	93.0
Total Part A	0	0	40.0	0	111.0	151.0
B. Irrigation Rehabilitation and Development						
B.1. Community Irrigation and Works	480.0	—	—	—	39.3	519.5
B.4. Survey and Mapping	—	—	5.0	—	—	5.0
Total Part B	480.0	0	5.0	0	39.3	524.3
C. Services to Farmers						
C.1. Information to Farmers						
C.1(a) Information Programming	—	—	60.0	—	24.0	84.0
Total Part C.1	0	0	60.0	0	24.0	84.0
C.2. Animal Health Services						
C.2.(a) Vaccination Campaigns	—	121.5	103.5	240.0	35.1	500.1
C.2 (c) Village Livestock Workers	—	37.5	—	—	35.1	72.6
Total Part C.2	0	159.0	103.5	240.0	70.2	572.7
C.3. Support to Agri-Business						
C.3 (a) Support to Seed Producers	—	—	6.0	—	—	6.0
C.3 (a) Support to Candlenut/Coconut Processors	—	—	6.0	—	—	6.0
C.3(b) Support to Rural Producer Organizations	—	—	15.0	—	—	15.0
Total Part C.3	—	—	27.0	—	—	27.0
D. Program Management						
D.1. Policy and Strategy	—	—	—	—	—	0
D.2. Project Management	—	—	178.2	—	—	178.2
Total Part D	—	—	178.2	—	—	178.2
Total CFET	*480.0*	*159.0*	*413.7*	*240.0*	*244.5*	*1,537.2*

MAFF's Procurement and Tender Services Unit will be responsible for project procurement. MAFF has also implemented the two previous ARP projects in the sector.

The estimated project costs are US$11.4 million equivalent, of which US$5.5 million will be local costs, and US$5.9 million foreign costs. IDA, as the Trustee for the Trust Fund for East Timor (TFET) will finance a grant of US$3.0 million. The European Commission will finance a grant of € 6.8545 million (US$6.9 million equivalent), administered by IDA. The Government will finance the remaining US$1.5 million. Of the portion funded by the TFET/EC grant, an estimated US$2.25 million will be for civil works, US$1.73 million for goods, US$3.99 for services, and US$0.24 million for Small Group Grants. The remaining amount (US$1.65 million) will be for training and incremental operating costs.

The project implementation period is from January 2004 to June 2007 (for the TFET grant) and from September 2004 to December 2007 (for the EC grant).

A. Summary of Procurement Methods

Procurement of civil works and goods financed by IDA and the EC shall be on the basis of the "*Guidelines: Procurement under IBRD Loans and IDA Credits*" dated January 1995, and revised in January and August 1996, September 1997, and January 1999. Selection of consultants shall be on the basis of the "*Guidelines: Selection and Employment of Consultants by World Bank Borrowers*", dated January 1997 and revised in September 1997, January 1999, and May 2002.

I. Procurement of Civil Works *(US$2.73 million, EC Grant and Government Financing)*

(a) International Competitive Bidding (ICB): The project is expected to include only one large civil works contract. Procurement of this contract shall be carried out through ICB procedures. MAFF has completed a detailed feasibility study and design documents for the contract.

(b) Procurement of Small Works (PSW): The project will finance a number of small works: refurbishing of existing office space and burglar proofing for community-based information units, protective fencing for agro-meteorological units and rain gauges (under the Information to Farmers sub-component), and village sheds for small oil processing mills (under the Agri-Business sub-component). These works are estimated to cost less than US$10,000 each, up to an aggregate amount not exceeding US$150,000[11]. Procurement of such small works shall be under lump-sum, fixed price contracts awarded on the basis of quotations obtained from at least three qualified domestic contractors in response to written invitations. The invitations for quotation shall include a detailed description of the works including basic specifications, the required completion date, a form of agreement acceptable to IDA, and relevant drawings where applicable. The award shall be made to the contractor offering the lowest price quotation for the work and who has experience and the resources to complete the contract successfully.

(c) Community Participation Procedures (CPP): Rehabilitation of small irrigation schemes and farm-to-market access roads under the Irrigation Rehabilitation and Management Component will be carried out with the active participation of the communities. MAFF will sign a memorandum of agreement for the rehabilitation of the works with a well respected community-designated

[11] Table C indicates maximum aggregates by financier. Maximum aggregates may exceed the estimated contract value.

representative, selected by the community itself, and signed in the presence of witnesses. This community-based contractor will be responsible for the works. Payment will be made against satisfactory progress of works, as verified by construction supervisors and MAFF irrigation staff (see Annex 7, Section B). These procedures have been well tested over the course of three seasons of works, and have shown to enhance community ownership and commitment to future maintenance. The schemes to be rehabilitated will be selected annually from submissions made by the scheme representatives, after scrutiny at the district level and technical review by MAFF. The cost of the schemes' rehabilitation – materials and labor – will be estimated by MAFF based on the scope of the works and guidelines developed over the course of previous seasons. Communities will be required to contribute 5-15% of the costs of rehabilitation in-kind (to be increased progressively). The maximum value of each scheme shall not exceed US$50,000, with a maximum aggregate value of US$750,000. The project includes provisions for a technical audit of the schemes at mid-term, to enable adjustments based on lessons from experience. The Government is expected to finance approximately half of the community irrigation and road schemes.

II. Procurement of Goods *(US$1.89 million, EC, TFET Grants and Government Financing)*

(a) **International Competitive Bidding (ICB):** ICB procedures shall be used for procurement of goods estimated to cost US$100,000 or more per contract. Goods planned for procurement through ICB include a topographic survey and mapping; procurement of community-based information equipment; agro-meteorological equipment; refrigerators for the vaccination cold chain; and small oil mills for the agri-business sub-component. The estimated cost of goods to be procured through this method is US$1.1 million.

(b) **National Competitive Bidding (NCB):** Goods estimated to cost more than US$15,000 but less than US$100,000 per contract up to an aggregate amount not exceeding US$250,000 (US$150,000 for TFET and US$100,000 for EC) may be procured through NCB.

(c) **Shopping:** Vaccines estimated to cost less than US$50,000 per contract, up to an aggregate amount not to exceed US$150,000 (US$75,000 for TFET and US$75,000 for the EC grant), and other goods estimated to cost less than US$15,000 per contract, up to an aggregate amount not to exceed US$250,000 (US$190,000 for TFET and US$60,000 for EC) may be procured through Shopping. If such goods are available in the local market from reputed local suppliers, who provide such goods as a part of their normal business, then they may be procured through national shopping. Otherwise, they shall be procured through international shopping.

(d) **Direct Contracting:** Veterinary medicines and supplies which are of proprietary nature and obtainable from a single source, with IDA's prior agreement, be procured directly from the suppliers. Foundation grain seeds which are of proprietary nature will be procured directly from the research institutes which originally bred the varieties, or their collaborating research institutes testing the variety. Direct contracting is justified on an exceptional basis due to the need to ensure the purity of the foundation seeds introduced into Timor-Leste, and the fact that foundation seeds are not yet commercially available. The aggregate value of goods purchased through direct contracting shall not exceed US$50,000 (US$25,000 each for the EC and TFET grants).

(e) **Procurement from IAPSO:** Vehicles, computers and related equipment may be procured through the Inter-Agency Procurement Services of the United Nations (IAPSO). The aggregate value shall not exceed US$200,000 (US$150,000 for TFET and US$50,000 for the EC grants).[12]

[12] While procurement of vehicles and equipment is expected to be through IAPSO, the specified maximum aggregates allow for it to be procured under ICB, or through NCB procedures if available in the local market at competitive prices.

III. Consultants Services *(US$4.23 million, EC, TFET Grants and Government Financing)*

The main consultants' services will consist of individual advisors, both international and local, who will assist MAFF with the implementation and monitoring of the project. With regards to firms, the main contract will be for supervision of the large irrigation works. In addition, MAFF will contract non-governmental organizations and training groups to assist with implementation, training, surveying and monitoring. Visits by experts from specialized institutions (e.g., Consultative Group on International Agriculture Research – CGIAR) will also be supported.

(a) **Least-Cost Selection (LCS):** For the supervision of the large irrigations works, a qualified consultant firm shall be selected through LCS method under the EC grant. The assignment is of routine nature and the estimated value of the contract is small (less than US$150,000). In addition, project auditors will also be selected through LCS method. The estimated value of consultants and auditors selected through LCS method will not exceed US$250,000 (US$50,000 for TFET and US$200,000 for EC).

(b) **Selection Based on Consultants' Qualifications (CQS):** Selection of NGOs and training organizations for facilitation, training, surveying and monitoring and evaluation activities under the Participatory Development and Natural Resources Component, Support to WUAs, Information Services, Vaccination Campaigns, and Project Monitoring and Capacity Building sub-components may be through CQS. The estimated cost of each contract will not exceed US$50,000, with a maximum aggregate value of US$300,000 (US$90,000 for TFET and US$210,000 for EC).

(c) **Single-Source Selection (SSS):** With prior concurrence from IDA, CGIAR Research Centers will be contracted on SSS basis to provide specialists in selected fields (e.g. rice seed production or pest management). Single-source selection is justified as these specialized research centers can provide leading specialists in their respective fields, and in some cases, charge only travel costs as part of partnership arrangements with national governments. The aggregate value of such contracts shall not exceed US$105,000 (under EC financing). In addition, where NGOs have established links with local communities in the fields of participatory planning and/or have unique advantages in monitoring and evaluation (because of their knowledge of field conditions), and where their past performance is considered to be satisfactory by MAFF, they may be selected on a single-source basis with IDA's prior concurrence. IDA's approval could be given against an aggregate list of selected NGOs with contract values and justification for their single source selection, and a pro-forma contract agreement. Such selection is justified as these NGOs will be continuing their established activities and, because of their links with the communities, they will be providing services of exceptional worth. This is expected to be required for facilitation and training in Component 1, information services, vaccination monitoring, and project monitoring. The maximum value of each individual NGO contract shall not exceed US$50,000 and the aggregate amount shall not exceed US$110,000.

(d) **Individual Consultants:** International advisors as well as local consultants, including facilitators and vaccinators, will be appointed by MAFF to assist in project implementation. They should be selected through a comparison of qualifications of at least three qualified consultants among those who have expressed interest in the assignments or have been approached directly by MAFF. The total estimated cost of the individual consultants to be selected through a competitive process is US$2,350,000. In addition, with appropriate justifications and after concurrence by IDA, individual consultants may be selected on a sole-source basis in exceptional cases, such as (i) tasks that are a continuation of previous work that the consultants have carried out and for which the consultants were selected competitively, (ii) assignments lasting less than six months; and (c) when the individual is the only consultant qualified for the assignment. The maximum aggregate value of such consultants is US$1,200,000 (US$500,000 under TFET and US$700,000 under EC). This takes into account potential extensions in contracts of current MAFF advisors, as well as Timorese vaccinators and facilitators whose performance is evaluated as satisfactory by MAFF management,

and in cases where such extension is deemed important for the continuation of ARP activities. The minutes of negotiations will include a clause specifying that for the hiring of individual consultants under sole source basis which are not subject to prior review, the unit rates will be based on prevalent rates established during ARP II, or on any official guidelines, acceptable to IDA, adopted by the Government of Timor-Leste in the future, with allowances for annual inflation as determined by the Timor-Leste National Statistics Directorate. Any additional rate increases will be subject to prior approval by IDA.

IV. Small Group Grants *(US$0.24 million, TFET only)*

Small Group Grants under the Participatory Development and Natural Resources Management Component will comprise of a broad spectrum of activities to be undertaken with the direct participation and in-kind contribution of the beneficiary communities. The main purchases will consist of construction materials for very small works, such as plant nurseries, woodlots, seed storage, fences, and water retention facilities, small equipment, materials and supplies not available locally (such as introduced seeds, fish fries), and payment for external specialized labor and technical support. Materials available locally within the villages, land, and local labor will be expected to be provided voluntarily by the communities. The grouping of these purchases would not be feasible because they involve different operators and scattered beneficiaries in very remote areas. The maximum amount of such grants for each village is US$10,000. Selection criteria and the process for allocation, procurement and disbursement of the small group grants shall be in accordance with an Operational Manual satisfactory to IDA. MAFF has prepared such a manual for ARP II, but it has been revised to incorporate lessons of experience from the first pilot communities. The revised Manual was a condition for negotiations. Because of the small size of the individual purchases and since a comparison of prices may not be practical due to quality and distance considerations, procurement of materials costing less than US$2,500 may be through direct contracting from local markets or suppliers. For all other items, a comparison of three quotations shall be required. MAFF will assist the communities by compiling a list of local suppliers and prevailing prices. Most community projects involve only minor earth works which communities carry voluntarily. In case skilled labor is required, communities will contract them directly on a daily rate or output basis, whichever is most prevalent locally. Disbursement of the small group grants will be done in three installments based on the progress of activities. MAFF shall carry out the monitoring of the use of the grants.

B. Procurement Manual and Procurement Documents

MAFF will prepare and submit to IDA for review a revised Procurement Plan and Procurement Manual prior to project negotiations. The Manual shall outline the agreed process for the procurement of works, goods and consultants' services, and also include sample documents, where standard procurement documents are not available. Once cleared by IDA, MAFF shall follow the Procurement Manual and the Procurement Plan for all its procurement. The Procurement Plan should be adjusted periodically (at least every 12 months) with IDA's concurrence to meet the evolving needs of the project.

For the procurement of works on the basis of ICB, MAFF shall use the *Standard Bidding Documents for Procurement of Works – Smaller Contracts*, dated January 1995, revised June 2002 and March 2003. For the procurement of goods on the basis of ICB, MAFF shall use the *Standard Bidding Documents for the Procurement of Goods,* dated January 1995, revised on March 2000, January 2001, March 2002 and March 2003. MAFF shall also use the *Standard Requests for Proposals – Selection of Consultants,* dated July 1997, revised on April 1998, July 1999 and March 2000. While using these documents, MAFF shall ensure that the latest revisions to the above documents are incorporated. These revisions are available in the Bank's external website at www.worldbank.org. Even though the procurement of the topographic survey is a goods ICB contract, given the nature of the contract and on an exceptional basis, the bidding documents will be based on the standard bidding documents for small works.

For procurement on the basis of NCB, until new Procurement Regulations are enacted (see below), the mandatory provisions outlined in the Attachment to this annex, shall be included as an Annex to the Procurement Schedule of the Grant Agreement. Once the new regulation is enacted, these provisions will be reviewed and amended as necessary.

For Procurement of Small Works and Community Procurement Procedures, Shopping, and Direct Contracting, sample documents shall be included in the Procurement Manual. In addition, the Bank's *Guidance Procurement Note on Handling Procurement Under Shopping Method,* dated June 8, 2000 shall be incorporated in the Procurement Manual and followed.

For selection of Consulting Firms, IDA's *Standard Request for Proposals – Selection of Consultants (July 1997 edition)* shall be used, after incorporating the latest revisions. For Individual Consultants, sample contracts (lump-sum and time-based) shall be included in the Procurement Manual.

In the preparation of evaluation reports for procurement for ICB and NCB, MAFF shall use IDA's *Standard Bid Evaluation Form – Procurement of Goods or Works,* April 1996. In the case of consulting firms, MAFF shall use IDA's *Sample Form of Evaluation Report –Selection of Consultants.* For all other cases, simple sample forms for evaluation shall be used and included in the Procurement Manual.

C. Summary Capacity Assessment

An assessment of the procurement capacity of MAFF was carried out in accordance with World Bank procedures (dated July 15, 2002). The assessment involved a review of the procurement policies and procedures adopted by MAFF and took into consideration the experience in the implementation of ARP I and ARP II, as well as the findings and recommendations of the *Timor-Leste: Country Procurement Assessment Report* of June 2003.

Legal Framework: The primary instrument governing public procurement in Timor-Leste is *Regulation 2000/10 on Public Procurement for Civil Administration in East Timor.* This Regulation is to a large extent based on the Model Law of the United Nations Commission for International Trade Law. However, there are several provisions and approaches that diverge from the Model Law and the World Bank's Procurement Guidelines. They include: (a) restriction to payments in US dollars; (b) greater emphasis on national sources of procurement; (c) exceptions to the use of open tendering; (d) publication of invitations to bid or to apply for pre-qualification in the Official Gazette, rather than in the national press; (e) expression of non-price evaluation criteria in non-monetary terms; and (f) apparent compulsory extension of bid validity periods at the discretion of the procuring entity. Regulations 2000/10 also expressly provide that in the case of donor funded procurement; the procurement rules of the donors will prevail over the Regulations in the case of any conflict. Accordingly, MAFF followed IDA's Procurement and Consultant's Guidelines for ARP I and ARP II.

The Government is aware of IDA's concerns and, with financing under the Administrative Services Capacity Building Project, has appointed a consultant to assist in the preparation of manuals related to procurement. The third draft of the new Procurement Regulations has been submitted to the Government and IDA for comments. The Government is also in the process of appointing consultants to assist in the preparation of manuals related to procurement. Since these manuals will not be available before the commencement of the proposed project, MAFF will have to use its own Procurement Manual (see above).

Procurement Thresholds: Regulation 2000/10 has very high levels of thresholds for shopping (US$200,000), small works (US$350,000), and ICB (above US$1.0 million). In a country where the procurement risks are considered to be "high" (see below), the high thresholds for shopping and small works cannot be justified. Further, the high threshold for ICB cannot be justified considering the capacity of local contractors and the limited local manufacturing capacity. Accordingly, consistent with the

recommendations of the Country Procurement Assessment Report, lower thresholds will be applicable under the proposed project (see Table B).

Procurement Capacity: MAFF has established a Procurement and Tender Services Unit (reporting to the Head of Administration) to assist in processing all procurement. However, it is inadequately staffed, with only one national regular staff with very limited experience in procurement, a national procurement consultant with some experience gathered during the implementation of ARP I and ARP II, and a part-time international procurement advisor. Lack of procurement capacity is one of the greatest challenges confronting Timor-Leste. This also extends to MAFF and there will be a continued need for MAFF to engage an international procurement advisor on a full-time basis for at least the first two years of project implementation. The advisor will assist in the processing of procurement, and will mentor and train national staff. Further, in addition to the one regular national staff assigned to the Procurement Unit, MAFF should consider recruiting another regular staff to enhance its capacity and avoid delays in processing of procurement. The appointment of the international procurement advisor shall be a condition of effectiveness of the Grant. Procurement capacity will be monitored closely during implementation. One possibility would be for the Government's Central Procurement Division to second an experienced procurement staff to MAFF.

Procurement Processing and Filing: In view of the limited national capacity available in the Procurement Unit, the burden of processing most of the procurement has been vested upon the international procurement advisor. As a result of the overload, there were often delays in processing and the Procurement Unit could not effectively monitor and supervise the performance of the suppliers and contractors. Filing of procurement documents under ARP II has improved and is now satisfactory. It is expected that procurement processing will improve with staff gaining more experience.

Risk Assessment: Consistent with the findings of the Country Procurement Assessment Report, the assessment of risks for the proposed Project is "high". This conclusion is based on the extremely weak procurement capacity. Based on past experience under ARP I and ARP II, corruption is not considered to be an issue. In order to mitigate the risk, as indicated above, appointment of an international procurement advisor will be a condition for effectiveness of the Grant. The terms of reference of the advisor will specifically include a provision for training and mentoring of national staff, and his/her performance will be judged by the success in capacity building. In addition, as an outcome of the *Country Procurement Assessment Report*, IDA and the Asian Development Bank are providing financing for training Government officials in procurement. MAFF staff will be able to avail itself of these training opportunities.

D. Prior Review Thresholds

Table B indicates the prior review thresholds. Since MAFF has been involved in the implementation of ARP I and ARP II, where substantial procurement through shopping and small works has taken place, prior review of such contracts is not considered necessary. Accordingly, prior review will be required for:

(i) all contracts for goods and works that are estimated to cost US$100,000 or more;

(ii) all contracts for consulting firms and NGOs, estimated to cost US$100,000 or more[13];

(iii) all contracts for individual consultants, estimated to cost US$50,000 or more;

(iv) all contracts for individual consultants selected through sole source procedures (excluding tasks below US$50,000 that are a continuation of previous work for which the consultants were selected competitively, such as vaccinators, facilitators, and local consultants);

[13] This applies to the EC grant only. Under the TFET grant, only a small amount of procurement (estimated at US$85,000) would be through firms. Prior review will apply to those selected on a single-source basis.

(v) all contracts for goods awarded through direct contracting; and

(vi) all contracts with consulting firms, including NGOs, awarded through single-source selection.

The total value of contracts subject to prior review is estimated to be US$6.06 million, or 63 percent of the value of the two grants.

E. Post Review and Procurement Supervision

Since procurement risks are considered to be "high", during the initial stage of project implementation, IDA shall carry out ex-post reviews of 20 percent of the contracts that were not subject to prior review. With the concurrence of the Regional Procurement Advisor, this percentage may be lowered if, during implementation of the project, it is determined that the processing of procurement is satisfactory and there is a lower perceived risk.

Procurement methods (Table A)

Table A: Project Costs by Procurement Arrangements (Total)
(US$ million equivalent)

	Procurement Method[1]				
Expenditure Category	*ICB*	*NCB*	*Other*[2]	*N.B.F.*	*Total Cost*
1. Works	1.56 *(1.56)*	0.00 *(0.00)*	0.69 *(0.69)*	0.48 *(0.00)*	2.73 *(2.25)*
2. Goods	1.13 *(1.13)*	0.08 *(0.07)*	0.53 *(0.53)*	0.15 *(0.00)*	1.89 *(1.73)*
3. Services	0.00 *(0.00)*	0.00 *(0.00)*	3.99 *(3.99)*	0.24 *(0.00)*	4.23 *(3.99)*
4. Small Group Grants	0.00 *(0.00)*	0.00 *(0.00)*	0.24 *(0.24)*	0.00 *(0.00)*	0.24 *(0.24)*
5. Training, Workshops, Study Tours	0.00 *(0.00)*	0.00 *(0.00)*	0.96 *(0.96)*	0.00 *(0.00)*	0.96 *(0.96)*
6. Incremental Operating Costs	0.00 *(0.00)*	0.00 *(0.00)*	1.10 *(0.69)*	0.00 (0.00)	1.10 (0.69)
7. Incremental Staff Salaries	0.00 *(0.00)*	0.00 *(0.00)*	0.00 *(0.00)*	0.24 (0.00)	0.24 (0.00)
Total	2.69 *(2.69)*	0.08 *(0.07)*	7.51 *(7.10)*	1.11 *(0.00)*	11.39 *(9.85)*

1/ Figures in parentheses are the amounts to be financed by the IDA and EC grants. All costs include contingencies.

2/ Includes civil works and goods to be procured through procurement of small works, shopping, direct contracting, consulting services, training, community participation procedures and incremental operating costs.

Table A1: Consultant Selection Arrangements
(US$ million equivalent)

Consultant Services Expenditure Category	*Selection Method*							
	QCBS	*QBS*	*SFB*	*LCS*	*CQS*	*Other*	*N.B.F.*	*Total Cost*[1]
A. Firms				0.20	0.07	0.21		0.47
				(0.20)	*(0.07)*	*(0.21)*		*(0.47)*
B. Individuals						3.52	0.24	3.76
						(3.52)	*(0.00)*	*(3.52)*
Total				0.20	0.07	3.73	0.24	4.23
				(0.20)	*(0.07)*	*(3.73)*	*(0.00)*	*(3.99)*

1\ Including contingencies

Note: QCBS = Quality- and Cost-Based Selection
QBS = Quality-based Selection
SFB = Selection under a Fixed Budget
LCS = Least-Cost Selection
CQS = Selection Based on Consultants' Qualifications
Other = Selection of individual consultants (per Section V of Consultants Guidelines), Commercial Practices, etc.
N.B.F. = Not Bank-financed
Figures in parentheses are the amounts to be financed by TFET and EC grants.

Prior review thresholds (Table B)

Table B: Thresholds for Procurement Methods and Prior Review

Expenditure Category	*Contract Value Threshold (US$ thousands)*	*Procurement Method*	*Contracts Subject to Prior Review (US$ thousands)*	*Amount Subject to Prior Review (US$ thousands)*
1. Works	≤10	Small Works	None	—
	≤50	CPP	None	—
	All Others	ICB	All	1.56
2. Goods	All	DC	All	0.05
	≤15[1]	Shopping	None	—
	>15 - ≤100	NCB	≥100	—
	≤150	IAPSO	≥100	0.16
	>100	ICB	≥100	1.13
3. Consultant Services Firms	≤50	SSS	All	0.21
	≤50	CQS	None	—
	≤150	LCS	≥100	0.15
4. Consultant Services Individuals			≥50[2]	2.96

[1] – Note: Vaccines threshold is US$50,000

[3] – Sole source individual consultants are also subject to prior review except if their assignment is a continuation of ARP II for which they were selected competitively, and the value of their contract does not exceed US$50,000.

Total value of contracts subject to prior review: **6.22** *(63% of TFET/EC Grants)*

Overall Procurement Risk Assessment: High

Frequency of procurement supervision missions proposed: One every six months

(includes special procurement supervision for post review/audits)

Table C. Maximum Aggregates for EC and TFET Grants (in US$)

Procurement Method	*EC Grant*	*TFET Grant*	*Total (EC and TFET)*
Works:			
ICB	—	—	—
PSW	150,000	—	150,000
CPP	750,000	—	750,000
Goods:			
ICB	—	—	—
NCB	100,000	150,000	250,000
Shopping	135,000	265,000	400,000
IAPSO	50,000	150,000	200,000
DC	25,000	25,000	50,000
Services:			
LCS	200,000	50,000	250,000
CQS	210,000	90,000	300,000
SSS	150,000	65,000	215,000
IC Competitive	1,400,000	950,000	2,350,000
IC SS	700,000	500,000	1,200,000

Note: Specification of maximum aggregate totals is not required for ICB. Maximum aggregates exceed estimated contract costs to allow for adjustments in cost items during implementation.

Attachment A. Mandatory Provisions for National Competitive Bidding

1. Goods and works for which this Schedule allows procurement under paragraphs 3.3 and 3.4 of the Guidelines shall be procured in accordance with the provisions of Regulation 2000/10 on Public Procurement for Civil Administration in East Timor, as adopted by the Democratic Republic of Timor-Leste (the Procurement Regulation). These provisions, in order to ensure economy, efficiency, transparency, and broad consistency with the provisions included in Section I of the Guidelines (as required by paragraph 3.3 of the Guidelines), shall be modified as set forth in the following paragraphs.

Participation in Bidding

2. Government-owned enterprises in Timor-Leste shall be eligible for bidding only if they can establish that they are legally and financially autonomous, operate under commercial law, and are not a dependent agency of the Recipient.
3. Foreign bidders shall be eligible to participate in bidding under the same conditions as local bidders. In particular, no domestic preference over foreign bidders shall be granted to local bidders in bid evaluation.

Advertising; Time for bid preparation

4. Invitations to bid shall be advertised in at least one newspaper of national circulation, allowing a minimum of 30 days for the preparation and submission of bids, such 30 days to begin with the availability of the bidding documents or the advertisement, whichever is later.

Standard Bidding Documents

5. Until national standard bidding documents approved by the Association are available, the Association's standard bidding documents shall be used.

Classification of Suppliers or Contractors; Post-qualification

6. Bidding shall not be restricted to any particular class of suppliers or contractors, and non-classified suppliers or contractors shall also be eligible to bid. Before contract award, the bidder having submitted the lowest evaluated responsive bid shall be subject to post-qualification.

Evaluation criteria

7. Evaluation criteria shall be clearly specified in bidding documents, and evaluation criteria other than price shall be quantified in monetary terms. Only evaluation criteria so specified shall be used in bid evaluation. Merit points shall not be used in bid evaluation.

Extension of the validity of bids

8. In exceptional circumstances, the procuring entity may, before the expiration of bid validity, request all bidders in writing to extend the validity of their bids. In such a case, bidders shall not be requested nor permitted to amend the price or any other condition of their bid. Bidders shall have the right to refuse to grant such an extension without forfeiting their bid security, but bidders granting such an extension shall be required to provide a corresponding extension of their bid security.

No post-bidding negotiations

9. There shall be no post-bidding negotiations between the procuring entity and the lowest or any other bidder.

Inspection and Auditing

10. Each contract financed from the proceeds of a Grant shall provide that the suppliers and contractors shall permit the Association, at its request, to inspect their accounts and records relating to the performance of the contract and to have said accounts and records audited by auditors appointed by the Association.

The project's overall internal Economic Rate of Return (ERR) is estimated at 17.7%, with a Net Present Value of US$2.32 million.

The project objective is to strengthen the capacity of MAFF and its development partners to assist rural communities in increasing their production and income in a sustainable way. Thus, while the economic analysis assessed the viability of individual project activities, ideally project activities should be assessed based on how they help strengthen the institutional capacity of MAFF and its partners (particularly in regard to the implementation of future projects). As future projects have not been identified, an economic analysis of these additional benefits could not be carried out. Furthermore, the economic analysis did not take into account potential environmental and social benefits, as relevant data were not available. Hence, the total benefits of ARP III are likely to exceed the benefits included in this economic analysis, and the project is expected to have a continuing impact on MAFF programs well beyond project completion.

The economic analysis was based on the US dollar, the official currency in Timor-Leste. There are tariffs on several agricultural products. However, as the analysis below shows, there is little evidence to suggest that these tariffs have a significant effect on the prices of domestically produced commodities covered in this economic analysis. Hence, no shadow prices were used in the economic analysis. The Financial Rate of return was considered to be similar to the Economic Rate of Return.

The economic analysis was first carried out on a component by component basis. This was based on both cost benefit analysis (for some components) as well as cost-effectiveness analysis (for components such as information which do not lend themselves to cost-benefit analysis). The ERR for the project as a whole was based on an aggregation of the individual components' analysis. The duration of the benefits was assumed to vary between 10 and 20 years, depending on the likely duration of the technology and its resulting benefit stream.

A. Economic Analysis by Component

Component 1 – Participatory Development and Natural Resource Management

The main activities associated with this component are facilitation and support to upland and coastal farmer groups for the implementation of their own Small Group Activities. One of the criteria for assessing the viability of Small Group Activities will be their economic viability. Many of the potential benefits, however, may be difficult to measure (such as reduction in environmental degradation). Furthermore, the benefits will be site and activity specific, and as the activities have not yet been identified, precise potential benefits cannot be assessed at this time.

The economic analysis took into account the potential ERR of prototype village activities, akin to those that may be funded under this component. The Australia East Timor Rural Development Program has estimated internal rates of return and returns on capital for similar village activities: vegetable development, new coffee plantings (starting with nurseries); and post harvest storage of rice and coffee processing. In addition, the economic analysis took into account rates of return for a hypothetical community fishpond activity, one of the activities supported under ARP II. The results are shown below:

Table 1. Indicative Rates of Return for Upland Community Activities

Activity	***IRR or ROC***
Vegetable development	151%
Coffee plantings	-4.4%
Post harvest storage	27%
Coffee processing	-250%
Fish ponds	> 25% (depending on size)

Source: AusAID Rural Development Program, Timor-Leste

The results suggest that significant rates of return could be achieved on individual community activities but that prior analysis would be advisable before proceeding. Some of the activities may only be viable if significant environmental benefits could also be achieved. As small village-based activities may be one of the main opportunities to increase farmer income, it is important that MAFF staff be trained in advising farmers on activities likely to yield positive returns. Table 1 shows, for example, that many small coffee plantation activities may not be viable at this stage, though this could change with a strengthening of world coffee prices or in areas with lower production costs.

This approach does not take into account the benefits of institutionalizing the process within MAFF. If costs associated with providing the technical assistance under this component were to be taken into account, the benefits would be underestimated.

For the purposes of the economic analysis, and taking into account the type of activities likely to be financed, it was assumed that the Small Village Grants included in this component (US$200,000) would achieve an ERR of 15% over ten years. Actual benefits may be higher, especially as social and environmental benefits were not been taken into account. For some technologies – such as tree planting – a ten year benefit stream may be too short while for others – such as fish ponds – it may be excessively long. The duration of the benefit stream takes into consideration an average of the activities expected to be supported under the project.

During implementation, relevant baseline data should be collected to permit a more precise evaluation of individual village activities, and subsequent adjustments in the positive list. This should include, among others, assessments of storage losses for grain, current yields for vegetable crops, prices for main agricultural commodities, mortality (for fish ponds), and processing conversion rates. Indicative financial viability analyses of most common village activities should then be included in the respective technical manuals.

Component 2 – Irrigation Rehabilitation and Management

The main activities under this component are community irrigation schemes and roads, one large irrigation scheme, institutional capacity building and surveys and mapping. Project benefits were only estimated for the rehabilitation of irrigation and farm-to-market road schemes.

Community Irrigation and Roads Rehabilitation. Based on experience gained under ARP I and ARP II, the average investment cost associated with community irrigation schemes is US$160 per hectare (ha). A total of 3,000 hectares will be rehabilitated under ARP III. These community schemes will be rehabilitating land that was previously irrigated but is not currently used because of damaged infrastructure. The base case scenario is that the land to be irrigated will produce a single rice crop with similar yields as nearby land that is already irrigated (on average 1.8 tons per ha). The land to be irrigated is currently left fallow in the wet season and may be used for grazing during the dry season.

The costs associated with growing rice are 100 man hours of labor per hectare at US$1 per hour with operation and maintenance costs of US$20 per hectare. No fertilizer is used. The rice price is assumed to

be US$0.13/kg (paddy), US$0.01/kg above current prices (at Bobonaro). This takes into account the fact that international rice commodity prices are at an historic low and are projected to increase by about 10 percent in the next few years.

Timor-Leste currently has a tariff of 10% on imported rice. Table 2 below shows the estimated imported parity price if the tariff was fully effective in raising local rice prices. However, selective inquiries about local rice prices during appraisal suggest little variation in prices irrespectively of the distance from Dili or from rice growing areas. Furthermore, local prices are approximately 10% below the estimated import parity prices. At current prices, therefore, the poor transportation infrastructure and limited marketing facilities cause rice prices to be determined predominantly by local supply and demand. Hence, the assumed rice price of US$0.13/kg of paddy is representative of both economic as well as financial prices.

Table 2. Comparison of Estimated Import Parity Price with Observed Market Prices of Rice (September 2003)

Conversion Factors	*Price (US$/MT)*
FOB Saigon/Bangkok	
(equivalent to 20% brokens – 16% discount on 5% brokens at US$210/MT)	**176.40**
Insurance and Freight	7.45
Import Duties (10%)	18.38
Labor	3.45
Haulage	6.85
Customs	0.45
Interest on Capital (15% for 15 days)	0.93
Sub-Total Dili Port	213.91
Importer's margin (15%)	32.08
Trucking Costs (Dili to Caraulun)	28.0
Wholesale Margin (10% on price at Dili)	21.39
Unloading and Loading Charges	4.00
Potential Caraulun Wholesale Price	**299.38 (US$0.299/kg)**
Selected Actual Market Prices:	**Unit as stated:**
Aileu (50 km from Dili):	
50 kg bag imported rice	14.00
1 kg imported rice	0.30
Maubisse (100 km from Dili):	
50 kg bag imported rice	14.00
1 kg imported rice	0.20
Same (150 km from Dili):	
50 kg bag imported rice	14.00
1 kg imported rice	0.25
Conversion to Paddy *(at 60% milling recovery – US$0.25 less wholesale margin)*	**US$0.135/kg**

The costs of rehabilitating farm-to-market roads have been included in the cost of rehabilitating the irrigation schemes. In the base case scenario, the benefits for this rehabilitation are assumed to be equal to the cost of maintenance. In the economic analysis in ARP II, the incremental benefit was assumed to be 200 Rupiah/km based on the estimates made for similar roads in Indonesia. This approach would value the benefits of the farm to market roads at the equivalent of US$12/ha rehabilitated or US$4/ha

above the assumed operational and maintenance costs of roads (5% of investment cost per year). In this analysis, the benefits of roads were valued conservatively at the same level as operational and maintenance costs. Under these assumptions, the ERR per ha for community schemes (over 20 years) is 47%. This relatively high rate of return reflects the fact that the project is simply rehabilitating schemes for which development costs have already been incurred, and may therefore be regarded as sunk costs. Furthermore, the potential irrigable areas are not currently being cultivated due to the state of disrepair of the schemes. Hence, investment in community irrigation rehabilitation is highly economical. The life span of community irrigation schemes was assumed to average 20 years.

Asides from the 3,000 ha of land that are expected to be irrigated through rehabilitation of community irrigation schemes, there remains at least another 7,000 ha that require future rehabilitation by MAFF. If MAFF can fund the rehabilitation of some 1,000 ha a year – as currently planned – it will have the institutional capacity to rehabilitate these schemes after the project ends. The benefits and costs associated with the rehabilitation of 1,500 ha of this land have been included in the sensitivity analysis (but not in the baseline scenario) as indicative of some of the capacity building benefits of ARP III (see Table 3).

Rehabilitation of Large Irrigation Schemes. The project is expected to rehabilitate only one large irrigation scheme, Caraulun, at a cost of approximately US$1.6 million with contingencies. The potential irrigable area is 1,030 ha. The feasibility consulting firm hired under ARP II carried out an independent cost-benefit analysis for this scheme in May 2003 (see Annex 13 for further details).

Based on assumptions that reflect current experience, the ERR is estimated at 20.3% over 20 years. The current yields are about 1.9 MT/ha with a single crop. The with-project benefits assume two crops per year, with yields increasing to 2.5 MT/ha for the first crop, and 2.0 MT/ha for the second crop after 5 years. The analysis also assumed a cropping intensity (with project) of 160%[14], taking into account the experience with light-to-medium damaged irrigation schemes rehabilitated during ARP II. As with community schemes, a price of US$0.13/kg of paddy was assumed. The sensitivity analysis indicates that if farmers grew only one crop on the newly irrigated area and there was no increase above current yields, the ERR would be 8.1%. However, the overall project would remain feasible with an ERR of 15.6%. The sensitivity analysis also shows that if no production increase was achieved in the first two years after rehabilitation (as WUAs gained experience in utilizing the improved scheme) the ERR would remain viable at 13.9%.

For the purposes of project monitoring, MAFF should collect information on existing yields from a control site (nearby irrigated land), and then monitor the impact of the rehabilitation on the area irrigated, yield, inputs used and prices.

Sub-Component 3.1 – Information to Farmers

The primary activities associated with the information component are delivery of information to farmers via various media and collection of meteorological information. These activities are considered separately below.

During the Indonesian Administration period, there were about 700 extension staff in Timor Leste, an average of about 2 per village. This compares to a current average of 5 technical agricultural staff per district, a reduction of nearly 50 staff per district. Most villages lack easy access to agricultural information. ARP III will use mass media and establish an e-mail information service network to raise the

[14] This assumption was discussed extensively with irrigation staff during appraisal and is considered to be conservative based on the experience of ARP II schemes.

capacity of district staff and other development partners to give relevant advice to farmers, as well as convey farmers' requests for information and support.

Delivery of information has a number of interconnected activities. The economic benefits of these activities cannot easily be estimated due to a lack of baseline data. Nevertheless, provision of information to farmers is a primary function of MAFF. A cost effectiveness approach to the delivery of information is therefore an appropriate evaluation methodology. A ten year time horizon was assumed in the economic analysis as future technology changes would likely render current interventions obsolete.

There are at least two methods of providing information to farmers: directly by word of mouth, and electronically. Cost effectiveness may be assessed by estimating (i) the costs of upgrading the capacity of existing field staff by providing them with access to information through computer networks; and (ii) the cost of providing more information through various media. The investment and operational costs of the proposed project activities can then be compared to the costs of employing further extension staff for face-to-face communication. A sensitivity analysis was undertaken to determine what would need to be the number of extension officers that could be 'replaced' by an effective mass media information system. This analysis suggests that if one radio program produced every two weeks could replace the activities of up to 20 extension workers at current salaries (about 1.5 officers per district), the estimated ERR for mass media campaigns would be 17% over a ten-year period. In other words, the mass media campaign would be cost effective under the realistic assumption that each extension worker is only able to visit an average of 5 farmers per day, whilst an effective radio program could reach an average of 1,000 farmers each fortnight. On the other hand, if less than 500 farmers were positively influenced by mass media on a 15-day period, a mass media information campaign may not be a cost effective option. A key issue is thus the number of farmers likely to be positively influenced by mass media campaigns. As 1,000 farmers is a relatively small proportion of farmers with access to radio (about 450,000 people), there seems a reasonable chance that an effective mass media campaign will potentially be a cost effective option.

The costs of the community based information services and links with the CGIAR network were compared with the costs of extension officers providing a similar service to farmers. The cost effectiveness of the information network might be evaluated by recording the network use by district extension staff on behalf of farmers. The sensitivity analysis used a base case scenario where an extension staff member (without access to an information network) provides advice to an average of 5 farmers per day. The increased productivity of district staff in the with-project situation may be measured by how many requests for information on agriculture problems they could make using the computer network. At present, district staff spend a lot of time traveling to Dili to confer with MAFF on problems encountered in the field. If each of the four district extension staff member (or, alternatively, local development partners) were to conduct on average 5 information searches per day (i.e. a total of 20 searches a day per district), then this number of requests might be considered the equivalent of each district officer achieving the workload of two district officers who do not have access to the information network (i.e. the five searches represent the additional capacity of a district officer to assist farmers). The rate of substitution (i.e. the average number of farmers assisted by district officers before and after the establishment of the information network) provides the basis for determining the cost effectiveness of the use of computer networks for the provision of information to farmers. Under the scenario of 20 searches per district per day (and 5 farmers assisted per day per district officer without access to an information network), the estimated ERR for the information network is 22% over a ten year period. This estimate is highly sensitive to the baseline assumptions: if the average number of searches were to be limited to 10 per district per day, the estimated ERR would be –4% over the ten year period. It is therefore appropriate to introduce the network on a pilot basis first, expanding nationwide only after an evaluation of the effectiveness of the first pilots (as currently proposed under the project).

For the purposes of evaluation, baseline information needs to be collected on current coverage and usage of radio programs. Such a survey is expected to be undertaken later in 2003. The survey should include

appropriate questions to assess the usefulness of the radio programs to farmers. As current use of e-mail by district officers is very limited, impact evaluation could be assessed based on usage of the network over the life of ARP III.

The collection of agro-meteorological information has additional benefits to those accruing to farmers. One important issue in any economic analysis is the quality of the technology to be used. A feasibility study will be prepared evaluating alternative approaches. Implementation of this sub-component and assessment of the economic benefits will depend on the results of this feasibility study. Only the costs of the feasibility study have been included in the overall economic analysis.

Sub-Component 3.2 – Sustainable Animal Health Services

The primary activities associated with this sub-component that lend themselves to an economic analysis are the vaccination campaigns for cattle, pigs and chickens. Ideally, the economic analysis should be based on actual mortality rate with and without vaccination. Livestock numbers, however, are not accurately recorded in Timor-Leste. The approach adopted was therefore to determine what parameters would be needed to generate a positive ERR. An assessment was then made as to whether these parameters are likely to underestimate the actual situation. A twenty year time frame was used in the economic analysis on the assumption that vaccination will remain the primary means of protecting animals against disease in the foreseeable future.

For all animals - cattle, pigs and chickens, the ERR for vaccination is positive for a wide range of reasonable assumptions. Based on experience in Indonesia, Hemorrhagic Septicaemia is endemic in cattle and the likelihood of an outbreak is 5-10% in any one year. The effectiveness of the vaccine could be around 35%. For pigs, swine fever is endemic and the likelihood of an outbreak could be at least 20% in any one year. The effectiveness of the vaccine could be at least 50%. For chickens, the likelihood of Newcastle disease could be 35% and the effectiveness of the vaccine could be at least 50%. This is a conservative estimate given that the effectiveness of the vaccine in challenge trials in Mozambique approached 100%.

Key assumptions are associated with the value of the animals that become infected. When infected, the animals are likely to be quickly killed and consumed. The economic cost is therefore the additional value that would have been added to the animal (e.g. in weight and breeding potential) before it is was eventually slaughtered or died. The economic analysis used conservative assumptions of US$50 for cattle, US$30 for pigs, and US$1 for chickens.

Imports of live animals are subject to a 12% duty, while duties for meat are set at 6%. The impact of these tariffs on prices of animals and meat in local markets is uncertain. Generally, prices of livestock products will reflect short-term supply and demand conditions at the local level, particularly when transportation is difficult and expensive. Thus tariffs are unlikely to have significant effects on local markets. Economic and financial prices are therefore assumed to be the same. Under these baseline assumptions, the resulting ERR is 234% over twenty years.

For the purposes of evaluation, it will not be possible to compare previous mortality from disease. The most appropriate assessment methodology will be to collect information on mortality through the new voucher system introduced by ARP III. Village Livestock Workers will be required to collect information on the number of animals in each household and the number vaccinated. The base case scenario assumes a mortality rate from disease after implementation of the campaigns of about 1% for cattle, 8% for pigs and 6% for chickens. The number of animals assumed to be vaccinated is 275,000 pigs, 200,000 cattle and 330,000 chickens.

Sub-Component 3.3 – Agri-Business Support

The primary activities include support to rural producer organizations; support to seed producers; and support to priority niche market commodities.

The benefits of establishing an Agri-Business Support Unit in MAFF were estimated based on the potential benefits of MAFF continuing to provide technical advice to Agriculture Service Centers established under ARP I and II (one of the types of rural producer organizations that the unit would support).

The three existing Agriculture Service Centers (in Bobonaro, Aileu and Viqueque) prepared business plans prior to their establishment. All three plans significantly overestimated the actual volume of activity during their first year of operation. Significant funds were invested in the establishment of these centers. Furthermore, in the absence of well-developed markets and associated infrastructure, many farmers could be without the means to dispose of surplus production at reasonable prices in the absence of efficiently functioning centers. Support for rural producer organizations is therefore one strategy that needs to be trailed as a means of raising rural production and farmer incomes. It is still too early to assess the long-term economic viability of the three pilot Agriculture Service Centers based on current performance. However, taking the initial investment as sunk costs, continued technical support to these type of organizations would have potentially high economic benefits. In the economic analysis, the foreign exchange costs associated with (indirectly) supporting producer organizations such as the ASCs (US$150,000) were assumed to have an ERR of 20% over ten years. A ten year time frame was assumed as developments in the market economy might lead to more efficient forms of marketing becoming available.

The viability of the proposed oil mills will be assessed through a feasibility study before MAFF proceeds with this assistance. Current information suggests the economic viability of coconut/candlenut oil mills is very sensitive to assumptions about market prices and the volume of nuts crushed. High prices and high throughput generates very high ERRs. Given that this analysis has still to be carried out, the costs associated with the implementation of oil mills were not incorporated into the economic analysis.

Component 4 – Program Management

No direct benefits were estimated for this component, even though the policy studies and capacity building are likely to generate long-standing benefits.

B. Overall Project Economic Returns

The overall estimated ERR for the project is estimated conservatively at 17.7% with a Net Present Value (at 12%) of US$2.3 million (see Table 3). This was based on a combination of cost effectiveness analysis for some components (e.g. information) and cost benefit analysis for other components, as outlined in Section A above. The overall ERR was estimated taking into account all project baseline costs, except for the agro-meteorological equipment and oil mills for which more complete feasibility analyses are still pending.

Table 3. Summary of Benefits and Costs for ARP III – Baseline Scenario (US$'000)

Year	*Costs*	*Benefits*							*Net benefits*
		NRM	*Irrigation Community*	*Caraulun*	*Information (1)*	*Information (2)*	*L'stock*	*Agribus*	
1	2,844						696		-2,148
2	3,506	40					722	37	-2,707
3	3,299	40	306		55	119	722	37	-2,021
4		40	306	201	55	119	722	37	1,480
5		40	306	234	55	119	696	37	1,486
6		40	306	282	55	119	722	37	1,561
7		40	306	328	55	119	722	37	1,606
8		40	306	391	55	119	722	37	1,669
9		40	306	391	55	119	696	37	1,643
10		40	306	391	55	119	422	37	1,369
11		40	306	391	55	119	722	37	1,669
12		0	306	391	55	119	722		1,592
13			306	391			696		1,392
14			306	391			722		1,418
15			306	391			722		1,418
16			306	391			722		1,418
17			306	391			696		1,418
18			306	391			722		1,418
19			306	391			722		1,418
20			306	391			722		1,418
21			306	391					697
22			306	391					697
23			0	391					391
								EIRR =	17.7%
								NPV =	$2,332

C. Sensitivity Analysis

Table 4 below shows the sensitivity analysis for the project for the most significant assumptions. The main risks that would significantly lower the project returns include:

- Caraulun farmers unable or unwilling to achieve increased yields and/or planting of two crops.
- MAFF unable to provide funds to cover recurrent costs associated with livestock vaccination program and farmers unwilling to pay for the coast of vaccination.
- Farmers unwilling to contribute to the maintenance of community irrigation schemes to ensure that they remain operational.
- Failure of the community based information services network to improve communication with farmers.

These risks would need to be managed carefully during implementation. Nonetheless, the sensitivity analysis indicates that the project is fairly robust to changes in the basic assumptions.

Table 4: Summary Sensitivity Analysis for ARP III (US$'000)

Variable		*ERR*	*NPV*
Baseline		17.7%	$2,332
Rice Price	-20%	14.6%	$1,014
	+20%	20.5%	$3,651
Rice Yields	-10%	16.1%	$1,656
	+10%	19.2%	$3,008
Additional 1,500 ha of community schemes rehabilitated		19.4%	$3,146
Increase in road benefits	+50%	17.8%	$2,404
No production increase in Caraulun for the first two years		16.4%	$1,850
No increase in yields or second crop in Caraulun		15.6%	$1,396
Only 60% cropping intensity achieved in Caraulun		14.3%	$867
Caraulun rehabilitation does not proceed		17.5%	$1,725
Value of vaccinated pigs	-20%	14.6%	$1,103
No agri-business support (or no net benefits)		17.2%	$2,145
Project cost increase (w/contingencies)	+15%	14.5%	$1,186
No community information network (or no net benefits)		16.3%	$1,799
No mass media campaigns (or no net benefits)		17.0%	$2,404

D. Fiscal Impact

The estimated recurrent costs after ARP program completion (excluding salaries) are US$733,000 a year, or about 26 percent of MAFF's forward estimated budget for FY06/07. These estimates were extensively discussed with MAFF management and are considered reasonable, given the high level of integration of ARP III with MAFF's current programs. The major recurrent costs will be annual vaccination campaigns (US$310,000 a year) and operation and maintenance costs for the 16,500 ha of irrigated land that will have been rehabilitated under ARP I, II and III by 2007. Detailed fiscal estimates by project component are summarized below.

1. Participatory Development National Resource Management

After completion of ARP, the following on-going activities would likely be implemented:

Activity	*Unit*	*Total Annual Costs US$*
Grant per village	$3,000	
Number of villages	13 (one per district)	$39,000
Facilitators	6 (on average 1 per two villages)	
Cost of facilitators	$190 per month (including travel)	$13,680
Training/extension material)	5 training courses per village	
Cost of training	$200 per course	$13,000
Total		$65,680

MAFF staff expenses associated with this activity would include:

Item	*Number*	*Unit cost*	*Total Annual Costs (US$)*
District Fishery and Forestry Offices	2 per district	$150 per month	$21,600
Transportation (district)	12 motorbikes	$80 per month	$11,520
Investment cost of bikes	12	$300 per annum	$3,600
Head office staff	3	$150 per month	$5,400
Total			$42,120

2. Irrigation Rehabilitation and Management Component

Under the various ARPs, it is expected that the following targets will have been achieved:

Type	*Target*	*Investment cost*	*Recurrent Annual Costs (US$)*
Community irrigation schemes	10,000 ha	$1.6 million (i.e. $160 per ha)	$80,000 @ $8 per ha
Light – medium irrigation schemes	2,436 ha	$2,256,000	$72,000 @ $30 per ha
Roads	200 km	$640,000 @ $3200 per km	$32,000 @ 5% of investment cost
Total			$184,000

If the Caraulun scheme goes ahead, there would be another US$50,000 per annum of recurrent costs. In addition, there are the following staffing and transportation costs:

Item	*Number*	*Unit cost*	*Total Annual Cost (US$)*
District Irrigation Officer	12	$150 per month	$21,600
Transportation (district)	12 motorbikes	$80 per month	$11,520
Investment cost of bikes	12	$300 per annum	$3,600
Head office staff	5	$150 per month	$9,000
Total			$45,720

3.1. Information Services Sub-component

There are three sub-components of the information sub-component. Recurrent costs are:

Item	*Composition*	*Unit cost*	*Total Annual Costs (US$)*
Information programming	Materials production – consumables etc.	$200 per month	$2,400
Radio person		$300 per month	$3,600
Communication assistant		$300 per month	$3,600
CGIAR	Internet/translation/ supplies	$4,000 per month	$48,000
CGIAR	Cross visits	1 @ $8,000; 1 @ $5,000 per year	$13,000
CGIAR	MAFF staff	1 @$150 per month	$1,800
Community network (3 stations)	Operational costs	$65 per month per station	$2,340
Community network (3 stations)	Computer operator	$150 per month per station	$5,400
Community network (3 stations)	Consumables	$2,000 per station per year	$6,000
Community network (3 stations)	Capital costs annualised	$1,000 per year per district	$3,000
Total			$89,140

In addition, if the meteorological data collection sub-component proceeds, the costs could be US$14,000 per annum for consumables and US$3,120 per annum (including travel) for a full time MAFF staff responsible for data collection.

3.2. Sustainable Animal Health Services Sub-Component

The costs of the vaccination campaigns are:

Item	*Number*	*Unit cost*	*Total Annual Costs (US$)*
CSF vaccine	350,000	11 cents	$38,500
ND vaccine	1,500,000	1.5 cents	$22,500
HS vaccine	200,000	10 cents	$20,000
CSF fee	350,000	25 cents	$90,000
HS fee	200,000	35 cents	$70,000
Supervision and Refresher Training	52 per year	$600	$31,200
Motor bikes (operating)	26	$80 per month	$24,960
Motor bikes (capital)	26	$500	$13,000
Total			$310,160

In addition, there are the following staffing and travel costs:

Item	*Number*	*Unit cost*	*Total Annual Costs*
MAFF salaries	Per month	$2,500	$30,700
MAFF operational costs	Per month	$1,000	$12,000
Total			$42,700

Other Recurrent Expenditures

ARP has provided at least US$79,000 in computer equipment which will need to be replaced. Assuming an average life of 3 years, the annual replacement costs are estimated at US$26,000.

Total Recurrent Costs after Project Completion

Based on the assumptions in the above tables, the total estimated fiscal impact of ARP on MAFF is:

Item	*Cost*	*MAFF staff*	*Total (US$)*
Participatory Development and NRM	$65,680	$42,120	$107,800 (Forestry $71,867) (Fisheries $35,933)
Irrigation	$184,000	$45,720	$229,720
- Caraulun	$50,000		$50,000
Information	$89,140		$89,140
- Agro-Meteorology	$14,000	$3,120	$17,120
Livestock	$310,160	$42,700	$352,860
Computer Replacement	$26,000		$20,000
Total without Caraulun and Agro-Meteorology	$668,980	$130,540	$799,520
Grand Total (w/Carulun and Meteorology)	$736,980	$133,660	$866,640

Thus, the estimated annual recurrent costs (minus salaries of MAFF staff), are US$737,000 a year, or about 26 percent of MAFF's forward estimate for FY06-07:

Item	*Forward Estimate ($'000)*
Department of Agriculture, Forestry and Fisheries	$2,798
Salaries and Wages	$580
Goods and Services	$1,218
Capital Expenditure	$1,000

A. Introduction

The project is classified as Safeguard Screening Category S2: some safeguard policies are triggered, but effects are limited in their impact and are technically and institutionally manageable.

The project triggers the following safeguard policies: (a) Environmental Assessment; (b) Natural Habitats; (c) Forests; (d) Pest Management; (e) Involuntary Resettlement; and (f) International Waterways. Potential environmental impacts will be short-term, localized and readily prevented or mitigated by good engineering design and construction practices – as laid out on the prevention and mitigation measures adopted by the project – reinforced by adequate supervision in the field. In the unlikely event that land needs to be acquired by the Government, it would be located around an existing irrigation scheme, be minor in nature, and will not result in population relocation.

1. Environmental Assessment

ARP III is designed to be primarily a continuation and sustainability phase of ARP II. The project activities are not expected to have any major significant, complex or irreversible adverse environmental impacts. No works will be undertaken that could affect protected or vulnerable natural habitats. The project has therefore been classified as Environmental Screening Category B (see Annex 12).

2. Natural Habitats

This policy will apply to the project. All community-based irrigation and farm-to-market access roads will be located outside protected areas as defined in Regulation 2000/19 on Protected Areas (one of the criteria used in their selection). However, Component 1 (*Participatory Development and Natural Resources Management*) may be carried out in and around natural habitat areas. The component is expected to strengthen natural habitat management by introducing improved methods of watershed management and replanting. The negative list for this component excludes any activity which may impact adversely on important/protected natural habitats, including at altitudes above 2000 meters, and in mangrove, wetland or coral reef areas (unless for rehabilitation purposes).

3. Forests

This policy will apply to the project. Component 1 will include activities on community-based forest management, such as reforestation of community-owned forest land, and sustainable utilization of non-timber forest products in natural forests within village boundaries (e.g. bamboo or honey). It will not involve harvesting timber in natural forests. Community forests established under the project will not be ready for harvest for 10-15 years. The Operational Manual for this component will include provisions that require replanting of future trees harvested in any community forestry areas supported under the project, and conservation plans for areas reforested to reduce environmental degradation.

4. Pest Management

This policy may be triggered in limited occasions. Under the on-farm demonstrations of new crop varieties by Water User Associations in Component 2 (*Irrigation Rehabilitation and Management*) and support to certified seed producers in Sub-Component 3.3 (*Support to Agri-Business*) it is possible that the project may need to supply limited amounts of pesticides to control insects or pests. In addition, farmers in Component 1 may feel the need to use agro-chemicals to protect new varieties introduced under the small group grants (even though the grants themselves would not finance pesticides or fertilizers). In these cases, MAFF would ensure that all procurement of pesticides would comply with Operational Directive 4.09. All Class 1 toxic pesticides and Class II moderately toxic pesticides would be excluded (see Table 2, Annex 12). MAFF would further provide training to farmers on principles of integrated pest management to minimize the use of chemical pesticides, and enhance their awareness on safe application and pesticide disposal methods which discouraged household use.

5. Cultural Property

This policy is not expected to apply to the project. All community-based Small Group Grants will be small in scale and will be decided by the communities themselves within their administrative village boundaries (thereby respecting any existing cultural property). The negative list for Component 1 specifically excludes the funding of activities which endanger cultural property. Rehabilitation of roads and irrigation will be on pre-existing schemes only.

6. Involuntary Resettlement

No involuntary resettlement or land acquisition resulting in loss of income is expected to take place as a result of project activities, as demonstrated under ARP II. However, as small amounts of community land may be required for community-based activities under Components 1 (*Participatory Development and Natural Resources Management*) and 2.1 (*Community Irrigation and Roads Rehabilitation*), the Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III were adopted by the Council of Ministers on November 15, 2003 (see Attachment 1). Part I of the Guidelines – incorporated into the Operational Manuals for the components – specifies the process for ensuring that there has been informed consent for land donations or community-funded compensation under voluntary community agreements.

In the case of the Caraulun irrigation scheme under sub-component 2.2 (Major Irrigation Rehabilitation), there is a remote possibility that the Government may need to acquire land to complete the rehabilitation works as designed. In this case, the provisions for involuntary land acquisition of the Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III (Part II of the Guidelines), would apply. In case communities or Water User Associations in Caraulun decided to establish tertiary canals under community irrigation contracts, they would follow the same process as for sub-component 2.1.

In the Caraulun major irrigation scheme, the ownership of a small area of land (291 ha) remains unclear although no disputes have been reported (see Annexes 11 and 13). This involves land previously occupied by Indonesian transmigrants, the church (who used it for a now discontinued youth program) and the Government. As part of the pre-conditions to proceed with the scheme's rehabilitation, the project will require topographic mapping of all land plots, establishment of Water User Associations, and resolution of land use issues according to traditional mechanisms as well as the provisions of the Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III.

Re-establishment of agro-meteorological stations would take place primarily in pre-existing sites. The equipment would require a small (about 9 m^2) fence to protect it against vandalism. Where new sites are needed (e.g. for rain gauges) the replacement agro-meteorological equipment would be installed in government land.

7. Indigenous Peoples

This policy would not apply to the project. Timor-Leste is made up of approximately 13 major ethnic groups and 33 main and sub-language groups. No single ethnic group dominates, and none are better placed than others to capture project benefits. As such, there are no specific indigenous minority groups requiring special attention. Village units are made up of homogeneous ethnic populations. Since the project is designed to operate largely within the administrative boundaries of single villages (including on irrigation schemes) an Indigenous People's Development Plan would therefore not be required.

Under Component 1 (Participatory Development and NRM), one of the criteria for the selection of target villages will be their level of poverty, with preference given to the poorest communities. This will ensure that groups in the most marginal areas are included.

Although widely spoken, not all ethnic groups speak Tetum or Indonesian. As a consequence, MAFF will select facilitators and Village Livestock Workers based on their capacity to communicate in the language of pilot villages, and local interpreters will be used when required. National activities – such as vaccination campaigns – also rely on locally-employed vaccinators and information is provided in local languages through the national community radio network.

8. Safety of Dams

This policy would not apply to the project. No dams will be constructed or rehabilitated under the project.

9. Projects in International Waters

The only major irrigation rehabilitation (Caraulun) is located in central Timor-Leste and does not involve international water issues as defined in the Operational Policy 7.50.

Since the rehabilitation of community irrigation schemes is national in scope, there is the possibility that several of the schemes may be located in the six International Waterways shared with Indonesia. These are:

- Malibaka River in Bobonaro District;
- Talau River in Bobonaro District;
- Motabicco (Lotan) in Bobonaro District;
- Noel Besi River in Oecussi District;
- Kali Tono River in Oecussi District; and
- Tafara River in Covalima District.

While it is not possible to identify up front the location of all the community irrigation schemes (they will be proposed by communities for each season) MAFF will adopt the procedure followed under ARP II to screen any proposed schemes near the border with Indonesia that may potentially involve international waters. MAFF would consult with IDA to ensure that they comply with the exception to the requirement to inform Indonesian riparians for cases where the works involve only minor additions or alterations to the ongoing schemes, which "*(i) will not adversely change the quality or quantity of water flows to the other riparians; and (ii) will not be adversely affected by the other riparians possible water use.* In cases

where this cannot be ensured, the schemes would not be considered for rehabilitation under the project. This exception was granted on September 17, 2003. While there are at present no agreed international waterway treaties, the need for notification will be reconsidered if required under any future treaties signed with Indonesia.

B. Application of Safeguard Policies

Most of the impacts and mitigation measures proposed that would apply to Environmental Assessment, Pest Management and Natural Habitats are described in detail in Annex 12. This section summarizes any additional safeguard risks and mitigation measures involving the application of the Forestry, International Waterways, and Involuntary Resettlement policies, as well as the general approach to assess safeguard issues, consult with stakeholders, and monitor compliance with safeguard policies.

1. Completed Studies and Assessments

The project carried out the following studies and assessments:

- A *review of the environmental impacts and monitoring procedures* in ARP II. This review, carried out during pre-appraisal (June 4-18, 2003) involved visits to project sites in four districts, as well as discussions with MAFF and Division of Environment and a review of project documents. The resulting recommendations were used to adjust the environmental safeguards of ARP III and improve their applicability (see Annex 12).

- A *social appraisal* of ARP II and III, carried out in February 2003. This involved focus group discussions with upland, coastal and lowland villages, detailed case studies of larger irrigation schemes rehabilitated under ARP II, and interviews with key service providers. MAFF used the results of this assessment to help design ARP III (see Annex 11).

- An extensive *environmental and social analysis of the Caraulun Irrigation scheme* area was carried out in 2002-03 by SMEC under contract to MAFF (see Annex 12 and 13). The study included extensive field surveys in the Betano area of Manufahi where the scheme is situated. Recommendations were taken into consideration in the project design.

- The existing ARP II Land Acquisition and Resettlement Policy Framework was assessed by MAFF and IDA's appraisal team, with advice from the World Bank Legal and Social Safeguard teams. A revised Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III was adopted for project implementation which better reflects the project activities.

2. Potential Safeguard Risks

The project is not expected to have major significant, irreversible or adverse environmental impacts. Potential environmental impacts would be mitigated according to the measures outlined in Annex 12, Table 4. This section describes primarily other safeguard risks not covered under the Environmental Analysis Annex.

Forestry

ARP II did not envisage application of the Forestry Policy. Following a review of ARP II community-based forest activities, however, it was agreed that more attention to forestry policy issues was needed due to the number of reforestation and plantation activities proposed by the target villages. The main areas of concern are as follows:

- Status of communal land planted with project-supported seedlings, including equity of access within the village;
- The intention of individual owners of trees to harvest them beyond the life of the project.

Although no disputes have yet been observed, ARP II raised questions regarding the tenure status of communal land planted with project-supported seedlings. Traditional mechanisms for allocation of land ownership and user rights vary from village to village, providing different degrees of certainty. In general, sub-villages (*aldeias*) are inhabited by extended families and land use is distributed within the village boundary. Open access to grazing and forest land is usually granted to all village members. In some areas, planting of trees signifies ownership of the land; in others, only the tree is owned by the individual who planted it. Traditional laws governing the harvesting of timber products and generally require permission from traditional leaders.

Target households under Component 1 are given the opportunity to participate in project-related activities by forming small groups to plan and manage activities funded by Small Group Grants. Whilst this process is inclusive of all households, internal village selection processes can limit the number of participants. In addition, some villages have large numbers of households which inhibits their total representation in project planning and in implementation groups at least in the initial stages. This means that in some cases, only a proportion of the community may be making use of communal land to plant project-supported seedlings. Whilst this has not yet led to conflicts, when the fruits and/or trees are ready to harvest, disputes over ownership and distribution could potentially arise. Consultation with pilot village groups revealed that this is not a major issue in the lifetime of individual participants, but as they do not "own" the land legally, they cannot bequeath trees they planted to their children, as redistribution according to traditional law may occur after their death.

Members of existing groups explained that representation of all households had not been achieved because some had not been interested in participating initially, due to disinterest in the types of activities proposed; suspicion that the funding of activities would either not materialize or be appropriated by a few in the village; or because they were "too lazy" to contribute any labor (in the words of respondents). Now that activities are under way however, non-group members in the community are seeing the results of the seedling production activities, and some have expressed an interest in becoming involved.

Another problem identified was that the primary focus of forest rehabilitation activities is to replant on degraded land. However consultations revealed that communities are motivated more strongly by the future economic benefits of tree planting rather than their environmental benefits. Whilst some of the land being planted is indeed degraded, participants on the whole intend to harvest the resulting trees even in these areas. If communities are to participate in planting trees on a voluntary basis, it is essential that they benefit economically in the use of project-related forest rehabilitation or plantation, while ensuring at the same time that the use is sustainable. This will require forward planning to include replanting of trees harvested if the integrity of the forest cover is to be maintained.

International Waterways

As the locations for community irrigation schemes are not yet defined, there is a risk that they may be situated on rivers that share a common border with Indonesia in Oecussi, Bobonaro or Covalima Districts.

The potential risks to Timor-Leste community irrigation projects are two-fold:

- Upstream riparians could extract more water and thus reduce the flow available for downstream use. Since the general topography of the border is unsuitable for large storage dams and the area of the community projects is very small (less than 0.3 percent) of the catchment area, the risks of excessive upstream extraction are low.
- Industrial development projects which may pollute the water supplies may be located in the future in upstream areas. Given the difficulties of access and the topography of the border areas, the potential risk of this occurring is minimal.

There is a potential risk for Indonesian riparians located below Timor-Leste irrigation schemes that they may receive reduced water supplies and that the water may be polluted. However, since the proposed community irrigation schemes are small in relation to the total catchment area, and the community projects would not be in the same sub-catchment, the interaction lower in the system would be minimal. For most waterways, Indonesian riparians also occupy a small proportion of the catchment area (less than 20 percent in Bobonaro) and are located upstream from riparians in Timor-Leste.

Land Acquisition

As stated above, the project is extremely unlikely to require involuntary resettlement. Risks associated with community activities under Components 1 and 2.1 relate to the possibility that community members may bring pressure to bear on individuals to donate their land. In this case, an effective consultation, verification and grievance process is required to ensure that affected people have recourse to appeal. Land use agreements will involve informed consent for the voluntary donation of land for use by the community. These procedures are included in the Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III (see Attachment). In the case of the Caraulun irrigation scheme (sub-component 2.2), where a remote possibility exists that the Government may need to acquire small areas of land involuntarily to implement the rehabilitation works, provisions for involuntary land acquisition have been included in the Guidelines.

3. Proposed Measures to Address these Risks

Forestry

The forestry regulatory framework remains a combination of existing Indonesian Law and Regulations 2000/17 and 2000/19 of the United Nations Transitional Administration in East Timor (UNTAET). As a first step in developing National policy and regulations, MAFF carried out a policy study entitled "*A New Forest for a New Country*", in May 2002. This stressed the importance of developing a policy for community-based natural resources management, including tenure and user right issues. MAFF proposes to carry out such a study under Component 4.2 of ARP III. It is expected that this study will make recommendations for a new Community-Based Natural Resources Management Policy in Timor-Leste, which in turn would guide the implementation of community forestry and fisheries management activities. It is expected that key principles of IDA's Forestry safeguards policy would be incorporated into this study.

It is not envisaged that the project would become involved in actual decision-making relating to traditional methods of determining land use and access. The results of the Natural Resource Management Policy Study would instead contribute to a clearer policy and legal framework. It is however proposed that the process of planning community-based forestry activities be strengthened to incorporate stronger principles of equity and sustainable management principles. This will be done in two key ways:

- For Small Groups in pilot villages that do not have complete household representation, group membership will be reassessed following production of the first batch of seedlings through a public meeting mechanism. Any additional community members willing to participate as a result of the success of the initial seedlings will be offered the opportunity to join groups or establish new ones as a means of accessing project support. This will provide them with seedlings to plant on their own and communal land, and reduce the potential for conflict over resource access and use in later years.

- Where planting is being undertaken on degraded land (that was unstable and prone to landslide prior to planting), consideration should be given to banning future harvest using agreed, traditional closure processes (*tara bandu).* Community plans for transplanting from nurseries to village land should ensure some or all of the degraded land is planted prior to planting on more stable land where sustainable harvesting can take place. A plan for continued replanting on community plantation areas should be included in the proposals. Communities will be encouraged to reinstate traditional ceremonies of *tara bandu* regulating the use of reforested areas or plantations. This system, previously banned under the Indonesian administration, is presently being revived in many Timorese communities and should provide a solid basis for community-based natural resource management.

As a principle, rather than providing seedlings, the project is providing training in seed selection and propagation (from the many locally available seed types) to ensure that beneficiary groups have the technical capacity to continue replanting beyond the life of the project using locally procured materials.

The project has prepared a 'positive' and 'negative' list which will govern the nature of activities supported under Small Group Grants (see Annex 4). The positive list includes nurseries to propagate mainly locally available tree seeds to be used for reforestation of degraded areas, increasing local fuelwood supply, introducing improved agroforestry techniques, community management of natural forests, mangrove rehabilitation, and catchment management. It also allows for the sustainable use of non-timber forest products (such as honey and medicinal plants). All of these activities are guided by sound principles of sustainable forest practices. The negative list prohibits the approval of any activity with significant environmental impacts, especially in protected areas and critical or important habitats.

International Waterways

IDA management has provided an exception to the notification requirement under the International Waterways policy, based on the fact that community irrigation works will only involve rehabilitation of existing schemes, and therefore that the quantity of water abstracted will not change from the original design capacity. The community rehabilitation works are also not expected to affect the quality or quantity of water to Indonesian riparians or be affected by their water use.

Land Acquisition

The Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III (see Attachment) will guide the process related to the voluntary donation of land, associated community compensation arrangements, verification, and grievance procedures. In the event of involuntary land acquisition by the Government, the Guidelines would provide for state-funded compensation.

4. Mechanisms and Capacity to Monitor Safeguards

MAFF – in close collaboration with the Division of Environment (DoE) – will be responsible for supervising the implementation of environmental management and monitoring procedures. Where required, MAFF may call on the DoE to assist in the identification of protected area boundaries and critical or significant natural habitat areas. As the capacity of both agencies to identify and monitor environmental mitigation measures is weak, training may need to be provided.

Project facilitators will be trained in the application of the Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III. Coordination with the Division of Lands and Property (Ministry of Justice) has been established, and their advice will be sought, as needed, during project implementation. In particular, district staff from Lands and Property will be involved in any grievances that may require district intervention. Monitoring forms have been included in the Guidelines, as well as in the Operational Manuals (see Attachments). The project overall indicators will record the number of sub-projects requiring land, as well as any grievances which may occur (see Annex 3).

For Components 1 and 2.1, the district implementation teams will be required to apply a checklist of possible negative environmental and social impacts, included in the Operational Manuals. The mitigation measures recommended and agreed by the communities will be included in Community Agreements. Compliance with these will be monitored by facilitators and by the district implementation teams. The project includes an overall environmental indicator measuring the proportion of community sub-projects which (a) do not require mitigation measures; (b) fully comply with the measures; or (c) partially comply with the measures. The target achievement is 90 percent by end-of-project (see Annex 3).

For Component 1 activities involving nurseries, project facilitators will ensure that community meetings are held following the first round of seedling production to re-visit group membership and encourage wider participation. New group members will only be accepted if they are willing to contribute labor and locally available materials. This will ensure greater equity of access to community forest land. Details of this process are specified in the Operational Manual.

The Small Groups Activity Plans will include agreements on which areas cannot be harvested (those planted in areas prone to erosion) and replanting for areas intended for future harvest. Ultimately, any harvesting will not occur until some years after project end. Monitoring is therefore expected to be undertaken by the Forest Guardians/extension officers employed by MAFF (currently around 3 per district). They will be included in project training for facilitating community proposal development, and will be aware of the plans made by the pilot villages for management of project-supported seedlings. Whilst it cannot be guaranteed that these staff will still be in placed when harvesting is planned, their current job description includes working with communities to manage their forest resources on a sustainable manner and act on and report incidences of mismanagement.

Village leaders will also be encouraged to participate in long-term monitoring, in particular, in monitoring compliance with the agreements surrounding resource use management made through their traditional *tara bandu* system.

The environmental mitigation plan for Caraulun will be included in the tender documents for the rehabilitation contractors, as well as the Terms of Reference for the consultants supervising their works.

The quarterly progress reports produced internally by MAFF, as well as the bi-annual reports submitted to IDA will include an assessment of the level of compliance with social and environmental safeguards. DoE and Lands will be provided a copy of this report and invited to provide advice on improving environmental compliance if necessary.

Attachment: Timor-Leste
Third Agricultural Rehabilitation Project (ARP III) Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III

Background

The Third Agriculture Rehabilitation Project aims to strengthen the capacity of the Ministry of Agriculture, Forestry and Fisheries (MAFF) to assist rural communities in increasing their production and income in a sustainable way. The project was designed as a consolidation phase, with an emphasis on sustainability of activities, impact of achievements, and quality of outputs. The period of implementation is January 1, 2004 – December 30, 2007. The project contains the following Components:

Component 1 – **Participatory Development and Natural Resources Management**, will support MAFF's main assistance program to upland and coastal communities. It will promote improved self-reliance and natural resources management to strengthen communities' resilience and make them less vulnerable to external shocks (such as periodic droughts and chronic food insecurity). It targets an estimated 50 villages in seven districts – Dili, Lautem, Liquiça, Manufahi, Covalima, Baucau, and Oecussi.

Component 2 – **Irrigation Rehabilitation and Management**, will support MAFF's main assistance program to farmers in lowland irrigated areas. The component will target about 4,000 rural families in all 13 districts. Activities include about 3,000 hectares of community rehabilitation of small irrigation schemes and 150 km of rural access roads, and the rehabilitation of the Caraulun irrigation scheme in Manufahi district.

Component 3 – **Services to Farmers**, would help institutionalize three basic MAFF services to farmers: Information, Animal Health, and Agri-Business support. Sub-Components are as follows:

- Sub-Component 3.1. **Information to Farmers**, will increase MAFF's capacity to provide information to farmers and enhance links with international agriculture research, pilot district information networks and establish an agro-meteorological network.
- Sub-Component 3.2. **Sustainable Animal Health Services**, will target the estimated 567,000 rural people living in households which own livestock, providing vaccination and veterinary services and establishing a network of Village Livestock Workers.
- Sub-Component 3.3. **Support to Agri-businesses**, will strengthen MAFF's advisory services to rural producer organizations and assist farmers in grain production, priority niche markets and candlenut and coconut oil production.
- Component 4 – **Program Management**, will help MAFF to manage the project, continue to develop key national policies, and strengthen the Ministry's managerial and technical capacity.

Given the nature of this project, which involves community based planning and implementation of small scale activities and rehabilitation of a large irrigation scheme (Caralaun), no adverse impacts are expected as a result of land use. However, some Project components may require land. The present ARP III Policy Guidelines have been prepared to guide the preparation and implementation of project components requiring land. These Policy Guidelines are applicable for the implementation of ARP III only and, by no means, shall it be considered national policy for all cases of land acquisition by the State. Its objective is to ensure that the use or acquisition of land for Project-related activities does not result in loss of

economic opportunity. It will be the goal of the Project to minimize any economic and physical displacement of people.

These guidelines include provisions for:

1. Voluntary donation of land, or land provided against compensation paid by community members, for Small Group Activities under Component 1 (Participatory Development and Natural Resource Management) and community-owned irrigation schemes under Sub-Component 2.1 (Community-based Irrigation and Roads Rehabilitation); and

2. Involuntary acquisition of land for the rehabilitation of the major irrigation scheme under Sub-Component 2.2 (Rehabilitation of the Caraulun irrigation scheme)

These Policy Guidelines are divided into two main parts. Part I includes provisions for: (i) ensuring that all participating communities under Project components 1 and 2.1 (option 1 above) are made aware of their rights relating to the provision of land as voluntary donation or as community based compensation; (ii) verify that voluntary donations or community based arrangements for compensation are indeed voluntary and appropriate; (iii) verify that the donor is the legitimate owner/user of the land/assets; (iv) verify that the donor is fully informed of the nature of the project activity and the implications of donating the property; and (v) provide an appropriate avenue for grievances.

Part II includes provisions for land acquisition against compensation paid by the Government of Timor-Leste should any land acquisition by the State by required under the Project component 2.2.

Key Definitions

Involuntary Land Acquisition refers to the taking of land by government for public purpose against compensation where the landowner must surrender their land involuntarily and has only the right to negotiate and appeal the amount of compensation proposed. This includes land or assets for which the owner enjoys uncontested customary rights.

Land refers to agricultural and non-agricultural land and any structures thereon whether temporary or permanent and which is required for the Project.

Voluntary Land contribution refers to a process by which an individual or communal owner agrees to provide land or property for project-related activities without compensation, or with community-provided compensation. Voluntary contribution is an act of informed consent, made with the prior knowledge of other options available and their consequences, including the right not to donate nor transfer the land. It must be obtained without undue coercion or duress.

Organizational Arrangements

Overall responsibility for the implementation of these Policy Guidelines lie with MAFF. MAFF will ensure that the Policy Guidelines are appropriately disseminated and that project staff have the required skills and receive appropriate training. The Unit is responsible for proper monitoring of the Policy Guidelines and will incorporate necessary changes to the guidelines and procedures based on recommendations from monitoring exercises and with the World Bank prior agreement.

Project facilitators and technicians will be trained and tasked to ensure that requirements and procedures of the Policy Guidelines will be followed as prescribed.

PART I: Voluntary Donation of Land

PART I.A: Project Component 1. Participatory Development and Natural Resource Management.

Guiding Principle

Where land is required for implementation of Participatory Development and Natural Resource Management activities, it must be provided voluntarily in accordance with the process specified below. No person will be involuntarily displaced by activities financed by Small Group Grants. Under **no circumstance** will the Government of Timor-Leste acquire land for the purpose of implementing activities funded by Small Group Grants, or be required to provide compensation to community members for land utilized by the community for the purpose of Component 1 activities. The Small Group Grants **can not** be used for the purpose of providing compensation in cash or in-kind. These principles and the following process are embodied in the Operational Manual for Component 1.

Key Additional Definitions

Community Facilitator refers to project-contracted facilitators who have been contracted for the purpose of assisting Small Groups to develop activities under the Project for financing by a Small Group Grant. It may also include MAFF field staff and field staff of the District Administration office following review at mid-term.

Small Groups refers to the groups based at the hamlet level (typically along kinship lines) formed to plan and manage Natural Resource Management activities using Small Group Grant support under Component 1.

Village Implementation Team refers to a team made up of elected representatives of the Small Groups with overall responsibility for village-level management and monitoring of Small Group Grants.

1. Securing of Land for Small Group Grant Activities

Land may be secured for use by community groups through:

a) Voluntary Land Contributions without Compensation: Individuals or community groups may elect to voluntarily contribute individual or communal land without compensation for use by the Small Groups for the Small Group activities;

b) Voluntary Land Contributions with Community-generated Compensation: Where land owners or community groups require payment of compensation to provide land for use by the Small Group for Small Group activities, this compensation must be agreed between them and the Small Group members (Small Group Grant funds cannot be used to pay for compensation in cash or in-kind nor will compensation be provided by the Government of Timor-Leste).

2. Consultation, Information Disclosure and Planning Process

The consultation, information disclosure and planning process for Voluntary Land Contributions with and without community-generated compensation will be as follows:

(a) At the initial broad-based community meetings conducted as part of the Education and Information Campaign, the Community Facilitators will inform the participating villages about the principles relating to the voluntary nature of land donations, the option for contributions of land with compensation resourced by the Small Group, the procedures of Part I of the Policy Guidelines, and a brief description of the grievance procedures and mechanism. The fact that the Small Group Grants **are not to be used** to provide compensation, whether in cash or in-kind, will be emphasized.

(b) As part of the proposal development process (defined in full in the Operational Manual for Component 1), Community Facilitators and members of the Village Implementation Team will facilitate a meeting with each Small Group to assist in the development of proposals. This will include determining the most appropriate location for the activity. The principles of Part I of the Policy Guidelines will be reiterated by the Community Facilitators prior to commencement of Small Group discussions relating to the proposed activity.

(c) Proposed Small Group Activities, with the need for voluntary provision of land with or without compensation, will need to include the following information in the Activity Plan (proposal) which is submitted to the District Management Team:

1. For any voluntary contributions of individual land, a consent form which includes the name of the land donor/s, and details of the contribution (type, size, location, specified period of use etc. as appropriate). This should be signed (or thumb-printed) by the land donor/s (including the male and female heads of the household involved), the Leader of the Small Group, the Chief of the Village and Chief of the Hamlet and the Leader of the Council of Elders (or nominee). A sample consent form is included as Attachment A.

2. For land contributions against compensation, a consent form which includes the name of the land donor/s, details of the contribution (type, size, location, specified period of use etc. as appropriate), and details of the agreed compensation arrangements. This should be signed by the land donor/s (including the male and female household heads), a nominated representative of the group providing the compensation, (e.g. the Leader of the Small Group), the Chief of the Village, Chief of the Hamlet and the Leader of the Council of Elders (or nominee). A sample consent form is included as Attachment B.

3. Where the land donated is communal land, these forms can be signed on behalf of the Small Group by the elected leader.

(d) For Small Group Activities where land is donated or provided against compensation, the District Implementation Team will, during its appraisal of proposed activities: (i) verify with the land donor/s that the donation is indeed made on a voluntarily basis, that the donor/s is/are the legitimate owner/user of such lands, and that the land donor/s is/are fully informed of the nature of the activity and the implications of donating the property; (ii) assess that the land donor does not suffer a substantial loss affecting his/her economic viability as a result of the arrangement. Where there is substantial loss the activity cannot be approved as proposed (the amount donated should usually not exceed 10% of his/her land or assets without an appropriate compensation); and (iii) assess that the compensation arrangements are appropriate. The compensation should be roughly equivalent to traditional compensation arrangements. Where demands are excessive, compensation inappropriate and the land donor

and the community cannot agree, the Community Facilitators will encourage alternative sites or arrangements. The activity will not be approved for funding by a Small Group Grant until suitable alternative sites are identified and land has been voluntarily made available through the process described above. If no suitable land is made available through the Voluntary Land Contribution process the activity would not be further processed.

(e) In all cases of voluntary land contributions, the Recipient shall furnish copies of all the duly signed consent forms to the Directorate of Land and Property of the Ministry of Justice, for reference and records purposes.

3. Complaints and Grievances

The Community Facilitators will be responsible for ensuring that Small Group discussions during proposal development – in particular relating to voluntary donation of land – are transparent and conducted in a fair manner. During proposal development, the following process for complaints and grievances will be reiterated to communities and followed:

(a) The District Implementation Team will invite and address any grievances during the verification and appraisal process. If a suitable solution is not found, the District Implementation Team cannot verify the consent forms and the proposal will not be submitted for assessment. The issue will then go back to the community for discussion. The Small Groups and the Village Implementation Team may request the assistance of the Suco and Aldeia Leaders and any relevant traditional leaders to mediate in the compensation process. The mediation process will be implemented according to traditional methods of mediation/conflict resolution. The resolution will then be documented on the relevant consent forms and verified following step 2.d above. If no resolution is forthcoming, the district office of the Directorate of Land and Property may be invited by the Recipient to assist in the mediation process. Until a resolution is arrived at, the Small Group Activity plan will not be submitted for approval.

(b) At their discretion, the National Management Team may elect, as part of the overall proposal assessment process, to re-confirm any consent forms as required through a verification dialogue process as defined above.

(c) After a proposal has been completed and verified, the land donor/s as well as other members of the community may raise any concerns they may have with the District Implementation Team, National Management Team, Suco and Aldeia Leaders, relevant traditional leaders or other appropriate authorities within 30 days after the verification meeting. The resolution will then be documented and the proposal and consent form changed, if needed, and verified by the District Implementation Team. If no resolution is forthcoming, the activity plan will not be approved.

4. Monitoring

During activity implementation, monitoring will be conducted by the Community Facilitators, the District Implementation Team and the National Management Team. This will be integrated into the overall monitoring of Small Group Grant activities. Facilitators will be principally responsible for identifying any adverse outcomes as a result of land donation. Where disputes occur, either because informed consent has been withdrawn or compensation agreements have been reneged on, any further Small Group Grant disbursement to the affected Small Group activity will be postponed until such time as the dispute has been resolved. If necessary, the Small Group can choose to relocate the activity which would require the re-negotiation of a consent form and verification as outlined above.

Indicators will include:

- the number of Small Group Grant activities which have involved land donation;
- the number of Small Group Grant activities which have involved provision of land against compensation; and
- the number of grievances recorded, including those successfully mediated, and those unresolved.

ATTACHMENT A: Sample consent form

AGREEMENT TO APPROVE THE USE OF LAND FOR THE PURPOSE OF SMALL GROUP, SMALL GROUP GRANT ACTIVITY IMPLEMENTATION

Date:_____

I/We,_____male household head_____female household head,

OR Small Group Leader_____

Resident/s of _____Sub-district_____Suco_____, Aldeia,

declare that I/We/the group is voluntarily donating the use of (*specify land, assetts, location, size, type etc)*

_____

_____

_____

For the purpose of: (*specify activity*)

_____

_____

_____

For the duration of: (*specify commencement date and duration*)

_____

_____

Of My/Our own free will, I/We are waiving My/Our right to compensation of any kind for the specified duration of the activity.

Signed:
Male household head_____ Female household head_____

Leader of Small Group_____ Suco Chief_____

Aldeia Chief_____

Leader of the Council of Elders (or designate)_____

ATTACHMENT B: Sample consent form

AGREEMENT TO APPROVE THE USE OF LAND FOR THE PURPOSE OF SMALL GROUP SMALL GROUP GRANT ACTIVITY IMPLEMENTATION FOR COMPENSATION

Date:_____

I/We,_____male household head_____female household head,

OR Small Group Leader_____

Resident/s of _____Sub-district_____Suco_____, Aldeia,

declare that I/We/the group are consenting to the use of (*specify land, assets, location, type etc)*

_____

_____

_____

For the purpose of: (*specify activity*)

_____

_____

_____

For the duration of: (*specify commencement date and duration*)

_____

_____

For the following agreed compensation arrangements (*NB, use the back of form if needed)*:

_____

_____

_____

Signed:

Male household head_____ Female household head_____

Leader of Small Group_____ Suco Chief_____

Aldeia Chief_____

Leader of the Council of Elders (or designate)_____

PART I.B: Project Component 2.1 Community Irrigation and Roads Rehabilitation

Guiding Principle

Component 2 focuses on the rehabilitation of existing roads and irrigation works proposed and done by communities and is, therefore, not expected to involve land acquisition or resettlement. The specific requirements for Community Schemes (under Activity 2.1), not requiring Involuntary Land Acquisition, are set out below. These principles and the following process are embodied in the Operational Manual for Community-based irrigation rehabilitation.

Key Additional Definitions

Community Contractor refers to the nominated manager of the community contract for infrastructure rehabilitation and the community liaison point with MAFF.

Water User Association (WUA) refers to a collection of rice farmers sharing a common irrigation scheme who are responsible for the management and minor maintenance of that scheme.

1. Securing of Land or Other Assets for Community Contracts

For rehabilitation of community irrigation and roads land may be secured for use by community groups through:

a) Voluntary Land Contributions without Compensation: Individuals or community groups may elect to voluntarily contribute individual or communal land or assets without compensation;

b) Voluntary Land Contributions with Community-generated Compensation: Where individuals or community groups are not willing to donate land and require compensation for providing land, they will be eligible to be provided with compensation in an amount and form agreed to and provided by the participating community or Water User Association. The community contract funds **can not** be used for the purpose of providing compensation whether in cash or in-kind, nor will the Government of Timor-Leste provide compensation.

2. Consultation and Information Disclosure Process

The consultation, information disclosure and planning process for Voluntary Land Contributions with or without community-generated compensation for community activities will be as follows:

a) The principles relating to the voluntary nature of land or property donations as a form of community contribution to the rehabilitation works, as well as the option for contributions against community compensation will be disclosed by District Irrigation Officers. This will be done during the process of soliciting/preliminary checks of proposals (see Operation Manual for Community Irrigation and Roads Rehabilitation). The fact that the infrastructure contract funds **are not to be used** to provide cash or in-kind compensation will be emphasized.

b) Once the preliminary selection of schemes to be funded by the project has been conducted by the Central Irrigation Team, the District Irrigation Officers will facilitate a meeting with all potentially affected landholders to assist in the development of agreements

to maintain the completed works (all beneficiaries) and, if needed, the preparation of consent forms. The principles of these Policy Guidelines as they relate to Activity 2.1 will be reiterated by the District Irrigation Officer as a preface to discussing community contributions and location of the rehabilitation works. The District Irrigation Officer will assist in facilitating discussions, but will not make any decisions on behalf of the community.

c) Proposed Community Schemes, with voluntary donations of land or provision of land with community-generated compensation, will need to include the following information in the proposal:

1. For voluntary contributions of individual land or property, a consent form which includes the name of the land donor/s, and details of the contribution (type, size, location, specified period of use, etc. as appropriate to the type of donation). This should be signed by the land donor/s (including the male and female household heads), the Community Contractor (or community representative), and witnessed by the Chief of the Village and Chief of the Hamlet and the Leader of the Council of Elders (or nominee). A sample consent form is included as Attachment C.

2. For land or property contributions with community-generated compensation, a consent form which includes the name of the land donor/s, details of the contribution (type, size, location, etc. as appropriate to the type of donation) and details of the compensation arrangements agreed. This should be signed by the land donor/s (including the male and female household heads), a nominated representative of the community group providing the compensation, (e.g. the appointed Community Contractor), and witnessed by the Chief of the Village, Chief of the Hamlet and the Leader of the Council of Elders (or nominee). A sample consent form which can be modified for each individual requirement is included as Attachment D.

d) For Community Schemes where land is donated or provided with community-generated compensation, the Central Irrigation Team will, during its appraisal of proposed activities, as the case may be: (i) verify with the land donor/s that the donation is indeed made on a voluntarily basis, that the land donor/s is/are the legitimate owner/user of such lands, and that the donor/s is/are fully informed of the nature of the works and the implications of donating the land; (ii) assess that the land donor does not suffer a substantial loss affecting his/her economic viability as a result of the arrangement. Where there is substantial loss the works cannot be approved as proposed (the amount donated should usually not exceed 10% of his/her land or assets without an appropriate compensation); and (iii) assess that the compensation arrangements are appropriate. The compensation should be roughly equivalent to traditional compensation arrangements. Where demands are excessive, compensation inappropriate and the community cannot agree, the Community Contractors will encourage alternative sites or arrangements.

e) In all cases of voluntary land contributions, the Recipient shall furnish copies of all the duly signed consent forms to the Directorate of Land and Property of the Ministry of Justice, for reference and records purposes.

3. Complaints and Grievances

The District Irrigation Officers will be responsible for ensuring that discussions during the formulation of agreements relating to voluntary donation of land and community-generated compensation are transparent and conducted in a fair manner. Once proposals are submitted, including the relevant forms agreeing to consent for voluntary donation and /or compensation, the following process for complaints and grievances is in effect and reiterated to communities:

a) Any grievances should be invited and addressed during the verification and appraisal process. If a suitable solution is not found, the Central Irrigation Team cannot verify the consent forms and the proposal will not be accepted for funding. The issue will then go back to the community for discussion. The village may ask the assistance of the Suco and Aldeia Leaders and any relevant traditional leaders to mediate in the compensation process. The mediation process will be implemented according to traditional methods of mediation/conflict resolution. The resolution will then be documented on the relevant consent forms and verified following step 2.d above. If no resolution is forthcoming, the district office of the Directorate of Land and Property may be invited by the Recipient to assist in the mediation process. Until a resolution is arrived at, the work proposal will not be submitted for approval.

b) After a proposal has been completed and verified, the land donor/s as well as other members of the community may raise any concerns they may have with the District Irrigation Officers, Suco and Aldeia Leaders, relevant traditional leaders or other appropriate authorities within 30 days after the verification meeting. The resolution will then be documented and the proposal and consent form changed, if needed, and verified by the Central Irrigation Team. If no resolution is forthcoming, the proposal will not be approved.

4. Monitoring

During activity implementation, monitoring will be conducted by the Central Irrigation Team and the District Irrigation Officers. This will be integrated into the overall monitoring of community rehabilitation works. District Irrigation Officers will be principally responsible for identifying any adverse outcomes as a result of land donation. Where disputes occur, either because informed consent has been withdrawn or compensation agreements have been reneged on, any further disbursement will be postponed until such time as the dispute has been resolved. If necessary, the village can choose to re-negotiate a consent form and verification will be required as outlined above.

Indicators will include:

- the number of community contracts which have involved land donation;
- the number of community contracts which have involved provision of land against compensation; and
- the number of grievances recorded, including those successfully mediated, and those unresolved.

ATTACHMENT C: Sample consent form

AGREEMENT TO APPROVE THE USE OF LAND OR OTHER ASSETS FOR THE PURPOSE OF COMMUNITY CONTRACTS FOR INFRUSTRUCTURE REHABILITATION

Date:_____

I/We,_____male household head_____female household head,

OR Community contractor_____

Resident/s of _____Sub-district_____Suco_____, Aldeia,

declare that I/We/the group is voluntarily donating the use of (*specify land, assets, location, size, type etc)*

_____

_____

_____

For the purpose of: (*specify activity*)

_____

_____

_____

For the duration of: (*specify commencement date and duration*)

_____

_____

Of My/Our own free will, I/We are waiving My/Our right to compensation of any kind for the specified duration of the activity.

Signed:
Male household head_____ Female household head_____

Community Contractor_____ Suco Chief_____

Aldeia Chief_____

Leader of the Council of Elders (or designate)_____

ATTACHMENT D: Sample consent form

AGREEMENT TO APPROVE THE USE OF LAND OR OTHER ASSETS FOR THE PURPOSE OF INFRUSTRUCTURE REHABILITATION FOR COMPENSATION

Date:_____

I/We,_____male household head_____female household head,

OR Community Contractor_____

Resident/s of _____Sub-district_____Suco_____, Aldeia,

declare that I/We/the group are consenting to the use of (*specify land, assets, location, type etc)*

_____

_____

_____

For the purpose of: (*specify activity*)

_____

_____

_____

For the duration of: (*specify commencement date and duration*)

_____

_____

For the following agreed compensation arrangements (*NB, use back of form if needed)*:

_____

_____

_____

Signed:
Male household head_____ Female household head_____

Community Contract_____ Suco Chief_____

Aldeia Chief_____

Leader of the Council of Elders (or designate)_____

PART II: Involuntary Land Acquisition

Land or other assets relating to the rehabilitation of roads and existing head works, primary, secondary or tertiary canals and land or other assets relating to the expansion of existing primary, secondary or tertiary canals, or the creation of new canals and other irrigation-related facilities if found to be required during field investigations, and which would require involuntary land acquisition by the Government of Timor-Leste, may be secured through the provisions of these Policy Guidelines.

These provisions relate to Component 2.2 Rehabilitation of the Caraulun Irrigation Scheme, and will be included in the tender documents for the supervision of the Caraulun Rehabilitation Contract. They do not relate to Component 1 Participatory Development and Natural Resource Management, nor to Component 2.1 Community-Based Irrigation and Roads Rehabilitation.

For tertiary canals under Component 2.2 that are proposed and implemented by communities the provisions in Part I.B of these Policy Guidelines apply as they will thus be provided for under a Community Contract arrangement.

Key Additional Definitions

Compensation refers to payment in cash or in kind of the replacement cost of the acquired land.

Displaced Person refers to persons who are affected by the involuntary taking of land resulting in (i) relocation or loss of shelter; (ii) loss of assets or access to assets; or (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location.

Replacement Cost refers to the principle of valuation used to determine appropriate compensation for lost land or other assets. For agricultural land, it is the pre-project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes. For houses and other structures, it is the market cost of the materials to build replacement structure, plus the cost of any registration and transfer taxes. In determining the replacement cost, depreciation of the asset and the value of salvage materials are not taken into account, nor is the value of benefits to be derived from the project.

Section 1. General Policy. The objective is to ensure that persons displaced either physically or economically by the Project maintain their livelihood. It shall be the goal of the Recipient to minimize the physical and economic displacement of persons as a result of the implementation of the project; provided, however, when the involuntary acquisition of land is required, the Recipient shall utilize available land administered by the Recipient and which the community is not using. Only as a last resort shall the Recipient acquire land through involuntary acquisition following the below provisions.

1.1 There shall be no involuntary land acquisition of land and other assets and resettlement of people, unless absolutely necessary. In particular, acquisition of sites of spiritual or cultural significance shall be avoided.
1.2 If such involuntary land acquisition is absolutely necessary then it shall be minimized to the greatest extent possible.
1.3 Plans for involuntary acquisition of land and other assets and provision of rehabilitation measures will be carried out in consultation with the Displaced Persons, to ensure minimal disturbance.
1.4 The Displaced Persons will participate throughout the various stages of the planning and implementation of the Resettlement Plans. For these purposes and prior to the preparation of the

Resettlement Plans, the Displaced Persons, will be informed of the provisions of these Policy Guidelines and their entitlements at public meetings held by the Recipient.

Section 2. Resettlement Instrument

2.1 A determination shall be made by the Recipient whether there are any Displaced Persons.

2.2 If there are no Displaced Persons, the Recipient shall provide a written statement to this effect to the Trustee.

2.3 If there are Displaced Persons, a Resettlement Plan, or an Abbreviated Resettlement Plan, will be prepared by the Recipient in accordance with the Provisions of these Policy Guidelines and the World Bank policy on Involuntary Resettlement, OP/BP 4.12.

Section 3. Entitlements Policy

The calculation of compensation payable to Displaced Persons shall be based on principles of sustainable development and ensure, in accordance with these Policy Guidelines, the maintenance of the physical and economic livelihood of Displaced Persons. For purposes of determining possible eligibility to compensation, the project activities will be announced to potentially Displaced Persons and a census will be conducted. The date of the census will be the cut-off-date for eligibility.

Section 4. Supervision, Monitoring and Evaluation

4.1 Implementation of the Resettlement Plan, or Abbreviated Resettlement Plan as the case may be, shall be subject to monitoring and evaluation by MAFF, with the assistance of the Directorate of Land and Property as appropriate, for the purpose of verifying that:

4.1.1 The information required in the Resettlement Plan has been satisfactorily provided.

4.1.2 The Provision of compensation, resettlement and other rehabilitation entitlement has been carried out in accordance with the provisions of these Policy Guidelines and the respective Resettlement Plan.

4.1.3 The funds for implementing these Policy Guidelines have been provided in the necessary amounts and in a timely manner and have been used in accordance with the Resettlement Plan as designed and approved.

4.1.4 Information relevant to the resolution of grievances and complaints in accordance with Section 5 of these Policy Guidelines has been provided to Displaced Persons.

4.2 At the request of the Trustee, one or more independent agencies acceptable to the Trustee shall be retained from time to time by MAFF, in accordance with terms of reference approved by the Trustee, to monitor and evaluate the implementation of the Resettlement Plans.

4.3 Any further implementation reports shall be furnished by MAFF to the Trustee upon its request.

Section 5. Complaints and Grievances

5.1 MAFF shall appoint a Grievance Officer who shall receive complaints and grievances related to any aspect of the application of these Policy Guidelines. The Grievance Officer shall be the Head of the MAFF Division of Forestry, or a person designated by MAFF as the Grievance Officer.

5.2 MAFF shall inform the Displaced Persons of the right to bring complaints, the process for making a complaint, the identity of the Grievance Officer and how to contact them.

5.3 The Grievance Officer shall receive grievances in the first instance. A report of any complaints or grievances received and any action taken to address that grievance shall be forwarded by the Grievance Officer to MAFF.

5.4 Displaced Persons shall have standing to enforce any aspect of these Policy Guidelines that is to their benefit in relevant dispute resolution mechanism or a competent court. The Recipient accepts the payment of all administrative and legal costs for complaints or grievance upheld by such court.

Section 6. Acknowledgements

6.1 These Policy Guidelines do not replace any rights that Displaced Persons have under the laws applicable in Timor-Leste or other requirements under the laws that must be observed in the implementation of the Project.

6.2 Final verification of rights in land and buildings in Timor-Leste may not be presently possible by the Recipient and compensation may be based on an assessment of likely rights.

Section 7. Institutional Arrangements

7.1 It is recognized that the Directorate of Land Property is the government office legally responsible for land and property issues in Timor-Leste. As such, it shall have formal participation in all involuntary land acquisition processes for the Project, in coordination with the Ministry of Agriculture, Forestry and Fisheries.

7.2 All decisions related to involuntary land acquisition for this Project shall be jointly approved by the Ministry of Justice and the Ministry of Agriculture, Forestry and Fisheries.

7.3 Any funds required for compensation in this regard shall be the responsibility of the Ministry of Agriculture, Forestry and Fisheries, unless otherwise agreed.

PROCEDURES FOR THE IMPLEMENTATION OF THE LAND POLICY GUIDELINES, PART II

The procedures set forth below shall be utilized by the Recipient in the implementation of these Policy Guidelines, of which these procedures are an integral part.

1. **Resettlement Instrument.** If there are Displaced Persons, an Abbreviated Resettlement Plan will be prepared by MAFF in accordance with the provisions of these Policy Guidelines, and will consist of the following:

    1.1.2 The numbers, names and addresses of Displaced Persons;
    1.1.3 The loss suffered by each person and / or household as determined on the basis of the following criteria:

        1.1.3.1 The number, type, and area of the houses and structures lost.
        1.1.3.2 The number and type of any other fixed assets lost.
        1.1.3.3 The number and area of the all the residential land lost
        1.1.3.4 The number, category and area of agricultural or grazing land lost.
        1.1.3.5 The quantity and types of crops and trees lost.
        1.1.3.6 A description of and value of lost business.
        1.1.3.7 Identification of sites of spiritual and cultural significance and a description of that significance (if appropriate; if not, a statement of the reason why this is not appropriate).

    1.1.4 Detailed compensation, rehabilitation and relocation arrangements for each Displaced Person as determined in accordance with the entitlement policy in Section 3 above, including :

        1.1.4.1 Any cash amounts payable.
        1.1.4.2 The location, area, value, and description of any replacement land.
        1.1.4.3 Evidence of the informed agreement by the Displaced Person.
        1.1.4.4 In the case of partial loss, a percentage figure for the portion of total productive assets lost.

    1.1.5 The intended sources of funding for the various Abbreviated Resettlement Plan activities, including compensation and rehabilitation measures will be clearly specified in cost tables.

    1.1.6 A detailed implementation schedule in accordance with Section 3 below.

    1.1.7 In the case that the total number of Displaced Persons affected by the Project exceeds 200, a full Resettlement Plan will be prepared, including a detailed socio-economic survey of all Displaced Persons describing their age, sex, ethnicity, education, occupation, sources of income, and total household income shall be prepared by MAFF (see World Bank Policy on Involuntary Resettlement, OP/BP 4.12 for further guidance).

2. Entitlements. The calculation of compensation payable to Displaced Persons shall be based on the following principles, including with respect to:

2. Land or premises wholly affected:

2.1 Houses, structures and fixed assets, cash compensation shall be at full replacement cost of the structures, without deduction for depreciation. Any salvage materials remaining become the property of the Recipient after the full payment and may be disposed in any manner it deems appropriate in accordance with existing government rules and regulations.

2.2 Residential, agricultural or grazing land, including premises, a choice shall be given to Displaced Persons of replacement land or cash, where:

2.2.1 Replacement land shall be acceptable to the Displaced Person and shall take into account size, productive capacity, financial value, be located as close as possible to the land that was lost and be otherwise satisfactory to the Displaced Person.

2.2.2 Cash compensation shall be at full replacement cost, without deduction for depreciation. Any salvage materials remaining become the property of the Recipient after the full payment and may be disposed in any manner it deems appropriate in accordance with existing government rules and regulations.

2.2.3 Crops and trees: Cash compensation shall be given for standing crops, fruit, industrial tress and productive trees at replacement cost.

2.2.4 Sites of spiritual or cultural significance: the Recipient shall negotiate appropriate compensation to Displaced Persons for interference with or destruction of such sites.

3. Land or premises partially affected:

3.1 If the portion of the land to be lost represents 20% or less of the total productive area of the landholding, and the remaining land is still a viable economic holding, a choice on the form of compensation must be given to the Displaced Person between replacement land (of equal productive value and acceptable to the Displaced Person) and cash compensation for the lost land, at full replacement cost .

3.2 If more than 20% of the productive area of a parcel of land is acquired and the remaining holding is not viable, then, with the consent of the Displaced Person, the entire landholding shall be acquired. A choice on the form of compensation shall be given to the Displaced Person between replacement land (of equal productive value and acceptable to the Displaced Person) and cash compensation at full replacement cost as described in the section 3.1 above concerning land wholly affected.

4. Land or premises temporarily taken (or unable to be used due to works under the Project) shall be compensated for:

4.1 Loss of income, including the cost of alternative premises.

4.2 Damage to productive assets, standing crops, infrastructure and shall include the cost of soil and habitat restoration.

5. Other entitlements:

5.1 Allowances sufficient to cover the cost of transfer and subsistence until the Displaced Persons are reestablished in their new location.

5.2 Such other financial and physical resources for resettlement and rehabilitation available as may be reasonably required by the Displaced Persons.

Section 3. Implementation Schedule

The following timeframes shall apply unless otherwise agreed between the Trustee and the Recipient; provided, however, no such agreement to waive the timeframes shall adversely affect the rights or interests of Displaced Persons under these Policy Guidelines:

3.1 The inventory shall be completed at least four months prior to the commencement of work.

3.2 The Abbreviated Resettlement Plan shall be submitted to the Trustee for its approval.

3.3 Compensation, resettlement and rehabilitation activities will only commence after the Trustee has accepted the Abbreviated Resettlement Plan.

3.4 The compensation, resettlement and rehabilitation activities, if any, will be completed at least one month prior to the commencement of work.

3.5 The provision of such further information as required by the Trustee in Section 3.4 shall be subject to such timeframes as may be specified by the Trustee.

Technical Annex 11: Social Analysis

TIMOR-LESTE: Third Agriculture Rehabilitation Project

A. Introduction

A Social Appraisal was carried out in February 2003 immediately following the mid-term review of ARP II. During the mid-term review, recommendations were made based on a self-evaluation of the quality of impact of activities on the farming community. These recommendations will be implemented between February – December 2003, and continue in ARP III. Project implementers and IDA will need to review the outcomes at the conclusion of ARP II (December 2004) in order to further adjust ARP III implementation.

The main theme of the Social Appraisal was to examine how best MAFF could identify and meet the needs of farming communities, while at the same time contributing to a culture of empowerment in which farmers articulate realistic demands for external assistance. The methodology included a number of qualitative tools, such as: (a) focus group discussions with sample groups from a mixture of upland, coastal and lowland villages from the north and south (269 men and 125 women); (b) development of detailed case studies of light to medium damaged irrigation schemes rehabilitated under ARP I and II; and (c) interviews with key service providers.

This Annex summarizes the results of the Social Appraisal. A complete report can be found in the project files (see Annex 15).

B. Key Findings

Component 1. Participatory Development and Natural Resource Management

Group Formation and Funds Disbursement

ARP II required project activities to be implemented with the active involvement of the *Conselho do Sucos* (village councils) established under the Community Empowerment Project (CEP), including sub-project agreements with the Project Management Unit. Supervision missions during ARP II noted non-compliance with this requirement in planning, management and disbursement of funds, and the Social Appraisal explored the issue further to determine suitable solutions.

Non-pilot communities with no experience of managing external assistance (except for CEP) were wary of the involvement of the *Conselho do Suco* as a possible organization to plan and implement agricultural activities. This seemed to largely be attributed to the fact that they are perceived to be integrally connected to CEP and do not yet have a broader role in the community. Instead, non-pilot groups identified the *Chefe do Suco* (village chief) and the *Chefe de Aldeia* (sub-village chief) as the key points of contact for planning new activities, and the most trusted mechanism for receiving and administering grant funds. They also mentioned the *Conselho dos Katuas* (Traditional leaders' council) as being important to decision-making. Normally very active in making decisions surrounding land tenure, traditional law and natural resource management ceremonies, they tend not to concern themselves with 'development' or modern governance issues, and are more appropriate in an advisory role. With regard to relying on existing groups to plan and implement the activities, a robust tradition of collective action in formally established, non-clan based 'farmers' groups appears to be largely absent from Timorese

farming communities. This is perhaps a reflection of low input farming and the relatively recent entry of many village communities into the money economy. Where groups did or do exist, they tend to be dependent on external support to provide them with a reason to identify as a group. This is supported by the fact that the majority of the non-pilot *sucos* thought that developing a new group to discuss and implement a hypothetical new agricultural development and manage subsequent funding would be most appropriate.

Where Implementation Teams (i.e. "new" groups) had been established in pilot *sucos*, the communities were largely content with their performance and nominated them as the most effective method to channel funds and new agricultural activities. The results of the Social Appraisal therefore supports the current ARP II approach to flexibility in establishing new *suco*-based groups for activity planning and implementation. This includes assessing requirements for groupings on a *suco* by *suco* basis, incorporating strong, traditional leadership support where it is found to exist, while assisting new community groups to increase self-reliance through increased democratic decision-making and funds management. These principles have been incorporated into the ARP III design, which no longer mandates the inclusion of the *Conselho do Suco* in a formal role but relies directly on the Implementation Teams.

The identification of new groups and their members should be done in close collaboration with the *Chefe do Suco*, *Chefe de Aldeia* and Traditional Leaders. What will be important is that all interested community members are provided with quality information about the scope of the potential activities, and are able to nominate themselves if they are keen to participate. *Suco* government and traditional leaders should be encouraged to motivate the poorest to become active members to minimize elite capture, rather than nominate the most progressive/active farmers only (as may have been the case in ARP II). The establishment of equal quotas of men's, women's and mixed groups is included in the design of ARP III as a mechanism to help ensure women are given maximum chances to participate.

The difficulty of sustaining purpose-specific groups will be common to any institution in which the component is located, i.e. they may only be sustained for as long as the activity is funded. ARP III will encourage groups to develop mechanisms for maximizing distribution of benefits arising from grant activities to the entire *suco* population. The Operation Manual will include a process to extend the opportunity to participate to beneficiaries who may not have been interested or been invited to join in initially, especially in the larger villages. This will be especially important for ensuring equity of access for activities involving the use of communal land such as reforestation/plantation activities.

The Office of Administration and Local Government and Development (OALGD) is currently leading a process to determine appropriate structures and institutions for local governance from *suco* to District level. MAFF, in its important role on the Technical and Political Committees (during the drafting of the Autonomy Law) should consider the need for *suco* level representation to assist in implementation of their broader programs. If a substantial change to village level administration occurs within the life of ARP III, the new *suco* structure will need to be studied by MAFF to determine whether the component 1 activities would be better planned and implemented through these structures, rather than through project-specific Implementation Teams. MAFF would then assists in overall capacity building of the newly emerging *suco* structures by administering small group grants through them. This would likely require a change to the Operational Manual and possibly an amendment to the Grant Agreement.

With regard to financial disbursement and transparency, communities appear to embrace the idea of the right to information, while the holders of money are equally keen to avoid suspicion of misappropriation. Whilst some form of public display (such as message boards) is likely to remain appropriate, it will only serve its intended function if communities are assisted in developing more user-friendly formats. What is preferable is that regular community meetings are held at which this information is presented orally for

discussion and comment to all interested parties. In the interests of promoting self reliance, communities should be encouraged to develop their own plans for ensuring transparency, following an agreed set of principles as part of their proposal. These should be endorsed by group members as a prerequisite to receiving funding. Revised funding disbursement mechanisms which no longer rely on the *Conselho do Suco* Treasurer have been incorporated into the ARP III design (see Annex 7).

Options for Providing Effective Service Delivery

The most keenly felt loss in agricultural support since independence is the services of the agriculture extension officers. Their most important contributions to farmers were the introduction of new varieties and the establishment of demonstration plots to introduce new technologies. There is a feeling that 'modern' farming practices are the answer to production problems, as well as inputs such as improved seed, fertiliser and pesticides. However, farmers feel decreased access to these inputs, as well as less face-to-face delivery. One of the key challenges for ARP III is to supplement MAFF's limited capacity to provide these services in a sustainable manner.

In the absence of effective and broad-based extension services, trained facilitators employed by the project are one of the most viable ways to assist in bridging the gap between communities and District Agricultural staff. It is extremely critical, however, that facilitators receive appropriate training and support. Attempts to train MAFF staff in participatory planning methodologies have largely been unsuccessful as they see their role as technical specialists and do not have the time for extended participatory planning. A desirable outcome from implementation of ARP III would be to have either MAFF or the local government hire the facilitators to create a permanent interface between communities and technical staff. Budgetary constraints, however, will likely prevent the hiring of additional staff for some time.

The project considered the alternative of using the Sub-District Community Development Officers (SCDOs) who will be recruited by OALGD by August 2003 at a rate of 1 per sub-district. Their intended role is to stimulate development at the *suco* level. As the vast majority will be based in rural areas, their role in facilitating agricultural planning could be maximized by MAFF. However it was considered premature to divest greater responsibility to them under ARP III as their status and role requires further clarification under the Autonomy Law, and the needs of the pilot villages at this point may mean they neglect non-pilot villages in their sub-districts.

Another alternative is to train the newly recruited Forest Guardians/Extension Officers to gradually take over the role of facilitators. The major drawback with this approach is that their terms of reference largely relate to community forestry activities, including policing, and do not extend to other NRM issues. They could not therefore be expected to facilitate and integrated NRM planning approach and provide follow up support in all areas. However under ARP III, both the SCDOs and the Forest Guardian/Extension Officers will be trained alongside the project facilitators, and will be included as far as possible in the facilitator teams to ensure the principles of community-based planning are extended into their core development activities beyond the life of the project.

Many local NGOs are now being supported by international NGOs such as Oxfam and Catholic Relief Services, and organizations such as CARITAS are actively trying to establish stable, local NGOs through an intensive process of capacity building. The extent to which effective NGOs are represented at the District level should be assessed by MAFF and contracts for facilitation services considered on a per-district basis (as an alternative to hiring facilitators), with district agriculture staff providing technical inputs as required. ARP III has made provisions for the involvement of up to 10 NGO contracts. The form of the NGO contracts will need to be carefully negotiated to ensure that MAFF is satisfied with the intended outcome, and that the NGOs are able to provide services to an agreed level of quality. NGOs

would be encouraged to seek funding from other sources to maintain their relationship with the pilot communities and continue providing support in partnership with MAFF beyond the life of the project. Under the remainder of ARP II and III, facilitator training needs to be improved to develop an effective, participatory planning methodology. This should take into account the broader farmers' priorities in ensuring food security and self-reliance (such as livestock management, improved cropping practice, and integrated pest management) rather than an exclusive focus on forestry and fisheries management. The activities selected by communities should be based firmly on their priority problems, rather than on activities recommended by the facilitators. ARP III has acknowledged the need to include other MAFF divisions in Component 1 through the establishment of an NRM Advisory Committee. Through their involvement in the component, it is hoped that sectoral staff can further absorb NRM and participatory planning principles and integrate them into their sectoral programs.

Component 2. Irrigation Rehabilitation and Management

Community and Light-to-Medium Damaged Irrigation Schemes

ARP II supervision missions indicated that farmers in areas where some of the more complex irrigation schemes had been rehabilitated were not yet using them optimally – e.g. not planting a dry season crop. The Social Appraisal highlighted that each irrigation scheme rehabilitated has a set of conditions, traditions and socio-political issues peculiar to the way it functions. The reasons given for sub-optimal utilization were complex and were often contradictory and confusing – particularly as farmers were largely being asked to estimate their future planting plans in an uncertain environment. An examination of pre-1999 rice growing patterns was revealing in both the extent to which rice growing was subsidized and supported, and the uneven adoption of inputs such as fertiliser and pesticides. Baedubu, one of the largest and most complex irrigation schemes, was kept operational by the Indonesian administration free of charge (de-silting the primary canal every year) while Bilimau had assistance from an NGO and the local sub-district head to excavate the intake each year. Neither of the two schemes in Viqueque or Maliana used fertilizer, and actively rejected it, believing their soil was sufficiently fertile (perhaps because the majority is cropped only once a year). By contrast, the three Oecussi schemes were largely responsible for their own maintenance and were using fertilizer and pesticide on a regular basis. Marketing patterns varied as well. In Viqueque, all surplus produced was sold to the Farmer's Cooperative; in Oecussi, it was sold in the market at Kefamenanu (West Timor); in Bobonaro, it appeared to be mostly used for household consumption, with some surplus sold to family members in Maliana. Planting a second crop on the same land was not widespread, but was most common in Oecussi.

The respective levels of dependency appear to be reflected in the post-conflict production patterns, where the three Oecussi schemes seem to have recovered quickest to pre-1999 production levels (at least in terms of number of hectares planted), with planting experiencing minimal disruption. Those with major government and NGO support on the other hand came to an almost complete standstill and were much slower to overcome production problems (whether this is coincidentally an effect of the extent of the level of damage they suffered is not known). The advent of the drought leading up to the 2002/2003 wet season further complicated the emerging use pattern. This may mean the 2003 dry season planting will have to be delayed until August, and the implications of the late wet season planting will need to be closely monitored before conclusions are drawn regarding optimal use.

Water availability aside, farmers raised many other factors that compound their difficulties. They include: threat of flooding which causes damage to intakes, (and the course of the river shifting away from the intake); lack of water; longstanding water divisions according to tradition; unsuitability of some areas for planting in both seasons; unsatisfactory systems of water distribution; lack of or high cost of tractors; lack of buffalo or buffalo unable to work in the dry season; lack of or poor quality rice seed; unavailability of other inputs and credit; market uncertainty; difficulty in coordinating the community

when only a few plant in the dry season, and a tradition of planting corn and subsistence tendencies. The interaction of price, assured markets, rice as a preferred staple, the capacity to adequately store surplus for long periods, the reversion to corn as a reliable staple post-1999, and the uncertainty surrounding the operation and maintenance of their irrigation schemes is complex. It will take some time before a balance is struck between perceived benefits of increasing productivity and returns on labor.

Despite the myriad problems facing rice growers, Water User Association (WUA) board members interviewed during the Social Appraisal seemed committed to the idea of WUAs as an appropriate vehicle for management of their water resources. All were well aware of the burden of self reliance that had been placed upon them and the enormity of the responsibility. They felt it was too early to comment on their capacity as they had not had a chance to test their WUAs during a planting season. Close monitoring will be required to ensure the WUAs are appropriate for the task of managing their water resources equitably. This may include strengthening the supporting role of the *Chefe do Suco* or Sub-district Head if the authority of the WUAs is not sufficient to organize voluntary operation and maintenance works and ensure compliance with distribution quotas. The ARP III design includes establishment of more WUAs and continued capacity building to assist them in undertaking their tasks. In recognition of the need to increase extension services to farmers to improve cultivation practices, provision for on-farm demonstrations has also been made.

Women were under-represented as members of WUAs, and while their importance to the production of rice is acknowledged by men, the tradition of men representing the household in irrigation matters is strong. Women are considered to be equally represented if their husbands are members, even though they may never attend meetings or participate in decision-making discussions. WUAs should be encouraged to progressively include more interested women as members to maximize organizational capacity and skills within the Associations. As women were not specifically invited to attend initial WUA meetings, a subsequent round of meetings to ascertain their desired level of involvement should be conducted as part of ongoing support to WUAs.

The Large Caraulun Irrigation Scheme

All of the issues relating to the light-to-medium damaged schemes also relate to the larger Caraulun scheme. However, the sociological study completed as part of the Feasibility Study (December 2002) indicated a higher level of community management prior to 1999. Indeed, 14 WUAs are reported to have been organized at the commencement of the scheme in 1995/6 with a membership of approximately 450 male and 150 female members. These were functioning until the scheme sustained major damage during the 2001 floods, and a relatively high level of cooperation was reported, with groups organized for each tertiary block and the implementation of agricultural extension activities. Two local field coordinators paid by the Indonesian Administration provided considerable support. This support will need to be replicated by MAFF until the groups are functioning again. The WUA consultants employed under ARP III should be sufficient for this task initially, but MAFF will need to make arrangements for longer-term support to the WUAs. The recent efforts of the Chefe do Suco to mobilize farmers in October 2002 to clean the canals in preparation for a pump promised by MAFF indicate a willingness of the WUA members to re-start their rice production.

The feasibility study identified as a potential concern three unresolved land ownership issues. These involve: 64 hectares used by transmigrants who have apparently left the area; 165 hectares used by the church for a youth program, which is now no longer functioning; and 62 hectares of government land which is currently being used by local farmers. While no disputes have thus far been reported, and there is apparently a surplus of irrigated land compared to the amount of families with potential ownership rights, this will need to be resolved in order for the scheme to be used optimally. With no formal land titling process in place for the foreseeable future, the reallocation responsibility will rest with Traditional

Leaders, the *Suco* and *Aldeia* Heads, and the *Posto* Administrator according to traditional land allocation practices. This process should be prompted by the detailed topographic and mapping survey which the project will support prior to the start of the works, identifying individual plots and their "owners". The project will also require that WUAs be established and land distribution resolved before any rehabilitation works proceed. By default, the land reallocation process must be completed before this begins, as all WUA members must have a defined and recognized relationship to their plot. A similar situation has occurred on some of the light-to-medium damaged schemes (Bilimau in particular) and been resolved without conflict, and as such is considered to pose a low risk to the project.

Component 3. Services to Farmers

Sub-Component 3.1 Information to Farmers

The Social Appraisal confirmed farmers expressed desire to learn about 'new' and 'modern' farming methods. The challenge for MAFF is to develop quality information as a pre-requisite for effective dissemination.

The overwhelmingly preferred method of delivery is through direct, practical demonstration, which enhances the adoption of new varieties and techniques for largely illiterate farming populations. While it is acknowledge that MAFF faces problems with a shortage of human resources to support this face-to-face delivery of technical training, direct extension as a means of effective communication should not be left behind in the rush to develop alternative, less labor intensive solutions which rely on radio and print media. ARP III includes demonstration activities under Components 1 and 2, and MAFF's Information Section will actively assist in the development of materials and media to facilitate face-to-face delivery. More traditional methods of information dissemination will also be utilized. These will include farmer field days which capitalize on pre-arranged activities (such as vaccination campaigns).

To assist MAFF in delivering appropriate information to farmers, the project will also establish a pilot community-based information service network. This would rely on simple e-mail communication, and would be open (on a regulated basis) to District Staff, local NGOs, community radio staff, service providers and teachers keen to access information from MAFF and international centers of expertise to disseminate through their current programs. The extent to which this information actually reaches farmers will need to be closely monitored to ensure this approach represents the most effective means of increasing farmer access to information. Undoubtedly, e-mail access will greatly assist the speedy response to implementation difficulties and should, at the very least, improve service delivery.

Sub Component 3.2 Animal Health Services

Vaccination campaigns

Farmer expectations that their animals will not get sick if they are vaccinated are largely being met through the current vaccination campaigns. Where animals were reported to have died following vaccinations, farmers reported that it was because they were sick already, and they seemed to understand that vaccinations will not cure sick animals. All *sucos* interviewed stated that they would continue to vaccinate their animals, and that they expected to increase the coverage rate during the next campaign – especially for free-ranging animals. Chickens were largely reported as not being vaccinated. This is because training for women vaccinators had not yet taken place. ARP III includes provision for this training and vaccines for this important source of household income and protein.

The main reasons given as to why not all animals may be vaccinated were related to lack of clear information or a meeting prior to the campaigns, and more importantly, the difficulty associated with

gathering the (free-ranging) animals from the hills. Subsequent campaigns should focus on targeting free-ranging herds as farmers become more accustomed to the annual event. This may require notifying the *sucos* at least one month in advance to enable the community to organize holding pens and conduct a coordinated animal drive. ARP III includes an information campaign which will pay attention to timely delivery regarding vaccination events. The vaccinator's Terms of Reference also include exit reports on the number of animals not vaccinated and the reasons given by the owners. This information should be used to improve MAFF's vaccination coverage.

A majority of groups interviewed indicated that vaccination was a service they would be prepared to consider paying a nominal amount for, in order to continue receiving the perceived benefits. This, however, has not been widely tested. With the progressive shift in vaccination funding to the Government, the concept of a fee for service should be gradually tested to ensure that MAFF can sustain this important service. However it may be premature to do this under ARP III as the cash economy is still developing in rural areas and cash shortages may prohibit payment even when the demand is high.

Village Livestock Workers

In general, farmers are somewhat fatalistic about animal illness, believing that once sick, it is better to kill and eat the animal rather than attempt to save it with their limited knowledge and resources. Prior to 1999, veterinary assistance was not widespread. The difficulties people are experiencing in converting their animals to cash is a possible disincentive to treat them, although the need to have significant numbers of animals for ceremonial obligations is quite strong, and may provide some motivation to invest in treatment. It is against this background that the Village Livestock Workers (VLW) program was designed for ARP II and will continue in ARP III.

Although the first batch of VLWs has been selected, trained and equipped under ARP II, this only occurred in mid 2003. As such, it is difficult to judge how well they will be accepted and utilized by the farming community. During the Social Appraisal, the VLW program was not yet well known. Once the program was explained to the groups, the majority indicated that they would likely call a VLW to treat a sick animal. However, this would depend on the cost and their ability to pay at the time. All of the groups were supportive of the idea of a VLW – the closer to the *suco* the better, and all but one thought it an appropriate role for a woman. Better information dissemination to publicize the program will be addressed in ARP III, including during the vaccination campaigns where paid vaccinators will provide information to *suco* with a VLW trained and operating in their sub-district. The tendency to select paid vaccinators to be trained as VLWs will need to be closely monitored to see if the combination of free service provision (vaccinations) with a paid service (all other treatments) acts as a disincentive to service utilization. The perception that the VLWs are government employees paid regular wages will need to countered if they are expected to thrive as private service providers. In addition, the dependence on paid vaccinators may be limiting the opportunity for women to take up these positions. Recruitment under ARP III should take both of these issues into account.

Sub-component 3.3 Agri-Business Services

The need for marketing services is a priority which continues to be expressed by farmers producing surplus rice and cash crops in particular. Whilst the Agriculture Service Centers (ASCs) supported under ARP I and II are well targeted to meet this need, during the Social Appraisal the level of farmer awareness of the ASCs appeared to be low. Farmers who had not heard of the ASCs (or had not had any dealings with them) had difficulty in conceptualizing what sort of services they might be able to provide. In Viqueque, as discussions were with rice farmers, they were interested in their ASC expanding to provide rice-related inputs. Pesticide was specifically mentioned, as this used to be provided by a farmer cooperative at the sub-district level and was no longer available for purchase. Oecussi farmers by contrast

had heard of the ASCs and were keen for the Maliana ASC to establish trading links to purchase their rice and provide subsidized or guaranteed quality fertilizer in exchange for a portion of the harvest (if the rice cannot be sold). Further discussions with farmers need to take place to determine other needs that the Agri-Business Unit could accommodate by diversifying services no longer available to farmers.

Conclusion

Recognizing that Timor-Leste is an emerging country with local government structures and service delivery mechanisms still in their development, the Social Appraisal for ARP II recommended that an assessment of social appropriateness become an integral, continuous part of the program. The idea is to make certain that the assumptions concerning the services provided and its impacts were actually correct, and suggest changes if they were not. The Social Appraisal for ARP III supports this recommendation. Supervision missions should continue to provide the vehicle for strategic shifts in approaches to respond to evolving needs.

Technical Annex 12: Environmental Analysis

TIMOR-LESTE: Third Agriculture Rehabilitation Project

A. Introduction

ARP III was designed primarily as a continuation and consolidation phase of ARP II. Therefore no new activities that could have potential environmental impacts are anticipated.

The project will finance four major components: Participatory Development and Natural Resources Management, Irrigation Rehabilitation and Management, Services to Farmers, and Program Management. Project components with potential for environmental impacts are mainly found in the Participatory Development and NRM and Irrigation components. As such, these components form the focus of the environmental analysis. Other activities – information to farmers, re-establishment of an agro-meteorological network, sustainable animal health services, agri-business support, policy development and training – are not expected to have significant environmental impacts.

During pre-appraisal, IDA reviewed lessons learned with environmental procedures adopted during ARP II to determine the degree of impact and assist MAFF in revising the procedures according to past experience. This environmental review took place on June 4-18, 2003, and involved field visits to the districts of Lautem, Manufahi, Bobonaro, and Baucau. Discussions were also held with MAFF staff and officials from the Division of Environment.

This Annex outlines the environmental safeguards of the overall project, based on lessons of experience from ARP II. The Annex will also serve as a guideline to ensure that the relevant Operational Policies are followed should any negative environmental impacts occur.

The environmental review concluded that the project would not entail any major significant, complex or irreversible environmental impacts. No works would be undertaken that could affect protected or vulnerable ecosystems. The project has therefore been classified as **Environmental Category B.**

The project is expected to result in environmental benefits from improved natural resources management. MAFF will follow the environmental mitigation measures recommended in this analysis and monitor their compliance by including them into operational manuals for the respective components and in the terms of reference of engineering supervision consultants (for the major irrigation works in Caraulun).

B. Institutional Context

Timor-Leste's environmental review procedures were formulated recently and are generally consistent with the World Bank and European Commission criteria. These procedures will form the framework for the project's approach to environmental management. Even though ARP III activities are expected to have no major adverse effects, MAFF will institute screening and reviewing procedures to ensure that any emerging problems are discussed and corrected in a timely manner.

There have been recent improvements in the institutional framework of the Division of Environment (Ministry of Development and Environment). A new environmental regulation similar to the *Indonesian Environmental Management Act No. 23/1997* has been drafted and is expected to be approved by the Secretary of State for Development and Environment at the end of 2003. Several Indonesian and UNTAET laws and regulations are still applicable, including *Regulation on Analysis of Environmental Impacts No 27 of 1999; Regulation Concerning the Control of Water Pollution No 20 of 1990;* and

Regulation on Protected Places No. 2000/19. UNTAET drafted an interim *Regulation on the Importation and Use of Agriculture Chemicals in East Timor* which is in line with the Food and Agriculture Organization International Code of Conduct on Distribution and Use of Pesticides, the Stockholm Convention on Persistent Organic Pollutants, and the Rotterdam Convention on Prior Informed Consent Procedures for Certain Hazardous Chemicals and Pesticides in International Trade. However, this regulation has not yet been officially adopted. With the exception of the UN Convention to Combat Desertification, which Timor-Leste accessed on August 20, 2003, the country is not yet a party to international treaties. Discussions are well underway for Timor-Leste to join the Biodiversity Convention and the Ramsar Convention on Wetlands.

In ARP II, MAFF undertook the initial environmental screening of village projects (under Component 1) and irrigation schemes. The screening criteria were derived from those followed by the Community Empowerment Project and originally from Indonesian environmental screening criteria, adapted to the environmental context of Timor-Leste. Improved criteria have been included in the Operational Manuals for the two components.

MAFF will collaborate closely with the Division of Environment in supervising the implementation of environmental management and monitoring procedures. Training will be provided in identification and minimization of potential environmental impacts for project-related activities. In addition, MAFF will provide the Division of Environment with copies of its quarterly and biannual progress reports, which will include a summary of any environmental issues encountered, the status of the environmental indicator index adopted for the project, and any proposed mitigation measures (see Annexes 3 and 10).

C. Environmental Aspects

Component 1: Participatory Development and Natural Resources Management

This component was designed as a continuation of a similar component under ARP II. The environmental analysis focused on the revised positive list of village activities, as well as actual activities under implementation in ARP II pilot villages. The review concluded that due to their small scale, the environmental impact of village projects in the short-term is not expected to be significant.

Activities promoted under this component are expected in general to have positive environmental effects. They include: (a) reforestation and rehabilitation of denuded communal areas within participating villages; (b) rehabilitation of selected catchment areas, thus enhancing the quality and quantity of water supply for domestic and agricultural use; (c) community management of natural forest areas; (d) mangrove rehabilitation, potentially improving productivity of fisheries resources; (e) community management of coastal fisheries and marine resources; (f) community nurseries to propagate fruit and forest tree species; (g) agro-forestry activities to promote alternative systems to shifting cultivation; and (h) soil and water conservation structures in individual farms. By encouraging better natural resources management, the component should also help decrease local vulnerability to climatic events such as droughts and floods.

The main environmental issue envisaged during project implementation (based on the experience of ARP II) is the disposal of large numbers of polybags (plastic bags used for seedlings). The recommended environmental mitigation measure is proper disposal of the polybags by farmers. MAFF should also encourage farmers to reuse the polybags or use local recyclable materials like bamboo tubes. In the facilitator training sessions, MAFF will incorporate training on the reuse of polybags, and more importantly, the use of locally available biodegradable substitutes.

Small freshwater fishponds in upland areas require minor excavation works by communities. Observations in the field indicate that this generally takes place in land with little alternative use. However, MAFF should ensure that the ponds are constructed at minimum distances from waterways and that farmers use only local feeds (e.g. corn scraps). Aquaculture proposals involving mangrove conversion (e.g. shrimp) or relying on wild broodstock (e.g. grouper mariculture) would not be supported.

ARP II adopted an environmental and social check-list to screen potential proposals. This form has been adjusted and simplified so that district staff and facilitators can use it as a practical environmental management guideline (or more likely as a best practice). The table below summarizes the recommended mitigation measures, which have been incorporated into the Operational Manual for Component 1.

Table 1: Best Practices for Environmental Management for the Participatory Development and Natural Resources Management Component

Activities	*Recommended Actions*
Processing	– Should be carried out by small-scale landholders, and local communities under community forest management – Include non-timber forest products – Harvest in areas outside critical forests or related critical natural habitats – Prepare a replanting plan to maintain the ecological functions and biological diversity of the area.
Forest restoration and plantation development	– Take actions to improve biodiversity and ecosystem functions – Establish plantations in non-forest lands that do not contain critical natural habitats – Avoid conversions or degradation of natural habitats – avoid siting of plantations adjacent to upstream or critical natural habitats – Avoid planting on steep slopes as it will encourage erosion – Ensure cooperation between MAFF and local NGOs (if applicable) in forest restoration and plantation development
Seedlings production (including silos)	– Reuse polybags – Confine disposal of polybags to a limited area – Explore alternative, biodegradable substitutes to polybags. – Encourage farmers to adopt a schedule for silo maintenance (including cleaning the silos to avoid insect breeding) – Select plant varieties/seeds that require lowest agro-chemical inputs to achieve high yields – If farmers use fertilizers and pesticides, encourage their safe and sustainable use (in accordance with World Bank Operational Procedures on Pest Management) – Select plant varieties with minimal level of pest and disease vulnerability
Aquaculture	– Use locally available materials for fish feeds. – Locate fishponds away or at a substantial distance from waterways – Drain ponds after harvest to avoid vector-borne diseases (e.g. malaria) – Encourage only extensive, sustainable aquaculture methods (e.g. carp in upland areas, seaweed mariculture in coastal areas); reject proposals for brackish water aquaculture that promote mangrove conversion (e.g. shrimp), or dependence on natural broodstock (e.g. grouper). – Avoid areas where there is a high density of aquaculture operations that could reduce the water quality used in other operations and thus increase the risk of disease.

Although Component 1 will not finance pesticides and fertilizers, it is possible that farmers may adopt new farming practices that may require them. If this occurs, the application of these agrochemicals would follow the World Bank's Operational Policy 4.09, which excludes all Class I toxic pesticides (see list in Table 2). MAFF would also not support any Class II moderately hazardous pesticides under the project. As an additional mitigation measure, MAFF staff would provide training for these farmers in the selection and safe use of appropriate agrochemicals.

Component 2: Irrigation Rehabilitation and Management

Community Irrigation and Roads Rehabilitation

Timor-Leste has 346 small irrigation schemes with a design area covering 41,092 ha and a functional area covering 21,000. Virtually all needed rehabilitation following the 1999 violence. To date, ARP I and II have rehabilitated 9,892 ha or 49 percent of the area in need of rehabilitation. Under ARP III, an additional 3,000 ha of irrigable land would be rehabilitated in all 13 districts. The schemes are scattered throughout the country and are therefore not expected to have any significant cumulative or regional impacts.

Table 2: World Health Organization List of Extremely Hazardous, Highly Hazardous and Moderately Hazardous Pesticides (Classes I and II)

Class I (Extremely and Highly Hazardous Pesticides)		
Extremely Hazardous Pesticides Class 1 (a)	*Highly Hazardous Pesticides Class 1 (b)*	*Highly Hazardous Pesticides Class 1 (b) Cont'd*
Aldicarb (ISO)	Acrolein (C)	Isoxathion (ISO)
Brodifacoum (ISO)	Allyl alcohol (C)	Lead arsenate (C)
Bromadiolone (ISO)	Azinphos-ethyl (ISO)	Mecarbam (ISO)
Bromethalin (ISO)	Azinphos-methyl (ISO)	Mercuric oxide (ISO)
Calcium cynide (C)	Blasticidin-S	Methamidophos (ISO)
Captafol (ISO)	Butocarboxim (ISO)	Methadathion (ISO)
Chlorethoxyfos (ISO)	Butoxycarboxim (ISO)	Methiocarb (ISO)
Chlormephos (ISO)	Cadusafos (ISO)	Methomyl (ISO)
Chlorophacinone (ISO)	Calcium arsenate (C)	Monocrotophos (ISO)
Difenacoum (ISO)	Carbofuran (ISO)	Nicotine (ISO)
Difethialone (ISO)	Chlorfenvinphos (ISO)	Omethoate (ISO)
Diphacinone (ISO)	3-Chloro-1, 2-propanediol (C)	Oxamyl (ISO)
Disulfoton (ISO)	Coumaphos (ISO)	Oxydemeton-methyl (ISO)
EPN	Coumatetralyl (ISO)	Paris green (C)
Ethoprophos (ISO)	Zeta-cypermethrin (ISO)	Penthachlorophenol (ISO)
Flocoumafen	Demeton-S-methyl (ISO)	Pindone (ISO)
Fonofos (ISO)	Dichlorvos (ISO)	Pirimiphos-ethyl (ISO)
Hexachlorobenzene (ISO)	Dicrotophos (ISO)	Propaphos
Mercuric chloride (ISO)	Dinoterb (ISO)	Propetamphos (ISO)
Mevinphos (ISO)	DNOC (ISO)	Sodium arsenite (C)
Parathion (ISO)	Edifenphos (ISO)	Sodium cyanide (C)
Parathion-methyl (ISO)	Ethiofencarb (ISO)	Strychnine (C)
Phenylmercury acetate (ISO)	Famphur	Tefluthrin
Phorate (ISO)	Fenamiphos (ISO)	Thallium sulfate (C)
Phosphamidon	Flucythrinate (ISO)	Thiofanox (ISO)
Sodium fluoroacetate (C)	Fluoroacetamide (C)	Thiometon (ISO)
Sulfotep (ISO)	Formetanate (ISO)	Triazophos (ISO)
Tebupirimfos (ISO)	Furathiocarb	Vamidothion (ISO)
Terbufos (ISO)	Heptenophos (ISO)	Warfarin (ISO)
	Isazofos (ISO)	Zinc Phosphide (C)
	Isofenphos (ISO)	

Table 2: World Health Organization List of Extremely Hazardous, Highly Hazardous and Moderately Hazardous Pesticides (Classes I and II) (Cont'd)

Class II (Moderately Hazardous Pesticides)		
Alanycarb [ISO]	Endosulfan [ISO]	Pebulate [ISO]
Anilofos [ISO]	Endothal – sodium [(ISO)]	Pemethrin [ISO]
Azaconazole	EPTC [ISO]	Phenthoate [ISO]
Azocyclotin [ISO]	Esfenvalerate [ISO]	Phosalone [ISO]
Bendiocarb [ISO]	Ethion [ISO]	Phosmet [ISO]
Benafuracarb [ISO]	Etrimfos [ISO]	Phoxim [ISO]
Bensulide[ISO]	Fenazaquin [ISO]	Piperophos [ISO]
Bifenthrin	Fenitrothion [ISO]	Pirimicarb [ISO]
Bilanafos [ISO]	Fenobucarb	Prallethrin [ISO]
Bioallethrin [C]	Fenpropidin [ISO]	Profenofos [ISO]
Bromoxynil [ISO]	Fenpropathrin [ISO]	Propiconazole [ISO]
Bromuconazole	Fenthion [ISO]	Propoxur [ISO]
Bronopol	Fentin acetate [(ISO)]	Prosulfocarb [ISO]
Butamifos [ISO]	Fentin hydroxide [(ISO)]	Prothiofos [ISO]
Butylamine [ISO]	Fenvalerate [ISO]	Pyraclofos [ISO]
Carbaryl [ISO]	Fipronil	Pyrazophos [ISO]
Carbosulfan [ISO]	Fluxofenim [ISO]	Pyrethrins [C]
Cartap [ISO]	Formothion [ISO]	Pyroquilon [ISO]
Chloralose [C]	Fuberidazole [ISO]	Quinalphos [ISO]
Chlordane [ISO]	Gamma-HCH [ISO]	Quizalofop-p-tefuryl [ISO]
Chlorfenapyr [ISO]	Guazatine	Rotenone [C]
Chlorphonium chloride [ISO]	Haloxyfop	Sodium fluoride [ISO]
Chlorpyrifos [ISO]	HCH [ISO]	Sodium hexafluorosilicate [ISO]
Clomazone [ISO]	Heptachlor [ISO]	Spiroxamine [ISO]
Copper sulfate [C]	Imazalil [ISO]	Sulprofos [ISO]
Cuprous oxide [C]	Imidacloprid [ISO]	TCA [ISO] (acid)
Cyanazine [ISO]	Iminoctadine [ISO]	Terbumeton [ISO]
Cyanophos [ISO]	Ioxynil [ISO]	Tetraconazole [ISO]
Cyfluthrin [ISO]	Ioxynil octanoate [(ISO)]	Thiacloprid
Beta-cyfluthrin [ISO]	Isoprocarb [ISO]	Thiobencarb [ISO]
Cyhalothrin [ISO]	Lambda-cyhalothrin	Thiocyclam [ISO]
Cypermethrin [ISO]	Mercurous chloride [C]	Thiodicarb [ISO]
Alpha- cypermethrin [ISO]	Metaldehyde [ISO]	Triazamate [ISO]
Cyphenothrin [(IR)-isomers] [ISO]	Metam-sodium [(ISO)]	Trichlorfon [ISO]
2,4 –D [ISO]	Methacrifos [ISO]	Tricyclazole [ISO]
DDT [ISO]	Methasulfocarb [ISO]	Tridemorph [ISO]
Deltamethrin [ISO]	Methyl isothiocyanate [ISO]	Vernolate [ISO]
Diazinon [ISO]	Metolcarb [ISO]	Xylylcarb
Difenzoquat [ISO]	Metribuzin [ISO]	
Dimethoate [ISO]	Molinate [ISO]	
Dinobuton [ISO]	Nabam [ISO]	
Diquat [ISO]	Naled [ISO]	
	Paraquat [ISO]	

None of these works will have significant, complex or irreversible adverse environmental effects, since they will be carried out only in pre-existing schemes. The activity will therefore not endanger protected or vulnerable areas or habitats. Potential impacts should be short-term, localized and readily prevented or mitigated by good engineering design and construction practices, reinforced by adequate supervision by MAFF staff of target communities.

An estimated total of 150 km of agriculture access roads (unpaved) will be rehabilitated and maintained through community participation. This activity is not expected to produce significant negative environmental impacts as it involves the rehabilitation of existing unpaved roads, without any lengthening

or enlargement of alignment. Local communities will undertake the work using hand tools and local materials. Based on ARP I and II, the roads will be scattered through the 13 districts, and are not expected to have any significant cumulative or regional impacts.

The main anticipated impacts of road rehabilitation will be soil erosion and possible land slides in hilly areas. During the design and construction phases, MAFF will adopt the following mitigation measures: (a) encourage communities to plant bush grass or build retaining walls in slopes and suitable places along the road side to prevent soil erosion; (b) on sections with high filing and deep cutting, encourage communities to cover slopes with stone pitching and plant steep slopes with grass; (c) in sections along the river, encourage communities to properly dispose of earth and stone to avoid blocking rivers, adversely impacting water quality; and (d) encourage construction of drains and culverts to provide adequate drainage.

After rehabilitation, MAFF should encourage communities to maintain road surfaces, drains and shoulders by periodically clearing drains to ensure water flow. Regular maintenance would help reduce environmental impacts caused by continuing deterioration of road conditions.

Environmental mitigation measures for community irrigation and roads rehabilitation have been incorporated into Operational Guidelines, and will be monitored under the project (see Annexes 3, 10).

Rehabilitation of Major Irrigation Schemes

The only major irrigation scheme proposed for rehabilitation is Carulun, in the district of Manufahi. This scheme serves a potential irrigable area of 1,030 ha.

Rehabilitation of Caraulun is unlikely to create any major adverse environmental impacts. No new construction/structure of significant size would be built. The major rehabilitation work is the construction of a new free intake at the existing intake site, but with an invert level 1.7 meters below the river bed. A new channel would be constructed through the existing masonry sedimentation basin and canal. The existing canals will also be rehabilitated.

Operation of the irrigation scheme is not expected to result in significant negative environmental impacts as it would bring back water into previously irrigated areas. Since irrigation water is generally diverted from river flows during and immediately after the rainy season, the rehabilitation of the scheme would not affect ground water supply but may reduce slightly the amount of runoff water that goes to the sea. No salination nor water logging are expected.

During ARP II, MAFF commissioned a comprehensive feasibility study for major-damaged irrigation schemes which included an environmental analysis (see *SMEC 2003. Feasibility Study Report of Seical Up, Maliana I, Uatolari and Carulun Irrigation Schemes, Annex 6*). The study indicated only relatively minor potential impacts. There are no protected areas or cultural sites within the scheme area. Negative impacts could potentially come from: (a) erosion and scouring of river banks; (b) indiscriminate dumping of excavated sediment deposits and other materials from the canals, drains, and structures during construction and maintenance; and (c) environmental damage caused by contractors during construction activities. The recommended mitigation measures to address these potential impacts include: (a) gravel management to maintain the river course during low and medium flows; (b) community-based catchment management to reduce the loss of vegetation on the slopes; (c) management of construction works during construction including disposal of sewage, disposal of spoil from canal desilting, and appropriate location of construction camp; (d) protection of flora and fauna; and (e) addressing health issues such as potential for increased mosquito breeding grounds in temporary ponds.

The identified list of potential environmental impacts from rehabilitation of major damaged schemes is included in Table 3 below, along with the recommended mitigation measures should these occur. MAFF will ensure that these measures are incorporated into the scope of works for the contractors as well as the terms of reference for the engineering supervisors. Relevant mitigation measures will also be integrated in WUA and staff training materials.

Rehabilitation of Carulun is expected to also have positive environmental impacts through: (a) cleaning of the main canals, drains and removal of deposited debris and other unwanted materials; (b) repair and improvement of canals and drainage channel banks; (c) removal of areas of stagnant and standing water through cleaning of drainage canals and drainage systems; and (d) improvement of water management by providing better access to control structures and to gates, improvement of outlets to farms and the re-establishment of Water User Associations.

Component 3: Services to Farmers

This component is not expected to have any significant environmental impacts. The project would support better information to farmers which should help encourage sustainable agriculture and natural resource management practices. The project would also support the restablishment of a network of agro-meteorological units and rain gauges. The automatic units would be installed in pre-existing sites. The rain gauges may require the construction of minor fences (about 9 m^2) to protect them against vandalism, but this should not entail any major environmental impact. The agro-meteorological network would be an important source of information to help MAFF and other government agencies identify vulnerable areas to droughts and floods and consequently develop appropriate policy responses.

The Support to Agri-Business component is expected to support the establishment of small village coconut and candlenut oil mills and grain seed producers (mostly rice and maize). The proposed feasibility study for coconut and candlenut oil processing will include recommendations on the proper disposal of organic waste and any mitigation measures required.

Extension support to seed producers is likely to entail distribution (by MAFF) of small quantities of pesticides and fertilizers. If so, the procedures described for Component 1 (including compliance with Operational Directive 4.09 on Pest Management) would apply. The Sustainable Animal Health Services sub-component would focus on vaccination and animal health and is not expected to have any significant environmental impacts. Vaccination syringes are re-used extensively and their disposal is not expected to be problematic.

Component 4: Program Management

This component would not have any significant adverse impacts on the environment. One of the policy studies proposed by MAFF would cover community-based NRM which is expected to improve the overall policy framework for environmental management in forest and coastal areas of Timor-Leste.

Conclusion

The overall potential environmental impacts of the project and remedies proposed are summarized in Table 4 below. Activities under Component 1 are small in nature and would generally improve environmental conditions. Component 2 only includes rehabilitation of existing irrigation schemes and roads – the quantity of water extracted would not change significantly from the original design capacity. Any shortages in water for irrigation are more likely to be related to shifting river courses from braided rivers rather than reductions in supply or project-related impacts. No significant regional or cumulative impacts of project activities are expected, since Component 1 operates in 50 villages spread over seven districts, and Component 2 in all 13 districts of Timor-Leste.

Table 3. Potential Environmental Impacts and Recommended Preventive and Mitigation Measures for Major Damaged Irrigation Schemes

Potential Impacts/Issue	*Prevention Measure*	*Recommended Mitigation Measure*
Potential Primary Impacts		
– River bank erosion caused by floods	– River training with revetments and gabion walls	– Protective gabion walls
– General river bank erosion	– Plant suitable grasses (e.g. vetiver, lemon grass)	– Plant suitable grasses (e.g. vetiver and lemon grass)
– River bed gouging and scouring	– Place boulders from site in scoured or gouges sites	– Place boulders from site in scoured or gouges sites.
– Where construction works cut into bank above water line	– Vegetate with quick growing cuttings, if necessary held in place by wire mesh. Protect from livestock by palisades. Augment cuttings with seeds of a desired species.	– Where site is in danger of immediate and significant erosion, spray with binding mixture, preferably biodegradable and containing seeds (e.g. Hydro-seed or Hydro-mulch). If this is not appropriate, use vigorous grass species and place palm leaves or other vegetation and stake in place at close intervals.
– Sediment run-off from bank erosion.	– Plant banks with grasses and where sediment run-off is steep, augment with sediment traps of stone or well staked branches.	– Plant banks with grasses and where sediment run-off is steep, augment with sediment traps of stone or well staked branches.
– Landslips and slides	– Vegetate slopes. Ensure construction work will not create or worsen these occurrences. Where potential slips likely to occur, install barriers to reduce impact of weirs, headworks and canals.	– Minimise damage and excavate material from scheme sites where necessary. Build gabion walls if further slides or slips may occur
– Reduced groundwater flows	– Estimate groundwater intake from surface and recharge flows and adjust scheme intake to maintain balance each planting season (i.e. three times a year).	– Immediately adjust scheme intakes above known groundwater intakes.
– Intrusion of saline water into groundwater systems	– Estimate flow of groundwater required to prevent saline intrusion and adjust scheme intakes above known groundwater intakes.	– Immediately adjust scheme intakes above known groundwater intakes.
– Degradation of downstream habitats through lack of water.	– Ensure appropriate controls are in place to regulate flows.	– Increase flow.
– Impacts on coastal environments e.g. mangroves, estuaries and salt flats through reduced stream flows and lack of flushing.	– Ensure appropriate controls are in place to ensure sufficient flow.	– Increase flow.
– Reduced water availability downstream for domestic and subsistence use	– Ensure appropriate controls are in place to ensure sufficient flow	– Increase flow.
– Water logging arising from poor irrigation management	– Develop guidelines (rules of thumb) for water volume applications. Educate water users regarding overuse.	– Inform water users of problem and request appropriate action
– Impacts of floods on villages and garden areas	– Assess 10,20, and 50 year flood event patterns and include protective measures such as gabions.	– Build protective gabions to protect critical areas and/or levee banks. Following floods, investigate alternative sites.
– Equity Issues	– Ensure there is agreement between all parties as to the equity of use for each proposed scheme.	– Ensure there is agreement between all parties as to the equity of use for each proposed scheme.

Table 3 Cont'd. Potential Environmental Impacts and Recommended Preventive/Mitigation Measures for Major Damaged Irrigation Schemes

Potential Impacts/Issue	*Prevention Measure*	*Recommended Mitigation Measure*
Potential Secondary Impacts		
– Increased pressure on land availability	– Introduce planning measures and Integrated Catchment Management Consult with community and invite participation in decision-making. Introduce concept of community partnership management	– Liaise with community throughout. Introduce planning regulations.
– Impacts on downstream users	– Ensure detailed design includes all planned water flows, highest level usage and local and downstream usage (including during droughts).	– Take immediate remedial action at WUA level to reach agreements between the scheme community and downstream communities on the most appropriate action, and formalize agreement.
– Vegetation clearing and degradation as a result of land access issues	– Assess existent and potential degradation. Consult with community and invite participation in decision-making regarding a preventative approach. Restrict slash and burn practices. Introduce community partnership management.	– Restrict clearing slash and burn until area has recovered. – Revegetate, where possible with local species. Restrict number of goats or control by fencing. Introduce planning measures and regulations.
– Salinization, degradation and general 'souring' of irrigated land through high groundwater levels.	– Identify substrata and water/groundwater height to assess water logging and salinization potential. Conduct yearly water level and water and soil quality checks.	– Test and take appropriate action.
– Nutrient leaching	– Estimate waste flow/ nutrient loss. Implement community management plan. Conduct community awareness and training programs	– Reduce number of crops and/or amount of water applied. Work with WUAs.
– Concentrated toxic leachates from bedrock in reduced groundwater.	– Analyze bedrock at design stage.	– If groundwater is reduced over a long period, begin testing on a six monthly basis, in particular for sulphur/arsenic.
– Eutrophication	– Ensure there will be sufficient flow to reduce eutrophication potential. Build community awareness on nutrient build-up, especially from use of fertilizers.	– Establish specific causes of problem and mitigate, in partnership with community/WUAs.
Potential Tertiary Impacts		
– Slope erosion arising from increased pressure for land and consequential vegetation clearing.	– Institute Intergrated Catchment Management principles and revegetation programs.	– Institute Integrated Catchments Management principles and revegetation programs
– Loss of habitat (from loss of vegetation).	– Institute Integrated Catchments Management and revegetation programs	– Institute Integrated Catchments Management principles and revegetation programs.
– Evapotranspiration/water cycle and long-term climatic impacts arising from reduction of vegetation	– Instigate community education programs. Incorporate in policy and regulations.	– Instigate community education programs. Incorporate in policy and regulations.
– Uncertainty of land tenure/ownership on scheme arising from changes in land use.	– Land tenure specialist to identify type of land ownership in each scheme district, any relevant colonial or contemporary legislation and make recommendations to the appropriate government body to ensure the sustainability of the scheme within the social /land tenure context.	– If regulation/policy issued, request arbitration from appropriate authority. If not initiate a community agreement process.

Table 4: Summary of Project Potential Environmental Impacts and Remedies

Project Component	*Potential Environmental Impact*	*Project Remedial Action*
Participatory Development and Natural Resources Management	Impact is not significant due to small-scale nature of activities.	Community proposals will be screened against criteria to evaluate their environmental soundness. Best practices for environmental management will be included in the Operational Manual. Any indirect application of fertilizer and pesticides will be in accordance to World Bank Operational Policy 4.09.
Rehabilitation of existing irrigation schemes:		
- Community scale	Impacts are local and temporary.	Community rehabilitation activities will be screened for environmental impact, and environmental mitigation measures will be monitored, as specified in the Operational Guidelines. No irrigation activities will be supported inside protected areas.
- Caraulun Scheme	Summary description of potential impacts and mitigation measures for major damaged irrigation schemes shown on table 3	Recommended environmental mitigation measures will be incorporated into construction tender documents and terms of reference for construction supervision Applicable mitigation measures will be incorporated into training materials for Water User Associations and MAFF
Rehabilitation of farm-to-market access roads.	Rehabilitation would be undertaken only on existing roads and would not enlarge or lengthen them. Impacts would be local and temporary.	MAFF will provide advice on environmental best practices to local communities involved in road rehabilitation and will monitor environmental mitigation measures. No road rehabilitation activities will be supported inside protected areas.
All project components	Ensure adequate public disclosure of key project documents.	MAFF will ensure adequate public disclosure of Project activities, and availability of relevant documents (including the Project Environmental Analysis) in publicly accessible locations. PAD including environmental analysis and the Integrated Safeguard Data Sheet will be available at the World Bank Public Information Center in Washington DC and Dili.

Technical Annex 13: Technical Evaluation

TIMOR-LESTE: Third Agriculture Rehabilitation Project

This Annex summarizes the technical assessment of project components.

Component 1: Pilot Participatory Development and Natural Resource Management

This component builds on the introduction of a more integrated approach to natural resource management (NRM) to increase sustainable productivity and decrease vulnerability in target upland and coastal villages. This is a shift from MAFF's current subsector-based approach to providing assistance. A national level Advisory Committee will lead the effort to achieve better integration of community-based activities. The focus on devolving responsibility for natural resource management (NRM) to the communities, and attempting to address user right security through a concurrent policy study, is consistent with proven farmer-first approaches in other developing countries. The strengthened positive list of activities offers technically simple, proven alternatives which continue to be adapted for implementation in Timorese villages. These include improved forage production, planting of higher yielding staples, and the promotion of traditional mechanisms to plan and respond to climatic fluctuations including droughts and floods.

In order to demonstrate the effectiveness of an integrated village-based program, provision of direct grants to farmers' groups is appropriate to enable sufficient experimentation with options. Community capacity and experience in planning, financing, implementing and monitoring their own development activities is still limited in Timor-Leste. However, the provision of direct grants to communities in countries around the world has demonstrated the potential of this mechanism to promote demand-driven development. It is also consistent with the Government's objective of strengthening local governance.

Component 2: Irrigation Rehabilitation and Management

The approach followed by the project to concentrate on rehabilitating existing irrigation schemes is considered appropriate. Further rehabilitation of irrigation schemes will reduce the risks to food scarcity caused by droughts, as indicated by the recent FAO/WFP report[15] which reported a 12 percent increase in rice harvest in 2003 at the same time as the yield of other food crops dropped (largely due to irrigation rehabilitation).

Community-based rehabilitation of small-scale irrigation schemes and farm-to-market access roads started under ARP I and II will be continued under the project. In economic terms, rehabilitation of these schemes is highly viable (see Annex 9). They have also shown to have generated considerable benefits to communities in terms of creating local employment as well as contributing to an increase in production. To strengthen farmers' capacity and improve operation and maintenance, one pilot Water User Association (WUA) will be organized in each district.

The 10 WUAs formed on the light-to-medium damaged irrigation schemes under ARP II will be strengthened further to ensure active participation of men and women farmers in the management of their irrigation schemes. The technical advice and further training provided by MAFF staff will improve the efficiency of the WUAs, particularly if staff could learn to work in inter-sectoral teams (Irrigation, Crops, Livestock and Research and Extension Divisions) to respond to farmers' needs for an integrated farming systems approach.

[15] FAO/WFP. 2003. *Special Report. FAO/WFP Crop and Food Supply Assessment Mission to Timor-Leste. June. Food and Agriculture Organization of the United Nations and World Food Programme. Dili, Timor-Leste.*

The topographic survey and mapping activities will provide detailed and accurate plans of completed irrigation schemes and are expected to facilitate their utilization and effective operations by WUAs. The training provided will also improve the capacity of MAFF staff to carry out future irrigation design and construction-related activities.

Technical Justification for Rehabilitation of Caraulun

ARP II carried out a feasibility study for major-damaged irrigation schemes. One economically viable scheme (Caraulun) will be rehabilitated to its original design capacity to enable farmers to plant two crops per year. The contract for construction will be awarded competitively. A qualified engineering firm will supervise the works. Based on the lessons of ARP II where farmers were slow to take advantage of the larger rehabilitated schemes, a number of pre-conditions will be required prior to the start of the works. These are outlined in the Attachment to this Annex.

The feasibility study considered various alternatives for rehabilitating Caraulun's headworks, including reconstruction of the original fixed weir, free intakes either constructed annually or as a permanent structure, and pumping. All these techniques could be used to ensure delivery of water to the project areas for irrigation. However, both the weir reconstruction as well as pumping were rejected on the following grounds:

- The estimated cost of construction of the fixed weir was excessively high, based on an assessment of the poor foundation conditions which consisted of gravels and large cobbles, and the potential scour depth (up to 5.5 metres). The economic analysis indicated the weir option was uneconomic.
- Pumping the water required for the project would require high annual operation and maintenance costs, which could not be funded by the WUAs, making the project unsustainable since it would require annual Government interventions.

The selected option was a free intake to supply irrigation water only to the left bank area, with water diverted directly from the river. This option is technically and economically feasible and relatively easy to operate and maintain. Although the Caraulun river is wide and braided, with its width varying from 150 to 500 meters upstream from the weir site, there are a number of low flow channels which run along the left bank, and the assessment is that flow concentrations will continue along the left side of the river, supplying water into the free inlet structure. Constructing a new intake structure with a lower invert level located at the upstream edge of the existing weir apron would allow flow to enter the flume, while minimizing debris and sediment inflow.

The feasibility study modeled and evaluated the existing canal system. Generally no major changes are necessary for the irrigation system to deliver water supplies to 1,030 hectares. The rehabilitation works include mostly de-silting and repairs to the existing structures, with two new siphons on the Caraulun secondary canal.

The engineering works proposed for the rehabilitation of the Caraulun Scheme appear appropriate, technically feasible and sustainable, with operation and general maintenance by the WUAs possible. Some long-term commitment is required of the Government for major maintenance works which will be required on the intake structure. More details of the technical assessment of and preconditions for this activity are provided in the Attachment to this Annex.

Component 3 : Services to Farmers

Information to Farmers

This sub-component builds upon lessons from ARP I and II, experience from other developing countries, and the expressed need of Timorese farmers to foster effective two-way communication flows.

Access to appropriate and timely information has consistently been identified by farmers as a major need, particularly in the present context where extension support is scarce. A participatory approach to information delivery through face-to-face contact with farmers will increase their knowledge and skills. This will be coupled with the use of mass media—particularly national and local radio broadcasts—to maximize information dissemination through agriculture programs, generate demand for services, and raise awareness. To ensure sustainability, capacity and resources will be strengthened at the local level. Training on basic communications and information will increase the ability to better identify needs and issues, and choose appropriate communication methods and materials. Further, the functions of the CGIAR Liaison Secretariat at MAFF, established under ARP II, will be streamlined to develop a rapid response system to timely address farmer's immediate needs, and enhance the institutional knowledge base. A point-to-point e-mail communications network—successfully implemented in the Solomon Islands through the People First Network (PFnet)—using solar-powered computers and radio connectivity is expected to expand MAFF's dissemination efforts by making e-mail accessible to other development partners working with farmers (e.g. NGOs).

The component also targets the re-establishment of a network of agro-meteorological stations to enable MAFF to collect and process basic information on rainfall, temperature, humidity, and evaporation. This information is becoming increasingly important to allow policy makers and potential donors to identify highly vulnerable areas prone to droughts and floods, and thereby permit a better targeting of assistance.

The comprehensive approach proposed for information services will seek to optimize information on demand. It is also consistent with MAFF's prioritization and sequencing exercise that identified information as one of the highest program priorities.

Sustainable Animal Health Services

MAFF will continue to support the vaccination campaigns that commenced in ARP I, to ensure no major outbreaks of animal diseases. The 2002 Poverty Survey had indicated that nine in ten rural dwellers live in households that own animals. The inability of very poor households to pay for vaccines may put other livestock at risk by reducing coverage. The government has therefore decided to continue vaccination as a public service in the short-term. To ensure financial sustainability, it was agreed that the vaccination program will be carried out on a 3-year phasing out formula of external assistance, with EC/TFET financing 75%, 50% and 25% of the campaign costs, and CFET funding the remainder.

The Village Livestock Workers (VLWs) Program builds on the successful Cambodian model of village para-vets, aimed at training a privatized cadre of animal health workers to serve rural communities. About 265 VLWs will be trained on basic animal health and livestock production topics to enable them to provide advice to farmers for a fee. MAFF could also contract out VLWs for its annual vaccination campaigns. Eventually, there would be one VLW per two villages, covering all 498 villages in 13 districts. This is considered an appropriate approach to provide minor veterinary services given the severe shortages of trained veterinarians and MAFF livestock staff. To ensure quality control, MAFF will

provide refresher training courses to VLWs every six months, and help establish a VLW Association to facilitate further training, certify its members and facilitate the procurement of veterinary supplies in bulk.

Support to Agri-business

ARP I and II established three farmer-owned Agriculture Service Centers (ASCs), to facilitate the marketing of agriculture products and sales of critical inputs (e.g. seeds and fertilizer). Although there is no further need for ARP III to invest in additional ASCs, MAFF will create, through the project, an Agro-Business Support Unit to continue to provide advisory services and training to rural producer organizations. In addition, MAFF will target the development of two promising niche markets: certified rice production in the main rice producing areas (Viqueque, Bobonaro and Baucau); and promotion of coconut and candlenut oil processing at the village level.

Availability of certified seed continues to be a major constraint to increasing rice production in the country. The project proposes to assist some 30-40 rice seed growers, help them establish a Seed Growers Association and assist them in initial marketing and quality control. This activity will be linked to on-going initiatives such as the ACIAR-funded Seeds for Life Project, and emerging partnerships with the International Rice Research Institute in the Philippines.

The establishment of about 12 small scale village-type oil mills in the production areas is expected to generate value added products and employment in the villages. A feasibility study to be carried out by GTZ will provide the economic context and basis for implementation of this activity.

Component 4: Program Management

The project will continue to support priority policy and organizational studies, through high-level advisors to MAFF. The scope of the studies and advisory services will be left flexible to meet evolving needs. This sub-component will be closely linked to MAFF's new Policy and Planning Unit, and enable MAFF to help connect its new policies with those of other agencies involved in regional development.

Attachment: Technical Evaluation and Pre-Conditions for the Rehabilitation of Caraulun Irrigation Scheme

A. Technical Evaluation

1. Location and Background

The Caraulun Irrigation Scheme is located in the District of Manufahi, about 20 km south of the district capital, Same. The scheme is designed to use the water from the Caraulun River, a wide, braided river discharging into the Timor Sea at Betano. The construction of the Caraulun Project commenced in 1991, and the civil works were substantially completed in 1996. The scheme consisted of a fixed weir across the approximately 90 meter wide river, with intakes designed on both the left and right banks. However, only the canal distribution system on the left bank was completed. This consists of a 2,200 meter long masonry paved main canal, and two secondary canals which branch off to the left and right of the system at a regulating structure.

2. Economic Feasibility

The feasibility study carried out under ARP II showed the following comparative costs of rehabilitating the four major damaged irrigation schemes in Timor-Leste:

Table 1. Comparative Costs for Major Damaged Irrigation Schemes

	Rehabilitation Costs (US$)				*Rehabilitation Costs per ha (US$)*		
Irrigation Scheme	*Headworks*	*Canals*	*Total*	*Area*	*Headworks*	*Canals*	*Total*
Caraulun	615,512	344,800	960,312	1,030	598	335	932
Seical Up	1,152,958	330,788	1,483,746	510	2,261	649	2,909
Maliana I	677,922	266,829	944,751	500	1,356	534	1,890
Uatolari	563,281	632,322	1,195,603	660	853	958	1,812

Source: SMEC 2003. Feasibility Study Report of Seical Up, Maliana I, Uatolari and Carulun Irrigation Schemes

Note: Area used in comparison is area proposed for first rice crop.

Although the total area planned to be planted for the first rice crop on Caraulun is more than 50% greater than any of the alternative schemes, and is double the proposed area in Seical Up and Maliana, the total rehabilitation costs for Caraulun is only approximately 50% of the cost of the next least costly project, Uatolari.

The considerable difference in the costs of rehabilitation is reflected in the Economic Rates of Return (ERRs) estimated for each of the schemes. Using a conservative approach based on the observed development progress on the Light-to-Medium Damaged schemes rehabilitated under ARP I and ARP II, the ERRs for the four schemes included in the SMEC Study were as shown in Table 2 below.

Table 2. ERR for Rehabilitation of Major Damaged Irrigation Schemes

	Name of Scheme	*ERR*
1	Caraulun	20.3%
2	Seical Up	1.16%
3	Maliana I	12.6%
4	Uatolari	5.21%

Source: SMEC 2003. Feasibility Study Report of Seical Up, Maliana I, Uatolari and Carulun Irrigation Schemes. The estimated ERR for this study (22.9%) has been reduced to conform with the project assumptions of 160% cropping intensity.

The economic analysis indicates that only Caraulun and Maliana 1 are economically viable. However due to budget limitations, the rehabilitation of only one of these schemes was possible under ARP III. Clearly, the rehabilitation of Caraulun represented the best option.

3. Economic Analysis

The base case scenario for the economic evaluation for the Caraulun Project was based on the following assumptions:

- First rice (wet season paddy) crop was assumed to yield 2.0 tons/ha after rehabilitation, increasing to 2.5 tons/ha. after 5 years;
- Second rice (dry season paddy) was assumed after rehabilitation to yield 2.0 tons/ha. after 5 years
- Incremental operating and maintenance costs are assumed at US$30/hectare per year, plus US$10,000/year for the headworks, with the cost building up at 10/50/100 percent over a three year period.

These assumptions are conservative, but perhaps realistic based on the actual progress made on the completed light-to-medium schemes to date.

However, even with these assumptions the ERR for the Caraulun scheme is 22.9%. The reasons for the high ERR are related to the low costs per ha of rehabilitating the scheme:

- The Caraulun scheme will cover 1,030 ha, which is much higher than the other three systems included in the feasibility study. The cost for rehabilitating the headworks per hectare is therefore reduced.
- The design for the new Caraulun headworks is much less expensive than for other schemes, since the modifications to the existing scheme do not require a long ungated free intake flume which is necessary on the Seical Up and Uatolari schemes.

The costs for rehabilitating the canal network are also considerably lower than for the other three schemes

4. Water Resources

The feasibility study carried out an assessment of the stream flow in the Caraulun River, as well as an estimate of the crop water requirements for the full development of 1,030 ha. based on a three crop cycle which may eventually be achieved. The land preparation and cropping pattern assumed for the analysis was:

- First paddy crop land preparation in December
- Second paddy crop land preparation in April
- Other crops cultivated in August

Table 3. Seasonal Analysis of Water Flow Availability in Caraulun River

		Jan	*Feb*	*Mar*	*Apr*	*May*	*June*	*July*	*Aug*	*Sept*	*Oct*	*Nov*	*Dec*
Crop Requirements	m3/sec	0.85	0.75	0.58	1.99	0.85	1.55	1.23	0.85	1.08	1.04	0.73	2.21
Availability 1:5 yr D	m3/sec	4.3	10.0	12.7	16.5	14.1	9.5	5.9	3.9	2.7	1.7	1.3	2.7
Min	m3/sec	0.9	1.1	2.1	3.2	8.2	5.7	3.7	2.5	1.9	1.3	1.0	1.3

The maximum water requirements are associated with land preparation and the first month of the first paddy crop in November/December when effective rainfall becomes insignificant in November and the available water drops substantially. It is apparent that in most years there will be sufficient water for the full irrigation of the 1,030 ha.

At present there are no significant upstream extraction on the Caraulun River which could affect the scheme. However, for the longer term sustainability of the system legal allocations and long term rights to these limited available water resources will become essential and should be addressed.

5. Major Works

The major civil works included in the proposed civil works contract for the rehabilitation of the Caraulun Irrigation Project are:

- Construction of new intake works on the Caraulun River, including a flume intake;
- Rehabilitation of the canal network

The proposed rehabilitation works include the construction of a free intake. The free intake is proposed with a lower invert level near the existing intake, and the design includes the lowering of the primary canal to the second drop structure. The free gated intake will include a gate and a debris and rock barrier, located in the existing training walls, 15 meters upstream from the existing intake. The water will be conveyed to the existing canal system in a flume through the existing sedimentation basin.

The civil works and equipment proposed as part of the rehabilitation of the headworks includes the following:

- Demolition of part of the existing weir, intake and sluice;
- Construction of a 240 meter long open flume through the existing sedimentation basin;
- Construction of a new flume and intake structure
- Installation of new gates for the flume and canal intakes.

For the canal distribution system, the rehabilitation works include the repairs and modifications to the 2.25 km long Caraulun main canal, the 0.7 km long Leoai secondary canal, the 5.4 km long Raifusa secondary canal and the 1.83 km long Caraulun secondary canal. The rehabilitation works include the desilting of the canals, and provision of some inverted siphons for cross drainage flow.

The need, if any, for additional works at the tertiary level will be assessed after the detailed topographical surveys are completed.

6. Social Conditions

The total population of Manufahi District was recorded as 38,617 in the 2001 Suco Survey. The project is located within the administrative boundaries of Betano village, which has a total population of more than 3,900 divided into 810 households. Before the Caraulun Scheme was damaged, 600 ha were under cultivation by about 600 families. Approximately 20% of the households were female headed, and the average land holding was 1.0 hectare. During the Indonesian Administration, about 80% of the land in Betano Village was owned by individuals, with a further 19.75% owned by the community, and the remaining 0.25% owned by the Government. The land tenure situation on the irrigated land indicated that 75% were owner-cultivator, 20% were tenant cultivator, and the remaining 5% were share tenants. There is an unresolved issue regarding the re-allocation of about 300 hectares of land, which was previously allocated for a transmigration program, a church youth program, and designated 'government' land under the Indonesian Administration. This will progressively be re-allocated according to traditional law, and the detailed survey to identify land parcels under ARP III will likely provide impetus for this process.

7. Water User Associations

The sociological study completed as part of the feasibility study indicated a higher level of community management prior to 1999 than in most light-to-medium damaged irrigation schemes. Indeed, 14 WUAs were reported at the commencement of the scheme in 1995/6 with a membership of approximately 450 male and 150 female members. These were functioning until the scheme sustained major damage during the 2001 floods. The WUAs were reported to have a relatively high level of cooperation, with groups organized for each tertiary block and the implementation of agricultural extension activities. This was partially due to the support of two field coordinators paid by the Indonesian Administration. MAFF will need to replicate a similar level of support until the groups are fully functioning again. The recent efforts of the *Chefe do Suco* to mobilise farmers in October 2002 to clean the canals in preparation for a pump promised by MAFF indicate a willingness of the WUA members to re-start their rice production. However in light of lessons learnt from the light-to-medium damaged schemes under ARP II, it was considered prudent to establish a number of pre-conditions to reconfirm both the commitment of farmers as well as the Government to ensure that the use of the scheme is maximized following its rehabilitation. These pre-conditions are summarized below.

B. Preconditions Prior to Proceeding with Tender Process

1. Summary

Although the economic analysis carried out for the feasibility study indicates that under the most conservative assumptions the investment for the rehabilitation of the Caraulun Irrigation Project is fully justified, there are still a number of activities required which need to be completed before the contract for the rehabilitation works can be awarded. Broadly, these fall into two categories:

Actions Required at Government Level:

- Regulation on Water User Associations and Responsibilities of the Government and Communities for Irrigation Maintenance

Actions required by MAFF:

- Detailed Topographic Surveys
- Completion of Detailed Designs and Bills of Quantities for Caraulun

- Formation of Water User Associations and Agreement on Land Use
- Staff Allocations from MAFF for Construction Supervision

Full completion of all these requirements will be necessary before the invitation to bid is issued by MAAF. A detailed activity plan has been agreed which indicates measurable outputs to evaluate the progress made towards achieving pre-funding requirements. Progress will be monitored during supervision missions. The activity plan envisages that all required activities will be completed by mid-October 2004. This will allow sufficient time for the bidding process for the rehabilitation works to commence in the dry season of April 2005.

2. Actions Required at Government Level

The development of irrigation within East Timor requires a clear legal framework to ensure that projects developed on presently available water resources are not detrimentally affected by future development strategies based on the same resources. Although there may be adequate water available for most purposes during the wet season when the rivers are flowing, the situation is significantly more critical during the dry season, when irrigation development is based on much lower river base flows.

Ideally, a Water Law would be enacted following discussion and review (among all the various Government Departments) of a Water Strategy and Policy Paper. The Water Law should cover at least the following aspects:

- Water extraction rights, including riparian rights and release of base flows for environmental purposes;
- Priorities for allocation of water extraction from rivers, including allocations for agricultural, rural and urban uses;
- Definition of the rights and responsibilities for various Government Ministries involved in the use and development of water resources;
- Allocation of available water resources for future development within the catchment areas, so that these areas have some reservations for development; and
- Formation of WUAs with the rights and responsibilities for the management of water resources within their project areas.

It is recognized, however, that drafting and enactment of a Water Law is beyond MAFF's control and may not realistically be accomplished during the life of the project.

At a minimum, MAFF should draft and facilitate the enactment of a Ministerial Order approved by the Council of Ministers specifying the following:

- *Clear delineation of responsibilities between the Government and communities and Water User Associations for the rehabilitation, operation and maintenance of irrigation schemes.*

- A firm Government commitment to *give the Caraulun Irrigation Scheme first priority on available water resources in the Caraulun River*, and to restrict any upstream water development projects which may prejudice the availability of water for the Caraulun Irrigation Scheme, particularly in periods when there is limited river flow.

- *A Water User Association regulation*, which may be part of a more general Law related to the legal status of small business, also issued as a Ministerial Order and approved by the Council of

Ministers, conferring official status and recognition to the formation of the Caraulun WUA and its Turnout Service Area Groups. The regulation should specify:

- Minimum numbers and titles of Office Bearers;
- Procedures for the election of Office Bearers;
- Constitution of the Associations;
- Internal and External Audit of Association Accounts;
- Authority of the Association to control and manage water distribution;
- Authority for the Association to assess and collect fees for water charges;
- Authority for the Association to use funds for expenses related to operation and maintenance;
- Authority for the Association to penalize or fine members for various activities including damage to the system, failure to carry out allocated maintenance or other duties, and illegal extraction of extra water from the system;
- Limited authority to resolve land disputes, and allocate unused land within the project areas;
- If agreed by members of the Association, to extend the activities of the association to the bulk purchase of crop inputs such as seeds, fertilizers, pesticides etc; and
- If agreed by members of the association, to extend the activities of the association to bulk selling of produce, and other activities including finance and loans.

Until more general Laws are established within East Timor, the development of irrigation projects which require effective WUAs to operate and manage the systems will be problematic. Although some WUAs have been established on the light-to-medium damaged projects which were rehabilitated under ARP I and ARP II, these associations have to rely on the good will of the members in order to operate the systems, and the WUAs have no procedures for obtain funds for their activities.

Before the Ministerial Orders can be issued, detailed discussions and agreements are necessary to establish the responsibilities related to operation and maintenance which will be assigned to the WUAs, and the source of the funds necessary to carry out these tasks. Generally it would be expected that the Government would provide the total maintenance costs in the first year (or two) of the project, and this would then decrease over a fixed period to some percentage (perhaps 30%). The Government would then be required to provide this final amount each year for operation and maintenance, and this amount should be included in the annual MAFF budget. The actual procedure for using these funds should also be clearly defined. The funds could be used by MAFF for direct maintenance costs under their supervision. Alternatively, the funds allocated by the Government for operation and maintenance could be passed directly into a bank account held by the WUA, and the WUA would make all arrangements for project maintenance. Annual auditing of the accounts would be necessary to ensure transparency in the allocation of these funds. MAFF may need to have a representative on the WUA to provide some technical support in making decisions on the use of available funds.

3. Actions Required by MAFF

SMEC has prepared the detailed Feasibility Study for the Caraulun Project, and as part of the Study SMEC has prepared detailed designs, specifications and tender documents for the project to proceed to the next phase. However, before MAFF can proceed with the tendering and eventual construction process there are a number of activities which must be completed, as a pre-condition for disbursement under the civil works category of the EC grant. These requirements are detailed below:

a. Detailed Topographic Surveys. In order to prepare detailed designs at the field level, as well as for the efficient and equitable operation of irrigation systems, there is an urgent need for MAFF to obtain detailed topographic surveys of the area. These should include contour intervals at perhaps 0.25-meter intervals drawn on the basis of spot height data collected by a total station (or similar system), at sufficiently close intervals so that the contours developed are reasonably accurate and reflect the true situation on the ground. The topographical surveys should result in the preparation of maps showing details of individual land holdings and field boundaries, as well as the positions of roads, canals, rivers, drains and any other natural features. Any infrastructure including houses, farm buildings etc should also be included. This detailed topographical map will be required for the preparation and finalization of the design for the irrigation canal network as well as in the reallocation of any unallocated land and the formation of the WUAs. MAFF will contract out this topographic survey in the first year of project implementation.

b. Completion of the Detailed Designs and Bills of Quantities for Caraulun. After the detailed topographical survey is complete, MAFF (with assistance from the Irrigation Advisor) should review the design documents completed by SMEC and prepare a more detailed design to ensure that equitable water supplies can be supplied to all participating households. Since the present irrigation system adopted is a cascading process, with water flowing from field to field and each farmer relying on the releases of water from the upper fields, this review should ensure that water will be able to reach the extremities of the project area without problems. If necessary, some additional secondary or tertiary canals could be proposed, but this would require agreement amongst WUA members that small amounts of land from surrounding farmers would be provided voluntarily for their construction, necessitating signed agreements similar to those used in ARP II for the location of WUA offices. The Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III (see Annex 10) should be applied to any land acquisition required for the rehabilitation of Caraulun.

SMEC's design documents for Caraulun show a river flowing through part of the system. The design review should consider the procedure for taking water across or around this river, and the possible use of the incised river to drain the area. When the design review is completed, MAFF should revise the Bill of Quantities to include any additional works identified in the detailed final design for the project.

c. Formation of Water User Associations and Agreement on Land Use. As soon as the detailed topographical survey is complete, the process of re-establishing Water User Associations on Caraulun should commence. It is anticipated that there will be a network of WUAs with branches established at the secondary and perhaps tertiary canal levels, each branch with the responsibility for managing water allocations supplied at one or more outlets from the proposed secondary canals. These branches will each provide a representative to the main WUA.

MAFF's WUA Advisor will determine the optimal number of WUA groups to be established on Caraulun, and define the activities needed to create effective and sustainable WUAs for the project.

The process of establishing WUAs on Caraulun may be difficult and time consuming if adequate resources are not allocated by MAFF. When the irrigation system failed, farmers generally abandoned the Caraulun Project area and returned to rainfed areas in the hills where there is generally adequate rainfall for a single rice crop. For dry season rice crop, some farmers are developing cultivated areas elsewhere along the rivers where diversions are possible. This highlights the importance of establishing the WUAs to determine the number of farmers who will return to and utilize the scheme once it is rehabilitated.

The WUA establishment process needs to include signed agreements from all stakeholders involved regarding the 291 ha that remain unresolved (see Annex 11). These include land used by Indonesian transmigrants who may have left the area (64 ha); land owned by the church and previously used for a youth program (165 ha); and government land (62 ha). Traditional and formal leaders, the WUAs, the church and the Government should agree in writing and voluntarily on the use of this land, using traditional land allocation procedures.

Establishment of the WUAs (including the election of office bearers, training, registration, and preparation of an operational and maintenance manual for day-to-day management) and written resolution of the unresolved land area will be required prior to MAFF proceeding with the tendering and rehabilitation of Carulun. IDA will monitor closely the progress towards this requirement during project supervision missions.

d. Staff Allocation from MAFF for Construction Supervision. The rehabilitation works will be carried out by a qualified company selected under International Competitive Bidding. MAFF will also contract out a qualified engineering supervision consultant to oversee the construction process, monitor progress, ensure compliance with the environmental management plan, and ensure quality control of the works in accordance with the original specifications. To limit the costs of the supervising services and to ensure that MAFF Irrigation staff gain experience in supervision of major irrigation works, MAFF should allocate some of its own staff for the supervision of Caraulun.

During the construction period, from the mobilization of the contractor until the issue of the Completion Certificate, MAFF shall provide three qualified staff to work directly under the Site Engineer nominated by the supervising Consultant. The counterpart staff assigned for supervision should not be changed during the construction period and should be involved in the preparation of the Operation and Maintenance manual for the WUAs to ensure close ownership over the scheme. Allocation of three qualified staff on a full-time basis to the scheme would be a pre-condition for tendering.

Figure 1. Action Plan for Meeting Disbursement Conditions for Rehabilitation of Caraulun

CARAULUN IRRIGATION PROJECT
PRE-FUNDING APPROVAL ACTIVITIES AND OUTPUTS
Schedule to Achieve Conditions of Grant Financing

	ACTIVITY	MEASURABLE OUTPUT FOR REVIEW	TIME FRAME (2004)										
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1	Recruitment, Training and Deployment of WUA Organizer (Local Consultant)	1 WUA organizer contracted, trained and assigned in the Project Area											
2	Conduct of Functionality,PBME and O & M Needs Survey of the Existing Water Users Groups/ Farmers Groups	Survey accomplished and 1 Consolidated Report Prepared											
3	Conduct of Massive Information Dissemination on the Project's Rehabilitation & Establishment/Re-activation of the WUA Program	Reports of consultation meetings held in each of the 7 sub-villages plus 1 general meeting of all prospective beneficiaries											
4	Presentation of the Draft and Finalization of the WUA Constitution and By-Laws	1 Constitution and By-Laws translated into Bahasa or Tetun approved by the representatives of the 7 sub-villages											
5	Surveying and Mapping of the Scheme's Service Area	1 Scheme's layout showing the facilities and structures and 1 ownership map showing individual lot boundaries prepared											
6	Design of Irrigation Facilities and Structures	100% of the Required Design Completed											
7	Drafting and Issuance of Ministerial Order (or Council of Ministers') Granting Caraulun Irrigation Project the Priority on Water Use from Caraulun river	1 Order issued and disseminated											

CARAULUN IRRIGATION PROJECT
PRE-FUNDING APPROVAL ACTIVITIES AND OUTPUTS
Schedule to Achieve Conditions of Grant Financing

	ACTIVITY	MEASURABLE OUTPUT FOR REVIEW	TIME FRAME (2004)										
			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
8	Identification, Listing & Formation of Actual Farmers by Water Supply/Source into Turnout Service Area Groups (TSAGs) in the Existing Areas	Listing of the 14 existing water users groups verified and finalized											
9	Identification, Listing & Formation of Actual Farmers by Water Supply/Source into Turnout Service Area Groups (TSAGs) in New Areas	Listing of all farmer groups including additional groups in at least 80% of all land allocated/owned finalized											
10	Resolution of All Land Allocation Issues	At least 80% of land allocation issues resolved											
11	Consolidation of the Turnout Service Area Groups (TSAGs) into Water Users Association	All TSAGs consolidated into 1 WUA for Caraulun irrigation scheme											
12	Election of the Board of Directors & Executive Officers, Composition of the Representative General Assembly, Creation of the Working Committees & Adoption of the Constitution and By-Laws	All members of the BOD (at least 5), Executive Officers and 5 working committees elected/appointed; Constitution and By-Laws adopted by the Representative General Assembly											
13	Drafting and Issuance of a Ministerial Order (or Council of Ministers') Granting Official Status/Recognition to the Established WUA in Caraulun	1 Order issued and disseminated											
14	Preparation of the Draft Operational Manual for Caraulun Irrigation Scheme	1 Draft Manual prepared & translated to Bahasa or Tetun											

Technical Annex 14: Project Preparation and Supervision

TIMOR-LESTE: Third Agriculture Rehabilitation Project

Project Schedule	*Planned*	*Actual*
Time taken to prepare the project (months)	4.5	
First Bank mission (identification)	May 27, 2003	June 3, 2003
Appraisal mission departure	August 15, 2003	September 1, 2003
Negotiations (TFET Grant)	September 9, 2003	December 5, 2003
Planned Date of Effectiveness	January 15, 2004	January 25, 2004

Prepared by: Ministry of Agriculture, Forestry and Fisheries, Timor-Leste
Preparation assistance:

Bank staff who worked on the project included:

Name	***Specialty***
World Bank Staff:	
Sofia Bettencourt	Sr. Natural Resource Economist, Task Team Leader
Dely P. Gapasin (Consultant)	Sr. Agriculturalist, PIP Preparation Coordination
Loty Salazar	Information Specialist
Helen Moriarty (Consultant)	Social/NRM Specialist
Brian Brandenburg (Consultant)	Livestock Specialist
Edio da Costa	Institutional Specialist and Project Officer
Michael Dalton (Consultant)	Project Economist
Chris Davey (Consultant)	Irrigation Specialist
Abdul Haji (Consultant)	Financial Management Specialist
Nurul Alam	Sr. Procurement Specialist
Lisa Lui	Project Lawyer and Sr. Counsel
Vivianti Rambe (Consultant)	Environmental Specialist
Svend Jensby	Sr. Sociologist
Hilarion Bruneau	Sr. Finance Officer (Disbursements)
Cecilia Belita	Program Assistant
Cynthia Dharmajaya	Program Assistant
Donna Marie Quartley-Parker	Program Assistant
Joeann Buhagiar	Office Assistant
Ronald Isaacson	Project Advisor/Deputy Chief of Mission
Carlos Escudero	Chief Counsel
Karin I. Nordlander	Lead Counsel
Glenn Morgan	Environmental Analysis and Safeguards Reviewer
Lars Lundt	Safeguards Committee Chairman
Hilary Kiell	Sr. Procurement Specialist
Denis Robitaille	Regional Procurement Advisor
Hoonae Kim	Sector Manager
Shawki Barghouti	Peer Reviewer
Marie-Helen Collion	Peer Reviewer
Eija Pehu	Peer Reviewer
Salah Dargouth	Peer Reviewer
Wayne Gum	External Peer Reviewer (Oxfam)

European Commission Partners:	
Guglielmo Colombo	Head of Office, European Commission, Dili
Stefan Agne	Administrator, EuropeAid Cooperation Office, European Commission
Juan Planas	First Counsellor, European Commission, Jakarta
Bart Smet	European Commission, Jakarta
Rowena Cabigon	Assistant to Head of Office, European Commission, Dili
Joerg Hartmann (Consultant)	Head of Mission, EC Project Identification, Timor-Leste
Adam Sendall (Consultant)	European Commission, EC Project Identification Timor-Leste
Bill Bradfield (Consultant)	European Commission, EC Project Identification, Timor-Leste

Counterparts who worked on the project included:

Name	*Specialty/Unit/Organization*
A. East Timorese	
H. E. Eng. Estanislau Aleixo da Silva	Minister for Agriculture, Forestry and Fisheries
H. E. Francisco de Sá Benevides	Vice Minister for Agriculture, Forestry and Fisheries
H. E. Aicha Bassarewan	Vice Minister for Planning and Finance
Cesar José da Cruz	Permanent Secretary of Agriculture/Director of PMU (ARP II)
Mario Ribeiro Nunes	National Director of Forestry, Forestry Department, MAFF
Narciso de Carvalho	Director of Fisheries Resources and Marine Environment, MAFF
Domingos Gusmão	Director of Livestock, MAFF
Florindo Barreto	Director of Irrigation, MAFF
Lourenço Borges Fontes	Director for Research and Extension Center, MAFF
Deolindo da Silva	Director for Crop Production, MAFF
Maria Odete de Céu Guterres	Director of Administration, MAFF
Fernando dos Santos	Monitoring and Evaluation Officer and Livestock Officer, MAFF
Arcanjo da Silva	Director of Policy, Planning and Program Services
Ervina Pinto Soares	Finance Officer, MAFF
Maria Virgina P. Belo	Finance Officer, MAFF
Edmundo da Costa	Procurement Officer, MAFF
Boaventura Freitas	Procurement Consultant, MAFF
Egas Brites da Silva	Training Coordinator, MAFF
Luis Godinho	Director, Reforestation and Forest Rehabilitation, MAFF
Acacio da Costa	District Fisheries Officer
Lourenço Amaral	Fisheries Officer, MAFF
Higinio Barros	Forestry Utilization Officer
Gil Rangel da Cruz	Director for Soil Conservation, Crop Production Division, MAFF
Guilhermo Piedade Boavida	ASC Consultant, MAFF
Lourenço dos Reis	Director for Aquaculture, MAFF
Cipriana Soares	Administrative Assistant
Ivone Goncalves	Vice Minister's Secretary, MAFF
Natalia Benevides	Administrative Assistant, MAFF
Francisco Amaro	Administrative Assistant, MAFF
Mr. Gastão de Sousa	Acting Director, Planning and External Assistance, Ministry of Planning and Finance
Mr. José Luis Lopes da Cruz	Finance Officer and Focal Point for External Cooperation, Ministry of Foreign Affairs and Cooperation

Counterparts who worked on the project included:

Name	*Specialty/Unit/Organization*
A. Foreign Advisors	
Ismael D. Tabije (Consultant)	PMU Advisor, MAFF
Stephen Dunn (Consultant)	Livestock Advisor, MAFF
David Hill (Consultant)	Procurement Advisor, MAFF
Kong K. Mu (Consultant)	Finance Advisor, MAFF
Erwin Nacuray (Consultant)	NRM Advisor, MAFF
James Oduk (Consultant)	Irrigation Advisor, MAFF
Felimar Torrizo (Consultant)	Agriculture Service Centres Management Advisor, MAFF
Genaro San Valentin (Consultant)	CGIAR Liaison Secretariat Advisor/Crops Production Advisor, MAFF
Leonardo Gonzales (Consultant)	Sr. Agriculture Policy Advisor, MAFF
Remegio Alquitran (Consultant)	Community Development Specialist, MAFF
Arno Haegens (Consultant)	Communications Specialist, MAFF
Bayani Ofrecio (Consultant)	WUA Specialist, MAFF
José Gonçalves	Investment Advisor, Ministry of Development and Environment
Joao Nataf	Legal Advisor, Ministry of Planning and Finance

Project Processing Budget and Schedule

Project Budget (US$000)	*Planned (At Activity Initiation Stage)*	*Actual*
From Preparation to Appraisal		
Bank Budget/TFET	250.0	212.3
Others (CTF)	20.0	22.0
From Appraisal to RVP Approval		
Bank Budget/TFET	150.0	228.8
Others		
Total	400.0	463.1

Technical Annex 15: Documents in the Project File

TIMOR-LESTE: East Timor Third Agriculture Rehabilitation Project

A. Project Implementation Plan (By Ministry of Agriculture, Forestry and Fisheries)

Analysis of Timor Lorosa'e Household Survey for Ministry of Agriculture, Forestry and Fisheries, March 2002.

Annual Action Plans and Quarterly Review Matrixes for FY2003-04, March 7, 2003.

Timor-Leste Third Agriculture Rehabilitation Project (ARP III) Policy Guidelines for the Negotiations over the Use and Development of Land for ARP III, November 15, 2003.

Environmental Analysis for ARP III. October 16, 2003.

Feasibility Study Report of Seical Up, Maliana I, Uatolari I and Caraulun Irrigation Schemes, SMEC International PTY LTD, 6 Volumes, December 10, 2002.

National Prioritization and Sequencing, February 17, 2003.

Operational Manual for ARP Participatory Development and Natural Resources Management, November 2003.

Operation Manual for Community Irrigation and Road Rehabilitation, November 2003.

Procurement Manual for ARP III, December 2003.

Project Implementation Plan of the Third Agriculture Rehabilitation Project, November 8, 2003.

The Road Map (for the implementation of the National Development Programs), *Republica Democratica de Timor-Leste*, Dili, April 15, 2003.

B. Bank Staff Assessments

Agriculture Rehabilitation Project, Implementation Completion Report, The World Bank, March 25, 2003-06-12.

Second Agriculture Rehabilitation Project, Project Appraisal Document, The World Bank, September 28, 2001.

Social Appraisal Report for the Third Agriculture Rehabilitation Project, The World Bank, March 2003.

Mid-Term Review of the Second Agriculture Rehabilitation Project, The World Bank, January 2003.

Technical Annex 16: Statement of Loans and Credits

TIMOR-LESTE: Third Agriculture Rehabilitation Project

27-Oct-2003

Project ID	FY	Purpose	Original Amount in US$ Millions					Difference between expected and actual disbursements	
			IBRD	IDA	SF	Cancel.	Undisb.	Orig	Frm Rev'd
P082190	2004	Transition Support Program II	0.00	0.00	0.00	0.00	4.17	0.00	0.00
P082366	2003	Timor-Leste Petroleum (EASEG)	0.00	0.00	0.24	0.00	0.00	0.24	0.00
P082942	2003	TP-Second Timor-Leste Petroleum Project	0.00	0.00	1.28	0.00	1.51	0.00	0.00
P075342	2002	TP THIRD COMMUNITY EMPOWERMENT & LOCA	0.00	0.00	1.50	0.00	0.19	1.20	0.00
P073911	2002	Second Agriculture Rehabilitation Proj.	0.00	0.00	8.00	0.00	2.00	7.80	0.00
P072654	2002	TP-*Small Enterprises Project II*	0.00	0.00	7.50	0.00	5.91	7.50	0.00
P072647	2002	TP-FUNDAMENTAL SCHOOL QUALITY PROJEC	0.00	0.00	13.90	0.00	9.36	0.00	0.00
P072358	2001	TP-SECOND COMMUNITY EMPOWERMENT PROJ	0.00	0.00	8.50	0.00	2.01	8.50	0.00
P072461	2001	TP-Economic Institutions for Capacity Bl	0.00	0.00	0.50	0.00	0.02	0.50	0.00
P072648	2001	TP-2ND HEALTH SECTOR REHAB	0.00	0.00	12.60	0.00	7.60	0.14	0.00
P070294	2000	TP-Health Sector Rehab. & Dev. Project	0.00	0.00	12.70	0.00	1.44	12.70	0.00
		Total:	0.00	0.00	66.72	0.00	34.20	38.58	0.00

TIMOR-LESTE
STATEMENT OF IFC's
Held and Disbursed Portfolio
June 30 - 2003
In Millions US Dollars

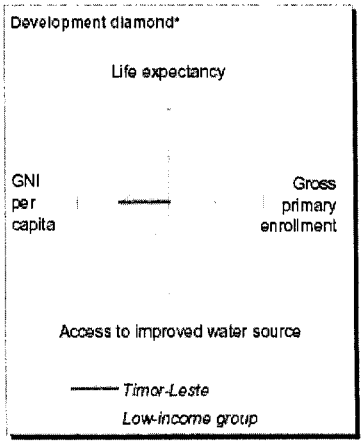
		Committed				Disbursed			
		IFC				IFC			
FY Approval	Company	Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Parti
	Total Portfolio:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0

		Approvals Pending Commitment			
FY Approval	Company	Loan	Equity	Quasi	Partic
	Total Pending Commitment:	0.00	0.00	0.00	0.00

Technical Annex 17: Country at a Glance

TIMOR-LESTE: Third Agriculture Rehabilitation Project

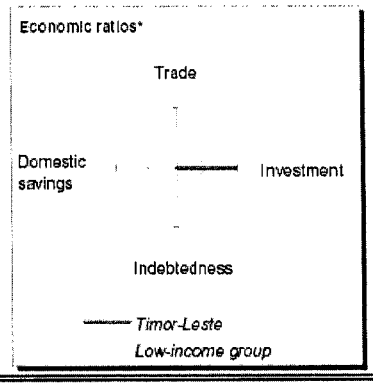
POVERTY and SOCIAL	Timor-Leste	East Asia & Pacific	Low-income
2002			
Population, mid-year *(millions)*	0.75	1,838	2,495
GNI per capita *(Atlas method, US$)*	460	950	430
GNI *(Atlas method, US$ billions)*	0.35	1,740	1,072
Average annual growth, 1996-02			
Population *(%)*	-2.2	1.0	1.9
Labor force *(%)*	..	1.2	2.3
Most recent estimate (latest year available, 1996-02)			
Poverty *(% of population below national poverty line)*	..	..	..
Urban population *(% of total population)*	8	38	30
Life expectancy at birth *(years)*	..	69	59
Infant mortality *(per 1,000 live births)*	85	33	81
Child malnutrition *(% of children under 5)*	..	15	..
Access to an improved water source *(% of population)*	..	76	76
Illiteracy *(% of population age 15+)*	..	13	37
Gross primary enrollment *(% of school-age population)*	..	106	95
Male	..	105	103
Female	..	106	87



KEY ECONOMIC RATIOS and LONG-TERM TRENDS

	1982	1992	2001	2002
GDP *(US$ billions)*	..	..	0.39	0.39
Gross domestic investment/GDP	..	..	25.0	..
Exports of goods and services/GDP	..	..	..	..
Gross domestic savings/GDP	..	..	-47.0	..
Gross national savings/GDP	..	..	31.5	..
Current account balance/GDP	..	..	-1.5	..
Interest payments/GDP	..	..	..	..
Total debt/GDP	..	..	..	..
Total debt service/exports	..	..	..	..
Present value of debt/GDP	..	..	..	..
Present value of debt/exports	..	..	..	..

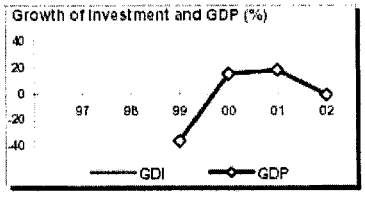
	1982-92	1992-02	2001	2002	2002-06
(average annual growth)					
GDP	..	..	18.2	-0.5	..
GDP per capita	..	..	15.7	..	..



STRUCTURE of the ECONOMY

	1982	1992	2001	2002
(% of GDP)				
Agriculture	..	..	25.4	..
Industry	..	..	17.5	..
Manufacturing	..	..	2.5	..
Services	..	..	57.1	..
Private consumption	..	..	..	..
General government consumption	..	..	..	..
Imports of goods and services	..	..	..	..

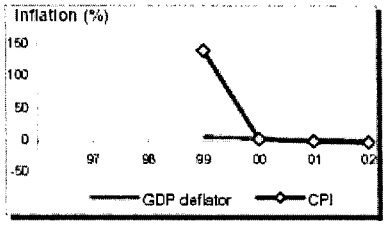
	1982-92	1992-02	2001	2002
(average annual growth)				
Agriculture	..	..	-2.3	..
Industry	..	..	9.5	..
Manufacturing	..	..	6.9	..
Services	..	..	..	..
Private consumption	..	..	..	..
General government consumption	..	..	..	..
Gross domestic investment	..	..	..	..
Imports of goods and services	..	..	..	..



* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

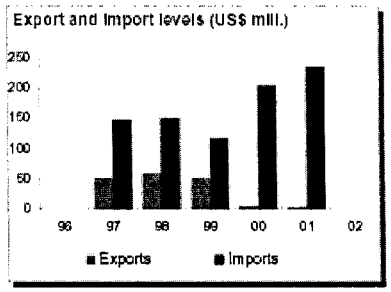
PRICES and GOVERNMENT FINANCE

	1982	1992	2001	2002
Domestic prices				
(% change)				
Consumer prices	..	..	0.0	-2.0
Implicit GDP deflator	..	..	2.5	0.2
Government finance				
(% of GDP, includes current grants)				
Current revenue	..	..	7.0	..
Current budget balance	..	..	8.5	..
Overall surplus/deficit	..	..	-5.2	..



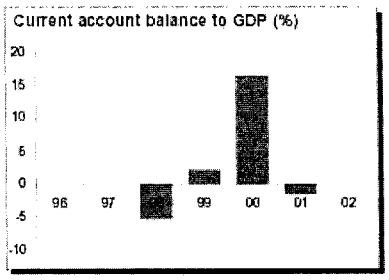
TRADE

	1982	1992	2001	2002
(US$ millions)				
Total exports (fob)	..	..	4	..
Coffee	..	..	3	..
n.a.	..	..	..	..
Manufactures	..	..	..	..
Total imports (cif)	..	..	237	..
Food	..	..	..	..
Fuel and energy	..	..	..	..
Capital goods	..	..	..	..
Export price index *(1995=100)*	..	..	..	..
Import price index *(1995=100)*	..	..	..	..
Terms of trade *(1995=100)*	..	..	..	..



BALANCE of PAYMENTS

	1982	1992	2001	2002
(US$ millions)				
Exports of goods and services	..	..	..	..
Imports of goods and services	..	..	..	..
Resource balance	..	..	-303	..
Net income	..	..	4	..
Net current transfers	..	..	293	..
Current account balance	..	..	-6	..
Financing items (net)	..	..	..	..
Changes in net reserves	..	..	..	..
Memo:				
Reserves including gold *(US$ millions)*	..	..	..	..
Conversion rate *(DEC, local/US$)*	..	..	1.0	1.0



EXTERNAL DEBT and RESOURCE FLOWS

	1982	1992	2001	2002
(US$ millions)				
Total debt outstanding and disbursed	..	..	..	..
IBRD	..	..	..	..
IDA	..	..	..	..
Total debt service	..	..	..	..
IBRD	..	..	..	..
IDA	..	..	..	..
Composition of net resource flows				
Official grants	..	..	..	..
Official creditors	..	..	..	..
Private creditors	..	..	..	..
Foreign direct investment	..	..	..	..
Portfolio equity	..	..	..	..
World Bank program				
Commitments	..	..	..	..
Disbursements	..	..	..	..
Principal repayments	..	..	..	..
Net flows	..	..	..	..
Interest payments	..	..	..	..
Net transfers	..	..	..	..

Note: This table was produced from the Development Economics central database. 8/20/03