AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D. C. 20523

PROJECT PAPER

SRI LANKA: Rehabilitation Assistance Project (383-0107)

July 7, 1988

REHABILITATION ASSISTANCE PROJECT

REHABILITATION ASSSISTANCE PROJECT

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LIST OF ACRONYMS

ACAS	Assistant Commissioner of Agrarian Services
ADB	Asian Development Bank
AGA	Assistant Government Agent
ASC	Agricultural Service Center
BOC	Bank of Ceylon
CB	Central Bank
CFC	Ceylon Fertilizer Cooperative
CFR	Code of Federal Regulations
CISIR	Ceylon Institute for Scientific and Industrial Research
CRB	Cooperative Rural Banks
DA	Department of Agriculture
DAS	Department of Agrarian Services
D/I	Director/Irrigation
DD/I	Deputy Director/Irrigation
ERD	External Resources Department
DRCC	District Rehabilitation Coordinating Committee
EEC	European Economic Community
ERD	External Resources Department
ESI	Essential Structural Improvement
GA	Government Agent
GDP	Gross Domestic Product
GSL/GOSL	Government of Sri Lanka
GPS	Guaranteed Price Scheme
HG	Housing Guaranty
IBRD	International Bank for Reconstruction and Development
ID	Irrigation Department
IDA	International Development Agency
IPKF	Indian Peace Keeping Force
IRDP	Integrated Rural Development Project
ISMP	Irrigation Systems Management Project
MADR	Ministry of Agriculture Development and Research
MIRP	Major Irrigation Rehabilitation Project
MLLD	Ministry of Land and Land Development
MFP	Ministry of Finance and Planning
MRR	Ministry of Reconstruction and Rehabilitation
NCRCS	New Comprehensive Rural Credit Scheme
NGO	Non-Government Agency
NHDA	National Housing Development Authority
NORAD	Norwegian Agency for Development NRSC
NRSC	National Rehabilitation Steering Committee
ODA	Overseas Development Authority
OFC	Other Food Crops
OFDA	Office of Foreign Disaster Assistance
PB	Peoples Bank
PC	Provincial Council
PMB	Paddy Marketing Board
PVO	Private Voluntary Organization
RAP	Rehabilitation Assistance Project
REPPIA	Rehabilitation of Persons, Properties and Industries Authority

SLICM	National Council of Cooperatives and the Institute of Cooperative Management
SMI	Small and Medium Industries
TCCS	Thrift Credit and Cooperative Society
VIRP	Village Irrigation Rehabilitation Project
WRB	Water Resources Board

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete)

Amendment Number

DOCUMENT CODE: 3

2. COUNTRY/ENTITY: SRI LANKA

3. PROJECT NUMBER: 383-0107

4. BUREAU/OFFICE: ASIA/NEAR EAST

5. PROJECT TITLE (maximum 40 characters): REHABILITATION ASSISTANCE PROJECT

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 07 DD 31 YY 92

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 88 B. Quarter 4 C. Final FY 92

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 88 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total	1200	8810	10010	6725	43275	50000
(Grant)	(1200)	(8810)	(10010)	(6725)	(43275)	(50000)
(Loan)	(-)	(-)	(-)	(-)	(-)	(-)
Other U.S. 1.	-	-	-	-	-	-
Other U.S. 2.						
Host Country	-	8170	8170	-	27000	27000
Other Donor(s)	52000	111000	143000	175000	243000	418000
TOTALS	53200	127980	161180	181725	313275	495000

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) ARDN	260			-	-	10010	-	50000	-
(2)									
(3)									
(4)									
TOTALS				-	-	10010	-	50000	-

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 930 | 010 | 021 | 043 | 064 | 130

11. SECONDARY PURPOSE CODE: -

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	BR	COOP	BS				
B. Amount	6000	16800	7200				

13. PROJECT PURPOSE (maximum 480 characters)

To promote incomes, employment and agricultural productivity in the northern and eastern portion of Sri Lanka by assisting in the restoration of a viable productive economy in the areas of agriculture, irrigation, private sector and housing.

14. SCHEDULED EVALUATIONS

Interim MM 09 YY 89 | MM YY | Final MM 02 YY 92

15. SOURCE/ORIGIN OF GOODS AND SERVICES: ☒ 000 ☐ 941 ☐ Local ☐ Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a ____ page PP Amendment)

Clearance: CTR:RBHartwell

17. APPROVED BY

Signature: Gary Nelson for

Title: Peter J. Bloom, Mission Director

Date Signed: MM 07 DD 17 YY 87

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

UNITED STATES A. I. D. MISSION TO SRI LANKA
P.O. Box 106
Colombo 3, Sri Lanka.
Telephone: 21271 - 21532

PROJECT AUTHORIZATION

SRI LANKA

Name of Project: Rehabilitation Assistance Project

Number of Project: 383-0107

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Rehabilitation Assistance Project for the Government of the Democratic Socialist Republic of Sri Lanka (the "Cooperating Country") involving planned obligations of not to exceed $50,000,000 in grant funds over a three year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project. The planned life of the project is four years from the date of initial obligation. This authorization is subject to the notification of the project to Congress and expiration of the notification period without objection.

2. The project consists of assisting the Cooperating Country as part of a multidonor effort to restore a viable and productive economy in the north and east of Sri Lanka in the areas of shelter, agricultural production and incomes. Funds will be provided for grant and grant/loan assistance packages to affected households and enterprises, restoration of irrigation systems, limited commodities, technical assistance, training, and operating costs.

3. The Project Agreement which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

a. Source and Origin of Commodities, Nationality of Services

Commodities financed by A.I.D. under the project shall have their source and origin in the Cooperating Country or in the United States except as A.I.D. may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have the Cooperating Country or the United States as their place of nationality, except as A.I.D. may otherwise agree in writing.

Ocean shipping financed by A.I.D. under the project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

b. Other

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the Cooperating Country shall furnish, in form and substance satisfactory to A.I.D., evidence of funding control/ accountability procedures for the disbursement of funds. In addition, prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the Cooperating Country and A.I.D. will consult to determine whether conditions in the affected area will permit effective implementation of the project.

c. Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance other than technical assistance, the Cooperating Country shall furnish in form and substance satisfactory to A.I.D., evidence of annual workplans.

d. The Cooperating Country shall covenant to consult with A.I.D. on all aspects of the rehabilitation situation as it affects project implementation.

Clearances:

A. N. Cohen, A/PRJ
B. J. Flynn, AGR
C. J. Pinney, ENG
D. D. Tsitsos, HSG
E. T. Penner, PSD
F. U. Ernst, A/PRM
G. R. Hartwell, A/CTR

Signature
Gary Nelson
Acting Mission Director

Date: 07 July 1988

Drafted: L.Chiles, RLA

GUARANTY AUTHORIZATION

PROJECT NO. 383-HG-005

PROVIDED FROM: Housing Guaranty Authority

FOR: Sri Lanka - Low Income Shelter Rehabilitation Program

Pursuant to the Foreign Assistance Act of 1961, as amended (FAA), the delegations of authority issued thereunder, and the specific delegation of authority to the Mission Director, USAID/Sri Lanka contained in State cable number 204415, I hereby authorize the issuance to eligible U.S. investors (Investors) acceptable to A.I.D. of guaranties pursuant to Section 222 of the FAA of not to exceed Fifteen Million United States Dollars ($15,000,000) in face amount. The guaranties shall assure against losses (of not to exceed one hundred percent (100%) of loan investment and interest) with respect to loans, including any refinancings thereof, made to finance housing and infrastructure projects in Sri Lanka.

These guaranties shall be subject to the following terms and conditions:

1. Term of Guaranty: The loans may extend for a period of up to thirty (30) years from the date of disbursement, may include a grace period of up to ten (10) years on repayment of principal and a grace period of payment of interest, and may include such terms and conditions as shall be acceptable to A.I.D. The guaranties of the loans shall extend for a period beginning with the disbursements of the loans and shall continue until such time as the loans have been paid in full.

2. Interest Rate: The rate or rates of interest payable to the Investor pursuant to the loans shall not exceed that prescribed pursuant to Section 223(f) of the FAA and shall be consistent with rates of interest generally available for similar types of loans made in the long-term U.S. capital markets.

3. Government of Sri Lanka Guaranty: Prior to disbursement of any loan amounts pursuant to this Guaranty Authorization, a written guaranty to indemnify A.I.D. against all losses arising by virtue of A.I.D.'s guaranties to the Investor or from non-payment of the guaranty fee shall be provided in a form satisfactory to A.I.D. by the Government of Sri Lanka.

4. Fee: The fee of the United States shall be payable in dollars and shall be one-half percent (1/2%) per annum of the outstanding guarantied amount of the loans plus a fixed amount equal to one percent (1%) of the amount of the loans authorized or any part thereof, to be paid as A.I.D. may determine upon disbursement of the loans.

5. Other Terms and Conditions: The guaranties shall be subject to such other terms and conditions as A.I.D. may deem necessary.

Gary Nelson
Gary L. Nelson
Acting Director
USAID/Sri Lanka

07 July, 1988
Date

Clearances:	RLA:LChiles		Date	7/1/88
	GC/PRE:MKitay	State 204415	Date	Recd 6/27/88
	PRM:UErnst		Date	7/5/88
	RHUDO:DPainter	Cleared on the telephone	Date	[illegible]
	MHA:JJDHagger		Date	7/1/88

III. A. PROJECT RATIONALE

1. Introduction

Ethnic conflict, such as the one that has raged in Sri Lanka since 1983, is not new to the island. This most recent conflict, however, severely affected the nation as it began to make real progress toward economic and social development. The resulting devastation has affected not only the North and East of the country, where most of the violence took place, but the country as a whole.

During the six years of peace after the current administration came into office, Sri Lanka had made major strides in achieving prosperity with a liberal, free market economy. Rice production approached national consumption needs; the trade balance was generally positive, and tourism began making an important economic contribution. But as the conflict began to absorb more and more of the people and resources of the country, rice imports began once again to rise, government expenditures for arms and soldiers began to tax the national budget severely and tourism declined.

The effects of the conflict have struck the eight districts of the North and the East of Sri Lanka most dramatically. Farmers have had to abandon their fields; small businesses have suffered destruction; public infrastructure, including irrigation systems, have not received necessary maintenance or been destroyed; and housing of rich and poor has suffered widespread damage. The damage to any given sector varies from district to district. Farmers getting inadequate yields because of poor tillage and insufficient fertilizer application have suffered from the conflict as surely as those whose fields lie fallow until they can return from secure areas to cultivate them. Businessmen who have borrowed at exhorbitant interest rates from the informal credit sector to replenish stocks or purchase equipment have suffered as surely as those whose businesses remain shut.

The Government of Sri Lanka (GSL) is now in the final stages of organizing a massive program to rehabilitate those parts of the island most affected by the conflict. They have succeeded in mobilizing massive donor support for this program and in ensuring close donor coordination. A National Reconstruction Steering Committee (NRSC) in Colombo has been complemented by the donors, led by the World Bank (WB), who have set up their own informal forum to help coordinate their programs.

In consultation with the NRSC and the other donors, USAID has proposed to fund the overall rehabilitation effort in the eight affected districts of the North and East of Sri Lanka. USAID will support programs in Sri Lanka where it has experience and where its contributions can achieve useful short term results.

Housing, considered to be the most heavily affected sector in the North and East and one essential to future stability, will be a major target for assistance.

Irrigated paddy agriculture was the backbone of the economies of the affected area, while many farmers derived important supplementary incomes from other food crops (OFC) as well. A well-developed micro and small business sector exists in those same areas to service and support the agricultural economy. Agriculture and business have suffered severe decapitalization as a result of the conflict and are in serious disarray. Until they recover, the North and East will depend on external assistance for basic needs.

USAID will support both of these key economic sectors. Farming in the affected areas is difficult without adequate and timely supplies of water. USAID will help fund the national programs for the rehabilitation and repair of irrigation systems which the conflict has caused to deteriorate. Even with water, however, farmers without tools or sources of traction for tillage cannot cultivate. Without modern inputs they cannot achieve the yields to make agriculture an attractive economic undertaking. USAID will help fund a national program of grant and loans to farmers to enable them to purchase what they need to return to productivity.

Micro and small businesses are essential to reinforce all economic activity in the North and East since without capital they cannot rebuild damaged premises, replace lost equipment, or purchase stock. USAID will provide funding for those national programs which are aimed at getting businesses back in operation.

Finally, and perhaps most important, many of the people who will benefit from the USAID program have seen their housing destroyed or damaged during the years of conflict. Stability cannot return to the area without shelter for residents. Without shelter for their families, farmers cannot farm or businesses operate. Home-based microenterprises cannot function. USAID will fund grants to beneficiaries for housing under a unified grant and loan scheme.

The Rehabilitation Assistance Project (RAP) is structured to provide essential resources to the affected areas quickly through existing national programs. If it can accomplish that, it will make a major contribution to the success of Sri Lanka's rehabilitation program.

2. Relation to USAID Strategy

The four sectors in which USAID will support GSL rehabilitation efforts in the North and East are those in which the ongoing development assistance program has worked successfully for a number of years. The Mission has experienced and well qualified staff, both Sri Lankan and American, in housing, agriculture, irrigation, and private sector development. This staff will enable the Mission to support the RAP program and to advise the GSL and instruct the contracted technical assistance on both policies and implementation.

In each component USAID has years of experience: In irrigation and agriculture, the Mission has projects in diversified crop research, irrigation systems construction, rehabilitation and management, and environmental management. Soon, the Mahaweli Agriculture and Rural Development and Downstream Support projects will enlarge the portfolio. Nearly US$ 100 million in Housing Guaranty (HG) loan funds has already been programmed to support the housing sector.The shelter aspect of this program has resulted in improved standards of living in rural and urban areas, while the credit aspect has moved toward more private sector and market-oriented financing of housing. In the private sector a Mahaweli Enterprise Development Support project is now being completed and a Development Studies & Training project for policy assistance is underway.

The principal themes of the USAID assistance program, as outlined in the CDSS are also reflected in the RAP. The rehabilitation effort for productive sectors will rely on market forces to move inputs to affected areas, to market surplus production, and to deliver credit to those who need it. USAID has led a multi-donor effort to raise interest rates within the Government's unified program to approach market levels. These interest rates will also contribute to maximizing cost recovery from program activities.

Implementation of the RAP depends largely on existing GSL and private sector organizations. This represents the most efficient use of available resources. No new institutions are being created exclusively for the project. Existing private sector distribution and marketing networks will carry much of the input distribution and marketing burden. Local financial organizations such as the TCCSs and CRBs will carry much of the institutional burden in credit components of the program. They will receive help in the form of capital and very limited technical assistance. RAP should generate improved rural incomes, productivity, consumption, and stability in the affected areas of the country. If the project can assist people to return to pre-hostility levels of prosperity and growth, it will have succeeded in furthering the overall objectives of USAID's Sri Lanka program as well as in satisfying the needs of the people devastated by the conflict.

3. Donor Coordination

The success of the RAP depends on the ability of the NRSC to coordinate donor resources and policies. But donors also will have to maintain close working relationships among themselves if rehabilitation is to achieve its objectives.

Both sides have made good starts toward such coordination. Soon after the signing of the Peace Agreement in July 1987, the donors met in Paris to pledge support to the rehabilitation program. Pledges of nearly US$500 million came from a wide range of bilateral and multilateral donors, led by the IBRD, USAID and the ADB. Although certain donors argued for a district by district approach

to rehabilitation, where a donor would support the entire rehabilitation program in a determined geographic area, the GSL finally opted for a sector approach. Donor assistance will go to specific areas (agriculture, fisheries, housing, etc.) in which the donor has particular competence or interest. The NRSC will ensure complete coverage of the affected districts and of affected economic and social sectors by negotiating with individual donors and with groups of donors.

To date, this system has worked reasonably well. Certain donors, such as the UNDP intend to provide only technical assistance to the planning and monitoring aspects of the program. Others, such as Japan and India, will provide commodities. Most of the other donors, including USAID, the IBRD and the ADB have chosen activities which reflect their historic interests and programs in Sri Lanka and will provide assistance to all of the affected districts.

Although few programs are actually underway -- a US funded OFDA program, the ADB road rehabilitation program, the UNDP TA to the NRSC/DRCCs, donor funded NGO activities -- the donors have begun their individual planning processes in close collaboration. For example, the IBRD fact-finding mission prepared its initial assessment of damages in the North and East with USAID, which provided two members of the assessment team. The IBRD has taken the lead in establishing a donor group which meets each month to discuss policy and coordination issues. All of the donors represented in Colombo attend these meetings.

The donors participating in the rehabilitation program have welcomed the GSL's establishment of the NRSC as a coordinating body for all of the line ministries who will implement specific activities with the overall program. The MRR will collect and distribute to the district level all funds for the rehabilitation program making monitoring easier for donors and providing a forum for discussion.

Housing

Housing is the sector in which the greatest number of donors have pledged support to the rehabilitation effort: Australia, Netherlands, Norway, Sweden, UNHCR, and the World Bank, in addition to USAID. The EEC and Canadian programs also have housing components. The NRSC has acted dynamically to develop registration procedures which all the donors have accepted. They have established income categories to determine levels of benefits and have identified grant disbursement and lending institutions to distribute donor, NGO, and GSL funds.

USAID is providing grant and loan funds for all affected districts, while the IBRD and other donors will provide loan funds. All USAID housing funds, whether grant or loan will be used to fund the GSL's program of housing grants to beneficiaries. In Batticaloa and Eastern Trincomalee, USAID funds will serve, if needed, to complement grant packages, including housing offered by NORAD and the EEC, respectively. In Vavuniya and Mannar, as well as in Western Trincomalee, the Canadians expect to provide some grant funds for

building materials and tools to approximately 2,000 Tamil families and 1,000 Muslim families. USAID grant funds will complement these programs if needed to bring the overall level of grants afforded these families up to NRSC-determined minimum levels.

The NRSC has established a policy that grant benefits will be disbursed to, and used by, beneficiaries before the beneficiaries may receive loan funds. As most other donor funds in the housing program will go out as loans, USAID grant funds likely will be disbursed first. The GSL had planned to have NGO's match the grants offered by the rehabilitation program, but the NGO's working in the affected districts have not been able to provide the amounts needed. Based on estimates of numbers of households affected, USAID's contribution will cover approximately half the amount needed for the two lowest income levels. The GSL will obtain funds for the other half from other sources.

USAID is the only donor planning technical assistance in housing. The advisers will monitor the implementation of the DA grant and HG loan facilities and advise the national housing program on policy matters of public and private sector credit, land tenure and titling, and administrative and managerial efficiency.

Irrigation

USAID is the only donor providing direct assistance to the irrigation sector so coordination is not an issue. Many donors, however, plan to have irrigation projects in affected districts. Policies and procedures should follow similar lines, particularly where other donor projects will carry out works similar to those planned under the USAID irrigation rehabilitation component or where other projects will pick up the operation, maintenance and improvement of systems rehabilitated with USAID funds. The USAID irrigation rehabilitation program is based on discussions with ID officials in Colombo and the field and thus reflects ID policies and procedures.

The donors involved in irrigation projects which have components in the North and East include:

The IBRD, Canada and Switzerland which jointly fund the MIRP. Three of the seven MIRP systems are in the affected districts.

The IBRD funds the rehabilitation of 1200 minor tank systems across the country, a significant proportion of which are in the North and East.

Certain portions of the Accelerated Mahaweli Development Program, fall in Batticaloa and Trincomalee Districts.

The most important issues requiring coordination include: criteria for selecting minor, medium and major systems which require assistance; criteria for assigning priorities among selected systems; unit costing agreements for types of irrigation operations, maintenance, rehabilitation, and construction; and drainage requirements.

USAID technical assistance to irrigation rehabilitation will work primarily in design, inspection, and certification of works performed for the purpose of releasing funds.

Agriculture

With the exception of a small, Swedish contribution, the ADB and USAID are the only donors in agricultural production and credit. The ADB begins its planning process as USAID is finishing this Project Paper. Discussions on coordination are leading to a consolidated approach. The ADB plans to put funds at the disposal of Sri Lankan lending agencies to lend at the same rates as that of the USAID program for agricultural inputs including fertilizer, chemicals, seeds, pumps, traction equipment and vehicles. In addition, they may fund technical assistance to assist credit institutions and the national extension service.

The USAID program complements that effort by financing start-up grants for affected farmers. These grants, though largely in kind, will also provide cash for tillage. The two programs together should cover the needs of most affected farmers. Most AID grant funds will be disbursed before ADB loan funds. Limited USAID-funded technical assistance in agriculture will monitor the overall program, conduct environmental studies and provide analysis of production and marketing constraints.

Enterprise

USAID and the IBRD are the only donors who have proposed assistance to the small business sector. However, like irrigation, other donor programs to train or finance small businesses operating in Sri Lanka and could assist the North and East if peace returns. The UNDP has an entrepreneur training program underway which could expand to the North and East. In addition, donors operating district programs, including NORAD and the EEC, have included entrepreneur development activities in building materials manufacture or tool-making that complement the USAID program. Some resettlement programs such as Canada's also include training for entrepreneurs in building materials enterprises or in the processing of agricultural products. The ODA-financed programs to train unemployed youths and widows in business skills, cottage enterprises, and construction trades could provide a means for certifying new entrepreneurs for small business loans and grants. The ODA-funded training would offer a guarantee that the borrower or grantee has the skills to establish a profitable enterprise.

The IBRD program includes US $7.25 million to provide credit to small businessmen. The program is based on the SMI I,II, and III programs which historically have failed to deliver loans under Rs.50,000(US $ 1600). The IBRD, therefore, has provided a special credit of US $1.9 million for loans to micro-entrepreneurs who cannot qualify for larger sums. They expect to disburse these loans through TCCSs, CRBs and other appropriate mechanisms.

The USAID's program fits well with that of the IBRD since both will now operate under the larger grant/loan framework jointly developed with the MRR. USAID will provide start-up grants to businesses in the range of those qualified for small loans under the IBRD supplemental program. These will include small agricultural entrepreneurs who need to purchase lift-pumps for intensive commercial production of OFCs. As in agriculture, technical assistance in the small business sector will be limited.

Conclusion

The NRSC and the donor group have succeeded in laying the foundations for a well coordinated effort to undertake the rehabilitation of the eight districts of the North and East which have been affected by the current hostilities. If such efforts can continue into the implementation period, duplication, gaps, and waste of resources will be minimal.

4. GSL Rehabilitation Strategy

At the GSL's request, the World Bank fielded a team in September to assess the immediate rehabilitation needs and develop a general program of assistance. The team proposed a program of $388 million over three years. While financing would be the responsibility of the GSL, the report recognized that the GSL would be unable on their own to provide resources of that magnitude within the necessary time frame and would require substantial donor assistance. The report recognized as well that such a program would have to be done in the context of the GSL's own reevaluation of macroeconomic policy and without disrupting progress on industrial policy reform.

The GSL has taken the first difficult steps in a program of economic reforms encouraged by the IMF aimed at reducing the public sector deficit from about 12% of GDP in 1986 to 9% in 1990. This deficit should be financed without resorting to credit from the Central Bank or commercial foreign borrowing. To make this adjustment budget revenues will be maintained at about 20% of GDP, and total Government expenditures will be reduced from 33% of GDP in 1986 to about 29% of GDP by 1990.

The proposed Reconstruction Program is planned for three years and will have an estimated import content of 35% with concessional foreign assistance financing up to 82% of the total cost. The Program is projected to have a positive impact on the balance of payments but will create new pressures and claim as much as 1.5% to 2% more of GDP yearly. This will add to other fiscal pressures such as increased civil service salaries and additional expenditures to support the new Provincial Councils and their own public investment projects. The Government, in the 1988 budget, began reducing budgets for other sectors, particularly defense, and will continue to focus on identifying current and capital reductions. Provided the Government reduces public expenditures, it should be possible to accommodate both the fiscal pressures identified above and the

Reconstruction Program within medium-term fiscal targets. This reduction in expenditures will not be an easy process. While an administrative reform plan has been formulated to reduce the size of the civil service rolls, a substantial salary increase to compensate for inflation over the past several years will reduce the budgetary effect. Some savings may be possible in budgetary transfers to public corporations and reductions in subsidies and other transfers but these are likely to be marginal. Thus, the major savings must come first from defense and the regular Public Investment Program.

The Government is currently analyzing the difficult social and economic consequences of rephasing its investment in Mahaweli and in other irrigation, power, and transportation schemes. Taken together these public investment projects account for close to 40 percent of development expenditures in the next five years. Specific proposals will be developed during 1988 for implementation in the 1989 and 1990 budgets. Meanwhile, no new capital projects in these areas are planned for the Public Investment Program.

III. B. PROJECT DESCRIPTION

1. Overall Summary

The purpose of the project is to promote incomes, employment and agricultural productivity in the Northen and Eastern portion of Sri Lanka by assisting in the restoration of a viable productive economy in the areas of agriculture, irrigation, prviate sector and housing.

The project purpose is:

a) to reconstruct housing for target groups;
b) to rehabilitate irrigation systems;
c) to restore crop production; and
d) to revive enterprises.

The project will operate in the context of a national rehabilitation program funded by a multitude of donor groups, NGOs and the Sri Lankan government. The RAP will provide development assistance funds to assist the Government of Sri Lanka in implementing its program to help restore the eight Districts of the North and East to pre-hostility levels of productivity and prosperity. In addition, the project will offer the GSL the opportunity to borrow US$15m of Housing Guaranty loan funds to provide additional financing for housing grants for beneficiaries affected by the ethnic conflict.

USAID funding will support four sectors where USAID has experience: irrigation, agriculture, business development and housing. While it will work closely with a variety of Sri Lankan institutions, the primary counterpart will be the Ministry of Rehabilitation and Reconstruction and the National Reconstruction Steering Committee.

The project will be supportive of the Government's efforts to mobilize and distribute significant quantities of resources quickly, efficently and effectively. Sri Lankan institutions must distribute these resources - including money and agricultural inputs, - widely, equitably and quickly. The usefulness of USAID assistance to the recovery of the Northern and Eastern Provinces will depend on the speed of the systems which the government creates to get resources into the hands of people affected by the conflict. In agriculture, this means before the 1988-89 Maha season in October.

While the needs of the people of the North and East are substantial, the GSL and the donor community have limited funds. The institutions providing and administering the assistance, therefore, must apply equitable selection criteria to identify accurately those who need different types and levels of assistance, establish channels for the distribution of benefits, and determine the minimum, effective level of benefits needed by each sector of the population to achieve pre-conflict levels of prosperity and welfare. The MRR/NRSC has planned a rigorous process to identify and register those who are eligible for assistance. They, also, are now in the final process of identifying the minimal level of assistance required and the institutions which will deliver assistance.

To return to pre-conflict status, the most urgent need in the North and East is capital: to purchase labor, traction power, fertilizer, and agro-chemicals for agriculture; building materials and labor for housing; and structures, stock, and equipment for small enterprises. There are two ways to distribute capital: as loans or as grants. In any effort to establish long-term, sustainable development programs, grants are anathema. Most credit experts advocate loans at market interest rates to ensure the continuing interest of the lending institution in providing credit and the long-term interest of the borrower in maintaining permanent access to credit for his/her needs.

USAID and the GSL, however, are not designing a long term development program in the North and East. The target group includes a population of farmers forced off their land, of businessmen whose enterprises have been destroyed, householders whose shelter has been levelled by five years of conflict. Some of those who were creditworthy have been forced to default on their loans. Others who needed no credit before have lost their reserves of capital. All need cash and appropriate inputs to start again.

The issue then is how the GSL and the donor community can distribute capital quickly and equitably to those who are eligible for it and ensure that this money will go to promote economic and welfare recovery. USAID believes a combination of grants and loans at reasonable interest rates is the best approach to rehabilitation in the housing, agriculture and enterprise sectors in the eight affected districts. (USAID is also working in the irrigation sector but only on infrastructural rehabilitation.) Both grants and loans should flow through established institutions, but it is important to be sensitive to the problems of slow disbursement.

Initial RAP disbursements to poorer people will take the form of grants, while householders and some businesses can apply for loans later. The grants will help restore farmers and entrepreneurs to credit-worthiness and avoid massive failures to repay loans, even at slightly concessionary interest rates. It will also enable residents to bring their units to minimally habitable condition. The grant policy will have the secondary effect of encouraging the rehabilitation of credit institutions in the North and East to permit the reestablishment of normal credit distribution channels.

MRR/NRSC has proposed a plan to deliver assistance equitably and rapidly to the affected population of the affected zone. They intend to consider all productive enterprises in one category - agriculture, fishing, animal husbandry, single family enterprises, rural industries and so on. Each affected individual or enterprise will receive Rs.6,000 in grants. These grants will be delivered in cash or in kind depending on need and convenience. However, the preference is to give assistance in kind where practical.

These grants are in three categories. The GSL will give each affected family a settling-in grant of Rs.2,000 in cash. In addition, each family which has a productive activity (fishing, farming or a business) will receive Rs. 4,000 from the GSL as a productive activities allowance.

These funds will be provided in-kind under a voucher system, where possible, or in cash. The amount is based on a calculation of the minimum effective level of support needed by poor farmers and small or micro-businesses.

All individuals or enterprises that need and can justify further infusions of capital will be eligible for lending from local credit institutions - banks, cooperatives, government structures, finance companies, and so on - at a uniform rate of 9%. The current plan of the government is to waive for two years the prohibition on extending new credits to borrowers who have overdue loans.

In the housing sector, the MRR/NRSC have proposed that householders with incomes below the rural median of Rs.1,500 per month receive a grant of Rs.15,000 for housing reconstruction or repair. In theory, houses which need less work will generate smaller grants. In practice, this is unlikely to occur. All those eligible under the income qualifier will receive the full grant. In addition, those with incomes between 700 and 1500 Rs/month will be eligible for loans of up to Rs.15,000 at the rate of 6%. People with incomes over Rs.1,500/month will be eligible for loans at 6%, as well but not for grants. USAID will fund approximately half of the grant portion of the MORR/NRSC housing grant program, but will not have money remaining for the loan program. The GSL will fund the remaining portion of the housing grant program from other funds. The following chart summarizes the MRR/NRSC plan RAP will support:

Sector		Income Level	Grant Amount	Loan Amount (max.)	Interest Rate
Productive			6,000	50,000	9%
Housing	up to	Rs 700	15,000	-0-	n/a
	Rs 701 to	Rs 1500	15,000	15,000	6%
	Rs1501 to	Rs 5000	-0-	50,000	6%
	over	Rs 5000	-0-	150,000	6%

In every component of the project except irrigation, RAP will infuse significant amounts of capital into individual households, farms, and micro- and small businesses. The programs in each are described in full in the sections that follow. The paragraphs below give only a brief idea of the activities the RAP will finance.

In irrigation the RAP will fund the rehabilitation of 95,000 acres of land irrigated by major and medium scale tank systems as well and 6,000 acres of land irrigated by minor tanks.These systems had fallen into disrepair during the hostilities when maintenance was impossible. The project will provide for a feasibility study and reconstruction of the Jaffna Lagoon salt water exclusion project. The project will procure vehicles and equipment to help replace what the ID lost during the conflict. It will also provide training to ID

staff and to farmers to compensate for lost opportunities during the disturbances. Finally, RAP will fund technical assistance to help with the design, inspection, and reimbursement of irrigation works carried out under the project.

In agriculture the RAP will provide input grants under the unified grant and loan scheme to farm families to help them return to normal productivity. RAP also will provide training to extension personnel and farmers, as well as short-term technical assistance for environmental monitoring and special studies, and long-term technical assistance for implementation monitoring.

In enterprise, the RAP will help fund start-up grants and loans for 15,000 affected enterprises. The project will undertake a program of strengthening rural credit institutions,like the CRBs and TCCSs, to help reestablish a well-managed, permanent structure for the delivery of credit to rural people.

In housing, the RAP will fund half of the grant component of the MORR/NRSC plan for reconstruction of the dwellings of households with incomes below Rs.1,500. In addition, the project will provide long and short term technical assistance to the rehabilitation program and to the national housing program.

III. B. 2. HOUSING COMPONENT

The Problem

Housing is the sector most heavily damaged by the conflict in the North and East. The September 1987 World Bank assessment team found that over 68,000 families had lost their homes, leaving over 340,000 people homeless. Another 28,000 suffered damages to their dwellings. Subsequently, the Indo-Sri Lanka Peace Accord brought a brief lull in the fighting followed by a new wave of destruction, especially in Jaffna. The most recent unofficial estimates put the new total of damaged or destroyed dwellings at up to 120,000.

The rural poor have borne the brunt of this destruction. The overwhelming majority--80%--of the households affected have incomes below the median, established at Rs.1500 for rural areas. The poor are more likely to occupy non-permanent structures, which are more vulnerable to damage and, if damaged, more likely to become uninhabitable.

Description of the Approach to the Problem and Proposed USAID Inputs.

The GSL, through the NRSC, has proposed a package of loans and grants for households whose dwellings have been damaged or destroyed by the conflict. The structure of the program is based on monthly income categories established as follows:

Category A --up to Rs. 700
Category B --between Rs. 701 to Rs 1500
Category C --between Rs. 1501 to Rs. 5000
Category D --greater than Rs. 5000

Under the proposed plan households in Category A and B would be eligible for one-time grants of Rs 15,000. In addition, households in Category B would be eligible for loans of up to Rs.15,000 at a 6% rate of interest. Households in Category C and Category D would be eligible for loans of varying amounts depending on incomes and at a 6% rate of interest. Current district-level estimates put the number of affected households in Category A at 53,400, in Category B at 38,260 and in Category C at 22,750. Approximately 92,000 households would therefore be potential beneficiaries of the grant program.

The GSL has requested donor funding for this program and USAID has determined that its resources can most effectively contribute to financing the grant portion of the benefit package. The funding proposed for this component ($10 million in DA resources and $15 million in Housing Guaranty loan resources) will be sufficient to fund grants of 50% of the entire housing grant program (Categories A and B). The project will therefore rely on other sources of grant funding, either from other donors or other GSL resources, for the remainder.

TABLE 1

Housing Rehabilitation Estimates

District	No. of Households Rs.700	No. of Households Rs.701-1,500	Total Rs.1,500	%	Total Affected
Ampara	2,000	1,000	3,000	100.0	3,000
Vavuniya	7,200	500	7,700	96.3	8,000
Mullaitivu	6,000	1,000	7,000	97.2	7,200
Mannar	7,200	1,260	8,460	97.7	8,660
Trincomalee (est)	10,000	10,000	20,000	76.9	26,000
Batticaloa (est)	3,000	2,500	5,500	84.0	6,550
Jaffna	18,000	22,000	40,000	72.7	55,000
Totals	53,400	38,260	91,660	80.1	114,410

Estimated Total Eligible 91,660

$ cost @ Rs.7,500 $22,915,000

$ cost @ Rs.15,000 $45,830,000

Technical assistance will be project funded and will include the services of two resident advisers, one expatriate and one local hire, and funds for targed short-term assistance as needed. Short-term implementation assistance will be provided by both expatriate and local experts and if feasible by PVOs active in the North and East.

Project Outputs and Beneficiaries

The project outputs will be grants, in the form of cash and vouchers, which can be used by eligible households to repair and reconstruct their dwellings damaged or destroyed in the conflict in the North and East. Project beneficiaries will be the approximately 92,000 affected households in the North and East having incomes below the median (Rs.1,500)

Rationale for Housing Grants

The rationale for the proposed approach is that grants are most likely to accomplish the project's purpose; to enable the speedy repair/reconstruction of damaged housing for households with incomes below the median. Grants can be quickly and easily disbursed, they will inject needed cash into the local economy, either directly or indirectly, they will not add to the debt burden of poor households, and they will not undermine the gains made by USAID's on-going regular Housing Guaranty financing of the GSL's Million Houses Program, which has been steadily improving in its movement towards more market-oriented interest rates and loan collection procedures.

Experience in other disaster-related reconstruction programs has indicated that, because of the extreme financial burdens on affected households, there is often strong pressure to subsidize heavily any loan programs, to extend credit to households who may not have the capacity to repay, or to forgive loans entirely. Such measures would have adverse impacts on other regular credit programs and on the institutions charged with administering them (most notably for housing, the Thrift and Credit Cooperative Society system). USAID has determined that the operational principal of the rehabilitation program to provide the minimal necessary resources to households to enable them to rebuild using available materials--will best be served by a quick disbursing grant program in which the subsidy aspect is clearly identifiable and beneficiaries understand the terms from the beginning.

The PID proposed a building materials component for the housing rehabilitation program. This aspect has been modified somewhat in that any direct assistance to the building materials subsector will be handled via the private sector component of the RAP,i.e., assistance to producers and suppliers will be the same as that for other small enterprises. The household grant program will most likely use a voucher system to enable households to obtain building materials directly from suppliers.

This approach will probably be adequate, since almost all the materials used in repair and reconstruction are available locally, with the possible exception of timber, which is currently being imported. The GSL policy is to encourage the use of locally-produced materials and building supplies as a means of stimulating the economies of the North and East, and this appears to be a feasible approach. The Building Materials Corporation, a parastatal which purchases and distributes building materials has already reopened branches in Jaffna and Trincomalee and is ready to open others as soon as security can be assured. The MRR is also considering setting up special building materials centers for project beneficiaries.

Some price escalation can be expected, at least in the short run until the market responds to increased demand by increasing production, but since the productive capacity is largely in place or can be restored via other components of the assistance program, this should not be a long-term problem. Use of vouchers and Government building materials suppliers can also help control excessive price inflation. Skilled labor will probably be in short supply, however, so short-term, in-country training in such trades as masonry and carpentry would be a good investment of project funds. There is in addition, a GSL training program in basic building construction skills now being run by the Institute for Construction Training and Development (ICTAD) which could be expanded in the North and East to meet the needs.

How the Project Will Work

DA resources will be accessed via normal USAID financing procedures. HG funds will be borrowed by the GSL from private U.S. investors at market rates. Repayment will be guaranteed by the U.S. Government. HG funds may be disbursed on a reimbursement basis or, if the situation demands and agreement is reached on terms, on an advance basis.

Funds from both sources will be used to finance housing grants to urban and rural households in the North and East below the median income. Funds for housing grants, from both DA and HG resources, will flow in the way described in the Implementation Plan.

Policy Impact

The housing component of the RAP differs somewhat from the other components in that there is a direct relationship between the GSL's reconstruction program in housing and its broader national housing program being supported by the on-going Housing Guaranty loan. The model that the GSL has chosen to deliver special rehabilitation assistance is that of the small home construction/improvement loan administered on a decentralized basis, like that developed by the Million Houses Program. Unlike the MHP, however, the RAP has a clearly identifiable grant component, which will be implemented separately, both in financial terms and in terms of the

institutions to be used to deliver the assistance. This distinction has been a critical one for USAID's shelter sector concerns. (USAID's rationale for funding the grant component is discussed above.)

During the course of project development, USAID was able to bring about a change in the approach to the grant/loan components of the housing program. The initial proposal called for grants in combination with a heavily subsidized loan scheme. USAID encouraged the GSL to adopt a package which separated out the grant component from the loan component, which would be made at a higher interest rate but with a better chance of being recovered. The MRR/NRSC accepted this approach.

Although the RAP is not directed at bringing about policy change, GSL acceptance of the principle in this instance is an important advance for USAID's policy agenda in the housing sector. Separation of grant and loan aspects of a housing program is a key item of that agenda. It will also serve to help ensure that the gains made in the Housing Guaranty program with the GSL regarding loan interest rates and recoveries under the MHP will not be endangered, since the reconstruction program will be entirely consistent with the on-going HG.

In addition to the above policy advance, the technical assistance to the RAP will reinforce the on-going program by providing support to both the grant and loan components of the program for the North and East. In order to protect the integrity of the loan program, limited and targeted TA will help bring implementing institutions in these provinces to a level comparable to those administering the housing program in non-affected areas.

III. B. 3. AGRICULTURAL COMPONENT

The major reasons why agriculture has fallen below pre-conflict levels of production in the North and East are the economic devastation of the small farmer and the collapse of the institutional mechanisms that support and service him. The lack of capital and inputs including seed, fertilizer, and pesticides, loss of traction energy for land preparation, and loss of hand tools makes it difficult for farmers to fully plant all their land much less produce the sustainable yields that provide a comfortable profit margin and cash reserve. Even though small farmers in some areas have already started their recovery, the principal purpose of this project component is to accelerate agricultural rehabilitation and restore economic viability to pre-conflict levels as quickly and effectively as possible.

The disruption of cropping cycles, lack of purchased inputs, and the disruption of transportation linking farmers to urban markets has led to reduced production and yields, reduced sales and consequently reduced family income. Cash reserves have gone for family consumption needs or have been invested in planting smaller areas for subsistence crops. In addition in some areas there has been a massive build-up of debt and overdue loans that disqualifies the small farmers for new loans and condemns them to a vicious cycle of poverty.

The total farm families in the Northern and Eastern Provinces is reported to be 140,000 (Census, 1981). Some of the affected families may not register, others will have greater needs than the average, since the damages and losses are not uniform throughout the project area. However, all families will have suffered some loss during the conflict. Damage to fields or equipment, ruined structures, loss of market access, disappearance of family members and animals, labor and input shortages have diminished production throughout the two affected provinces. Consequently, for reasons of social equity, the agricultural component of RAP expects to target all farm families in the North and East.

The agricultural component will provide a quick injection of cash and urgently needed agricultural inputs and hand tools to accelerate recovery and revive production to generate positive net family incomes. The correct use of agricultural inputs will stimulate productivity and generate financial surpluses that can be reinvested in agriculture so that farmers regain the economic base that allows them flexibility and prosperity.

The USAID grant of Rs.2000 will be disbursed as one half of a Rs.4000 productive enterprise grant. This is in addition to a resettlement grant of Rs.2000 and gives affected small farmers a total of Rs.6000. The USAID portion will be given partially in kind for agricultural inputs, and partially in cash for land preparation and hired labor to all eligible beneficiaries who qualify and are identified with an appropriate registration card. The total of Rs.6000 for each farm family is sufficient for cultivating two acres

of paddy, or 0.5 acres of chillies, or 0.25 acres of onions, or one acre of vegetables or pulses or some combination of the above. Since the average size of land holding for settlement schemes is generally three acres (two acres of paddy and one acre of highland) this one time grant will be a sufficient stimulant to plant the most productive lands and apply the appropriate level of inputs. Application of these proven technological packages will produce a marketable surplus and build up some cash reserves. In the Jaffna Peninsula where individual land holdings range from 0.125 - 0.25 acres each, the grants can be applied to intensive vegetable production, tobacco, grain legumes, pulses, etc. and also contribute to the replacement of small pumps that provide well irrigation water pumped from the shallow limestone aquifer. The actual area planted will be considerably less than in the other districts, but productions costs, risks, and potential income are also considerably higher for the Jaffna farmer. If the RAP can be implemented quickly and efficiently so that farmers have access to the needed inputs, tillage, and labor in order to take advantage of the upcoming maha planting season which starts in October, affected farmers should be able to fully recover to prior production and economic levels in two cropping seasons.

While the RAP funds will be available to all beneficiaries, the formal credit channels represented by the TCCS's and the CRB's would not enable all farmers access to credit for the next Maha season. Utilizing other agricultural institutions such as the Agrarian Service Centers to administer and supervise loans would have little success since they have never functioned as a credit institutions and would need substantial training and addition of personnel, which adds considerable delay to realistic credit delivery. Consequently, RAP will concentrate on agricultural grants to provide a quick infusion of capital and inputs to aid small farmer recovery and depend on other donors such as the ADB to supply additional loans at an equitable and justifiable interest rate. This approach allows a majority of the registered, affected farmers sufficient resources to exploit at least 75% of their land holdings as well as become eligible for additional loans available under accompanying rehabilitation schemes.

USAID grants to the agricultural component will be complemented with a loan program that will be supplied by other donors (ADB and WB) and GSL in order to enable small farmers further access to credit. Most farmers will use the combined USAID and GSL grant as the sole mechanism to accelerate their economic recovery. Others will return to the informal channels of credit (i.e. traders, money lenders, shop owners, etc.) and a small portion of farmers will find the proposed 9 percent interest rate a convenient mechanism to borrow for larger capital outlays such as hand tools, small tractors, animal traction, sprayers, etc.

Grant funds will be assigned to each district based on work plans approved by the NRSC and the MRR and deposited in an account controlled by the GA in the District capital. The GA will authorize grant distribution to the AGA's and Grama Sevakas who will distribute cash or input vouchers through the local network of ASC's

and ASC sub-offices to eligible farmers. The input vouchers can be used for purchase of fertilizers, pesticides, seeds, and small hand tools at the ASC's or from private business. The vouchers can be redeemed by the BOC, the Peoples Bank, or other financial institutions. Vouchers will also probably be exchanged or traded for other services, but this is uncontrollable and potentially beneficial to a depressed economy. The cash grants are intended for land preparation and hired labor, but will undoubtedly be used for household consumption and emergencies also.

RAP will depend largely on ASC's, the most widely distributed institutional network found in the rural areas, to provide agricultural inputs to farmers. Of the 114 ASC's and 92 fertilizer depots established in the eight districts, 86 are severely damaged and equipment has been lost. Currently it is planned that the ADB will support the major work to rehabilitate the structures.

The technical assistance provided under the agricultural subcomponent will include baseline ecological monitoring of water quality; integrated pest management and pesticide application; and a series of special studies to analyze the rehabilitation process and assess the impact of grant funds and the rate of farmer recovery. Local hire TA will be used to monitor project implementation.

III. B. 4. IRRIGATION COMPONENT

Irrigated agriculture is the predominant economic activity and source of employment in Northern and Eastern Sri Lanka and is an essential component of the rehabilitation of the rural economy. In the eight districts that make up the affected areas of the North and East, approximately 120,000 farm families depend on upon a combination of small, medium and large scale gravity schemes for the irrigation of their crops while about 10,000 families depend on ground water sources. The conflict and the lack of security during the past four years have made it impossible to operate and maintain the range of irrigation systems on which agriculture in the North and East is so dependent.

The normal maintenance and operation of the gravity irrigation systems, carried out by the District offices of the Irrigation Department (ID) declined during the conflict. Some of the operation and maintenance (O&M) staff left contested areas for safer locations while the remaining staff was largely immobilized because of the dangers associated with traveling to and working in the remote areas where irrigation schemes are found. A substantial amount of equipment necessary for O&M was destroyed, severely damaged, or suffered deterioration due to lack of maintenance. Finally, during the four years of the conflict many farmers who might have otherwise carried on some maintenance activities also left the areas or have been unable to maintain the irrigation systems and access roads. As a result, the systems have deteriorated significantly. This has contributed to a dramatic drop in agricultural production and farmer incomes in the eight affected districts.

Deterioration due to reduced maintenance of the gravity irrigation systems has occurred on the tank headworks, the Main and Branch Canals, the Distributory Canals and on the Field Channels. The gated sluice inlets and the downstream outlet structures on many of the headworks have reached a condition that requires either heavy maintenance or replacement. On some tanks the embankments need restoration and at some locations the upstream face of the bund will require rock pitching to repair and protect against serious damage caused by wave action. Most of the canals of the entire distribution system have suffered abnormal build-ups of silt accumulation and vegetal growth during the years of neglect. There are numerous canal sections, usually on curved reaches, where continued bank erosion is endangering the integrity of the system. In many instances, this erosion has encroached into the maintenance road preventing vehicular travel along the canal. It is estimated that over two thirds of the canal structures are in need of some degree of repair. Damage to a number of structures is so severe that total replacement is necessary. Extensive downstream scour, accumulated due to lack of annual maintenance, has occurred on many structures. Nearly all of the outlet gates from the main and secondary canals are in a poor state of repair. Replacement with modern screw type gates is needed to provide a fully operational water distribution system. Access roads to a number of the

irrigation schemes are barely motorable and in need of reconditioning. There are numerous other specific locations where works have become substandard due to five years of neglect. Those will require rehabilitation or in some cases reconstruction to restore the system to a fully operational condition. Some of these other shortcomings, as noted by the design team, are on canal bunds, bridge crossings, water level control structures, and the drainage systems.

In addition, there has been damage to an extensive salt water exclusion scheme for the Vadamaradchchi and Elephant Pass Lagoons in the Jaffna peninsula. Historically, these lagoons were naturally salt or brackish water. However, projects undertaken by the Government prior to the conflict blocked off the outlets to the sea and interconnected the lagoons in order to create a body of fresh water. The purpose of this salt water exclusion scheme was to recharge the adjacent aquifers with non saline water to enhance the quality of the groundwater supply. The sluice gates at the Thondamannar Barrage and the Eastern Closure Bund have been damaged or neglected and now need renovation if the system is to function effectively again.

The Irrigation component will provide $9.8 million, of USAID grant funds to get as many affected irrigation schemes as possible quickly restored to functioning condition and to return them over a period of four years to a fully operational basis. Specifically, the $9.8 million will:

a. Restore medium and major Irrigation Department (ID) systems serving an estimated 95,000 acres at a cost of $6,204,000.

b. Rehabilitate minor (less than 200 ac) irrigation schemes administered by the Agrarian Services Department (DAS) serving an area of 6,000 acres at an estimated cost of $780,000.

c. Assist the ID to restore the sluice gates and embankments of the Jaffna lagoons at an estimated cost of $700,000 if the feasibility and environmental studies are positive.

d. Provide for technical assistance to monitor the construction for percentage of actual cost reimbursement (PACR) and assist with the lagoon and lift irrigation rehabilitation ($210,000);provide for a feasibility study and environmental assessment of the Jaffna lagoon scheme ($200,000); and provide for administration and vehicle operation and maintenance ($ 60,000)

e. Provide for commodity support for the ID. $800,000 has been set aside for vehicles and survey equipment urgently needed to initiate project activities. $600,000 has been allotted

to assist the ID in replacing plant and machinery lost during the conflict and $200,000 is to replace power, communications and office equipment.

f. Provide for short term in-country training of ID staff and farmer leaders. ($100,000)

At the close of the RAP, 101,000 acres of irrigation systems will have been rehabilitated to improved production resulting in an increase in annual yields of 60,000 metric tons of paddy over the hostility period and 13,000 metric tons above prehostility level with corresponding increases to the incomes of 32,000 farm families. The salt water exclusion projects in the Jaffna peninsula, if found feasible, will be functioning again and providing water of improved quality for aquifer recharge and lift irrigation. Training will have been provided to approximately 200 ID personnel and 400 farmer leaders resulting in improved water management practices and more efficient and effective operations and maintenance procedures.

III.B. 5. ENTERPRISE COMPONENT

Under the government's unified grant loan scheme, the productive enterprise grants and loans would also be applicable to business development. As in the case of agriculture, AID will buy in to the program and fund a portion of the grants and loans to affected businesses in the eight affected districts of the North and East. The productive enterprises portion of the grant/loan scheme will offer start-up capitalization in the form of grants to family enterprises who suffered losses as a result of the conflict.

As in agriculture activities, all families receive two grants, a settling in allowance of Rs.2,000 and Rs.4,000 for productive enterprises. A productive enterprise can be fishing, family farming or a family owned manufacturing, service or trade activity. Every family is entitled to only one of the these regardless of whether they are engaged in fishing, farming or business. All affected families will receive the same amount as a grant; there is no distinction made between the type of productive enterprise. In addition, those who need additional funds, can productively use the money and are likely to be able to repay a loan can receive a loan for up to twenty-years at an interest rate of 9%. It is expected that most loans will be for less than 5 years. All productive enterprises are treated the same.

Currently the MRR estimates that the 12,000 family businesses will receive a Rs.4,000 productive enterprises grant and will borrow an average of Rs.10,000. An additional 2,000 businesses will borrow under a program which has a maximum loan of Rs.50,000. The average loan is expected to be Rs.30,000. These are classified as small businesses. Eight-thousand businessmen will borrow an average of Rs.60,000 and are classified as medium-sized businesses.

The total estimated cost of the grant scheme is $1.5 million. The loans are estimated to total $22 million of which USAID will provide $6.2 million. If the grant program costs more then there will be less available for the loan program, and vice versa. The GSL has additional funds from the ADB and IDA to finance most of the balance of the estimated loan needs.

These grants and loans should help speed the recovery of the already very dynamic private sector in the North and East. Enterprises which RAP will pay special attention to will include intensive, market-oriented agriculturalists producing OFCs for sale; manufacturers or wholesalers of building materials; livestock breeders or dairy keepers; other agriculture-related enterprises, such as food processing or packing; equipment repair and input supply.

For the micro- and small enterprise sector to function normally, credit facilities must be available for all businesses which need and can justify the investment of capital. In the current Sri Lankan network of financial institutions, only the Thrifts and CRBs regularly make loans under Rs.50,000. The Bank of Ceylon and other commercial banks have indicated a willingness to set up a special

window to process small loans. However, there is a need to strengthen the capacity of the financial institutions that are interested in participating in the program. Few of the Thrifts in the North and East are currently interested in participating in the non-housing loan program; however, this may change.

There are 89 branches of CRBs in the North and East, spread throughout rural and urban centers. These institutions have failed to live up to expectations. Many have been dormant since the conflict began; their staff, however, is still present, their buildings are for the most part usable, and the branches are open in law if not in reality. For these reasons, the RAP will undertake a program of strengthening the CRBs to provide a rural lending institution adapted to the needs of small and micro-businesses. The RAP will provide technical assistance to help CRB personnel generate and manage loan portfolios, supervise borrowers, reduce bureaucracy, and become more effective bankers. The RAP will also fund training courses for CRB personnel. TCCSs will have access to assistance and training.

The last element in the small business component is the provision of a long-term Sri Lankan advisor to assist in the development and monitoring of the lending program. He/she will be responsible for developing and implementing the training program discussed above.

The RAP program of grants, loans and strengthening rural credit institutions should help speed the recovery of the small-scale private sector in the North and East. It will help the recovery of the agricultural and shelter sectors by generating incomes, providing marketing opportunities, and supplying necessary inputs. Finally, the RAP program will fit well with those programs of other donors who are planning to finance skills training, or small enterprise development. Discussions with [illegible] resulted in harmonized interest rates and terms, with reduced subsidies and with grants provided on a comparable basis to different categories of families.

IV. A. FINANCIAL PLAN

As noted from the sections in this project paper dealing with project rationale and economic analysis, an overriding rationale for this project is the need to get the areas affected by the conflict back to peaceful levels of economic activity. This in turn justifies a focus on rehabilitation, rather than development. This focus has implications for the project budget and the way it will need to be managed. At this early stage of rehabilitation we cannot be precise as to the funding sources which would support the full $75 million pledge made by the US Government. For that reason we have done two consolidated budgets and focussed attention on detailing the US $ 30 million budget complemented by $27 million of GSL funds which is available now. The full $75 million budget assumes that additional funds will be forthcoming in outyears either in the form of grant Development Assistance or some other source.

For purposes of this project paper and our planned agreement with the GSL, however, we have budgeted for only the monies that we are assured are available during the planning period: a DA assistance level of $30 million complemented with GSL contibutions which are nearly equivalent to the PL480 allocation and Housing Guaranty which are being made available.(Table 1).

While the allocation of funds to these sectors has generally respected those proposed in the PID and the efforts of the design team, reconsideration of the exact extent of each component and the role of technical assistance has led to some changes. Most of the changes stem from two factors. The first is the need to minimize technical assistance. As the rationale of the project paper points out, the project is not intended as a development project but rather as a means to transfer substantial resources to a number of key sectors in the context of delivery systems which the Mission feels comfortable with and which the Mission has played a role in designing. The second factor is that the budget proposed for this project is funded from both incrementally funded Development Assistance grant monies and GSL contibutions.

The GSL funding would derive from different budgetary sources. They, therefore, would want to monitor their own contribution more carefully than normal. Not all of their funds may be used for each portion of the budget. For this reason particular care will have to be taken in managing the budget to insure elements of each of the four components do not exceed the amount of monies budgeted and the allowable funding sources. In addition, funds will be needed for contingency purposes to cover any inflationary impact and minor changes in the funding needs of project components. Contingency and inflation has been kept as a separate line item but can be ascribed to any of the components, given the rate of disbursement.

At the same time, however, some of the components should be able to disburse relatively faster than others. Housing and agriculture, for example might be able to begin well in advance of irrigation

activity. For that reason a decision has been made to initially hold down the irrigation component of the project budget both for the life of the project and for the first year. Should the pace of disbursement exceed all expectations and additional funding become available, first consideration will be given to augmenting funding of the irrigation component. The irrigation component would be given first call on the use of contingency funds on any additional DA funding.

The table below presents the budgetary levels of the major categories first from the Project Identification Document ($50 million DA planned) and from the Project Paper ($30 million DA plus GSL contribution:

BUDGET MODIFICATIONS

Component	PID	PP
Housing	10	24.05
Irrigation	18	11.85
Agriculture	10	10.80
Small Business	12	7.90
Central Mang. TA	0	0.60
Evaluation	0	0.15
Contingency/Infl	0	1.65
TOTAL:	50	57.00

The principal categories of assistance which the RAP will fund are grant/Loan assistance to individual beneficiary families, construction, training, commodity procurement, and technical assistance. The budgets which follow present the overall break down of the project budget by these categories.

1. Budgetary Inputs:

Grant/Loan Support: The total amount for this the largest component is $41,400,000 with $16,400,000 coming from DA grant funds and $25,000,000 from the proceeds of PL 480 and the Housing Guarantee monies.

Technical Assistance: Estimated TA costs total $2,266,000. Long term expatriate technical assistance (88 person months) is budgeted per standard AID costs and includes salaries, overhead, fees and allowances for housing, utilities, furnishings and education. Transportation for long term TA will also be provided as part of support costs.

Construction: Estimated at $9,684,000 and reserved for major and minor irrigation works.

Equipment: Estimated at $1,600,000 and for irrigation related activities.

Training: AID training costs total $250,000. The training component is exclusively short term in-country training. The cost of this item is based on Mission standard costs.

Evaluation: Budgeted at $150,000

Contingency: $1,650,000 has been budgeted for contingency and will be applied to components and/or specific items which demonstrate a need for additional funds. Any and all audit expenditures will be funded from the contingency line item.

2. GSL Budget Contribution:

Since the project is only one part of a multi donor-effort, the Government is not obligated to make the full 25% contribution. We have included and the government has agreed to a host country contribution equivalent to the amount of funds that will be made available through local currency generations of the PL 480 and HG agreements. Thus, the total GSL financial contributions to the project are estimated at a rupee equivalent of $27 million, or 47% of total project costs. Because the activities of the project are closely integrated with the on-going activities of the entire rehabilitation program and part of the Irrigation Department's work, tracking of this contribution will be done with NRSC and MRR. The semi-annual review of the project will include a review of GSL funding for the grant/loan portion.

In addition to the $25 million equivalent of PL480 and Housing Guaranty loan program funds, the government will also provide:

1. Ad-hoc coordinating units, working groups and staff salaries of the Ministry of Rehabilitation and Reconstruction and the National Reconstruction Steering Committee involved rehabilitation.

2. Offices and secretarial support for consultants.

3. A portion of in-country training costs such as per diem, in kind contributions, etc.

4. A specific contribution of US $2 million to irrigation construction support.

3. Audit Procedures

Given the overall audit responsibilities of AID, there are three major areas of audit activity requiring attention:

Technical Assistance: Technical assistance financed by AID is subject to audit by AID/IG. To minimize vulnerability, the Mission Controller will conduct periodic examination of records in support of disbursements and as part of its voucher examination program, will review GSL accounting procedures and documentation as it relates to this contracting. This should be a relatively straightforward exercise given that all contracts under the project are anticipated to be direct contracts signed with individuals with billings submitted to the Mission.

Irrigation Works: Given that the Mission anticipates using a Percent of Actual Cost Reimbursement system, auditing should be confined to monitoring the general contracting process used by the government to insure that it is adequately implemented. (The contracting process of the government is discussed in the technical annex on irrigation.) This should be complemented by our own monitoring of progress and comparison to costing estimates that would be established. In addition there would also be the possibility of requesting audits from the government if we believe that that is necessary as well. To the extent that any large contracts are initiated which are not under the PACR type system of reimbursement--an unlikely situation--funds can be set aside from the contingency portion of the project budget for audit by non-federal auditors, i.e. through local affiliates of US CPA firms, the selection of which would be approved by the GSL, the Mission, and RIG/A/S. These services will be procured by AID direct contract following direct payment procedures.

Grant/Loan Component: The largest component that AID will fund is the Grant/Loan portion of the Rehabilitation Assistance Project package. This area, representing as it does a significant outflow of funding in vouchers and cash, will have to be monitored closely. Audit controls for this component will depend heavily on the implementation system put into place between MRR/NRSC and the District Governments and the Banks. Given the procedural systems which are being put into place, District Governments should be able to report the number of grants extended and keep adequate records of all individuals who received them. As noted, a detailed registration procedure will be in place to determine the eligibility and amount of funds which can be received by any one family.

With respect to loans, funding will be channelled via REPPIA, either to the cooperative rural banks, the TCCs or commercial banks. Auditing procedures are currently under consideration and are expected to largely follow existing procedures for all normal loans. Given all three institutions' experience in extending credit, we believe that these procedures should provide a firm base for auditing the disposition of funds. As noted earlier funding for auditing of this would be from the contingency line item of the project budget.

4. Contracting And Disbursement Procedures

Technical Assistance: All technical assistance under this project is planned to be procured under direct personal services contracts. The contracts will be negotiated and signed by the Regional Contract Officer in close coordination with the AID Mission. Monitoring and audit of these contracts will be done by the Mission. Given that these are Personal Services Contracts, and the Mission has established standard cost estimates for work done in Sri Lanka, we anticipate no problem in successfully negotiating contracts. Disbursement procedures should follow standard procedures. Principal areas of attention will be those associated with Personal Services Contracts, i.e. completed vouchers for support costs, random checking on per diem, etc. The Mission has established set certifications statements to be used when approving vouchers, and these will apply to the direct contracts under this project.

Procurement: The bulk of procurement to be done under this project supports the irrigation component. As noted, there are basically two tranches of procurement to be done: those to be done immediately after conditions allow the project to commence and those which can be done in the second year of the project. Procurement for this equipment will be done under a PSA for international procurement. Vehicles and that part of the procurement which require local servicing will be done through local agents. Monitoring and control of this equipment will follow the procedures established by the Government of Sri Lanka and the Mission. Equipment will be checked yearly by the Government and confirmation will be received that the equipment is being used for the intentions of the project. This will be recorded in the project files for future reference and certification. Disbursement of funds for procurement again should follow standard procedures. We anticipate using LComms for international procurement and direct billings to USAID supported for local procurement.

Training: Training will be done under USAID training procedures. Earmarking and commitment PILs will list a project budget and reimbursement requests subsequent to the completion of training will note expenditures based on the budget earlier approved. Random sampling and checking of the accuracy of training costs will be done by the Controller's Office as part of his yearly review of the project.

Evaluation: Evaluation will be done under Personal Services Contracts either by a expatriate contractor and/or in combination with local PSCs. As such, the same procedures which would apply to technical assistance would be applied to evaluation.

Construction: Construction is one of the larger items on this project budget. The implementation section of this project paper describes the procedures by which this element will be supported. AID will not be a party to the actual contracts which are used for irrigation rehabilitation, but it will approve the work plan by which the the work requirements are established. Prime responsibility for construction oversight will be carried by the Engineering Office of USAID/Colombo. That Office will be responsible to conduct site visits to ensure that all construction so approved has in fact been completed. Once the levels and magnitudes of construction are approved in the yearly Work Plan, a PIL will be issued which will detail the amount of construction which is reimbursable from AID, and the reimbursement procedures, either fixed amount reimbursement or actual cost reimbursement in accordance with AID regulations. Such approval and reimbursement would be done in close coordination between the Engineer and the Controller to ensure all appropriate regulations and requirements are met. Disbursement of our funding will be done after the construction is completed and be preceded by inspection of the sites and certifications to the Controller by the Mission engineers that payment may be effected.

Grant/Loans: The largest single item in the project is for the Grant and Loan Program. No contracting requirements are related to this component but disbursement procedures are. As this represents essentially a distribution of funds and vouchers to a large segment of the population, the primary emphasis of this component will be to ensure that the amounts so approved have in fact reached the target population. The amount of money which AID would reimburse in any one year would be indicated to the government as approval of the government's work plan. Once levels are established, the government will begin its program based on the expectation that AID will reimburse for a certain amount. Monitoring and Audit Controls of this aspect of the project will rely primarily on the monitoring and management information system established by the National Reconstruction Steering Committee and the Ministry of Rehabilitation and Reconstruction. In addition, this will be supplemented by a number of random spot checks conducted primarily by the PSC hired to manage the project in close coordination with the Controller's Office. Disbursement procedures, to be outlined in project implementation letters, will require certification from the NRSC/MRR supported by the reports generated by the MIS system put in place.

Sectoral Funding Levels

The funding levels proposed in this PP are the best possible estimate at this time. However, security conditions, different levels of managerial efficiency in each of the eight affected districts, and other donor activities may call for re-alignment of funding levels among sectors. In this case, USAID will discuss the issue with the MRR/NRSC at the reviews and, if needed, authorize modification of the budget between the sectors supported by the RAP.

Proposed Payment Procedures

The proposed payment procedures are given in Table 2.

TABLE 2

PROPOSED PAYMENT PROCEDURES

Item	Method of Implementation	Method of Financing	Approximate Amount ($ '000)
Technical Assistance	AID Direct Contract	Direct Payment	2,266
Training	GSL Arrangements	Reimbursement	250
Construction	HC Construction Contracts	FAR or PACR	7,684
Commodities:			
A. Foreign Exchange	USAID/PSA Contract	Mission-Issued Direct L/Comm	600
B. Local Currency	Direct AID procurement or through PSA	Direct AID Payment or L/Comm	1,000
Grant/Loan Program	GSL arrangements	Reimbursement	16,400
Evaluations	Direct AID Contract, buy-in to centrally funded project, or PSC	Direct Reimbursement	150
		Total	28,350

TABLE 3

($30 Million DA)

REHABILITATION ASSISTANCE PROJECTED PROJECT BUDGET
(IN 000'S US$)

	AGRICULTURE	IRRIGATION	HOUSING	PRIVATE ENTER.	PROJ MGT/ CONTINGENCY	TOTAL
GRANTS/LOANS	$10,700	-	$23,000	$7,700	-	$41,400
CONSTRUCTION	-	$9,684	-	-	-	$9,684
TA	$102	$470	$864	$230	$600	$2,266
TRAINING	-	$100	$150	-	-	$250
EQUIPMENT	-	$1,600	-	-	-	$1,600
EVALUATION	-	-	-		$150	$150
CONTINGENCIES	-	-	-		$1,650	$1,650
TOTAL	$10,802	$11,854	$24,014	$7,930	$2,400	$57,000

TABLE 4

($ 30 Million DA)

REHABILITATION ASSISTANCE PROJECT LIFE OF PROJECT BUDGET
(IN 000'S US$)

	AGRICULTURE	IRRIGATION	HOUSING	PRIVATE	PROJ MGT/ CONTINGENCY	TOTAL
AID CONTRIBUTION						
GRANTS/LOANS	$6,885	-	$5,630	$3,885	-	$16,400
CONSTRUCTION	-	$7,684	-	-	-	$7,684
TA	$102	$470	$864	$230	$600	$2,266
TRAINING	-	$100	$150	-	-	$250
EQUIPMENT	-	$1,600	-	-	-	$1,600
EVALUATION	-	-	-	-	$150	$150
CONTINGENCIES	-	-	-	-	$1,650	$1,650
AID TOTAL	$6,987	$9,854	$6,644	$4,115	$2,400	$30,000
GSL CONTRIBUTION:						
GRANTS/LOANS	$3,815	-	$17,370	$3,815	-	$25,000
CONSTRUCTION SUPPORT	-	$2,000	-	-	-	$2,000
TOTAL	$10,802	11,854	$24,014	$7,930	$2,400	$57,000

TABLE 5

($ 30 Million DA)

REHABILITATION ASSISTANCE PROJECT - FIRST YEAR PROJECT BUDGET
(IN 000'S US$)

	AGRICULTURE	IRRIGATION	HOUSING	PRIVATE ENTER.	PROJ MGT/ CONTINGENCY	TOTAL	L OF
AID CONTRIBUTION:							
GRANTS/LOANS	$1,250	-	$5,296	$911	-	$7,457	$1
CONSTRUCTION	-	$500	-	-	-	$500	$
TA	$20	$85	$288	$100	$400	$893	$
TRAINING	-	$50	$50	-	-	$100	
EQUIPMENT	-	$800	-	-	-	$800	$
EVALUATION	-	-	-	-	-	$0	
CONTINGENCIES	-	-	-	-	$260	$260	$
AID TOTAL	$1,270	$1,435	$5,634	$1,011	$660	$10,010	$3
GSL CONTRIBUTION:							
GRANTS/LOANS	$1,250	-	$2,370	$1,911	-	$5,531	$2
CONSTRUCTION SUPPORT	-	$550	-	-	-	$550	$
TOTAL	$2,520	$1,985	$8,004	$2,922	$660	$16,091	$5

TABLE 6

($30 Million DA)

REHABILITATION ASSISTANCE PROJECT - ESTIMATED DISBURSEMENTS
(IN 000'S US$)

	YEAR ONE	YEAR TWO	YEAR THREE	YEAR FOUR	TOTAL DISBURSEMENT
AID CONTRIBUTION					
GRANTS/LOANS	$5,046	$6,500	$4,400	$454	$16,400
CONSTRUCTION	$400	$3,000	$2,884	$1,400	$7,684
TA	$943	$700	$488	$135	$2,266
TRAINING	$100	$50	$50	$50	$250
EQUIPMENT	$800	$800	$0	$0	$1,600
EVALUATION	$0	$75	$30	$45	$150
CONTINGENCIES	$310	$380	$560	$400	$1,650
AID TOTAL	$7,599	$11,505	$8,412	$2,484	$30,000
GSL CONTRIBUTION:	$7,620	$7,880	$6,000	$3,500	$25,000
CONSTRUCTION SUPPORT:	$550	$600	$850	-	$2,000
TOTAL	$15,769	$19,985	$15,262	$5,984	$57,000

TABLE 7

($30 Million DA)

FOREIGN CURRENCY/LOCAL CURRENCY BREAKDOWN FOR THE PROJECT BUDGET
(000'S)

	TOTAL	LOCAL CURRENCY	FOREIGN CURRENCY
AID CONTRIBUTION:			
GRANTS/LOANS	$16,400	Rs.492,000	$0
CONSTRUCTION	$7,684	Rs.230,520	$0
TA	$2,266	Rs. 45,000	$766
TRAINING	$250	Rs. 7,500	$0
EQUIPMENT	$1,600	Rs. 30,000	$600
EVALUATION	$150	Rs. 3,450	$35
CONTINGENCIES	$1,650	Rs. 27,000	$750
AID TOTAL	$30,000	Rs.835,470	$2,151
GSL CONTRIBUTION:			
GRANTS/LOANS	$25,000	Rs.750,000	-
CONSTRUCTION SUPPORT	$2,000	Rs.60,000	-
TOTAL	$57,000	Rs.1,645,470	$2,151

Rs.30.00 = US$1.00

TABLE 8

($30 Million DA)

FUNDING SOURCES FOR THE AID PORTION OF THE PROJECT BUDGET

CATEGORY	TOTAL	DEV. ASSIST.	HOST COUNTRY CONTRIBUTION
G/LOANS-AGR	$10,700	$6,885	$3,815
G/LOANS-PRI.SECT.	$7,700	$3,885	$3,815
GRANTS-HOUSING	$23,000	$5,630	$17,370
CONSTRUCTION	$7,684	$7,684	$200
TA	$2,266	$2,266	$0
TRAINING	$250	$250	$0
EQUIPMENT	$1,600	$1,600	$0
EVALUATION	$150	$150	$0
CONTINGENCIES	$1,650	$1,650	$0
TOTAL	$55,000	$30,000	$27,000

TABLE 9

REHABILITATION ASSISTANCE PROJECT - FULL FUNDING LEVEL of $ 75 MILLION
(IN 000'S US$)

	AGRICULTURE	IRRIGATION	HOUSING	PRIVATE ENTER	PROJ MGT CONTINGENCY	TOTAL
GRANTS/LOANS	$13,804	-	$28,000	$9,000	-	$50,804
CONSTRUCTION	-	$14,530	-	-	-	$14,530
TA	$102	$470	$864	$230	$600	$2,266
TRAINING	-	$100	$150	-	-	$250
EQUIPMENT	-	$1,600	-	-	-	$1,600
EVALUATION	-	-	-	$150	-	$150
CONTINGENCIES	-	-	-	-	$5,400	$5,400
AID TOTAL	$13,906	$16,700	$29,014	$9,380	$6,000	$75,000

IV. B. COMPONENT COST ESTIMATES

TABLE 10

(US $ 57,000 Combined USAID and GSL)

ITEM	GSL	AID (GRANT)	TOTAL
A. IRRIGATION			
1. Rehabilitation/Construction:			
a) Minor Tanks (6000ac @ Rs.4,000/ac [$130/ac])		$780,000	
b) Major Tanks (95,000 ac @ Rs.2,000/ac [$65/ac]		$6,204,000	
c) Jaffna Lagoon Salt Water Exclusion Scheme		$700,000	
	$600,000	$7,684,000	$8,284,000
2. Technical Assistance			
a) Long-Term Local Hire (2 Engineers for 4 years (@ $18,000/yr.)		$144,000	
b) Short-Term Expatriate - 3 mos. @ $20,000/mo.		$60,000	
Local Hire - 4 mos. @ $1,500/mo		$6,000	
c) Jaffna Lagoon Study		$200,000	
d) Support (Vehicle O&M and Admin.)		$60,000	
		$470,000	$470,000
3. Commodities (Vehicles and Survey, construction and Office equipment)	$50,000	$1,600	$1,650
4. Training	$50,000	$100,000	$150,000
5. Personnel (Recurrent Costs)	$1,300	$1,300	
	$2,000	$9,854	$11,854

IRRIGATION TOTAL US $11,854
(GSL costs are in $ equivalents
at Rs. 30 = 1 US $)

B.	HOUSING Grants to poor families	AID/GSL GRANTS & LOANS
	92,000 families x 50% of Rs. 15,000/grant	US $23,000,000
	Technical Assistance:	
	36 months expatriate long-term	US $450,000
	36 months Sri Lankan long term	US $30,000
	18 months short term (Exp. & S.L.)	US $384,000
	Training for NHDA staff	US $150,000
	HOUSING TOTAL	US $24,014,000
C.	AGRICULTURE	TOTAL
	1. Technical Assistance	
	Short Term TA	
	Expat. 6 mo @ 15m =	US $90,000
	Local Hire 12 mo @ 1 pm=	US $12,000
	Grants/Loans	US $10,700,000
	AGRICULTURE TOTAL	US $10,802,000
D.	PRIVATE SECTOR	
	1. Grant/Loans	
	Grants to small and micro-enterprises 30,000 grants x Rs.2,000	US $2,000,000
	Small loans to micro-businesses 6,400 loans x Rs.15,000	US $3,200,000
	Small loans to small businesses 2,150 loans x Rs.35,000	US $2,500,000
	Technical Assistance	US $230,000
	PRIVATE SECTOR TOTAL:	US $7,930,000

E. PROJECT COORDINATION:

1 expatriate coordinator x 2 to 3 years	US $600,000

The technical assistance for the RAP is budgeted using unit costs:

Resident expatriate -	US $150,000 to US $200,000/yr
Full-time Sri-Lankan -	US $10,000 to US $20,000/yr
Short term expatriate -	UP TO US $20,000/mo
Short-term Sri Lankan -	UP TO US US $3,000/mo

TA needs by sector, especially in the short-term categories are approximations. The STTA will be treated as a pool from which needs can be satisfied as they arise. However,if major changes from the plan occur, these will be formalized with project implementation letters.

The Grant loan portion represents a combination of AID funding and proceeds from PL 480. See Budget tables.

TABLE 11

Productive Activities

	Productive Actv.Grant	Est. No. Eligible	Total cost of Grants	Ave.Loan Amount	Total Loan Cost Rs.	Total Cost Rs.
Cat.1	Rs.4,000	20,000	80.0m	3,000	60m	140m
Cat.2	Rs.4,000	55,000	220.0m	5,000	275m	495m
Cat.3	Rs.4,000	12,000	48.0m	10,000	120m	168m
Small Bus.	-0-	2,000	-0-	30,000	60m	60m
Med. Bus.	-0-	8,000	-0-	60,000	480m	480m
Total			Rs.348.0m		Rs.995m	Rs.1,343m

Category 1: Fishermen
Category 2: Family-owned Farms
Category 3: Family-owned Businesses
Small Businesses: Enterprises owned by more than one person borrowing less than Rs.50,000
Medium Businesses: Enterprises owned by more than one person borrowing between Rs.550,000 and Rs.200,000)

Loan Portion =	Category (1)	Rs. 60/- million	or US $ 2.0 million
	Category (2)	Rs.275/- million	or US $ 9.2 million
	Category (3)	Rs.120/- million	or US $ 4.0 million
	Small Bus.	Rs. 60/- million	or US $ 2.0 million
	Medium Bus.	Rs.480/- million	or US $16.0 million
Total Loans		Rs.995/- million	or US $33.2 million

Settling-in Allowance

Estimated Number of Beneficiaries	Allowance	Total Cost
270,000	Rs.2,000/-	Rs.540m

Total Cost Rs.540 million or US $ 18 million

V. IMPLEMENTATION PLAN

The Rehabilitation Assistance Project poses a number of implementation challenges. Most important is that project implementation will be done in the overall context of the government's rehabilitation effort. In effect the project will buy into the procedures and implementation modalities established by the National Reconstruction Steering Committee(NRSC) and the Ministry of Rehabilitation and Reconstruction(MRR). The Mission is comfortable with this approach because of our involvement in working with the government in designing them.

The Project has four components; all should go forward relatively together, but we recognize implementation must retain sufficient flexibility to adjust to the opportunities and constraints in specific geographic areas or sectors. More importantly RAP is one part of a broad, multi-donor rehabilitation program covering nearly every major economic and social sector in eight districts of Sri Lanka. While RAP has to have its own implementation plan and schedule, they must fit into the implementation scheme of the overall Sri Lankan rehabilitation program.

A. Implementation in the National Context

The GSL has assigned overall responsibility for the rehabilitation program to MRR. MRR is linked with the NRSC which serves as a coordinating and planning unit. The Secretary of the MRR will orchestrate the funding flows to the District Reconstruction Coordinating Committees(DRCC). The Chief Executive Officer(CEO) of the NRSC will coordinate the monitoring of the program and set policy for the rehabilitation efforts of all the donors and the GSL line ministries. The DRCCs, chaired by the Government Agents(GA), will implement the program using local line ministry departments and other implementing agencies (see Section VII.A.). The UNDP has funded staff expertise within the NRSC to assist monitoring, coordinating, and tracking donor finances.

AID's contribution to the rehabilitation program will flow to MRR via Treasury of the Ministry of Finance and Planning. The initial approach which will be taken in this project will be to spell out in the context of annual workplan the type of activities that AID will reimburse for and the documentation which will be required for AID to reimburse. In this regard "R" accounts will be established at the Central Bank. An R-1 account will contain the GSL contributions to the program and MRR will establish a separate "R" account for each donor, to permit separate tracking of all reimbursements to the program. MRR will also set up a special accounting unit to keep track of funding flows. This accounting system will have regular and frequent contacts with the NRSC monitoring unit to ensure consistent financial and performance monitoring.

When disbursements are approved, GSL funding can flow to the field through the line ministries in Colombo to their field offices (for national programs); or from MRR directly to the Kachcheries, where the GAs will take responsibility for carrying out the work. Since the DRCCs will plan and prepare estimates for the activities USAID will fund in housing, agriculture, irrigation, and small business development, nearly all AID reimbursement will will go for that activity of district administrative offices(Kachcheries) under the control and supervision of each GA, his staff and the DRCCs or through credit institutions. The exception to this general rule would be major irrigation schemes, but this would first need the concurrance of MRR and NRSC.

Implementation in the Districts

The DRCCs, established in each of the eight affected Districts of the North and East in December 1987, are responsible to plan and implement the rehabilitation activities in their respective authority. Monitoring grant and loan funding will begin first at the district. DRCCs will have personnel and equipment furnished by the UNDP to carry out data collection and district level aggregation and analysis. National level aggregation and analysis will go on in the NRSC.

Earlier the DRCCs established District Rehabilitation plans and submitted them to the NRSC/MRR for approval. The Ministry has granted initial approval for some activities and granted each district funds from the GSL rehabilitation budget to begin limited implementation. The World Bank will reimburse the GSL for the costs of some of these activities under a retroactive funding arrangement in the IDA loan agreement signed on 20 April 1988 in Washington.

B. USAID Implementation System

USAID will assign a Project Development Officer from the Projects Office to coordinate implementation. This person will be supported by a personal services contractor for all phases of implementation and monitoring. In addition, each project component will have a technical officer from an office in the mission dealing with that substantive sector: Agriculture, Housing, Irrigation and Private Sector. The Project Officer will chair frequent meetings of the Project Management Team for the first six months of implementation. Afterwards, the frequency of meetings can be reduced.

To assist day-to-day implementation of RAP activities with MRR/NRSC on policy and implementation issues, the project will fund a long-term resident personal services contractor who will work in the Mission as well as with the MRR and the NRSC.

Shortly after all conditions precedent are met, USAID will organize a series of pre-implementation meetings to optimize coordination between USAID and GSL coordinating and implementing officials. This will be organized and chaired jointly by USAID and the NRSC/MRR.

Participants will include:

- members of the USAID project committee
- the CEO and professional staff of the NRSC Secretariat
- the Secretary and staff designated by him of the MORR
- available government agents or DRCC Secretariat members of the affected Districts
- Line ministry representatives to the NRSC
- NGO representatives designated by the CEO of the NRSC
- representatives of other donors working in the sectors to which RAP provides funding

Key agenda items for the seminar will include:

1. A review of a draft work plan for the six months following the seminar to focus attention on RAP.

2. An explanation of the coverage and limitations of the USAID assistance package for each sector.

3. Discussion of how the USAID assistance fits into the broader GSL rehabilitation program.

4. A discussion of the relationship between USAID assistance and other donor participation in rehabilitation activities.

5. A review of USAID monitoring and evaluation requirements, including the reimbursement procedures.

6. A description of planned USAID technical assistance to each sector and to the NRSC-DRCCs.

7. A review of immediate actions to implement first steps to put the USAID-funded programs into motion.

C. Implementation of the Agricultural Component

As part of the unified grant and loan scheme of the government, USAID will fund grants to recapitalize farmers made destitute by the hostilities. The RAP will also fund some training, short-term technical assistance, and special studies of environmental and agricultural interest.

It is expected that AID funds for the grant program will be funded on a reimbursement basis. The GSL will advance funds into the system. When funds have been passed on to the recepients, the MRR will request the Treasury for reimbursement. Provided AID monitoring procedures concur that funding guidelines have been followed, AID will reimburse the GSL Treasury, which will reimburse MRR, which will deposit the reimbursement in the USAID "R" account in the Central Bank.

Each GA will inform the NRSC of the number of beneficiaries entitled to the agricultural production grant in his area via the approved Annual District Rehabilitation Plan. MRR will release to the GA

sufficient funds to cover the needs of those beneficiaries who have registered in the NRSC program and possess an entitlement card specifying their eligibility for an agricultural production grant.

The GA will distribute to the AGAs, who conduct the registration exercise, both cash and input vouchers to the amount of the grant to which the total number of beneficiaries in their Division are entitled. Farmers will receive a portion of the grant in cash to cover the cost of tillage. The proportion of the grant received in cash will depend on the amount of land the farmer exploits. The grant will cover the essential inputs required to cultivate the farmer's land and to make him credit worthy after three cropping seasons(see Annex X.F.2 - Agriculture). Depending on location, the AGA will distribute vouchers directly to the farmer or through the ASCs, ASC sub-offices or Grama Sevaka Offices.

The major portion of USAID funds will be for in-kind input vouchers. Most farmers will pay for tillage with either the Settling In or the Productive Enterprise Grant that they receive from the GSL. The farmers will present the vouchers to any input supplier: ASCs MPCSs, CFC outlets, or private dealers and receive inputs in the quantity covered by the Rs. amount on the voucher. The grant-in-kind voucher will not specify the inputs the farmer must use or their price. This should encourage the return of private sector merchants to the input supply business and permit farmers greater choice.

Public and private sector merchants, therefore, should respond to farmer demand and supply appropriate inputs for sale. Merchants will bring vouchers collected from beneficiaries to Kachcheries or AGA offices, to CRBs or to ASCs, where they will receive cash or deposit slips for credit to their account in banks. In the latter case, the Kachcheri will transfer funds to the bank for credit to the input supplier's account. This latter provision will reduce the risk of robbery or informal taxation of cash in remote areas.

The GAs will take responsibility for accounting for the funds in this program and for monitoring distribution of cash and inputs, as well as the impact of the program on agricultural production and income in their Districts.

The ADB and the WB will contribute loan funds in agriculture for farmers who need and can justify such investment. The CB refinanced schemes have still more funds available for this purpose. Approved financial institutions will issue these loans at a common rate of interest (9%) and for common terms, with common eligibility criteria. Current indebtedness will not preclude farmer eligibility for this program.

To carry out the rehabilitation of essential public sector infrastructure to support agricultural rehabilitation, the DRCCs will establish priorities among those structures most needed in their Districts. They will then carry out cost estimates for minimal repairs of storage and office facilities. The DRCCs will

decide which among these structures most needs repair to support rehabilitation. The GA will advance funds from line ministry budgets or from decentralized development budgets to fund this construction. These construction activities, however, will not be funded by AID.

The agricultural component of this program will not require large scale resident technical assistance; however, some technical assistance is anticipated. The types of assistance expected are detailed in Annex X.F.2.Training for DAS or DA personnel, as well as for farmers, will be given if during implementation it is shown as neccessary. Requests will come through the MRR. ACASs, DDAs, CRBs, ASCs or ASC Sub-Offices will propose specific training courses they need in fields such as credit management, input use, or extension methodology. The DRCC will coordinate all requests in a district and submit a plan to MRR who in turn will propose it to USAID.

D. Implementation of the Enterprise Component

USAID will fund grants and loans to businesses to help recapitalize the private sector in the North and East and provide assistance to lending institutions required for restore normal credit activities in the private sector.

To simplify the process of providing rehabilitation grants the MRR and DRCCs will provide a Rs.4,000 productive enterprise for every family affected by the hostilities that was engaged in fishing, had a farm or a family-owned enterprise. All affected families will be treated the same. USAID will fund the grant component for the estimated 12,000 families with family-owned enterprises.

The funds for these grants will flow through the channels outlined above for agricultural and housing grants. The GAs, AGAs or other agents designated by them will distribute these grants in cash or through vouchers. Given the diversity of products which businesses require, a voucher system may be difficult. Exceptions may include: vouchers for water pumps for intensive commercial agri-businesses in the Jaffna area and equipment for the production of building materials (bricks, tiles, or hardware). The DRCCs will establish procedures for the redemption of these vouchers as they do for the agriculture and housing sectors. MRR will monitor the implementation of the first voucher systems to ascertain whether this system can work effectively. Some modifications may be proposed.

All productive enterprises, whether family-owned or not, are eligible for loans. The procedures for all loans under Rs.200,000 are the same. It is expected that most people borrowing less than Rs.10,000 will use Cooperative Rural Banks and most people borrowing over Rs.50,000 will use commercial banks. All loans of less than Rs.200,000 will be at 9% interest. The repayment period is to be determined by the financial institutions but can be up to twenty years. Thrift and Credit Cooperatives which were surveyed in the North and East have indicated that they do not think their members will be interested in these loans. However, this may change with the availability of loan money.

Funds will be provided by REPPIA for on-lending by the financial institution having contact with the borrower. REPPIA will assume all the risk for non-repayment. The financial institution will receive a percentage of the repayment coupon as an incentive to help with collections. Most of the agreements thus far negotiated are for a retention of 2% of the amount repaid. The MRR/NRSC has proposed the establishment of a special Capital Development Fund for the repayments. The first two repayments can be relent at 9% for loans under Rs.200,000. The next repayment money can be re-lent at 11% for loans up to Rs4 million. The banks retain 2% of the coupon. When this money is repaid it can be re-lent for 13% for loans up to Rs.10 million with the banks retaining 2% of the coupon. The next relending can be at any interest rate and in any amount. The banks would have to pay 1.5% for the money at this point; they will keep the balance that they receive, but at this time they bear the full risk for non-repayment. All money would have to be repaid to the government according to a schedule to be determined depending on the terms of the reconstruction loan money the government receives .

There are an adequate number of CRBs through out the provinces. These are complemented by Bank of Ceylon branches throughout the provinces and in some of the Agrarian Service Centers, The NRSC and MRR believe many of the smaller CRBs will need some technical assistance and/or training to permit them to handle the quantity of loans expected.

E. Implementation of the Housing Component

USAID will fund two principal activities in housing: grants to affected householders who have registered as beneficiaries through the DRCCs and the NRSC and are in the two poorest groups among those affected by the hostilities; and technical assistance to the rehabilitation and national housing programs. Since no other donors are expected to contribute significant sums for housing grants, this program component will require the use of both AID funds targeted for this sector. Also because of that USAID will not participate in the financing of the housing loan program that complements the grant program. The GSL will use an equivilent of monies equal to the HG funds to support this as well.

Grant money will flow through the channels described in the section on national level implementation above: from USAID to the Treasury to the MRR subject to distirubtion agreed upon in the annual workplan. These plans will note the number of beneficiaries registered in the two lowest income categories. The registration process will also keep track of beneficiaries who have already received other forms of housing support - NGO assistance, help from donors with geographically based programs, etc. - in order to avoid duplication of benefits.

The GAs and AGAs will distribute housing grants with help from District NHDA offices. Grants will be partially in cash, to cover costs of labor, and partially in the form of vouchers for building materials and contractors.

The GA will ensure that all legitimate manufacturers or suppliers of building materials and services in the District have registered with the DRCC. Only registered firms and contractors will be able to redeem the vouchers at the Kachcheries, AGA offices, NHDA offices or other agencies. As in the agricultural program, the sums received by the suppliers can be taken in cash or deposited directly into a bank account of their choice by the redeeming agent at the GA or AGA level.

The NRSC monitoring system supplemented by USAID monitoring, will track financial information about the distribution of housing grants as well as indicators of the success of the program in helping affected householders reestablish acceptable shelter conditions for their families.

USAID will fund a long-term resident technical adviser in the housing sector to assist with monitoring the implementation of the housing rehabilitation program. The adviser will also contribute technical assistance to the loan components of the GSL's rehabilitation scheme for housing. He/she may advise the national housing program on policy issues such as devolution and decentralization, land tenure and titling, public and private sector credit facilities and management and administration. DRCCs and the GSL National Housing Program can also call for short-term technical assistance, both expatriate and Sri Lankan as needed. The long-term expatriate housing adviser will work in close contact with the NHDA, NRSC, USAID and all other GSL and private entities closely involved in housing sector development.

F. Implementation of the Irrigation Component

USAID will fund four sets of activities under the irrigation component of RAP: rehabilitation of affected systems, procurement of commodities, limited training for farmers and irrigation department personnel, and technical assistance. In addition, the Project will reserve funds for feasibility and environmental studies and possible rehabilitation of the salt-water exclusion scheme on the Jaffna Lagoons.

To carry out the rehabilitation of irrigation systems affected by the hostilities, funds will flow through ERD, MRR and the "R" account. Funding will go either directly to the Irrigation Department or via the Districts, depending on the size of the subproject. The DRCCs have prepared district level plans which include requirements and priorities for irrigation rehabilitation. Irrigation Department (ID) personnel in each District have conceived these plans, carried out initial designs and cost estimates and discussed priorities with the membership of the DRCC.

When the NRSC approves a District plan for irrigation rehabilitation, the Irrigation Department will follow its usual procedure to invite tenders for the execution of the work required. The Irrigation Engineer or the Deputy Director (depending on the

size of the contract) will notify eligible contractors who will submit bids. These in turn will be evaluated by a committee at the Range or Division level (depending, once again on the size of the contract).

Contracts for this sub component are varied and may be based on quantities of work performed (in the case of earthworks, for example) or on discreet units completed (in the case of sluice gates or cross regulators). ID personnel will supervise the work, approve it in the contractor's logbook and then certify that the contractor may be paid. When a construction component is completed, the ID will inform the DRCC which applies to MRF for reimbursement for the expenses undertaken to rehabilitate the system in question.

The Irrigation Component of the project seems particularly suited for a percentage of Actual Cost Reimbursement payment system. Because much of the work will consist of labor intensive activities with many small and diverse components -- canal cleaning, construction of small structures, repairs to bunds, etc. -- it will not be necessary in many cases to have detailed designs before the work is actually begun. Even where larger and more complex construction is involved, the ID will generally be using standard criteria for designs and cost estimates and for their tendering procedures which have already been checked and fully accepted by AID. Thus, while the general plans of the type of works to be done and their estimated costs and locations will be agreed to by AID in advance of the construction, it will not be necessary for AID to approve detailed plans and cost estimates before work is begun, as is required under the Fixed Amount Reimbursement System. Although generally AID procurement rules do not apply, USAID may require approval of contracts for more than $100,000 to improve monitoring. AID will reimburse for the actual costs of satisfactorily completed subprojects, upon receipt of appropriate documentation of such costs.

Before any rehabilitation work is undertaken, a workplan for the year must be approved by AID. The workplan will describe the subprojects to be rehabilitated for the year, show their location on large scale maps, list their estimated costs, and give an estimate of the time requried to complete the work. The workplan or portions of them may be amended at any time with AID's approval. AID will earmark and commit funds on the basis of this workplan.

Prior to reimbursement, AID will require documentation and evidence to verify actual cost expended for a subproject and certification by MRR that the subproject has been completed in accordance with agreed upon design specifications and other criteria. In addition, AID will provide for monitoring of the construction by the TA team. At the outset AID will finance 100% of each subproject completed. The GSL will make a contribution of the Rupee equivalent of US $ 2 million but this will be essentially for personnel support costs and for design costs and limited commodity costs.

After the first year and before the next year's workplan is prepared, the cost of that year's works will be reviewed. If the average costs of the subprojects begin to exceed the agreed upon overall rates of Rs.2,000 per acre for major and medium systems and Rs.4,000 for minor systems, the GSL will be expected to increase

its contribution. If the Mission feels that costs are exceeding the general parameters of what it would cost to build similiar systems, consideration will be given to reducing the amount that AID will reimburse for or reverting to a FAR type system.

At the same time the DRCC and the DD/I will carry out their own monitoring of expenses incurred for system rehabilitation. The NRSC/DRCC rehabilitation monitoring plan will include measures of the effectiveness of irrigation rehabilitation in getting farmers back on the land, increasing the land area receiving adequate water, and increasing the cropping intensity in affected systems.

For the rehabilitation of minor irrigation systems (those serving less than 200 acres of land), the initial planning and prioritizing is done by DAS personnel in the ASCs or the ASC sub-offices. Once they have submitted a plan for the rehabilitation of minor systems to the DRCC and it is approved, the DRCC will instruct the DD/I to have his divisional engineers prepare plans and estimates based on ID unit costs and standard design features. Afterwards, the system proceeds as for major and medium systems.

This approach will have the following advantages: it will greatly speed up the rehabilitation process, it will make AID overall dollar commitment to the component the same, it will not increase the percentage contribution to individual subprojects which will remain fixed, and it will reimburse only for completed subprojects. If a subproject is not completed, AID will not reimburse.

Procurement

USAID will fund the procurement of a significant quantity of commodities for the ID ranges in the North and East. These commodities and the method for procuring them are described in the Commodity Procurement Plan (Section V.G.).

Training

Training for farmers and ID personnel will go forward in the same decentralized manner as in the Agriculture component. DD/Is and ACASs will prepare plans for training of farmers or ID personnel, which they will submit to the DRCC. The DRCC will modify or approve the plan and transmit it to the NRSC which will obtain USAID approval for the training program. Funds will then flow from the "R" account to the institution or individual carrying out the training session (see annex X.F.3 for details of illustrative training courses and participants).

Technical Assistance

Technical assistance for the irrigation component of the RAP will include short-term Sri Lankan and expatriate engineers and two long-term Sri Lankan engineers. In addition short-term technical assistance is anticipated for the Jaffna Lagoon Study.

The long-term Sri Lankan engineers will work closely with USAID, MRR/NRSC and the ID. If security conditions permit, one or both may live in the North and East at the headquarters of the most active ranges - probably Vavuniya and Batticaloa. The mechanism for identifying needs for short-term personnel is described in Section V.E. - Technical Assistance Plan.

When circumstances permit, USAID will fund a full feasibility studyand environmental assessment for the rehabilitation of the salt-water exclusion scheme on the Jaffna Lagoons. A team of expatriate and Sri Lankan experts will spend two months in Jaffna and prepare a full justification for carrying out or not carrying out the rehabilitation. If the technical, agronomic, environmental, economic and social analyses are positive, USAID will fund, through the DD/I and the DRCC in Jaffna the rehabilitation works recommended by the study. Construction will be contracted and the works constructed, inspected and paid for as per the procedures outlined above for the rehabilitation of major irrigation schemes. TA engineers will participate actively in both the design and the execution of this work.

G. Commodity Procurement Plan

The RAP will do relatively little procurement. However, the Irrigation Department, which suffered losses of equipment during the ethnic conflict, needs certain goods to carry out its part in the rehabilitation program. Without transport for its agents and their tools, as well as some heavy equipment, the ID will find itself unable to put water back on the fields of the affected farmers of the North and East. This would seriously constrain the return to normal agricultural productivity that is one of the principle objectives of the project. If in the extremely unlikely situation that overseas procurement in other project components becomes necessary as implementation proceeds, MRR/NRSC, the DRCCs, and USAID will develop ad hoc plans to cover those needs.

Requirements:

The following equipment will help the ID carry out its role in the RAP. The items below are most urgently required for work to begin normally once the project begins disbursing:

15 4-wd Mitsubishi Pajero jeeps
15 45HP Massey-Ferguson farm tractors
15 3.5-ton trailers for tractors
8 stake-bed trucks (7T capacity)
20 sets of field survey equipment

The estimated total cost of the items above is US$800,000. The DRCCs and the Deputy Directors of Irrigation (DD/Is) will present plans for the distribution of this equipment among the five irrigation ranges in the North and East. The MRR/NRSC will review and approve the final list in consultation with the ID and distribute the equipment according to need.

In addition, the ID has other sorts of equipment in the North and East. The RAP will procure, to a total value of US$600,000, the following items:

generators
water pumps
powered hand compacters
dump trucks
bulldozers
excavators
cement mixers
other construction equipment.

This equipment is not immediately necessary for rehabilitation works funded by RAP. Thus procurement can proceed with less urgency than for the first list. The DRCCs will consult with the DD/Is in their Districts and present lists of needed equipment to the MORR/NRSC for approval, which will reconcile the requests with available funding and present a procurement schedule to USAID and the procurement agent.

Finally, RAP will procure for the ID ranges in the affected areas, office equipment to the amount of US$120,000 to replace materials lost during the conflict. This list will include:

telephones
transceivers
typewriters
photocopying machines
calculators
safes

The DRCCs and the DD/Is will plan for the procurement of this material as they will for the construction equipment.

In summary:	urgent maintenance equipment -	US$800,000
	replacing construction equip. -	600,000
	replacing office equipment -	120,000
	PSA costs of procurement -	80,000
TOTAL PROCUREMENT:		US$1,600,000

Procurement:

Procurement delays are traditional in programs of assistance to Sri Lanka. Projects may spend a year waiting for vehicles and other essential items. These delays may seriously compromise their ability to work to schedule. For the RAP, such delays would be difficult to absorb. If the ID work suffers delay, the agricultural recovery program will suffer in turn. As most of the people in the affected districts depend upon agriculture as their principal source of income, they will have to do without essential items they would ordinarily purchase for purposes of production or consumption. At the very least the irrigation component may find itself compromised

USAID has analyzed the different methods for procuring project-related commodities in Sri Lanka. It reveals that while all methods are slow, AID direct procurement is the fastest method. For this reason, the design team proposes that procurement for the RAP be carried out by a procurement services agent (PSA) under contract with USAID. Given the expected fee for this service the Mission will informally solicit quotations from a number of firms to do this work. USAID and GSL will agree on specifications for the commodities, which will be procured by the PSA following host country procurement rules. Payment for the equipment will be made by USAID directly to the suppliers, or through L/Comms. The GSL will have the responsibility do all necessary customs clearances, etc.

Waiver Considerations:

Using products of other manufacturers or vehicles with left hand drive would have negative consequences for the ID, as they would have to train new maintenance and operations people or retrain their current personnel, maintain double stocking of spares for equipment of different brands, and carry out new operation costing for monitoring and controls. Therefore, where appropriate waivers for proprietary or sole source procurement will be obtained. These, however, will need to be justified in detail. Some of those items include:

Mitsubishi Pajero jeeps (Japan)
Massey-Ferguson Tractors (England)
Brown and Co. trailers (Colombo)

Once USAID waivers are considered and approved if appropriate, procurement would begin. The following steps will speed the procurement process and will begin shortly:

Preparing technical specifications, cost estimates.

Obtain GSL letter of request to USAID. This should happen very swiftly as the procurement is in response to ID requests.

Draft PIO/C and waiver requests and obtain clearance.

The steps and procedures proposed above should reduce procurement time. This is crucial since intensive work to rehabilitate irrigation works should begin as soon as possible. The MRR/NRSC and USAID should consult with the ID/MLLD to obtain the release of equipment from other ID ranges to lend those in the North and East until the new equipment arrives if that become necessary.

For the less urgent construction and office equipment, normal procurement procedures can take place as delays will have less of an impact on RAP implementation.

VI. MONITORING PLAN

Primary USAID responsibility for monitoring the project will lie with a Project Officer from the Projects office. He/she will be supported by a long term personal services contractor funded by the project, a Foreign Service National officer and each of the technical offices participating in the project.

In carrying out his/her responsibilities, the Project Development Officer will be assisted by USAID staff who have been active in the design of the project, i.e Program Economist, representatives from the Program Office and other mission offices, etc. In addition, a long term personal services contract will be signed funded by the project to assist with implementation and monitoring responsibilities. In effect for this multi office project it is planned to have the project committee concept extend beyond signing of the project agreement. Members of the project committee have been closely involved to date in project design and PP preparation. In addition, the Mission will draw, as needed, on the services of the Regional Commodity Management Officer (Bangkok) and the Area Contracting Officer (New Delhi).

The Project Officer will promote and facilitate regular contact with staff of other donors involved in the GSL rehabilitation program (especially the World Bank, ADB, and UNDP) to help ensure a high level of complementarity and coordination and to share monitoring and evaluation findings. The NRSC, with assistance from an AID-funded rehabilitation expert, the World Bank, and loaned experts from the GSL, is completing a comprehensive automated monitoring system for the rehabilitation program. Implementation of the program will be facilitated by trained staff provided to the NRSC and DRCCs through UNDP funding. The system is designed both to serve the management needs of program implementors and the accountability needs of the GSL and donor agencies.

The purposes of the system are to monitor financial performance (disbursement and recovery) and physical performance, and provide statistical information on the rehabilitation program. Major system inputs for each activity will include preliminary and monthly reports, periodic work schedule reports, monthly accounting of payments and receipts, supplier data, and survey reports.

System outputs include national and regional level reports for donors and GSL agencies; District level reports for the NRSC and DRCCs, and special reports for control and implementation purposes. As far as possible, performance will be compared to expected values (expenditure and physical performance). Graphical representations will be prepared in relevant cases. Data will be transferred between the Districts and the NRSC by floppy disk exchange.

For each sector, a set of 10-15 indicators is being established. Each indicator will have up to nine variables or subsets of information. For example, an indicator measuring the number of people receiving a certain benefit will be subdivided in terms of

place of registration, income, ethnic background, etc. There will be regular tracking and reporting; data gathering will be keyed to the District level (and lower administrative units such as AGAs, Grama Sevekas, and sectoral field staff as appropriate).

Information will be aggregated at both District and national levels for periodic graphing and analysis. Computers and qualified computer operators will be provided to both the NRSC and the DRCCs with UNDP support. Both implementation, impact, and accounting data will be captured. Report formats will be geared to both GSL and donor requirements. The regular monitoring system will be supplemented by special surveys and data gathering conducted by the NRSC.

This system should provide AID with most of required monitoring information. It would be inefficient and largely duplicative for AID to superimpose its own monitoring system. Nonetheless, there are some broader questions dealing with benefit equity and the specific impact of AID grant assistance to beneficiaries that may benefit from special analysis outside the regular monitoring system. For this purpose, USAID may wish to contract with NGOs or other local institutions to conduct special studies from time to time and monies have been so budgeted in the Evaluation section of the project budget.

A contracted project manager will be placed in the USAID mission to assist with AID monitoring, administration and coordination. He/she also will assist the NRSC and DRCCs in the implementation of their monitoring system, if necessary, especially to assure that the system produces the types of information that USAID requires. This person also will support mission liaison with GSL project implementing agencies. It will be specific part of the terms of reference to coordinate USAID monitoring needs with the evolving NRSC system. Additional technical assistance for the irrigation component will assist with specific inspection requirements for that sector of activity.

A detailed listing of NRSC monitoring indicators for the sectors covered by RAP is contained in the Institutional Analysis Annex to this PP. The project evaluation plan is contained in Section IX.

VII. A. INSTITUTIONAL ANALYSIS

I. Administrative Context of the Government of Sri Lanka Rehabilitation Program

Background

The administrative structure of the Government of Sri Lanka (GSL) rehabilitation program for the districts affected by ethnic conflict seeks to strike a delicate balance between centralized coordination and decentralized implementation. The GSL recognizes rehabilitation and reconstruction priorities must emerge from local level decision makers rather than from the center. At the same time, the central government must balance available resources against aggregate needs and assure a consistent and effective system of accountability for the use of donor and national resources.

Another administrative challenge is that local people also must participate in the design and implementation of district rehabilitation programs if these activities are to be perceived as legitimate. Doing so requires administrative mechanisms to incorporate the views of disparate elements in the society, each with its own social, political, and economic recovery agendas.

In its November, 1987 report, the World Bank assessment team recommended putting each district in charge of its own reconstruction program. The World Bank team offered the following principles to guide program administration:

> prioritizing, planning, and monitoring of rehabilitation and reconstruction activities to be managed by district-level coordinating committees;
>
> project evaluation, financial approval, and coordination to be managed by a powerful and impartial central agency or ministry; and
>
> project implementation to be managed by District-level departments of line ministries utilizing existing procedures, expertise, and organizations.

In reality, the initial design of overall GSL rehabilitation policy and broad program guidelines appears at this time to be rather centralized in the hands of the GSL, donors, and technical assistance personnel. District-level program planning within the central framework is proceeding in a more decentralized fashion.

The National Reconstruction Steering Committee

Following the World Bank's guidelines, the Government of Sri Lanka formed the National Reconstruction Steering Committee (NRSC) in December, 1987 within the Ministry of Finance and Planning (MFP).

As a result of recent decisions, the NRSC remains with the Ministry of Finance and Planning but works closely with the Cabinet rank Ministry of Rehabilitation and Reconstruction (MRR) as an advisory policy formulation, planning, coordinating, and monitoring unit for rehabilitation activities. The NRSC retains three representatives from the MFP among its membership, including its Chief Executive Officer, the Budget Director, and the Director of External Resources.

The stated responsibilities of the NRSC include the following:

- organize, coordinate, and supervise the implementation by the line ministries of the rehabilitation program;
- develop work programs and budgets for the program, by year and by sector, based on proposals from the District Reconstruction Coordination Committees (DRCC);
- review project proposals and recommend financial approval for the transfer of funds from the Treasury to line ministries and DRCCs;
- monitor program implementation and prepare periodic reports of financial and physical progress for reporting to the MORR and concerned donors;
- liaise with donors, in conjunction with the Director of External Resources in the MFP, to mobilize funds to implement the program;
- prepare reimbursement claims for financing of eligible expenditures from donor agencies;
- maintain accounts of all project expenditures and prepare annual audit statements; and
- settle any disputes arising between districts in the implementation of the program.

The NRSC consists of a Chief Executive Officer, Secretaries of line ministries that have a sizable financial involvement in the rehabilitation program, and the Government Agents of the eight affected districts. Secretaries of additional ministries may be coopted as needed. An approved plan for the staffing of an NRSC Secretariat calls for a total of 29 people, including one expatriate long-term consultant.

The NRSC, in coordination with donors, has developed the policy framework for implementation of rehabilitation activities in some, but not all sectors. Aggregate work plans are keyed to expected donor pledges by sector. In some cases, final policy determination depends on donor studies and agreements. In these cases, planning moves forward on the basis of assumptions about the level, source, and form of assistance.

The NRSC, with the concurrence of the MFP, also has worked out disbursement procedures to facilitate the flow of funds. MRR will establish a special set of "R" accounts for the rehabilitation program. The R1 account will be designated for Government of Sri Lanka counterpart funds released by the Treasury. Other R accounts will provide a control mechanism for specific donor accounts by sector. The MRR will disburse funds from these accounts directly to the District GAs (or to line ministries for national programs) against work plans approved by the NRSC and the MRR. The GAs then will provide funds to local line ministry directors and assistant directors at the District level for implementation of sectoral activities or to the designated offices for grant and credit programs. (see Figure 1).

This procedure places ultimate accountability for donor funds with the MRR which will establish a special accounting unit for this purpose. Under this arrangement, some normal accounting procedures are waived as long as all government requirements are met. Major benefits are 1) GA's can receive funds for implementation in advance of formal plan approval; and 2) procurement procedures will be expedited.

Financial and other monitoring will be carried out under the direction of the NRSC according to a detailed procedure currently under development.

The District Reconstruction Coordinating Committees

The DRCCs were formally established in the eight affected districts in December, 1987. Their stated responsibilities are to

- consult elected representatives, citizens' representatives, NGOs, and line ministry staff to reach agreement on priorities for reconstruction;

- develop annual work plans for needed rehabilitation and reconstruction investment within the District;

- prepare monthly reports on the status of prioritization. planning, and preparation of proposals for the various rehabilitation sectors;

- request line ministries to develop proposals for consideration by the NRSC when the district line ministry staff is incapable of doing so for technical or other reasons;

- coordinate and supervise the implementation of projects and prepare monthly reports of financial and physical progress; and

- ensure and coordinate the maximum participation by NGOs, departments, and other local citizens' groups in project implementation, in conformity with technical standards established by the government.

Each DRCC is chaired by the District Government Agent (GA) and consists of relevant regional and district line department heads as well as chosen representatives of NGOs and citizens' committees. Each Kachcheri has a special Secretariat handling the DRCC work program to be supplemented by UNDP-funded specialists. Due to the curtailment of some other projects due to disruption caused by the ethnic conflict, there are available qualified personnel in each Kachcheri drawn from staff of the existing District Development Committees and other organizations.

The NRSC requested each DRCC to formulate annual work plans for 1988 consistent with national reconstruction program guidelines. As of April 20, 1988, all of the district plans had been received by the NRSC. Subsequently, at the April meeting of the NRSC, the Budget Director authorized block grants totaling US$200,000 to be made available to the eight Districts on a roughly equal basis. Districts may spend these funds on approved activities in their plans for which GSL or donor funding is available.

The performance to date of the NRSC and especially the DRCC's is promising. Despite the lack of a full Secretariat and, until recently, considerable ambiguity about its placement in the government structure, the NRSC has move forward with several major agendas. These include

- development of an implementation framework for the reconstruction program;
- support to the development of DRCCs in the affected districts and guidance to them in the initiation of their activities, including preparation of 1988 work plans;
- development of an feasible funds flow mechanism and initiation of funding for some local activities with GSL and IDA funding.
- preparation of a standardized beneficiary registration procedure;
- development of a comprehensive program monitoring system; and
- determination of a Secretariat staffing plan, job descriptions, and the beginning of hiring procedures.

The status of the DRCCs is even more encouraging. Using presently available Kachcheri staff, each DRCC has initiated comprehensive impact assessment and planning for needed rehabilitation investment. Government Agents from each of the eight affected Districts are participating actively with the NRSC and mobilizing local implementing units through participation in planning and costing specific work items.

In general the NRSC and DRCCs are capable of providing the necessary planning, coordinating, and monitoring leadership to the rehabilitation program. Important steps to be completed in the near future include obtaining formal approval for the funds flow scheme from the MOFP, setting up the special "R" accounts, and establishing the monitoring and evaluation system. Action on each of these steps is underway. A major contingency is that the NRSC operate relatively free from political interference. The need for Cabinet approval of major rehabilitation policy decisions highlights this risk.

The administrative structure for local rehabilitation program coordination is depicted in an attached figure.

Implementing Agencies

Under the coordinating leadership of the NRSC and DRCCs, various other government and non-government agencies will play an important role in rehabilitation program implementation. These include credit and financial intermediary organizations, government line ministries, and NGOs.

Credit and Financial Intermediaries

Sri Lanka needs a strong system of rural financial intermediaries. In rural areas, community-level organizations are best equipped to lend on the basis of an individual's known credit worthiness, supervise the use of funds for the intended purposes, and ensure recovery of funds. In Sri Lanka there are two institutions at the village level which potentially can play this vital role: the Thrift and Credit Cooperative Societies (TCCS) and the CRBs.

Except for Trincomalee and Ampara, an adequate network of these institutions exists in the affected districts. The role of TCCSs, however, should be limited to serving current members or to members added in the course of natural expansion that occurs under their own control and choice.

For housing loans under the rehabilitation program, the TCCS structure is appropriate as a delivery mechanism for its members. Other borrowers and all eligible housing grant recipients should be served by a special window established at the District level by the MRR in conjunction with NHDA, the Government Agent and the District Housing Committee that the GA chairs. Repayment of housing loans will be managed at the local level by Assistant GAs and Grama Sevekas who are in position to register and monitor individual borrowers (Grama Sevekas are local officials appointed by the Ministry of Home Affairs on recommendation of the GA).

For agricultural and small business grants, the Government Agents will distribute cash or input vouchers to AGAs and Grama Sevekas for distribution to beneficiaries identified as eligible by the registration system. For agricultural and small and micro-business loans, the Agrarian Service Centers are most appropriate as a delivery vehicle, at least for the first cycle of production and loan repayment, under the supervision and sponsorship of the Bank of Ceylon.

Line Ministries and Other Implementing Agencies

Successful implementation of the rehabilitation program depends not only on national and district coordinating units but also on those agencies responsible for program implementation. Each of the four sectors of planned USAID assistance to a lesser or greater extent depends on GSL line ministries or other agencies for effective delivery of program services. Since implementation in the sectors of USAID assistance will be coordinated at the District level, it is the line ministry departments at that level that are especially important for implementation. This is particularly true in irrigation where much of the technical and construction work will be performed by local units of the Irrigation Department. In agriculture, a variety of agencies are responsible for input delivery, and the research and extension work that undergrid farmer productivity. For housing, the NHDA and REPPIA will play a role. For small business, the Department of Rural Industries and other support agencies will be involved.

In view of the centrality of the District administration and of financial intermediaries for the rehabilitation program, demands on line ministries will generally not be extraordinarily large. Staff availability appears to be generally good despite the disruptions suffered in the North and East. At the same time, the physical infrastructure that these ministries have to work with is severely damaged in much of the affected area.

The local administrative structure for the agriculture and irrigation line ministries is depicted in an attached figure.

NGOs

Numerous local and international NGOs are active in Sri Lanka's northern and eastern Districts, including many that initiated activities there in the wake of the ethnic conflict. In addition there are countless village-level humanitarian organizations and committees which have arisen with particular political or relief and rehabilitation agendas. These include religious groups, human rights advocacy groups, women's organizations, local rural development societies, and many others. The main limitation of these groups in terms of the rehabilitation program is the absence of linkage to the larger

and more formal organizations that are, in turn, linked to the DRCCs. The strength of these groups is their grass-roots legitimacy. At the same time, many represent narrow interests that may be highly politically charged.

NGOs are and should continue to play a useful role in assisting the reconstruction effort, especially in the housing, health, and agriculture sectors. Each of these agencies, however, has its own limited area of operation, its own program agenda, and its own clientele. The GSL, by contrast, needs to assure both widespread coverage and benefit equity in its programs.

At the same time, NGOs can play several very important supplementary roles that will support the formal rehabilitation program without violating their own program integrity. Potential roles include:

assisting in the identification and certification of eligible beneficiaries;

helping eligible beneficiaries secure credit, housing materials, agricultural inputs, or other benefits by providing transportation, or, when needed, advocacy with suppliers; and

advising the DRCCs on issues of community need, preferences, and concerns and help the DRCCs monitor implementation fairness and equity.

Mechanisms for NGOs to play these roles are suggested in Annex VII. A.

II. Special Project Issues

Donor Coordination

The success of RAP depends heavily on the ability of the NRSC to coordinate donor resources and policies. But the donors also will have to ensure close working relationships among themselves if the overall rehabilitation effort is to achieve its objectives. Both the GSL and the donor community have made good starts toward such coordination. The donors participating in the rehabilitation program have welcomed the GSL's establishment of the NRSC as a coordinating body for all of the line ministries who will implement specific local activities within the overall program.

The NRSC and the donor group have succeeded in laying the foundations for a well coordinated effort to undertake the rehabilitation program. Details of this coordination are discussed in Section III. A. 4 of this PP.

Establishing Benefit Eligibility

The NRSC has developed a comprehensive registration system to identify eligible beneficiaries and assure equitable distribution of the benefits for which they qualify. Detailed instructions for the registration prices have been prepared for the DRCCs as has an information booklet for potential recipients. The registration process will be under the control of the District GA through a DRCC Assessment Panel but will involve personnel at the community level and make informal use of citizens' groups to help arbitrate conflicts or confirm eligibility in cases where records may be lost. Instructions to recipients will detail the sources of grant, loan, commodity, or other type of assistance and how and where it can be obtained.

The registration system is well conceived and consistent with the past GSL experience in welfare assistance programs. The focus on decentralized determination of eligibility provides reasonable assurance of fairness and equity under the circumstances. Staff available to the DRCCs appear to be sufficient in number and capacity to administer the procedure. Employing Grama Seveka-designated personnel to conduct the actual registration interviews places this key task as close to the community level as possible and will help the program achieve perceptions of credibility among the people.

Government Commitment to the Rehabilitation Program

The GSL recognizes an economic initiative is essential for the political and administrative dimensions of the peace accord to take root. In coordination with donors and based on the framework recommended by the World Bank team in 1987, the Government has created the required administrative infrastructure to plan and coordinate the program. As noted, the authority and capacity of the NRSC and DRCCs appear adequate to implement the rehabilitation program. Additionally, staff are being made available in the Districts to implement specific activities. Under the leadership of MRR and the NRSC, roles and responsibilities in the program are being defined against the normal backdrop of political competition for control over the resources the program will bring.

Decentralization

Given the political and ethnic background to the conflict that created the need for the rehabilitation program, both the reality and the perception of decentralization are especially important. The principle of District control of processes of prioritizing needs, planning activities, disbursing funds to local implementing agencies, and supervising the monitoring and reporting of local performance must be carefully maintained.

Among the majority of local residents in the affected Districts, there remains a suspicion of the central government and the likelihood of a fair and equitable distribution of resources. Mechanisms for decentralization contained in the Peace Accord are not accorded a high degree of trust. Programs identified with Colombo are unlikely to succeed or survive under present circumstances. The GA's, by contrast, have a relatively high degree of local credibility although, in some cases, their freedom of action also is circumscribed by militant factions in the community. Nonetheless, a rehabilitation program identified with them, and with DRCCs that are perceived as responsive to the people, has a chance to make a difference.

GSL plans to devolve power to Provincial Councils are still in the formative stage so it is not possible to fully assess the impact this administrative change will have on future institutional responsibility for the rehabilitation program. Provincial elections for portions of the country outside the affected Districts have been held. Provincial Council elections in the North and East must still be scheduled. Timing is dependent on complex political factors as well as the linkage of such elections to the pullout of the Indian Peace-Keeping Force (IPKF).

The important role assigned to the Districts in the rehabilitation program is consistent with the concept of devolution of power embodied in the Provincial Councils. It is probable, however, that some district boundaries may change which could cause administrative disruption to DRCC implementation of the rehabilitation program in those areas (see Annex VII.A).

Provincial governance in the affected area is expected to provide a stronger political voice in Colombo for the interests of the North and East. This will help fill a political vacuum caused by the resignation of the Members of Parliament from all the affected districts except Trincomalee. District leadership in the North and East welcomes the coming of Provincial Councils as an antidote to the perceived responsiveness of most line ministries to political pressures generally favoring Southern interests. At the same time, it is realistic to expect that the political power of Provincial officials, especially the Chief Minister, may reduce the effective authority of District leadership.

VII. B. 1. SUMMARY HOUSING ANALYSIS

As part of project design, a number of analysis of the housing component have been undertaken. Given that key decisions on most aspects of design depend upon larger program considerations, these analyses have functioned less to determine the optimum design of a housing rehabilitation program than to select the best intervention for USAID in the context of the exigencies of the situation. One major constraint has been severe limitations on design team access to primary sources of information in the affected areas of the North and East. Nevertheless, judicious use of Colombo-based organizations with networks in the North and East has permitted a clear enough picture to emerge to enable the team to be confident that the design proposed is a basically sound and feasible one. Its actual implementation will depend upon the degree to which public and private institutions in the affected areas can fulfill their functions on a relatively normal basis. The purpose of the technical analysis is to explain the rationale behind the proposed program and identify issues needing further analysis or refinement.

Housing Damages and Affected Households

A World Bank team visited the affected areas of the North and East in September of 1987, just prior to the wave of violence related to the signing of the Indo-Sri Lankan Peace Accord of July 1987. At that time, the damages were heavily concentrated on non-permanent and semi-permanent structures housing. These belongs to mostly poor households in rural areas. The ratio of destroyed to damaged structures was either to take shelter with relatives elsewhere on the island or flee to India. A small proportion ended up in government run shelters, where conditions remained relatively good in comparison to refugee camps elsewhere.

The numbers of affected households grew after the violence which culminated in the occupation of the North and East by the Indian Peace Keeping Force, which continues to operate there. The total now estimated to have suffered some degree of damage to their dwelling is 114,000 households. This total does not represent a complete update, however, since data from some affected areas cannot yet be collected due to the security situation.

The characteristics of affected households are known only generally, from the October 1987 assessment. A CARE survey of a sample of households in Jaffna, Mannar and Batticaloa will provide more precise data as well as updated information on damages. What we know now is that the great majority of affected households are poor, 80% having incomes below the median. In rural areas, where the majority resided, they occupied dwellings constructed of mud, wattle-and-daub, and mud brick. They probably do not have formal title to their land, limiting their access to conventional mortgage credit. They are likely to be rural farm families or laborers; many

are fisherman who have also lost their means of earning a living. In urban areas, they are generally low income, and many lived in structures that also housed shops or other small businesses.

Building Materials and the Construction Industry

Although a complete study of the construction and building materials sector in the North and East was not feasible, CARE, under contract to USAID, has undertaken a survey of the sector in Jaffna, Batticaloa, and Mannar. Preliminary results are in for Jaffna and Batticaloa, and they a summarized here.

The information collected so far indicate that wide variations exist among the districts of the North and East. The construction industry in Batticaloa has suffered significant drops in output levels, while many entrepreneurs in Jaffna, particularly the small firms, have maintained pre-conflict levels of activity, though large contractors have had to reduce their operations substantially. There does appear to be a sufficient degree of health in the industry overall to suggest that it could play an important role in the reconstruction process if its capacity can be strengthened work. The household grant component of the RAP will therefore have a positive impact on the building sector as well.

With regard to building materials, local production is much more important than imports. The sector is made up of public enterprises, large private factories, and small scale businesses using traditional technologies. Of the materials in use for most housing construction in the region, only timber must currently be imported (from Malaysia). Prices for materials have already started to increase, however, though such increases may stimulate additional production. RAP does not currently include a materials procurement component; existing GSL institutions and the private sector are more efficient suppliers.

Skilled labor is expected to be in short supply, and in-country vocational training programs will probably be necessary. Such programs exist and could fairly readily operate in the North and East, once the security situation permits.

Program Analysis

The GSL is in the process of structuring a package of grants and loans to affected households, and USAID is participating in that process. Although the package has not yet been finalized, the preliminary analyses of costs, beneficiary incomes, affordability, and equity considerations indicate that the most effective intervention for USAID is in the grant component of the housing benefit structure.

As it currently stands, grants of Rs. 15000 will be made to affected households below the median monthly income of Rs..1500. This amount will not be sufficient to completely replace permanent structures. particularly in urban areas such as Jaffna, but will permit repairs and reconstruction to commence. For non-permanent and semi-permanent dwellings, this amount will also not meet full

replacement costs, but will comprise a more substantial part of the required investment. For higher income families who have access to credit, loan funds will be available under other parts of the GSL's rehabilitation program as well as the GSL's regular Million Houses Program.

Administrative Analysis

The institutional framework within which the reconstruction project must function is described elsewhere in this paper. For purposes of the housing component, however, an additional key institution will need to participate in implementation. One is the National Housing Development Authority, particularly via its district offices. The NHDA is currently undergoing a restructuring to respond to GSL commitments to decentralize. This devolution process is more thoroughly discussed in the full annex, since it will have a strong impact on the role the agency plays at the local level.

Affordability/Equity Analysis

A variety of grant/loan combinations have been considered and analyzed in the course of selecting the most effective intervention for USAID in the rehabilitation effort. This section looks at the options on the table from the point of view of how equitable different schemes are, how efficient, and how costly, to donors the GSL, and potential beneficiaries. The conclusion that USAID inputs are best used to support the grant component of the housing benefit package is based on these considerations. The analysis suggests that the optimum approach, on balance, is the flat grant scheme for lower income groups.

Technical Assistance/Training

Technical assistance needs associated with implementation and with the larger Sri Lanka housing program will be met by two resident advisers, one expatriate and one local, and limited short-term assistance. Short-term TA and training could include such topics as grant administration, PVO assistance to implementing agencies and beneficiary households, NHDA devolution, land tenure issues, skills training in the building trades, etc. It is important that sufficient flexibility be left in this component and indeed the project to allow responsiveness to needs as they present themselves in a highly fluid situation.

VII. B. 2. SUMMARY OF AGRICULTURE ANALYSIS

The scarcity of manual labor, lack of agricultural inputs, loss of hand tools, equipment and draft animals, and the consumption of cash reserves has made it difficult for farmers to begin recovery to former levels of production. Where data is available, the current conditions are assessed in an attempt to describe and quantify the plight of the affected farmers and develop the basis for the quickest and most effective method of recovery. This assessment includes: realistic levels of production, anticipated rates of recovery, expected yield levels, rate of incorporating irrigated and rain-fed areas into cultivation, the minimum economic unit, the role of the public/private sector input delivery system, the difficult problem of re-establishing the animal and/or mechanical traction for timely land preparation and the urgent need for start-up grants.

Farm Families

The 1981 Census reported 140,000 farm families in the Northern and Eastern Provinces. The World Bank (1987) estimated 55,000 farm families affected in the conflict; whereas, the MRR had estimated 30,000 farm families requiring assistance for economic rehabilitation (Sept.,1987). Assuming a conservative 5 percent increase in rural population since the 1981 Census and the identification of an additional 15,000 affected farm families, the RAP should target 70,000 beneficiaries or an estimated 50% of the total farm families in the North and East. Some may not register, others will have a greater need. However, all families will have suffered some loss during the conflict. Damage to fields and equipment, ruined structures, loss of market access, disappearing of family members and livestock, labor and input shortages have all diminished production throughout the two affected provinces. For this reason, the RAP expects to deal with all farm families in the North and East.

Farming Systems

Three farming systems models representative of cropping systems and land tenure characteristics of the study area have been selected for purposes of calculating cash flow and net farm income. The three systems include: 1) Jaffna where intensive small-scale (1/8 - 1/4 acres) vegetable cultivation is practiced year round with pumped irrigation water; 2) Vavuniya where settlement schemes provided two acres of paddy and one acre of highland for the production of paddy and rain-fed crops; and 3) Trincomalee, Batticaloa, and Ampara where farmers in similar settlement schemes are able to grow two crops of rice in addition to grain legumes or maize.

Farm Income

Crop budgets were prepared for the three representative farming systems to determine the size of a RAP grant necessary for affected farmers to return to profitable levels of production and income. Utilizing the generalized cropping systems, net family farm income of Rs.15,355 was calculated for Jaffna (intensive vegetables); Rs.8,363 for Vavuniya (maha paddy, yala rain-fed crops); and Rs.16,160 for Trincomalee, Batticaloa, and Ampara (two crops of paddy and other food crops). Both Jaffna and the Trincomalee model provided realistic incomes due to the strong markets and high yields of the vegetables and the year round water supply that assures two crops of paddy and other food crops. The Vavuniya model illustrated the lowest net income since the water availability was adequate for only one crop during maha. Consequently, if the RAP and other donors intended to provide a one time grant of Rs.2000 to cover the inputs and expenses of one acre of paddy (estimated cost of production Rs.3000-4000 per acre), the farmers represented by the Vavuniya model could plant only a partial acre and expect an income that does not even reach the poverty level. On the other hand, if USAID grants are combined with GSL and other donors so that at least Rs.6000 each can be given to each farmer, then two acres of paddy or .5 acre of chillies or some combination of grain legumes or other rain-fed crops could be planted greatly increasing his production and income potential. Full farmer recovery under the RAP is anticipated to be complete in two cropping cycles or one calendar year after disbursement of the original grant.

Yields

Average national yields of paddy have doubled in the past twenty years increasing from 35 bu/A in 1966 to 70 bu/A in 1983 and fallen to 66 bu/A in 1985. In the combined 1987-88 cropping year, the national paddy yield was reported at 69 bu/A, whereas the paddy yield in the Northern and Eastern Provinces was 94 bu/A. Technology and grower experience have not changed. There is no indication that the ethnic strife has affected yields any more than natural fluctuations in rainfall and normal problems of water management. Consequently, the RAP anticipates that the grants in kind and cash will provide the land preparation and inputs recommended by proven technological packages so that farmers can rapidly return to pre-conflict production and yield levels.

Area of Paddy Production

Paddy is a good indicator of production trends since the area planted to paddy accounts for about 84% of all crop land in the North and East. Combined maha and yala acreage reached a peak in 1984 when 560,600 acres were harvested, but then dropped to 437,700 acres in 1987, probably due to drought and the conflict. The reduction in area harvested is 122,900 acres of which at least 75 percent could be reincorporated by the RAP farmer grants. The production areas of other food crops is not well documented, but will also be expanded with RAP grants. Full recovery of planted area to pre-conflict levels is anticipated in two to three cropping cycles.

Land Preparation

The biggest constraint to land preparation at present is the overall shortage of draught animals and the pattern of their ownership. Not all farmers own draught animals, but rather contract their tillage needs with neighboring farmers. The reduced number of draft animals found in the North and East will not be able to prepare the land in a timely manner if the RAP is successful in implementation and grant disbursal prior to the onset of maha in October. To correct this shortage a long term reproduction and upgrading program should be initiated with improved stock. Using hand labor for land preparation is still a common practice, but it is not readily available.

In some areas of the dry zone, the need for mechanized traction for paddy cultivation is greatest where the water supply is unreliable and the timing of land preparation is critical. Where the water supply is reliable, the use of tractor power has few advantages over drought animals which are more adaptable to constant turning in small plots. Mechanized traction requires continual maintenance and spare parts which may not be readily available. Where the water supply is inadequate and the storage tanks are empty, a combination of animal and mechanized power will be required to ensure that some land is prepared before the rains begin. The purchase of animal or mechanized traction by individual farmers will be encouraged under the loan programs funded by other donors. In the RAP some consideration may be given to the purchase of 2 wheel tractors to be rented by the ASC's, but that should be a short-term strategy until more draught animals are acquired since care and maintenance of equipment is difficult and costly.

Role of Public/Private Sector Input Delivery System

The major portion of the fertilizer and pesticide inputs is supplied by small businesses located throughout the region. Seed is also sold in the private sector; however, some specialized paddy varieties and seeds of other food crops are supplied primarily by the Department of Agriculture. For both sectors, reliable transportation is necessary to deliver supplies from Colombo to the North and East. Interviews with the Ceylon Fertilizer Corporation and two private sector distributors (A.Baur & Co. Ltd. and Haychem) indicated that sufficient quantities of technical material was available in Colombo to mix fertilizers and formulate pesticides recommended in the technological packages. Haulage from Colombo to Jaffna costs about Rs.6000-7000 per trip with the return trip carrying vegetables or cement. Transportation and the delivery of input supplies will gradually increase as security is maintained. Storage facilities in the ASC's will be quickly rehabilitated by other donor efforts and small business that have been damaged or destroyed will be eligible for loans under RAP.

Technical Assistance and Training

An estimated 20 person months of short term technical assistance will be financed by RAP. Technical assistance will include baseline ecological monitoring and studies on integrated pest management and pesticide handling plus a series of specialized studies that focus on monitoring project management and the exploitation of the palmyrah palm for housing construction. Additional local TA will be used to monitor project implementation at the field level.

VII. B. 3. SUMMARY OF IRRIGATION TECHNICAL ANALYSIS

Overview of Irrigation in Sri Lanka

Sri Lanka is a tropical country endowed with resources and a diversity of agro-climatic conditions which permit year-round cropping. The country is divided into a wet zone and a dry zone. The former benefits from two monsoons annually while the latter from one monsoon only followed by prolonged period of drought thus necessitating irrigation for agriculture.

Irrigation in Sri Lanka dates back several centuries. Most of the ancient tanks went into disuse for a long period of time and have been progressively restored since the turn of last century. Currently over one million acres are irrigated and increasing attention is now being given to rehabilitation of existing schemes in order to fully realize their benefits.

During the conflict, maintenance of irrigation systems in the affected areas declined dramatically. The systems now work to only about 75% of their original capacity.

General Description of Project Area

The Northern and Eastern provinces comprise eight districts and contain a total of 119 major and medium scale irrigation schemes irrigating a total of 356,000 acres and 2,208 minor schemes supporting 101,400 acres. The project area on the whole is flat with gentle relief.

Agencies Involved

Within GSL the MORR has overall responsibility for the rehabilitation work. Responsibility for Irrigation rehabilitation lies with MLLD/ID and DAS. Coordination and monitoring of RAP will be carried out by MORR through NRSC and the DRCCs. Prioritization of irrigation projects is done by the DRCCs in consultation with ID.

The MLLD is in overall charge, outside the area vested with the Mahaweli Authority, of all activities pertaining to irrigation, land settlement and administration of forestry through its respective departments.

The Irrigation Department is responsible for all irrigation development outside the area vested with Mahaweli Authority. It has highly qualified and experienced staff capable of undertaking the rehabilitation program. All civil works will be carried out by contract in accordance with the established procedures of the ID. It is estimated that the bulk of the works under RAP will be on medium or small scale systems.

The Water Resources Board (WRB) is a state corporation under MLLD. Its activities are related to ground water exploration and exploitation.

The Department of Agrarian Services (DAS) is in the Ministry of Agricultural Development and Research (MADR). It is responsible for all minor irrigation works (less than 200 ac) in the country outside the area vested with the Mahaweli Authority.

Other Irrigation Rehabilitation Projects in Sri Lanka

The objective of the Major Irrigation Rehabilitation Project (MIRP) is to increase agricultural production under selected major schemes by irrigation rehabilitation and integrated management of all complementary inputs. The rehabilitation program envisages a thorough renewal of the system with accurate control and measuring devices.

The Village Irrigation Rehabilitation Project (VIRP) is aimed at making the minor irrigation schemes economically viable and to re-establish tank irrigation in place of the widespread practice of chena (slash and burn) cultivation. The level of effort required in the rehabilitation program is labor intensive and is aimed at ensuring stability of tank bunds and providing canal systems with adequate control arrangements for the equitable and economical distribution of water.

The Irrigation Systems Management Project (ISMP) is aimed at providing a low cost, yet effective means for physical upgrading of existing systems. Only essential structural improvements are being carried out.

The method adopted on the Water Management (Gal Oya) Project for physical rehabilitation is basically similar to that recommended for ISMP except that it is called "pragmatic" method. Both ISMP and Gal Oya (Water Management) aim at effecting minimal physical improvement to the systems and thereafter nursing and nurturing them on a sustained renewal basis with active farmer participation.

Proposed Irrigation Improvements Under RAP

There are 190,000 un-rehabilitated acres commanded by major and medium irrigation schemes in the North and East, exclusive of other rehabilitation and anicut schemes. Of this amount, the RAP will extend rehabilitation assistance to 95,000 acres. In addition, an area of 6,000 acres of minor irrigation schemes will be provided with funds for rehabilitation. The RAP irrigation component proposes to implement, as quickly as possible, the minimum necessary works to restore these systems to full operational capability at an average cost of Rs.2000 per acre for the larger schemes and Rs.4000 for the more costly minor schemes. Costs of individual projects will vary. Therefore, a provision has been made whereby, at the request of the ID, the allowable costs per acre for an individual irrigation project can be increased or decreased. A request for an increase will be contingent upon an agreement by the I.D that a selected area with an equivalent reduction in cost will be set aside.

During the five years of hostilities neither the ID nor the farmers have been able to adequately maintain the systems and their condition has deteriorated significantly. It has therefore been proposed that an Initial Renovation component be introduced in the RAP for early implementation of emergency measures to return all schemes to a basic operational capability within a time of about two cropping seasons. To accomplish this, a portion of the average standard per acre rate for rehabilitation would be allotted to the initial renovation program. This emergency scheme would be executed using simple basic specifications and reimbursement units. Work of a non-emergency nature would be deferred to be implemented under the regular rehabilitation program.

The regular rehabilitation program will be carried out by making only those repairs on the headworks, the canal network and on access roads which are necessary to make the system capable of full operation. The rehabilitation of all measures will need to be carried out in an efficient manner in order to keep the pro rata costs at a minimal level.

Repairs to the headworks will be limited to measures essential to the integrity of the structure and/or vital to the operation of the system. Rehabilitation may include justified repairs of sluice gates, downstream outlet and spillway structures and restoration and rock pitching protection for the tank embankment.

On the canal distribution system, removal of silt deposits, excessive growth of grass and shrubs and structure repair not taken care of in the Initial Renovation program will be undertaken. In addition, other earthwork measures would include reforming and sodding of canal embankments. Most common among essential repairs of structures will be: (i) lengthening of downstream walls to provide protection against scour, (ii) rubble packing (rock riprap) or rock masonry revetments to repair and prevent bank erosion, (iii) measures to control the water surface at full supply levels (FSL) and (iv) renovation of gated outlet structures.

Many of the project roads will need to be regraded and resurfaced and new structures built to provide a motorable access to and from the headworks and command area of the scheme.

If the feasibility study and environmental assessment, proposed in this report for the Jaffna lagoons, is positive, the work on this RAP component will proceed. Because of the size and complexity of this salt water exclusion scheme the amount of funds remaining after deduction of expenses of the proposed study will provide for only minimum essential rehabilitation repairs.

Training

The training component will provide in-country short-term training only. The basic objectives of this element of the project is to produce trained personnel and farm leaders resulting in improved water management practices and more effective operations

and maintenance procedures. It is proposed that in-country training will include training for Irrigation Engineers (IE), Technical assistants (TA), work supervisors and farmer leaders on water management at the Galgamuwa Irrigation and Training Institute (GITI).

Technical Assistance

The irrigation component will require technical assistance (TA) personnel to work with the I.D. primarily to insure that the completed works are satisfactory for reimbursement by USAID under the Actual Cost Reimbursement method. In addition, the TA team will provide assistance to the team making the feasibility study and environmental assessment of the salt water exclusion scheme for the Jaffna lagoons and, if needed, for the rehabilitation of small pumping lift improvements on the Jaffna peninsula.

The long-term technical assistance (LTTA) component will be comprised of 96 person months of local hire irrigation engineering Services. Short-term technical assistance (STTA) will include four person months of local hire and three person months of expatriate assistance.

Commodities

Included in the commodities to be procured under the RAP irrigation component are (i) vehicles and survey equipment, (ii) plant and machinery (heavy equipment) and (iii) power, communications and office equipment. The purchase of these items is intended to assist in the replacement of equipment that was lost to the ID as a result of the hostilities. The RAP does not provide funds to fully replace all of the items that were lost but partial replacement is essential to permit the ID to resume its normal activities in the North and East. The replacement of vehicles and survey equipment is vital to successful initiation of rehabilitation work in the affected districts and these items must be delivered to the ID at the start of the project. If not, an alternative arrangement needs to be made whereby survey equipment and vehicles for transportation to field locations can be made available from other ID areas.

Project Implementation

The implementation of the irrigation element is coordinated with the overall RAP implementation plan as included in Section V of this report. To comply with the effort to set the RAP into motion quickly, the implementation plan for irrigation activities includes early mobilization of the TA team and the procurement of commodities. In order to get as many of irrigation schemes that have suffered undue degradation during the conflict back into a basic operation capability quickly, an Initial Renovation plan has been scheduled to be implemented in the first 15 months of the project.

Implementation of the rehabilitation of the irrigation schemes takes into account the fact that construction activities must take

place during the periods when the canals are shut down between cropping seasons. These shut-down periods are normally about two months in length during the months of Feb-March and Aug-Sept. During the Yala cropping seasons a variable portion of the command area is irrigated depending on available reservoir storage. The areas not irrigated during this period would be available for construction activity. There are a few rehabilitation activities that can be accomplished during periods when water is flowing in the canals, such as drainage improvements, canal bund restructuring and tank spillway renovation. Because of the time limitations, every effort should be made to carry out these construction jobs during the cropping season.

The Jaffna lagoons feasibility study and environmental assessment has been scheduled to begin just after the 1988-89 Maha monsoon season and the study team should be recruited and be in-country by that time. If the studies are positive, rehabilitation of the salt water exclusion scheme will begin after the monsoon in January 1990 and rehabilitation completed by the end of the project in 1992.

Lists of registered contractors for both large and small works, submitted for each Range by the DD's, were examined and found to be adequate for the activities to be performed under RAP. The staff of the ID serving the eight Districts of the North and East is at near full strength and assurances were received that these forces would be adequate to carry out the RAP renovations when normalcy returns.

Irrigation Rehabilitation Costs

The total cost of the rehabilitation of 101,000 ac of irrigated land in the North and East is estimated to be $11.85 million. Of this amount, $9.85 million (83.0%) will be provided by USAID as a grant and $2.0 million (17.0%) will be borne by GSL. The cost provided by USAID for the rehabilitation of major, medium and minor irrigation schemes is $7.68 million or 78% of USAID's commitment. Of the balance of USAID's funding, $470,000 (5%) is for technical assistance, $1.60 million (16%) is for commodities, and $100,000 (1%) is for training. A detailed listing of these cost estimates is shown in Table IV.A.2.

VII.B. 4. ENTERPRISE ANALYSIS

Without the business sector, the economy of the North and East can not return to its former prosperity. For this reason, the rehabilitation program planned by the MRR/NRSC includes assistance for enterprises of all sizes, not just micro and small scale ones. USAID will provide assistance to this sector in the form of grants and loans to enterprises and limited technical assistance to institutions working in credit delivey.

The Northern and Eastern Provinces of Sri Lanka are primarily agricultural with most people farming or fishing for a living. Agricultural is oriented toward the national market for rice and OFCs. There are few subsistence farmers. This market orientation has led to the establishment of a dynamic private sector in the districts affected by the ethnic conflict. Private merchants provide the inputs the farmers need to achieve high yields and good profits. They buy the crops, assemble, package and transport them to market. They provide the services the farmers need to keep going: retail shops, repair shops, informal money-lending and pawning, small-scale manufacturing and repairing of tools and consumer items.

Based on the 1981 census, 75% of the population in the North and the East live in rural areas. The proportion of the population employed in agriculture in the North and East averages 44% with a range between the districts of 33% to 61%. Many of these activities are more like small businesses than like farms and are treated as such in the RAP. They produce entirely for the market and use their income to buy their food. They invest intensively in their land, using modern inputs and techniques to maximize yields to maximize profitability. They are responsive to market fluctuations and shift crops readily to respond to opportunities for gain. They are functioning in much the same way as small businesses.

For all of the districts of the North and East, agriculture and fisheries generate 51% of all employment, followed by services and non-classified labor at 39%, then industries and manufacturing at 10%. Primary sector employment is as high as 76% of the total in Mullaitivu and as low as 40% in Jaffna. However, throughout the North and East, many people counted in agricultural professions also earn a portion of their income or provide for a portion of their subsistence through non-agricultural activities, and vice versa. Small industries are defined in government statistics as employing less than five non-family people. Micro enterprises employ only family members.

Average employment per small industry is 2.3 people with a value added, in 1982, of Rs.17,000 per person. Medium and large industries average 21 people employed with Rs.97,000 value added per employee. No comparable figures exist for micro-enterprises. It is thus estimated that the estimated 22,000 businesses affected by the war probably provide some employment and income to nearly 100,000 people.

Commercial structures of all classes received extensive damage throughout the North and East. In September 1987, it was estimated that 20% of all structures had been damaged. Since that time, damage, especially in Jaffna, has increased by fifty percent. Most of the structural damage in terms of numbers and rupee amounts has been in the Jaffna/Kilinochchi district where 75% of all claims by number of premises and 87% by value have been made. The total cost estimate for damage and destruction in the North and East is Rs.892 million involving a total of 6119 premises. In the World Bank report, structural losses are estimated at Rs.700 million for 11,300 damaged and destroyed commercial premises. Definitional differences explain most of the difference in the numbe of premises damaged.

In addition to losses on premises, there are estimates of losses of trade inventories caused by looting and arson of Rs.526 million. Finally, a large number of businesses, including commercial farms, livestock producers, retailers, and small service and repair shops suffered from an inability to conduct normal business at normal volumes. This sort of loss, particularly in the micro-enterprise sector, is likely to have weighed heavily on the welfare of these entrepreneurs and their having the resources to reconstruct.

In this analysis the number of small retailers, 19,612, is used as a proxy for small businessmen. To this number is added the number of industrial enterprises employing less than five people, 8,157, to give a total estimate of small businessmen of 27,769. An estimated 5,300 of these were affected by the war according to estimates of September 1987. It is estimated by MRR that around 10,000 are affected now. An additional 10,000 micro-enterprises have been effected and 1,500 larger enterprises or 21,500 in total.

The MRR/NRSC has proposed, after discussions with RAP designers, to provide a Rs.4,000 productive enterprise grant to every family that had an enterprise, whether the activity is fishing, farming or business. This simple approach avoids the problem of families with more than one activity receiving more than one grant. Similarly every family is eligible for a loan of 9% to further support the enterprise. The amount of the loan and the repayment period is to be developed based on an analysis of their ability to service the loan. There are no preferential rates for any group of borrowers. However, the first two times through the system the loan funds will be used for loans of less than Rs.200,000. The government has proposed establishing a Capital Development Fund for the North and East which will use the re-flows for further development of productive enterprises.

It is estimated that 12,000 families with family-run enterprises will qualify for a Rs.4,000 grant, or $1.5 million. It is also assumed that these enterprises will want to borrow Rs.10,000 each, for a total loan need of $4 million. An estimated 2,000 businesses will want to borrow less than Rs.50,000, averaging Rs.30,000, and a total need of $2 million. A remaining 8,000 businesses will borrow over Rs.50,000, averaging Rs.60,000, for a total need of $16 million. Thus the total need for loans money is $22 million of which USAID will provide $6.2 million. The balance will come from funds from the World Bank's IDA and the ADB.

If the national rehabilitation program is to achieve a return to normalcy in the small business sector in the North and East, normal, commercial credit facilities must be available to businesses which need additional capital for operations or expansion after the grant program ends. The Cooperative Rural Banks (CRBs) are the institution which has the best chance of taking on this essential role for the 75% of the population of the affected districts who live in rural areas. Lending to small farmers as well as to small and micro-businesses could be a profitable activity, if managed well.

The RAP will undertake a program to assist the CRBs or similar organizations improve their management. They will progressively take over most programs of large numbers of micro-loans from the state and commercial banks, which are not interested in or able to administer such programs.

VII.B. 5. SUMMARY CREDIT ANALYSIS

The Institutional Framework

The financial system of Sri Lanka is dominated by the two government-owned domestic commercial banks, the Bank of Ceylon and the Peoples Bank, which together account for approximately 75% of total deposits. Within the affected Northern and Eastern Districts, there are 66 branches of the major commercial banks. The number of branches effectively operating, is less as the banks are restricting their cash handling transactions to the major cities until security improves. In the case of BoC the branch network is complemented by a sub-system of Agriculture Centers within certain of the Agrarian Service Centers (ASC) while the PB has linkages with the Cooperative Rural Banks (CRB).

Major Credit Schemes

In recent years, the GSL has tried to stimulate lending in key sectors through schemes of re-financing from Central Bank. There are 29 such schemes operated through the Central Bank but these are generally under-utilized: 10 schemes have not made any disbursements and, of the remainder, the range of utilization is between 3% and 50%. These schemes seem to have had little affect on the total supply of agricultural credits, although credits may have been smaller in their absence, and very little positive impact overall.

Since 1978, the only noticeable trends in sectoral credit allocation by the commercial banks have been: 1) a decline in the share of agriculture and industry; 2) an increase in the share of housing and commercial credit; and 3) a fall in consumer credit's share. The commercial and industrial sectors have maintained their combined share at about 70% of total credits. Thus some of the observed changes may be just definitional.

It is estimated that the formal credit sector provides 20% of total credit in the rural areas. Only 42,000 of the 1.8 million farmers nationally (2.3%) had short and medium/long term loans obtained under Central Bank re-financing facilities in 1986. The amount obtained, Rs.450 million, is 11% of total agricultural credits. These have gone mainly to estates, exporters, and GPS financing. The rural community obtains most of its financing needs from relatives, pawning facilities, money-lenders and traders. Many of these do not charge any interest rate, or the charge is contained within the cost of the item being purchased. This makes it difficult to compute interest charges comparable to those charged at formal lending institutions. One major reason for using the informal channels is that decisions are made faster, there is less paperwork and the source of the money is not as physically distant from the borrower. Some short term borrowings are at a rate of 10% per month, but recent studies indicate that the de facto interest rate charged by non-relatives is around 28%. When the cost of waiting and transportation is added to commercial bank rates the total cost of credit is comparable.

Attitudes of lenders and borrowers have polarized over time. In the past, little action has been taken against non-payment of debts. This has lead to the perception of Government sponsored loan schemes as "grants". Poor loan recovery rates and a difficult and slow debt recovery legal system have caused banks to impose barriers to rural lending. Candidates for borrowing must go through difficult and time-consuming loan application procedures. The result is a feeling of hostility between the parties that is not conducive to a deepening of mutual interests. In the last two years, most of the NCRCS lending in the North and East has been through the Bank of Ceylon and the CRBs. The loans in arrears rates for these, compared with the remainder of the country, are shown in Table III.C.1.

Table III.C.1

Paddy & Subsidiary Crop Lending: 30 June 1987

District	Bank of Ceylon Arrears %	CRBs Arrears %
Trincomalee	42.9	80.7
Jaffna	62.7	87.8
Kilinochchi	71.1	92.4
Mannar	42.5	100.0
Mullativu	69.0	100.0
Vavuniya	65.5	100.0
Ampara	48.2	69.9
Batticaloa	48.7	80.9
North/East Average	52.0	90.4
Non-North/East Average	25.3	n.a.

While the recovery rate for the non-affected districts is bad enough at 74.7% (as of 30 June 1987), the recovery rate for the eight affected districts is only 48% at Bank of Ceylon lending and an average of only 9.6% at the CRBs.

Any further programmed lending, without substantial changes in loan terms and conditions and operating systems will only result in additional losses to the credit delivery institution. In the short term, only a government held bank with adequate capital or guarantees, such as the Bank of Ceylon, could be involved in a rehabilitation lending scheme based on low interest rates to target groups.

Rural Lending

Nearly three-quarters of the population is living in rural areas. Most businesses are quite small and comprise farmers, fishermen, retail outlets, and small and cottage industries. There is a large market and need, therefore, for a strong system of rural financial intermediaries. Currently, a large proportion of rural savings is on-lent to financial institutions lending in urban areas. This can be seen in the CRBs where deposits exceed loans outstanding, surplus funds are deposited with the PB and NSB.

In the rural areas it is important to have village level organizations which lend on the basis of an individual's credit worthiness, supervise the use of funds for the intended purposes, and ensure recovery. Since loans are generally small it is important that they be obtained cheaply and easily by the borrower and that costs to the lender be controlled through a high recovery rate. In Sri Lanka there are two institutions at the village level which could play a vital role: the Thrift and Credit Cooperative Societies (TCCS) and the Cooperative Rural Banks (CRB). Their distribution in the affected districts is shown in Table 2.

Table III.C.2

Thrifts and CRBs in the North and East

District	Popul'n '000s	Number TCCS Units	Number CRB Units	---population/unit-- TCCS	CRB	Both
Trincomalee	292	4	14	73000	20857	16222
Ampara	439	36	13	12194	33769	8959
Batticaloa	378	172	12	2198	31500	2054
Kilinochchi)		34	4)			
Jaffna)	915	381	30)	2205	26912	2038
Vavuniya	108	57	3	1895	36000	1800
Mannar	120	57	6	2105	20000	1905
Mullativu	86	46	7	1870	12286	1623
Totals	2338	787	89	2971	26270	2669

Except for Trincomalee and Ampara, an adequate network of rural financial institutions already exists in the Districts and these are complemented by the Bank of Ceylon units in some of the Agrarian Service Centers. The TCCSs and CRBs are discussed in detail in the Credit Annex to this PP.

Financial Assistance

All loans for any purpose, other than housing, of less than Rs.200,000, will be at a 9% interest rate with up to twenty years for repayment. It is expected that most loans will be repayable in three to five years without a grace period. The decision as to how much any one family or enterprise can borrow and the length of the loan is to be made by the lending institution using their normal guidelines. The ability to repay the loan will guide their decision; individuals ought not spend more than 20% of their income on servicing this debt. When the reconstruction loan schemes were first developed there were different schemes for different categories of people, each had its own terms and the basic interest rate structure was 2/4/6% depending on the size of the loan. USAID was able to convince the Government of the need for simplicity and interest rates that were closer to market levels and comparable to other loan programs elsewhere in the economy. The ADB and World Bank have modified their programs to have the same conditions as USAID's.

The estimated average loan for fisherman loans is Rs.3,000, for small farmers Rs.5,000, for micro-enterprises Rs.10,000, for small businesses Rs.30,000 and Rs.60,000 for medium businesses. The figures for business loans were derived from the actual loans made by the National Development Bank for these types of enterprises. The estimated loan size for farmers is based on experience with existing agricultural lending schemes and the estimated loan size for fishermen is a guess based on field observations.

The total cost of business loans is estimated to be $4 million for micro-enterprises (12,000 loans averaging Rs.10,000), $2 million for small enterprises (2,000 loans averaging Rs.30,000) and $16 million for medium enterprises (8,000 loans averaging Rs.60,000), for a total of $22 million in loans for business enterprises. USAID will contribute $6.2million of the total money needed for these loans. The balance will come from funds from the ADB and World Bank (IDA). There will be $9.2 million needed for agricultural loans (55,000 loans averaging Rs.5,000) of which USAID will provide funds for $5.6 million.

The funds for lending will be provided to REPPIA which will on-lend the money to the borrower using existing commercial banks and other financial institutions. Some of these institutions will set up a special window to process these loans. To encourage the financial institutions to be involved they will receive a fee for their services. This fee is subject to negotiation but the agreements thus far have been for 2% of the value of the money that is actually repaid to the financial institutions. Hatton Bank's fee is likely to be slightly higher.

As these institutions are acting as agents for REPPIA, and they have a 100% guarantee. If the money is not repaid then they do not repay REPPIA, and they do not collect any fee. The initial loans will only go to affected businesses borrowing less than Rs.200,000. While USAID will not monitor the reflows of the money the GSL is planning that repayments will be retained by the collecting institutions in a special Capital Development Fund for the North and East. The money may be re-lent, at higher rates, and in larger amounts.

A Sri Lankan advisor to REPPIA will be provided with project funds for three years to assist in the development, monitoring and administration of the loan accounts made through the project. The advisor at REPPIA will also develop and control a fund of $230,000 for training and upgrading of financial institutions. This fund will:

(1) train field staff on rural credit, farmer and business rehabilitation, bookkeeping and management procedures.

(2) design and implement a system for monitoring the performance of enterprises and financial institutions.

VII.C. SUMMARY OF ECONOMIC ANALYSIS

The Rehabilitation Assistance Project will help restore the economic fabric of the North & East, combining productive and consumptive elements. In combination with loans, grants provided under the Project will speed up the resumption of productive agricultural and non-agricultural activities, and the provision of adequate shelter. The benefits of RAP thus comprise increased income from productive activities and improved welfare as a result of restored housing. These two aspects call for different approaches in the economic analysis. Assessing the impact of Project activities in productive sectors can draw on standard project appraisal techniques, at least in principle. In contrast in housing benefit-cost ratios and similar performance measures have generally proved somewhat suspect. The economic analysis for the RAP has therefore focused on an appraisal of the cost-effectiveness of alternative methods of providing the housing assistance.

The appraisal of Project performance in the productive sectors has been severely hampered by data constraints. The analysis therefore had to be content with illustrative examples rather than a comprehensive assessment. In some instances in agriculture, the Project-funded assistance for agricultural inputs could mean the difference between recovery in one year and recovery in seven years. For representative farm enterprises engaged in paddy cultivation, this acceleration in the pace of recovery yields benefits that far exeed costs. While no comparable analaysis was done for irrigation, very rough assessments susggest a similar conclusion.

The spotty data and the wide range of possible activities ruled out any quantitative estimate of the Project's impact on non-agricultural enterprises. However, the rationale used for agriculture holds here as well -- the Project assistance will generate income benefits by speeding up recovery. Under the assumption of comparable gross income streams for the with and without scenarios, the Project should achieve a similar benefit-cost ration, in particular since the main component of the Project cost--the self-employment grant--in effect is income for the recipient.

Extensive analysis of equity and efficiency implications of alternative housing assistance delivery mechanisms suggested that a clear separation of grant and loans (at normal rates) would perform better in terms of benefits to needy recipients and in terms of administrative costs than the GSL's original scheme which relied heavily on subsidized interest rates. This analysis has played a major role in the revision of overall assistance program.
One element that greatly affects the economic value of the Project has been excluded from the appraisal: we expect that the provision of assistance to rebuilding housing and restarting economic activities will have a stabilizing influence on the political situation. People who have regained an economic state in an area

are less likely to give their unconditional support to the separatist cause. At the same time cooperation between government institutions and the separatist groups in the course of administering the assistance program may establish a modus vivendi necessary for the evolution of permanent institutional structures. Although the hope for such an impact appears justified, the effect is not something that lends itself to reasonable economic analysis.

VII. D. SOCIAL SOUNDNESS SUMMARY

I. Background to the Rehabilitation Program

For centuries, diverse ethnic and religious communities have coexisted in the island nation of Sri Lanka. The three major ethnic communities in Sri Lankan Society are the majority Sinhalese (74 percent of the total population), Tamils (18 percent), and Muslims (6 percent).

After Sri Lanka (then Ceylon) gained its independence from Great Britain in 1948, perceptions grew among the Tamil community, especially in the North, that national policies affecting language, education, government posts, and their general role in society was discriminatory, favoring the Sinhalese majority. In recent years, Tamils of the North and East began to demand various degrees of autonomy or even independence from the rest of Sri Lanka. Various groups pressed these claims, some resorting to militancy and violence.

As violence flared and the nation's integrity was threatened, the Government pursued a dual course of 1) military action to restore security and 2) limited accommodation and negotiation to reach a political solution. Eventually, the Government of India, concerned about the political implications of potential Sri Lankan disintegration and the masses of Tamil refugees fleeing to southern India, entered the negotiations with the GSL and offered to provide security assistance in the affected districts by means of an Indian Peace-keeping Force (IPKF).

The signing of the peace accord between the Governments of Sri Lanka (GSL) and India on July 29, 1987 raised hopes for peace in the affected areas in the North and East and spurred donor interest in supporting a major rehabilitation and reconstruction effort. Rejection of the accord by some key groups, however, has delayed key political steps, especially devolution of power to new Provincial Councils in the North and East.

Reports from recent tours to the affected districts by NRSC and USAID staff indicate that some semblance of security and order has returned. The rate of displacement has dropped and the number of refugees in welfare centers has been reduced. Some farmers are resuming cultivation, traders and small merchants are reopening their businesses, and the administrative and physical infrastructure is slowly recovering. In short, natural processes of reconstruction have begun as relative order has returned. There is considerable evidence that people are ready for rehabilitation. It is the political and social context that represents the major constraint to recovery.

Uncertainties about the security of rehabilitation efforts are a constraint to the willingness of donors to commit funds. At the same time, the viability of the Peace Accord and hopes for stability depend on effective GSL response to concerns that have contributed

to the conflict. Some of these concerns are political and must be addressed outside the rehabilitation program itself. Others, however, relate to issues such as economic opportunity and unemployment which must be addressed, at least in part, through rehabilitation investments. Thus risks must be taken to support reconstruction and reactivation of economic activities as a means to strengthen hopes for peace.

With this in mind, the USAID assistance program emphasizes activities having the highest economic benefits and quickest returns, especially for the poor. The first priority is getting affected people back to work and restarting their economic activities. This requires moving resources fairly and with a minimum of red tape.

II. Project Beneficiaries

The direct beneficiaries of the AID assistance to the GSL rehabilitation program will be poor families in the affected areas who were involved in agriculture and small-scale private enterprise as well as those whose homes have been destroyed or damaged. Other poor groups not owning farm land or businesses (for example, landless farm laborers) will receive direct assistance only through GSL resettlement and economic assistance allowances; they should, however, obtain substantial indirect benefits from increased employment in agriculture, construction, irrigation rehabilitation, and small business activity generated by the RAP and other GSL and donor rehabilitation projects. Notable indirect beneficiary groups include building contractors (from irrigation, housing, public building, and business construction) and those transporting and marketing agricultural inputs, produce, and building supplies.

The AID assistance is keyed particularly to the poorest victims of the conflict. Consistent with the income-related gradations built into the beneficiary registration system, AID has targeted assistance in housing to the lower income groups. It also is pursuing a strategy of providing small grants to poor recipients (often as input-keyed vouchers) in order to move resources quickly into the affected areas with a minimum of administrative complexity.

The rehabilitation program will serve four broad categories of beneficiaries in the affected areas: displaced persons, refugees returning from India, landless persons (especially Estate Tamils), and others who stayed put but suffered loss of housing, property, or the opportunity for cultivation or enterprise activity. These groups vary in their legal entitlements, access to benefits, andthe readiness with which they can return to a productive life. These are complex issues. Some require a generalized policy framework for their resolution; others need local adjudication. As a general policy, the GSL rehabiltation program will treat all affected persons equally.

One group of potential beneficiaries who are demanding rehabiltation assistance are families of militants killed by security forces or in inter-group clashes and militants themselves who were injured or disabled in the conflict. If these persons are left out, program credibility will be damaged.

The eight districts vary in ethnic composition, urban-rural mix, predominant farming system, climate, degree of conflict damage, and other factors. Officially, the rehabilitation program will not recognize ethnic differences; that is, assistance will be offered to all victims. Eligibility and assistance levels will depend only on income level and loss caused by the conflict.

III. Local Participation

As described in detail in the Institutional Analysis, Government Agents, assisted by special DRCCs, are the focal point in each District for the executive task of local rehabilitation implementation. Most of the affected Districts have Tamil GAs who are sensitive to the needs and circumstances of this majority group. The decentralized structure of the rehabilitation program is essential for the rehabilitation effort to have credibility with local people and motivate their effective participation.

As structured for the rehabilitation program, DRCCs are to include representation from citizens groups such as local community groups and NGOs. This is, in fact, happening through appointment of such representatives by the Government Agents. Some of these groups represent particular aggrieved interests, make no claim to be broad-based, and are not representative of the broader, ethnically-diverse communities where they exist. Others have been more broadly representative but communal hostility has resulted in a number of these broader groups disbanding because of threats to their leadership. Groups of this type, however, have a history in Sri Lanka as effective vehicles of popular participation.

Informally, local community organizations are a way of providing some line of communication to the interests of militant factions in the affected areas. At the very least, community representatives in some areas will need to be acceptable to militant groups exercising informal control and requiring at least indirect participation in decision making. Clearly not all groups can or should be invited to participate with the formal rehabilitation structure. Informally, however, they may be able to play a role in beneficiary identification and in monitoring the fairness of program implementation at the community level.

IV. Gender Analysis

The team was not able to undertake a full Women in Development analysis for this paper; however, some information is available which should be considered as design and implementation progress. (Further information is contained in the Social Analysis annex.)

In general, of the three ethnic/religious groups affected by the situation in the North and East, Sinhalese women tend to have the fewest traditional restrictions on their activity; any restrictions, however, tend to apply less to poor women, who must go out to work to ensure the survival of their families.

This necessity pertains for much of the target population of the North and East. There is the additional unknown of the effect the social upheaval of the conflict itself has had on women's roles, including those in more traditionally restricted segments of society. Women who heretofore depended on a spouse or other male relative for economic support may now be faced with the need to become the sole breadwinner for a family, a role for which they may well be unprepared.

For women who do engage in income-producing activity, whether pre-conflict or in the future, traditional activities cover a fairly wide, if not particularly lucarative, range: agriculture -- especially raising of vegetables and livestock, fish drying (though not fishing itself), weaving and handcrafts, and other micro-enterprises. The main characteristic of these activities is that they are largely based in the home. Realistically, the RAP will not be able to change this orientation; to the extent that its benefits are available to women, the RAP may expand the number of women taking part in economic activities.

Although the evidence is intuitive and anecdotal now, the numbers of young men killed in the conflict suggests a large potential problem for the widows left behind. They are likely to be relatively young, with young children needing care, and unskilled. They may also be without a source of support if familiy networks are not present or accessible.

RAP monitoring can help ensure that project benefits are available to widows and other eligible female beneficiaries. Technical assistance is directed at implementing institutions, not individual beneficiaries. However, involvement of PVOs in implementation offers the possibility of specialized local programs for special needs.

VII. E. - SUMMARY OF ENVIRONMENTAL ASSESSMENT

The Environmental Assessment (EA) for the RAP project focused on the potential for adverse environmental impacts due to four project components: 1) agricultural rehabilitation, 2) restoration of irrigation infrastructure, 3) housing rehabilitation and 4) restoration of the Jaffna Lagoon salt water exclusion scheme.

The Environmental Assessment was produced simultaneously with the RAP design, so the design team became aware of potential adverse impacts early enough to include appropriate mitigations in the design. As a result, the potential for adverse impacts due to the RAP has been minimized and most of the mitigations proposed in the EA have been included in the project design.

The greatest potential for adverse impacts due to agricultural rehabilitation results from possible use of toxic pesticides. This potential will be mitigated by indicating on vouchers that only pesticides registered for use in Sri Lanka can be purchased, with the exclusion of registered pesticides that are cancelled or restricted by the US Environmental Protection Agency. In addition, short-term, recurring technical assistance will be provided for training and field demonstrations in Integrated Pest Management (including appropriate use of pesticides) and monitoring of soils, water and crops for pesticide residues.

Rehabilitation of the irrigation tanks and canals will not involve creating new infrastructure or clearing new lands. The sustainablity of rehabilitation efforts should be ensured by requiring that restoration of tanks with severely deforested catchments involve some reforestation efforts.

Support for repair and restoration of housing is likely to increase the demand for wood and concrete and clay bricks. Cement factories are already working at full production so cement will be imported. Increased production of clay bricks could lead to extraction of clay from new lands along flood plains in the eastern province. Increased cutting of forests is also likely due to wood demands. Sri Lankan laws concerning coastal conservation and delegation of forest cutting to the State Timber Corporation , if enforced, should help minimize such impacts.

Restoration of the salt-water exclusion scheme at Jaffna Lagoon creates the potential for significant adverse environmental impacts in a number of areas. The EA outlines the terms of reference for an additional, detailed Environmental Assessment of the proposed lagoon restoration plan. The RAP will fund the Jaffna EA as part of an overall feasibility study for the salt-water exclusion plan. Support for the lagoon restoration will be contingent upon the EA producing a negative determination by indicating that adverse environmental impacts to physical and biological resources can be mitigated.

The environmental impacts of the alternative to the proposed project were also assessed. The only alternative considered was "No project". In the absence of a project, assuming peace is attained, farmers and local peoples would return to their farms and homes and resume their lives. This would involve many of the activities supported by the project. However, in the absence of the project it is expected that there would be greater exploitation of natural resources (e.g. trees) to generate income or for home restoration. It is also likely that the lack of funds for intensive cultivation would result in an increase in forest clearing associated with low input, low yield subsistence cultivation (chena). The absence of both the technical assistance for integrated pest management and the restrictions on use of US cancelled or restricted pesticides required by RAP could result in increased use of highly toxic pesticides.

VIII. CONDITIONS AND COVENANTS

As in the past the project will be negotiated with the External Resources Division of the Ministry of Finance and Planning. They in turn will consult with the Ministry of Rehabilitation and Reconstruction, the National Reconstruction Steering Committee and the National Planning Division of MFP.

RAP implementation will take place as institutional and socio-political conditions permit. These conditions are beyond the control of USAID but nevertheless are relevant to the effective implementation of the project. The conditions and covenants, therefore, have been tailored accordingly.

Before initial disbursement, the Mission must determine to their satisfaction that conditions in the affected districts are such that implementation can go forward. Such a determination might be made for the entire program or portions of it, either in terms of geographic area or project components. The Mission, therefore, will be including language as an additional condition precedent to first disbursement which says that prior to disbursement the GSL and USAID will consult with each other with the intention of mutually determining that conditions are such in the affected area so as to allow effective implementation of the project.

At the same time, given that close consultation will be successful to get the project moving, a condition precedent will be added to the agreement which says that prior to disbursement for other than for technical assistance, the GSL will furnish an annual workplan for the first project year, and at mutually-agreeable yearly dates thereafter. This will be supported by covenants which will call for the government to regularly consult and review with A.I.D. on all aspects of the rehabilitation situation as it affects project implementation. These consultations and reviews initially will be conducted quarterly. Another covenant will call for the government to consult with A.I.D. on all terms and conditions of the grant and loan program.

Finally, since the project is so dependent on the coordination and financing interministerial funding mechanisms, a condition precedent will be added requiring evidence of funding control/accountability procedures established by the Grantee for reporting disbursement of funds under the rehabilitation program and system for allocating expenditures for A.I.D. funded activities. This should not represent a major new requirement of the GSL since they are already doing the planning on this. Rather it is to insure that it is completed before any of our funding is disbursed. In brief the MRR should demonstrate that "R" account system for financial monitoring and control is in place and ready to receive funds and district level accounts managed by the GAs have been established to receive transfers of USAID-provided funds.

In addition to these conditions precedent and covenants, the amplified project description will note that before any construction can begin on the rehabilitation of the salt water exclusion system on the Jaffna Lagoon, an environmental assessment must be done and a negative environmental determination made and approved.

IX. EVALUATION PLAN

The evaluation plan will need to be kept relatively flexible in this project. The successful implementation of the project depends on a number of basic political and social features which are expected to be changing during the life of the project. As the project has four distinct components which will be implemented in different ways, it would be quite possible that the need for evaluation will be much more important for one component than another.

The role of evaluation in the project will be primarily to determine the effectiveness of the different components in directing resources to the targeted populations to achieve the purpose level impacts. An important aspect of any overall interim evaluation would also be to recommend whether redirecting resources from one component to another would be more effective in achieving the project purposes and goal.

The project will be carefully monitored, using information from a planned NRSC monitoring system, supplemented by AID monitoring and spot checking under the supervision of the TA-funded Project Coordinator. Any special needs for evaluation or reassessment of project functioning would be identified through this monitoring.

A likely scenario is that there will be two formal evaluations during the life of the RAP project:

Interim Process and Impact Evaluation:	end-1989
End-of-Project Evaluation:	mid-1992

Each is described in more detail below. The financial plan includes $ 150,000 for evaluation, in addition to the TA funds available for monitoring, giving some flexibility in responding to evaluation needs that become apparent.

Interim Evaluation

The interim evaluation will take place at the end of FY 1989, by which time sectoral programs will have distributed a significant level of benefits and it will be possible to review implementation progress in all aspects of the program. The primary goal of this evaluation will be to inform mission and GSL staff of necessary and beneficial mid-course adjustments to improve the effectiveness of the project through its remaining life. The findings also will feed into the FY '90 annual project review. Additionally, information from this evaluation should be of timely assistance to the NRSC in its management of the overall GSL rehabilitation program.

Exactly how this evaluation will be focused and what expertise would be included on the evaluation team will depend on the differential performance of the components in the first year. Quite likely an overall evaluation would be done including all components. If there are one or more components having unusual problems, project and Mission management may decide that special emphasis should be given to that component (or even that it be evaluated separately).

If possible, the interim evaluation should be conducted by mission personnel (including the TA-funded Project Coordinator) supplemented by expatriate and locally-contracted experts.

Project monitoring may depend heavily on secondary information, depending in part on the security situation. Therefore, a major point of inquiry for an interim evaluation will be to assess the accuracy, completeness, and quality of information produced by the rehabilitation program monitoring system. If possible, this evaluation should incorporate some local spot-checking to verify the information produced by the monitoring system.

An interim evaluation will focus on the timing, quality, and effectiveness of project inputs to date in each of the RAP sectors of activity. It also will examine implementation arrangements, especially the strategies employed for distributing direct benefits (grants, vouchers, loans, etc.) to beneficiaries. The evaluation will analyze problems, delays, and discrepancies from plan and recommend necessary input or implementation adjustments.

It may also assess the accuracy of key assumptions underlying project strategy. Examples include an atmosphere of reasonable security, the infusion of planned GSL and other donor resources into the program, and the ability of the NRSC/ DRCC coordinating structure to perform in its intended decentralized manner.

Some output and purpose target achievements can be assessed at this point. These include:

progress in reconstruction of housing and infrastructure (for example, agricultural service centers and irrigation works);

cultivation increases during the first seasons of rehabilitation assistance as a result of grant and loan assistance;

area covered by restored irrigation; and

increase in private sector activity attributable, at least in part, to financial assistance to small businesses and to training.

End-of-Project Evaluation

An end-of-project evaluation would take place late in the final year of project implementation (mid-1992). This evaluation will attempt a more comprehensive analysis of the impact of AID assistance. It will examine the project's effectiveness in achieving project outputs, but also will focus on whether the project has attained its stated purpose and on the effectiveness of specific inputs in achieving project objectives for each sector of activity. These inputs include technical assistance, training, and limited commodity support as well as financial assistance to be distributed through the GSL rehabilitation program as grant, voucher, and loan assistance to affected persons for housing, agriculture, and small business recovery.

Specific targets and measurement indicators for use by evaluators are detailed in the overall RAP and sectoral logframes contained as annexes to this PP.

The end-of-project-evaluation will likely be undertaken through an independent AID contract for a mixed expatriate-local team containing social scientists and technical experts in rehabilitation and in the relevant project sectors. The effort put into a final evaluation will most likely depend on the extent that the project may have "lessons learned" useful for AID projects in similar post-war circumstances.

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E.O. 12356: N/A
TAGS: N/A
SUBJECT: REHABILITATION ASSISTANCE PROJECT (383-0170): ANPAC REVIEW OF PID

REF: (A) STATE 65823, (B) COLOMBO 01321, (C) STATE 045952

1. SUMMARY: PRC AND ANPAC MET ON 23 FEBRUARY AND 1 MARCH, RESPECTIVELY, TO REVIEW SUBJECT PID. ANPAC APPROVED PID SUBJECT TO GUIDANCE PROVIDED BELOW. MISSION IS AUTHORIZED TO COMPLETE PROJECT PAPER AND TO APPROVE PROJECT IN FIELD FOR FY 88 OBLIGATION. AS MISSION IS AWARE (REFTEL A), ONLY DOLS. 10 MILLION IN DA FUNDS IS CURRENTLY INCLUDED IN FY 88 CYB FOR THIS PROJECT, AND IT WILL BE NECESSARY TO DESIGN WITH FLEXIBILITY OF FUNDING SOURCES AND AMOUNTS IN MIND. AID/W IS AWARE OF MISSION'S REQUEST FOR REPROGRAMMING OF FUNDS THAT MAY BE DEOBLIGATED ELSEWHERE IN REGION AND WILL KEEP MISSION INFORMED OF STATUS OF ANY SUCH DEOBLIGATIONS. PER REFTEL (A), AID/W WILL GIVE FULL CONSIDERATION TO ALLOCATING SUCH FUNDS TO SRI LANKA FOR THIS PROJECT, THROUGH NORMAL PROCESS OF REVIEW BY PPC AND OMB.

2. ANPAC WAS GENERALLY ENTHUSIASTIC ABOUT PROJECT AS AN OPPORTUNITY TO SUPPORT THE SRI LANKAN PEACE PROCESS WITH TANGIBLE ASSISTANCE TO THE MOST AFFECTED AREAS OF THE COUNTRY. MEMBERS RECOGNIZED THAT CONDITIONS REMAIN FAR FROM NORMAL AND THAT ONGOING IF SPORADIC VIOLENT EPISODES CONTINUE TO IMPEDE GSL EFFORTS TO RESETTLE REFUGEES, RECONSTRUCT DAMAGED BUILDINGS AND INFRASTRUCTURE AND RESTART ECONOMY OF THE NORTHERN AND EASTERN PROVINCES. DESPITE THE UNCERTAINTY THAT THESE CONDITIONS ATTACH TO THE INITIATION OF A REHABILITATION PROJECT, THE ANPAC CONCURRED WITH NEED TO SUPPORT U.S. POSITION TAKEN AT DECEMBER DONORS' MEETING, I.E. THAT DONORS SHOULD TAKE NECESSARY STEPS TO PREPARE RECONSTRUCTION/REHABILITATION ACTIVITIES FOR RAPID IMPLEMENTATION. ANPAC WAS ESPECIALLY ENCOURAGED BY THE TIMELY PREPARATION OF THE WORLD BANK'S RECONSTRUCTION PROJECT, WHICH ANPAC UNDERSTANDS WILL BE CONSIDERED BY THE BANK'S BOARD ON 15 MARCH. AT THE SAME TIME, ANPAC NOTED THAT USAID PROJECT WILL ADD CONSIDERABLY TO BOTH

MORTGAGE AND PIPELINE AND THAT OBLIGATION OF SECOND YEAR'S FUNDING IS LIKELY TO DEPEND CRITICALLY ON DETERMINATION THAT CONDITIONS HAVE IMPROVED SUFFICIENTLY FOR IMPLEMENTATION TO PROCEED.

3. PRC AND ANPAC MEMBERS WERE CONCERNED THAT PROJECT COULD BE OVERLY AMBITIOUS IF IT MAINTAINS A DUAL FOCUS ON BOTH IMMEDIATE RECONSTRUCTION AND LONGER-TERM ECONOMIC DEVELOPMENT AND INSTITUTION-BUILDING. MEMBERS UNDERSTOOD THAT REHABILITATION FOLLOWING UP TO FIVE YEARS OF FIGHTING, DEPOPULATION, ABANDONMENT OF HOMES, BUSINESSES AND GOVERNMENT SERVICES, AND GENERAL ECONOMIC STAGNATION POSES DIFFERENT IMPLEMENTATION PROBLEMS FROM THOSE FACED FOLLOWING IMMEDIATE DISASTERS SUCH AS EARTHQUAKES, FLOODS, ETC. CLEARLY, IMPLEMENTATION OF THE HOUSING, AGRICULTURAL AND PRIVATE ENTERPRISE COMPONENTS WILL REQUIRE THAT LOCAL INSTITUTIONS, PARTICULARLY FINANCIAL INTERMEDIARIES, RETURN TO FUNCTIONAL CONDITIONS. NONETHELESS, ANPAC STRONGLY RECOMMENDS THAT PROJECT FOCUS PRIMARILY ON IMMEDIATE NEEDS SUCH AS SUPPLY OF HOUSING MATERIALS, AGRICULTURAL INPUTS, ETC. AND LIMIT TECHNICAL ASSISTANCE TO THAT NECESSARY TO GET THE INTERMEDIARY INSTITUTIONS TO THE LEVEL OF FUNCTIONING NECESSARY TO DELIVER IMMEDIATE AND ESSENTIAL SERVICES.

4. ANPAC NOTED LEGAL DETERMINATION OF THE BLA, AS INDICATED IN THE PID, THAT PROJECT IS EXEMPT FROM REQUIREMENT FOR 25 PERCENT HOST COUNTRY CONTRIBUTION, PER FAA SECTION 110, AS AN INTEGRAL PART OF AN AUTHENTICALLY MULTILATERAL ACTIVITY. ANPAC RECOMMENDS, NOTWITHSTANDING THIS DETERMINATION, THAT MISSION CALCULATE WHAT RESOURCES THE HOST COUNTRY IS, IN FACT, CONTRIBUTING. SUCH RESOURCES ARE LIKELY TO BE WHOLLY OR PREDOMINANTLY IN-KIND AND ARE PROBABLY SUBSTANTIALLY GREATER THAN THE REQUIRED AMOUNT. IN ADDITION, ANPAC RECOMMENDS THAT MISSION EXPLORE POSSIBILITY OF REACHING AN UNDERSTANDING WITH GSL, PERHAPS THROUGH SIDE LETTER TO PROJECT AGREEMENT, THAT LOCAL CURRENCY GENERATED THROUGH SALE OF PL-480 COMMODITIES PROVIDED UNDER SUPPLEMENTAL FOOD AID PLEDGED IN PARIS DONORS' MEETING BE UTILIZED TO PARTIALLY FINANCE THE REHABILITATION PROJECTS TO WHICH AID IS ALSO CONTRIBUTING DA RESOURCES.

5. PRC AND ANPAC MEMBERS WERE PARTICULARLY CONCERNED THAT CREDIT COMPONENTS (HOUSING, AGRICULTURE, BUSINESS DEVELOPMENT) OF THIS PROJECT SHOULD NOT ENDANGER PROGRESS MISSION HAS MADE IN ITS REGULAR AGENDA OF POLICY REFORM IN INTEREST RATE STRUCTURES AND OTHER FINANCIAL POLICIES. WHILE RECOGNIZING THAT GSL AND

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OTHER DONORS MAY BE CONTEMPLATING CREDIT SUBSIDIES IN SOME ASPECTS OF THE OVERALL PROGRAM, PRC AND ANPAC CLEARLY FAVORED ALTERNATIVES TO SUBSIDIZED CREDIT (E.G., GRANT PACKAGES TO THE DESTITUTE, MARKET-BASED LOANS TO OTHERS AND COMBINATIONS OF GRANTS AND MARKET-BASED LOANS) WHEREVER POSSIBLE, AND URGE MISSION TO THOROUGHLY EXPLORE SUCH OPTIONS BEFORE COMMITTING ITSELF TO SUBSIDIZED CREDIT UNDER THE PROJECT. DIRECT GRANT ASSISTANCE TO THE NEEDY IN FACT MAY BE MORE EASILY ADMINISTERED THAN TRANSFER OF RESOURCES THROUGH POTENTIALLY MORE-COMPLICATED INSTITUTIONAL CREDIT ARRANGEMENTS, ALTHOUGH EFFECTIVE BENEFICIARY SELECTION/MONITORING AND ATTENTION TO INPUT DELIVERY SYSTEMS DOES BECOME MORE IMPORTANT UNDER SUCH DIRECT ASSISTANCE MODES. ON THE OTHER HAND, GRANT ASSISTANCE TO PRIVATE SECTOR ENTREPRENEURS (DOLS. 8 MILLION CAPITAL SUPPORT PROGRAM COMPONENT) DID NOT SEEM JUSTIFIED AS A REGULAR FEATURE OF AID'S SUPPORT TO THE REHAB PROGRAM. MISSION MAY WISH TO REFOCUS PRIVATE SECTOR ELEMENT TO GIVE FIRST PRIORITY TO STRENGTHENING THOSE ENTERPRISES THAT SUPPLY ESSENTIAL COMMODITIES OR SERVICES DIRECTLY RELATED TO REHAB EFFORTS. WHILE LEAVING FINAL DECISION ON NECESSITY OF CREDIT SUBSIDIES AND GRANT SUPPORT TO PRIVATE BUSINESSES UP TO MISSION, ANPAC WANTED TO CONVEY ITS VIEWS THAT IF CREDIT SUBSIDIES ARE USED, THEY SHOULD BE MINIMIZED AND, AS APPROPRIATE, FULLY ANALYZED AND JUSTIFIED IN THE PP ECONOMIC ANALYSIS OR IN LATER IMPLEMENTING DOCUMENTS (PRIOR TO DISBURSEMENT OF FUNDS). AT A MINIMUM, PP SHOULD ESTABLISH CLEAR PARAMETERS AND CRITERIA FOR LENDING TERMS. MONITORING OF INTERMEDIARY INSTITUTION PROGRAMS WILL BE NEEDED TO ENSURE ADHERENCE TO ESTABLISHED PARAMETERS.

6. POTENTIAL DISBURSEMENT PROBLEMS ARE EVIDENT AS A RESULT OF BOTH THE INHERENT UNCERTAINTY OF THE SECURITY SITUATION IN THE NORTH AND EAST AND THE SHEER MAGNITUDE OF THE TASK OF DELIVERING LARGE QUANTITIES OF BUILDING MATERIALS, AGRICULTURAL INPUTS, ETC. OVER A WIDE AREA UNDER EXTRAORDINARY CIRCUMSTANCES. ANPAC WONDERED WHETHER CPS OR COVENANTS MIGHT BE APPROPRIATE TO SIGNAL MINIMUM CONDITIONS REQUIRED TO BEGIN AND/OR CONTINUE DISBURSEMENT. SUCH CONDITIONS MIGHT INCLUDE TANGIBLE EVIDENCE OF REFUGEES BEING RETURNED TO THE REGION IN REASONABLE NUMBERS, RELEVANT LOCAL GOVERNMENT OFFICES OPEN AND FUNCTIONING, COMMITMENT FROM FARMERS TO BEGIN CULTIVATION OF LAND HOLDINGS IN A GIVEN PLANTING SEASON, ETC. THE MISSION IS IN THE BEST POSITION TO MAKE A TECHNICAL JUDGMENT ABOUT THE FEASIBILITY OF SUCH CPS OR COVENANTS, BUT AID/W BELIEVES THEY WOULD BE USEFUL AS INDICATORS OF OVERALL ENVIRONMENT AS CONDUCIVE TO SUCCESSFUL REHABILITATION EFFORTS. ANPAC WAS ALSO CONCERNED ABOUT EVIDENT NEED FOR GSI (AS POSSIBLY USAID) TO ESTABLISH STREAMLINED PROCUREMENT PROCEDURES TO SHORTEN TIME REQUIRED FOR PURCHASE OF GOODS AND SERVICES UNDER NORMAL PROCEDURES. MISSION SHOULD BE AWARE.

HOWEVER, THAT WAIVERS OF COMPETITIVE PROCEDURES ARE UNDERGOING RIGOROUS REVIEW IN AID/W AND IN CONGRESS AND SHOULD BE STRICTLY LIMITED TO CASES IN WHICH U.S. FOREIGN ASSISTANCE PROGRAM WOULD BE ENDANGERED BY FOLLOWING NORMAL REQUIREMENTS. SUCH CASES REQUIRE STRONG WRITTEN JUSTIFICATION.

7. BEARING IN MIND THAT PROJECT-FUNDED TA WILL BE LIMITED AND MOST ASSISTANCE IS LIKELY TO BE CHANNELED THROUGH LOCAL PVOS AND CONTRACTORS, AID/W NONETHELESS URGES MISSION TO CONSIDER POSSIBILITY OF USING GRAY AMENDMENT ENTITIES WHERE POSSIBLE FOR PROJECT ACTIVITIES.

8. PLANS FOR ENVIRONMENTAL ASSESSMENT OF PROJECT (REFTEL B), AND TDY OF ANE ENVIRONMENTAL ADVISOR WILL BE ADDRESSED IN SEPTEL. SHULTZ

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ANNEX A 1

This memo is written to address the specific issues raised when ANPAC approved the project and authorized the Mission to negotiate it in the field. The detailed description of the project is, of course, contained in this Project Paper. However, this memo highlights those major areas of attention ANPAC noted in their reference cable State 085276:

1. Immediate Versus Long-Term Development Goals:

As noted in the from the project design, this project follows ANPAC guidance with respect to focusing primarily on the immediate needs, such as the supply of housing materials, agricultural inputs, etc. Technical assistance to the project is extremely limited and represents only 7% of the total AID project cost and 4% of the total project budget including the GSL contribution.

2. Host Country Contribution:

While the project remains part of a multi-donor activity, the Mission has, as ANPAC has urged, been able to identify a large contribution of GSL funding. Specifically, we and the Government have reached agreement that $25 million of funding to the total project will be derived from the proceeds of the $10 million PL480 and the $15 million Housing Guarantee Program. ANPAC urged that we vigorously explore these avenues as possible supplemental funding for rehabilitation activities. We have been successful in reaching agreement with the Government that they will be so provided as an integral part of rehabilitation assistance.

3. Compatibility With the Existing Credit:

ANPAC raised concern that the proposed credit component not endanger any other progress the Mission has made with respect to the regular agenda of policy reform. In this regard we have exceeded our original expectations. We have moved away from an extremely subsidized and hence potentially detrimental credit component, and instead worked very closely with the Government to create a comprehensive Grant/Loan Program that should address the most immediate needs. The loan portion of the program, while not high in terms of absolute interest rates costs i.e. 6% for housing loans and 9% for productive enterprises loans, is nevertheless the same as other existing programs in Sri Lanka. This represents a major leap from what individual ministries had originally proposed at the beginning of the design process. In addition to this, we have reached agreement with the Government that the other donors will adopt this scheme for their funding as well, and all of this has been included into a universal grant/loan scheme to ensure overall consistency from each donor financing. We regard this as a major breakthrough.

4. Initial Implementation:

The Mission has been equally concerned as ANPAC was over the conditions required to allow full rehabilitation to begin and continue. We have, therefore, conditioned our agreement in a way which provides for mutual consultation before any disbursement of any project funds are to begin as well as regular quarterly reviews with the implementation authorities. The specific requirements which should be met will be spelled out in PIL No: 1, which will follow immediately after signing of the agreement. We regard these conditions at this time to be: operational Government offices opened and fully staffed, a rehabilitation registration and voucher system in place with materials passed out to various District Offices for appropriate registration, etc. In addition as an added safeguard we have negotiated a suspension clause into the agreement.

5. Procurement:

Procurement under the project is limited to the irrigation component. We have reached agreement with Government that such procurement will be done outside of normal Governmental procedures and likely be done on the direct basis under a Procurement Services Agent Contract. We believe we have over the obstacle of Government slowness in the procurement process while at the same time remaining sensitive to AID competitive procedures.

6. Gray Amendment:

The Mission has fully considered the possibility of using Grey Amendment organizations as part of this project. However, because technical assistance is exclusively limited to Personal Service Contracts and not firms or educational institutions, consideration of Grey Amendment firms would not apply to this situation.

7. Environmental Assessment:

The environmental assessment is thorough and fully considers a number of environmental impacts which the project may bring. In this regard the Government has agreed to exclude from voucher reimbursement payment for pesticides and chemicals which do not meet AID standards. As the same time, the Government has also been considering expanding the list to also exclude those pesticides and chemicals which do not meet the World Bank list of approved commodities.

In sum, the Mission believes we have been responsive to the ANPAC concerns and at the same time have designed a coherent project which gives promise of assisting in the rehabilitation across sectors.

COUNTRY: SRI LANKA
PROJECT TITLE AND NUMBER: REHABILITATION ASSISTANCE PROJECT

NARRATIVE SUMMARY	OBJECTIVE VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal To promote incomes employment and agricultural productivity in the northern and eastern portion of Sri Lanka by assisting in the restoration of a viable productive economy in the areas of agriculture irrigation, private sector and housing.	Measure of goal achievement 1. Agriculture, supporting irrigation equivalent land subsistence levels achieved. 2. Comparable quality of life restored to population. 3. Off-farm employment and income generating opportunities increase.	Census reports on cropped acreage, employment levels and incidence, tax levels and incidence, marketings of selected products. Selected business indicators. Evaluation of housing, loan, credit and other applications, limited to target beneficiary groups.	Purpose/Goal 1. Long term security maintained. Security restored in project areas. 2. Marketing system restored. 3. Private investment adequate. 4. Long term GSL reconciliation successful. 5. Voucher System working
Project Purpose: Contribute to 1. Reconstruction of housing, for target groups, 2. Rehabilitation of irrigation systems; 3. Restoration of crop production and 4. Revival of business enterprises	Condition that will indicate purpose has been achieved; EGFS - rehab. of homes for affected persons under median income; - support to affected farmers; - small irrigation works restored; - financial and training support to affected small businesses. (See individual logframes)	1. Census, focused surveys, identification of loan, grant etc applicants. 2. Outline monitoring and evaluation 1. UNDP records 2. GSL records including those of NRSC/MAR/DACC.	1. Transportation system recovers. 2. Other donor programs fulfilled 3. GSL recovery program fulfilled 4. Credit delivery system functions. NRSC monitoring system in place and functions
Output 1. Target groups assisted (housing) 2. Renewed private sector; Increased employment 3. Restored. selected irrigation facilities. 4. Rehabilitation of Agricult. Assisted. extension serv.	Magnitude of outputs 1. 92,000 poorer households provided shelter 2. 15,000 businesses helped blos rehab. 3. 95000 acres under renewed irrigation 3. 140,000 farm households assisted for crop production. (See individual logframes)	Routine monitoring and evaluation of: 1. Target households. 2. Targeted businesses and trainees. 3. Non-estate farmers. 4. Users of established irrigation systems.	1. Extension system put in place. 2. Other government structures in place. 3. Voucher system in place and AGA Officer open.
Inputs (US$ 000)	Rehab. Assistance Project - Estimated Disbursements (in 000's US$)	Regular monitoring of budget.	1. GSL supplies agreed money and support. 2. Other local parties concur - bank etc. 3. Other donor funding forthcoming.

Project Budget:	Yr. One	Yr. Two	Yr. Three	Yr. Four	TOTAL DISBURSE
AID CONTRIBUTION					
GRANTS/LOANS	$5,046	$6,500	$4,400	$454	$16,400
CONSTRUCTION	$400	$3,000	$2,354	$1,400	$7,154
TA	$943	$700	$463	$135	$2,266
TRAINING	$100	$50	$50	$50	$250
EQUIPMENT	$800	$800	$0	$0	$1,600
EVALUATION	$0	$75	$30	$45	$150
CONTINGENCIES	$310	$360	$560	$400	$1,650
AID TOTAL	$7,599	$11,505	$8,412	$2,484	$30,000
GSL CONTRIBUTION	$7,620	$7,830	$6,000	$5,500	$27,000
GRANTS/LOANS					
TOTAL	$15,219	$19,335	$14,412	$7,984	$57,000

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ANNEX B2

COUNTRY: SRI LANKA
PROJECT TITLE AND NUMBER 383-0107 - REHABILITATION ASSISTANCE PROJECT -

HOUSING COMPONENT
LIFE OF PROJECT 4 YRS
FY 88 TO FY 91
TOTAL US FUNDING $24.01 MILLION

NARRATIVE SUMMARY	OBJECTIVE VERIFIABLE INDICATORS Indicators of progress toward planned targets/benefits	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
purpose repair/rehabilitate damaged housing for households below the median income (Rs.1500) in affected districts of the North and East.	Conditions that will indicate purpose has been achieved: EOPS 92,000 dwelling units rehabilitated in whole or in part with 34,000(1988), 39,000(1989), 15,000(1990) 54,000 with incomes under Rs.700pm 38,000 with incomes between Rs.700-1500	local registration records monitoring by the DRCCs USAID monitoring and evaluation	output-purpose - households will use housing grants to repair/rebuild damaged housing - other resources will be available to poor families for housing - building materials available
output grant assistance for households with incomes below the median for rebuilding or repairing dwellings damaged in the conflict. adequate GSL capacity to manage/implement the housing rehab. program	Magnitude of outputs - 54,000 households with income below Rs.700/month receiving housing grants of Rs.7500 - 38,000 households with incomes between Rs.700 and 1500 receiving housing grants of Rs.10,000 16 person years L.T. Tech Assistance 60 mos. S.T. Tech. assistance training (local mgt./logistics)	local registration records monitoring by the DRCCs and USAID USAID monitoring and evaluation	input/output GSL registration procedures correctly identify eligible families GSL procedures deliver resources to beneficiaries trained staff remain with housing program
inputs 1st yr all yrs USG $5.6 MM 6.6 MM HOST GOVT $2.3 MM $17.7 MM OTHER TOTAL $7.9 MM $24.3 MM * Include HG Proceeds	Input categories TECHNICAL ASSISTANCE: $864 TRAINING $150 OTHER (Grant Assistance) $5630 Proceed $17370 TOTAL $24014	project performance tracking	provision of inputs

ANNEX B3

COUNTRY: SRI LANKA
PROJECT TITLE AND NUMBER : 383-0107 - REHABILITATION ASSISTANCE PROJECT

AGRICULTURE COMPONENT
LIFE OF PROJECT 4 YRS
FY 88 TO FY 91
TOTAL US FUNDING 10.8 MILLION

NARRATIVE SUMMARY	OBJECTIVE VERIFIABLE INDICATORS Indicators of progress toward planned targets/benefits	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
purpose support rehabilitation of crop prod. for small farms in N & E provinces	Conditions that will indicate purpose has been achieved: end of project - 140,000 farm households get input grants in-kind and cash - no of cropped acres increases by 93,050 during LOP 89 90 91 all 156 46.2 37.3 140 37.2 30.6 25.2 93	m/e NRSC monitoring criteria and system	output-purpose credit delivery system functions inputs available other donors and inst. provi credit and support for 70,0 farmers
output 1. provided: crop prod. credit for inputs	Magnitude of outputs 89 90 91 all 3.71 3.07 2.52 9.30 90 ASC outlets upgraded	m/e monitoring NRSC mis	input/output credit del system repaired extension system in place structures reclaimed
inputs (mil $) 1st yr all yrs USG USG 7.0 HOST GOVT 3.8 OTHER (ADB) 20 TOTAL 30.8	Input categories TA/TRNG 13.5 per mon US 26 per mon local OTHER grants and credit buydowns SUBTOTAL CONT/INFLA TOTAL	project performance tracking Workplan reviews	provision of inputs gov't allocates its share credit systems agree extension system agrees

383-0167 REHABILITATION ASSISTANCE PROJECT - IRRIGATION COMPONENT

LIFE PROJECT 4 YRS
Total US funding $9.854.00

ANNEX B 4

NARRATIVE SUMMARY	OBJECTIVE VERIFIABLE INDICATORS Indicators of progress toward planned targets/benefits	Indicators of benefit incidence target group which participate in benefits: production or consumption	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS	MEANS OF VERIFICATION
Purpose 1. restore selected major, medium, and minor irrigation facilities 2. restart salt water exclusion project. (Jaffna Lagoon)	Conditions that will indicate 1. acres restored to pre-hostility productivity. 1989 1990 1991 ALL 40,00 40,000 21,000 100.000 2. cropping intensity restored to above pre-hostility levels 3. fresh water level in and ground water restored.	benefit incidence 1. 32,000 farmers supplied on improved land. 2. increased paddy production on all scales of farm.	project monitoring	output-purpose 1. farm pop returned. 2. tillage energy avail. 3. conflict over use of lagoon resolved.	monitoring
Output 1. restored, irrigation facilities in eight affected districts. 2. completed, Jaffna lagoon study and salt water exclusion scheme. 3. strengthened, ID capacity.	Magnitude of outputs 1. 101,000 acres under irrigation 2. one study 3. restored ID capacity	benefit incidence 1. contractors and laborers. 2. study staff. 3. ID officials and farmers trnd. 4. ID and contractors.	1. records of ID. 2. study. 3. PIO/Ps, records. 4. records of ID.	input/output 1. trainees provided. 2. labor available. 3. neg. det on environment study.	1. PIO/P 2. contract monitoring. 3. CD monitoring.
Inputs 1st yr all yrs USG 1.385 9.854	Input categories Budget and implementation schedule TA first second third fourth ALL TA .85 .331 .034 .020 .470 COMMODITIES .800 .665 .135 - 1.600 TRNG - .030 .060 .010 .100 CONSTRC .500 2.770 2.720 1.694 7.684 TOTAL 1.385 3.796 2.949 1.724 9.854	input source all 1. inst consultants, PSC's 2. PSA contract 3. local and other Asian inst. ID and contractors. 4. USAID and contractors.	project performance tracking 1. PRO/AG: July 2. irrigation rehab unit; Aug. 3. Jaffna study, Jan Feb 89 4. 1st eval Mar 90. 5. final eval. Mar 92.	provision of inputs 1. nec. tech on ID staff. 2. Trainors avail. 3. tech personnel avail. 4. GSL provides fuel. 5. agreed construction.	1. PRO/AG

COUNTRY: SRI LANKA
PROJECT TITLE AND NUMBER: 383-0107 - REHABILITATION ASSISTANCE PROJECT Enterprise Component

ANNEX B5

NARRATIVE SUMMARY	OBJECTIVE VERIFIABLE INDICATORS Indicators of progress toward planned targets/benefits	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Purpose: 1. renew private sector 2. Increase employment of target groups	Conditions that will indicate purpose has been achieved: EOPS -Return of private sector to pre-conflict business operations -Decrease in number of un-employed youths -bank branches operating fully through the districts -Employment levels return to pre-conflict amounts -emmigration trends halted	NRSC monitoring system data National statistical data per district Tax revenues including BTT data	output-purpose 1.Agric sector revitalized 2.SMI III (WB) proceeds 3.Successful implementation of other aid programs 4.Businessmen and business supports willing to re-commence operations
Output 1. Recapitalization of private businesses. 2. Upgrading of rural credit institutions	Magnitude of outputs 1. Financial assistance for 15,000 businesses 2. TA Training for 6 branches of financial institutions	NRSC monitoring system data National statistical data per district Tax revenues incl BTT data BTT data -Amounts & numbers loans disbursed and recovered -Numbers of trained youths placed in jobs -Volume of essential goods returning to pre-conflict levels per capita. - NRSC reports	input/output 1. MIS system established 2. Financial Institution operating
Inputs	Input categories	project performance tracking	provision of inputs
	LOAN/GRANT $3885		1. Financial institutions handle credit and grant flows to end recipients
	TA $ 230	NRSC reports Financial Institutions reports	
	GSL $3815		

	1st yr	all yrs
USG	1011	4.115
HOST GOVT	1911	3.815
TOTAL		7.930

ANNEX X-C

5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable to: (A) FAA funds generally; (B)(1) Development Assistance funds only; or (B)(2) the Economic Support Fund only.

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FY 1988 Continuing Resolution Sec. 526. Has the President certified to the Congress that the government of the recipient country is failing to take adequate measures to prevent narcotic drugs or other controlled substances which are cultivated, produced or processed illicitly, in whole or in part, in such country or transported through such country, from being sold illegally within the jurisdiction of such country to United States Government personnel or their dependents or from entering the United States unlawfully? — No

2. FAA Sec. 481(h). (This provision applies to assistance of any kind provided by grant, sale, loan, lease, credit, guaranty, or insurance, except assistance from the Child Survival Fund or relating to international narcotics control, disaster and refugee relief, or the provision of food or medicine.) If the recipient is a "major illicit drug producing country" (defined as a country producing during a fiscal year at least five metric tons of opium or 500 metric tons of coca or marijuana) or a "major drug-transit country" (defined as a country that is a significant direct source of illicit drugs significantly affecting the United States, through which such drugs are transported, or through which significant sums of drug-related profits are laundered with the knowledge or complicity of the government), has the President in the March 1 International Narcotics Control Strategy Report (INSCR) determined and certified to the Congress (without — N/A

Congressional enactment, within 30 days of continuous session, of a resolution disapproving such a certification), or has the President determined and certified to the Congress on any other date (with enactment by Congress of a resolution approving such certification), that (a) during the previous year the country has cooperated fully with the United States or taken adequate steps on its own to prevent illicit drugs produced or processed in or transported through such country from being transported into the United States, and to prevent and punish drug profit laundering in the country, or that (b) the vital national interests of the United States require the provision of such assistance?

3. Drug Act Sec. 2013. (This section applies to the same categories of assistance subject to the restrictions in FAA Sec. 481(h), above.) If recipient country is a "major illicit drug producing country" or "major drug-transit country" (as defined for the purpose of FAA Sec 481(h)), has the President submitted a report to Congress listing such country as one (a) which, as a matter of government policy, encourages or facilitates the production or distribution of illicit drugs; (b) in which any senior official of the government engages in, encourages, or facilitates the production or distribution of illegal drugs; (c) in which any member of a U.S. Government agency has suffered or been threatened with violence inflicted by or with the complicity of any government officer; or (d) which fails to provide reasonable cooperation to lawful activities of U.S. drug enforcement agents, unless the President has provided the required certification to Congress pertaining to U.S. national interests and the drug control and criminal prosecution efforts of that country? N/A

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4.	FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) the debt is not denied or contested by such government?	No
5.	FAA Sec. 620(e)(1). If assistance is to a government, has it (including any government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?	No
6.	FAA Secs. 620(a), 620(f), 620D; FY 1988 Continuing Resolution Sec. 512. Is recipient country a Communist country? If so, has the President determined that assistance to the country is vital to the security of the United States, that the recipient country is not controlled by the international Communist conspiracy, and that such assistance will further promote the independence of the recipient country from international communism? Will assistance be provided directly to Angola, Cambodia, Cuba, Iraq, Libya, Vietnam, South Yemen, Iran or Syria? Will assistance be provided to Afghanistan without a certification?	No
7.	FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, damage or destruction by mob action of U.S. property?	No
8.	FAA Sec. 620(l). Has the country failed to enter into an investment guaranty agreement with OPIC?	No

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9. FAA Sec. 620(o); Fishermen's Protective Act of 1967 (as amended) Sec. 5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel because of fishing activities in international waters? (b) If so, has any deduction required by the Fishermen's Protective Act been made? — No

10. FAA Sec. 620(q); FY 1988 Continuing Resolution Sec. 518. (a) Has the government of the recipient country been in default for more than six months on interest or principal of any loan to the country under the FAA? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the FY 1988 Continuing Resolution appropriates funds? — No

11. FAA Sec. 620(s). If contemplated assistance is development loan or to come from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget and amount of the country's foreign exchange or other resources spent on military equipment? (Reference may be made to the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.) — N/A

12. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have relations been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? — No

13. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget? (Reference may be made to the Taking into Consideration memo.)	Current
14. FAA Sec. 620A. Has the President determined that the recipient country grants sanctuary from prosecution to any individual or group which has committed an act of international terrorism or otherwise supports international terrorism?	No
15. FY 1988 Continuing Resolution Sec. 576. Has the country been placed on the list provided for in Section 6(j) of the Export Administration Act of 1979 (currently Libya, Iran, South Yemen, Syria, Cuba, or North Korea)?	No
16. ISDCA of 1985 Sec. 552(b). Has the Secretary of State determined that the country is a high terrorist threat country after the Secretary of Transportation has determined, pursuant to section 1115(e)(2) of the Federal Aviation Act of 1958, that an airport in the country does not maintain and administer effective security measures?	No
17. FAA Sec. 666(b). Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA?	No
18. FAA Secs. 669, 670. Has the country, after August 3, 1977, delivered to any other country or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards, and without special certification by the President? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.)	No

19. FAA Sec. 670. If the country is a non-nuclear weapon state, has it, on or after August 8, 1985, exported (or attempted to export) illegally from the United States any material, equipment, or technology which would contribute significantly to the ability of a country to manufacture a nuclear explosive device?	No
20. ISDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N. on Sept. 25 and 28, 1981, and did it fail to disassociate itself from the communique issued? If so, has the President taken it into account? (Reference may be made to the Taking into Consideration memo.)	Sri Lanka was not represented at the meeting when communique was adopted and it entered written reservation subsequently.
21. FY 1988 Continuing Resolution Sec. 528. Has the recipient country been determined by the President to have engaged in a consistent pattern of opposition to the foreign policy of the United States?	No
22. FY 1988 Continuing Resolution Sec. 513. Has the duly elected Head of Government of the country been deposed by military coup or decree? If assistance has been terminated, has the President notified Congress that a democratically elected government has taken office prior to the resumption of assistance?	No
23. FY 1988 Continuing Resolution Sec. 543. Does the recipient country fully cooperate with the international refugee assistance organizations, the United States, and other governments in facilitating lasting solutions to refugee situations, including resettlement without respect to race, sex, religion, or national origin?	N/A

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria

FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy?	No
FY 1988 Continuing Resolution Sec. 538. Has the President certified that use of DA funds by this country would violate any of the prohibitions against use of funds to pay for the performace of abortions as a method of family planning, to motivate or coerce any person to practice abortions, to pay for the performance of involuntary sterilization as a method of family planning, to coerce or provide any financial incentive to any person to undergo sterilizations, to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?	No

2. Economic Support Fund Country Criteria

FAA Sec. 502B. Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, has the President found that the country made such significant improvement in its human rights record that furnishing such assistance is in the U.S. national interest?	N/A
FY 1988 Continuing Resolution Sec. 549. Has this country met its drug eradication targets or otherwise taken significant steps to halt illicit drug production or trafficking?	N/A

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ANNEX X-C

5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A includes criteria applicable to all projects. Part B applies to projects funded from specific sources only: B(1) applies to all projects funded with Development Assistance; B(2) applies to projects funded with Development Assistance loans; and B(3) applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

A. GENERAL CRITERIA FOR PROJECT

1.	FY 1988 Continuing Resolution Sec. 523; FAA Sec. 634A. If money is sought to obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified?	Congress has been notified by CN.
2.	FAA Sec. 611(a)(1). Prior to an obligation in excess of $500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance, and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?	Yes
3.	FAA Sec. 611(a)(2). If legislative action is required within recipient country, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?	N/A

4.	FAA Sec. 611(b); FY 1988 Continuing Resolution Sec. 501. If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.)	No new irrigation facilities will be constructed. Rehabilitation of existing canals and structures only will be financed under the project.
5.	FAA Sec. 611(e). If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?	Yes
6.	FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.	Project is being developed in close coordination with other bilateral donors, the World Bank and the ADB.
7.	FAA Sec. 601(a). Information and conclusions on whether projects will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.	Project is designed to support private sector in areas under rehabilitation. Credit organizations will participate in the housing rehabilitation program.
8.	FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	Most of the project funds will be for local currency costs. A small amount of U.S. technical assistance will be required.
9.	FAA Secs. 612(b), 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.	The GSL is contributing local currencies to meet the costs of rehabilitation activities. U.S.-owned Sri Lankan currency is not available.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

No.

11. FY 1988 Continuing Resolution Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

N/A

12. FY 1988 Continuing Resolution Sec. 553. Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel?

No.

13. FAA Sec. 119(g)(4)-(6). Will the assistance (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?

N/A. This is a rehabilitation project in which due regard will be taken to protect the environment.

14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)? N.A.

15. FY 1988 Continuing Resolution. If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government? N.A.

16. FY Continuing Resolution Sec. 541. If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.? N.A.

17. FY 1988 Continuing Resolution Sec. 514. If funds are being obligated under an appropriation account to which they were not appropriated, has prior approval of the Appropriations Committees of Congress been obtained? N.A.

18. FY Continuing Resolution Sec. 515. If deob/reob authority is sought to be exercised in the provision of assistance, are the funds being obligated for the same general purpose, and for countries within the same general region as originally obligated, and have the Appropriations Committees of both Houses of Congress been properly notified? N.A.

19. State Authorization Sec. 139 (as interpreted by conference report). Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision). Will be done.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FY 1988 Continuing Resolution Sec. 552 (as interpreted by conference report). If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities (a) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (b) in support of research that is intended primarily to benefit U.S. producers?	N.A.
b. FAA Secs. 102(b), 111, 113, 281(a). Describe extent to which activity will (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and	As a rehabilitation project this effort encourages resettlement back to previously inhabited areas. As such the project should have a positive effect in disbursing investment to rural areas.

insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries.

c.	FAA Secs. 103, 103A, 104, 105, 106, 120-21. Does the project fit the criteria for the source of funds (functional account) being used?	Yes
d.	FAA Sec. 107. Is emphasis placed on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?	Yes
e.	FAA Secs. 110, 124(d). Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?	The project is part of a multidonor effort and is therefore exempt from this requirement. Nevertheless, the GSL will be making a significant contribution to the rehabilitation effort.
f.	FAA Sec. 128(b). If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?	N.A.

g.	FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.	Project is designed to restore areas of country to pre-conflict levels. Proje addresses most urgent needs housing, small business, irrigation and agriculture.
h.	FY 1988 Continuing Resolution Sec. 538. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?	No.
	Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations?	No.
	Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?	No.
i.	FY 1988 Continuing Resolution. Is the assistance being made available to any organization or program which has been determined to support or participate in the management of a program of coercive abortion or involuntary sterilization?	No.
	If assistance is from the population functional account, are any of the funds to be made available to voluntary family planning projects which do not offer, either directly or through referral to or information about access to, a broad range of family planning methods and services?	N.A.

j.	FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	Yes
k.	FY 1988 Continuing Resolution. What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 20 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)?	No institutional contracts are planned under this project.
l.	FAA Sec. 118(c). Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16? Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (a) stress the importance of conserving and sustainably managing forest resources; (b) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (c) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (d) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (e) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared	Yes. A detailed analysis of environmental issues is included as part of this project paper.

or degraded; (f) conserve forested watersheds and rehabilitate those which have been deforested; (g) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (h) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (i) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (j) seek to increase the awareness of U.S. government agencies and other donors of the immediate and long-term value of tropical forests; and (k) utilize the resources and abilities of all relevant U.S. government agencies?

m. FAA Sec. 118(c)(13). If the assistance will support a program or project significantly affecting tropical forests (including projects involving the planting of exotic plant species), will the program or project (a) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land, and (b) take full account of the environmental impacts of the proposed activities on biological diversity? N.A.

n. FAA Sec. 118(c)(14). Will assistance be used for (a) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; or (b) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas? — No

o. FAA Sec. 118(c)(15). Will assistance be used for (a) activities which would result in the conversion of forest lands to the rearing of livestock; (b) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands; (c) the colonization of forest lands; or (d) the construction of dams or other water control structures which flood relatively undegraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development? — No.

p. FY 1988 Continuing Resolution If assistance will come from the Sub-Saharan Africa DA account, is it (a) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant; (b) being provided in — N.A.

accordance with the policies contained in section 102 of the FAA; (c) being provided, when conistent with the objectives of such assistance, through African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots activities on behalf of long-term development in Sub-Saharan Africa; (d) being used to help overcome shorter-term constraints to long-term development, to promote reform of sectoral economic policies, to support the critical sector priorities of agricultural production and natural resources, health, voluntary family planning services, education, and income generating opportunities, to bring about appropriate sectoral restructuring of the Sub-Saharan African economies, to support reform in public administration and finances and to establish a favorable environment for individual enterprise and self-sustaining development, and to take into account, in assisted policy reforms, the need to protect vulnerable groups; (e) being used to increase agricultural production in ways that protect and restore the natural resource base, especially food production, to maintain and improve basic transportation and communication networks, to maintain and restore the natural resource base in ways that increase agricultural production, to improve health conditions with special emphasis on meeting the health needs of mothers and children, including the establishment of self-sustaining primary health care systems that give priority to preventive care, to provide increased access to voluntary family planning services, to improve basic literacy and mathematics especially to those outside the formal educational system and to improve primary education, and to develop income-generating opportunities for the unemployed and underemployed in urban and rural areas?

2. Development Assistance Project Criteria (Loans Only) N.A.

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest?

c. FY 1988 Continuing Resolution. If for a loan to a private sector institution from funds made available to carry out the provisions of FAA Sections 103 through 106, will loan be provided, to the maximum extent practicable, at or near the prevailing interest rate paid on Treasury obligations of similar maturity at the time of obligating such funds?

d. FAA Sec. 122(b). Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities?

3. Economic Support Fund Project Criteria

N.A.

a. FAA Sec. 531(a). Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA?

b. FAA Sec. 531(e). Will this assistance be used for military or paramilitary purposes?

c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

THE HOUSING GUARANTY PROGRAM

STATUTORY CHECKLIST

SRI LANKA

PROJECT NO. 383 -HG- 005

	ANSWER YES/NO PUT PP PAGE REFERENCES AND/OR EXPLANATIONS WHERE APPROPRIATE
A. General Criteria Under HG Statutory Authority.	
Section 221(a)	
Will the proposed project meet the following criteria.	
(1) is intended to increase the availability of domestic financing by demonstrating to local entrepreneurs and institutions that providing low-cost housing is financially viable;	NO
(2) is intended to assist in marshalling resources for low-cost housing;	YES
(3) supports a pilot project for low-cost shelter, or is intended to have a maximum demonstration impact on local institutions and national policy; and,	YES
(4) is intended to have a long run goal to develop domestic construction capabilities and stimulate local credit institutions to make available domestic capital and other management and technological resources required for effective low cost shelter programs and policies.	NO
Section 222(a)	
Will the issuance of this guaranty cause the total face amount of guaranties issued and outstanding at this time to be in excess of $2,183,100.	NO
Will the guaranty be issued prior to September 30, 1988.	YES

Section 222(b)

Will the proposed guaranty result in activities which emphasize:

(1) projects providing improved home sites to poor families on which to build shelter and related services; or — NO

(2) projects comprised of expandable core shelter units on serviced sites; or — NO

(3) slum upgrading projects designed to conserve and improve existing shelter; or — NO

(4) shelter projects for low-income people designed for demonstration or institution building; or — YES

(5) community facilities and services in support of projects authorized under this section to improve the shelter occupied by the poor? — NO

Section 222(c)

If the project requires the use or conservation of energy, was consideration given to the use of solar energy technologies, where economically or technically feasible? — N/A

Section 223(a)

Will the A.I.D. guaranty fee be in an amount authorized by A.I.D. in accordance with its delegated powers? — YES

Section 223(f)

Is the maximum rate of interest allowable to the eligible U.S. Investor, as prescribed by the Administrator, not more than one percent (1%) above the current rate of interest applicable to housing mortgages insured by the Department of Housing and Urban Development? — N/A

Section 223(j)

(1) Will the proposed Housing Guaranty be coordinated with and complementary to other development assistance in the host country? YES

(2) Will the proposed Housing Guaranty demonstrate the feasibility of particular kinds of housing and other institutional arrangements? YES

(3) Is the project designed and planned by A.I.D. so that at least ninety percent (90%) of the face value of the proposed guaranty will be for housing suitable for families below the median urban income for housing in urban areas, in the host country? YES

(4) Will the issuance of this guaranty cause the face value of guaranties issued with respect to the host country to exceed $25 million in any fiscal year? NO

(5) Will the issuance of this guaranty cause the average face value of all housing guaranties issued in this fiscal year to exceed $15 million? NO

Section 238(c)

Will the guaranty agreement provide that will cover only lenders who are "eligible investors" within the meaning of this section of the statute at the time the guaranty is issued? YES

8. Criteria Under General Foreign Assistance Act Authority.

Section 620/620A

(a) Does the host country meet the general criteria for country eligibility under the Foreign Assistance Act as set forth in the country eligibility checklist prepared at the beginning of each year? YES

(2) Is there any reason to believe that circumstances have changed in the host country so that it would now be ineligible under the country statutory checklist? NO

ANNEX D

දුරකථනය
தொலைபேசி
Telephone } 24183

විදුලි පණිවුඩ
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මගේ අංකය
எனது இல.
My No. } CA 9/9/138 B

ඔබේ අංකය
உமது இல.
Your No. }

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வெளிநாட்டு வள திணைக்களம்
நிதி, திட்டமிடல் அமைச்சு
DEPARTMENT OF EXTERNAL RESOURCES
Ministry of Finance and Planning

මහලේකම් කාර්යාලය, (3වැනි මහල)
செயலகம், (3ம் தட்டு)
The Secretariat, (3rd Floor)

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அ. பெ. இல. 277, கொழும்பு 1
P. O. Box 277, Colombo 1

19 88.06.24

Mr Gary Nelson,
Acting Director,
USAID Mission,
Colombo.

Dear Mr Nelson,

On behalf of the Government of Sri Lanka I wish to submit a formal request for Grant Development Assistance funds from USAID in support of the Government's Reconstruction and Rehabilitation Programme.

As you are aware, at the Special Aid Group Meeting convened by the World Bank on 5th December, 1987, to canvas donor support for the Rehabilitation Programme, the Government of the United States of America made a provisional pledge of $ 75 million based on a combination of funding arrangements, consisting of Development Assistance Grants, PL 480 Title I funds, and Housing Guaranty funds. According to the preliminary understanding of the Government of Sri Lanka, approximately $ 50 million of the total pledge of $ 75 million was to consist of Development Assistance Grant funds.

We would be most grateful if this request is conveyed to your authorities at the earliest and their formal confirmation obtained.

Thanking You.

Yours sincerely,

S. Kuruppu

(Mrs S.L. Kuruppu)
Acting Director
External Resources

UNITED STATES A. I. D. MISSION TO SRI LANKA
P.O. Box 106
Colombo 3, Sri Lanka.
Telephone: 21271 - 21532

Certification Pursuant to Section 611 (e) of
the Foreign Assistance Act of 1961, as amended

The Rehabilitation Assistance Project, A.I.D. Project No. 383-0107, includes an irrigation reconstruction and rehabilitation component which will primarily consist of clearing and essential structural improvement to bring the systems up to an acceptable level of productivity. Commodities, training and technical assistance are also included in limited amounts. The project may also fund work on the Jaffna Lagoon salt water exclusion project if initial environmental and other studies prove positive and if funds are available for this purpose. Based on USAID's extensive prior experience with the capacity of the Sri Lanka Government and its agencies to properly utilize and maintain irrigation systems such as those to be rehabilitated and the commodities to be imported under this project as well as the technical assistance and training to be funded, I hereby certify that, in my judgement, Sri Lanka has both the financial capability and adequate human resources to effectively utilize this project.

Gary Nelson

Gary Nelson
Acting Director

Date: 07 July, 1985

ANNEX E - ENVIRONMENTAL ANALYSIS (SUMMARY)

Annex F.9. presents the Environmental Assessment prepared by Kathryn Saterson, Environment and Natural Resources Officer with the Asia/Near East Bureau, A.I.D. The Assessment certifies that the potential environmental consequences for the project have been properly assessed and mitigated to an acceptable extent, in accordance with 22 CFR 216.

A.I.D. will not have direct "knowledge of or control over" how the agricultural assistance will be used by farmers so the EA is not legally required to analyse pesticides. Nevertheless, since A.I.D. is aware that pesticides are likely to be purchased, A.I.D. chose to assess the impacts of pesticide use and advise the Government. Suppliers of agricultural commodities will be advised that reimbursement will not be made for vouchers exchanged for agro-chemicals that are not in accordance with A.I.D. environmental regulations. The salt water exclusion scheme at Jaffna Lagoon will be subject to a separate feasibility study and environmental assessment.

ANNEX F. 1. - INSTITUTIONAL ANALYSIS

I. Administrative Context of the Government of Sri Lanka Rehabilitation Program

Background

The administrative structure of the Government of Sri Lanka (GSL) rehabilitation program for the districts affected by ethnic conflict seeks to strike a delicate balance between centralized coordination and decentralized implementation. The GSL recognizes that rehabilitation and reconstruction priorities must emerge from local level decision makers rather than from the center. At the same time, the central government must balance available resources against aggregate needs to assure a consistent and effective system of accountability for the use of donor and national resources.

Another administrative challenge, if these activities are to be perceived as legitimate, will be to bring local people into the design and implementation of district rehabilitation programs . Doing so requires administrative mechanisms to incorporate the views of disparate elements in the society, each with its own social, political, and economic recovery agendas (see the Social Soundness Analysis of this PP for additional discussion of this issue).

In its November, 1987 report, the World Bank assessment team recommended putting each district in charge of its own reconstruction program. This structure assigned to the Districts the major planning and prioritizing role and to the Central Government responsibility for financial approval, monitoring, and problem resolution. Only programs of national scope such as telecommunications, railways, ports, and public transportation were to be planned and supervised by the concerned ministry at the national level.

In sum, the World Bank team offered the following principles to guide program administration:

- prioritizing, planning, and monitoring of rehabilitation and reconstruction activities to be managed by district-level coordinating committees;
- project evaluation, financial approval, and coordination to be managed by a powerful and impartial central agency or ministry; and
- project implementation to be managed by District-level departments of line ministries utilizing existing procedures, expertise, and organizations.

The design phase of the rehabilitation effort has been relatively centralized in the hands of the GSL, donors, and technical assistance personnel. District-level program planning within the central framework is proceeding in a more decentralized fashion.

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The National Reconstruction Steering Committee

Following the World Bank's guidelines, the Government of Sri Lanka formed the National Reconstruction Steering Committee (NRSC) in December, 1987 within the Ministry of Finance and Planning (MOFP). As a result of recent decisions, the NRSC remains with the Ministry of Finance and Planning but serves as an advisory policy on formulation, planning, coordinating, and monitoring to the Ministry of Rehabilitation and Reconstruction (MORR) . The NRSC retains three representatives from the MOFP among its membership, including its Chief Executive Officer, the Budget Director, and the Director of External Resources.

The stated responsibilities of the NRSC include the following:

- organize and coordinate the implementation by the line ministries of the rehabilitation program;
- develop work programs and budgets for the program, by year and by sector, based on proposals from the District Reconstruction Coordination Committees (DRCC);
- review project proposals and recommend financial approval for the transfer of funds from the Treasury to line ministries and DRCCs;
- monitor program implementation and prepare periodic reports of financial and physical progress for reporting to the MRR and concerned donors;
- liaise with donors, in conjunction with the Director of External Resources in the MFP, to mobilize funds to implement the program;
- prepare reimbursement claims for financing of eligible expenditures from donor agencies;
- maintain accounts of all project expenditures and prepare annual audit statements; and
- settle any disputes arising between districts in the implementation of the program.

The NRSC consists of a Chief Executive Officer, Secretaries of line ministries that have a sizable financial involvement in the rehabilitation program, and the Government Agents of the eight affected districts. Secretaries of additional ministries may be coopted as needed. An approved plan for the staffing of an NRSC Secretariat calls for a total of 29 people, including one expatriate long-term consultant. Specifically, the NRSC is to be staffed as follows (positions marked with * are to be UNDP-funded):

Chief Executive Officer *
Senior Advisor (expatriate) *
Economic Opportunities Coordinator (for income-generating projects) *
Housing and Building Program Coordinator (to be seconded from the National Housing Development Authority)
Social Sector Coordinator *
Quantity Surveyor *
Repatriation Coordinator *
Finance Monitoring/Liaison Officer *
Public Relations Officer
Documentation Officer *
Computer Operations Coordinator *
Administrative Officer
Accountant
Secretaries (2) *
Support Staff - clerks, stenos, drivers, etc. (16)

Job descriptions have been prepared for each of the professional positions in the Secretariat.

In addition to funding 20 of the above staff at an estimated annual cost of Rs.874,000 (US$29,000), the GSL will provide office space, office equipment, supplies, telephones service, vehicles, and recurrent costs coverage.

Pending implementation of the technical assistance agreement with the UNDP (signed on April 25, 1988), NRSC Secretariat staffing currently is limited to the CEO; an AID-funded short-term advisor who is an expert in rehabilitation; and clerical support. Addition of the UNDP funded staff and additional support personnel have started. There have been some discussions about placing some UNDP-funded staff in the MRR rather than the NRSC since the latter is an advisory body and the MRR has a broader administrative role for the rehabilitation program. These issues are, as yet, unresolved but the decision is unlikely to have a major effect on program implementation or the overall role of the MRR and NRSC as the point of central coordination.

The NRSC, in coordination with donors, has developed the policy framework for implementation of rehabilitation activities in some, but not all sectors. Aggregate work plans are keyed to expected donor pledges by sector. In these cases, planning moves forward on the basis of assumptions about the level, source, and form of assistance.

The NRSC, with the concurrence of the MOFP, also has worked out disbursement procedures to facilitate the flow of funds. Funds will flow from donors through the MFP Division of External Resources through the MFP Budget Director to the MRR. The MRR will establish a special set of "R" accounts for the rehabilitation program. The R1 account will be designated for Government of Sri Lanka counterpart funds released by the Treasury. Other R accounts will provide a control mechanism for specific donor accounts by sector. The MORR will disburse funds from these accounts directly to

District GAs (or to line ministries for national programs) against work plans approved by the NRSC and the MRR. The GAs then will provide funds to local line ministry directors and assistant directors at the District level for implementation of sectoral activities or to the designated offices for grant and credit programs.

This procedure places ultimate accountability for donor funds with the MRR which will establish a special accounting unit for this purpose. The arrangement is parallel to that used for the World Bank funded Integrated Rural Development Project (IRDP) with a "single project" accounting system to expedite fund flows. Under this arrangement, some normal accounting procedures are waived as long as all government requirements are met. Major benefits are 1) GA's can receive funds for implementation in advance of formal plan approval; and 2) GSL procurement procedures will be expedited.

Financial and other monitoring will be carried out under the direction of the NRSC according to a detailed procedure currently under development. Major features of the monitoring plan are described later in this annex.

The District Reconstruction Coordinating Committees

The DRCCs were formally established in the eight affected districts in December, 1987. Their stated responsibilities are to

- consult elected representatives, citizens' representatives, NGOs, and line ministry staff to reach agreement on priorities for reconstruction;
- develop annual work plans for needed rehabilitation and reconstruction investment within the District;
- prepare monthly reports on the status of prioritization. planning, and preparation of proposals for the various rehabilitation sectors;
- request line ministries to develop proposals for consideration by the NRSC when the district line ministry staff is incapable of doing so for technical or other reasons;
- coordinate and supervise the implementation of projects and prepare monthly reports of financial and physical progress; and
- ensure and coordinate the maximum participation by NGOs, departments, and other local citizens' groups in project implementation, in conformity with technical standards established by the government.

Each DRCC is chaired by the District Government Agent (GA) and consists of relevant regional and district line department heads as well as chosen representatives of NGOs and citizens' committees. Each Kachcheri has a special Secretariat handling the DRCC work program. Planned staffing for the DRCC secretariats is as follows:

Staff	Allocation								
				Jaf. Man.	Kil. Bat.	Tri. Amp.	Mul. Total	Vav.	
Executive Officer	1		1	1	1	1	1	1	8
Project Coordinator *	3	2	3	2	3	3	3	2	21
Engineer	1		1		1		1		4
Quantity Surveyor *	1		1		1		1		4
Registrar	1		1		1		1		4
P.R./Documentation Officer	1	1	1	1	1	1	1	1	8
Computer Operator *	1		1		1		1		4
Accountant	2	1	2	1	2	1	2	1	12
Admin. Officer	1	1	1	1	1	1	1	1	8
Support Staff (clerks, drivers, stenos, etc)	23	12	20	12	14	12	19	9	121
	35	18	32	18	26	19	31	15	191

In addition to funding 170 of the above staff at an estimated annual cost of Rs.8,167,000 (US$ 268,000), the GSL will provide office space, office equipment, supplies, telephone service, vehicles, and recurrent cost coverage.

Job descriptions have been prepared for each of the professional positions in the DRCC Secretariats. Many of the positions have been filled on at least a temporary basis by staff borrowed or transferred from other development activities in the respective districts.Due to the curtailment of some other projects due to disruption caused by the ethnic conflict, there are available qualified personnel in each Kachcheri drawn from staff of the existing District Development Committees, District Development Committees, and other activities. In Districts involved in the largely interrupted World Bank IRDP, there is are well-qualified but underutilized staff. Since, in most cases, local line ministry staff are housed in the Kachcheri office, coordination between the GA and these staff is facilitated.

The NRSC requested each DRCC to formulate annual work plans for 1988 consistent with national reconstruction program guidelines. As of April 20, 1988, all of the district plans had been received by the NRSC. In addition, Vavuniya District had tendered to the NRSC approved total cost estimates for priority work items and the MRR had advanced a block grant of Rs.3 million to the GA to begin these activities. Batticaloa was advanced Rs.2.5 million as an initial allocation pending the working out of total cost estimates for its rehabilitation works.

Subsequently, at the April meeting of the NRSC, the Budget Director authorized block grants totaling US$200,000 to be made available to the eight Districts on a roughly equal basis (Jaffna and Vavuniya received somewhat more than the $25,000 average). Districts may spend these funds on three categories of activities in their plans.

1. Items covered by GSL funding;

2. Items for which there is a firm donor commitment (a signed agreement that the costs are reimbursable); and

3. Items for which a donor has pledged and sent a memorandum of understanding or pre-implementation agreement authorizing work to begin.

Full funding of DRCC work programs awaits the completion of ongoing donor project design studies and approval processes. Nonetheless, early activities such as the distribution of settling-in, economic assistance, and housing grants to early returnees has commenced. The NRSC has requested that donor pledges be confirmed as soon as possible.

The performance to date of the NRSC and especially the DRCC's is promising. Despite the lack of a full Secretariat and, until recently, considerable ambiguity about its placement in the government structure, the NRSC has move forward with several major agendas. These include

- o development of an implementation framework for the reconstruction program;
- o support to the development of DRCCs in the affected districts and guidance to them in the initiation of their activities, including preparation of 1988 work plans;
- o development of an feasible funds flow mechanism and initiation of funding for some local activities with GSL and IDA funding.
- o preparation of a standardized beneficiary registration procedure;
- o development of a comprehensive program monitoring system; and
- o determination of a Secretariat staffing plan, job descriptions, and the beginning of hiring procedures.

The status of the DRCCs is even more encouraging. Using presently available Kachcheri staff, each DRCC has initiated a comprehensive impact assessment and planning for needed rehabilitation investments. Government Agents from each of the eight affected Districts are participating actively with the NRSC and mobilizing local implementing units through participation in planning and costing specific work items.

In general, the Mission believes that the NRSC and DRCCs are capable of providing the necessary planning, coordinating, and monitoring leadership to the rehabilitation program. This confidence is contingent on the anticipated completion of arrangements with the UNDP to support key Secretariat staff positions and upon the willingness of militant groups to allow District-level civil administration to function. Important steps to be completed in the near future include obtaining formal approval for the funds flow scheme from the MOFP, setting up the special "R" accounts, and establishing the monitoring and evaluation system. Action on each of these steps is underway.

Another contingency is that the NRSC operate relatively free from political interference. The need for Cabinet approval of major rehabilitation policy decisions highlights this risk. Some Cabinet members may have less sympathy for funnelling resources to the North and East than others. This risk is properly being approached by first obtaining overall approval for the broad outlines of rehabilitation assistance.

Implementing Agencies

Under the coordinating leadership of the NRSC and DRCCs, various other government and non-government agencies will play an important role in rehabilitation program implementation. These include credit and financial intermediary organizations, government line ministries, and NGOs. The roles and capacities of important implementing agencies are discussed in the sector specific annexes to this PP. Key institutional implications are summarized here.

Credit and Financial Intermediaries

USAID-supported rehabilitation programs in the housing, agriculture, and small business sectors require participation by financial institutions as a delivery mechanism.

Nearly three-fourths of the Sri Lankan population lives in rural zones and most businesses consist of rural farmers, fishermen, trades-people, and small-scale entrepreneurs. Sri Lanka thus needs a strong system of rural financial intermediaries. In rural areas, community-level organizations are best equipped to lend on the basis of an individual's known credit worthiness, supervise the use of funds for the intended purposes, and ensure recovery of funds. Since loans are generally small it is important they can be obtained cheaply and easily by the borrower and their costs to the lender be controlled through administrative simplicity and a high recovery rate. In Sri Lanka there are two institutions at the village level which potentially can play this vital role: the Thrift and Credit Cooperative Societies (TCCS) and the CRBs.

Except for Trincomalee and Ampara, an adequate network of local credit institutions exists in the affected districts. These are complemented by Bank of Ceylon units in some of the Agrarian Service Centers. Nonetheless, it commonly is estimated that the formal credit sector provides only 20 percent of total credit in the rural areas. These estimates are supported by aggregate data on agricultural loans outstanding from the formal credit institutions. The rural community obtains most of its financing needs from relatives, pawning facilities, moneylenders and traders. Despite the apparently high interest rates charged by these sources, ranging from 25 percent to as much as 120 percent per annum, the immediate and easier availability of such credit may make it effectively cheaper and more appealing than borrowing from banks using low interest Central Bank refinance facilities.

Further programmed lending under the auspices of the rehabilitation program, without substantial changes in loan terms and incentives for collection will only result in additional losses to formal credit delivery institutions. In the short term, only a government held bank with adequate capital or guarantees, such as the Bank of Ceylon, could be obliged to accept the losses implicit in a rehabilitation lending scheme based on low interest rates to current target groups. Smaller and financially weaker financial institutions should not be drawn into rehabilitation activities unless they are able to operate in lending activities with very high recovery rates or the risks associated with this type of lending are somehow alleviated. Only the TCCSs meet this criteria and their success is due in large part to small size and close, personal links of their leaders to a community-based membership.

Any attempt to use the Thrifts for a broad program involving non-members or to force expansion in their membership for purposes of distributing rehabilitation program loans or grants would be unwise and unworkable. The role of Thrifts should be limited to serving current members or to members added in the course of natural expansion that occurs under their own control. (Overall TCCS membership did,in fact, expand substantially in 1987 due to their role as a window for subsidized loans from the National Housing Development Authority (NHDA) under the "Million Houses Program." Much of this expansion occurred through the natural generation of new Thrifts rather than expansion of existing ones. The effective maximum size for a TCCS appears to be about 400 members.)

For housing loans under the GSL rehabilitation program, the TCCS structure is appropriate as a delivery mechanism for its members. Others borrowers and all eligible housing grant recipients should be served by a special window established at the District level by the MORR in conjunction with NHDA, the

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Government Agent and the District Housing Committee that the GA chairs. The NHDA has division-level outlets in the Districts that can be used for this purpose ranging from 10 in Jaffna and Trincomalee to a minimum of four in Vavuniya, Kilinochchi, and Mullativu. Alternatively, the REPPIA program of the MORR may decentralize its administrative structure to the Districts and provide a lending facility linked to the local banking and credit system. These mechanisms currently are under discussion by the MORR and will be decided by that Ministry.

Repayment of housing loans will be managed at the local level by Assistant GAs and Grama Sevekas who are in position to register and monitor individual borrowers (Grama Sevekas are local officials appointed by the Ministry of Home Affairs on recommendation of the GA. Each serves an area with an average of about 300 families.)

For agricultural and small business grants, "Productive Enterprises" Grants, the Government Agents will distribute cash or input vouchers to AGAs and Grama Sevekas for distribution to beneficiaries identified as eligible by the registration system. For loans, the Agrarian Service Centers are appropriate as a delivery vehicle, at least for the first cycle of production and loan repayment, under the supervision and sponsorship of the Bank of Ceylon. Where this is not possible, finance should be channeled through a special outlet provided under the auspices of the Government Agent.

Since the Agrarian Service Centers are not themselves credit institutions, the rehabilitation program may include arrangements to upgrade the capacity of the Cooperative Rural Banks to assume a permanent role in rural agricultural lending.

Line Ministries and Other Implementing Agencies

Successful implementation of the rehabilitation program depends not only on national and district coordinating units but also on those agencies responsible for program implementation. Each of the four sectors of planned USAID assistance depends on GSL line ministries or other agencies for effective delivery of program services. Delivery mechanisms are covered in detail in the Implementation Plan of this PP and in the sectoral annexes for housing, agriculture, irrigation, and small business, respectively.

Since implementation in the sectors of USAID assistance will be coordinated at the District level, it is the line ministry departments at that level that are important for implementation. This is particularly true in irrigation where much of the technical and construction work will be performed by local units of the Irrigation Department. In agriculture, a variety of agencies are responsible for input delivery, and the research and extension work that undergrid farmer productivity. For housing, the NHDA and REPPIA will play a role. For small business, the Department of Rural Industries and other support agencies will be involved.

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In view of the centrality of the District administration and of financial intermediaries for the rehabilitation program, demands on line ministries will generally not be extraordinarily large. Staff availability appears to be generally good despite the disruptions suffered in the North and East. At the same time, the physical infrastructure that these ministries have to work with is severely damaged in much of the affected area. For example, Agrarian Service Centers are damaged, Irrigation Department facilities and equipment wrecked, and staff immobilized in all sectors due to the risks of travel and loss of vehicles. In several of these cases, this PP recommends limited assistance.

NGOs

Numerous local and international NGOs are active in Sri Lanka's northern and eastern Districts, including many that initiated activities there in the wake of the ethnic conflict. The following number of NGOs are operating above the village level in the eight affected Districts:

	International	Sri Lankan
Jaffna:	7	31
Vavuniya:	5	8
Mannar:	2	8
Kilinochchi:	5	10
Mullativu:	3	5
Trincomalee:	4	15
Batticaloa:	5	20
Ampara:	0	12

Some NGOs classified as Sri Lankan have international affiliations or sources of foreign support such as the YMCA and certain religious organizations. The international NGOs Redd Barna, CARE, OXFAM, Save the Children (UK) are each active in at least three Districts. The Sri Lankan organization, Sarvodaya, has programs in all Districts and an extensive network of affiliated local groups.

In addition there are countless village-level humanitarian organizations and committees which have arisen in response to particular political or relief and rehabilitation agendas. These include religious groups, human rights advocacy groups, women's organizations, local rural development societies, and many others. The main limitation of these groups in terms of the rehabilitation program is the absence of linkage to the larger and more formal organizations that are, in turn, linked to the DRCCs. The strength of these groups is their grass-roots legitimacy. At the same time, many represent narrow interests that may be highly politically charged.

NGOs are and should continue to play a useful role in assisting the reconstruction effort, especially in the housing, health, and agriculture sectors. Each of these agencies, however, has its own limited geographic coverage. program agenda, and clientele. It is unrealistic to expect NGOs to deliver broad-based benefits. They do not have the managerial capacity to handle large programs with large budgets and accountability requirements.

It is unlikely, therefore, that NGOs can or should play a central implementing role in the GSL rehabilitation and reconstruction program. For example, an early assumption that NGOs would provide housing grants of Rs.7500 to eligible recipients with incomes below Rs.750 per month as a supplement to the Government housing grant of Rs.7500 has proven highly unrealistic; no one now expects this assistance to be forthcoming. Suggestions that NGOs be utilized as intermediaries to channel credit to broad groups of beneficiaries are equally ill-founded. While individual NGOs have excellent access to particular groups of farmers, fishermen, or other groups, they do not possess the administrative mechanisms nor the financial experience to manage a large-scale credit program. Moreover, most will resist programs outside their sphere of interest and capacity. Others will be unacceptable to local authorities because of their links to external funding or to local militant groups. In fact, the GSL has indicated it will issue no permits for new international organizations to enter the area.

Likewise, the World Bank recommendation that the Government coordinate all NGO efforts to ensure that there is no duplication of effort and that the NGOs all conform to uniform benefit standards is unworkable in practice. Realistically, the impetus for coordination must come from the NGOs themselves but they generally will be more concerned with their own program effectiveness than the broader political and implementation concerns of the government program. Their comparative advantage should not be sacrificed in the interests of conformity.

At the same time, NGOs can play several very important supplementary roles that will support the formal rehabilitation program without violating their own program integrity. Potential roles include:

- assisting in the identification and certification of eligible beneficiaries and establishing priorities among them;

- helping eligible beneficiaries secure credit, housing materials, agricultural inputs, or other benefits by providing transportation, or, when needed, advocacy with suppliers;

- advising the DRCCs on issues of community need, preferences, and concerns and help the DRCCs monitor implementation fairness and equity; and

- serving as a buffer between the DRCCs and local socio-political forces to improve communication and mutual trust.

To increase their voice, multi-village NGOs might be encouraged to come together into AGA Division-level consortiums for pooling of resources, information, and experience. Each of these consortiums might then be invited to name a representative to the DRC. These representatives should be selected from locally evolved NGOs rather than from national and international NGOs that have moved into the affected areas. This might help diffuse perceptions of the DRCCs as agents of centralized civil administration. Another recommendation is that GAs in each District hold meetings with all active NGOs to explain the rehabilitation program and its benefits. The NGOs then can play a useful role in explaining benefits to various beneficiary groups with which they have linkages.

To the extent NGOs or groups of NGOs provide direct support services to rehabilitation program beneficiaries, they should be provided some direct cost support from District rehabilitation budgets at the discretion of the GA.

II. Donor Participation and Coordination

The success of the RAP will depend heavily on the ability of the NRSC to coordinate donor resources and policies. But the donors also will have to ensure continued close working relationships among themselves if the overall rehabilitation effort is to achieve its objectives. Both the GSL and the donor community have made good starts toward such coordination.

Soon after the signature of the peace agreement in July 1987, donors met in Paris to pledge support to the rehabilitation program. Pledges of nearly US $500 million came from a wide range of bilateral and multilateral donor agencies, led by the World Bank, USAID and the ADB. Although certain donors argued for a district by district approach to rehabilitation, by which a donor would support the entire rehabilitation program in a single geographic area, the GSL finally opted for a sector approach. Donor assistance thus will go to specific domains (agriculture, fisheries, housing, etc.) in which the donor has particular competence or interest. The NRSC will ensure complete coverage of the key districts and of affected economic and social sectors by negotiating with individual donors and with groups of donors.

To date, this system has worked reasonably well. Certain donors, such as the UNDP intend to provide only technical assistance to the planning and monitoring aspects of the program. Other, such as Japan and India, will provide commodities. A few, such as NORAD and the EEC have insisted on applying the district approach approved at the first Paris meetings and have planned integrated programs in Batticaloa (NORAD) and the Eastern half of Trincomalee (EEC) respectively. Most of the other donors, including USAID, the World Bank and the ADB, have chosen complementary activities which reflect their historic interests and programs in Sri Lanka and will provide assistance to all of the affected districts in the sectors in which they intend to work.

Some programs are now actually underway - a small US-funded (OFDA) emergency relief program, the ADB road rehabilitation program, the UNDP technical assistance to the NRSC and DRCCs (as of 25 April), and some donor-funded NGO activities. Most donors have begun their individual planning processes in an atmosphere of close collaboration and exchange. For example, the World Bank fact-finding mission prepared its initial assessment of damages in the North and East in close association with USAID, which provided two members of the assessment team. The World Bank has taken the lead in establishing a donor group which meets informally each month to discuss policy and coordination issues. All of the donors represented in Colombo attend these meetings.

The donors participating in the rehabilitation program have welcomed the GSL's establishment of the NRSC as a coordinating body for all of the line ministries who will implement specific local activities within the overall program. Based on District plan approval by the NRSC, MRR which will collect and distribute to the district level all funds for local rehabilitation activities. This will centralize monitoring responsibility for the donors and provide them with a forum for discussion of programs from different donors working in the same sector.

The NRSC and the donor group have succeeded in laying the foundations for a well-coordinated effort to undertake the rehabilitation of the eight districts of the North and East affected by the current hostilities. If such efforts can continue through the end of the design phase and into the implementation period for this program, lack of donor coordination should not constrain efficient use of donor and Sri Lankan resources.

III. Special Project Issues

Establishing Benefit Eligibility

The NRSC has developed a comprehensive registration system to identify eligible beneficiaries and assure equitable distribution of the benefits for which they qualify. Detailed instructions for the registration prices are being prepared for the DRCCs and an

information booklet for potential recipients. Since this booklet explains the benefits for which a person may be eligible, printing and distribution is being delayed until benefit strategies in each of the sectors are firmed up. These strategies, in turn, await completion of donor studies such as this AID design and final coordinated negotiations with all of the donor countries.

The registration process will be under the control of the District GA through a DRCC Assessment Panel but will involve personnel at the community level and make informal use of citizens' groups to help arbitrate conflicts or confirm eligibility in cases where records may be lost.

To determine if he or she is eligible for a specific benefit or type of assistance, an individual will first be interviewed by the Grama Seveka or his designated local representative. Eligibility for most benefits is determined by factors such as income, type of employment, size of farm, and the type of assistance required (Eligibility factors and benefit descriptions in the USAID-assisted sectors are described in the sectoral annexes to this PP).

After the interview, the individual will receive a registration card that shows all benefits available from the rehabilitation program. The ones for which a person is not eligible will be marked out by the interviewer. A system of symbols or icons on the card that can be punched out probably will be used for this purpose.

If a registrant feels that he or she is eligible for some type of assistance that the interviewer disallowed, he or she may appeal to the full Assessment Panel of the DRCC.

The registration system, as planned, is based on rehabilitation experience elsewhere and appears to be well-conceived. It also is consistent with the experience of the GSL in past programs of welfare assistance. These include food stamps, loan support through the "Million Houses" program, and rehabilitation assistance in the form of death benefits, dry rations, and resettlement allowances. The focus on decentralized determination of eligibility provides reasonable assurance of fairness and equity under the circumstances. Staff available to the DRCCs appear to be sufficient in number and capacity to administer the procedure. Employing Grama Seveka-designated personnel to conduct the actual registration interviews places this key task as close to the community level as possible and will help the program achieve perceptions of credibility among the people.

Instructions to recipients will detail the sources of grant, loan, commodity, or other type of assistance and how and where it can be obtained.

Government Commitment to the Rehabilitation Program

The GSL recognizes that an economic initiative is essential for the political and administrative dimensions of the peace accord to take root. In coordination with donors and based on the framework recommended by the World Bank team in 1987, the Government has created the required administrative infrastructure to plan and coordinate the program. As noted above, the authority and capacity of the NRSC and DRCCs appear adequate to put in motion the planned rehabilitation program. Additionally, ample staff are being made available in the Districts to carry out the implementation of specific activities.

Under the leadership of MRR and the NRSC, a policy and implementation for the program is being developed and communicated to participating line ministries through their participation on the NRSC. The design team notes, however, that many Colombo-based line ministry staff at middle and upper management levels do not yet seem plugged into the program and there is a notable absence of a sense of urgency regarding the special rehabilitation activities planned for the affected districts. Clearly this is, in part, a reflection of the decentralized nature of the program and the fact that implementation responsibility is, in most cases, at the District level and accountability first to the District government, not Colombo. We expect that District-level department heads of participating line ministries are more in tune with the program.

Roles and responsibilities in the program are being carefully defined against the normal backdrop of political competition for control over the resources the program will bring. Some of this is reflected in the current uncertainty over the precise nature of the relationship between the MORR and NRSC and where the UNDP-funded technical experts will be placed. How this is resolved is unlikely to have a significant effect on actual program implementation. Of more importance is holding to the principle of decentralized program control against pressures from central line ministries who will prefer to have donor resources flow through them.

Decentralization

Given the political and ethnic background to the conflict that created the need for the rehabilitation program, both the reality and the perception of decentralization are especially important. The principle of District control of processes of prioritizing needs, planning activities, disbursing funds to local implementing agencies, and supervising the monitoring and reporting of local performance must be carefully maintained. Support for the rehabilitation program which is weak among some Colombo-based Sinhalese politicians and narrow sectoral interests at the national level are two areas worth watching. While the policy framework upholds the concept of decentralization, more will need to be done to make sure it is fully realized.

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Among the majority of local residents in the affected Districts, there remains a suspicion of the central government and the likelihood of a fair and equitable distribution of resources. Programs heavily identified with Colombo are unlikely to succeed or survive under present circumstances. The GA's, by contrast, have a relatively high degree of local credibility although, in some cases, their freedom of action also is circumscribed by militant factions in the community. Nonetheless, a rehabilitation program identified with them, and with DRCCs that are truly responsive to the people, has a chance to make a difference.

GSL plans to devolve power to Provincial Councils (PCs) are still in the formative stage so it is not possible to fully assess the impact that this administrative change will have on future institutional responsibility for the rehabilitation program. Provincial elections for portions of the country outside the affected Districts now are scheduled for April and June 1988.

PC elections in the North and East contained in the Peace Accord were rejected by the LTTE (the largest Tamil opposition faction) and subsequent security operations by the Indian Peace Keeping Force (IPKF) have postponed them. The timing of the the Provincial Council elections in the conflict areas is dependent on complex political factors including the agreement of all major factions in the area and the linkage of such elections to the eventual pullout of the IPKF.

Its expected each province will be made up of several Districts so that the key role of the current northern and eastern Districts in local program coordination will not necessarily change if and when the Councils are established in that area. The important role assigned to the Districts in the rehabilitation program is consistent with the concept of devolution of power embodied in the Provincial Councils. It is probable, however, that some district boundaries may change which could cause administrative disruption to DRCC implementation of the rehabilitation program in those areas.

Provincial governance in the affected area is expected to provide a stronger political voice in Colombo for the interests of the North and East. This will help fill a political vacuum caused by the resignation some years ago of the Members of Parliament from all the affected Districts except Trincomalee. District leadership in the North and East welcomes the coming of Provincial Councils as an antidote to the perceived responsiveness of most line ministries to political pressures generally favoring Southern interests. At the same time, the political power of Provincial officials, especially the Chief Minister, may reduce the effective authority of District leadership. The political value of large amounts of rehabilitation assistance will not go unnoticed and there is some risk of this assistance being skewed toward the political or factions that control the new provinces.

Training and Technical Assistance for the Coordinating Units

In view of the substantial professional staffing planned for the NRSC and DRCCs under expected UNDP support, including a long-term rehabilitation advisor placed in the NRSC Secretariat, significant additional technical assistance is not required under AID project support.

Monitoring and Evaluation in the Rehabilitation Program

The NRSC, with assistance from an AID-funded rehabilitation expert, the World Bank, and loaned experts from the GSL, is developing a comprehensive automated monitoring system for the rehabilitation program. Implementation of the program will be facilitated by trained staff to be provided to the NRSC and DRCCs through UNDP funding. The system is designed both to serve the management needs of program implementors and the accountability needs of the GSL and donor agencies.

For each sector, a set of 10-15 indicators is being established. Each indicator will have up to nine variables or subsets of information. For example, an indicator measuring the number of people receiving a certain benefit will be subdivided in terms of income, ethnic background, etc. There will be monthly tracking and reporting with data gathering keyed to the District level (and lower administrative units such as AGAs, Grama Sevekas, and sectoral field staff as appropriate). Information will be aggregated at both District and national levels for periodic graphing and analysis. Computers and qualified computer operators will be provided to both the NRSC and the DRCCs with UNDP support. Both implementation and accounting data will be captured. Report formats will be geared to GSL and donor requirements. The regular monitoring system will be supplemented by special surveys conducted by the NRSC.

This system will provide AID with most of the monitoring information it requires. It would be inefficient and unworkable for AID to superimpose its own monitoring system and, given the security situation, unlikely that AID teams would have sufficient access to the affected areas to carry out meaningful investigation. Nonetheless, there are some broader questions dealing with benefit equity and the specific impact of AID grant assistance to beneficiaries that may benefit from special analysis outside the regular monitoring system. For this purpose, USAID may wish to contract with NGOs or other local institutions to conduct special studies from time to time. Accordingly some monies have been programmed for evaluation.

Additionally, USAID should conduct two formal evaluations during the life of the project. An interim process and impact evaluation should take place at the end of FY 1989, by which time the sectoral programs will have distributed a significant level of benefits. This evaluation should be conducted by mission personnel supplemented by locally-contracted experts.

The freedom of an evaluation team to conduct field inquiry will depend on the security situation. The evaluation may, therefore, depend heavily on secondary information; therefore, a major point of inquiry will be to assess the accuracy, completeness, and quality of information produced by the rehabilitation program monitoring system. If possible, this evaluation should incorporate some local spot-checking to verify the information produced by the monitoring system.

An end-of-project evaluation should take place in mid-1992. This evaluation will attempt a more comprehensive analysis of the impact of AID assistance. It will be keyed to the input-output and output-purpose linkages in the project and sector logframes of this PP. This evaluation will require the support of a mixed expatriate-local contract team containing social scientists and technical experts in rehabilitation and in the relevant project sectors. Further discussion of RAP monitoring and evaluation arrangements is contained in sections VI and IX of this PP.

To help USAID fulfill its own monitoring requirements and to support the added load of administrative responsibilities that this project will bring to the mission, one long-term contracted Project Coordinator will be funded for the life of the project under RAP. This person, experienced in monitoring and evaluation, information systems, and project management, will work closely with the mission and be placed in the USAID office. However, he or she will work closely with the NRSC and DRCC staff concerned with program monitoring and provide technical expertise to these coordinating bodies as needed. This person also will support mission liaison with GSL project implementing agencies.

NRSC monitoring indicators cover the process of resettlement as well as 12 specific rehabilitation sectors. A list of tentative indicators for the sectors with which USAID plans to be involved is provided below.

Tentative Rehabilitation Program Indicators

(developed by the NRSC)

1 - Small Business

Performance Indicators

1. The number of individuals issued economic assistance grants by GSL for micro-enterprises (by type of enterprise, scale of enterprise).

2. The number of enterprises applying for REPPIA loans (by type and scale of enterprise, by lending institution and by value of application).

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3. The number of REPPIA loans approved (by type and scale of enterprise, by lending institution, and by value of application).

4. The number of commercial building reconstruction repairs initiated (by size of building).

5. The number of damaged commercial buildings demolished (by contract).

6. The number of electrical connections restored to commercial properties.

7. The number of enterprises assisted by NGOs (grants in cash/kind, training, etc. by type and scale of enterprise).

8. The number of loans for new enterprises (by amount).

9. Loan default rate by type of business, size of loan, and lending institution). Note: loan default will be defined as overdue loans divided by loans due.

10. The number of overdue loans (by 60, 90, 120 day categories).

11. The reasons for default.

12. The number of permanent jobs generated by small business activity (by self employment or wage labor).

13. Ethnic distribution of assisted businesses .

14. The total number of individuals or enterprises receiving assistance against total number affected.

- -- All data will be compiled by District and region.
- -- Data for 1-3 will be measured against goals/targets established by surveys.
- -- Data for 4-6 will be obtained from permits issued.
- -- Data for 7 will be based on NGO records.
- -- Data for 8 will be based on information collected by GAs.
- -- Data for 2-3 and 9-12 will be obtained from lenders.
- -- Data for 13-14 will be obtained from surveys.
- -- All data will be collected and analyzed on a semi-annual basis.

Monitors

1. All data from surveys will be collected at the District level by DRCC staff from surveys of lenders and NGOs.

2. All data will be aggregated, analyzed, and graphed by the NRSC Economic Sector Coordinator.

Goals

1. To reach 50% of qualified micro-enterprises in 1988.

2. To reach 40% of qualified small businesses in 1988.

2 - Agricultural Assistance

Performance Indicators

1. The number of farmers issued reconstruction grants by principal agricultural activity.

2. The amount of tools, seeds, and fertilizer issued (by type, quantity, and value).

3. The number of applications received for agricultural loans (by category).

4. The number of agricultural loans approved (by category).

5. Acreage planted.

6. The annual harvest of the following crops: paddy, chillies, maize, onions or other vegetables, soya.

7. The number of tractors purchased (by individuals, MPCS, or other cooperatives).

8 The number of families assisted by NGOs (by grants, in-kind contributions, etc.)

9 Loan default rate (defined as number of overdue loans divided by loans due).

10. Reasons for default.

11. The number of jobs created by agricultural activity.

12. The total number of farmers receiving assistance divided by total number affected (by loans, grants, in-kind assistance).

- -- All data will be compiled by Grama Seveka, AGA Division, District, and (where possible) by ethnic group.
- -- Data for 1-5 and 12 will be measured against goals/targets established by surveys by the DRCC.
- -- Data for 6 will be measured against past and current production levels (compensated for drought).
- -- Data for 7-8 will be based on records supplied by ASCs and NGOs.
- -- Data for 9-10 will be obtained by surveys of lending institutions.

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-- Data for 11 will be obtained by an annual survey by the DRCC.
-- All quantitative data will be graphed on a quarterly basis.

Monitors

1. Agricultural DAta will be collected by the agricultural projects coordinator of the DRCC staff from ASCs, NGOs, etc.

2. Cumulative data will be graphed and analyzed by the Economic Sector Coordinator of the NRSC staff.

Goal: To reach 30% of eligible farmers in 1988

3 - Irrigation Assistance

1. The number of tanks rehabilitated (against number authorized) by size or capacity, number of farmers served, and cost.

2. The number of irrigation channels cleared (against estimates).

3. The number of irrigation channels repaired (against estimates).

4. The number of pumps repaired (against estimates).

5. The number of sluice gates and other works repaired or replaced (against estimates).

6. The number of surface acres of water increased (compared to pre-conflict norms).

7. The percentage of restored or increased (compared to pre-conflict norms).

8. The number of farmers receiving improved irrigation service (by District, and ethnic group)

9. Initiation of repairs or reconstruction of Irrigation Department facilities (against projects identified).

10. Costs of repair or reconstruction (by site, against initial estimates).

11. Kilometers of access roads improved (by class and surface type).

12. Number of bridges repaired (as part of irrigation works).

13. The number of Irrigation Department technicians trained.

14. Overall costs of all activities in relation to budget estimates.

15. The number of jobs created by rehabilitation of the irrigation systems (by temporary and permanent jobs, with temporary expressed in total person days per AGA or District.)

-- All data will be classified according to size of the system (major, medium, minor).
-- All data will be compared to targets established in the District plans by the DRCCs.
-- All data will be collected by the Irrigation Department.
-- All data regarding costs and execution of procurement will be verified by purchase orders.
-- All data will be classified according to District and, where appropriate, ethnic areas served.
-- All data will be gathered annually.
-- A map showing the projects approved, projects in execution, and projects completed will be compiled annually by the Economic Sector Coordinator of the NRSC.

Monitors

1. All projects executed by the Irrigation Department will be monitored by the authority.

2. All projects executed at the District level will be monitored by the GAs.

3. The commencement of projects in relation to the overall plan and schedule of execution will be monitored by the NRSC.

4. All District data will be aggregated and graphed by the NRSC's engineer.

5. The map showing the projects approved, projects in execution, and projects completed will be compiled annually by the NRSC.

Goals

1. To repair or rehabilitate 50% of all affected tanks in the North and East by the next Maha season.

2. To repair or rehabilitate 100% of all affected tanks by the following Maha season (1989).

3. To repair all damaged irrigation facilities by mid-1989.

4. To restore full irrigation capacity to the affected area by the end of 1989.

4 - Housing

Performance Indicators

1. The number of housing grants issued (by range of grant).

2. The number of households applying for loans and for grants or both.

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3. The number of housing loans applied for (by range of size of loan).

4. The number of housing loans approved (by range of amount of loan).

5. The number of housing loans rejected (by range of amount, reasons for rejection).

6 The number of housing starts (by repairs and new houses)

7. The number of land grants or permits issued (vs. need and requests)

8. The quantities of building materials supplied (by types of material).

9. The number of households assisted by NGOs (by number and range of values of grants, loans, building materials, or other in-kind assistance, etc.).

10. The number of overdue loans (by 60, 90, and 120 day categories).

11. Loan default rate (by reasons for default).

12. Tenure of households receiving assistance (tenant, owner, encroachers, etc.).

-- All data will be compiled according to Grama Seveka, AGA Division, District, and region.

-- All data will be measured against goals/targets established by the DRCCs established from damage assessment surveys.

-- All quantitative data will be graphed on a quarterly basis.

Monitors

1. Data will be collected by the Housing Coordinator of the NRSC staff (from TCCS. BMC, NGOs, etc.).

2. Data will be aggregated, graphed, and analyzed by the housing sector coordinator of the NRSC staff.

Goal: To initiate an average of 15% of necessary housing starts in 1988 (targets to be adapted to the local situation in each District).

(Note: an additional indicator set covers building material supply)

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ANNEX F. 2. - HOUSING

As noted in other parts of this paper, housing is the sector most severely affected by the conflict in the North and East. Information on the overall Sri Lanka housing sector is available in Project Papers for previous Housing Guaranty Loan programs. The best documentation we have on the impacts of the conflict on the housing sector has been obtained from three sources: a report by Intertect's Fred Cuny, an AID-funded adviser to the World Bank damage assessment team that visited the affected areas in September 1987; a USAID-funded survey by CARE of damages and affected households in three districts of the North and East, currently underway; and a study by IRED, a local PVO, of PVO activity in the North and East, also currently underway. Thus, although the security situation in the North and East has prevented the project design team from doing primary or secondary data collection on site, the housing sector has the benefit of the research of a network of people willing and able to travel and carry out their work in the affected districts.

A few caveats are in order by way of introduction. In using the data collected by these studies, plus reports obtained from local officials on their visits to Colombo, occasional inconsistencies or variations had to be accepted or left unresolved and will be noted where they affect the conclusions. Some are due to the fact that the Intertect work was carried out prior to destruction that has followed the attempts to enforce provisions of the Indo-Sri Lankan Peace Accord. The presence of large numbers of Indian troops in the North and East and their quartering in private homes has also had an impact on the housing situation, though evidence of this impact is still anecdotal. Finally, the project design has to accept a certain margin for error, particularly in number of households affected.

The following analysis presents the basis for the proposed design and attempts to identify issues needing further analysis prior to or during implementation. It is organized into 5 subsections: housing damages and affected households, building materials, program analysis, administrative analysis, affordability analysis, and details of required technical assistance and training for implementation.

Housing Damages and Affected Households

The best available documentation of the extent and types of damages suffered in the districts of the North and East comes from the assessment done for the World Bank. Estimates of numbers of households affected have been updated for some districts by district NHDA offices. Before implementation begins, more definitive estimates of both numbers of homes and extent of damages will be available from the CARE work .

The figures below indicate the estimated numbers of homes damaged and destroyed before and since the Bank team visit:

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District	10/87 Estimate	Current Estimate
Amparai	2300	3000
Vavuniya	8000	8000
Mullativu	2700	7200
Mannar	2600	8660
Trincomalee	23000	26000
Batticaloa	7600	6550
Jaffna	50300	55000
Totals	96,500	114,410

Notes on sources: The 10/87 estimates appear in Assessment Report: Estimated Damages in the Housing Sector Caused by Civil Disturbances, Sri Lanka 1983-1987, and Suggested Reconstruction Strategies, by Fred Cuny, Intertect, October 1987.

The current figures used for planning purposes are unofficial estimates obtained by the district offices of the National Housing Development Authority. In some districts, updated figures could not be obtained due to the conflict, so the 10/87 numbers have been retained. In Batticaloa, the current estimate is lower than that made in 10/87, but the continuing conflict there has not permitted verification of the data. In Mannar, the large increase is due to a decision by the district to allot 6000 refugees in India to the Mannar district.

The CARE study is resulting in somewhat higher figures in all districts except Jaffna, where the increase is much greater: as many as 65,000 dwellings. CARE's preliminary total for the whole North and East is 128,000. Since supporting data are not yet available, however, the NHDA estimates are used here.

With an average household size of 5 persons, the above total means that almost 600,000 people have been directly affected by loss of, or damage to, their homes. What distinguishes the Sri Lanka case from other disasters, however, is the very high proportion of destroyed dwellings, resulting in a high proportion of displacees. According to the Cuny report, about one-third of those whose homes were rendered uninhabitable had to leave their villages to find shelter. Approximately 125,000 fled to India (this figure is presumably higher since the October report), and about 150,000 had to resort to refugee camps (this figure is now considerably lower due to the GSL resettlement program). The majority of displacees took refuge in the homes of friends and relatives.

Another characteristic of the damage was its heavy impact on low income households. (See Table 1--further detail on the income and other characteristics of affected households will be forthcoming from the CARE survey now underway). This impact resulted in part from the relatively high proportion of non-permanent structures in the affected areas; these were presumably more vulnerable and less likely to survive with only minimal damages. Also, a mud structure that may have sustained only slight damage would quickly deteriorate once the integrity of the mud wall was breached, leaving it open to rains and insect damage.

The Cuny report characterizes the housing in the area as follows:

Classification	%	Construction	Average Costs
temporary	30	wood pole/cadjan mat; wood pole and thatch; wood pole, plywood, and corrugated iron (CI) sheets	Rs 3-12,000
semi-permanent	40	wattle and daub; mud brick with cadjan, title, or CI sheet roof	Rs 15-30,000
permanent	30	fired clay brick or cement block with concrete or asbestos cement roof sheets	Rs 35,000

Costs of repair and rebuilding can be expected to vary widely among the affected structure types. Preliminary results from the CARE study indicate average repair costs in the Jaffna district for non-permanent dwellings are around Rs 10,000, for semi-permanent dwellings Rs 12,000, and for permanent dwellings Rs 17,000, but the variations within each of these categories is very large. Escalation in the prices of building materials as reconstruction begins will occur, affecting costs for permanent structures more than for others due to the use of more manufactured materials and skilled labor. Non-permanent structures will also be affected, though, mostly due to the need for roofing materials. The October 1987 assessment estimated the total costs of replacement for the North and East at $95.5 million. Roughly half of this amount was for Jaffna damage. Since the report was written, Jaffna has been the area most heavily affected by IPKF operations and sustained considerable additional damage to dwellings, particularly roofs) as a result of shelling. Preliminary results of the CARE survey indicated that approximately 40% of all the dwellings in Jaffna had been damaged or destroyed, and the cost of repairs is likely to be substantial since housing in Jaffna tends to be of permanent, relatively high value construction. Updated repair and replacement cost estimates will be available by early June for Jaffna (as well as Mannar and Batticaloa).

The above analysis of housing sector damages focuses on damages to structures only. According to the World Bank assessment team, damages to infrastructure--water and sewer systems and electricity--were not a major problem. Road damage was heavy, and reconstruction is being financed by the World Bank. In rural areas, irrigation systems need to be restored, but sources of drinking water are available. In the major urban center affected, Jaffna, water, sewer, and electrical services have been restored to most of those parts of the district which the system reaches. The RAP team visit confirmed this. USAID assistance to the housing sector will therefore not need to extend to restoration of infrastructure.

TABLE 1

Housing Rehab Cost Estimates					
District	no. hhlds	no. hhlds	total	total affected	% eligible
	< Rs 700	Rs 701 - 1500	< Rs 1500		
Ampara	2000	1000	3000	3000	100.00%
Yavuniya	7200	500	7700	8000	96.25%
Mullaitivu	6000	1000	7000	7200	97.22%
Mannar	7200	1260	8460	8660	97.69%
Trincomalee (est)	10000	10000	20000	26000	76.92%
Batticaloa (est)	3000	2500	5500	6550	83.97%
Jaffna	18000	22000	40000	55000	72.73%
Totals	53400	38260	91660	114410	80.12%
Estimated total eligible	91660				
$ cost @ Rs 7500	$22,915,000				
$ cost @ Rs 15000	$45,830,000				

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Building Materials and the Construction Industry

The CARE survey indicates that wide variations exist among the districts of the North and East. (Very broadly speaking, one may take Jaffna and Batticaloa as the cases most indicative of the range of needs: Jaffna is the most urbanized of the affected districts, and, although not representative of any other districts, is the district with the heaviest concentration of damages, in both numbers and values of structures damaged. Batticaloa, on the other hand, is more like the other affected districts with regard to amount and types of damage.)

At this stage, severe shortages in materials are not expected, though prices will undoubtedly rise and some of the demand may have to be met from outside the affected districts. For the low income shelter sector, traditional materials such as baked bricks, coconut timber, cadjan mats (woven coconut palm leaves), jungle posts, roof sheets, rubble, and sand, are largely produced locally by small and medium sized suppliers. In spite of the conflict, many of these suppliers are still operating, though at reduced outputs. For more substantial dwellings, such as characterize Jaffna district, timber for rafters and framing, roof sheets and tiles, cement blocks are needed, The district was largely self-sufficient in cement, palmyrah timber, asbestos roof sheets, and sand prior to the conflict. Other materials and fittings had to be imported from outside the district. In Batticaloa district producers met the entire local demand for baked bricks and most of the demand for roof tiles. Timber used as fuel in kilns was also available. Cement was supplied by the Building Materials Corporation, a parastatal purchasing and distribution agent serving the entire island. Construction timber was also supplied by a parastatal.

The conflict, of course, has reduced the entire sector's ability to meet local or neighboring district needs. Although the sector has suffered significant drops in output levels overall, some entrepreneurs in Jaffna, particularly the small firms, have managed to maintain pre-conflict levels of activity, while large contractors have had to reduce their operations substantially. The RAP approach of providing grants to small entrepreneurs as well as vouchers for building materials to affected households has been selected as the best means to provide the impetus needed to revitalize the sector, at least for smaller producers. Larger firms will rely on larger loans from other programs. As public sector distribution networks are re-established, materials which cannot be produced within the affected districts can be brought in. Massive dumps of materials from outside, however, are neither warranted nor wise, as they will be difficult to set up in the early stages while security is still a problem and will not generate much in the way of local economic activity, another aim of the reconstruction program.

It does not appear that anticipated demand for skilled labor in the construction trades (masons, carpenters, etc.) can be met at all without the use of training programs. Although much of the reconstruction of low-value dwellings will be undertaken by residents themselves using the material readily at hand, some items for even semi-permanent structures will require skilled

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workers--especially roofs. A small amount of short-term vocational training under existing programs (see section below on technical assistance and training) could go along way to meeting these needs.

Program Analysis

In spite of limitations on data collection, the information now at hand is sufficient clearly to establish the magnitude of the program required to return the area's housing stock to a degree of normalcy. It further points to the need for a program targeted at low income households. This section describes alternative benefit packages under consideration and the institutions charged with administering them.

The NRSC has proposed a combination of grants and loans for households in the North and East affected by the conflict. It is based on income categories as follows:

Category	Grant	Loan-max.	Interest rate
A Rs 700	Rs 15,000		
B Rs 701 - 1500	Rs 15,000	Rs 15,000	6%
C Rs 1501 - 5000		Rs 50,000	6%
D Rs 5001		Rs 150,000	6%

Grant funds would be channeled by Rehabilitation of Persons, Properties, and Industries Authority (REPPIA) to the DRCCs/Government Agents for disbursement. Loan funds would go from REPPIA to various lending institutions depending on the groups served and on which institutions operate in different areas. NHDA district offices would also be involved in implementing the program, particularly the grant component, since its housing officers will be important support to the GA and will also assist households in selecting appropriate designs, etc. (Note: Earlier in project design, the possibility of having NGOs disburse the grants/loans was considered. The USAID-funded survey by IRED, however, has found that there are no NGOs in the affected areas with the capacity, and willingness, to take on such a massive effort without a great deal of institution-building. Other sources in the North and East have confirmed this finding. See the administrative analysis section below on NGO roles.)

Successful implementation of this scheme depends on a number of factors. First and foremost is adequate outreach to ensure that all potentially eligible residents are aware of the program. The NRSC has already drafted information booklets for distribution in the districts. Sri Lanka's high literacy rates make this approach more feasible than it might be in other LDCs. The booklets contain a description of benefits, eligibility criteria, where to go for assistance, and a sample of the registration card that will be issued to eligible beneficiaries. (see below)
Once beneficiaries have applied (current plans are for beneficiaries to apply at the Gramaseveka's office, a level below the Assistant GA

division level and above village level), the main task of the implementing agent will be to determine eligibility. Three things must be established: residency in the affected district, damage to housing resulting from the ethnic conflict between 1983 and the present, and income level.

The first two can be verified by public records and direct observation. The third is more problemmatic. For the lowest income category, i.e., below Rs 700, the agency will rely on income eligibility already determined for the food stamp program, which uses the same level for eligibility. Although this method is not foolproof, and higher income households and known to participate in the program, it is probably as good a method as any that might be devised, and reduces the administrative burden. For the category of households with incomes between Rs 701 and Rs 1500, however, the issue of how to verify income becomes difficult. Since this is the cutoff point for grant eligibility, the incentive to understate income will be great. Elaborate verification schemes are impractical, however, so ways need to be found to encourage accuracy of reporting.

Once eligibility has been established, registration cards will be issued to the beneficiaries. The cards will be laminated, and a picture of the beneficiary will appear on the front. Around the edges will be icons representing the various benefits for which the beneficiary is eligible (housing grant, housing loan, agriculture loan, small business loan, etc). As the beneficiary receives them, the icon will be punched out to prevent duplicate payments. Actual payments for housing benefits will be made in the form of cash, to pay for labor, and vouchers to purchase building materials from approved retail suppliers. This method has been used successfully by the NHDA in other programs. In Trincomalee, the Building Materials Corporation has recently opened a branch there at the suggestion of the MRR and with the assistance of the GA, who obtained secure space for the depot next to an IPKF camp. There the GA issues vouchers to beneficiaries who come to the depot, collect their goods, and pay with a voucher. The BMC then invoices the GA. This system is working well so far and could readily be extended to include private suppliers as well.

No matter how well-designed the program, however, its ultimate success will depend upon its acceptability to the groups and individuals in the affected areas. Planning of the program, although it has drawn extensively on GA input, has not directly involved the participation of community groups and has remained government-centered. Tailoring of the program to local needs and characteristics has had to give way to the important need for uniformity of treatment of beneficiaries. Nevertheless, there is some risk that the program will be perceived as a centrally-imposed structure. Even worse would be the perception that the reconstruction program was a means of reasserting central government control and administration over the affected areas. Implementation assistance should focus on finding ways to enable non-government and beneficiary groups to have a real voice in how they rebuild their communities.

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Administrative Analysis

The civil administration at the local level will have to gear up to handle a considerable volume of activity in order to implement the aboveprogram, even with strong NGO help. In Jaffna, for example, as many as 50,000 households may be eligible for grant benefits. If the reconstruction program is stretched over four years, and assuming an even flow of applicants, the local administration (district or sub-divisional) would have to handle at least 50 new applicants a day for housing grants alone plus processing of previous applications and monitoring disbursements and other aspects of the program. Under the current situation in the North and East, kachcheris are open only for the last five days of each month. In order for reconstruction to proceed under the current plan, more normal operations must be restored in the short run.

Under the assumption that such normalcy will be forthcoming, the larger institutional framework within which USAID's RAP will operate has been described in Section VII. E. This framework has as its district level linchpin the Government Agent and his staff. As will be discussed below, devolution may drastically change the structure of local government and its relationship to the central government. Under current plans, the role of the GA is unclear and may disappear entirely. The RAP, therefore, may face reorientation during implementation.

The housing component will involve another key institution in addition to the structure described for the overall RAP. The National Housing Development Authority is now the implementing agency for the Mission's on-going HG program in Sri Lanka and will play both a technical and administrative role in the RAP. It will also be virtually the first GSL agency actually to undergo devolution. It may therefore be instructive here to describe the institution as it relates to the RAP and then to discuss how it is coping with plans for devolution.

AID has worked closely with the NHDA since the HG program began in 1981 and has helped the organization to make its operations more effective and to redirect its long term goals. During the last few years, the NHDA has made far-reaching changes in its programs (e.g., the use of the thrift system for loan application and servicing). It has also changed its cost recovery philosophy. When AID began working with NHDA, housing loans carried no interest. Today, interest rates for the Million Houses Program loans range from 6% for loans in rural areas to 10% for loans in urban areas, and recovery rates have improved steadily .
Since 1985, NHDA has moved away from its direct housing delivery programs, particularly in rural areas. It is increasingly transferring its rural housing loan delivery/recovery system to the TCCS system. In 1986, the TCCS system more than doubled in size and capacity to accommodate the NHDA loan program. In urban areas, NHDA, in conjunction with the TCCS, has initiated a pilot TCCS expansion project utilizing urban thrifts for loan delivery and recovery.

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The initial results of the TCCS role are universally superior to the previous direct lending record. Loan origination and servicing costs are lower, and recoveries are higher, with some districts reporting 100% collections.

In the North and East, the use of the TCCS system for implementation of the Million Houses Program has enabled the program to continue functioning in many areas throughout the conflict. Although recoveries inevitably suffered to some degree, the integrity of the TCCS loan program has remained intact, and it will be an important tool for reconstruction, both under the RAP and with its on-going housing loan program.

At the central level, the High Level Working Group (composed of representatives of NHDA, the Federation of TCCS and the Ministry of Cooperatives) has become increasingly effective in focusing on policy issues, program monitoring, and strategic planning. Meanwhile, NHDA has begun a decentralization process to achieve greater adaptability and responsiveness and to allow it to serve its constituency more effectively. The operation of district offices is becoming more independent of head office leadership. Although basic policy decisions are still being made in Colombo, lesser policy decisions and most implementation decisions are now made in the districts. Nevertheless, modifications in programs and policies at the central level have not always been followed by adjustments in NHDA's organizational structure, resulting in inefficiency in program management. Overlapping roles and functions of the Deputy General Managers and ineffective management systems have impeded program implementation.

Under devolution, NHDA's organizational structure will certainly change. The GSL's devolution policy is a response to demands for greater autonomy for the North and East. The creation of provinces and elections of provincial officials begins the process politically. Administratively, as noted above, the NHDA will lead the way. Sri Lanka's Prime Minister is also Minister of Local Government, Housing, and Construction, so the choice of the housing agency is not surprising, but NHDA's past record of flexibility and willingness to change make it a good candidate.

The recently enacted legislation changes the structure of the government from highly centralized to one in which the province plays a key role politically and administratively. The current system of central ministries as the political core and 25 administrative districts (the GA level) managed by District Development Councils as the implementation core would be replaced by three levels: the center, the province, and the Pradeshiya or "division" level.

At the center, the parliament and Cabinet of Ministers would retain responsibility for national planning and policy development. At the province level, the Provincial Council and Board of Ministers would formulate operational programs and budgets and support implementation at the Pradeshiya Sabha level. Pradeshiya Sabhas and

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their Executive Councils would be responsible for project implementation and delivery of services. The intent of this arrangement is to shift greater political and administrative autonomy to the provincial level, which maintaining the character of the unitary state. Conspicuously absent from this structure is a correspondent to the district level. The provinces will be comprised of several districts, and the next level down is the division, currently the AGA level. What will happen to the GAs under devolution is now unknown but will have a major impact on reconstruction implementation.

The legislation calls for the devolution process to begin with the election of officials in four of nine provinces in April (the first election was held on April 28), with the remaining provincial elections to be held before the end of 1988. The implementation of the devolution plan in each province will coincide with the Provincial Council elections.

The NHDA's plan for devolution is based on the concept that it would maintain a national planning and policy formulation capability at the center, along with the implementation of projects of national significance, such as Gam Udawa and the management of NHDA owned land and housing projects and related financial and management control functions. Implementation of all urban and rural development programs and related technical and administrative support would be devolved to the provinces and Pradeshiya Sabhas.

NHDA's commitment to bringing development closer to the people is a strong one, although the mechanisms for doing this may not be. Although pilot projects have been designed, detailed implementation plans have been difficult to devise since the Provincial and Pradeshiya functions ofthe other institutions operating in the area are not yet known, so collaboration could not take place. Other implementation problems, like those inherent in turning over large, money-losing housing schemes to provinces which will be financially weak, at least in the beginning, have surfaced. Understandably, there are serious differences of opinion among management levels over the extent and form devolution should take.

The issue for RAP is whether the NHDA will be able to take on the additional responsibilities at both central and district levels of a massive housing reconstruction program in the North and East while it is in transition to a new administrative structure. The answer is even more critical given the unknowns surrounding the role of the GA and the new roles of lower administrative units. The NHDA has requested USAID advice on the development and implementation of its devolution plans, and a recent consultant provided the information for this section. The final product of this effort will be received shortly. Meanwhile, provincial elections have begun, and the political process is not likely to wait for the administrative side to catch up.

Affordability/Equity Analysis

The housing benefit program described above and elsewhere in this document is only the most recent of a series of proposals which have attempted to devise a program that is equitable, affordable to the GSL and to affected households, adequate to accomplish the rehabilitation task, and acceptable to the many institutions, groups and individuals involved. There is still concern over how much should be provided to whom, how equitable different grant/loan schemes are, how efficient, and how costly. In addition to the need for administrative simplicity and flexibility, the design of the financial assistance system for housing must also cope with equity issues on one side, and (likely) resource constraints on the other. USAID decisions regarding the nature of its contribution to the housing component depends upon an analysis of the benefit package with these concerns in mind.

Equity considerations extend to both income (ability to pay) and extent of damage suffered ("justified" financial need). Since higher income categories are likely to own larger and typically more expensive houses, the same level of damage would presumably imply greater financial need. In other words, the two equity considerations point in different directions: schemes geared toward ability to pay should provide higher levels of assistance (transfers) to lower-income households. Schemes designed to compensate for damage suffered would most likely provide higher levels of assistance to higher-income households. To find some compromise requires an assessment of the relative burden of servicing any loans under different financial arrangements.

The results of this analysis are presented in Tables 1 through 6. The first three columns in each table provide information on the household income groups. All income categories are the same as in the original NHDA scheme. In each category, the approximate mid-point is taken as average household income. The next column shows an estimate of financial assistance needs to restore the houses. These estimates use the NHDA maximum assistance levels as guidance. The only adjustment refers to households with monthly incomes in the range of Rs. 1,501 to 2,500. Here the original NHDA scheme provided for 2-percent loans up to Rs. 75,000. With total financial assistance to the income group below at Rs. 25,000 and to the next-higher group at Rs. 100,000, Rs. 50,000 seems more appropriate than Rs. 75,000. Generally, we don't really know whether these estimates are adequate even for planning purposes. On the one hand, they may be too low for the complete reconstruction of houses, especiallyin Jaffna. On the other hand, they may well be on the high side for the repair of more limited damage to lower value structures.

Under the NHDA scheme, the relative burden of servicing loans (at the level indicated by the financial assistance needs ranges from 0 for the lowest income category to slightly over 21 percent for the highest income group. Much of the total assistance under this scheme is hidden in the form of interest rate subsidies. The

Table 1
Original NHDA scheme

Monthly income category	Estimated average monthly income	Total financial assistance needed	Grant	Interest rate	Years	Monthly payment	As per cent of income
under 700	500	15,000	15,000	*N/A.	*N/A	- 0	0.0%
701 - 1500	1,100	25,000	10,000	2.0%	15	97	8.8%
1501 - 2500	2,000	50,000	0	2.0%	15	322	16.1%
2501 - 5000	3,750	100,000	0	4.0%	15	740	19.7%
5001 +	6,000	150,000	0	6.0%	15	1,266	21.1%

Table 2

Design team proposal

Monthly income category	Estimated average monthly income	Total financial assistance needed	Grant	Interest rate	Years	Monthly payment	As per cent of income
Under 700	500	15,000	7,500	6.0%	15	63	12.7%
701 - 1500	1,100	25,000	4,000	6.0%	15	177	16.1%
1501 - 2500	2,000	50,000	0	9.0%	20	450	22.5%
2501 - 5000	3,750	100,000	0	9.0%	20	900	24.0%
5001 +	6,000	150,000	0	9.0%	20	1,350	22.5%

Table 3
NRSC planners proposal

Monthly income category	Estimated average monthly income	Total financial assistance needed	Grant	Interest rate	Years	Monthly payment	As per cent of income
under 700	500	15,000	15,000	6.0%	15	0	0.0%
701 - 1500	1,100	25,000	15,000	9.0%	20	90	8.2%
1501 - 2500	2,000	50,000	0	9.0%	20	450	22.5%
2501 - 5000	3,750	100,000	0	9.0%	20	900	24.0%
5001 +	6,000	150,000	0	9.0%	20	1,350	22.5%

Table 4

All borrowing at 6 percent, 15 years

Monthly income category	Estimated average monthly income	Total financial assistance needed	Grant	Interest rate	Years	Monthly payment	As per cent of income
under 700	500	15,000	15,000	6.0%	15	0	0.0%
701 - 1500	1,100	25,000	15,000	6.0%	15	84	7.7%
1501 - 2500	2,000	50,000	0	6.0%	15	422	21.1%
2501 - 5000	3,750	100,000	0	6.0%	15	844	22.5%
5001 +	6,000	150,000	0	6.0%	15	1,266	21.1%

Table 5

Sliding grant scale proposal

Monthly income category	Estimated average monthly income	Total financial assistance needed	Grant	Interest rate	Years	Monthly payment	As per cent of income
Under 700	500	15,000	15,000	6.0%	15	0	0.0%
701 - 1500	1,100	25,000	10,000	6.0%	15	127	11.5%
1501 - 2500	2,000	50,000	5,000	6.0%	15	380	19.0%
2501 - 5000	3,750	100,000	0	9.0%	20	900	24.0%
5001 +	6,000	150,000	0	9.0%	20	1,350	22.5%

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Table 6

Flat grant to lowest three income groups

Monthly income category	Estimated average monthly income	Total financial assistance needed	Grant	Interest rate	Years	Monthly payment	As per cent of income
under 700	500	15,000	15,000	*N/A	*N/A	0	0.0%
701 - 1500	1,100	25,000	15,000	9.0%	20	90	8.2%
1501 - 2500	2,000	50,000	15,000	9.0%	20	315	15.7%
2501 - 5000	3,750	100,000	0	9.0%	20	900	24.0%
5001 +	6,000	150,000	0	9.0%	20	1,350	22.5%

Table 7

Comparison of total program costs

Financial assistance scheme	Total Cost in US-Dollars	As percent of NHDA scheme
NHDA scheme	51,133,000	100.0%
Design team	24,752,000	48.4%
NRSC planners	44,000,000	86.1%
All borrowing at 6 percent	49,068,000	96.0%
Sliding grant scale	45,239,000	88.5%
Flat grant for three income groups	47,750,000	93.4%

summary here shows a grant of Rs. 15,000 to households with incomes below Rs. 700, although the Government was planning on having PVOs finance one-half of that amount (at a total cost of some US-$11 million), a plan that has since proved infeasible.

Concern with speedy and equitable assistance focused on means to separate grants from loans at normal rates. Efforts to translate this principle into a workable assistance program have resulted in two proposals for financial assistance to housing. Compared to the design team's scheme, described in Table 2, the NRSC proposal (Table 3) basically doubles the grant benefits for the lowest two income categories, but retains the borrowing at some higher rate (still assumed to be 9 percent) for all income groups above Rs. 1,500. In further discussion, the possibility was raised that the regular lending rate for housing loans should be 6 percent (the rate for rural borrowers under the Million Houses program).

Under the design team's proposal, low-income households would have to borrow (presumably at 6 percent) to meet their assumed financial need of Rs. 15,000. Under this scheme, the relative loan-service burden on households would be 13 percent for the lowest income group, and 16 percent for the next category. All other income groups would have to devote slightly less than a quarter of their monthly income to servicing their housing loans. Under the NRSC planners' proposal, the increase in the relative burden would be much less between the first two income categories (from 0 to 8 percent), but would then jump sharply to the 22.5 percent of the design team's scheme.

Table 4 modifies the NRSC planners' proposal by assuming an additional interest rate subsidy by allowing everybody to borrow at 6 percent for 15 years. This modification makes little difference in the relative loan service burden, in particular, the sharp discrepancy between the below Rs. 1500 group and those above that remains. For all practical purposes, dropping the lending rate for everybody to 6 percent does little to alleviate the problems of equity (and of any resistance engendered by such problems). Tables 5 and 6 explore the possibility of broadening the distribution of grants. Table 5 outlines an alternative combining a sliding grant scale from Rs. 15,000 for the poorest income group, to Rs. 10,000 for the next, and Rs. 5,000 for the group with household incomes between Rs. 1,501 and 5,000. Although that proposal would provide 10 percent of the total financial assistance in form of a grant, and the rest at a rate of 6 percent, the relative loan service burden for this group drops only slightly to 19 percent. In terms of the relative impact on the debt service burden, neither the sliding grant scale nor the provision for loans at 6 percent does much to alter the outcome.

Finally, Table 6 presents a scheme of Rs. 15,000 grants for the lowest three income categories. At that level, the increase in the relative loan service burden becomes more gradual, from 0 to 8 to 16 percent.

What about the cost of the different schemes? Table 7 shows the total dollar costs for each option examined here, using the frequency distribution of households shown in the design team's paper. All proposals are below the real cost of the NHDA subsidized loan-cum-grant scheme. Fitting the assistance program into a $25 million envelope, the design team's proposal would cost less than half of the NHDA program. The sliding grant scheme would be similar in cost to the NRSC planners' proposal, $7 to $8 million below the NHDA scheme. Finally, the flat grant scheme would seem to offer better equity at lower cost.

The choice of a particular approach may well depend on the total cost, including direct outlays in the form of grants or interest subsidies, administrative costs, and the political costs of missing on the equity end. For example, a program that fails to address the needs effectively or that introduces glaring inequities in the distribution of benefits may defeat its basic purpose. If our information accurately reflects the real need, programs such as flat grants for the lower income groups (either the lowest two only, or the lower three) costing in the mid-40's may represent the most appropriate approach.

Technical Assistance and Training

Resident housing finance adviser-expatriate

The role of the expatriate adviser will be to provide assistance to the implementing institutions for the housing component of the rehabilitation program: MRR and an expanded REPPIA. The adviser will also provide housing finance advice to the institutions involved in both the rehabilitation program and the housing finance sector of Sri Lanka: NHDA, State Mortgage Investment Bank (SMIB), National Savings Bank (NSB), Housing Development Finance Corporation (HDFC), and, possibly, private sector housing finance companies. The assistance will cover a broad range of implementation activities including:

- monitoring of grant administration, analyses of the TCCS involvement in the loan portion of the rehab project and how it affects the TCCS work in the MHP,

- assisting other financial institutions in low income lending under the rehab project and other housing programs,

- working with the NHDA as it gears up to fund the program of grants (to be financed with USAID DA funds and HG funds) and loans (to be financed by other donors). Since the NHDA is concurrently undergoing a massive restructuring to decentralize operations, the resident adviser will inevitably be involved in monitoring the devolution process as it affects NHDA programs and policies.

Although USAID may be contributing capital support to only the grant component, assistance in implementing the loan component will be even more crucial, since it now appears other donors, most notably the World Bank, will not be providing it. The focus of this assistance should be on maintaining the integrity of the loan program, i.e., ensuring that reasonable lending procedures are followed, recovery targets are met, and implementing agencies monitored, and on ensuring that it reaches low income borrowers.

Because of the number of housing finance institutions involved in both the rehabilitation project and in the broader housing finance system in Sri Lanka, and because of the changes their roles are undergoing during this period, the resident adviser should be based in USAID, at least in the short term. Division of labor among the implementing institutions and between the rehab and other housing programs will have to be determined as rehab implementation gets underway.

Resident Adviser-Local

A locally-hired resident adviser will be responsible for day to day monitoring of all aspects of the housing grant component of the project. This professional will have a background in project management, preferably with experience in housing or related field. Another major activity will be taking responsibility for the housing training program: monitoring and assisting in implementing training plans where they exist and updating them and modifying them as needed.

Short-term TA and training

The housing rehabilitation project will require a flexible package of limited short-term implementation TA and training in addition to that to be provided by the resident adviser staff. The devolution of responsibilities within the NHDA, already underway, will undoubtedly require some follow-up work to that already done by CMS; the issues there will affect the implementation of the rehab project, touching such topics as decentralization of authority and responsibilities, financial decentralization, and institutional capacity to undertake the program.

Other short-term TA or training will be targeted at specific implementation problems. For example, if project monitoring indicates that expected numbers of eligible beneficiaries are not making application for available grants, assistance might be needed in solving the problem (e.g., inadequate outreach programs) and proposing solutions (home visits, better advertising, etc.) Another possible implementation issue requiring short-term assistance might be land tenure problems for returnees. PVOs active in the affected areas may also have a role in providing implementation assistance, particularly to beneficiary households.

Any training provided under the project will be short-term and specifically focused on implementation issues; most of this type of training will be in-country or, possibly third country, since the experience of other countries in reconstruction might be very helpful to officials here. One example of needed training already identified is skills training in the building trades. ICTAD has a short-term, low cost program already in use for the Million Houses Program of matching an unskilled household member with a sklled craftsman, who teaches as the home improvement is accomplished. Manuals already exist in Tamil and Sinhala, and only a small amount of funding would be needed for tools and the honorarium paid the skilled craftsperson. ICTAD also has an on-going 2.5 month training program for higher skill levels; it is being delivered through Technical Colleges in various areas. This program could also cover the North and East as soon as the security situation improves.

Because there are so many unknowns at this stage of the design of the rehabilitation project, some flexibility is built into the TA and training plan in order to retain the ability to be responsive to needs as they arise.

ANNEX F. 3. - AGRICULTURE TECHNICAL ANALYSIS

I. Current Agricultural Situation in the Northern and Eastern Provinces

Background

Despite the water management constraints and the relatively limited extent of fertile soils of the dry zone, the small farmers of the Northern and Eastern Provinces have traditionally enjoyed a higher level of agricultural development than others areas of Sri Lanka. As a result these farmers have been more affluent and successful in their farming operations. In particular the Jaffna farmers have better houses, are sensitive to erratic markets, and have become specialized managers of intensive crops.

During the last three to four years these farmers have been forced to abandon or reduce their crop and livestock production activities due to the ethnic conflict. This has consequently reduced farm family income. The scarcity of manual labor, lack of available agricultural inputs, loss of hand tools, equipment and draught animals, and exhaustion of personal cash reserves has made it difficult for farmers to begin recovery to former levels of production. With the exception of the estimates presented in the World Bank Reconstruction and Rehabilitation Report (1987), there has been no serious assessment of the actual damage to the agricultural sector nor quantification of farmer losses due to the war. The design team was able to visit Jaffna and compare first hand observations with reported damage estimates. Jaffna reportedly suffered the most destruction of housing and economic disruption in the North and East. If this is so, then the rest of the North and East may have suffered considerably less than was first reported.

Methodology

The observations presented in this analysis are based on a thorough review of available literature and extensive interviews in Colombo with people working in agriculture in the North and East, as well as on one field trip to the Jaffna Peninsula and two additional trips to surrounding areas (Polunnaruwa and central highlands) where farmers were interviewed and agricultural institutions visited. Where data is available, current conditions will be assessed in an attempt to describe and quantify the plight of the farmer beneficiaries in the North and East and to develop the basis for the quickest and most efficient method of recovery. This assessment will include: realistic levels of production (pre-conflict, current, and projected), anticipated rates of recovery (expected yield levels, rate of incorporating irrigated and rainfed areas into cultivation), the extent of need for start-up grants/loans, and an approach to the difficult problem of re-establishing animal and/or mechanical traction for timely land preparation. Other technical questions such as "has the decline in water use resulted in lower

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yields ?" or "have uncropped fallow fields built up beneficial organic matter or will land preparation be more costly ?" will have to be answered during a later stage of project implementation. Likewise the issues concerning the landless estate Tamils of Vavuniya and Kilinochchi or those displaced from Trincomalee now living in refugee camps in Mullaitivu will not be addressed here. This annex suggests some of the most useful studies that the RAP should fund to understand the impact of the conflict on agricultural productivity.

General Agroecology

The dry zone of Sri Lanka, until about the 13th century A.D. the center of a highly advanced civilization based on irrigated agriculture, covers about 75 percent of the island. It includes the eight districts in the Northern and Eastern Provinces where the Rehabilitation Assistance Project (RAP) will be implemented (Figure 1). In Jaffna, after many centuries of repeated clearing for both sedentary and shifting cultivation, only patches of xerophytic secondary vegetation or palmyrah palms remain among widespread individual farmsteads. Much of the rest of the North and East has been cleared for farming, but patches of forest remain.

Two monsoonal rainy periods define the wet and dry season and the annual cropping pattern. Total average annual rainfall ranges from 900 - 1500 mm with 70 - 80 percent concentrated in the months of October-December (maha) when the main rice crop is grown. The second rainy period from April- September (yala) rec ives considerably less precipitation and paddy or other field crops (OFC) grown depend entirely on supplemental irrigation.

Under rain-fed conditions, only one crop of paddy is grown annually followed by pulses or grain legumes. If soil moisture is deficient then the land will lie fallow, or is grazed by draught animals or goats until the next maha season when the cycle will be repeated. Although rain-fed uplands are classified in the dry zone, the total rainfall and seasonal distribution is generally adequate for the production of a variety of rain-fed crops such as rice, groundnut, finger millet, maize, sesame, etc.

Soils

The undulating topography is typified with well drained and imperfectly drained reddish brown soils that are found on the crests and mid-slopes where most of the rain-fed crops are grown. Poorly drained, low humic, clay soils are found in the depressions where the ground water level is high for a considerable part of the year and are used for the production of paddy.

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Farm Population

The 1981 Census of Population and Housing reports all categories of the rural population of the eight Districts in the Northern and Eastern Provinces at 1,560,643 or 75 percent of the total population (2,338,000). Based on the census definition, the farmer subgroup is estimated at slightly larger than 140,000 farm families. The World Bank estimated 55,000 farm families affected in the conflict (1987); whereas the MORR had estimated 30,000 farm families requiring assistance for economic rehabilitation (Sept.,1987). Assuming a conservative 5 percent increase in rural population since the 1981 census and the identification of an additional 15,000 affected farm families, 70,000 beneficiaries or an estimated 50 percent of the total farm families in the North and East have probably been severely affected by the conflict.

Some of the affected families may not register, others will have greater needs than the average, since the damages and losses are not uniform throughout the project area. However, all families will have suffered some loss during the conflict. Damage to fields or equipment, ruined structures, loss of market access, disappearance of family members and animals, labor and input shortages have diminished production throughout the two affected provinces. Consequently, for reasons of social equity, the agricultural component of RAP expects to target all farm families in the North and East.

Land Tenure

Size and distribution of land holdings is covered in detail in the economic analysis of agriculture.

Farming Systems

The dry zone farmers of the North and East who have been given land under a post World War II settlement scheme usually cultivate in three separate areas; each in a different manner. The lowland paddy area (an estimated 2-3 acres per family) is generally kept in continuous production producing two rice crops per year; whereas the well drained highland soils (1 acre or less) produce only one crop of paddy or other field crops (OFC) unless supplemental water is available. In addition there is usually another separate site for the homestead, which usually includes a small vegetable garden and fruit tree crops for home consumption and seasonal markets.

In the Jaffna Peninsula the farming systems are quite distinct from the rest of the North and East. Farmers cultivate intensive vegetables (onions, chillies, pulses, beetroot, eggplant) as wellas tobacco, bananas, millet, and manioc on extremely small plots (.12 - .25 acres), irrigated year round with the well water pumped from the shallow limestone aquifer. Those farms are generally privately owned and have been continuously subdivided through inheritance so that the average size of holding is less than .25 acre.

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Three typical cropping systems are used in this annex to illustrate returns to agricultural activity. They were chosen as representative of the ways that farmers make their living in the affected districts. However, there are numerous cropping combinations that are not represented by these models that are important to farmers receiving grants under the RAP. For example, areas of intensive cultivation of chillies are found in Vavuniya, Mannar, and Batticaloa, but have not been included. The chosen models have served as guidelines for planning the agricultural component of RAP (Table 1). Cash flow and net farm income will be based on these same models and discussed in the section detailing their specific characteristics. However, farmers are not obliged to adopt any particular cropping system to receive RAP-funded benefits.

Table 1

Representative Farming Systems in the Northern and Eastern Province

Area	Land Tenure	Predominant Farming System
Jaffna Peninsula	Individual private ownership, small plots of 1/8 to 1/4 acre	Intensive small-scale vegetable cultivation producing year year round with tube wells
Vavuniya	Post WWII settlement schemes provided one acre highland and two acres paddy land; inheritable usufruct rights, no land sales	Maha paddy yala fallow, or rain-fed crops
Trincomalee, Batticaloa, Ampara	Post WWII settlement schemes, some private owners, farm size of one acre highland and two acres of paddy; Highlands under utilized due to lack of water inheritable usufruct right, no land sales	Maha paddy, yala paddy; irrigation water available all year

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Livestock

Draught animals, dual purpose cattle, goats, and chickens form part of the farming enterprise, but many of the animals have been consumed, stolen, or lost during the conflict. Despite the absence of accurate quantification, the losses of meat, eggs and milk products has been felt by the rural families. In the intensive cultivation areas of the Jaffna Peninsula, livestock manure is incorporated into the soil as a substitute for chemical fertilizers. This loss of organic matter will now require a purchased input by farmers who have little or no cash. Replacing the livestock and draught animals is important to the nutrition and stability of the rural population, but will require relocation of breeding stock and considerable time to reach pre-conflict levels.

Crop Area Estimates: Past, Present, and Future

Actual land use in the Northern and Eastern Provinces indicates that annual crops occupy 84 percent (estimated 805,000 acres and permanent crops occupy 16 percent (estimated 152,000 acres) of the agricultural land (Jayawardene et al., 1984).

Paddy

The area planted to paddy has ranged from 358,600 acres (maha and yala) in 1977 to an estimated 437,700 acres in 1987 (Table 2). 1984 had the highest reported paddy acreage of 560,600 acres for the eight districts in the Northern and Eastern Provinces. These reported harvested areas account for approximately 20 percent of all the paddy produced in Sri Lanka. According to these estimates there was no reduction in harvested paddy during the start of the ethnic war; however lack of agricultural inputs (primarily fertilizer) and the lack of security in the region may have accounted for some of the reduction in acreage during the years 1986 and 1987. Paddy yields for 1987-88 maha and yala production are higher in the study area (94 bu/A) than the rest of the island (70 bu/A). This may be partially due to the higher level of management of the local farmers, but more likely is a result of water availability and climatic variations.

Other Field Crops (OFC)

Approximately 140,000 acres of vegetables, non-rice cereal grains, grain legumes, and fruits are planted in the study area (Table 3). Areas planted to tree crops such as coconuts and other crops such as tobacco, bananas, and citrus are included and do generate important income for the farmers of the North and East, but do not play such an important role in the farming systems as paddy and OFC.

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The palmyrah (Borassus flabellifer) located in the Jaffna District and noted for its multi-use of leaf, wood, fiber, seed, and toddy grows on an estimated 31,500 acres of natural stands (Jaffna District in Facts and Figures, 1987). Although this natural resource is important in the regional economy and should be considered in future development schemes for its export potential, the details will not be discussed here.

Table 3

Estimated Area of Other Food Crops Planted in the Northern and Eastern Provinces

Crop	Extent (acres)	% of Total National
Chillies	21,020	22
Red Onions	18,155	62
Bombay Onions	875	27
Cowpea	13,413	15
Maize	31,588	26
Blackgram	33,908	57
Vegetable/ Pulses	29,260	15
SUBTOTAL	139,222	
Other		
Tobacco	n/a	n/a
Bananas	7,133	6
Citrus	1,250	10
Coconut	58,344	18
SUBTOTAL	66,727	n/a

Note: Other vegetables include groundnut, greengram, sesame, soybean, pulses, kurakkan, and tuber crops.

Source: Ministry of Agriculture Development and Research, 1987.
Central Bank of Sri Lanka, 1986.

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Yields

National average yields of paddy have increased from 35.6 bushels/acre in 1966 to a high of 70.2 in 1983 and fallen to 66.4 bushels/acre in 1985 (Department of Census and Statistics, Paddy Statistics, 1986). Yields of OFC are considerably more variable. There is no indication that the ethnic strife in the North and East has affected yields any more than natural fluctuations in weather, and normal problems of water supply. The 1985 drought reduced yields and income throughout the dry zone and could easily reoccur during the implementation of RAP. Using the present available technologies there is every reason to believe that yields of paddy and other field crops will continue at current levels.

Trends

The crop area estimates reported by the Department of Agriculture and the Ministry of Agricultural Development and Research reflect past trends and present status. They also allow some evaluation of reduced planting or harvesting due to the war. Other reports such as the World Bank (1987) and the Annual Work Plans prepared by the District government agents for the MOFP (1988) attempt to assess the economic loss of farm production due to the strife, but have not quantified nor located the reduced production.

From only one field trip to the Jaffna Peninsula, this author and other members of the design team were impressed with the amount of agricultural activity they saw including tobacco and vegetable production. Much additional land was under active preparation. Gross visual estimates of abandoned or fallow uncropped land ranged from 10 to 40 percent and are not necessarily representative of the conditions in the other affected districts. The most important observation was that farming operations were very active, evidenced by growing and recently harvested tobacco and vegetables and widespread land preparation activities. With the exception of the area immediately surrounding the Jaffna airport, there was no evidence of large-scale land abandonment or inactivity despite the widespread destruction of homes and public buildings. All of these brief observations confirm the fact that farmers who are accustomed to taking risks and who can be characterized as aggressive entrepreneurs will return to their land if security and peace are maintained.

Agricultural recovery will occur when peace returns to the North and East. However, this recovery may come too late for some, not at all for others. Consequently the purpose of the agricultural component of RAP is to accelerate an equitable recovery of the agricultural economy by providing grants to all affected farm families, rehabilitating selected ASC's,

purchasing some essential equipment and tools for rent to farmers, and providing technical assistance to insure efficient use of agricultural inputs. The RAP activities in agriculture and the other components will help speed the return to normalcy for all farmers.

Agricultural Performance

The growth performance of the agricultural sector of the economy has been showing improvement, but not at the rate of the other sectors. During the period 1970-77, agriculture grew at the relative rate of 1.8 percent while during the 1978-85 period the national growth rate has averaged about 4 percent (King and Schermerhorn, 1986). The improvement in growth rate resulted from generally favorable weather conditions, intensive short-term development policies (i.e. planting and fertilizer subsidy; floor price scheme; subsidized interest rates for credit) and various economic reforms such as price decontrol and privatization of trade.

Most of these policies have been directed primarily toward achieving rice self-sufficiency. Sri Lanka came close to achieving this goal in 1983-4, but in the last 4 years larger quantities of rice have been imported in order to meet local demand. There has also been increased emphasis given to crop intensification and diversification at the national level. This is also potentially important for increasing agricultural production in the irrigated as well as rainfed areas of the North and East. Past increases in agricultural production have been due to incorporating additional areas into cultivation rather than increasing yields or diversification. The RAP intends to reincorporate those lands that have not been cultivated during the conflict and support the on-going crop intensification and diversification policies.

The crops produced in Northern and Eastern Province do not contribute to the export oriented economy like the tea, rubber, and coconut plantation crops concentrated primarily in the central highlands. Instead, the agricultural production of the North and East is consumed or sold locally or transported to the Colombo markets. With the disruption in transport that links the producing areas of the north and east with the urban markets, farmers have not been able to fully participate in the national economy for thelast four years. With the implementation of RAP providing a quick infusion of cash and inputs, there is every reason to believe that farmers can expand their crop production to pre-conflict levels and be fully integrated into the economy in two or three cropping cycles.

Levels of Technology

Over the past 20 years, paddy farmers have gradually incorporated the use of agricultural inputs (i.e. fertilizer, pesticide, improved seed varieties), improved land preparation and water management techniques, along with greater efficiency in farm management to produce higher yields. Even though average paddy yields have

doubled in the past twenty years, Sri Lankan yields still lag behind other rice-producing countries. Until recently, the technological packages for other food crops were not emphasized nor accepted by farmers due primarily to unproven markets and profitability. These conditions apply to farmers that have been given land in settlement schemes throughout the North and East where their primary income is derived from paddy and to a much lesser extent from other food crops. On the other hand, Jaffna farmers have long term experience and success with high value vegetables, grain legumes, and other minor crops produced under intensive rotations and a high level of management including considerable agricultural inputs.

The RAP, by providing grants for the purchase of inputs to all affected farmers and by rehabilitating essential public infrastructure needed to ensure reliable input supply will help promote recovery to former levels of technology applied in the North and East before the conflict.

Agricultural Institutions Important to RAP

Three ministries including the Ministry of Agricultural Development and Research (2 departments, a board, and a public corporation); the Ministry of Lands and Land Development (1 department); and the Ministry of Rural Industrial Development (1 board) are key in the coordination and implementation of the RAP agricultural component.

Ministry of Agricultural Development and Research (MADR):

Responsible for the organizational, administrative, and financial operations of the food and minor export crop sectors in agriculture; issues policy guidelines; preparation and implementation of development and production plans; coordination of activities with other ministries.

Department of Agriculture (DOA):

Responsible for agricultural research, extension and training; seed and planting material production; agricultural engineering, and agricultural economics; research and extension on rice, subsidiary food crops and horticulture; 9 regional research stations with supporting experimental stations (Kilinochchi and Batticaloa in the North and East) and a central rice breeding station; seed production farms, data processing and statistical units; 24 district offices; operation of 3 agricultural schools, printing press, publications and 7 regional and 24 district training centers; farm mechanization research, plant quarantine; operation of pesticide act; and soil conservation.

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Department of Agrarian Services (DAS):

Supply of agricultural inputs through the agrarian service centers, provision of services for the implementation of the tenancy provisions of the Agrarian Services Act; maintenance of minor irrigation schemes (less than 200 acres in command); implementing programs relating to efficient cultivation of agricultural lands and irrigation water management; and operation of 524 agrarian service centers including 114 in the North and East and 2137 village level extension service centers. 86 ASC's have been affected by the conflict in the North and East.

Paddy Marketing Board (PMB):

Purchasing, selling, supplying and distributing paddy and selected subsidiary field crops; milling, hulling, and processing of paddy, implement policy of product price stabilization by operating a guaranteed price scheme for paddy and the floor price scheme for specified subsidiary field crops; supply rice to the Food Commissioner for the operation of the food stamp scheme and a buffer stock; research on post harvest technology and training on grain storage, rice processing and by-product development. The PMB currently buys less than 10 percent of the paddy produced nationally.

Ceylon Fertilizer Corporation (CFC):

Supply of fertilizer to the paddy and minor food crops sector; operational network of fertilizer distribution outlets consisting of 5 regional warehouse complexes (Anuradhapura and Polonnaruwa which serve the RAP project area have mixing and storage facilities for 29,000 metric tons), 34 district fertilizer stores with MPCS, ASC's, and private authorized dealers as retail outlets (13 district stores and over 700 retail outlets in the North and East).

Ministry of Lands and Land Development (MLLD):

Land policy and settlement planning; water resources development; forestry and environment; land use policy planning; programming and progress control; water management and forestry planning unit.

Irrigation Department (ID):

Investigation, design and construction of new irrigation projects including village irrigation rehabilitation project (VIRP), infrastructure planning and construction; irrigation ;rehabilitation; flood control projects; land use investigations and training, surveys and training, water management; 11 range offices, each administered by a deputy director.

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Ministry of Rural Industrial Development (MRID):

Policy formulation on animal husbandry development, preparation of short-term plans and their implementation, monitoring and control; provision of inputs, support services and marketing.

National Livestock Development Board (NLDB):

Upgrading indigenous cattle to increase the productivity of milk, beef, and draught power; maintenance of facilities for cross breeding of cattle, buffalo, pigs, sheep and poultry with improved breeds for farmer distribution; provision of veterinary health care, natural and artificial breeding; and farmer training on dairy husbandry practices.

Research

The decentralization of agronomic research to nine regional research centers will help meet the needs of the affected region. A change in the emphasis from rice oriented research to a program focusing on other food crops will form the technological base for improving production and yields, but practical needs of the recovering farmer such as low cost nutrient supply, improved and economical pest control through a combination of integrated pest management and chemical control, and improved water management schemes should also be considered.

The gap between yields obtained in research trials and those achieved by small farmers is still wide. In addition, the escalation of prices of agricultural inputs despite the heavy subsidies for fertilizers has focussed the need to develop new low cost technology. One example of practical low cost nutrient and organic matter supply is the cutting of leaf material from leguminous fence row trees such as Gliricidia that are incorporated in the soil as green manure.

Extension

The extensionists or KVSN at the village level provide an important link in transferring technology to small farmers. A modified training and visit system is employed using contact farmers as an interface as there is no possible way that the KVSN can effectively serve 300-700 farmers (Table 4). Considerable information concerning use of inputs is supplied by private dealers.

Table 4

Agricultural Extension Personnel in the North and East

District	Village Level KVSN	Avg. Farm Families Per Field KVSN	Avg Area (sq.mi) Per KVSN
Jaffna	78	700	9.0
Vavuniya	51	400	26.0
Mannar	36	300	22.0
Trincomalee	46	300	22.0
Batticaloa	47	650	16.0
Amparai	87	450	10.5
Totals	345		

Source: World Bank Report, 1979.

Even though extensionists have not been able to work effectively in the study area, it is anticipated that a full staff will be available to assure that farmers utilize the inputs efficiently at the recommended rates of application. Table 4. summarizes the number of extensionists in the North and East. Transport will be problematic since vehicles, bicycles, and motorbikes have been stolen or destroyed. Other donors should address the problem of limited transport since the RAP does not envision assistance in this area.

Inputs

Fertilizer

Fertilizer use at the national level has increased from 373,000 tons in 1979 to just less than 500,000 tons in 1986 (National Fertilizer Secretariat, 1987). For the first time, the estimated use of fertilizer has been reported by district for 1986 (Table 5). Considerable caution should be exercised in interpreting this data, since district consumption of fertilizer is based on fertilizer wholesalers data based in turn on declarations of purchasers of fertilizer. Thus, if a retail outlet in a particular district purchased fertilizer in Colombo, such purchases are considered as consumption in that district. At other times,the address of a direct user may be Colombo, but the fertilizer may actually be used in another district.

Table 5

Estimated Fertilizer Consumption by District in 1986.

District	Use of Fertilizer Products (MT)
Jaffna	11,178
Vavuniya	8,555
Mullaitivu	173
Mannar	5,480
Killinochchi	4,114
Trincomalee	7,699
Batticaloa	18,625
Amparai	14,709
Total for North and East	70,533
Per cent of National	14
Total Sri Lanka	497,059

Source: National Fertilizer Secretariat, 1987.

Table 6

Fertilizer Distribution by Agrarian Service Centers in the Northern and Eastern Provinces (in MT).

District	1982	1983	1984	1985	1986
Jaffna	1,447	1,154	270	398	279
Kilinochchi	n/a	n/a	777	176	86
Mannar	853	769	1,127	384	34
Vavuniya	337	359	429	161	13
Trincomalee	1,860	1,287	1,349	780	158
Batticaloa	2,459	1,086	629	437	23
Amparai	3,134	1,834	1,214	726	692
Totals	10,836	7,248	5,795	3,183	1,301

Source: Administrative Report, Commission of Agrarian Services 1982-86.

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There is no documentation of decreased fertilizer use in the affected study area since 1986 was the first year that fertilizer distribution was reported at the district level. However, the design team interviews with the Ceylon Fertilizer Corporation, the district GA's, ASC's, and A. Baur & Co. confirmed that the lack of transport had greatly reduced the supply of fertilizer to farmers in the North and East. Similar complaints were heard regarding the reduced availability of pesticides and improved seed varieties.

There has been a decreasing trend in the amount of fertilizer distributed by the ASC's which indicates the important role of the private sector and small retailers who serve farmers (Table 6). The reasons for the ASC's reduced share of fertilizer distribution are: 1) attractive handling commissions are being offered to private authorized dealers by the CFC creating an advantage over ASC's; and 2) the multiplicity of private outlets, which are often nearer to farmer villages than are the ASCs; and 3) fertilizer sales by marketers who come to the villages to purchase the farmers crop, thus providing a credit service as well as an input supply service. On the other hand, ASCs retain a market share because 1) there are allegations that private retailers sell substandard fertilizer at reduced prices; and 2) traders and village money lenders may offer fertilizer on high interest credit (5-20% per month) which is repaid in-kind at harvest. Finally, 3), the ASCs act as an input supplier "of last resort" when road or security conditions discourage the private sector from entering a given area.

Thus, the RAP will encourage the input vouchers to be used either at ASC's (quantified by District in Table 7) or any small business in order to allow flexibility should supplies be limited when RAP vouchers are distributed.

The RAP will depend on existing fertilizer and pesticide distribution networks already well established in the Northern and Eastern Provinces. The private sector fertilizer and pesticide distributors have many small shops, stores, and business that retail to farmers. The ASC's will provide another storage facility and distribution point for inputs. The grant in kind will be given as a voucher for inputs that can be picked up at any outlet. The vouchers can be redeemed at the banks or at GSL administrative offices.

Table 7

District Location of ASC's and ASC Fertilizer Facilities

District	Total No. ASC's	No. of ASC's Damaged 1/	No. ASC Fertilizer Facilities
Jaffna	12	13	18
Kilinochchi	8	8	n/a
Vavuniya	8	8	8
Mullataivu	10	9	13
Mannar	12	12	7
Trincomalee	22	16	18
Batticaloa	15	15	19
Amparai	27	2	19
TOTALS	114	86	92
North and East	32		20
% of Total			
Sri Lanka	355		465

Source: Ministry of Agricultural Development and Research. Agricultural Implementation Programme. 1987.

1/ Number of damaged ASC's includes multiple branches of a single ASC.

Pesticides

All requirements of agrochemicals are imported from international basic manufacturers in the form of finished products (insecticides, fungicides, herbicides, rodenticides, miticides, fumigants) as well as technical grade material (insecticides, herbicides) for local formulation into liquids, granules, and dust. In 1981 the major products marketed included: Carbofuran 3 percent G (1,000 MT), paraquat (250 MT), MCPA (225 MT), propanil (200 MT), parathion (100 MT), and sulphur 80 percent WP (70 MT).

Both public (Ceylon Petroleum Corporation) and private sector import formulated agrochemicals and technical grade materials are involved in local formulation. Nine firms share the pesticide market in Sri Lanka: Hayleys Ltd. (Haychem)-Bayer is the leader in marketing with 30-40 percent share; Chemical Industrial Colombo, Ltd. (ICI,Monsanto) is the next largest manufacturer/distributor; Harrisons & Crosfield Ltd. (Ciba-Geigy), Lankem, Ltd. (Shell), and

Ceylon Petroleum Corporation (FMC) each share about 15-20 percent of the market; and Mackwood, A. Baur & Co., J.L. Morrison and Co. Ltd. and Anglo-Asian Fertilizer Ltd. all have a small share of the market.

All private sector companies which sell agrochemicals and the CPC have their own distribution channels with include: 1) private dealers; 2) ASC's and; 3) MPCS. Private dealers account for about 75 percent of sales and ASC's and MPCS share the remaining market. Distribution is organized by regional or district distributors who link manufacturers with retail outlets. Rarely do distributors trade in pesticides alone. Instead, they may sell or act as distributors for other commodities such as cigarettes, soft drinks, baby foods, fertilizers, etc. The private dealers which are generally small shop keepers sell a wide variety of consumer goods. Limited capital restricts farmers and private dealers to purchasing small quantities, thus local inventories could be depleted during heavy use. Consequently, reliable transportation is essential to maintain regular supply from distributors to small retailers and farmers.

Frequently pesticides are found stacked along foodstuffs and other grocery items. This is potentially dangerous since some flour products have a high adsorption capacity. The technical assistance provided by RAP will help raise the awareness of the hazards of pesticides as well as train farmers concerning handling procedures and proper calibration of backpack sprayers.

Transportation Costs For Delivering Inputs

The major portion of the fertilizer and pesticide inputs is supplied by small businesses located throughout the region. Seed is also sold in the private sector; however, some specialized paddy varieties and seeds of other food crops are supplied primarily by the Department of Agriculture. For both sectors, reliable transportation is necessary to deliver supplies from Colombo to the North and East. Interviews with the Ceylon Fertilizer Corporation and two private sector distributors (A.Baur & Co. Ltd. and Haychem) indicated that sufficient quantities of technical material was available in Colombo to mix fertilizers and formulate pesticides recommended in the technological packages. Prior to the conflict, trucking costs from Colombo to Jaffna were charged at Rs.2000 per trip. Now that same haulage costs about Rs.6000-7000 per trip with one private fertilizer company reporting as high as Rs.10,000 per trip or Rs.1000 per ton of fertilizer. Transportation and the delivery of input supplies will gradually increase as security is maintained.

Land Preparation

The biggest constraint on agricultural recovery in the North and East may be the availability of traction power for land preparation. The biggest constraint to land preparation at present is the overall shortage of draught animals and the pattern of

ownership. Not all farmers own draught animals, but instead contract for their tillage needs with neighboring farmers. If the RAP is successful in initiating the grant disbursal prior to the onset of maha in October there is not adequate animal traction to prepare land in a timely manner. To correct this a long term private-sector reproduction and upgrading program should be initiated with improved stock. Using hand labor for land preparation is still a common practice, but labor may not be readily available this season. The RAP small business component will provide grants and loans for livestock breeding enterprises.

In some areas of the dry zone, the need for mechanized power for paddy cultivation is greatest where the water supply is unreliable and the timing of land preparation is critical. Where a reliable water supply exists, the use of tractor power has few advantages over draught animals which are more adaptable to small plots of paddy. Timing is no longer a factor where land preparation activities are independent of the timing of the rains. Where the water supply is inadequate and the storage tanks are empty at the start of the dry season, a combination of animal and mechanized power will be required to ensure that some land is prepared before the rains begin.

Current charges for land preparation are: 4 wheel tractor - Rs.900-1000 per acre; 2 wheel tractor - Rs.750 per acre; and water buffalo - Rs.250 per acre. The purchase of animal or mechanized traction by individual farmers will be encouraged under the loan programs funded by other donors. In the RAP, some consideration may be given to the purchase of 2 wheel tractors to be rented by the ASC's, but that decision should be a short-term strategy until more draft animals are acquired. Four wheel tractors have been lost during the strife, but will not be purchased under RAP. Care and maintenance of equipment is difficult and costly.

Irrigation and Water Supply

New crop production areas as well as increased yields can be expected from the rehabilitation investment in irrigation schemes and water management. Paddy and other food crops respond to improved water supply especially in areas such as Vavuniya, Mannar, and Kilinochchi where lack of water limits the area planted and the potential yields (Table 8).

Table 8

Effect of Irrigation on OFC Yields (Kgs/Ha)

Crops	Rain-fed	Irrigated	Percent Increase
Chillies	400	1,000	150
Cowpeas	700	1,500	114
Blackgram	800	1,500	88
Groundnuts	800	1,500	88
Greengram	600	1,000	67
Onions	7,000	10,000	43
Soybeans	1,500	2,000	33

Source: Ministry of Agriculture and Agroskills Ltd, Subsidiary Crops Production and Processing Project, 1987.

Credit

Rural credit is adequately discussed in the credit technical annex.

II. RAP Agricultural Components

The agricultural component will attempt to revive the agricultural economy in the Northern and Eastern Provinces by directly providing small farmers with combination cash/in-kind grant to increase their productivity and income-generating capacity to pre-conflict levels as quickly as possible. The correct use of agricultural inputs will stimulate productivity and generate financial surpluses that can be reinvested in agriculture so that farmers regain the economic base that allows them flexibility and prosperity.

1. RAP Agricultural Grants

The total affected farm families, estimated to be 140,000, will be eligible to receive a grant disbursement of Rs.2000 each. This grant will be given partially in-kind (60%) for agricultural inputs, and partially in cash (40%) for land preparation and hired labor to all eligible beneficiaries who qualify and are identified with an appropriate registration card. Direct grants are easier to administer than loans, are equitable to affected farmers no matter the income level, and can be quickly disbursed to accelerate the rehabilitation process.

The RAP grant will be disbursed in addition to an economic grant of Rs.2000 and a resettlement grant of Rs.2000 both financed by the GSL giving affected farmers a total of Rs.6000 each. The GSL grant will be given in-kind. This total combined grant is sufficient for cultivating two acres of paddy, or 0.5 acres of chillies, or 0.24 acres of onions, or one acre of vegetables/pulses or some combination of the above. Since the average size of land holding for post WWII settlement schemes is generally three acres (two acres of paddy and one acre of highland), this one time grant will be a sufficient stimulant to plant the most productive lands and apply the appropriate level of inputs as recommended in proven technological packages in order to produce a marketable surplus and build up some cash reserves.

In the Jaffna Peninsula where individual land holdings range from 0.125 - 0.25 acres each, the grants will be applied to intensive vegetable production, tobacco, grain legumes, pulses, etc. and also assist with the replacement of pumps that provide irrigation well water pumped from the shallow limestone aquifer. The actual area planted in Jaffna will be considerably less than in the other districts, but production costs, risks, and potential income are also considerably higher for the Jaffna farmer. The areas incorporated in Vavuniya and the Trincomalee region will follow the pattern suggested in the farming system models primarily planting paddy, maize, grain legumes, and other field crops. If the RAP can be implemented quickly and efficiently so that farmers have access to the needed inputs, tillage and labor in order to take advantage of the upcoming maha planting season which starts in October, affected farmers should be able to fully recover to prior production and economic levels in two or three cropping seasons.

The RAP grant funds will be assigned to each district based on work plans approved by the NRSC and the MORR and deposited in an account controlled by the GA in the District capital. The GA will authorize grant distribution to the AGA's and Grama Sevakas who will distribute cash or input vouchers through the local network of ASC's and ASC sub-offices to eligible farmers. The input vouchers can be used for purchase of fertilizers, pesticides, seeds, and small hand tools at the ASC's or from private business. The vouchers can be redeemed by the BOC, the Peoples Bank, or other financial institutions. Vouchers will also probably be exchanged or traded for other services, but this is uncontrollable and potentially beneficial to a depressed economy. The cash grants are intended for land preparation and hired labor, but will undoubtedly be used for household consumption and emergencies also.

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2. Overdue loans

USAID grants to the agricultural component must be complemented with a loan program that will be supplied by other donors (ADB and WB) and GSL in order to enable small farmers further access to credit. Most farmers will use the combined USAID and GSL grant as the sole mechanism to accelerate their economic recovery. Others will return to the informal channels of credit (i.e. traders, money lenders, shop owners, etc.) and a small portion of farmers will find that the proposed 9 percent interest rate a convenient mechanism to borrow for larger capital outlays such as hand tools, small tractors, animal traction, sprayers, etc. The RAP will also consider providing funding whereby 10 percent of the value of overdue loans or a maximum of Rs. 500 will be deposited in the participants account and the remaining 90 percent of the loan will be rescheduled enabling farmers to be eligible for a new production credit. Unindebted farmers would receive Rs.500 deposited in their savings account in order not to punish those that pay on time. Approximately 30-40 percent of the affected farmers are targeted for grant disbursal during the first year of implementation and the remaining portion spread out over the following two years of the project. The schedule or rate of grant disbursal can be readjusted to adapt to the efficiency of farmer registration, institutional capacity of the Agrarian Service Centers, and return to normalcy.

The formal credit channels represented by the TCCS's and the CRB's would not enable all farmers access to credit for the next maha season due to prior indebtedness, burdensome bureaucratic procedures, and non-membership in the thrifts. Utilizing other agricultural institutions such as the Agrarian Service Centers to administer and supervise loans would have little success since they have never functioned as a credit institution and would need substantial training and addition of personnel which adds considerable delay to realistic credit delivery. Consequently, the RAP will concentrate on agricultural grants to provide a quick infusion of capital and inputs to aid small farmer recovery and depend on other donors such as the ADB to supply additional loans at a equitable and justifiable interest rate. This approach allows a majority of the registered, affected farmers sufficient resources to exploit at least 75% of their land holdings as well as become eligible for additional loans available under accompanying rehabilitation schemes.

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While the bulk of the RAP agricultural component is designed for small farmer grants, a mechanism for allowing indebted farmers to reschedule their overdue loans and apply for new ones is provided.

Minimum Economic Unit

Farm Income

Crop budgets (Table 9) were prepared for the three representative farming systems to determine the size of a RAP grant necessary for affected farmers to return to profitable levels of production and income. Utilizing the generalized cropping systems, net family farm income of Rs.15.355 was calculated for Jaffna (intensive vegetables); Rs.8363 for Vavuniya (maha paddy, yala rain-fed crops); and Rs.16,160 for Trincomalee, Batticaloa, and Amparai (two crops of paddy and other food crops). Data for Jaffna and Trincomalee on cropping costs and benefits seem realistic. Those for Vavuniya seem less so. Both Jaffna and the Trincomalee model provided profitable incomes due to strong markets and high yields of the vegetables and the year round water supply that assures two crops of paddy and other food crops. The Vavuniya model illustrated the lowest net income since the water availability was adequate for only one crop during maha. Consequently, if the RAP and other donors intended to provide a one time grant of Rs.2000 to cover the inputs and expenses of one acre of paddy (estimated cost of production Rs.3000-4000 per acre), the farmers represented by the Vavuniya model could plant only a partial acre and expect an income that does not even reach the poverty level. On the other hand, if USAID grants are combined with GSL and other donors so that at least Rs.6000 each can be given to each farmer, then two acres of paddy or .5 acre of chillies or some combination of grain legumes or other rainfed crops could be planted greatly increasing his production and income potential. Full farmer recovery under the RAP is anticipated to be complete in two cropping cycles or one calendar year after disbursement of the original grant.

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Table 9

Farm Income and Cash Flow

Production Package	Season	Production Costs Rs/Acre	Yield Kg/Acre	Price Rs./Kg	Gross Return Per Acre	Net Income Per Acre	Farm Size (Acres)	Net Farm Income
Jaffna								
Chillies	Maha	13,500	1,000	50.0	50,000	36,500	0.25	9,125
Red Onions	Yala	26,837	5,000	9.0	45,000	18,136	0.25	4,540
Vegetable/ Pulses		3,000			6,000	3,000	0.25	750
Annual Income								15,355
Vavuniya								
Paddy	Maha	2,693	1,571	3.1	4,839	2,146	2.00	4,292
OFC								
Groundnut	Maha	2,800	813	10.8	8,808	6,008	0.50	3,004
Blackgram	Maha	962	328	9.5	3,097	2,135	0.50	1,067
Annual Income								8,363
Trincomalee, Batticaloa, Amparai								
Paddy	Maha	2,693	1,571	3.1	4,839	2,146	2.0	4,832
Paddy	Yala	2,681	1,425	3.4	4,788	2,107	1.0	2,107
OFC								
Maize	Maha	2,254	1,500	4.0	6,000	3,745	0.5	1,873
Groundnut	Maha	2,800	813	10.8	8,808	6,008	0.5	3,004
Gingerly	Yala	3,034	500	15.0	7,500	4,466	0.6	2,680
Grain legume (cowpea,blackgram)	Yala	945	345	14.8	5,106	4,161	0.4	1,664
Annual Income								16,160

Source: Department of Agriculture, 1986.

Technical Assistance

60 person months (13.5 PM expatriate and 26 PM local hire estimated to cost $630,000) of short term technical assistance and training will be financed by RAP. The technical assistance provided by RAP will include extension training to improve farmer efficiency at implementing recommended technological packages; baseline ecological monitoring of water quality and pesticide residues; integrated pest management and pesticide handling; and a series of special studies to analyze the rehabilitation process and assess the impact of grant funds and the rate of farmer recovery.

Short-Term Technical Assistance

Baseline Ecological Monitoring (6.5 PM expatriate; 6 PM local)

In order to monitor changes in environmental quality during project implementation, a baseline study will be provided by short-term technical assistance. Large and small irrigation systems should be monitored for changes in water quality especially pesticide residues. Initial wet and dry season samples should be analyzed from several surface and groundwater locations. Problem areas should be monitored more frequently. Samples should be analyzed for phosphates, nitrates, toxic chemicals, and oxygen. Chemical degradation rates on treated soils and crop plants should also be monitored.

Integrated Pest Management/Pesticide Training (4 PM expatriate; 4 PM local)

Integrated Pest Management (IPM) is an insect/disease management system, that compatibly uses all suitable techniques to limit pest populations below levels causing serious economic loss to crop plants. The basic methods of IPM to be included in training and short-term technical assistance are:P

- Biological control: e.g. enhancement and/or release of natural predators, pathogen application.

- Host resistance: selection of resistant plants and animals

- Cultural control: e.g. destruction of alternative hosts, crop rotation, and temporal avoidance.

- Physical control: Physical barriers to invasion.

- Autocidal insect control: sterile-male release, use of pheromones, attractants or repellents; use of growth regulators.

- Agrochemical applications used in conjunction with IPM.

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Special Studies

Case Study of Processes and Lessons Learned: (1.6 PM expatriate, 2 PM) local)

The processes of agricultural rehabilitation such as rate of recovery, rate of input application, incorporation of total farmland into cultivation, decisions on mix and selection of traction power, return to pre-conflict yields, income levels, markets, rate a transportation and small enterprise recovery will be documented. These lessons learned will serve as guidelines for future rehabilitation projects.

Monitor Harvest of Palmyrah:(1.6 PM expatriate, 2 PM local)

Reconstruction of damaged houses will require large amounts of building materials many of which are not locally available. Wood from palmyrah is currently used for house construction and could be harvested excessively since the source is close by (for Jaffna residents). Palmyrah harvesting will be monitored so as to avoid any risk to other sectors of the rural population that depend on toddy or specialized products for family income.

Project Monitoring (12 PM local)

Field level monitoring of input flows, utilization and assistance to personnel implementing the project will be provided during the first year of implementation from a local line agricultural professional.

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Implementation Schedule:

Table 10

Rate of Implementation and Anticipated Benefits

Outputs	FY'88	FY'89	FY'90	FY'91	Total
Farmer Grants					
Number (000)	--	56	42.2	37.8	140
Value (Mil US$)	--	3.71	3.07	2.52	9.3
Acreage added (000 acres)	--	37.2	30.6	25.2	93
10% Loan Buydown					
(Value/yr) (Mil US$)	--	.24	.23	.23	.70
Total Grants and Credit Buydown (Mil US$)	--	3.95	3.30	2.75	10
Technical Assistance and Training	--	.10	.15	.15	.40
Total Disbursements	--	4.05	3.45	2.90	10.40

Assumptions for disbursing: 1) registration system in place and beneficiary list finalized; 2) peace and security maintained.

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Financial Cost Estimate

Table 11

Cost Estimate: Agriculture

			Amount
Grant Component for Farmers			
140,000 farmers @ Rs.2000 each			9.3
10% buydown of overdue loans			0.7
Illustrative List (TA,Training, Special Studies			
	Person Months		
	Expat	SL	
ST TA Baseline Ecological Monitoring	6.5	6	0.148
ST TA IPM/Pesticide Training	4.0	4	0.092
Monitoring Project Implementation		12	0.012
Special study: Palmyrah Export Potential			
Special study: Case study of processes and lessons learned			
Special study: Monitor harvest of palmyrah for reconstruction materials			
Total TA for Special Studies	3.0	4	0.050
Total Person Months/Cost	13.5	26	0.302
Contingencies			0.500
TOTAL			10.802

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A. Introduction

1. Importance of Irrigation in Sri Lanka

The climate of Sri Lanka is tropical with mean monthly temperatures ranging from 76 deg.F to 83 deg.F, making it suitable for year round cropping. Rainfall varies considerably. The island can be divided into two distinct precipitation zones: the wet zone (average annual rainfall over 75 inches), situated in the South Western quadrant and covering about 30% of the land area, and the dry zone (average annual rainfall ranging from 35 to 75 inches) covering the remainder of the island. The wet zone benefits from both the Northeast (Maha) and Southwest (Yala) monsoons and permits double cropping of rice and field crops as well as perennials such as tea, rubber and coconut. In contrast, the dry zone receives most of its rainfall during Maha (October to March). This makes it necessary for supplemental irrigation during Maha and for almost complete irrigation during Yala (April to September).

2. Overview of Irrigation

Irrigation in Sri Lanka dates back to about 600 BC, when a series of village tanks for local rainwater storage were constructed in the North Central Province. Other tanks were constructed in other parts of the dry zone as well over the years. Owing to invasion, civil strife, malaria, etc., many of these tank schemes fell into disuse and were abandoned for several centuries. During the last century, many of them were restored and incorporated into new irrigation systems. In order to cope with this large network of irrigation works, a separate department, (the Irrigation Department), was established in 1900 to construct, maintain, and operate all irrigation schemes in the country. The pace of irrigation development increased rapidly thereafter. Currently over one million acres, throughout the island are irrigated and efforts are continuing to expand the irrigated area to meet the growing needs of the country's increasing population.

Irrigation in the wet zone is generally confined to run-of-river diversions to supplement rainfall. In the dry zone, rainfall is less dependable and highly variable and over 60% of the annual precipitation occurs during 3 months of the year. This necessitates storage reservoirs for sustained agriculture. The country has about 180 major tank schemes, each with a storage capacity in excess of 20 thousand acre feet, irrigating a total of about 408,000 acres. About the same area is commanded by some 2500 village irrigation schemes, known as minor schemes (each supporting 200 acres or less), of which about 60% are tank schemes and the rest diversion schemes.

Past irrigation development programs in the dry zone have also included river basin developments, such as the Gal Oya and Uda Walawe projects. The ongoing Mahaweli Ganga program envisages additional irrigation of about 900,000 acres of land both within the

Mahaweli basin, and in the neighboring dry zone, where excess water will be diverted by new or refurbished canals.

Rapid expansion of irrigation has been accompanied by a growing awareness that benefits from irrigation schemes are not fully realized. Attempts to improve performance have been limited by the physical characteristics of the schemes, their deterioration due to inadequate maintenance, and the perpetuation of out-of-date management. Increasing attention is now being given to rehabilitation, modernization and management of existing schemes rather than to the development of new projects. The USAID-funded Gal Oya Left Bank water management project was completed two years ago and the Irrigation Systems Management Project is in progress. World Bank funded rehabilitation of selected major and village (minor) irrigation rehabilitation projects are in progress. The Asian Development Bank is funding the ongoing rehabilitation of the Walawe right bank irrigation system.

3. Degeneration of Systems in North and East due to hostilities

Irrigated agriculture is the predominant economic activity and source of employment in the North and East of Sri Lanka. Approximately 120,000 farm families depend upon a combination of major, medium and minor gravity schemes for irrigating their crops while about 10,000 families depend on groundwater sources.

During the conflict, maintenance of irrigation systems in the affected areas declined dramatically. Many resident maintenance staff of the Irrigation Department left for safer areas while the remaining staff was largely immobilized because of dangers associated with travelling to and working on sites. The cumulative effect of total lack of operation and maintenance of the irrigation system during the five year period of hostilities is that the systems now work to only about 75% of their original capacity. Tank headworks, main and branch canals, distributory canals and field canals need extensive repairs. Tank bunds are generally overgrown with secondary vegetation. Upstream faces of embankments are badly eroded and need additional earthwork and riprap or other protection, while the downstream face needs additional earthwork and turfing wherever the embankment has suffered scour and earth slips. The main and branch canals are generally single banked contour canals intercepting cross drainages carrying silt and debris. It is estimated that annually an average of six inches of silt is removed from the problem areas of these canal beds. Owing to accumulation of silt in the canals during the hostility, at various places the banks have suffered damage due to overtopping by floods. Severe bank erosion has occurred, in particular at sharp bends in the canals. Some of the cross regulators and drop structures have suffered extensive downstream erosion and some have collapsed and need replacement. The control gates of outlet structures are of an outmoded design needing replacement by screw-type gates for proper control of water delivery. The distributory and field canals also need desilting, earth-filling, and repairs or replacement of structures. Some of these minor canals would normally have been maintained by farmers if they had cultivated their lands.

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In addition, there has been damage to an extensive salt water exclusion scheme for the lagoon in the Jaffna peninsula. Historically, this lagoon was salt or brackish water. However, projects undertaken by the Government prior to the conflict blocked off the outlets from the sea in order to make the water fresh. The purpose of this salt water exclusion scheme was to recharge the adjacent aquifer to enhance the groundwater supply which holds the key to agricultural enterprise within the peninsula in addition to meeting part of its domestic, municipal and industrial requirements.

B. Background

1. General Description of Project Area

The project area comprises eight districts in the Northern and Eastern provinces of Sri Lanka, namely: Jaffna, Kilinochchi, Mullaitivu, Vavuniya and Mannar in the Northern Province and Trincomalee, Batticaloa and Amparai in the Eastern Province. There are 77 major and medium scale irrigation schemes in the Northern Province and 42 in the Eastern Province irrigating about 192,000 and 164,000 acres respectively. These schemes are operated and maintained by the Irrigation Department through its range and divisional offices. In addition there are 2,208 minor irrigation schemes supporting 101,400 acres under anicut (diversion) schemes and village tanks maintained by the farmers and administered by the Department of Agrarian Services through its district offices. Each of these minor irrigation schemes command an area of less than 200 acres.

The project area lies within the dry zone of Sri Lanka. Its climate is characterized by distinct wet and dry seasons with an annual average rainfall of about 1300 mm (51 inches). Most of the precipitation is concentrated in October, November, December with considerable year to year variability. Extended droughts occur even during the rainy season necessitating supplemental irrigation. Owing to the unpredictability of rainfall, inter-basin diversion is effected for three major irrigation schemes in the project area. Giants Tank in the Northern Province is augmented from the Malwattu Oya. Kantalai tank and Maduru Oya Project in the Eastern Province are augmented from the Mahaweli Ganga.

Temperatures average about 28 deg.C varying from occasional lows of 17 deg.C in January - February to highs near 38 deg.C during June - September. Annual pan evaporation, which has a bearing on the consumptive crop use, varies between 61.4 and 70.7 inches. Evaporation is at a maximum in the months of June, July and August (6 to 8 inches per month) when rainfall is practically nil. The irrigation requirement is at its maximum during these months.

The project area on the whole is a flat terrain with gentle relief and contains major, medium and minor irrigation schemes spread all over the two provinces. The Jaffna peninsula, which contains no irrigation tanks, is very flat and only 2-9 meters above mean sea level.

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2. Agencies Involved in Rehabilitation

Within the GSL the Ministry of Rehabilitation and Reconstruction (MORR) has overall responsibility for all rehabilitation works. Responsibility for major irrigation rehabilitation lies with the Ministry of Lands and Land Development (MLLD) through the Irrigation Department (ID). Ground water investigation and monitoring is carried out by the Water Resources Board established in 1964 under the MLLD.

The Department of Agrarian Services (DAS), which comes under the Ministry of Agricultural Development and Research, is responsible for all minor irrigation works. Investigation, design, and rehabilitation of minor irrigation schemes are carried out by the Irrigation Department at the request of the DAS and are then handed over to DAS for operation. Farmers maintain these schemes under the administrative control of the DAS.

3. How Agencies work (generally) and interact

Coordination of all rehabilitation works is carried out by MORR through two inter-agency committees: a National Rehabilitation Steering Committee (NRSC) at the policy level, and a District Rehabilitation Coordinating Committee (DRCC) in consultation with the DD/I at the working level. All ministries and departments involved in the planning and implementation of rehabilitation works are represented on these committees. The prioritization of irrigation projects for rehabilitation is decided by the DRCC in consultation with the DD/I and implemented through the respective range and divisional irrigation offices. NRSC has specific responsibility for coordination and monitoring of project activities.

C. Administrative Analysis

1. Ministry of Lands and Land Development (MLLD)

The Ministry of Lands and Land Development (MLLD) is responsible, outside the area administrated by the Mahaweli Authority, for irrigation development through the Irrigation Department, land settlement and administration through the Land Commissioner's Department, and forestry matters including catchment management through the Forestry Department. This ministry is also responsible for all land surveys of the country through the Survey Department. The Water Resources Board, State Timber Corporation, Reclamation Board and State Development and Construction Corporation are statutory bodies incorporated by act of parliament and function directly under the MLLD.

2. Irrigation Department

The Irrigation Department (ID) is responsible for all irrigation and drainage development outside the areas vested with Mahaweli

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Authority and for the operation and maintenance of all schemes over 200 acres in extent. In addition to works financed under its own budget, it is also responsible for implementing irrigation under the decentralized development budget and the district rural development program. ID was established in 1900 and has considerable experience in irrigation work. It has a highly qualified staff of engineers, scientists, administrators and supporting technical and clerical staff.

The approval of contracts under the Rehabilitation Assistance Program (RAP) will be as follows:

(a) Contracts above Rs.5 million are approved by a cabinet appointed tender board.

(b) Contracts of Rs.2 to 5 million are approved by an MLLD tender board which includes a representative from MORR or NRSC.

(c) Contracts of Rs.1 to 2 million are approved by an ID tender board.

(d) Contracts of Rs.300,000 to Rs.1 million are approved by a range tender board.

(e) Contracts up to Rs.300,000 shall be approved by a divisional tender board.

A bidding procedure will apply to all contracts except in circumstances where it is advantageous to award several small scale contracts (SSC) of value not exceeding Rs.300,000 each. This applies to the execution of works of a repetitive nature, simultaneously on a large scale, such as in the rehabilitation of distributory and field channels. In such cases, rate quotations are invited from small scale contractors who are registered in the divisional offices for specific items of work such as shrub clearing, earthwork, concrete, etc. The lowest acceptable unit rate is recommended by the divisional tender board from the quotations received and these rates shall apply for all SSCs for a reasonable period of time. Thereafter the process is repeated. It is estimated that the bulk of work on RAP will be in categories (d) and (e) above and would be contracted out to small and medium scale contractors registered with each range or division.

Rehabilitation work will be coordinated and monitored by NRSC and DRCC in addition to the technical control exercised by the Irrigation Head Office in Colombo and the MLLD.

3. Water Resources Board

The Water Resources Board (WRB) is a state corporation under the MLLD. Its activities are related to ground water exploration and exploitation. It provides service to both Government and private organizations and individuals. WRB has its headquarters in Colombo and branch offices in Anuradhapura, Puttalam, Tangalle and Jaffna.

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Since its inception in 1964, this organization has conducted ground water studies in several parts of the country. In particular, its records of investigations of water quality and quantity in the Jaffna peninsula from 1965 onwards will be of great importance for the proposed feasibility studies on the Jaffna lagoon scheme under RAP.

4. Department of Agrarian Services

The Department of Agrarian Services (DAS) is a department in the Ministry of Agricultural Development and Research. The DAS is responsible for a wide range of activities concerned with agrarian management, servicing of farmers, coordination of government agencies and increasing agricultural productivity. It maintains a network of 536 Agrarian Service Centers throughout the country, of which 86 are in the North and East. They are organized on a district basis under the direction of an Assistant Commissioner. In addition each ASC supervises between 10 and 40 cultivation officers who live in agricultural villages.

The DAS is in overall charge of all minor (less than 200 acres) irrigation works. Agents organize cultivation meetings in association with the farmers and promote the implementation of agreed cultivation timetables. In addition, DAS employs a staff of technical officers whose responsibilities have been largely confined to minor construction and repair of irrigation works. All works on investigation, design and construction of DAS operated irrigation systems are carried out by the Irrigation Department.

D. Analysis of Other Rehabilitation Projects

1. Major Irrigation Rehabilitation Project (MIRP)

The MIRP, with the assistance of the World Bank, is to increase agricultural production under selected major irrigation schemes and to introduce an effective program for their integrated management through:

- . Rehabilitation of the systems for optimum utilization of available water, and

- ensure proper operation and maintenance and distribution of irrigation supplies and the complementary programming of agricultural activities and inputs.

The major components of the physical rehabilitation are:

- repairing damaged structures, remodelling these for increased discharge, wherever necessary, and additional control devices

- Construction of new structures for distribution of supplies or for metering the flow

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- raising canal banks to provide freeboard at revised discharges, strengthening the banks wherever they lack safety, enlarging channel section wherever tight, providing erosion protection in vulnerable reaches; and canal lining in extra pervious formations.

- reservoir headwork strengthening, feeder channel improvement, and facilities for improved operation and control.

- Construction of drains and metering stations to determine return flow.

In essence, the scope of rehabilitation is to refurbish an outmoded and degenerated distribution system by constructing effective control and measurement devices to ensure economy and equity in water use. This work includes extensive topographic surveys along existing canal traces and redesign of the entire distribution system.

2. Village Irrigation Rehabilitation Project (VIRP)

VIRP schemes are minor schemes commanding less than 200 acres. Most of these have been restored from ancient abandoned tanks by cultivators with limited Government funding for headworks and sluices. At the time of restoration there was very little information on catchment hydrology. The tank headworks comprise junction block - type sluices and earthen embankments incorporating the ancient bund and natural channel spillways at one end of the embankment. Cultivators built the canal system from their own resources. Under current water management practices, water is usually allowed to flow from field to field with few control structures, limited field channel development and head sluices that can seldom be operated systematically in relation to rainfall or irrigation needs. Thus these systems remain well below their potential, and cultivators have increasingly allocated their efforts and resources to Chena (slash-and-burn) cultivation. The government is actively seeking to discourage chena and re-establish tank-based agriculture.

Essential technical features of VIRP, as assisted by the World Bank, are:

- investigation and design of the tank bund (including remodelling and/or raising), spillway, sluice and canal system;

- construction of tank bund to the designed section; protective turfing for the rebuilt portions of the tank bund; and graveling of embankments to be used as maintenance roads;

- remodelling of the spillway and the provision of a crest well;

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- replacement of junction block-type sluices with tower-type sluices using pre-cast vertical pipes and screw-type cast iron gates;

- alignment of canal system, desilting, resectioning and improving the supply channels and the rehabilitation or provision, as appropriate, of control structures, drainage works, turnout structures and measuring devices.

3. Irrigation Systems Management Project (ISMP)

One of the objectives of the USAID supported ISM Project is to establish the viability of low-cost effective means for physical upgrading/rehabilitation of existing systems. Its main aim is to use low-technology, labor intensive construction techniques to effect essential structural improvement. Main items of improvement are:

- embankment stabilization
- installation of regulators
- desilting
- replacing gates
- installing measuring devices
- repairing, replacing and protecting structures
- farmer amenities such as tractor crossings, washing steps, buffalo baths etc.
- establishing farmer organizations for local
- maintenance and management of the irrigation system

4. Water Management (Gal Oya) Project

This project was completed two years ago with assistance from USAID. In this project it was decided to adopt a pragmatic method of system rehabilitation. Only essential improvements to facilitate proper system operation were carried out. Items of work were the same as in the ongoing ISMP except that the estimated pro rata cost of rehabilitation in Gal Oya was higher--Rs.2500 per acre compared to Rs.1800 for ISMP. This was because Gal Oya was in a badly deteriorated state. Further, the canals in Gal Oya are in more erodible soil which required additional silt removal and embankment stabilization.

Both ISMP and Gal Oya (Water management) Project are aimed at providing minimal physical improvements to the irrigation systems and thereafter nursing and nurturing them on a sustained renewal basis with active farmer participation.

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E. Technical Analysis

1. Scope of Restoration

The irrigation component of RAP will be confined to the eight affected Districts of the North and East. During the design of RAP it was mutually agreed that the project would be extended to as many major irrigation schemes as possible. There are 190,000 ac. in major and intermediate size irrigation schemes administered by the Irrigation Department (ID) in these Districts, excluding the Gal Oya and MIRP schemes which are currently assisted by other rehabilitation programs. Some areas will not be able to participate in the assistance program for various reasons --i.e. security problems, failing to meet selection criteria, little need for rehabilitation, etc. It has therefore been determined that the RAP will provide assistance to 95,000 ac of major and medium projects. In addition, as originally planned, the assistance provided under the RAP will be extended to 6000 ac of minor irrigation schemes, excluding those covered by VIRP. The minor schemes are administered by the Agrarian Services Department (DAS) but designed and constructed by the ID. A summary of irrigated areas by major and minor schemes in the eight affected Districts can be seen at Annexure II.

It is the purpose of the RAP irrigation component to implement, as quickly as possible, the minimum necessary works to restore the systems to full operational capability. This concept of full operation covers somewhat more than the repair of damages sustained due to the hostilities as many systems were not in good condition prior to the conflict. The intent is to provide returning farmers with an effective irrigation system to facilitate their return to normalcy. The average pro rata minimum cost of accomplishing full operation has been determined to be Rs.2000 per acre for the major and medium projects based on the experiences of USAID Water Management and ISMP. It should also be noted that the cost of Rs.2000 ac is an average figure for the entire area and it is not expected that each scheme will require this exact amount for rehabilitation. A Sample Cost Estimate of the 4134 acre Pavatkulam irrigation scheme can be seen at Annexure III. It will also be necessary to carry out some emergency repairs early on in the project to restore basic operational capability to many of the irrigation schemes. Some irrigation schemes will cost less and some will cost more. These aspects are discussed in more detail in the following paragraphs.

2. Levels of Intensity of Rehabilitation

The rehabilitation of irrigation schemes, as practiced by the ID in Sri Lanka, is the restoration and improvement of the physical components and the management capability of the scheme to a desired level of operational ability and system maintainability. As such, there are various degrees or levels to which rehabilitation can be accomplished. A number of different approaches to management and rehabilitation have been employed and tested in various donor

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assisted projects. The costs of these improvements have been expressed in per acre terms. The options range from the minimum structural renovation to achieve full operation and system stability to a maximum amount of structural reconstruction and modernization with inclusion of a high level of management technology and improved farmer organization. The ultimate degree of system rehabilitation to complete automation and computerization has not yet been introduced in the country and is probably not practical at this stage.

The minimum essential levels of irrigation system rehabilitation have been initiated by the ID in association with USAID through the Irrigation Systems Management Project (ISMP) and the Gal Oya Water Management Project. These methods of rehabilitation, termed as Essential Structural Improvement (ESI) as employed on the ISMP and the pragmatic approach as practiced in Gal Oya Project, vary only slightly in their treatment of structural improvements. At current pricing levels these rehabilitation measures will vary from Rs.2000/ac to Rs.3000/ac. A further option involving a substantially higher expenditure of about Rs.6000/ac to Rs.10,000/ac is already built into the World Bank funded Major Irrigation Rehabilitation and Village Irrigation Rehabilitation Projects. It is estimated that the ESI approach can raise cropping intensities from an average pre-hostility level of 135% to an average of 145% while average cropping intensity of 160% could be reached with the more management oriented approach used on the MIRP & VIRP schemes.

In the RAP, the irrigation component is intended to provide the minimum necessary to restore the systems to full operation based on the experiences of the USAID Water Management and ISM Projects. Under the ESI approach that has been adopted for implementing rehabilitation under the RAP, it has been determined that the general overall pro rata cost should be Rs.2000 per acre for the major and medium schemes and Rs.4000 per acre for the minor schemes. This is comparable to costs of rehabilitation that have been incurred on other USAID projects as applied to RAP conditions and omits measures that have been included for the purpose of improved management techniques. It is believed that these rates of Rs.2000 and Rs.4000 per acre will extend the benefits of rehabilitation to as many irrigation schemes as possible in the affected area.

3. Variability in Restoration Measures

The measures required for rehabilitation will vary between individual irrigation schemes. One project may require extensive repair work on the headworks while another may only need minor rehabilitation measures. The pro rata costs for headworks generally tend to be higher for smaller tanks while the reverse is usually true for rehabilitation of the distribution system. The cost of access roads will vary considerably from one scheme to another depending upon their proximity to the major road network. Major irrigation schemes generally have lower average per acre cost than the smaller projects for the same level of rehabilitation. This

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has been reflected in the increased cost of Rs.4000 per acre that has been determined for minor irrigation schemes.

A provision has therefore been provided whereby the standard rate per acre can be adjusted upward for irrigation schemes with high proportionate costs. However, for an increase in the standard rate to be allowed there should also be schemes proposed with an equivalent decrease in the rate. Therefore an increase in the standard rate can be approved when a request is made by the DD/I (or the D/I if different Ranges are involved). The request is submitted to the USAID representative under the ACR system, provided that project(s) with equivalent reductions are agreed to in the request.

4. Initial Renovation Scheme

An initial renovation scheme will be instituted early in the irrigation rehabilitation program, using a portion of the standard per acre rate in order to, in as short a time as possible, perform emergency measures to return all inoperable or poorly operating irrigation schemes to a usable condition. This program would quickly benefit all farmers who are returning to active agricultural pursuits. They would then be able to return to full production as the program proceeds to systematically rehabilitate the remaining tank schemes over the four year life of the RAP.

The work carried out under the initial renovation program would include mainly channel "clean-out" and repair of non functioning structures. It is estimated that the cost of this initial renovation will average approximately Rs.300 per acre. Other work of a non-emergency nature would be deferred for implementation under the regular rehabilitation program.

5. Nature of Rehabilitation

a. Gravity Irrigation Systems

The type of work proposed in the overall rehabilitation of gravity irrigation systems falls into three categories: (i) the headworks, which includes necessary repair to the tank bund and its appurtenances, or in the case of river diversion schemes, the anicut structure, (ii) the canal network, which includes all of the delivery canals and the structures required for its operations, and (iii) the access roads.

In the RAP the major emphasis will be placed on rehabilitation of the canal system with restoration of only those features of the headworks and access roads which are absolutely required for satisfactory operation and safety of the system. No works will be done on field channels as farmers are to maintain these themselves.

(1) Headworks

Repairs and reconstruction of the structural facilities that

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make up the headworks of an irrigation tank or anicut scheme in the RAP will be limited to those measures that are essential to preserve the integrity of the structure or that are absolutely necessary for the operation and maintenance of the irrigation system. Rehabilitation of sluice gates should be carried out only to the extent necessary to ensure continued operation. Repair to downstream outlet structures and the spillway and placement of upstream embankment protection by rock pitching should only be carried out if the safety of the structure is in jeopardy. Restoration of the earth embankment and maintenance roadway should be considered, only if absolutely necessary. In some cases the catchment area of tanks may have deforested nonagricultural land and the Ministry of Forestry should initiate a reforestation program for these areas.

(2) Canal System

(a) Earthwork

The removal of accumulations of silt deposits and the removal of excessive growth of grass, weeds and shrubs from the canal banks, which have become detrimental due to four to five years of neglect, will be an essential measure required for rehabilitation of irrigation in the North and East. Reforming of canal bunds which have deteriorated during the conflict will require earthwork in some reaches. In the ESI approach, canal bunds will not necessarily be reshaped to their original cross section but will be restored to the extent necessary to ensure stability.

This work,in conjunction with other necessary emergency type repairs, will need to be carried out early on all projects as a measure to bring them back to basic operating status. An extensive program to implement this type of work on as many irrigation schemes as possible, as soon as possible, will be required to achieve a widespread return to irrigated agriculture in the affected area. It is expected that the overall cost of these desilting and jungle clearing works will average Rs. 300 per acre.

(b) Structures

Most common among essential repairs of structures needed to restore irrigation canals to operational capability and structural stability are protection against downstream scour, prevention of bank erosion at curves, measures to control the water surface at full supply level (FSL), and the renovation of the rundown condition of gated outlet structures. Scour of the banks immediately below control or drop facilities in the canal is the most common cause of structural failure. The five year hiatus in maintenance has placed many canal structure in jeopardy. Repair is normally accomplished by extending the downstream wingwalls or the placement of rubble packing (rock riprap). Canal banks on the outside of curves in the alignment are subject to heavier forces of flowing water and at many locations the accumulated erosion at these critical locations is endangering the embankment. Methods of protection commonly used are rubble masonry retaining walls or hand placed rubble packing. Each

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type of protection needs to be properly keyed into the bottom of the canal to prevent undercutting. Although retaining walls are preferred by many engineers, the rubble packing is less expensive if a source of rock is nearby and is recommended for use in the RAP. Rock riprap or rubble packing can be placed to form either a smooth or rough surface. It is recommended that horizontal placement of large stones to form a rough exterior surface be used. The rough surface tends to reduce the velocities adjacent to the rock slope and prevents scour of the canal bottom at the base of the rubble packing.

Irrigation canals under most circumstances become wider due to their natural tendency to form a parabolic shaped cross section and this is accelerated by the accumulation of silt in the canal. The ESI program does not provide adequate funds to restore irrigation canals to their original cross section, so they will remain wide. This condition lowers the FSL which will cause the design flow at take-off points to be reduced. To prevent this from occurring it often becomes necessary to revise or reconstruct cross-regulators in the canal. These water surface control measures should be incorporated into an existing structure wherever possible to eliminate the need to adopt another structure in the canal system.

Outlet gates are always a weak link in the canal system. Inexpensive designs seldom seem to function properly; they generally leak badly and are easy for irrigators to tamper with. They are quite often broken and must receive constant attention for proper operation of the system. The cast iron screw type gate, which is now being installed by the ID in their irrigation schemes, presents the best solution to the above problems and is recommended for renovation of all outlet gates except for those handling very small flows (less than one cusec.) The ID has developed a method of rehabilitating existing outlet structures to facilitate the installation of cast iron gates and continuation of this procedure is suggested.

The rehabilitation of other structural measures in the canal system will also need to be carried out in an efficient manner to keep the pro rata cost at the ESI level. Other required repairs may include; (i) the raising of existing structure walls to obtain adequate freeboard, (ii) rebuilding and restoration of canal banks for adequate cross section and essential access, and (iii) renovation of bridge crossings, if fully justified as an essential measure. Other commonly implemented structures under rehabilitation, such as buffalo baths, steps for clothes washing and desilting basins, would certainly enhance and improve the canal system, but would not normally be considered as essential for satisfactory operation. An example of where steps for clothes washing would be justified is when they also serve as an inlet for accumulated surface drainage into the canal. The combining of structures to facilitate multiple purpose use such as for regulation of the FSL or inclusion of a water measurement device should be practiced wherever possible.

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(3) Access Roads

The length of access roads necessary for the various irrigation schemes will differ considerably from one project to another. Some smaller projects located near major roads may not require any work in this category while other projects which are far removed from the road network will need substantial input if the condition of the access road has been allowed to deteriorate to an unusable condition. Access roads that require renovation should have a minimum width of 12 ft with a suitable gravel surface which will be crowned for satisfactory drainage. The roadsides should be graded for drainage to the nearest outlet. The standards of the ID for access roads are satisfactory and should be followed for the rehabilitation of access roads, where necessary.

b. Jaffna Lagoons

This proposed project sub-component is for the purpose of repairing sluice gates and rehabilitating flood bunds and structures in the Jaffna Lagoon salt water exclusion areas. This is a large and complex groundwater recharge scheme which requires extensive rehabilitation and improvement. The equivalent amount of Rs.21 million as provided by RAP can only accomplish rudimentary repairs required to restore the original capability to exclude salt water from the lagoons.

The Thondamannar gated barrage is situated on the Western terminus of the 45 km long, 3.3 km wide Vadamaradchchi Lagoon. This lagoon is located on the Northeastern edge of the Jaffna peninsula and has a surface area of 14,900 ha and an average depth of 1.2 meters. The eastern end was connected with a link canal to Elephant Pass Lagoon which is on the mainland and has a sizable (580 sq km) catchment area. The Elephant Pass lagoon was closed to the Jaffna lagoon by the Elephant Pass causeway on the west and to the sea by the Eastern Closure. This combined system was intended to provide more fresh water storage volume to accommodate the large runoff which flows into the Elephant Pass Lagoon.

The eastern closure, which is 3.2 km. in length, was breached during the 1969 flood and has remained only partially effective. Inadequate installation, lack of maintenance and poor operating procedures are reported to have resulted in leakage and inefficient use of the Thondamannar barrage. It has also been reported that attempts have been made to block the gates open to perpetuate the salt water fisheries potential of the lagoon. The link canal between the two lagoons collapsed during and shortly after construction in 1963 and has never been used effectively.

Because of the complex physical and ecological interrelationships, the large area covered, and the controversial nature of this salt water exclusion scheme, a study has been proposed to investigate the feasibility and environmental consequences during the early portion of the RAP. If the results of the study are positive and all adverse environmental consequences

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can be mitigated, the work will be funded and construction of rehabilitation measures will take place during the latter years of the project. This study will include a full environmental assessment. If this assessment determines that significant adverse environmental consequences cannot be mitigated, then no further work on the lagoons will take place.

2. Complementary Project Components

a. Training

The RAP training component will include in-country short term training. The basic objective of this element of the project is to produce trained personnel and farm leaders to improve water management practices and operations and maintenance management procedures. The training will be for Irrigation Engineers (IE), Technical Assistants (TA), work supervisors and farmer leaders on water management techniques and farmer organization skills. Most of the training will take place at the Galgamuwa Irrigation and Training Institute (GITI). The GITI is a training facility under the MLLD located about 80 miles northeast of Colombo on the western Kurunagala-Anuradhapura road.

The total training program is budgeted at $100,000. The GSL will contribute $ 50,000 for domestic transportation, in-country per diem and honoraria. Approximately 200 GSL personnel of the ID and 400 farm leaders will be trained in water management and O&M skills.

b. Technical Assistance

The irrigation component will require technical assistance (TA) to work closely with the ID to assure that completed work meets agreed upon plans and specifications and to certify them for reimbursement. The TA team will also provide assistance as required to ID, USAID and the feasibility/environmental assessment study team on the proposed rehabilitation of the Jaffna lagoon salt water exclusion scheme. The long-term technical assistance will be provided by two Sri Lankan engineers who should have a minimum of 5 years of professional experience and be familiar with the policies, administration and contracting procedure of the ID. They will be retained for the full four years of the project.

It is envisaged that both local-hire and expatriate short-term consultancies will be needed in a number of fields of expertise including small dam construction and repair, irrigation structures, stream bank protection, water and systems management and hydrogeology. Seven person months of this STTA will be provided.

The STTA team which will study the feasibility of the Jaffna lagoons salt water exclusion scheme should include the technical disciplines of civil engineering, agronomy, ecology and environmental analysis, social and economic analysis, and hydrogeology. Ten person months of expatriate and Sri Lankan TA will be needed for this task.

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Three 4-W drive vehicles and office equipment will be provided as commodities. Administrative and clerical staff will be furnished under the overall project. Drivers and minor staff will be provided by GSL at its expense.

C. Commodities

Included in commodities to be purchased under the RAP are (i) vehicles and survey equipment, (ii) plant and machinery and (iii) communications and office equipment. The purchase of the items is intended to assist in the replacement of items that were either lost, damaged, stolen or cannibalized in the eight project districts during the five years of the conflict. The acquisition of this equipment and materials is essential for restoring the normal activities of the ID in the affected districts.

The 4-W drive vehicles for transportation of ID staff to the work sites need to be procured quickly as they will be urgently needed to initiate productive implementation of the Project. Rapid procurement of survey equipment will also be vital for starting up the project work. It is recommended, therefore, that early procurement be expedited for 4-W drive vehicles and survey equipment. Other equipment under the heading of vehicles includes farm tractors and trailers, lorries, motorcycles and miscellaneous complementary equipment. Approximately 15 vehicles (4-W drive), 15 farm tractors, 8 lorries and 20 survey sets have been budgeted in this item. The budget allotted for these commodities is $800,000. It may be necessary for the ID to assign vehicles and office equipment from their existing inventory to facilitate early implementation and later replace these items with the newly acquired equipment when it arrives.

To assist the ID in replacing plant and machinery items lost during the hostilities an amount of $600,000 has been provided. The ID has estimated their total loss of these items to be $2,450,000, of which about 85% is in the eight RAP Districts. This would include generators, water pumps, vibrating rollers, dumps trucks, bulldozers, excavators, cement mixers and other construction equipment. Since construction works on the RAP will be done primarily by private local contractors, the need to replace heavy machinery is not urgent for project purposes as the vehicles and equipment listed above.

Damages to communication facilities is primarily in the area of telephones and transceivers. Office equipment losses include typewriters, photocopying machines, calculators, and even four steel safes. An amount of $200,000 has been allocated to assist the ID in replacing this equipment.

The total budget allocated for commodities is $1,600,000 for AID and $50,000 for the GSL for handling charges.

F. Implementation Plan

The implementation plan for the irrigation component will be coordinated with those of the other three major elements (housing, small business and agriculture) of the RAP and included in Section V (Implementation Plan). The primary players in the implementation of the irrigation component are the ID, DAS, NRSC, DRCCS and USAID, assisted by the TA team. A major approval, coordination and monitoring role will be played by the NRSC and the DRCCs.

To comply with the effort to set the RAP into motion quickly, the implementation plan for irrigation activities includes early mobilization of the TA team and the procurement of commodities. In order to get as many irrigation schemes that have suffered undue degradation during the conflict back into a basic operation capability quickly, an Initial Renovation plan has been scheduled to be implemented in the first 15 months of the project.

Implementation of the rehabilitation of the irrigation schemes takes into account the fact that construction activities must take place during the periods when the canals are shut down between cropping seasons. These shut-down periods are normally about two months in length during the months of Feb-March and Aug-Sept. During the Yala cropping seasons a variable portion of the command area is irrigated depending on the reservoir storage that is available for the dry season. Irrigation is confined to that portion, with the farmers sharing the land. During this period the unirrigated areas will be available for construction activity. There are a few rehabilitation activities that can be accomplished during the period when water is running in the canals, such as drainage construction, canal bund restructuring and tank spillway renovation. Because of the time limitations an effort needs to be made to carry out these construction jobs during the cropping season (See Annexure IV).

1. Role of the Irrigation Department

The implementing agency for the rehabilitation of major, medium and minor tanks and for the Jaffna lagoons will be the ID. The ID will prepare implementation plans for each irrigation scheme (subproject), and carry out the design, contracting and construction of the rehabilitation works.

The ID staff in the eight Districts of the North and East is nearly at full complement and it will not be difficult to fill the few vacancies when the area returns to normal conditions. The clerical staff has the most vacancies and the ID is confident that this lacuna will be easily overcome with the advent of peace in the area. The technicians of the ID are well trained and competent and the D/I feels that the Department will have no trouble in handling the work load brought about by the RAP. The design team agrees with his assessment.

The DD/I's from the five Ranges in the North and East have been queried in regard to the capability and availability of contractors to perform the work that will be generated by the RAP. Each DD/I maintains a list of registered contractors which were submitted for examination. Most of the contracts executed for RAP work will be small. The list of registered contractors qualified for the small jobs is very lengthy for each of the ranges. The team was assured that most of these contractors will be available for work and that there will be no shortage of qualified contractors

2. The Role of USAID

USAID, as the primary funding agency, will establish criteria, provide technical assistance and monitor the implementation process. The implementation will be carried out in accordance with ACR procedures for disbursement of funds.

The Office of Engineering and Water Resources, USAID/Colombo will assign an engineer with responsibility for RAP. With the assistance of the TA team, USAID will review and approve annual work plans prepared by the ID, subproject plans including locations , designs, specifications, cost standards, total costs and implementation schedules. USAID will review these plans from the standpoint of sound design, accurate costing and appropriate implementation arrangements prior to giving final approval. The final inspection and certification of satisfactory completion of irrigation schemes will be performed jointly with the TA and ID engineers. The USAID engineer may also participate in final inspections from time to time.

3. Selection Criteria

Irrigation rehabilitation under RAP is intended to improve the irrigation systems where full benefits are not being obtained as a result of system degeneration during hostilities. Only those sub-projects which have not been adequately maintained during hostilities and consequently are functioning below capacity should be considered for rehabilitation. As far as possible, all sub-projects should be equitabily distributed among the affected districts to benefit an aggregate extent of 95,000 acres under major and medium schemes and 6,000 acres under minor schemes. Criteria for selection should be based on the following:

a. Maximum beneficiaries for a given area

b. Schemes providing greatest returns on investments

c. Schemes with substantial acreage under diversified cropping

d. Sub-projects needing least time to rehabilitate.

e. Farmers organized to undertake earthwork on field channels

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4. Implementation Schedule

The proposed implementation schedule is shown in Annexure IV which portrays how the various irrigation components will be carried out over the four-year life of the project. Included are schedules for (i) technical assistance, (ii) training, (iii) procurement of commodities and (iv) rehabilitation planning and construction. The schedule for the planning and construction of rehabilitation works separates out the activities to be carried out under the Initial Renovation program because of its importance in quickly returning the irrigation schemes in the affected areas back to an operational capability.

5. Reimbursement Considerations

All systems improvement and rehabilitation will entail local currency expenditure financed retroactively by USAID through the Percentage of Actual Cost Reimbursement (PACR) method. USAID will administer the overall implementation of the PACR system of funding through its mission in Colombo. The Chief, Office of Engineering and Water Resources, USAID/Colombo will assign an engineer with responsibility for the RAP. The project will be managed so as to meet the requirements of the PACR system.

USAID will be assisted by the full time Sri Lankan TA engineers in supervising the implementation of the program for rehabilitation of the irrigation infrastructure and administering the PACR system of disbursement of funds. The local engineers will have responsibility for review and approval of the implementation plans and for inspection and certification of the construction. The USAID engineer will have overall supervision of this work.

An annual construction work plan will be submitted to USAID by the ID through the NRSC. The workplan will provide general information on each of the subprojects, including location, selection determinations, general description of the works, cost estimates and implementation schedules. USAID, assisted by the TA team, will review the work plan prior to giving final approval. Annually, USAID, assisted by the TA team, will review the past year's construction and assess progress in view of the workplans for construction. Final inspection and certification of the satisfactory completion of each subproject will be performed by the ID. The ID will inform the MRR about the subprojects certified as being satisfactorily completed and MRR in turn will inform AID and request reimbursement. The TA engineers will inspect the completed works on a sample basis as a check.

G. Cost Estimate of Irrigation

The total cost of the rehabilitation of 95,000 ac of irrigated land in the North and East is estimated to be $11.8 million. Of this amount, $9.8 million (83.0%) will be provided by USAID as a grant and $2.0 million (17.0%) will be borne by GSL.

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The cost allowed for the construction for rehabilitation of major, medium and minor irrigation schemes is $7.68 million or 78% of USAID's commitment. An amount of $2.17 million has been included in the cost estimate for restored capacity of the ID in the areas of training of staff, replacement of commodities and technical assistance. A Table showing a summarized listing of these cost estimates can be seen below.

COST ESTIMATE ($000's)

(Irrigation Component)

ITEM	GSL	AID(GRANT)	TOTAL
1. Rehabilitation/Construction	600	7,684	8,284
2. Technical Assistance		470	470
3. Commodities	50	1,600	1,650
4. Training	50	100	150
5. Personnel (Recurrent Costs)	1,300	--	1,300
Total	2,000	9,854	11,854

A more detailed estimate of project expenditures itemized by calender year for each of the irrigation components is contained in Annexure V.

H. Results of Rehabilitation

The irrigation component will rehabilitate 101,000 ac of major, medium and minor tank schemes during its four year life. The RAP team has determined that the average prehostility cropping intensity for irrigation projects in the affected areas was at the level of 135% and that in recent years that average has decreased to a figure of 105%. The team estimated that improved delivery of irrigation water after rehabilitation would cause the average cropping intensity to rise to 145%. It is estimated that 28,000 farm families in the major and medium schemes and 4,000 families in the minor schemes will benefit from RAP.

Average crop yields for paddy declined during the hostilities from about 70 bushels per acre (National average) to about 66 bushels per acre. If we assume that, by completion of the project, yields will have returned to the prehostility level and that the average price of paddy will be around

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Rs 3.50 per kilogram, the annual returns will be Rs.52 million over the prehostility returns and Rs.238 million over those during the distressed conditions resulting from the conflict. These figures are shown in Annexure I.

In addition, the quality and effectiveness of the ID will have been enhanced. Training will have been provided to approximately 200 GSL personnel and 400 farmer leaders, resulting in improved water management practices and more effective operations and maintenance procedures. The ID will have returned to normal operating capabilities through assistance in replacing vehicles, plant and machinery (heavy equipment), and equipment for surveying, power, communications, and office operations that have been lost or damaged due to the hostilities.

ANNEXURE I

BENEFITS OF REHABILITATION OF IRRIGATION
(Not to be used as evaluation criteria)

ITEM	UNIT	Relationship to the Period of Hostilities		
		PRE	DURING	POST (W/REHAB)
Baseline Period	Year	1984	1984	1992
Area of Benefit	acres	101,000	101,000	101,000
Ave. Cropping Intensity	%	135	105	145
Average Yield	Bu/ac	70	66	70
Yield (Benefited Area)	MT (000's)	199	146	214
Increase (over hostl.)	MT (000's)	--	--	68
Incr. (Over prehostl.)	MT (000's)	--	--	15
Value (@ Rs 3.50/kilo)	Rs (mil)	697	511	749
Increase (over hostl.)	Rs (mil)	--	--	238
Incr. (over prehostl.)	Rs (mil)	--	--	52
Families Benefited	No.			54,000

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ANNEXURE II

TABLE 1. IRRIGATED AREA -- MAJOR SCHEMES
(Eight Affected Districts)

DISTRICT	TOTAL	ANICUT	MIRP & OTHER	BALANCE MAJOR (less Other)	TOTAL FARM FAMILIES
	acres				no.
Ampara	163,898	5,850	76,631	81,417	51,218
Batticaloa	46,089	1,550	---	44,539	14,403
Trincomalee	45,924	19,313	16,786	9,825	14,351
Kilinochchi	31,200	---	20,882	10,318	9,750
Mannar	34,142	---	24,438	9,704	10,669
Mullaitivu	22,280	---	---	22,280	6,963
Vavuniya	12,088	---	---	12,088	3,778
Jaffna		---	---	---	---
TOTAL	355,621	26,713	138,737	190,171	111,132

TABLE 2. IRRIGATED AREA - MINOR SCHEMES
(Eight Affected Districts)

DISTRICT	TOTAL	ANICUT	VIRP & OTHER	BALANCE (MINOR)	FARM FAMILIES
	acres				no.
Ampara	2,507	427	216	1,864	1,243
Batticaloa	9,613	1,198	993	7,422	4,950
Trincomalee	4,749	827	1,238	2,684	1,790
Kilinochchi	7,648	1,675	4,558	1,415	944
Mannar	2,807	111	669	2,027	1,352
Mullaitivu	4,498	235	2,077	2,186	1,458
Vavuniya	9,238	37	1,097	8,104	5,405
Jaffna	11,828 (lift irr)	--	---	11,828	10,753
TOTAL	52,888	4,510	10,848	37,530	27,896

GRAND TOTAL (Eight Affected Districts) = 139,028

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ANNEXURE III.

SAMPLE COST ESTIMATE
Pavatkulam Irrigation Scheme
(4134 acres)

ITEM	UNIT	QUANTITY	RATE (Rs.)	AMOUNT (Rs 000's)
1. HEADWORKS				
a. Eathwork on embankment riprap protection and repairs to radial gates	one	job	l.s.	1,200.0
2. MAIN CANAL (26.7 km)				
a. Desilting	Cu.M	9,875.9	24.5	242.0
b. Earthfill on embankment	Cu.M	13,313.4	65.3	869.4
c. Turfing	Sq.M	7,305.9	11.1	81.1
d. Improvement to Structures	one	job	l.s.	1,655.0
Sub Total				2,847.4
3. BRANCH CANAL (3.6 km)				
a. Desilting	Cu.M	589.4	24.5	14.4
b. Earthwork on embankment	Cu.M	1,397.1	65.3	91.2
c. Turfing	Sq.M	994.6	11.1	11.0
d. Improvement to Structures	one	job	l.s.	225.0
Sub Total				341.7
4. DISTRIBUTORY (18.1 km) & FIELD CHANNELS (92.1 km)				
a. Desilting, earthfill on embankment, and improvement to structures	acres	4,134.0	1,000.0	4,134.0
5. ACCESS ROADS				
a. Grading & surfacing	km.	2.0	56,530.0	113.1
TOTAL COST				8,636.2

PRO RATA COST FOR 4134 AC. = Rs2,089.1/ac

NOTE: Earthwork on Field Channels is not included in the cost of the above estimate as it will be the responsibility of the farmers.

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ANNEXURE IV.

IMPLEMENTATION SCHEDULE
(Calendar Year)

ITEM	1st Year	2nd Year	3rd Year	4th Year	5th Year
Months	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND
A. TECHNICAL ASSISTANCE					
1. Procurement of TA	xXXXXX				
2. LTTA		XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	
3. STTA	XXX	X X X X X X	X X X X X X	X X X X X X	
4. Jaffna Lagoons Study					
a. Procure STTA Team	XXXXX				
b. Study Implementation		XXX			
B . INITIAL RENOVATION					
1. Select Sub-Projects	xxxXXXXX				
2. Planning and Tendering	xXXXXX	XXXXXXXXX			
3. Construction	XX	XXxxxxXX			
C. REGULAR REHABILITATION					
1. Inspect & Record System Defects	xxXXXX	XXXXXX			
2. Survey for Desilting Earthwork & Protective Measures	xxXXX	XXXXXXX	XXXXXXXX	XXXXXXXX	
3. List Structures for Improvement or Replacement	xXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	X	
4. Prepare Design and Tender Document	xXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXX	
5. Order Gates and Hoists	XXX	XXXXXXXXXXXX	XXXXXX		
6. Construct Sub-Contracts	XX	XXxxxxXX	XXxxxxXX	XXxxxxXX	
D. JAFFNA LAGOONS REHABILITATION					
1. Design		XXXX			
2. Tendering		XXXXX			
3. Construction			XXXXXXXX	XXXXXXXX	
E. TRAINING					
1. Overseas					
a. Develop Plan & Select	xXXXXX	XXX			
b. Training Courses		XXXXXX	XXXXXX	XXXXXX	
2. In-Country	XXX	X XXX	X XXX	X XXX	
F. COMMODITIES					
1. 4W-Vehicles & Survey Equip.	xXXXXXX				
2. Other Vehicles	XXXXXX	XXXXXXXXX			
3. Plant and Machinery	XXXXX	XXXXXXXXXXXX			
3. Communication, Power and Office Equipment	xXXXXX	XXXXXX			

NOTE: Small (xxxx) indicates either partial implementation (in Yala) or pre-implementation activities

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ANNEXURE V.

PROJECT EXPENDITURES BY CALENDAR YEAR
Irrigation Component

ITEM	Unit $000s	Amount	Rate	Total	1988	1989	1990	1991
A. REHABILITATION CONST.								
1. Initial Renovation	Ac.	101,000	0.010	1,010	500	510	--	--
2. Rehabilitation								
a. Major & Medium	Ac.	95,000	0.056	5,314	--	2,000	2,000	1,314
b. Minor Schemes	Ac.	6,000	0.11	660	--	260	270	130
3. Jaffna Lagoons	L.S.			700	--		450	250
SUB TOTAL				7,684	500	2,770	2,720	1,694
B. TECHNICAL ASSISTANCE								
1. Technical Staff								
a. Local Hire LTTA	PY	8.0	18	144	20	90	24	10
b. Local Hire STTA	PM	4.0	1.5	6	--	6		
c. Expatriate STTA	PM	3.0	20	60	40	20		--
2. Jaffna Lagoon Study	L.S.	--	--	200	--	200	--	--
3. Support (Veh.O&M & Admin.)	L.S.			60	25	15	10	10
SUB TOTAL				470	85	331	34	20
C. COMMODITIES								
1. Veh. & Surv. Equip.				800	700	100	--	--
2. Plant & Machinery				600		465	135	--
3. Comm. & Off. Equip				200	100	100	--	--
SUB TOTAL				1,600	800	665	135	0
D. TRAINING								
1. Short-Term In-country								
a. ID Staff		200	0.3	60	--	20	40	--
b. Farmer Leaders		400	0.1	40	--	10	20	10
SUB TOTAL				100	--	30	60	10
AID BUDGET				9,854	1,385	3,796	2,949	1,724

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ANNEX F. 5. - ENTERPRISE DEVELOPMENT

Introduction

Sri Lanka's Northern and Eastern Provinces participate little in the export-oriented modern economy of the nation. However, agriculture and, particularly, small business has flourished in the area. Since the liberalization of the economy in 1977, enterprises have taken over many of the input supply, agricultural marketing and retailing of goods and services functions that the state had carried out before the reforms. However, during the ethnic conflict that began in 1983, these businesses have suffered enormous losses. Buildings have been destroyed, stocks burnt or looted, and financial capital has ceased to be available.

Without the micro and small enterprise sector, the economy of the North and East can not return to its former prosperity. For this reason, the rehabilitation program planned by the MORR/NRSC includes assistance for enterprises of all sizes, not just medium and large scale ones. USAID will provide assistance to this sector in the form of grants and loans to micro and small enterprises, training for unemployed youths and for business operators, and technical assistance to institutions working in the field of private sector development of skills training.

Sector description:

The Northern and Eastern Provinces of Sri Lanka are primarily agricultural with most people farming or fishing for a living. Agricultural is oriented toward the national market for rice and OFCs. There are few subsistence farmers. This market orientation has led to the establishment of a dynamic private sector in the districts affected by the ethnic conflict. Private merchants provide the inputs the farmers need to achieve high yields and good profits. They buy the crops, assemble, package and transport them to market. They provide the services the farmers need to keep going: retail shops, repair shops, informal money-lending and pawning, small-scale manufacturing and repairing of tools and consumer items.

The non-agricultural sector employs more than half of the population of this agricultural area. The regional employment and industry profile which follows lists only those enterprises which employ non-family labor and are registered with the administration. The myriad of micro-enterprises in all fields of endeavor are excluded.

Based on the 1981 census, 75% of the population in the North and the East live in rural areas. This compares with 72% for the whole of Sri Lanka. There are substantial differences between the Districts: Trincomalee and Jaffna have lower concentrations of rural dwellers, 66% to 67%, while Mullaitivu has a 91% concentration and Ampara and Mannar both have 86%.

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For all of the districts of the North and East, agriculture and fisheries generate for 51% of all employment, followed by services and non-classified labor at 39%, then industries and manufacturing at 10% of all employment.

Classified and non-classified laborers make up an average 24% of the work force. Major classifications of labor are in the sub-sectors of: clothing and materials, food processing, machine operating skills, construction, and operating transport and moving equipment. Almost all of these people are small businessmen.

Employment in the North and East by the industrial sector is shown in Table 1. This shows that the industry and manufacturing sectors are 20% of employment outside agriculture and fisheries or 10% of total employment.

Small industries are defined as employing less than five non-family people. Micro enterprises employ only family members. Many of the non-paddy cultivators can be counted as micro-enterprises, as they employ small amounts of family labor seasonally to supplement family income and in many ways act more like small businessmen than like traditional farmers.

Table 1
Industrial Size and Employment

District	No. Employed Non-Agriculture & Fisheries	Industrial Employment		Industrial Empl. as percent total non-ag. or fish. empl.		
		Small	Other	Small	Other	Total
Trincomalee	34409	1892	2709	5.5	7.9	13.4
Ampara	40320	3830	9635	9.5	23.9	33.4
Batticaloa	38104	5154	5197	13.5	13.6	27.2
Jaffna	108577	5922	12631	5.5	11.6	17.1
Vavuniya	10533	327	743	3.1	7.1	10.2
Mannar	11987	1331	498	11.1	4.2	15.3
Mullaitivu	6275	173	369	2.8	5.9	8.6
	250205	18629	31782	7.4	12.7	20.1

Jaffna Districts dominates non-primary sector employment with 43% of total non-agricultural or fishery employment in the North and East. Ampara and Batticaloa districts are the most dependent on industrial employment, Mullaitivu and Vavuniya Districts are the least dependent. Small industrial employment is concentrated in the Jaffna and Batticaloa Districts, with medium and large employment concentrated in Jaffna and Ampara Districts.

Table 2 shows the number of enterprises according to size, employment and output. Average employment per small industry is 2.3 people with a 1982 value added of Rs.17,000 per person. Medium and large industries average 21 people employed with Rs.97,000 added value per employee. No figures are available for micro-enterprises.

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Table 2
Industrial Size, Employment and Output

District	Small			Medium & Large		
	Number Enter-prises	Employ-ment	Value Added Rs.ml	Number Enter-prises	Employ-ment	Value Added Rs.ml
Trincomalee	845	1892	41.5	93	2709	1985.6
Ampara	1681	3830	87.9	368	9635	189.2
Batticaloa	2485	5154	34.6	248	5197	268.8
Jaffna	2433	5922	132.2	688	12631	553.7
Vavuniya	129	327	6.6	47	743	60.8
Mannar	516	1331	13.0	47	498	19.3
Mullaitivu	68	173	1.2	23	369	3.9
	8157	18629	317.0	1514	31782	3081.3

Batticaloa District tends to have the smallest enterprises with an average size of just over 2 employees; similarly its small-enterprises are the least productive, producing under Rs.7,000 per employee and Rs.14,000 per enterprise. The average for all the districts is nearly three times the value added per employee.

For non-small enterprises the figures are skewed by a few very large enterprises in Trincomalee District. The result is that the average value added per employee is over Rs.700,000 and these enterprises average an output of over Rs.21 million. On average the non-small enterprises have 20 employees each producing almost Rs.100,000 of value added, six times the average productivity on small enterprises.

Extent of Damage to the Private Sector

Structural Damage

Commercial structures of all classes received extensive damage throughout the North and East. In September 1987, it was estimated that 20% of all structures had been damaged. Since that time, damage, especially in Jaffna (where there have been a number of groups reassessing the damage, albeit not in a systematic way), has increased by an estimated fifty percent. Overall structural damage could be 30% of all structures now. The groups most affected are moderate-sized shops in the urban areas, particularly those on cross-roads, and smaller trading stores along main roads.

Table 3 shows that most of the structural damage in terms of numbers and Rupee amounts has been in the Jaffna/Kilinochchi district: 75% of all claims by number of premises and 87% by value. Compared with total numbers of commercial premises for each district, 36% of all premises have been damaged or destroyed in the Jaffna/Kilinochchi district. Relevant percentages for the other districts are: 22% for Mullaitivu, 12% to 13% for Trincomalee, Mannar and Vavuniya, and 3% to 6% for Batticaloa and Ampara respectively. These damage estimates are tentative and subject to change following the development of more detailed damage reports.

Table 3

Numbers and Cost Estimates for Damaged and Destroyed Commercial Premises.

	Number Commerc'l Premises Destroy'd	Value Commerc'l Premises Destroy'd Rs.M	Number Commrc'l Premises Damaged	Value Commrc'l Premises Damaged Rs.M	% age all Losses in No.	% age all Losses in Rs.
Trincomalee	331	91.99	143	2.89	7.7	10.6
Ampara	339	7.59	43	0.90	6.2	1.0
Batticaloa	165	3.64	58	0.90	3.6	0.5
Kilinochchi	426	26.68	142	0.68	9.3	3.1
Jaffna	3085	689.48	908	57.84	65.3	83.8
Vavuniya	114	6.48	8	0.02	2.0	0.7
Mannar	186	0.03	52	0.00	3.9	0.0
Mullaitivu	87	2.55	32	0.40	1.9	0.3
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	4733	828.44	1386	63.63	100.0	100.0

Total cost estimate for damage and destruction was estimated at Rs.892 million for a total of 6119 premises. In the World Bank report, structural losses are estimated at Rs.700 million for 11,300 (a higher number) damaged and destroyed commercial premises.

In addition to losses on premises, there are estimates of losses of trade inventories caused by looting and arson of Rs.526 million. 90% of this has occurred in the Jaffna area. No details are provided concerning the numbers of enterprises claiming these losses but, assuming they are the same numbers as for damaged and destroyed premises, the range in average losses is between Rs 11,000 and Rs.117,000 with the larger amount being in Jaffna and the smaller amount being in Kilinochchi. Excluding Jaffna, the range in trade inventory losses is Rs.11,000 to Rs.54,000 on an estimated 2126 enterprises and this is most likely to be made up predominantly of small business enterprises.

Finally, a large number of businesses, including commercial farms, livestock producers, retailers, and small service and repair shops suffered from an inability to conduct normal business at normal volumes, even if the conflict did not touch them or their buildings/stock physically. This sort of loss, particularly in the micro-enterprise sector, is likely to have had a great impact on the welfare of these entrepreneurs. Many will require grants and loans to recover. Poultry producers, for example, have suffered 100% loss of stock during military operations in their areas and dairy producers, unable to store or preserve their produce, will have lost considerable income.

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Average employment per small retail outlet is two people. The number of retail proprietors, 19,612, is used here as a proxy for small retail businessmen as there are few non-small retail establishments. To this number is added the number of industrial enterprises employing less than five people, 8,157, to give a total estimate of small businessmen of 27,769. Using the estimated loss percentages for each district provides an estimate of small businesses requiring assistance of 5,269 as shown in Table 4.

Table 4
Number of Affected Small Businesses

	-No. of Small Businesses-			Loss	est. # of small
	Retail	Industry	Total	%	bus. with losses
Trincomalee	2192	845	3037	13	395
Ampara	3245	1681	4926	6	296
Batticaloa	3385	2485	5870	3	176
Jaffna	8697	2433	11130	36	4007
Vavuniya	740	129	869	12	104
Mannar	977	516	1493	13	194
Mullaitivu	376	68	444	22	98
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	19612	8157	27769	19	5269

To these estimates of affected businesses must be added those commercial farmers, livestock producers and micro-enterprises who suffered losses of various kinds. Field estimates are that there were twice as many micro-enterprises, commercial farmers or livestock producers who were affected as small retail or industrial establishment suffering losses. Thus, the estimate is that there are 10,000 of these firms in addition to the 5,269 small enterprises damaged or destroyed by the war.

In the same manner, the estimate of numbers of medium to large businesses affected, 774, is shown in Table 5. These numbers are mainly made up of: wholesalers, averaging 100 employed people per outlet, catering and lodging establishments averaging nine employed persons, and industries with an average of twenty one people.

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Table 5
Medium to Large Businesses Affected by the War

	-Medium to Large Businesses-				Loss	Number
	Whole-sale	Catering & lodging	Industry	Total	%	Losses
Trincomalee	64	338	93	495	13	64
Ampara	117	594	368	1079	6	65
Batticaloa	75	545	248	868	3	26
Jaffna	121	692	688	1501	36	540
Vavuniya	6	94	47	147	12	18
Mannar	66	187	47	300	13	39
Mullaitivu	15	60	23	98	22	22
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	464	2510	1514	4488	17	774

The total numbers of businesses affected, including micro-enterprises 16,043. This is within 1% of the World Bank's September 1987 estimate of 16,119 small enterprises affected by the war.

Based on limited observations since September 1987, it appears that the World Bank underestimated the number of small and medium businesses affected by the conflict by 25%. In addition the number affected has increased by 50% since that time. However, it does not appear that the number of micro-enterprises affected has increased by much since the September 1987 estimate. This means that an estimated 10,000 small enterprises are in the affected category and 10,000 micro-enterprises (including small commercial farmers and livestock producers). In addition, there are around 1,500 medium to large enterprises destroyed or damaged in the North and East by the war. Thus the estimate for the total number of businesses affected by the conflict as of June 1988 is 21,500. This number is greater than the total number of businesses officially registered, because a large number of enterprises do not register.

Financial Assistance for Affected Businesses

One of the major problems noted by the MORR/NRSC in developing a scheme to help different categories of people affected by the war is that the affected people fit into many different categories. As was mentioned earlier there are many farmers who also have micro or small enterprises and vice versa. The government is concerned about the problem of double counting with families receiving multiple grants or getting many different loans. It is likely that could afford to repay each loan but not all. The MORR's solution was to treat each family as a single unit. Each affected family would have to register and the registration card would indicate to what they are entitled.

It is theoretically possible, although difficult with unpredictable results, to separate the actual payments into portion that went for agricultural purposes and those for businesses. However, the

government has not had good experience with vouchers and many argue that cash grants would be more efficient and effective. If this is done then the distinction between grants used for agriculture and for business would be even more difficult to determine. However, from the standpoint of the recipient they are entitled to a grant for productive enterprises which is the exact same whether they are farmers or businessmen. Similarly, they are entitled to loans at the same terms. Thus, they do not perceive any distinction in treatment based on their status.

The government is not making any distinction between the terms of loans for business or agriculture. The categories which exist were developed to help estimated the cost of the program and not to differentiate programs. The 87,000 families affected by the conflict were classified for analytical purposes into category 1: fisherman (20,000 families), category 2: self-employed land owning farmers (55,000 families) and category 3: micro-enterprises (12,000). Non-single family activities are treated separately.

Every family, regardless of category, is entitled to one productive enterprises grant of Rs.4,000 plus a loan of up to Rs.200,000 at 9%. Being in one category or another does not effect the amount you can borrow or the size of your grant.

The statistical data base on businesses in the country uses as its definitions those presented earlier. However, in the interests of making the process as simple as possible the GSL has decided to use definitions proposed by the World Bank and not the definitions used in GSL statistics presented earlier. For micro-enterprises there is only a slight difference: these are category 3 productive activities and will go to families that have enterprises which they own alone, a sole proprietorship, as opposed to enterprises that use only family labor. Every family affected by the war will receive one productive enterprises grant regardless of the number of enterprises it owns. However, it is possible that some families may be divided based on the number of businesses.

The MORR is not concerned whether the grant goes for fishermen, farmers or micro-enterprises. Small businesses are those whose borrowing needs are less than Rs.50,000 and have more than one owner. The requirement that these businesses be partnerships was required by the World Bank. It means that many GSL statistics-defined small businesses are reclassified as micro or medium businesses depending on the amount of money they want to borrow or whether they qualify for the Rs.4,000 productive activity grant to families. Medium businesses are defined as those who borrow less than Rs.200,000 and large businesses borrow over this. Micro, small and medium businesses are eligible to borrow at the same terms.

Our analysis indicated that there are currently 10,000 micro-enterprises, 10,000 small enterprises and 1,500 medium to large enterprises or 21,500 businesses who would qualify for grants or loans. MORR estimates that 12,000 families will receive grants or borrow money as micro-enterprises, another 2,000 as small

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businesses and 8,000 as medium enterprises, or 22,000 enterprises. Because the difference is not significant we shall use their figures for budgetary purposes.

Thus, the GSL figures that 15% of the statistically small businesses are family enterprises, will want to borrow small amounts and will be classified as micro-enterprises. But 65% of the small businesses are not sole proprietorships, will want to borrow amounts larger than Rs.50,000 and be end up being classified as medium businesses.

The Rs.4,000 grant combined with the Rs.2,000 setting-in grant is sufficient to permit small and micro-enterprises like bicycle repair shops, repairers of electrical and electronic goods, small tradesmen, restauranteurs and many service activities to become re-established. USAID commissioned a series of business profiles to determine financial needs. For example, setting up a small, 100-hen, poultry operation requires Rs.1,000 in fixed investment and working capital of Rs.3,700. The grants would provide the money needed to start production. Profits would begin towards the end of the first year of operation.

The 22,000 business enterprises assisted will each receive a grant of Rs.2,000 from USAID funds at a cost of Rs.44 million or $1.5 million. All grants would be made through the NRSC offices in the kachcheries or by the AGA's office.

All business enterprises would be eligible for loans up to Rs.200,000 at 9% interest rate and with repayment up to twenty years. The decision as to how much any one family or enterprise can borrow and the length of the loan is to be made by the lending institution using their normal guidelines. The ability to repay the loan will guide their decision; individuals ought not have to spend more than 20% of their income on debt servicing.

These loans would operate through any interested financial institution, however, most loans for businesses are expected to be made through a special window established at the Bank of Ceylon or at Cooperative Rural Banks. Other commercial banks are expected to become involved. At present, very few Thrifts have indicated a willingness to participate in the business or agriculture loan scheme.

The estimated average loan for micro-enterprises is Rs.10,000; for small businesses Rs.30,000 and for medium enterprises Rs.60,000. Thus, the estimated total cost of business loans is $4 million for micro-enterprises, $2 million for small enterprises and $16 million for medium enterprises. Of the total estimated need for $22 million in business loans RAP will provide $6.2 million. The balance will come from facilities being established by IDA and the ADB. The money from IDA and the ADB would be loaned at the same terms as USAID's money.

More details on the operation of the loan scheme and the affordability of it is in the Credit Annex (F6).

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ANNEX F. 6 - CREDIT ANALYSIS

The Institutional Framework

The financial system of Sri Lanka is dominated by the two government-owned commercial banks, the Bank of Ceylon and the Peoples Bank, which together account for approximately 75% of total deposits. Supplementing these are two private domestic commercial banks, two industrial development banks, four regional rural development banks, the National Savings Bank, twenty one foreign commercial banks, 24 foreign currency banking units, fifty finance companies providing leasing and hire purchase facilities, three major leasing companies, and several provident funds and insurance companies.

The relative significance of the types of financial institutions is shown in Table 1.

Table 1
Loans Outstanding: December 1986

	Lending Rs.mln.	% of Total
Commercial Banks: Agriculture	4,216	8.2
: Non-agriculture	38,517	75.1
Finance Companies	1,663	3.2
Cooperative Rural Banks	295	0.6
Thrift & Credit Cooperative Societies	420	0.8
National Development Bank	1,947	3.8
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	47,058	91.8
Other Development Financial Institutions	1,960	3.8
Development Finance Corporation of Ceylon	1,257	2.5
Insurance Companies	987	1.9
	---	---
	4,204	8.2
Total Loans Outstanding	Rs.51,262	100.0

(From Central Bank Survey 1986)

Within the affected Northern and Eastern Districts, Table 2 shows the branch networks of the major commercial banks. The number of branches operating effectively is less than those shown as the banks are restricting their cash handling transactions to the major cities only until security improves. The table shows that in the immediate term, it is only the Bank of Ceylon (BoC) and the Peoples Bank (PB) that have an extensive network in the affected area. In the case of BoC this is complemented by a sub-system of Agriculture Centers within certain of the Agrarian Service Centers while the PB has linkages with the Cooperative Rural Banks.

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Table 2
Network of Commercial Bank Branches

District	Population '000s	-Major Commercial Banks- BoC	PB	HNB	CBoC	Total Number Branches	Pop. Per Branch
Trincomalee	292	3	4	1		8	36,500
Ampara	439	9	7			16	27,438
Batticaloa	378	5	7			12	31,500
Kilinochchi) Jaffna)	915	8	11	1	1	21	43,571
Vavuniya	108	1	1	1		3	36,000
Mannar	120	1	1	1		3	40,000
Mullativu	86	2	1			3	28,667
	2338	29	32	4	1	66	

Major Credit Schemes

In recent years, the GSL has tried to stimulate lending in key sectors through schemes of re-financing from Central Bank. There are 29 such schemes operated through the Central Bank but these are generally under-utilized: 10 schemes have not made any disbursements and, of the remainder, the range of utilization is between 3% and 50%. These schemes seem to have had little affect on the total supply of agricultural credits, although credits may have been smaller in their absence, and very little positive impact overall. This can be seen in the extent of financial deepening in the agriculture sector and the total economy in Table 3. Over the last decade total domestic private credits as a percentage of GDP have almost doubled while those for agriculture have grown by smaller amounts and less consistently

Table 3
Agricultural and Private Sector Credits

Year	Agricultural Credits as % Agric. GDP	Total Private Sector Credits as % Total GDP
1976	7.2	14.9
:	:	:
1981	12.6	27.7
1982	12.2	26.4
1983	10.6	28.3
1984	8.4	28.7
1985	8.6	27.5
1986	11.6	27.1

Since 1978, the only noticeable trends in sectoral credit allocation by the commercial banks have been: 1) a decline in the share of agriculture and industry; 2) an increase in the share of

housing and commercial credit; and 3) a fall in consumer credit's share. The commercial and industrial sectors have maintained their combined share at about 70% of total credits. These figures are in Table 4.

Table 4
Loans and Advances of Commercial Banks

	1978		1983		1986	
	Rs.mln.	%	Rs.mln	%	Rs.mln.	%
Commercial	4,028	45	15,262	48	20,391	50
Industrial	2,191	25	6,831	22	7,946	19
Agriculture	1,415	16	3,418	11	4,217	10
Housing	296	3	1,982	6	3,440	8
Consumption	252	3	488	2	638	2
Other	666	8	3,437	11	4,301	11
Totals	8,848	100	31,418	100	40,933	100

In 1981, total refinancings for agricultural crop and cultivation credits were Rs.146 million with a further Rs.214 million for the GPS (Guaranteed Price Scheme): a total of Rs.360 million. Refinancing for other subsectors, including medium and long term credit finance for industries, fisheries and non-crop agriculture, amounted to a further Rs.1,048 million. Total refinance was Rs. 1,408 million which was 8% of total private sector domestic credits, it was a comparable percentage in 1986. Although these low interest credits reflect the GSL's commitment to subsidize certain sectors by offering loans at less than commercial rates (currently 12% to 15%) they still account for a small segment of the total market. In 1986, refinance provided to agriculture was Rs.221 million and for GPS it was Rs.558 million. In real terms, agriculture crop refinance credits have been declining and are now less than 53% of their 1981 real values.

It generally is estimated that the formal credit sector provides 20% of total credit in the rural areas. Only 42,000 of the 1.8 million farmers nationally (2.3%) had short and medium/long term loans obtained under Central Bank re-financing facilities in 1986. The amount obtained, Rs.450 million, is 11% of total agricultural credits. These have gone mainly to estates, export credits, and GPS financing. The rural community obtains most of its financing needs from relatives, pawning facilities, money-lenders and traders. Many of these do not charge any interest rate, or the implicit charge is contained within the cost of the item being purchased. This makes it difficult to compute interest charges comparable to those charged at formal lending institutions. One major reason for using the informal channels is that decisions are made faster, there is less paperwork and the source of the money is not as physically distant from the borrower. Some short term borrowings are at a rate of 10% per month, but recent studies indicate that the de factor interest rate charged by non-relatives is around 28%.

When the cost of waiting, travelling and burocratic problems

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at the commercial banks are taken into consideration such credit is comparable or cheaper than borrowing from banks using low interest Central Bank refinance facilities. For a small loan from a commercial bank, or a CRB, the borrower may need to wait as long as three months to receive loan approval and travel to a bank branch many times for approval and to collect the money in multiple tranches. A study of interest and transaction costs of borrowing in the Anuradhapura District showed an effective cost of such formal borrowing of 34.7% for loans up to Rs.2,600 and 29.2% for larger loans up to Rs.4,300. These rates are higher than money borrowed informally against pawned assets.

The financial institutions handling programmed agriculture credit incur losses in the process. The banks' spread on government small agricultural loans is 7.5% (1.5% re-finance rate and 9% on-lending rate) and on medium/long term agricultural lending is 4% (8.5% --° 12.5%). A spread of between 4% to 7.5% covers the administrative costs of lending to small borrowers but not losses due to late or no repayments. The average recovery rate on agricultural loans over the years, excluding 1977/78, is about 70% Excluding loan guarantee schemes, an interest rate of 48% would need to be charged to cover losses, the cost of non-subsidized money and administration costs. A rural credit system that could obtain recoveries of 90% and hold administrative expenses to 3% would still need to charge 25% to cover costs.

Attitudes of lenders and borrowers have polarized over time. In the past, little action has been taken against non-payments of debts. This has lead to the perception of Government sponsored loan schemes as "grants". Poor loan recovery rates and a difficult and slow debt recovery legal system have caused banks to impose barriers to rural lending. Candidates for borrowing must go through difficult and time-consuming loan application procedures. The result is a feeling of hostility between the parties that is not conducive to a deepening of mutual interests. In the last two years, most of the NCRCS lending in the North and East has been through the Bank of Ceylon and the CRBs. The loan arrears rates for these, compared with the remainder of the country, are shown in Table 5.

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Table 5
Paddy & Subsidiary Crop Lending: 30 June 1987

District	Bank of Ceylon Arrears %	CRBs Arrears %
Trincomalee	42.9	80.7
Jaffna	62.7	87.8
Kilinochchi	71.1	92.4
Mannar	42.5	100.0
Mullativu	69.0	100.0
Vavuniya	65.5	100.0
Ampara	48.2	69.9
Batticaloa	48.7	80.9
North/East Average	52.0	90.4
Non-North/East Average	25.3	n.a.

While the recovery rate for the non-affected districts is bad enough at 74.7% (as of 30 June 1987), the recovery rate for the eight affected districts is only 48% for Bank of Ceylon lending and an average of only 9.6% for the CRBs.

The total real costs of lending in these circumstances are very close to the informal credit market. The recovery rate on lending under the IDA funded SMI I and II schemes are little better for loans to small and medium industries: a rate of 75% as of 31 December 1986.

Any further programmed lending, without substantial changes in loan terms and conditions and operating systems will only result in additional losses to the credit delivery institution. In the short term, only a government-owned bank with adequate capital or guarantees, such as the Bank of Ceylon, could be involved in a rehabilitation lending scheme based on low interest rates to target groups.

Rural Lending

Nearly three-fourths of the population is living in rural areas. Most businesses are small and comprised of farmers, fishermen, retail outlets, and small and cottage industries. There is a large market and need, therefore, for a strong system of rural financial intermediaries. Currently, a large proportion of rural savings is on-lent to financial institutions lending in urban areas. This can be seen in the CRBs where deposits exceed loans outstanding, surplus funds being deposited with the PB and NSB.

In the rural areas it is important to have village level organizations which lend on the basis of an individual's credit worthiness, supervise the use of funds for the intended purposes, and ensure recovery. Since loans are generally small it is

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important that they be obtained cheaply and easily by the borrower and that costs to the lender be controlled through a high recovery rate. In Sri Lanka there are two institutions at the village level which could play a vital role: the Thrift and Credit Cooperative Societies (TCCS) and the Cooperative Rural Banks (CRB). Their distributions in the Northern and Eastern areas are detailed in Table 6.

Table 6
Information on Thrifts and CRBs

District	Popul'n '000s	Number TCCS Units	Number CRB Units	---population/unit-- TCCS	CRB	Both
Trincomalee	292	4	14	73000	20857	16222
Ampara	439	36	13	12194	33769	8959
Batticaloa	378	172	12	2198	31500	2054
Kilinochchi)		34	4)			
Jaffna)	915	381	30)	2205	26912	2038
Vavuniya	108	57	3	1895	36000	1800
Mannar	120	57	6	2105	20000	1905
Mullativu	86	46	7	1870	12286	1623
Totals	2538	787	89	2971	26270	2669

Table 3 shows that, except for Trincomalee and Ampara, an adequate network of rural financial institutions already exists in the Districts and these are complemented by the Bank of Ceylon units in some of the Agrarian Service Centers.

The Thrift and Credit Cooperatives (TCCS)

TCCSs as organizations date back to 1911 and constitute a village-level savings and credit movement of small groups of rural people. They seek to mobilize rural savings which are then loaned to members in the form of small loans. From the late 1950's until the early 1980's, the TCCSs declined in numbers as the Government promoted the Multi-Purpose Cooperative Societies (MPCSs) to play a key role in socio-economic development. From 4413 societies in 1964, number of units decreased to 1298 societies in 1978 with 232,330 members. Total loans outstanding were Rs.55 million in 1978.

In 1979 the first District Union for TCCSs was formed at Kegalle and a national Federation of TCCSs was formed in 1980. Currently their are 21 District Unions of TCCSs and 5096 TCCS units with membership of 565,000 people and total loans outstanding of Rs. 563 million. Of this amount, Rs. 92 million is in housing loans funded by the NHDA and it is estimated that 75% of the balance (Rs. 350 million) are to agriculture. Aggregated deposits of the TCCSs is Rs. 352 million. TCCS growth has been rapid: in the year of 1986/1987 there was an increase in number of units of 731, a membership increase of 200,000 people, and an increase in loans outstanding of Rs.143 million. In one year, the number of members increased 54% and loans outstanding increased 34%. During the same period , total domestic private credit for Sri Lanka increased by 8%.

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It is the policy of the Federation of the TCCSs that the debt equity ratios of units should be maintained at a level of not more than one to one and that loan schemes sponsored from outside the organization should not exceed 25% of total lending. Currently, the TCCSs are estimated to have a conservative debt-equity ratio of 1.6:1. This exceeds Federation targets. Borrowing for programmed lending is Rs.92 million for housing and this is 16% of the total loan portfolio and well below the 25% ceiling. However, on an individual basis, about half of the TCCSs have been formed in the last four years and many of these newer units have exceeded their 25% ceiling. In 1980, total deposits were 104% of loans outstanding. This percentage has declined as the TCCSs borrow externally to supplement deposits which are now 62% of loans outstanding.

There are twenty staff employed in the Federation head office and a further six hundred full time staff employed throughout the twenty five Districts covered. Otherwise staff are mainly part-time and employed directly by each TCCS. There is a plan to decentralize supervision of the TCCS to the 285 AGA Division levels which will necessitate employing at least a further 285 field officers. These staff will carry out monthly visits to the TCCSs in their area and provide assistance in loan appraisal, bookkeeping methods and unit supervision and monitoring.

The Federation has determined that the TCCS movement will not become an agent of the government but will undertake community development programs of its own through the initiative and participation of its members and with the use of its own resources. It is very important that they maintain this standpoint. Their financial and management strength lies in developing and maintaining a close relationship with their members and borrowers. With an average of 110 members per unit and a lesser number of borrowers (possibly about 50% of members) this close relationship can be maintained.

Most of the TCCS units are staffed by people paid a nominal honorarium. Many of the offices used are provided free of cost. This means that administration expenses are minimal and generally covered by the 4% spread between interest costs and interest revenue. Provision for bad and doubtful debts is not generally made. A manager in the Kegalle area saw no need for such provisions as they have recovery rates close to 100%.

Current policy is to open up a new TCCS in a new village area rather than allow one unit to become larger and cover more than one village. As long as free facilities and low cost staffing exist, this is quite rational. However, once coverage of all economically viable villages is attained then there will more intensive development within each unit. This could lead to higher administration costs which could, very quickly, exceed the 4% spread. The increase in number of units to be monitored by the District Union will also increase administration expenses. At some

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point it may be necessary to rationalize the smaller units by opening them to the public less frequently, possibly once per week, and service with staff from a larger unit. Each primary TCCS must make this decision for itself.

Funds for lending are primarily mobilized from the members themselves as well as non-members in the area. The minimum savings deposit is Rs.5. Deposits may be supplemented by borrowing from the District Union (DU) of TCCSs which also carries out supervision of the TCCS units. Each affiliated TCCS pays Rs.500 as membership of the DU which also holds surplus cash balances (above Rs.5,000) of the units. A TCCS can borrow up to ten times its paid-up share capital from the DU and pays interest at the rate of 12% and on-lends to members at 16%. The rates of interest offered by the TCCSs on deposits are usually 1% higher than those offered by the commercial banks: 10% on ordinary savings and 16% on fixed term deposits. Generally a spread of at least 4% is maintained on the lending rate.

The operating surpluses of the TCCSs are quite fragile. The TCCS visited at Ahasliyadha, Kegalle, had a net profit of 0.[illegible] of average total assets without any provision for bad debts. Total net worth is now 20% of loans outstanding and 16% of total assets so that the debt:equity ratio is about 5:1. This is more than national targets. Expenses are 93% of revenues. Although the lending rate is 16% on loans the actual interest earnings shown are only 14.8%. Although no bad debts are expected, not all interest is being paid. This unit is building its own office facilities and expenses are likely to rise. A relatively small increase in expenses coupled with a small bad debt element would force this unit into a loss making situation even though this is considered to be one of the stronger units in the area.

Conditions for membership vary: a membership fee of between Rs.25 and Rs.240. To this an entrance fee of Rs.5 may be added. A member is then eligible to receive a loan between three to ten times his membership fee and accumulated savings but may need to wait three to four months before becoming eligible. Loans are normally restricted to activities for which there is adequate local demand and are approved by a committee representing the members of the society. The upper limit for loan size is between Rs.10,000 to Rs.15,000. The advent of NHDA loans has increased these loan limits in the case of housing loans. Normal loans are for one to three years, with housing loans between five to fifteen years. Normal lending is usually at 14%, with housing loans at 6%. Under the IFAD support project, lending is at the rate of 16%. A borrower needs two guarantors, who are also members, to support his loan application. Lending is usually free of collateral requirements.

Although the rural rich may deposit savings with the TCCSs, rural social norms tend to constrain them from borrowing through the same institution. Loan sizes and limits are also more relevant to the poorer class of society with smaller investment needs.

The TCCSs have several needs that could be addressed by technical assistance in the RAP. These include:

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1. Financial monitoring and supervision: Rigorous training in basic accounting and audit supervision is needed to improve supervision of individual units and improve the presentation of aggregate data.

2. A classification system of individual thrift units: This is needed to help the DUs obtain an objective assessment of each unit in terms of financial viability and performance and managerial ability and performance.

The Cooperative Rural Banks

The CRBs are the banking arm of the Multi-Purpose Cooperative Societies (MPCS). Throughout Sri Lanka there are now 285 MPCSs with approximately 8,000 retail outlets and 283 CRBs with about 900 sub-branches.

The concept of a rural bank operating in conjunction with MPCSs was inaugurated in 1964 by the Peoples Bank (PB) and was seen as a way to obtain deeper financial penetration of the rural sector. At that time there was a very close relationship between the PB and the rural banks with PB staff being posted to the rural banks for periods of time to provide guidance and monitor performance. This close relationship has declined since 1971 when the MPCSs were reorganized and banking activities subordinated to the MPCSs' full range of activities of which retailing became the major emphasis. At this time the rural banks' accounting system was terminated and merged with the rest of the MPCS accounts. This made it very difficult for the PB to maintain adequate supervision of the rural banks. Rural bank staff became general MPCS staff, leading to the dissipation of banking skills and a lessening in staff morale.

Since the MPCSs are primarily consumer oriented there is a need to make the CRBs more independent of the MPCS. Furthermore most MPCSs make losses on their retail operations and there is a risk this will affect the financial integrity of the CRBs which generally make profits. This has implications for the safety of deposits made with the CRBs.

Recently there have been proposals to restore closer links with the PB and restructure the CRB to become more autonomous from its MPCS parent. Such a move, coupled with other procedural changes, could substantially strengthen the role of the CRBs in rural financial intermediation.

The numbers of CRBs and summaries of their deposits and volume of lending is outlined in Table 7. The volume of lending has increased five times over the years shown and this compares with the increase of total private sector credit of eight times the 1977 levels. Recipients of CRB lending tend to be the middle class of society and farmers. Marginal farming enterprises are usually excluded.

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Table 7
Cooperative Rural Banks: All Sri Lanka

Year	Number CRBs	Total Deposits Rs.mln	Total Advances Rs.mln.	Deposits as % Advances
1977	285	175.46	110.88	158
1978	283	222.15	125.08	178
1979	284	271.02	129.25	210
1980	284	334.73	176.79	189
1981	287	434.05	271.60	160
1982	286	541.48	329.27	164
1983	288	717.98	391.61	183
1984	286	905.49	508.25	178
1985 1/.	286	1054.10	554.45	190
:				
1987 2/.	283			

1/. September 1985. Otherwise December years.
2/. Estimate from Ministry of Food and Cooperatives.

Only members of the MPCSs are able to borrow from the CRBs and to do this a member must pay for a shareholding which is never refunded and on which no dividends are paid. The shareholding cost per member can be as low as Rs.1 and consequently most CRBs are undercapitalized. The CRB visited in Kegalle had a share cost of Rs.10. A member may then borrow up to ten times the cost of his subscription with a further limitation that the maximum loan size is generally Rs.35,000, if for productive purposes, and Rs.5,000 otherwise. For cultivation loans under the NCRCS it is possible for a farmer to borrow up to twenty times his paid shareholding.

Rates of interest offered on deposits are usually higher than those offered by the commercial banks: 10% on ordinary savings and 16% on fixed term deposits. Generally a spread of at least 4% to 11% is maintained on the lending rate. Loans are funded from fixed deposits and savings attracted by the CRB which may also have borrowing facilities through the local Peoples Bank branch for which the Rural Bank pays interest at the rate of 15%. Borrowers from the Rural Bank pay interest on their loans at between 20% to 28% with the higher rate being on pawned loans. The Rural Bank is required to hold at least 20% of its deposit liabilities in cash or with the Peoples Bank.

Table 8 shows the numbers of MPCSs and CRBs in the Northern and Eastern Districts.

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Table 8
Multi-Purpose Cooperative Societies: North and East

District	Number Number MPCSs	Number MPCS Staff 1/.	Number CRBs	Maximum Number of A/cs 2/.	Minimum Number of A/cs 3/.	Maximum A/cs as % Total Popul'n
Jaffna	22	2647	30	72789	39858)	10.9
Kilinochchi	4	384	4	20230	18136)	
Mullativu	5	n.a.	7	n.a.	n.a.	n.a.
Vavuniya	3	198	3	17091	13044	17.3
Mannar	6	254	6	15281	7024	13.9
Trincomalee	7	567	14	33894	16749	12.8
Batticaloa	13	682	12	26587	14065	7.8
Ampara	14	n.a.	13	n.a.	n.a.	n.a.
	---	----	---	------	------	
	74	4732	89	185872	108876	

1/. The largest number of employees at any time during 1981-1985
2/. The largest number of CRB accounts at any time during 1981-1985. These can be deposit or loan accounts.
3/. The minimum, non zero, number of CRB accounts 1981-1985

It can be seen that the MPCSs are a significant part of society in terms of population cover: a range of 7.8% to 17.3% between Districts with the greatest coverage being in Vavuniya. However, there is some duplication in these numbers as it is possible for one person to have at least two accounts: one for deposits and one for loans. In discussions with the Peoples Bank, it was stated that most farmers are members of a CRB. Given the numbers above, it is estimated that 20% of families have an account with a CRB.

The CRBs are staffed by permanent employees of the MPCSs and a bank branch will have between three to ten employees depending on the volume of operations. These staff can be assigned to the banking or retail arms of the MPCS at any time so that it is unlikely that they will develop specialized banking skills during their career.

Supervision of the CRBs is mainly the function of the Department of Cooperative Development. The PB only has the right to inspect the accounts of the CRB and through this make recommendations concerning their operations.

At present, training of CRB staff is carried out by the National Council of Cooperatives and the Institute of Cooperative Management (SLICM). In 1985 and 1986 the SLICM held training courses for 102 CRB managers but given the turnover of staff and the existence of 283 CRBs with 900 sub-branches this is still insufficient. The PB also hold training courses free of charge. Training needs to become more rigorous and specialized with greater inputs from the SLICM and the PB.

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Compared with all Sri Lanka, growth of the CRBs has been rapid in the North and Eastern areas. Loans outstanding have increased six-fold over the five years to June 1987. Growth has been especially high in the Vavuniya, Mullativu and Mannar districts but these also have the worst record of loan recovery: 100% of loans are in arrears. Of the other districts, the level of arrears is also high: between 70% and 92%. Most of these overdue loans are cultivation loans provided under the Comprehensive Rural Credit Scheme refinanced by Central Bank. Lending and performance by district are shown in Table 9.

Table 9
Cooperative Rural Banks: Growth & Performance

	Loans Outstanding		Arrears on '87 Loans	Arrears as % Loans Outstndg.	Total Savings
	1982 Rs.m	1987 Rs.m	Rs.m		Rs.m
Jaffna	5.5	15.8	13.9	87.8	44.8
Kilinochchi	0.0	1.9	1.8	92.4	1.5
Vavuniya	0.0	51.3	51.3	100.0	0.9
Mannar	0.1	10.0	10.0	100.0	0.3
Mullativu	0.0	39.8	39.8	100.0	1.2
Batticaloa	4.0	10.7	8.7	80.9	1.5
Ampara	17.8	38.6	27.0	69.9	10.4
Trincomalee	1.1	4.8	3.9	80.7	1.1
	28.5	173.1	156.4	90.4	61.7

Total savings and deposits have increased 3.77 times over the five years shown; an average growth rate of 30% compared with the national growth rate for all time and savings deposits of 12%. Compared with nationwide CRB savings, those in the North and East were 57% of loans outstanding while the national figure was 164%, indicating a much higher local use of local savings. As the result of using refinance for cultivation loans, the ration of savings to loans outstanding has been only 31% since 1982.

The rapid growth in lending and the high level of overdues on loans have put the CRBs in a financially precarious position. Over the eight districts, overdue loans are 86% of total net worth. For Jaffna and Kilinochchi the figures are 37% and 47% respectively. In Ampara the figure is 108%: overdues exceeds net worth. In the other five districts, overdues are between 97% and 100% of net worth. Most of these CRBs can not afford to write off much of their loans in arrears.

If the CRBs were to be used in the Rehabilitation program, care would be needed to ensure that further lending does not lead to more overdue loans and eventual liquidation of the CRBs. At the very least, additional programmed lending will lead to a worsening in their debt:equity ratios which, in theory, would force them to raise interest rates on deposits to offset a higher perceived risk. To offset this, some direct financial assistance to maintain an acceptable capital ratio would be needed.

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In either case,a program of recovery is essential and both technical and socially effective supports are needed for this to succeed.

Credit Component

All loans for any purpose, other than housing, of less than Rs.200,000, will be at a 9% interest rate with up to twenty years for repayment. It is expected that most loans will be repayable in three to five years without a grace period. The decision as to how much any one family or enterprise can borrow and the length of the loan is to be made by the lending institution using their normal guidelines. The ability to repay the loan will guide their decision; individuals ought not spend more than 20% of their income on debt servicing. When the reconstruction loan schemes were first developed there were different schemes for different categories of people, each had its own terms and the basic interest rate structure was 2/4/6% depending on the size of the loan. USAID was able to convince the government of the need for simplicity and interest rates that were closer to market levels and comparable to other loan programs elsewhere in the economy. The ADB and World Bank have modified their programs to have the same conditions as USAID's.

The estimated average loan for fisherman loans is Rs.3,000, for small farmers Rs.5,000, for micro-enterprises Rs.10,000, for small businesses Rs.30,000 and Rs.60,000 for medium businesses. The figures for business loans were derived from the actual loans made by the National Development Bank for these types of enterprises. The estimated loan size for farmers is based on experience with existing agricultural lending schemes and the estimated loan size for fishermen is a guess based on field observations.

Work USAID commissioned on the financial needs of affected businesses shows that chemists and small grocery stores need around Rs.50,000 for working capital to cover their need for new stock. The Industrial Development Board has developed profiles for twenty-four small businesses for loans to be made through the Central Bank's Regional Rural Development Banks. This includes loans for example for setting up candle making, cement bricks, coconut jaggery, coir fibre products, confectionary, dry fish,furniture making, egg production, washing soap, writing chalk and yoghurt production. These businesses can be carried out with investments of up to Rs.80,000 or less except where there is a need to buy land or build. These activities have rates of return in excess of 20% with a break even point on cash flow of three years. In most cases the grant money plus a loan of Rs.50,000 would be sufficient to re-enter or start one of these businesses.

An example of larger loans which was developed for analytical purposes was for rice milling with a throughput of 1,500 tons. A loan of Rs.500,000 would be needed to purchase equipment. If there were no other debts, and if the firm did not need to purchase land or a building then it could afford a three year loan and make a

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small profit during the first two years of operation. If its needs are greater than the loan repayment period would have to be grater to enable a profit.

The total cost of business loans is estimated to be $4 million for micro-enterprises (12,000 loans averaging Rs.10,000), $2 million for small enterprises (2,000 loans averaging Rs.30,000) and $16 million for medium enterprises (8,000 loans averaging Rs.60,000), for a total of $22 million in loans for business enterprises. USAID will contribute $6.2million of the total money needed for these loans. The balance will come from funds from the ADB and World Bank (IDA).There will be $9.2 million needed for agricultural loans (55,000 loans averaging Rs.5,000) of which USAID will provide funds for $5.6 million.

The funds for lending will be provided to REPPIA which will on-lend the money to the borrower using existing commercial banks and other financial institutions. Some of these institutions will set up a special window to process these loans. To encourage the financial institutions to be involved they will receive a fee for their services. This fee is subject to negotiation but the agreements thus far have been for 2% of the value of the money that is actually repaid to the financial institutions. Hatton Bank's fee is likely to be slightly higher.

This was designed to ensure the bank's assistance in encouraging loan repayment. There has been disagreement as to whether 2% is a sufficient encouragement to the banks and will meet their costs of participating in the scheme. It was estimated that they would need closer to 5% of the coupons to meet costs. However, the current figures were arrived at through negotiations between NRSC and the financial institutions. Some financial institutions view this as a service to their customers, as a way to getting reestablished or expanding their operations. Thus, they expect to be able to spread their overhead over a larger volume of loans and reduce the amount they need per loan.

These institutions are acting as agents for REPPIA they have a 100% guarantee. If the money is not repaid then they do not repay REPPIA, and they do not collect any fee. The initial loans will only go to affected businesses borrowing less than Rs.200,000. While USAID will not monitor the reflows of the money the GSL is planning that repayments will be retained by the collecting institutions in a special Capital Development Fund for the North and East.

These repayments can be re-lent at 11% for loans of less than Rs.4 million. The next repayment can be re-lent at 13% for loans of under Rs.10 million. The Banks would continue to keep 2% of each coupon. For the fourth round the banks could lend at commercial rates to anyone in the North and East and pay REPPIA 1.5% interest on the outstanding balance. ADB money would operate according to similar procedures, with similar terms, but REPPIA's disbursing role would be handled by the Central Bank. would only have a monitoring role for ADB money.

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The funds provided by the ADB have a ten year grace period and must be repaid in full in thirty years. The government would want the money advanced to the financial institutions to begin to be repaid to REPPIA (for the Central Bank) in five years and to be fully paid off in twenty-five years. This provides the Government with a five year period that they can use the money. This requirement effects how many times the money can be re-lent by the financial institutions. Comparable schemes would be established with other loan money provided to the government for reconstruction.

A Sri Lankan advisor to REPPIA will be provided with project funds for three years to assist in the development, monitoring and administration of the loan accounts made through the project.

If the national rehabilitation program is to achieve a return to normalcy in the North and East, normal commercial credit facilities must be available to business which need additional capital for operations or expansion after the grant program ends. The cooperative Rural Banks (CRB's) are the institutions which has the nest change of taking on this essential role for the 75% of the population of the affected districts who live in rural areas. Lending to small farmers and businesses could be profitable, if managed well. The objective of providing assistance is to improve the operation and financial capacity of participating financial institutions, especially the CRB's and Thrifts. This improvement would have to take place within a short period of time to enable them to provide on-going credit support after the first phase of rehabilitation. For the CRBs the assistance will be in line with proposals mooted by the Committee of Cooperative Rural Banking (1986) and a precursor to further assistance planned under the proposed ADB Rural Credit Project.

The advisor at REPPIA will develop and control a fund of $230,000 for training and upgrading of financial institutions. This fund will:

(1) train field staff on rural credit, farmer and business rehabilitation, bookkeeping and management procedures.

(2) design and implement a system for monitoring the performance of enterprises and financial institutions.

Few Thrifts and Credit Cooperatives have indicated an interest in participating in the non-housing components of the reconstruction program.

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ANNEX F. 7. - ECONOMIC DESCRIPTION AND ANALYSIS

Introduction

Consistent with the Government of Sri Lanka's overall rehabilitation and reconstruction program, the Rehabilitation Assistance Project (RAP) goal is recovery, not growth, revival, not development. The Government has chosen to act as an insurer, paying citizens back for damages inflicted by five years of ethnic conflict or at least sharing their losses. The RAP is designed as an integral part of the national program, incorporating a strong element of compensation for damages. Both the housing and the economic activities components aim at getting families and enterprises back on their feet as quickly as possible, to put them in a position where they can again begin to pursue long-term growth and development. But housing remains an investment only in the broadest sense of the term. For the economic analysis here, we have chosen to treat it as a value in itself, concentrating on the cost-effectiveness of the alternative means of helping the affected households to repair and reconstruct their houses.

Agriculture and irrigation in principle lend themselves to a more conventional economic analysis of benefit flows related to project investments. However, data on base-line conditions for agriculture in the North and East are sparse and of dubious reliability. Since 1983, no reliable data gathering has gone on in the eight administrative districts in the Project area. To examine the likely economic effects of the Project, the analysis therefore focuses on the agricultural inputs component, relying on data collected before 1983, and on a series of "best guesses" about key variables such as yields, prices, and cultivated area. Specifically, we have drawn on available data for specific areas as "representative" for other parts of the region. Consequently, the results of the economic analysis presented in this annex should be viewed as illustrative rather than comprehensive. They provide some insight into the economic impacts we can expect, even though the rates actually estimated may not be achieved.

Background

The worsening of the on-going ethnic conflict in 1983 led to serious disruptions of economic activity in the North and East of Sri Lanka. Housing, agriculture and other economic activities, irrigation systems, and the transport and communication infrastructure suffered major destruction and losses. Physical damage to shelter as well as to public and private facilities, the flight of farmers from their fields, reduced private investment, and disruptions in domestic trade had widespread negative effects on stability and welfare in the affected districts. Although macroeconomic performance was not that much affected directly, given the relative backwardness of the economy of the North and East, the conflict has begun to affect economic fortunes in the rest of the country by discouraging private investment, creating uncertainties in markets for Sri Lanka's export products, and curtailing tourism.

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In spite of these factors, the economy, buffered by high levels of foreign assistance, showed considerable resilience, registering acceptable national growth rates through 1986. Sri Lanka has struggled to maintain some semblance of economic progress through the period of hostilities. Macroeconomic indicators have appeared almost indifferent to the ethnic conflict, largely because the North and East have traditionally not been closely integrated into the national economy.

When the Indo-Sri Lanka Peace Accord was signed in July 1987, the stage for the country's economic recovery program seemed set. A return to normal agricultural production, business activity, and welfare and stability in the North and East, as well as to peace throughout the country would restore Sri Lanka's potential for continued economic growth. But speedy recovery will require a major infusion of resources.

In response to the country's subsequent appeal for assistance, many donors have come forward. The threat of renewed hostilities, however, has cast a shadow over the proposed recovery program. Nevertheless, many communities have begun to work to restore some semblance of normal life. Families are rebuilding their homes, farmers planting their fields, businesses opening their doors.

The ability of communities in the North and East to achieve a swift and complete recovery from the years of conflict depends only in part on the country's prosperity. The North and East have always been peripheral to the principal engines of the Sri Lankan economy: plantation agriculture and export oriented industries based on the island's cheap labor force. Thus, recovery to pre-hostility levels in the North and East of Sri Lanka should not be directly constrained by the current slump of the national economy. Resource transfers under the assistance program will provide the needed stimulus for recovery. Long-term growth and development seem unlikely without stronger linkages between the region and the rest of the country. Building and developing such linkages, however, goes beyond the scope of the rehabilitation and reconstruction effort.

I. Macroeconomic overview

a. Summary

Economically, the North and East present a relatively backward picture, with much of the population engaged in little more than subsistence agriculture. The region's limited trade is with the western and southern parts of the country, rather than among the different districts. Exports from the region to the rest of the country, mostly agricultural produce, face fairly stable demand patterns. The backward nature of the North and East and its limited integration into the national economy make recovery less dependent on a strong performance of the national economy. Fortunately so,

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since the gains of the late 1970's and early 1980's have been replaced by a mediocre growth record, with per capita income in 1987 stagnating for the first time in over a decade. Given stable markets, prospects for commercial agriculture in the North and East are more sensitive to any competition from imports.

b. The national economy

Sri Lanka's macroeconomic performance in recent years has been mediocre at best. While real GDP growth between 1977 and 1982 averaged 6.2 percent per year, and still held at 4.3 percent in 1986, it fell sharply to 1.5 percent in 1987. This sharp drop is largely a result of a drought that combined with a reduction of cultivated acreage in the North and East to lower paddy production by some 18 percent.

On balance, revenues from traditional export crops. tea (the country's most important net foreign exchange earner), rubber, and coconut, have stagnated over the last decade. Lasting export gains have been concentrated in a few sectors. Garments alone account for 70 percent of total export growth (in SDR terms) since 1977; garment exports have surpassed tea in total revenues, but their high import content yields substantially less domestic value added. Tourism, prior to 1983 a growth industry with a bright future, has suffered from the ethnic conflict: revenues in 1987 were less than 40 percent of their peak in 1982.

Following the massive expansion of public investment in the late 1970's and early 1980's, inflation ran rampant. It was brought under control, but has lately shown signs of renewed acceleration. Increasing debt service obligations (now claiming 40 percent of the GSL budget) and expenditures necessitated by the ethnic conflict offset efforts to cut back on capital expenditures, keeping the budget deficit at some 12 percent of GDP. Generally, the Government retains a lead role in economic activity, including the management of productive enterprises. Protection of these enterprises in various forms is a major source of remaining distortions in the economy, in contradiction of the avowed intent to move toward a more market-oriented and efficient economy.

c. The economy of the North and East

Together, the North and East account for roughly 15 percent of the total population of the island (7.6 percent in the North, 7.0 percent in the East), but only 12 percent of national GDP, as estimated on the basis of the sectoral composition of economic activity. Only the Southern Province showed a lower per capita GDP than the North or East.

The regional economy is dominated by agriculture, with very little of the country's modern industry located there. The area's few industrial enterprises include cement factories in Jaffna and Trincomalee, a chemical plant in Killinochchi, and flour mill in Trincomalee. Working primarily with imported inputs (with the exception of the Jaffna cement plant), these enterprises generate relatively little value added.

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The integration of the rest of the regional economy into national markets is limited. Basically, the districts of the North and East have been exporting a few basic agricultural products to other parts of the country. In return, they have been receiving mostly processed goods, including farm inputs, such as fertilizer, and building materials. The Colombo region has traditionally imported a wide range of vegetables, pulses, onions, chilies from Jaffna, Vavuniya and Trincomalee. Central Sri Lanka obtains vegetables and fruit from Batticaloa and Ampara. High transport and assembly costs, however, work to keep farm-gate prices for these commodities low relative to retail prices in the southwest. Generally, trade volumes have been low, even before 1983. Trade among districts within the region appears negligible, partly a result of poor intraregional transport networks, partly a consequence of limited specialization in a regional economy with large elements of subsistence agriculture.

Traditionally, Tamils living outside of their districts both in Sri Lanka and abroad (estimated at some 28 percent of the entire Tamil population) have maintained strong ties to their regions of origin. Remittances from this group are an important source of income for the region, in particular for the North.

d. Implications for the rehabilitation program

The shallow integration of the economy of the North and East into the national economy dampens the impact of the ups and downs of Sri Lankan industry and plantation agriculture. The current weakness of the country's economy therefore is unlikely to affect the rehabilitation program much; it presents a more serious obstacle to long-term development. More important for its relations to national markets in the short run will be the competitiveness of the economy of the North and East vis-a-vis imports that made up for supply gaps due to the conflict, and the Government's ability to prevent sharp increases in the price level for building materials by ensuring adequate supplies.

The RAP's focus on small-scale agriculture reflects the economic realities of the region. Since non-agricultural activities are largely oriented toward local markets, rapid restoration of agricultural incomes is also essential to complement support for off-farm enterprises by creating adequate demand. Non-agricultural activities with significant linkages to the outside may face problems during and especially after the assistance effort, if economic stagnation persists.

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II. Sectoral analysis: Agriculture

a. Summary

Agriculture dominates the economy of the North and East, with its share of GDP and employment significantly above the national average. Production has fallen off sharply over the last five years, as hostilities made it increasingly difficult to cultivate the land. Limited access to the fields also resulted in the deterioration of the irrigation infrastructure. But the basically simple patterns of production prior to 1983 should make recovery possible, once the situation settles down sufficiently. The actors will be in place: farmers, private merchants, extension agents, and administrators. The influx of resources under the rehabilitation program would provide the needed impetus for agriculture to reach its previous production levels. Under reasonably peaceful conditions, recovery will be greatly accelerated by the RAP assistance. The mostly illustrative economic appraisal of the impact of the resources to be injected into agriculture under the RAP indicates (financial) internal rates of return of some 18 percent for agricultural inputs, and about 6 percent for irrigation.

b. National overview

Sri Lanka has a triadic agricultural economy: a well-organized plantation sector works next to peasant farmers, who in turn work next to market oriented horticulturalists. To an important degree Sri Lanka's exports, and thus foreign exchange earnings, are crop driven, but the most important of these -- tea, rubber, and coconut -- are not grown in the North or East except for a few small-holder coconut estates.

For decades, national agricultural policy has stressed self-sufficiency in rice. The country came close to achieving this goal in 1983, but imports have climbed again since that year. Drought and the ethnic conflict share the blame for this regression. In recent years, the country's agricultural strategy has favored a more diversified agriculture, including fruit, vegetables, pulses, and minor export crops. Marginal lands in the East and North have been brought under cultivation and irrigation command areas expanded. However, some developments under this strategy have created competitors in markets where farmers in the North and East used to have assured markets.
The government establishes and supports floor prices for rice and selected other crops through the Paddy Marketing Board (PMB). The share of the crop purchased at the floor price has gone steadily down since 1977. It rarely exceeds 10 percent today. The GSL also subsidizes farm inputs, but since 1977 the subsidies on inputs have been reduced in real terms.

c. Agriculture in the North and East

Agriculture in the North and East differs fundamentally from that of the central and southwestern provinces. Rainfall is markedly lower, which makes agriculture much more dependent upon irrigation. Production depends largely on small-holders who grow rice to provide

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both their staple food and their principal source of cash income. Most farmers are effective owner operators although some tenancy exists. Many occupy lots on irrigated settlement schemes to which they have secured usufruct rights if not ownership.

Farm Population: With the exception of Jaffna, population densities in the North and East are below the island's norm. Where the southwest sustains from 400 to over 1000 persons per square km, the northern districts of Mullaitivu and Vavuniya have the lowest densities in the country (less than 50 per square km) and only Jaffna approaches southern levels. Mannar and Ampara support from 50 to 100 persons per sq km and Trincomalee and Batticaloa from 100 to 200.

The stricken districts are strongly rural. Mannar has only 15 percent of its population listed as 'urban'. Mullaitivu is the most rural, 89 percent, while none of the others are less than two thirds rural. The national rural average is around 78 percent.

Substantial proportions of the rural people, however, are not farmers (table 3). In only one district, Vavuniya, is the rural population claimed to be 100 percent farmers - a figure which should be treated with caution. In the other districts, twenty percent are typically rural but non-farm.

Table 1

Population Characteristics

District	Density per sq km	Percent Rural	Percent Non-farm*
North	1984		
Jaffna	400 - 600	67	18
Mullaitivu	50+	89	26
Mannar	50 - 100	85	50
Vavuniya	50 - 100	80	0
East			
Trincomalee	100 - 200	66	25
Batticaloa	100 - 200	75	18
Ampara	50 - 100	86	22
All island	245	59	25

Sources: Sri Lanka Transport Sector Study, 1986;
Census of Agriculture, 1982
* As a percentage of the rural population.

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d. Distribution of farms and cropped area

The decade prior to the `troubles' witnessed progressive change in the composition of farm holdings (Table 2). These changes are the joint product of varying numbers of farm households occupying a changing land base. In all but one area, Jaffna, cropped acreage rose, but in different rates, and sometimes direction, to changes in population. In Mullaitivu there were more and smaller farms in 1982 than in 1972, and similarly in Vavuniya. Ampara witnessed a sharp decline in average farm size. Three districts experienced an increase in average farm size -- Mannar, Batticaloa and Trincomalee.

Table 2

Trends in Land Use and Ownership, 1973-82

District	Percent change in No. of holdings	Percent change in No. of acres
North		
Jaffna	-4.1	-4.2
Mullaitivu	54.4	39.4
Mannar	10.6	30.9
Vavuniya	78.6	58.6
East		
Trincomalee	-3.6	26.0
Batticaloa	14.1	32.2
Ampara	21.2	4.6

Source: Census of Agriculture, 1982

e. Crop programs and dedication to paddy

In only two districts of the North and East do the majority of farmers grow paddy (Table 3). Jaffna is the major exception; its land holdings are typically too small to allow subsistence agriculture to be a practical proposition and in fact only 25 percent of the farmers reported growing the crop, where 45 percent of acreage was devoted to it. In four districts, Mullaitivu, Vavuniya, Batticaloa and Ampara half or less of the farmers were reported to grow rice. Somewhat higher proportions of land are reported under paddy - nearly 50 percent in Mullaitivu and Vavuniya, and 80 percent in Mannar and Batticaloa. Cultivation of other food crops (OFC) usually means intensive use of inputs, the use of modern and improved techniques, and sensitivity to market prices and conditions. The concentration on OFCs in the North and East bodes well for economic recovery in the agricultural sector.

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Table 3

District Paddy Holding by Size Class

District	Acres <1	-5	-15	>15
North				
Jaffna	38.7	52.1	7.7	1.5
Mullaitivu	0.6	78.7	18.2	0.5
Mannar	4.3	65.3	27.5	2.9
Vavuniya	3.1	66.2	27.1	3.6
East				
Trincomalee	1.7	79.9	16.1	2.3
Batticaloa	2.2	62.5	31.0	4.3
Ampara	6.4	78.9	13.1	0.6
Sri Lanka	43.6	50.8	5.2	0.4

Source: Census of Agriculture, 1982

The North is a relatively dry zone and irrigation is widely employed to provide supplementary water to offset highly variable rainfall. In many areas very little Yala [summer] cultivation is attempted. This is reflected in highly variable crop intensities which range from 141 in Ampara to 86 in Vavuniya (Table 4). Cropping intensity for the island as a whole is 125. One of the goals of the project is to enable farmers to return to normal cropping intensities. Neglect of irrigation systems during the conflict has had an important impact on farmers' capacity to get the most out of their land.

Table 4

Cropping Intensities

District	cropping intensity
North	
Jaffna	104.7
Mullaitivu	104.8
Mannar	89.1
Vavuniya	86.4
East	
Trincomalee	115.4
Batticaloa	95.8
Ampara	141.5
Sri Lanka	124.9

Source: Census of Agriculture, 1982

f. Sources of farm energy

Land abandoned during the hostilities has grown a thick cover of weeds and shrubs. Tilling this land will require more than usual amounts of energy. The availability and cost of this energy constitute two of the most important variables which will influence the success of the program to help agricultural sector recovery in the North and East. The RAP program to help recapitalize smallholder agriculture will ensure that farmers have access to adequate resources to purchase or hire traction to till their fields. If the cost of energy for traction suffers from scarcity-driven inflation, the economic analysis of this annex may be invalidated.

Sri Lankan farms draw upon three sources of energy to provide traction used in farm production: human and animal muscle and combustion engines. Many farms have no need to hire non-family workers (Table 5) -- 68 percent in Batticaloa, 63 percent in Mannar, and 57 percent in Jaffna. But 70 percent of the farms in Trincomalee, Mullaitivu and Vavuniya must supplement family provided energy with hired labor. On many farms, family workers provide less than half of the needed energy.

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Table 5

Farms Depending Upon Family and Other Labor

District	Percentage of farms where all work by family	percentage of farms <half work by family
North		
Jaffna	57	21
Mullaitivu	30	40
Mannar	63	25
Vavuniya	27	47
East		
Trincomalee	29	42
Batticaloa	68	15
Ampara	55	17
Sri Lanka	71	14

Source: Census of Agriculture, 1982

Note: on half of the farm area in Sri Lanka, work is done by non-farm members, but on 70 percent of the farm units all of the work is done by members of the farm family

Until the 1970s bullocks and buffaloes provided the bulk of traction energy to these farms. But the national draught herd has been on the decline since 1970. Some districts reported that the number of cattle fell by as much as a half in the this period. The explanation is argued to be a mix of pro-mechanization policies and loss of grazing land. In 1982 in the North or East, farms had only a third of the needed draught animal force available to them. During the war, more animals have disappeared. The DARP staff estimates that in normal circumstances, mechanized traction tills at most 6 percent of agricultural land (2 and 4-wheel tractors together). Animals till approximately a third of the land and the rest is done by hand.

Studies in 1981 demonstrated that bullocks were the most cost effective means of traction, where they were available. In the Mahaweli project area west of the Trincomalee district, a farmer could hire a pair of bullocks for Rs 75 a day, and get an acre tilled; the driver, assumed to be family, was not included as a cost. A four-wheel tractor, with driver, cost Rs 700 per day and

could till 6 - 8 acres, a range of roughly Rs 90 to 116 per acre. A recent AID-supported study has found that tractor threshing is approximately twice as costly as use of bullocks for threshing, Rs 147 -162 per acre versus Rs 80 acre.

g. Extent of commercialization

Subsistence production for home consumption continues to be important. In three districts, over half of the farmers did not engage in commercial agriculture in any significant way. In others, notably Mullaitivu and Vavuniya, a large proportion of all farmers sold production to buyers (Table 6). Specific information for the project districts is lacking; however, information from paddy systems in the east-central part of the island suggests that farmers first store a portion of their harvest for home consumption. Then `in-kind' debts are repaid to traders who have provided consumer goods, production credit and [possibly] emergency funds during the 3 - 4 month production period. Finally a share is distributed as gifts and the remainder is sold. The referenced study from eastern Sri Lanka estimated paddy sales to be 69 percent of total production, maize 74 percent and green gram 81 percent. The Paddy Marketing Board (PMB) estimates that half the crop is sold nation-wide.

h. Marketing.

Given the high proportion of crops sold by most farmers in the North and East, the recovery of the marketing system to pre-hostility levels of efficiency and coverage is essential. RAP agricultural and small business components will contribute to this recovery. Although this PP will not present an economic analysis of the marketing system in the North and East, the description below should help understand the commercial context in which the program will operate.

Several sorts of market structures exist. The best understood are the official channels for paddy and estate crops. Less well-known are those for coarse grains, chilies, pulses, oil crops and onions. The eastern and northern districts are essentially self-sufficient in food crops and little distribution occurs. Surplus paddy and coconuts are sent to the south western-markets.

There are at least seven major types of commercial participants in the private sector marketing systems: farmers, small retailers, trader boutiques, traders, itinerant traders, collectors and processors. In addition, three major public sector entities participate in the marketplace: the Multi-Purpose Cooperative Societies, Paddy Marketing Board and the Ceylon Oils and Fats Corporation. The private sector, however, has grown in importance since liberalization. The farmers maintain close links with the retailers as these provide lines of credit when cash is otherwise unavailable.

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The agricultural marketing system in the North and East operates under conditions of permanent scarcity of liquid capital. Traders, consequently, provide consumer goods and inputs to farmers which they themselves have obtained on credit from wholesalers, who have received their stock on consignment. Farmers repay in-kind to retailers, who in turn move the bulk goods up the system through traders and ultimately processors. Cash only enters the system at the point of final sale, at which time it begins to dribble back down, eventually reaching the primary producer: the farmer. The scarcity of capital partially explains the notoriously high interest rates charged for informal credit throughout the system.

Table 6

Proportion of Farms Which Produce Mainly for Sale

District	Percent of farms which market
North	
Jaffna	40
Mullaitivu	70
Mannar	63
Vavuniya	80
East	
Trincomalee	63
Batticaloa	35
Ampara	43
Sri Lanka	39

Source: Census of Agriculture, 1982

The ethnic conflict, by dramatically increasing the risk involved in any delayed transaction, has hamstrung this system which was based on trust and permanence. The RAP will provide an initial input of capital to reestablish the market participants in their former roles. At the same time, the infusion of important amounts of capital should help keep informal interests rate lower than usual.

Considerable competition exists at the farm gate level. Itinerant traders come to the farm to buy, and the farmer may choose between them and a number of local retailers. Farmers find it in their interest, however, to cultivate particular dealers on whom they can rely. Dealers in turn, face competition in selling goods and thus

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have an incentive to stay competitive. There seems little opportunity for monopsonistic practices on the part of traders. Although overall price spreads may be wide between farmer and consumer, market margins are reported to be very thin for traders, reflecting competition and the small absolute level of commercial activity at any given point.

Farmers prosperity directly affects the entire system. Because risk is commonly crop-related, bad luck for one farmer is likely bad luck for all. The above-noted AID marketing study reports traders in studied villages in eastern Sri Lanka get above 80 percent recovery in any given year. Crop production related risk from any source is borne by the lender which is an additional source of high interest rates.

Many farmers also earn important shares of their income from off-farm and non-agriculture activities (Table 7). A rather large number of farmers are part-time operators for whom agriculture is a sideline. In Ampara, for example, 44 percent of the households who operated farms had non-farm incomes and of this group of 16,000 only 1,000 viewed agriculture as their most important source of income. Other districts reported similar patterns.

Table 7

Source of Income for Rural People

District		Percent of farms having only agriculture income
North		
	Jaffna	49
	Mullaitivu	80
	Mannar	75
	Vavuniya	87
East		
	Trincomalee	71
	Batticaloa	55
	Ampara	66
Sri Lanka		56

Source: Census of Agriculture, 1982

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III. Hostilities and their effect on the agricultural sector of the North and East

a. Then [1982] and now [1988]

Since the 1982 Census used here as a baseline, civil unrest in the Northern and Eastern provinces has removed much land from cultivation and destroyed or run down considerable capital -- animals, tools, irrigation facilities, shelter, transportation and marketing or input supply infrastructure. The amount of damage to the agricultural sector has been estimated in global terms, but the details, on a farm level basis, remain little known. It is from this level, some estimated fraction of 1982, that recovery must begin.

Since 1985, the area has been afflicted by severe drought in addition to its man-made problems. It is difficult to separate the impact of each of these phenomena on total agricultural production. Paddy production has declined since 1983-84 in every district exce . Ampara, where, due to an influx of settlers, actual area under production has grown.

Substantial tracts of land in the eight affected districts have not been tilled for significant lengths of time. Irrigation systems are reported to have decayed from years of neglect. Tractors have been diverted from farm use to haulage and are much run down when, and if, returned. Livestock herds have been greatly reduced. Landless laborers, important supplements to the family work force, have departed as well. As production declined due to civil unrest, so have the transportation dependent marketing structures. Operating capital has been diverted to survival needs and traditional sources of informal credit have suffered as well, making liquid capital scarcer and more expensive than ever.

Table 8

Representative Net Paddy Areas Cropped, 1977 - 1984
['000 acres]

District	pre-1985 level	1987
North		
Jaffna	[65]	59.5
Mullaitivu	30	7.8
Mannar	32	21.6
Vavuniya	30	4.3
East		
Trincomalee	75	31.3
Batticaloa	104	92.5
Ampara	[145]	220.5

Source: Department of Agriculture, Census and Statistics, 1987

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Note: The figures reported from Jaffna [which include Kilinocchchi], have been extremely erratic since 1980 [s.d.= 23]. Ampara has sustained continued growth since 1978, when 113,000 acres were planted. The figures reflect drought as well as civil unrest.

Estimates exist as to the total acreage planted to paddy in the districts during the period of hostilities which, when compared with the years immediately preceding, provide some insight into the effect upon plantings of the troubles. These estimates are reproduced in graphic form [Graphs 1 and 2]. Production peaked in 1984, after civil unrest had turned violent. Each successive year has witnessed a poorer paddy crop. Violence has played some role in this decline, but the drought of the same period had an important impact as well.

The social cost of the conflict and the ground which must be recovered can be best understood by comparing the present with the last year of peace. The levels of acreage which must be recovered are suggested in the district graphs, as summarized in Table 8. Paddy production was on a plateau, averaging about 480,000 acres in the subject area, during the five years prior to civil unrest, 1978 - 1982. During the following two years total plantings rose 16 percent, to 560,000 acres, and then fell 21 percent to 437,000 acres by 1987. What proportion of this fall can be attributed to which phenomenon? We cannot answer this question.

In any particular year drought may have a widespread impact upon overall plantings, but full recovery occurs as soon as rain returns. War is likely to effect restricted areas more profoundly in that actual destruction of productive resources occurs. The low reported plantings in the North and East have been the joint product of sectional conflict and drought.

IV. Factors affecting speed of recovery

In order to better understand the returns to society from investment in rehabilitation, it is useful to estimate what might occur were no external assistance to be forthcoming. This is not entirely speculation in that recovery, no matter how restricted by insecurity, has begun, spontaneously led by people who never left their homesteads or who have returned to them.

If seeds and basic cultivation tools are available, cropping may begin as soon as rains permit. Larger scale cultivation, however, depends upon the condition of the supporting irrigation systems, and upon the availability of traction to open up land. One or both may prove to be serious constraints to early spontaneous recovery. Farmers will need assistance to overcome both of these obstacles to recovery.

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Fertilizer and specialized seeds, those not normally supplied, or not currently available, must be acquired somewhere. Government outlets and private retailers used to supply these inputs. Where these systems do not presently exist, or where supplies cannot be assembled and brought in for any other reason, farmers will face a constraint they cannot easily overcome without assistance.

Both farmers and tradesmen are likely to buy even without significant liquidity -- somehow credit will be found or arranged. But it may be exorbitantly expensive and may come slower than needed. Without external priming, money will not find its way into the sector quickly enough to prevent much additional indebtedness.

Farms depend on people for labor. If people have no place to live, they cannot work. If jobs are in prospect and shelter is available, people will return to the land. The RAP housing component will play a crucial, though unquantifiable, role in agricultural recovery.

In sum, if no assistance is forthcoming, the agricultural economy will eventually recover. But it will recover slowly and to the disadvantage of the small-holding farmers who are the backbone of the islands rural economy. They will have to go deeply into debt at usurious interest rates to obtain the capital they need to get their farms back into production.

V. Illustrative economic analysis

This section summarizes the assumptions for and results of an illustrative economic analysis of the impact of the assistance under this Project. The example chosen is that of agriculture, where the provision of grants (and loans) will speed up recovery in terms of acreage cultivated and of productivity per acre. Using the districts of Trincomalee and Batticaloa as an example, the analysis suggests that a starting grant of Rs. 2,000 as part of the self-employment grant will yield total benefits (net present value) of roughly Rs. 3,300 to farmers supported. The ratio of discounted benefits to Project costs is close to 3. As the discussion of the assumptions below shows, these estimates should be treated with considerable caution. However, they do give an impression of the magnitude of the economic effects of the Project.

Assumptions for the analysis

The analysis is based on the assumption that some 93,000 acres are to be brought under cultivation in the districts of Trincomalee and Batticaloa, for which we have suitable farm enterprise budgets. Actually, the Project will provide inputs sufficient to plant roughly 240,000 acres during the three-year LOP. None of the acres in the two sample districts are irrigated, all have lain fallow pending the return of farmers who have stayed away because of hostilities in the area. Without financial support under the

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rehabilitation program, these farmers are unlikely to have the cash or credit needed to purchase sufficient inputs when they return. The analysis of pre-hostility farm enterprise budgets suggests that expenditures of some Rs. 3,000 per acre maximize net income at Rs. 2,150 (implying a gross income of Rs. 5,150).

Under the "without project" scenario, farmers are expected to ration their insufficient resources by using fewer inputs on fewer acres. Thus, total income will be low because bringing land under cultivation is slow, and because productivity per acre is low. The Project assistance will enable farmers to accelerate cultivation and to use the optimum input level on each acre cultivated. The analysis below relies on some reasonable assumptions about these differences between the "with" and "without" scenarios.

1. General assumptions

   a. Relative prices do not change over the ten year analysis period.

   b. Rainfall is normally distributed, without the occurrence of a severe drought.

   c. The farm system will be able to autonomously regenerate itself over seven years.

   d. Farmers use the grant as intended.

   e. Farmers reinvest sufficiently to reach the target net revenue.

2. Assumptions for the "without project" scenario

   a. Inputs. Farmers are unable to fully finance inputs necessary to realize target net revenue at the beginning of the period. The ability to purchase inputs is a function of gradual growth following reinvestment from net earnings of the preceding year. Yields consequently rise yearly as farmers are able to reinvest from previous years earnings, building up the amount investable each successive year. It will take seven years [14 planting seasons] to reach the level of inputs which project farmers are able to reach in the first year they receive the grant. This assumes that the farm earns no off-farm income, which assumption is not true in many particular instances. Farmers are unable to generate much investable income from farm resources alone. The schedule is:

Year	Farmers' investment in inputs
1	Rs 2,400
2	2,500
3	2,600
4	2,700
5	2,800
6	2,900
7	3,000

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b. Acreages. It will take seven full years to recover pre-war acreage levels, if farmers have to rely fully upon their own regenerative capacities. The schedule of recovery is:

Year	Acres under tillage incremental	Acres under tillage cumulative
1	18,000	18,000
2	13,000	31,000
3	13,000	44,000
4	13,000	57,000
5	13,000	70,000
6	13,000	83,000
7	10,000	93,000

c. Revenues/yields. Gross revenues reflect the growing annual yield as extra inputs are applied per acre. The schedule is:

Year	Gross revenues
1	Rs 3,000
2	3,430
3	3,860
4	4,300
5	4,650
6	5,000
7	5,150

That is, without project assistance farmers are expected to bring the entire 93,000 acres under cultivation within 7 years and to increase their expenditures on inputs gradually to the optimum level and maximize their net income over the same time period. The annual net benefit flow, without project, increases as farmers are able to earn and reinvest.

3. Assumptions for the "with project" scenario

a. The delivery mechanism by which grants are provided to farmers is able to reach only a fraction of the farmers annually: 40 percent the first years and 30 percent the last two years. The delivery rate is reflected in the number of acres effected annually.

b. Acreage. The 93,000 acres will be brought back under cultivation over only three years under the project, following the schedule below:

Year	Acreage incremental	Acreage cumulative
1	37,000	37,000
2	28,000	65,000
3	28,000	93,000

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c. Inputs. The project will provide Rs 2,000 (as part of the self-employment grant) to each beneficiary farmer to purchase a basic input package, and one which will produce the targeted yield. For simplicity's sake, each grant recipient is expected to farm one acre. Each farmer will purchase Rs. 3,000 worth of inputs per acre.

d. Revenues. Farmers using the package realize full target earning potential from the first year, for a gross revenue of Rs. 5,150, or a net revenue of Rs 2,150.

e. Project costs. The project includes costs which cover the establishment of a system by which grants can be extended to farmers. The annual pace of outreach, essentially 40 percent then 30 and 30, reflect budgeting issues within the design -- in practice money might well be moved much more quickly. These charges are allocated unequally over three years.

On the basis of these assumptions, the analysis of the agricultural inputs component of the RAP indicates that the Project would yield a discounted present value (at 15 percent) of benefit streams to farmers, net of their own costs, of roughly Rs. 490.5 million, or Rs. 5,274 per acre. This benefit includes the one-time grant of Rs. 2,000. The discounted present value of Project costs for the sample area is estimated at Rs. 166.5 million, for a benefit-cost ratio of 2.95.

Analysis of the housing support component

1. Overview

The housing support component forms part of the unified grant and loan scheme In conjunction with the GSL's national rehabilitation program, USAID will supply funds and technical assistance to help restore damaged or destroyed housing belonging to poor families in the eight affected districts of the North and East of Sri Lanka to pre-conflict conditions of safety and comfort. Each targeted beneficiary will be given Rs 15,000 to be used to upgrade the household shelter. Although housing incorporates an important investment component, it is treated here primarily as a consumption good. The objective is to compensate people for damages and help them restore their housing to functional levels. The task is to achieve that objective as equitably and efficiently as possible. This section of the PP identifies the beneficiaries of the housing program, describes the pre-hostility conditions of housing in the North and East, and outlines some direct and indirect economic benefits from the construction and rehabilitation of housing in the short and in the long run. The comparison of the assistance approach finally adopted in the design of this Project with alternatives that had been considered in terms of equity and efficiency implications is provided in the housing annex.

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2. Beneficiaries

In the housing support component of the RAP, $22,500,000 will be distributed as grants to nearly 100,000 families whose homes have been damaged or destroyed since 1983. The direct beneficiaries will be persons in the lower half of the national income distribution, with monthly incomes of Rs 1500 or less, and who live in either urban or rural areas in the Northern and Eastern districts of Sri Lanka.

The restored shelter will not necessarily be equivalent to the housing lost in the conflict, but will provide the family a safe place to live and work. Families who want better housing can obtain loans from other sources established as part of the rehabilitation program, provided their incomes justify further indebtedness.

3. Pre-hostility condition of housing

The 1981 Census of Population and Housing offers a picture of the national housing sector, providing a basis for assessing what types of housing were affected during the civil unrest, and thereby allowing some estimate of the kind of rehabilitation work required. At the national level, a representative house in an urban area comprised a permanent structure (70 percent) with a hard roof (60 percent), cement floor [80 percent], access to a modern toilet facility, electricity and piped-in water (approximately 50 percent), and had two and a half rooms. Most (60 percent) were owner-occupied, but a good portion (30 percent) was rented or leased. The house was occupied by five and a half persons on average. Many of the houses were contractor-built and included an unmeasured but probably substantial import content (cement materials, metal appliances, etc.). Loss of such houses represents the destruction of an important asset which cannot be replaced easily by self-help alone. Owners of such houses, however, are more likely to be familiar and have access to formal sector credit channels.

Rural homes were much less well-constructed and had access to far fewer amenities. A bit over half of the rural dwellings had dirt floors, were constructed of impermanent or semi-permanent materials, had a thatch roof and non-rigid walls (60 percent in each instance). Almost none had access to piped-in water (95 percent) or electricity (85 percent). Only 42 percent had protected water supplies. Houses had 2.5 rooms and were occupied by a bit less than six persons. Many were single room establishments. Most [80 percent] were owner-occupied. A large number of the rural houses had been family-built from locally obtained materials. Many of the rural homes could be replaced using local materials and labor. Their loss, together with contents, may represent proportionately as great if not a greater setback to their owners than the urban housing losses.

4. Economic gains from investments in housing

The value of lost housing to the economy is difficult to measure, because housing contains elements of both an intermediate good and a consumption good. It is an intermediate good, since adequate housing contributes to productivity, although the mechanics of this contribution may not be well understood. At the same time, it contains important elements of a consumption good as well, reflecting qualities not directly relevant to productive activities. The relative importance of these two aspects varies by location and income category. For many micro-enterprises, the residence may also be the place of business.

Studies of housing elsewhere suggest certain patterns of any economic benefits generated by the sector, both in the process of construction (and maintenance) and in the use of the housing stock. In construction, low-income housing has been found to have both a higher labor content and lower import content than high cost housing. In addition, the construction of lower-income housing tends to make use of a higher proportion of low-skilled workers than high cost. For example, a housing-construction subsidy of $12,000 given to families earning less than $2,000 annually in Brazil was found to create five person-years of work largely concentrated among unskilled and barely skilled workers. Finally, there are important backward linkages from housing as a whole through the building industry and industries which supply building materials and equipment and furnishings for housing. All of these have a high employment content.

Housing serves multiple purposes, whether owner or tenant occupied. In addition to lodging, structures are often the center for many income-producing activities including retailing, provision of services, handicrafts, and even manufacturing. Stocks of housing, therefore, are likely to produce a stream of benefits for as long as the buildings are in service. Long term effects include the settlement of a labor force, and creation of house-based incomes, including rental [of a spare room], etc made possible by the housing investment.

Housing can also have savings effects. For most families the house represents their most important asset. It can be a growing asset as well (as the overall value of housing rises) and thus represents an important form of saving and source of future income. A house can be collateral as well. From a development point of view it a far superior form of saving than jewelry, gold or cash hoard. Such a savings effect may well play a role in creating incentives for maintaining stability in the reconstruction and rehabilitation in the North and East.

ANNEX F. 8 - SOCIAL SOUNDNESS ANALYSIS

I. Background to the Rehabilitation Program

For centuries, diverse ethnic and religious communities have coexisted in the island nation of Sri Lanka. Though there is a high degree of religious/ethnic tolerance, there have also been occasional outbreaks of communal violence, or tensions arising out of a sense of discrimination, injustice, or threat (either by a minority or the majority). The overt fighting in north and eastern Sri Lanka since 1983, primarily between is the most recent and most protracted such violence.

The Rehabilitation Assistance Project will address many of the consequences of that violence and, hopefully, contribute to conditions where sound ethnic relations can be rebuilt. Large numbers of non-combatants have been affected by the violence. Many were killed or maimed. Many more have had their lives and livelihood disrupted. Some refugees fled to India; many more fled from fighting to safer places in Sri Lanka. The homes of many have been damaged or destroyed. Focusing on four areas (housing, agriculture, irrigation, and small business enterprise), the Rehabilitation Assistance Project will attempt to help re-establish viable economic activity and family lives.

The three major ethnic groups in Sri Lankan Society are the majority Sinhalese (74 percent of the total population), Tamils (18 percent), and Muslims (6 percent). The Sinhalese majority, predominantly Buddhist, form the majority population in most of the nation (apart from the North and East) and dominate most national institutions. They occupy most seats in Parliament (particularly since the resignation of Tamil members from northern districts in 1983), as well as key policy and administrative posts in the Central Government.

In Sri Lanka Muslims are considered a distinct ethnic group, though virtually all are native speakers of Sinhala or Tamil. The Muslim community is a small minority in most parts of the country, but there are large concentrations in Ampara (where they are the most populous group), Batticaloa, and Trincomalee Districts. Muslims play a strong role in the nation's commercial life and retain strong communal solidarity through cultural and religious bonds.

The Tamil community is divided into two distinct groups. The majority, about two-thirds, are usually identified as "Ceylon Tamils" and have lived on the island for its known history. The other third, "Estate Tamils" or "Indian Tamils," are of more recent origin, brought to the island for work on British coffee, tea and rubber plantations from the mid-1800s onwards. Most of the Ceylon Tamils are concentrated in the North and East where they constitute a majority except in Trincomalee and Ampara districts. The majority of Estate Tamils live in the

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central highland tea areas, and are the most populous group in Nuwara Eliya District. Small, but significant numbers however, migrated to several northern districts after communal violence was directed against them in the late '50s. Until recently, most of this group of Tamils did not enjoy Sri Lankan citizenship and therefore lacked the legal right to own land.

After Sri Lanka (then Ceylon) gained its independence from Great Britain in 1948, perceptions grew among the Tamil community, especially in the North, that new national policies affecting language, education, government posts, and their general role in society were discriminated against them and increasingly limited their economic and educational opportunities.

The issues and feelings involved were and remain extremely complex and need not be analyzed in detail here. In recent years, Tamils of the North and East began to call for various degrees of autonomy. Various factions pressed these claims even from within parliament. As peaceful avenues of achieving such changes were perceived to be cut off, some resorted to militancy and violence directed against Sri Lankan government officials and security forces, Sinhalese communities, and Tamil moderates, to achieve an independent "Tamil Elam". This violence triggered indiscriminate communal violence against Tamil communities, particularly in 1983, followed by a build-up of the small Sri Lankan military. While Muslims generally remained neutral in these conflicts, many Muslim villages, especially in the east, also were caught up in the violence around them.

In response to this the Government pursued a dual course of 1) military action to restore security and 2) accommodation and negotiation to reach a political solution. The authorities were caught between the extreme position of the militants on the one hand and nationalistic tendency on the other, rendering resolution of the conflict extremely difficult. Eventually, an accord was signed with the Government of India (GOI) in which the GOI guaranteed the disarming of the main militant groups in return for a number of concessions by the Government of Sri Lanka. Among others, these conditions included the Sri Lankan Army pulling back to fixed position, establishment of an interim combined Provincial Council in the Northern and Eastern Provinces with substantial participation by the militants, constitutional changes related to language, and elections to be held by a set date. Indian troops were brought to Sri Lanka to police the peace under these conditions.

The Current Situation

The signing of the peace accord between the Governments of Sri Lanka (GSL) and India on July 29, 1987, raised hopes for peace in the affected areas in the North and East and spurred GSL and

donor interest in supporting a major rehabilitation and reconstruction effort. Reaction against the accord resulted in rioting in south and western districts, followed months of a continuing low level political violence. Rejection of the accord by the key Tamil militant group, led to a resumption of intensive fighting in the North and East, this time with the Indian Peace Keeping Force (IPKF), rather than the Sri Lankan Army. Though the GSL proceeded with many of the steps called for in the peace accord, renewed fighting delayed implementing the key steps in the North and East, particularly setting up the new Provincial Councils there. However, in anticipation that a final settlement would soon be reached, plans have been developed for post-war rehabiltation and returning refugees and displaced persons to their homes.

The major question of current concern is, when will it be possible to implement the rehabilitation program? As this project is moving toward authorization, peace has not yet been fully restored. The Indian Peacekeeping Forces are still in place. Almost daily casualties are reported in localized fighting the major militant group (the LTTE, or Liberation Tigers of Tamil Elam) and the IPKF, as well as occasional continued fights among the militant groups. Many people still are displaced. And the LTTE has considerable power over civil and administrative operations.

On the other hand there are a number of positive things to be said. Reports from northern districts, and particularly from Jaffna and Vavuniya, indicate that some semblance of security and order has returned, even though it is to a large extent enforced by the heavy presence of foreign troops. Refugees have been steadily returning from India to their homes,.mostly in Mannar District. In areas where fighting has largely ceased, many people have returned to begin repairing or rebuilding their homes, to begin farming, or to resume business activity. Though there is still no concluding agreement, or even direct negotiations between the LTTE and the GSL, the LTTE has informally indicated to local government officials that assistance which goes directly to people to rebuild houses or or re-establish economic activities would be permitted to proceed. In otherwords, some elements of the rehabilitation program could probably proceed now, though not in all affected areas. Finally, much planning has been done already by the GSL for the rehabilitation program. Indeed, some of the natural processes of reconstruction have begun.

Thus, uncertainties about the security of rehabilitation efforts are a constraint to the willingness of donors to commit funds, but at the same time, the viability of the Peace Accord and hopes for stability depend on effective GSL response to concerns that have contributed to the conflict. Some of these concerns are political and must be addressed outside the rehabilitation program itself. Others, however, relate to issues such as economic opportunity and unemployment which must be addressed, at least in part, through rehabilitation investments.

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With these factors in mind, the USAID assistance program emphasizes activities having the highest economic benefits and quickest returns, especially for the poor. The first priority is getting affected people back to their homes and work and restarting their economic activities. This requires moving resources quickly, fairly and with a minimum of red tape.

The impact and sustainability of rehabilitation efforts undertaken in these circumstances depends on several factors. First, a continuing reduction of tension, violence, and uncertainty is essential. Only if people believe that their personal investment of time and resources in rebuilding has a good chance of lasting will they commit their own resources or use project resources as intended.

A second factor is the consistency of political will as reflected in the implementation of the rehabilitation program. It has been agreed that rehabilitation funds largely will be channelled through the Government Agents of the affected Districts without interference from central Ministries. This principle is of critical importance as is non-interference by local or IPKF security forces at local levels for their own benefit or the benefit of a particular segment of the community.

A third factor of great importance is how the rehabilitation effort is perceived by potential beneficiaries. These perceptions will influence not only program success but also the possibilities for restoration of deeper political and social recovery. This factor obviously depends to some extent on the first two factors above. But it also hangs on perceptions of fairness and equity among groups across the spectrum of ethnic and political background. Great sensitivity will be required among program administrators and their personal credibility will have a strong impact on the program. This represents an important additional argument for local control of decision making and the participation, formal or informal, of a wide variety of community groups.

II. Project Beneficiaries

The direct beneficiaries of the AID assistance to the GSL rehabilitation program will be poor families of the affected areas involved in agriculture and small-scale private enterprise as well as those whose homes have been destroyed or damaged. Other poor groups not owning farm land or businesses (for example, fishermen or landless farm laborers) also will receive assistance through GSL resettlement and economic assistance allowances; they should, however, obtain substantial indirect benefits from increased employment in agriculture,

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construction, irrigation rehabilitation, and small business activity generated by the RAP and other GSL and donor rehabilitation projects. Notable indirect beneficiary groups include building contractors (from irrigation, housing, and business construction) and those transporting and marketing agricultural inputs, produce, and building supplies.

AID assistance is keyed particularly to the poorest victims of the conflict. Consistent with the income-related gradations built into the beneficiary registration system, AID has targeted assistance in housing and agriculture to the lower income groups. It also is pursuing a strategy of providing small grants to poor recipients (often as input vouchers) in order to move resources quickly into the affected areas with a minimum of administrative complexity.

Variations in Beneficiary Groups

The rehabilitation program will serve four categories of beneficiaries in the affected areas:

Displaced persons - those who fled from their place of residence to another, safer, area of the country and now are returning: This is the largest group. Most own land and were economically self-supporting. The GSL rehabilitation program is fundamentally structured for this group and should reach those persons in a relatively straightforward and effective fashion.

Refugees returning from India - those who fled to India and now are returning to Sri Lanka (especially the Mannar District which provides the closest port of embarkation for India): In general, the problems of this group are similar to those of displaced persons. Because many have been away longer or less in touch with friends or family in Sri Lanka, it may be more difficult for some refugees to prove land ownership or demonstrate eligibility for program benefits.

Landless persons (especially Estate Tamils who migrated to the Vavuniya and Kilinochchi Districts in the last decade): These persons may have an especially difficult time establishing benefit eligibility for housing or agricultural assistance. Many are not Sri Lankan citizens and do not have legal access to the land on which they live (or previously lived if now displaced).

Others who stayed in place but suffered loss of housing, property, or the opportunity for cultivation or enterprise activity: These persons should receive benefits on an equal basis with displaced persons who have returned.

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These groups vary in their legal entitlements, access to benefits, and the readiness with which they can return to a productive life. Persons who suffered loss of income-generating opportunity may be saddled with unpaid debts. Returning refugees may find settlers encroaching on their land. Widows may have to resume life without the major family breadwinner.

These are complex issues. Some require a generalized policy framework for their resolution; others need local adjudication. For example, citizenship is not a requirement for assistance under the rehabilitation program. But this issue is complicated by the fact that non-citizens cannot own land and may have been living in areas of encroachment on government land or land owned by absentees. Resolving the land issue for these persons is beyond the scope of the rehabilitation project and will depend on political decisions made by the GSL.

While determining damage to housing is a reasonably straightforward process, determining even the fact of loss for farmers is much more difficult. Farmers who remained on their land despite the obstacles to successful cultivation should not be discriminated against vis-a-vis those who fled and now have returned. In the same way, assessing enterprise loss is difficult. Both the amount and value of lost business or inventory during the period of disruption are difficult to ascertain. Local grass roots groups can assist the DRCC and AGAs with the process of determining benefit eligibility.

Variations Among the Affected Districts

The target area for RAP is by no means homogeneous. The eight districts vary in ethnic composition, urban-rural mix, cropping mix and intensity, climate, amount of conflict damage, and degree of private sector development.

Among the major variations is the ethnic mix itself. At one extreme, Jaffna is nearly 90 percent Tamil, almost all of whom are Ceylon Tamils. Few Sinhalese residents remain in this District; most of the non-Tamils are Muslim. By contrast, Trincomalee has a nearly equal division of Tamils and Sinhalese - about 40 percent each - with the remaining 20 percent Muslim. Batticaloa is nearly all Tamil and Muslim. Neighboring Ampara has experienced a good deal of Sinhalese resettlement in formerly Muslim areas. Of the Estate Tamils who have settled in the north, significant minority concentrations exist in Vavuniya, Kilinochi, Mulaitivu, and Mannar Districts. These variations result in differing social situations, each requiring a program sensitivity that is most likely to be found among local actors rather than in Colombo.

The rehabilitation program will not recognize ethnic differences; that is, assistance will be offered to all victims. Eligibility will depend on income level and loss caused by the conflict. In eastern Districts with a relatively large Sinhalese minority, assuring fairness may be difficult as strong central government political pressures in favor of Sinhalese interests may come to bear on program administrators.

There are other variations between Districts which may have significance to the program. In Jaffna, for example, there is an unusually high proportion of well-educated and administratively experienced persons and a broad middle class. Ceylon Tamils of other northern and eastern districts are generally not as well educated, and in some cases even resent the advantages of the Jaffna Tamils. A large number of relatively well-off persons in Jaffna were affected by the conflict, especially in terms of physical damage to houses and places of business. While their losses are greater, their resources for recovery and access to normal credit windows also are greater.

Another variation that could adversely influence project implementation is the degree of security as perceived by the government authorities. If, for example, implementation is skewed to those areas where security is highest, there is risk of benefits moving unequally. Such an eventuality could throw the rehabilitation effort into doubt among other residents of the affected areas.

III. Local Participation

As described in detail in the Institutional Analysis of this PP, Government Agents, assisted by special DRCCs, are the focal point in each District for the executive task of local rehabilitation implementation. Most of the affected Districts have Tamil GAs who are sensitive to the needs and circumstances of this majority group. Past government programs in these areas are perceived by many as not reaching affected Tamils in an equitable manner. Typical line ministry programs are perceived, correctly or not, as having diverted resources to activities favoring the majority Sinhalese population in the South. The decentralized structure of the rehabilitation program, allowing a maximum degree of the implementation decisions to be made locally, is essential for the rehabilitation effort to have credibility with local people and to motivate their effective participation.

The rehabilitation program directs DRCCs to include representation from citizens groups such as local community groups and NGOs. This is, in fact, happening through appointment of such representatives by the Government Agents. There are, however, difficulties in selecting these persons in a way that achieves the theoretical intent of citizen participation.

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In the wake of the disturbances of the early 1980s and the resulting lack of effective civil administration at local levels, many citizens committees emerged in the affected districts of the North and East to press for political concerns or provide a degree of village organization. Some of these committees represent particular aggrieved interests, make no claim to be broad-based, and are not representative of the broader, ethnically-diverse communities where they exist. Others have been more broadly representative but communal hostility has resulted in a number of these broader groups disbanding because of threats to their leadership. Groups of this type, however, have a history in Sri Lanka as effective vehicles of popular participation.

While citizens' committees are genuinely independent of Government, they receive a de-facto degree of official recognition when asked to provide representation to a government body such as the DRCC. This presents an obvious dilemma for both the GA and the Committees. Invitation to representatives of several narrowly-based committees virtually guarantees unproductive in-fighting on the DRCC. For the Citizens' Committees, acceptance of an invitation to serve on a government committee may compromise their legitimacy in the eyes of factional members. Clearly not all groups can or should be invited to participate with the formal rehabilitation structure. Informally, however, they may be able to play a role in beneficiary identification and in monitoring the fairness of program implementation at the community level. To this end, certain representatives of Citizens' Committees may be given an advisory role to the technical leadership of the DRCCs. Informally, these committees also are a way of providing some line of communication to the interests of militant factions in the affected areas. At the very least, community representatives in some areas will need to be acceptable to militant groups exercising informal control and requiring at least indirect participation in decision making. In any event, this is an issue in which AID will not be involved and which can only be worked out by local participants.

IV. Gender Analysis

Household and Economic Roles of Women

Although there is a considerable body of research on the roles of women in various apsects of Sri Lankan society, information on those women most affected by the ethnic conflict is either not available or not easily accessible. Some generalizations are possible and indicate gender considerations which should be kept in mind as design and implementation progress.

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In general, of the three ethnic/religious groups affected by the situation in the North and East, Sinhalese women tend to have the fewest traditional restrictions on their activities. Muslim and Tamil women, by contrast, are much less likely to go into business or take part in public life, and their literacy rates are likely to be lower than the very high 82% female literacy rates for Sinhalese women islandwide. However, social and cultural restrictions on women in public life are less apparent for poor women, no matter the ethnic group - a situation not uncommon in other parts of the world. Poor women rarely have the luxury of being "protected" by their menfolk and must go out to work to ensure the survival of their families.

This necessity pertains for much of the target population of the North and East. There is the additional unknown of the effect social upheaval itself has had on women's roles, including those in more traditionally restricted segments of society. Families have been split up, lost their homes, been displaced, fled to other regions or countries, and lost their breadwinners or other means of support. These impacts can be expected to cause changes in the roles of women, economically and otherwise. Women who heretofore depended on a spouse or other male relative for economic support may now be faced with the need to become the sole breadwinner for a family, a role for which they may well be unprepared.

Access of Women to Project Benefits

For women who do engage in income-producing activity, whether pre-conflict or in the future, traditional activities cover a fairly wide, if not particularly lucrative, range: agriculture (especially raising of vegetables and livestock, fish drying (though not fishing itself), weaving and handcrafts, and other micro-enterprises. The main characteristic of these activities is that they are largely based in the home. Realistically, the RAP will not be able to change this orientation; to the extent that its benefits are available to women, the RAP may expand the number of women taking part in economic activities.

Since for Muslim and Tamil women in particular, the family dwelling is a center of activity, the housing component of the project will have an effect on their ability to generate income as well as on their domestic well-being. Under the on-going Million Housing Program, which has continued to operate in the North and East throughout the conflict, women have had access to small home improvement loans. Some of these loans are disbursed via the TCCS (Thrift and Credit Cooperative Societies). In Jaffna, there are 16 women's Thrifts serving the credit needs of low and moderate income households. While this is not to say that women's access to credit for housing is equivalent to that of men, clearly the benefits of the on-going program are accessible to them, giving reason to believe the special RAP benefits will be as well.

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In the areas of agriculture and housing, women's access to credit may be expected to be constrained somewhat by issues of land tenure, particularly for single or widowed women and especially in Tamil and Muslim areas. Except for the Thrifts, formal lending institutions are generally only willing to make loans against collateral, such as land titles, which are more likely to be in the name of a male. Although the RAP cannot address these problems directly, it is important to monitor and assure that project grant benefits are not restricted for women heads of household who qualify.

Particular Problems of Widows

Although the evidence is intuitive and anecdotal now, the numbers of young men killed in the conflict suggest a large potential problem for the widows left behind. They are likely to be relatively young, with young children needing care, and unskilled. They may also be without a source of support if familiy networks are not present or accessible. Although Sri Lankan Hindu custom regarding widows is not as severely restrictive as in India (for example, Hindu widows in Sri Lanka are allowed by custom to remarry, though many do not do so), widowhood in Tamil society is an additional handicap with regard to opportunities for economic independence.

The RAP is not structured to address these sorts of problems. Monitoring can help ensure that project benefits are available to widows and other eligible female beneficiaries. Technical assistance is directed at implementing institutions, not individual beneficiaries. However, involvement of PVOs in implementation offers the possibility of specialized local programs for special needs. Widows should be targetted for such help, but the assistance must be very localized and culturally integrated with the beneficiary groups to be served. There are indications that other donors may help to finance such assistance for this group.

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ANNEX F. 9 - ENVIRONMENTAL ASSESSMENT

I. Introduction

A.I.D. policy requires that the environmental consequences of all activities be identified and considered by A.I.D. and the host country prior to a final decision to proceed with a project. The process of doing environmental assessments will enhance host country capability to evaluate environmental affects of development programs, and to design, implement and manage effective environmental programs [CFR. Reg.216.1 (b)].

An Environmental Assessment (EA) is required for the Rehabilitation Assistance Project (RAP) because the project proposes components related to irrigation and water management and because the agricultural component will indirectly finance input purchases, some of which may be pesticides [CFR.216.2 (dii) and 216.2 (e)]. Because this EA was produced simultaneously with the RAP design, the design team became aware of potential adverse impacts early enough to include appropriate mitigations in the RAP design. As a result, the potential for adverse impacts due to the RAP has been minimized and most of the mitigations proposed in this EA have been included in the project design.

AID will not have direct "knowledge of or control over " how the agricultural assistance will be used by farmers so the EA is not legally required to analyze pesticides (CFR. 216.2 (c)(ii) categorical exclusion). However, since AID is aware that pesticides are likely to be purchased, the Agency chooses to responsibly assess the impacts of pesticide use and advise the Government of Sri Lanka on appropriate mitigations.

II. Summary

The Environmental Assessment (EA) for the RAP project focuses on the potential for adverse environmental impacts due to four project components: 1) agricultural rehabilitation, 2) restoration of irrigation infrastructure, 3) housing rehabilitation and 4) restoration of the Jaffna Lagoon salt water exclusion scheme.

The greatest potential for adverse impacts due to agricultural rehabilitation results from possible use of toxic pesticides. This potential will be mitigated by indicating to all suppliers that certain pesticides, i.e. those that are restricted by the US Environmental Protection Agency or the World Bank would not be eligible for reimbursement. In addition as part of the general agricultural assistance, assistance will be provided for training in Integrated Pest Management (including appropriate use of pesticides) and monitoring soils, water and crops for pesticide residues.

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Rehabilitation of the irrigation tanks and canals will not involve creating new infrastructure or clearing new lands. The sustainability of rehabilitation efforts will be ensured by requiring that restoration of tanks with severely deforested catchments involve some reforestation efforts.

Support for repair and restoration of housing is likely to increase the demand for wood and concrete and clay bricks. Cement factories are already working at full production so cement will be imported. Increased production of clay bricks could lead to extraction of clay from new lands along flood plains in the eastern province. Increased cutting of forests is also likely due to wood demands. Sri Lankan laws concerning coastal conservation and delegation of forest cutting to the State Timber Corporation, if enforced, should help minimize such impacts.

Restoration of the salt water exclusion scheme at Jaffna Lagoon creates the potential for significant adverse environmental impacts in a number of areas. The EA outlines the terms of reference for an additional, detailed Environmental Assessment of the proposed lagoon restoration plan. RAP will fund the Jaffna EA as part of an overall feasibility study for the salt water exclusion plan. Support for the lagoon restoration will be contingent upon the EA producing a negative determination by indicating that adverse environmental impacts to physical and biological resources can be mitigated.

The environmental impacts of the alternative to the proposed project were also assessed. The only alternative considered was "No project". In the absence of a project, assuming peace is attained, farmers and local peoples would return to their farms and homes and resume their lives. This would involve many of the activities supported by the project. However, in the absence of the project it is expected that there would be greater exploitation of natural resources (e.g. trees) to generate income or for home restoration. It is also likely that the lack of funds for intensive cultivation would result in an increase in forest clearing associated with low input, low yield subsistence cultivation (chena). The absence of both the technical assistance for integrated pest management and the restrictions on use of USEPA- "cancelled" and "restricted" pesticides proposed in RAP could result in increased use of highly toxic pesticides.

III. Purpose of Project

The project will contribute to reconstruction of housing, rehabilitation of irrigation systems, restoration of crop production and revival of small enterprises. Farmers will be provided with a combination of grants and loans in order to purchase the agricultural inputs of their own choosing. Some of the grants will be in the form of input vouchers. The project will involve only

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existing irrigation systems and lands abandoned due to ethnic conflict. Since RAP does not involve clearing and developing new lands, there are few negative environmental consequences of the project and there are some beneficial environmental impacts. Section IIIA of the Project Paper provides a more detailed summary of the project's objectives.

IV. Affected Environment

Physical Environment

Physiography, Geology and Soils

Most of the project area is a relatively flat plain with isolated erosional remnants. Elevation above sea level ranges from 0 to 700 feet, with a few erosional remnants up to 2,500 feet (de Alwis and Eriyagama, 1968).

Most of the project area is based on Archean crystalline rocks. The north, central provinces are in the Khondalite group which includes quartzites, gneisses, schists, and crystalline limestones and dolomites. The east and south east contain the Biotite Gneiss group which includes feldspar, quarts and hornblende. In addition to those two main groups, the northwest coast contains Pleistocene sediments and Miocene sedimentary limestone (de Alwis and Eriyagama, 1968).

Climate

The general climate is equable, moderate, tropical and oceanic, with local conditions determined by topography (Holmes, 1956). Most of the project area is in the "dry zone" where rainfall is 25-100 inches/year, with an average of 50 inches (Holmes, 1956). De Alwis and Eriyagama (1968) report an average annual precipitation of 40-75 inches [1200 - 1900mm/year (MFC, 1983)] with more than half of it falling from October to January. The Jaffna area and NW coast are in the "arid zone" where precipitation is below 1250 mm/year and the period of drought is considerably longer than in the dry zone (MFC, 1983). Precipitation in the study area is principally received during the north-east monsoon (Maha) from November to January, and soils can become quite dry from July to September. The mean annual temperature is 85 degrees F.

Natural Ecosystems

Figure 1 summarizes five natural ecosystems contained within the project area. In addition, the project area contains several coastal ecosystems.

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Dry Evergreen Forest

The predominant natural vegetation of the project area is dry mixed evergreen forest. This is secondary forest underlain by relatively nutrient-rich soils. The forest is dominated by Drypetes separia (Wira), Manilkara hexandra (Palu) and Chloroxylon swieenia (buruta)(de Alwis and Eriyagama, 1968). The forest contains a number of valuable timber species such as Diospyros ebenum (Kaluwara), Vitex pinnata (Milla), Manilkara hexandra and Adina cordifolia (Kolon). Drypetes separia is the commonest species but its fluted trunk makes is useless for timber; it is used for fuelwood and charcoal production (MFC, 1983).

This forest supports a rich and varied wildlife population. The noteworthy animals living in dry evergreen forest include the elephant (Elephas maximus), leopard (Panthera pardus), sambur deer (Cervis unicolor), and spotted deer (Axis axis). Endemic species include jungle fowl (Gallus lafayetti), purple-faced langur (Presbytis senex) and toque macaque (Macaca sinica).

Thorn Forest

The arid, northwest coast of the project area is dominated by thorny scrubs and small trees. Dry zone species, such as Drypetes separia (Wira) and Manilkara hexandra (Palu), that are found in the arid zone are stunted in growth. Common trees include Acacia leucophloea, Azadirachta indica, Salvadora persica, and Chloroxylon swieenia (MFC, 1983). The growth of most species is too poor for forestry , but the areas are used by wildlife (de Alwis and Eriyagama, 1968).

Damana Grassland

Damana grasslands in the project area are only found in a small area on the western edge of the Batticaloa and Ampara districts, in the Eastern province. This grassland occurs in areas with shallow, alkaline soils, seasonal dryness, and repeated burning. Dominant grasses are Cymbopogon confertiflorus (Mana), Imperata arundinella (Illuk) and Dactylochium. Trees can occur in clumps on deeper soils, but frequent burning prevents much tree regeneration (MFC, 1984a).

Villus Grassland

Villus are seasonal, shallow, saucer-shaped, fresh-water marshes that usually occur on the alluvial flood plains of major rivers (MFC, 1984b). Villus occur in the project area along the Mahaweli river in the eastern province. Villus are typically covered with water for much of the

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year, but many can dry out in some months. Deep waters at the center of the villu support floating and submerged aquatics such as Hydrilla or Ceratophyllum. Villu edges support grasses that include Echinocloa, Polygonum, Ipomoea, and Scirpus. A park-like meadow can encircle the villu, supporting water-tolerant trees such as Terminalia, Mitrogyna, and Erythrina (MFC, 1984a).

The villu grasslands provide important grazing areas for both livestock and wild animals. Livestock herds in the Tamankadu area are almost completely dependant on the villus of the Mahaweli River. Villus are also important fishing areas and support a rich and varied bird life (MFC, 1984a).

Mangrove Forest

Mangroves are estuarine communities whose specific composition depends on the salinity and depth of water at each location. Mangrove vegetation is found in seven coastal locales in the project area: Jaffna Lagoon, Tambalagam Bay (700 ha), Kinniya (180 ha), Uppu Aru (360 ha), Mutur (300 ha), Arugam Bay, and Mullaithivu. The predominant mangrove species include the generas Rhizophora, Bruguiera, Avicennia, and Sonneratia (MFC, 1984b). Mangrove systems are vitally important for providing breeding grounds for shrimp and other fish and for preventing shoreline erosion. Mangroves are a significant source of fuelwood in the Jaffna and Trincomalee areas. Fishermen use mangrove wood for the poles and beams in their homes and for boat construction.

Coastal Systems

Seagrass beds, coral reefs, lagoons and estuarine ecosystems are also found in the project area. Coral reefs, shallow ecosystems based on calcium carbonate deposits from plants and animals, are found along the north coast of the Jaffna peninsula and along the east coast near Nayuru and south of Panyapalou. Coral reefs have significant economic value as buffers to coast erosion, breeding grounds for fish and as attractions for tourists. Estuaries are coastal water bodies with a perennial connection to the sea but which drain fresh water from the land. The 20 major estuaries in the project area include Jaffna Lagoon, Naya bay, Thambalagam bay, Uppur Lagoon and Batticoloa Lagoon (some estuaries are incorrectly called lagoons). The economic value of estuaries is based on their importance as nurseries for many commercially important species, harbors for fishing craft, sites for aquaculture, and as sources of sediments and sand. Lagoons are coastal, saline water bodies that are permanently separated from the sea, or are connected to the sea only during part of the year. Most estuaries will eventually fill in with silt and provide buffers against coast erosion (Workshop, 1987).

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Seagrass beds, among the most productive ecosystems on earth, are communities of rooted, seed-bearing marine plants (halophytes) that occur in shallow, near-shore coastal waters where wave action is reduced. Seagrass beds obtain nutrients from sediments and genera include Cymodocea, Halophila, Syringodium, and Zostera. The most extensive seagrass bed in the project area extends from Dutch Bay to Jaffna Lagoon. An additional large seagrass area is around Kokkilai Lagoon on the east coast. Seagrass beds are the only habitat of the endangered dugong (Dugong dugon). Seagrass is important for penaeid shrimp nurseries and as nesting area for the commercially important cichlid fish (Etroplus suratensis) (Workshop, 1987).

Developed Systems

Tanks

Many tanks harbor a rich flora that is influenced by the duration of water retention. Grasses and annuals invade the exposed drawdown zone of tanks. Large areas of some tanks are covered by naturalized exotics such as Salvinia molesta (a floating fern) and Eichornia crassipes, which have now become pests (MFC, 1984b).

Agricultural Lands

42% of the project area is forested. A significant portion of the remaining lands in the project area are used for agriculture. The Technical Annex for agriculture provides considerable detail on agricultural land use in the project area. Figure 2 shows the remaining dense forest cover in the project area.

Protected Areas

Figure 3 shows the location of national parks, nature reserves and wildlife sanctuaries in relation to the project area, while Figure 4 shows the locations of forest reserves. All of the forest reserves are currently established; the "proposed reserves" have not yet been surveyed.

V. Institutions and Laws Regulating use of Natural Resources and Protection of Environment

It is necessary to understand the GSL capability to protect its natural resources and environment in order to determine what types of environmental protection activities (mitigations) may need to be

designed into the project. The following is a summary of those agencies most directly responsible for managing the natural resources that will be affected by the RAP project, and the laws governing that management.

A. Government Institutions responsible for management of natural resources

Ministry of Local Government and Housing

Central Environmental Authority (CEA)

The CEA was established in 1981 to coordinate the activity of all government institutions concerned with the environment. The objectives of the CEA include incorporating environmental considerations into development planning and carrying out research and public awareness programs. When, in 1984, the government made Environmental Impact Assessments (EIA's) mandatory for all development projects, the CEA was responsible for developing EIA guidelines and providing training for implementation. However, there are no legal provisions in the Natural Environment Act to ensure compliance with the EIA requirement. Responsibility for approving development projects was delegated to 15 different agencies and only the Coast Conservation Department has statutes to implement the requirement. Activity of the CEA is constrained by lack of staff and budget, so it serves as an advisory body with little authority.

Ministry of Lands and Development

Irrigation Department (ID)

The ID is one of the oldest state agencies and is responsible for development of land and water resources for irrigation, hydropower and flood control. The Land Use Division was established in 1958; this division carries out salinity surveys and on-farm water management research.

Forest Department

The Forest Department responsibilities include protection of natural forests and plantations, establishment of agroforestry, watershed management, and maintenance of a sustained yield of timber for housing and other human needs.

State Timber Corporation

Commercial timber exploitation activities are carried out by the State Timber Corporation. The Corporation is responsible for timber cutting, saw mill operation, and wood product sales and marketing. It is one of the few State Agencies making a profit.

Water Resources Board

The Water Resources Board, established in 1966, is responsible for investigating underground water resources, well drilling, planting trees around wells and maintaining a plant supply nursery.

Ministry of Agricultural Development and Research

Department of Agriculture

The major activities of the Department of Agriculture include research, extension, training and certification of seed and planting material. The Department maintains a number of Regional Research Stations in each of the major agro-ecological zones.

Department of Agrarian Services (ASD)

The ASD is concerned with increasing agricultural productivity through efficient land use. The ASD has over 500 service centers throughout the island for supply of agricultural inputs. The ASD is also responsible for maintenance of minor irrigation schemes (for less than 200 hectares).

Ministry of Fisheries

Coast Conservation Department (CCD)

The CCD is responsible for planning and management of development activities within the coastal zone. The coastal zone is defined as 300 meters inland of the mean high water line, except for natural inland waterways connected to the sea, in which case the inland boundary is 2 kms. CCD has received donor assistance in developing a Coastal Zone Management Plan for Sri Lanka and a Master Plan for Coastal Erosion Management. CCD enforces requirements for environmental assessments for projects developed in the coastal zone.

Ministry of State

Department of Wildlife Conservation

The Department of Wildlife Conservation maintains protected areas and is responsible for protection of wildlife both within and outside protected areas. The Department manages 10% of Sri Lanka's land area but has limited research and training capability due to limited staff and budget.

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B. Non-Governmental Organizations (NGO's)

Voluntary non-governmental organizations are having an increasing influence on management of natural resources in Sri Lanka. NGO's have raised public awareness about projects that include protection of the Sinharaja Rainforest and opposition to the Trincomalee coal fired plant. Major environmental NGO's include the Wildlife and Nature Protection Society, the March for Conservation, the Sri Lanka Association for the Advancement of Science and the Nation Builders Association.

C. Legislation concerning Environment and Natural Resources

Many of the laws concerning protection of the environment and natural resources of Sri Lanka are more than 100 years old. At present there are more than 90 different statutes containing provisions related to natural resource management, pollution control and environmental planning. Some of the laws that are relevant to proposed components of the RAP include:

Water Resources Board Act No. 29 of 1964

Establishes the Water Resources Board and directs it to advise on planning of water resource use.

Forest ordinance of 1907 as amended in 1966, 1979 and 1982

Provides for the establishment of forest reserves and the control of timber and forest product transit. The ordinance is not adequately enforced and the penalties for illegal tree felling are considered too low to provide a disincentive for illegal logging.

Felling of Trees Ordinance No. 9 of 1951

Provides for the prohibition, regulation and control of cutting specific tree varieties. The Forest Department implements the ordinance, but it is largely unenforced.

Coast Conservation Act No. 57 of 1981

Provides for the creation of the CCD and requires EIA's for development in the coastal zone. The limited area defined as coastal zone excludes significant areas of mangrove and estuaries.

Prohibits extraction of coral for lime and cement??

Soil Conservation Act No. 25 of 1951

Provides for surveys of soil erosion and regulations to mitigate soil erosion. Any area can be declared "erodible" and specific regulations concerning its management can be designed. Land owners can be required to reforest stream banks and certain agricultural and forestry practices can be prohibited. The provisions of this act are not implemented or enforced.

Agrarian Services Act No. 58 of 1978

Requires that land be properly maintained to ensure efficient use and conservation of soil and water. Forms the Agrarian Services Commission to enforce the Act. The Act still lacks regulations related to appropriate soil conservation methods, the cutting of trees in reservations around minor irrigation works and the prevention of effluent discharge into paddy fields and minor irrigation works.

Crowns and Land Ordinance of 1947

Provides for the declaration of reservations for the protection of public streams, tanks, reservoirs, canals etc. The Ministry of Lands and Land Development implements the ordinance. The law is largely unenforced and penalties are considered too low.

Control of Pesticides Act No. 33 of 1980

Provides for regulation of pesticide formulation quality, use, transport, storage and disposal. The Act does not have provisions for protecting air, water and land. The Act's effectiveness is limited by lack of an institutional framework for enforcement and lack of support for monitoring residues in crops, soil and water.

Natural Environment Act No. 47 of 1980

Establishes the Central Environment Authority.

VI. Proposed Project and Alternatives: Impacts and Mitigations

A. Rehabilitation Project

1. Agricultural Rehabilitation

a. Pesticide Use

(1) Pesticides proposed for use.

Table 1 and Appendix A list the pesticides registered for use in Sri Lanka as of February 1988, and their USEPA

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registration status. The most recent USEPA registration status for each chemical was obtained from the AID/Washington Office of Agriculture; the status information for many chemicals is from the most recently available EPA lists, which may be two or three years old. The registration categories are as follows:

C - Cancelled. Not recommended for use anywhere.

R - Restricted. Recommended only for use by trained farmers. Pesticide presents high toxicity risks to humans and/or the environment. Can be purchased and used in the U.S. only by pesticide applicators who are certified. May be recommended only for use on specific types of crops.

G - General. Recommended for general use. Can be purchased and used in the U.S. without special permits.

NS - Not Sold in the U.S. This may be because a company has not yet applied for US registration, or because a chemical has a safety concern and is not yet registered. Chemical is usually in the experimental stage.

NR - Not Registered in the U.S.

D - Data Call In. The chemical is being examined to determine proper labelling requirements.

RSP - Registration Standard Procedure. Chemical is being examined in anticipation of re-registering it. Usually done for a chemical that has been on the market for a number of years.

USEPA classifies five of the 109 pesticides listed in Annex A as "cancelled" (1,2-dichloropropane, aldrin, butachlor, chlordane, and thiram) (Table 1). An additional 34 pesticides are classified for "restricted" use only. Some of the restricted chemicals, such as aldicarb, are highly toxic but are not usually used in Sri Lanka. Other toxic chemicals, such as paraquat, are not registered for use in Sri Lanka but are actually used here (see Table 2). The World Bank's pesticide guidelines find use of aldrin and methomyl (which is highly toxic to fish) to be unacceptable.

The RAP does not provide for procurement of specific pesticides and it is not known exactly what agro-chemicals a farmer might elect to purchase. Table 2 summarizes pesticides that were used in 1978 and 1983 on crops grown in the project area. Although none of the farmers contacted for the two referenced studies were using pesticides that are registered for Sri Lanka but are cancelled by the USEPA, it is discouraging how many of the pesticides used are not registered for use in Sri Lanka.

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Although malathion was used on rice in Jaffna (Table 2), it is not registered for use as a pesticide in Sri Lanka. It is imported by the Ministry of Health for use in malaria control and it illegally finds its way into the hands of the small farmer.

It is AID policy to try to use only pesticides that the USEPA has registered for "general use" without restriction. It is not AID policy to support use of restricted chemicals by small farmers, without providing for substantial technical assistance and training on how to reduce the risk of use.

TABLE 1

USEPA REGISTRATION STATUS OF
PESTICIDES REGISTERED FOR USE IN SRI LANKA *

CANCELLED

1, 2 - Dichloropropane (N) **
Aldrin (I)
Butachlor (H)
Chlordane (I)
Thiram (F)

RESTRICTED

1,3- dichloropropene (N)
2,4 D + MCPA (H)
Aldicarb (I,A)
Aluminium phosphide (I,T)
Brodifacoum (R)
Captafol (F). Under Data Call In.
Carbendazim (F)
Carbofuran (I). For powder and suspension forms.
Carbosulfan (I)
Dazomet (F,H,N). Can only be used on ornamentals, not food.
Dichlorvos (I)
Fenaminosulf + quintozene (F). Only for use on Hawaiian pineapples.
Fenamiphos
Fenvalerate (I)
Fosetyl - Al (F). Not for use on food.
Improdione (F). Not for use on food.
Indol 3 butyric acid (P,F)
Indol 3 butyric acid + NAA + thiram (P)
Isofenphos (I). Not for use on food.
Kasugamycin (F)
Lindane (I). Some uses are cancelled.
Magnesium phosphide (I)
M C P A (H)
Methamidophos (I)
Methomyl (I,A)
Methyl bromide (I,A,N)
Monocrotophos (I)
Oxadiazon (H). Not for use on food.
Oxydemeton-methyl (A,I)
Paraquat (H)
Permethrin (I)
Phenthoate (I,A)
Pirimiphos methyl (I). Only for exported grain.
Profenofos (I)

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Table 1 (cont'd)

Propoxur (I)

GENERAL USE

1 - Naphtylacetic acid (F). Under Registration Standard Procedure.
2, 4 - D (H)
Acephate (I)
Alachlor (H)
Ametryn + atrazine (H)
Asulam (H)
Bacillus thuringiensis (I)
Benomyl (F)
Captan (F). Under special review.
Carbaryl (I)
Carbofuran (I). Only for granular form.
Carboxin + Thiram (F)
Chinomethionate (AC,F)
Chlorothalonil (F)
Chlorpyrifos (I)
Cuprous oxide (F). Data call in in 1986.
Cyfluthrin (I)
Dalapon (H). Data call in.
Diazinon (A,I)
Dicofol (A)
Dimethoate (I,A)
Diuron (H)
Ethephon (P). Only for use on vegetables.
Fenthion (I). Only for use on ticks.
Folpet (F)
Glyphosate (H)
NAA + Thiram (P)
Mancozeb (F)
Mancozeb + Metalaxyl (F)
Mancozeb + Metalic Copper (F)
Maneb (F)
Metaldehyde (M)
Metribuzin (H)
Molinate + Propanil (H). For use on rice.
Propanil (H)
Quinalphos (I,A)
Sulphur (F,A)
Thiabendazole (F)
Thiodicarb (I)
Thiophanate - Methyl (F)
Trichlorfon (I)
Zineb (F)

NOT SOLD IN THE U.S.

2,4 D + Ioxynil octanoate (H)

Table 1 (cont'd)

2,4 D + piperphos
Benfuracarb (I)
Bitertanol (F)
Butralin (P). Under data call in.
Carbendazim (F)
Copper Oxychloride (F). Under data call in.
Coumatetralyl (R). Under restricted use.
Deltamethrin (I)
Endosulfan (I). Used on rice outside US, but is toxic to fish.
Edifenphos (F)
Fentin Acetate + Maneb (F, A). Denied registration.
Formothion (I)
Ofurace (F)
Isoprocarb (I)
Mancozeb + Oxadixyl (F)
Methabenzthiazuron (H)
Omethoate (I,A)
Oxadixyl (F)
Propineb (F). Not cleared yet.
Prothiofos (I)

UNKNOWN EPA REGISTRATION STATUS

BPMC (I)
chlorfluazuron
high boiling tar acid
oxycarboxin
oxyfluorfen
pretilachlor

* See text for explanation of EPA registration status.

** (N) - Nematicide
(I) - Insecticide
(H) - Herbicide
(F) - Fungicide

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TABLE 2

PESTICIDES USED BY A SAMPLING OF FARMERS IN SRI LANKA

CROP	USEPA	PESTICIDES USED Trade name (chemical name)	REGISTRATION STATUS *
Rice paddy (Jaffna Dis) (ref 1)	General	BHC **	
		Carbaryl	General
		Dursban (chloropyriphos)	
	General	Diazinon	
	General	Dimethoate	
	General	Dipterex (trichlorophan)	
	General	Endosulfan	Not sold in US
		Folidol **	
		Folythion **	
		Malathion **	
		Quinalphos	
	General	Sumithion (fenitrothion) **	
		Tamaron (methamidophos)	
	Restricted	Benlate (benomyl)	General
		3-4 DPA **	
		Sarcopur **	
		Stamf 34 ((propanil)	
		General	
Rice (ref 2)		MCPA	Restricted
		Propanil	General
		Paraquat	Restricted
		Parathion **	
		BHC dust **	
		Carbofuran	
	Restricted	Carbamates **	
		Edifenos	Not sold in US
Potatoes (Jaffna Dis) (ref 1)		Ambush (permethrin)	Restricted
		Antrecol 2 (propineb)	Not cleared in US
		Brassicol **	
		Daconil (chlorothanonil)	
	General	Tamaron	Restricted

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Table 2 (cont'd)

USEPA CROP	PESTICIDES USED	REGISTRATION STATUS *
	Trade name (chemical name)	
	Topsin (thiophanate methyl)	
General		
Chilis (ref 2)	Pirimiphos methyl	Only used on exports.
	Monocropthphos	Restricted
	Methamidophos	Restricted
	Sulfur (wwp)	General
	Captan	
General		
	Dithiocarbamates **	
Beans	Dimethoate	
General		
Shallot onions (ref 2)	Permethrin	Restricted
	Fenvalerate	Restricted
	Alachlor	General

* USEPA registration status provided only for pesticides registered for use in Sri Lanka.

** Not on 1988 list of pesticides registered for use in Sri Lanka.

References:

1. Vitarana 1983 (pesticides used by 10 interviewed farmers)

2. Sri Lanka, 1983 (pesticides used in significant quantities in 1978)

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Tinsley (1988) analyzed the toxicology of pesticide use in Sri Lanka. His report indicated that the use of chlorinated organics is minimal, with the exception of small quantities of aldrin, BHC and chlordane being used on coconuts and in reforestation. Such insoluble organic pesticides are resistant to hydrolysis. Their residue accumulation in water can have lethal effects on aquatic organisms, primarily fish.

Some method of controlling weeds is important. Failure to control weed growth soon after seeding in both rain-fed and irrigated wetland rice can cause up to 50% reduction in yields (Weeraratne, 1983). Farmers should first be trained and educated about Integrated Pest Management alternatives to intensive pesticide use. Training is also needed for appropriate pesticide selection, use and disposal.

(2) Quantities used

The Government Agent for Vavuniya indicated that pesticide use in his district is not excessive, but that farmers in the Jaffna district tend to overuse pesticides.

Pesticide use in rice and chillies is highest in the irrigated tracts. Pyrethroid use on onions is confined to the Jaffna peninsula (Sri Lanka, 1983?).

(3) Extent to which pesticide use is part of IPM program

IPM training has been conducted in Sri Lanka for a number of years. FAO (Food and Agriculture Organization) has supported training for IPM trainers. Studies of the effectiveness of IPM training in Sri Lanka have shown savings of 400-500 rupees/acre/season for rice and other crops. Use of IPM techniques is integrated into the programs of the agricultural extension service and IPM demonstrations are carried out in each district (M. Jansen, personal communication).

(4) Host country ability to regulate and control distribution, storage, use and disposal

The 1980 Control of Pesticides Act authorized delegation of a Registrar of Pesticides who is responsible to the Director of Agriculture. Application for registration requires extensive documentation of toxicological and efficacy data and industry representatives feel the process is working efficiently (Tinsley, 1988). However, compounds for which patent rights have expired can be registered with "generic" toxicology data and inadequate data on composition. The Registrar's office is unable to implement the enforcement provisions of the act due to lack of staff and analytical data (Tinsley, 1988).

Pesticides are supplied by regional distributors, private dealers, Multipurpose Co-operative Societies (MPCS) and Agrarian Service Centers (ASC) (Sri Lanka, 1983).

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(5) Acute and long term human impacts

The major cause of acute pesticide associated deaths is from suicide. Tinsley (1988) concluded that some occupational exposure to pesticides must occur in this multi-cropping system, particularly in the contract sprayer who might spray for 8-10 hours/day for several weeks. He found no record of consumers being adversely affected by residues on crops, or of Sri Lankan products being embargoed in other countries due to pesticide residues (Tinsley, 1988).

(6) Environmental toxicology and potential contamination of surface and groundwater

Tinsley (1988) concluded that the pesticides registered for use in Sri Lanka (Appendix A) present a low risk of undesirable environmental effects. He concluded that the high temperatures and light intensities of Sri Lanka would enhance rapid degradation of chemicals. Fish kills could result from improper disposal into streams. Pesticide drift (particularly from aerial spraying) might impact non-target organisms.

Contamination of surface or groundwater could have significant adverse impacts on inland and coastal aquatic habitats, human health and agricultural production. Contamination of groundwater could be particularly problematic in the Jaffna area where the population is highly dependant on groundwater for agricultural production.

(7) Development of pest resistance

The Government Agent for Jaffna district indicated that many of the crops grown in the area are in the Solanaceae family and their pests have developed resistance to pesticides. Throughout Sri Lanka the use of malathion and fenitrothion is restricted to mosquito control programs, to minimize the development of resistant mosquitos (Tinsley, 1988).

(8) Provisions for monitoring use and effectiveness of pesticides.

The GSL appears to have the capability to effectively control formulation of pesticides through the Ceylon Institute for Scientific and Industrial Research (CISIR). Tinsley (1988) noted that although the analytical ability of CISIR is well developed, it is overtaxed and cannot handle routine analysis required for pesticide regulation. The major formulators are equipped for quality control measurement while others have their formulations tested elsewhere (Sri Lanka, 1983).

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The GSL needs improved capability to monitor residues in soil and on crops. This is the only way to "keep the farmer honest regarding recommended application procedures" (Tinsley, 1988) and to avoid adverse environmental consequences. The Registrar has given responsibility for analysis of both formulation and residues to the Agricultural Chemistry group of the Central Agricultural Research Institute. The laboratory is well equipped and can analyze for chlorinated hydrocarbons and several organophosphates, but appropriate detectors are needed to analyze for the residues of many chemicals (Tinsley, 1988). Sri Lanka (1983) indicated that the GSL needed standard methods for quality control and a residue methodology for extraction and clean-up. There is currently monitoring of salinity and nitrogen compounds in groundwater is association with some major irrigation systems (around Puttalam).

(9) Measures necessary to mitigate potential adverse effects of pesticide use.

(a) Technical assistance, training, research and extension in Integrated Pest Management:

Integrated Pest Management (IPM) is a pest management system that, in the context of the environment of the pest species, compatibly uses all suitable techniques and methods to keep pest numbers below levels causing serious economic injury. The basic techniques of IPM which should be included in training include:

biological control: e.g enhancement of natural enemies, release of natural enemies, pathogen application.

host resistance: selection of resistant plants and animals.

cultural control: e.g. destruction of alternate hosts, crop rotation, pasture rotation, use of varied tillage practices, temporal avoidance.

physical control:e.g. temperature manipulation, fire, physical barriers

autocidal insect control:sterile-male release, use of pheromones, attractants or repellants; use of growth regulators

chemical pesticide use

Worldwide experience has demonstrated that the most effective way to avoid pest resistance and to also increase and sustain agricultural production is to employ a variety of the above control tactics. Under IPM, crops are regularly monitored (which is called "scouting") for the presence of pests, natural enemies and other factors which could influence a decision on a control measure.

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Pesticides are applied only if pest populations have exceeded unacceptable density levels and there is reasonable assurance that pesticide use will be profitable. Numerous recent examples have illustrated that pesticide use by small farmers can be reduced by 50% when farmers learn to evaluate their fields instead of immediately spraying on a prescribed schedule (AID, 1987).

In addition to training, technical assistance related to IPM should include on-farm demonstrations of yields with and without IPM. A program to design, monitor and evaluate field testing programs should also be included.

(b) Identify unacceptable pesticides

Vouchers for agricultural inputs should indicate that the voucher cannot be used for agro-chemicals that are 1) not registered by GSL or 2) classified as "cancelled" or "restricted" by the USEPA. The vouchers should clearly identify which chemicals cannot be purchased (the cancelled and restricted chemicals listed in Table 1). A list of the acceptable pesticides should also be made available to farmers with the input vouchers. Reimbursement will not be provided to vendors who sell unacceptable pesticides.

In addition, short-term technical experts should hold a meeting with officials responsible for registering pesticides in Sri Lanka. Registered pesticides that are cancelled or restricted by USEPA should be discussed in terms of potential residue problems and toxicity. GSL should explore methods of reducing risks from the most toxic chemicals (through education and training, or by removing them from the registration list?)

(c) Suggest proper application procedures for acceptable pesticides.

Technical assistance should include distributing information and training on restricted chemicals and others chemicals that need trained applicators. Tinsley (1988) noted the need to motivate farmers to adhere to recommended application procedures.

The GSL should be encouraged to adhere to the World Bank Guidelines for use of Pesticides (Appendix B). The guidelines address packaging, labelling, transport, storage, disposal and user training.

(d) Monitoring pesticides in water, soil and crop residues.

It is important to monitor changes in environmental quality (positive or negative) during project implementation. The agriculture and irrigation project components include recurring short-term technical assistance that is intended to assist with monitoring. This monitoring could be done in cooperation with the Water Resources Board and Agrarian Service Centers.

There is a need to monitor more large and small irrigation systems for pesticide residues in water. Initial wet and dry season samples should be analyzed from a number of surface water and groundwater locations. Problem areas should then be monitored more frequently. Samples should be analyzed for phosphates, nitrates, toxic chemicals, oxygen etc. Chemical degradation rates on treated crops and soil should also be monitored.

The GSL needs assistance in upgrading and expanding its analytical capability for pesticides in terms of both facilities and trained personnel. Technical assistance should be offered to the Central Agricultural Research Institute in acquiring appropriate detectors for various chemical compounds and solvents of satisfactory purity.

If the rehabilitation project includes the mitigations outlined above, then the Agency will have helped minimize the impacts of pesticide use by ensuring that all available pest management tools are considered and by addressing specific safeguards.

Summary of Technical Assistance required in Mitigations:

The Agriculture Component of the RAP Project Paper includes technical assistance provisions designed to mitigate potential adverse effects of pesticide use, and provisions for making the GSL aware of the risks of pesticide use. Short-term technical assistance is proposed for 2-3 months at the beginning of the project and then for three weeks every six months for the remaining three years of the project.

Short-term technical assistance will be provided by expatriate plant protection specialists with expertise in entomology and tropical agroecosystems, in collaboration with Sri Lankan plant protection scientists and plant ecologists.

a. Ecological Monitoring:

Expatriate 6.5 months; Sri Lankan 6 months $148,000

IPM Training:

Expatriate 4 months; Sri Lankan 4 months $ 92,000

b. Fertilizer Use

Because fertilizer inputs are relatively costly, soils in the project area are relatively fertile (in contrast to the wet zone), and rainfall is not excessive, it is not likely that fertilizer use could result in eutrophication of aquatic systems. Kandiah (1981) reported a high nitrate content in groundwater of the Jaffna peninsula which he attributed to use of excess urea fertilizer.

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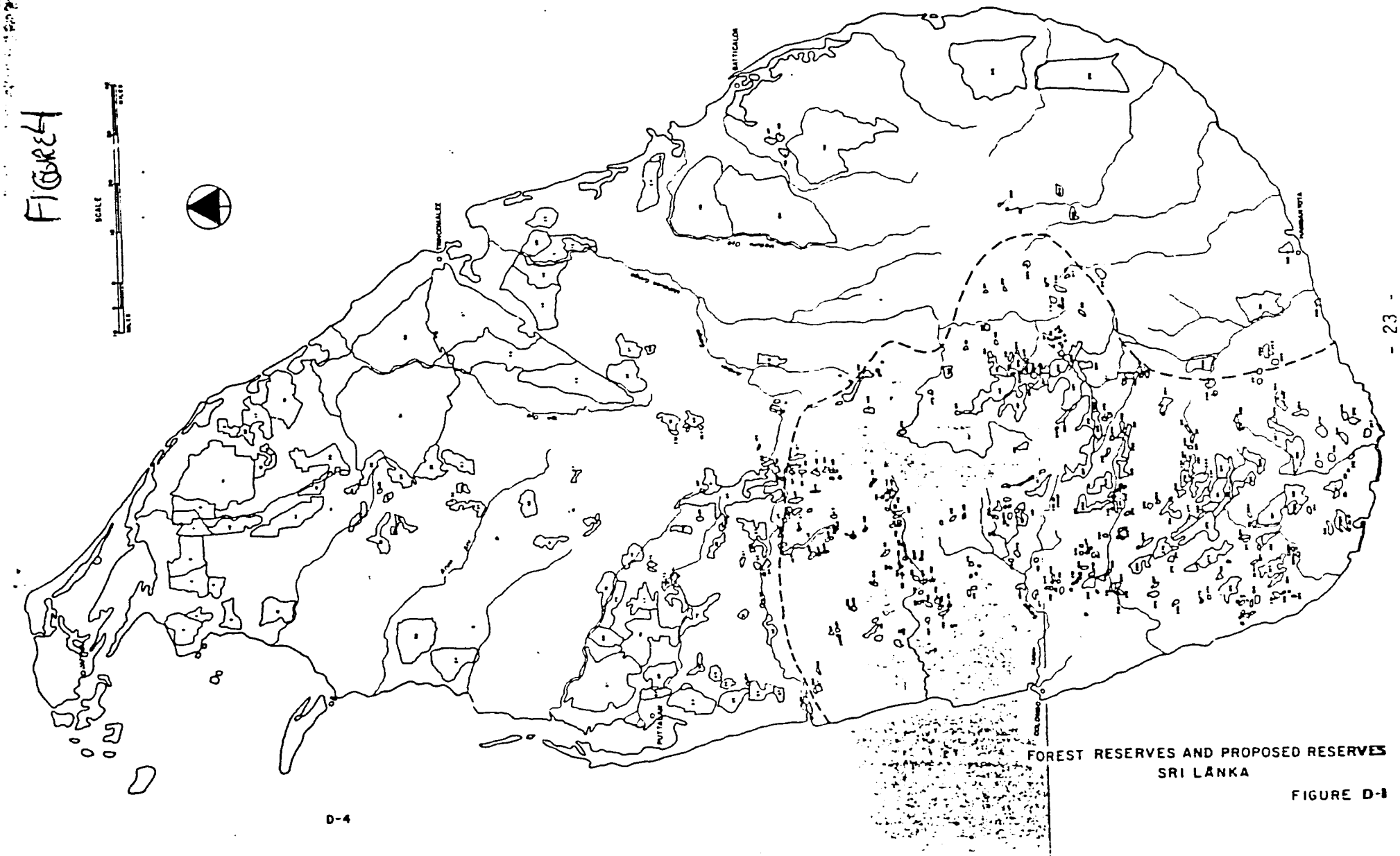
FIGURE 4



FOREST RESERVES AND PROPOSED RESERVES
SRI LANKA

FIGURE D-1

FIGURE 3 279

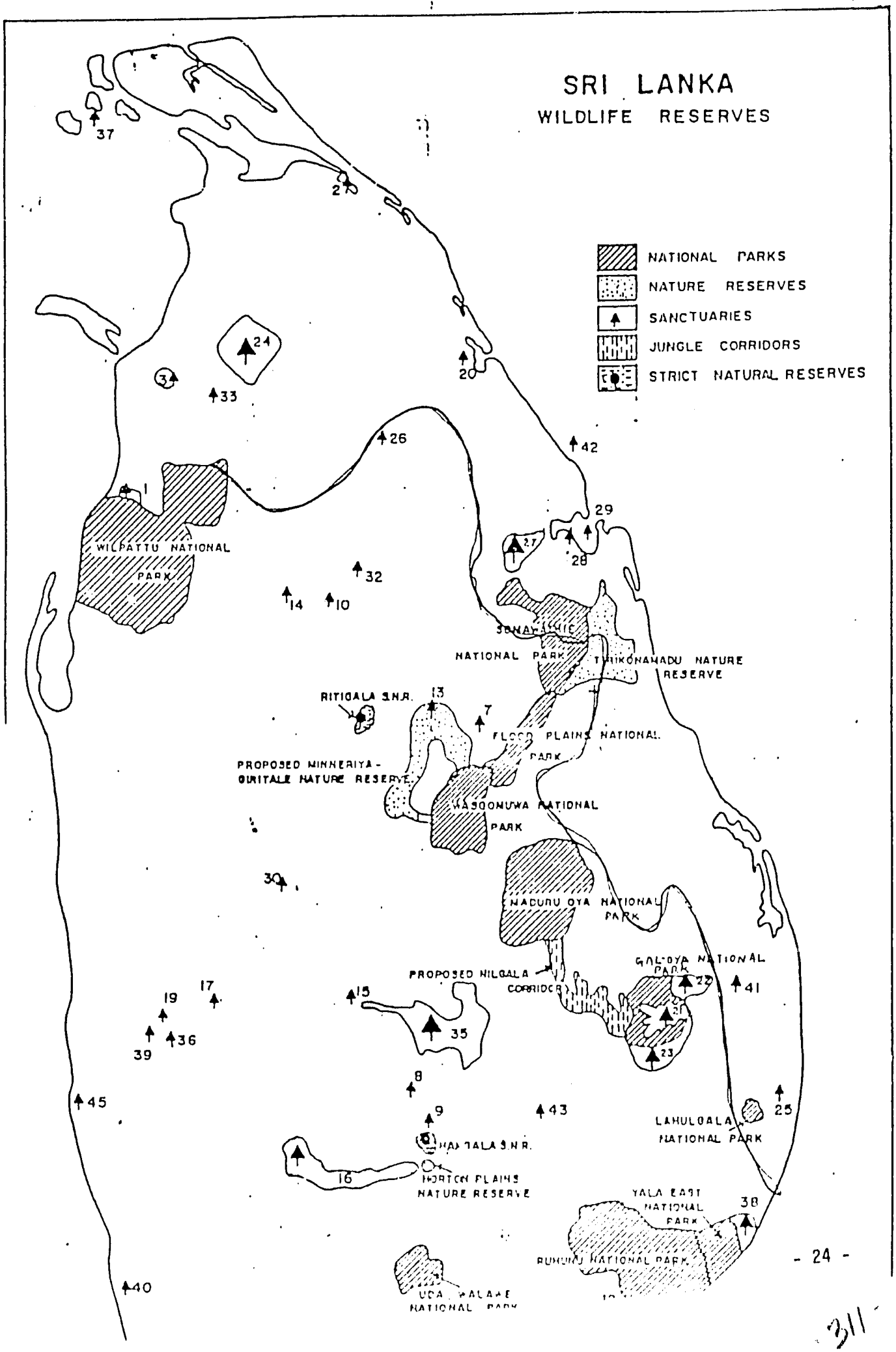


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Figure 2

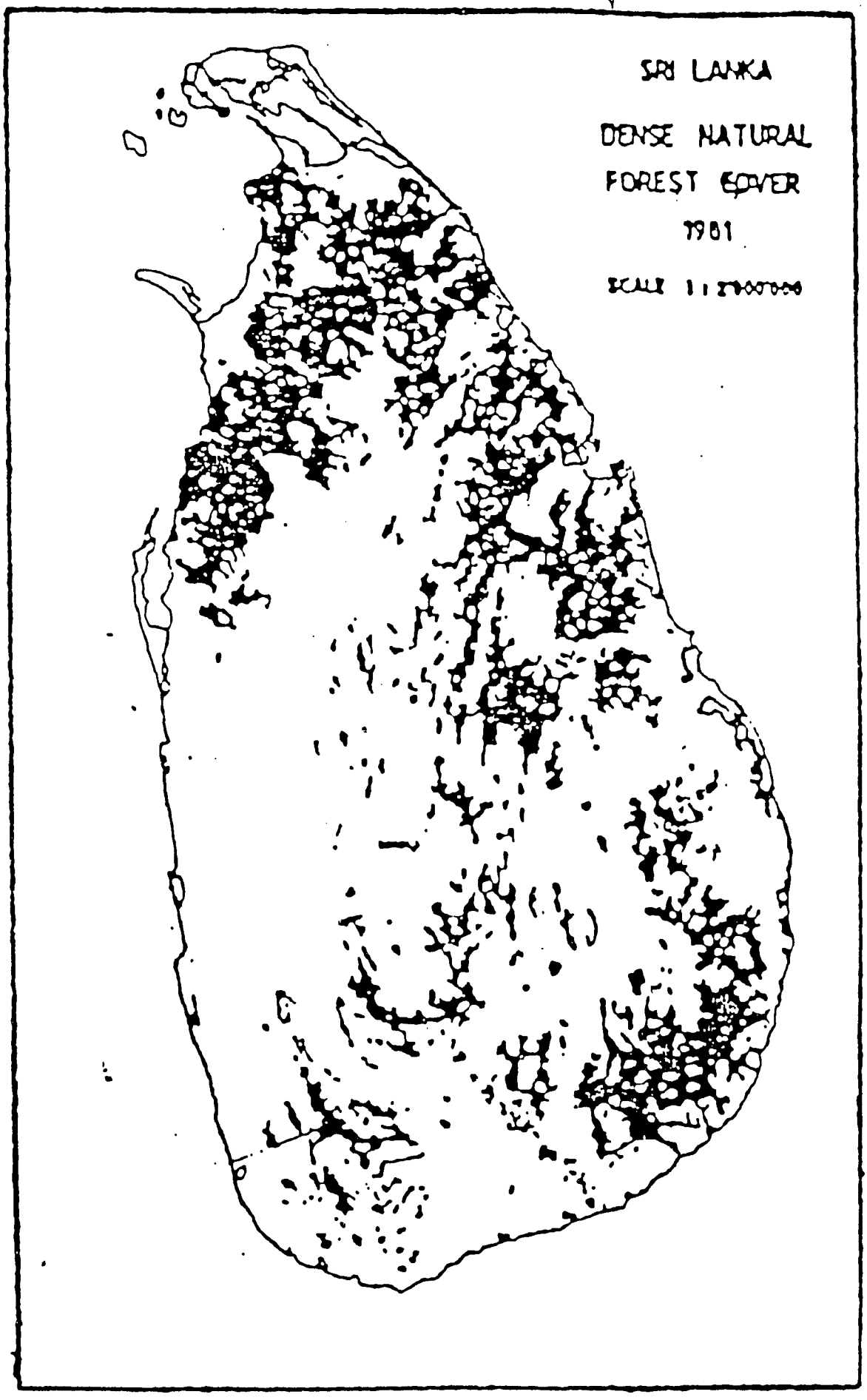
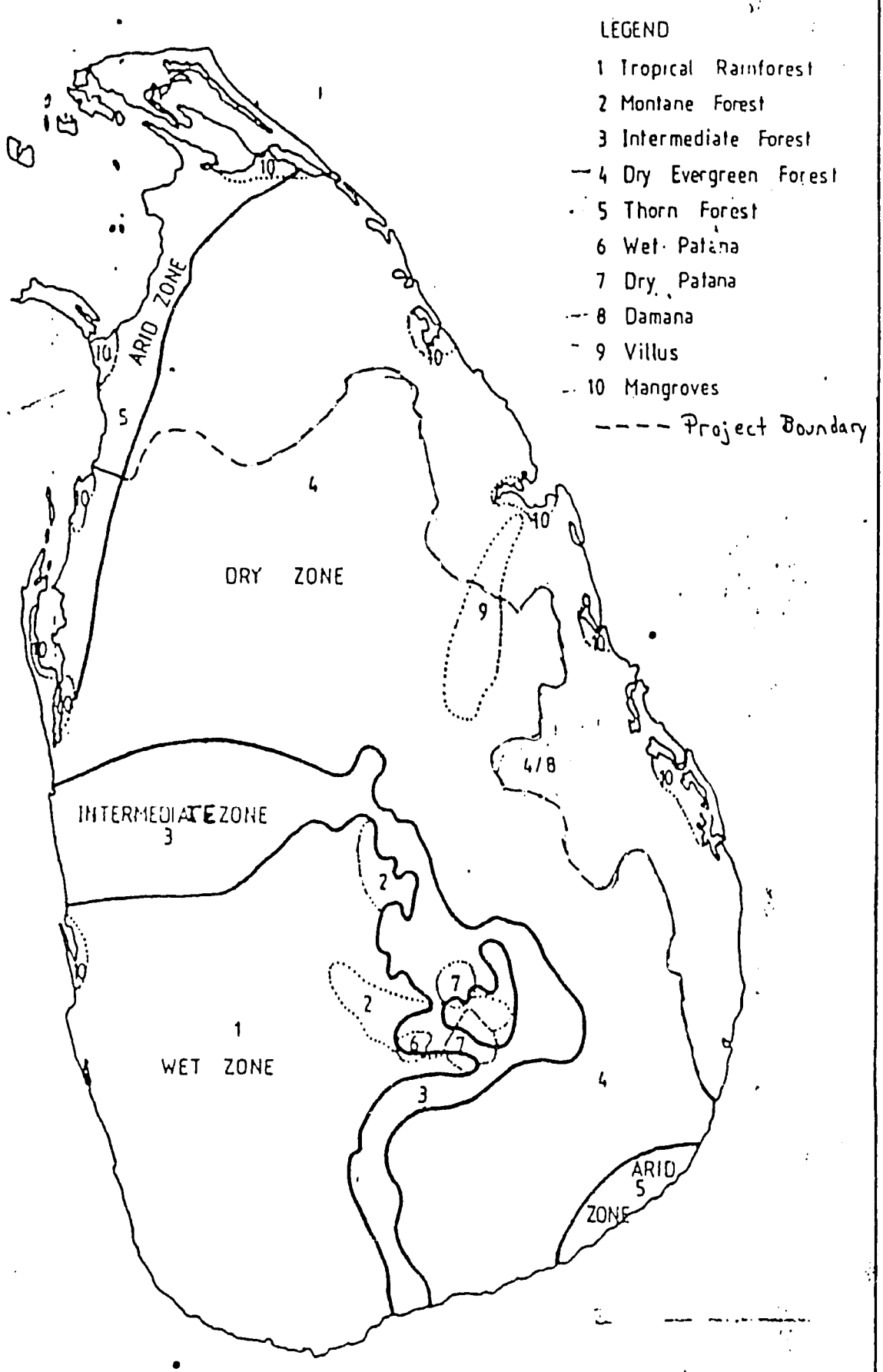


Figure 9 . Dense Natural Forest Cover Map of Sri Lanka.
(Source: Survey Department, 1981).

FIGURE I

Generalised Vegetation Map of Sri Lanka 275



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c. Agricultural restoration in general

The increase in agricultural production associated with the project will create potential for over-exploitation of groundwater resources and risk of increased salinization in specific areas. This has already occurred in some areas around Jaffna.

The potential for increased salinity due to overuse of groundwater could be mitigated by regulating the hours and amount of water pumped from wells. Each GA should consider regulating the hours and capacity of pump use where potential for saltwater intrusion into groundwater exists.

2. Irrigation sector rehabilitation

a. Impacts on land and water use

The irrigation rehabilitation proposed for gravity systems includes repair to the tank bund, the canal network and the access roads. Removal of grass, weeds and shrubs that have grown into the canals in the last 4 or 5 years should not have significant adverse impacts on birds or other animals that may be using that vegetation for food now. The banks of the canal will be replanted with turf, or covered with gravel, if necessary to prevent erosion. Gravel will be extracted from existing quarries. Work on access roads will not involve any clearing of new land.

b. Effects on ground water

Tank rehabilitation will help keep groundwater levels higher. In the NW there is a need for tank rehabilitation to prevent salt water intrusion since the area is underlain by limestone.

c. Effects on soil salinity and alkalinity

There is currently some waterlogging in Trincomalee and Batticoloa which leads to salinity buildup in soil. It is not expected that irrigation rehabilitation will increase the likelihood of changes in soil salinity or alkalinity.

d. Effects on water related human diseases

The project will reduce stagnant ponding (where malaria carrying mosquitos breed) by clearing canals and tanks to increase water flow. The only way the irrigation restoration component could increase the threat of water related human disease is by increasing the opportunity for transport of such diseases by bringing completely abandoned canals and tanks back into use. There are no plans to rehabilitate such canals.

e.Effects on erosion of watersheds, siltation etc.

The proposed project is not expected to increase erosion of catchments or increased siltation. The project is intended to decrease siltation.

Watersheds around some tanks, and upstream catchments, have been deforested enough to cause increased siltation into tanks (Vavuniya district).

f. Recommendations to ensure successful irrigation rehabilitation

Irrigation rehabilitation should consider the whole system, not just the tanks and canals. In order to ensure the sustainability of irrigation reconstruction and agricultural rehabilitation, the tank rehabilitation should be viewed from an ecosystem perspective and include tree planting to reduce siltation into tanks.

Tank rehabilitation should include reforestation of the area in the high flood level around a tank if it is denuded. If the catchment upstream from a tank is deforested, the GSL should agree to take necessary actions to reforest the area to complement the RAP irrigation rehabilitation efforts. Reforested areas could also serve as fuelwood plantations for villagers or could combine agroforestry techniques. This catchment restoration could be part of a technical assistance package that also includes methods to prevent further degradation of tank cachments (education and training of local people).

3.Housing Rehabilitation

Most of the homes in the study area are currently constructed with concrete bricks, wood, or clay bricks. Support for repair and restoration of housing is likely to increase the demand for wood and concrete and clay bricks. Cement factories are already working at full production so concrete bricks will be imported. Increased production of clay bricks could lead to extraction of clay from new lands along flood plains in the eastern province. The firing of the bricks could also result in increased cutting of fuelwood from natural forests. Increased cutting of forests is also likely due to wood demands for building.

Offering credit for obtaining housing materials could increase commercial cutting of trees for sale. The palmyrah stands and mangroves around Jaffna would be particularly vulnerable since there are few other wood sources in that district.

Proposed Mitigations

Sri Lankan laws concerning coastal conservation and delegation of forest cutting to the State Timber Corporation, if enforced,

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should help minimize the potential impacts of vegetation removal for construction.

The laws for protected areas and forested lands should effectively regulate where people cut trees for rebuilding houses. The GA for each district should regulate where clay is removed from floodplains in order to avoid damage to natural systems and important habitat.

4.Salt Water Exclusion Scheme at Jaffna Lagoon

The salt water exclusion scheme at Jaffna Lagoon will be subject to a separate feasibility study and environmental assessment. The barrage at the end of the lagoon is presently closed and seawater is kept out, but it leaks. Attempts are made to keep the salinity of the lagoon low in order to protect the fresh groundwater that is just six feet below the ground surface on the Jaffna peninsula. The GA for Jaffna indicated that they want to reclaim areas on the edge of the lagoon by building bunds, planting with casuarina or palmyrah, and leaching salt from reclaimed areas in each monsoon and by turning over topsoils. He then proposes growing salt tolerant rice.

While protection of the fresh water source for the Jaffna district is essential, the salt water exclusion scheme creates the potential for a number of adverse environmental impacts. The Environmental Assessment should, in addition to addressing the issues raised in Tillman (1981) and CFR 216, include the following:

1. A review of existing information on:

coastal and near coastal habitats in and around Jaffna lagoon; their areas and role in maintaining life support systems of the region (water and nutrient cycling, fish production etc)

the value of lagoon as nursery and spawning grounds for commercial and non-commercial species

the status of threatened and endangered species and present management status in the area

2. An assessment of:

the present level of fishery activity and other traditional uses of the lagoon system

the cost of salt water exclusion versus benefits of groundwater protection versus loss of prawn fishing.

- Water Resources Board monitoring capability for water quality. (Board was looking at N and Salinity in groundwater before the hostility started).

the probable impact of the rehabilitation of the saltwater exclusion scheme on lagoon ecosystem and associated seagrass beds, mangrove and salt marsh habitats.

probable impact on fisheries and other uses of the lagoon, and impact on livelihood of users.

impact on migratory species and threatened and endangered species.

3. Recommended Mitigation Measures for the Potential Impacts

Consideration should be given to the possibility of CCD (Coast Conservation Department) doing a Coastal Resources Special Area Management Plan for Jaffna Lagoon (Possibly as part of the USAID Coastal Resources Management Project)

The team conducting the assessment should include the following expatriates and Sri Lankan counterparts:

Ecologist/Coastal resource expert (with fishery expertise)
Ground water engineer
Agronomist
Social scientist/natural resource economist

The ecologists and social scientists should be present for the entire two month feasibility/environmental assessment period. The agronomists and engineers should be present for the first month.

5. Small Business Rehabilitation

Public sector infrastructure repairs are expected to be minimal and not involve the clearing of new lands.

B. Alternative to RAP: No project.(without ethnic conflict)

The environmental impacts of the alternative to the proposed project were also assessed. The only alternative considered was "No project". In the absence of a project, assuming peace is attained, farmers and local peoples would return to their farms and homes and resume their lives. This would involve many of the activities supported by the project. However, in the absence of the project it is expected that there would be greater exploitation of natural resources (e.g. trees) to generate income or for home restoration. Mangrove and palmyrah in the Jaffna area might be particularly vulnerable to exploitation. Village forests would continue to be used for grazing. (The GA for Trincomalee indicated protected areas are currently being cut illegally and animals are being eaten from protected areas). Catchments around tanks would continue to be cut and to cause increased siltation into tanks and canals.

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It is also likely that the lack of funds for intensive cultivation would result in an increase in forest clearing associated with low input, low yield subsistence cultivation (chena). The absence of both the technical assistance for integrated pest management and the restrictions on use of US cancelled pesticides proposed in RAP could result in increased use of highly toxic pesticides.

VII. Environmental Consequences

If proposed mitigations are implemented, it is not expected that the RAP project will have significant, unavoidable, short or long-term adverse impacts on tropical forests; the diversity of biological resources; endangered or threatened species, or their critical habitat; soils, water and air quality; coastal resources (vegetation, fisheries); land use; or archaeological, cultural and historic resources.

VIII. Conditions to Disbursement

Security considerations precluded conducting an adequate environmental assessment and feasibility study of the proposal to restore the saltwater exclusion scheme at Jaffna lagoon. Support for the lagoon restoration is contingent upon a separate EA being done which generates a negative environmental determination. The EA must show that any adverse environmental impacts to physical and biological resources can, and will, be mitigated.

IX. List of Preparers and Qualifications

This Environmental Assessment was prepared by Kathryn Saterson, Environment and Natural Resources Officer with the Asia/Near East Bureau, Agency for International Development. She has an M.S. in Botany and a PhD in Biology. Saterson's experience in natural resource management includes 3 years preparing environmental impact statements with Arthur D. Little, Inc. and a year in the AID Office of Forestry, Environment and Natural Resources.

Assistance was provided by Malcolm Jansen, USAID/Colombo Environmental Officer. His has an advanced degree in ecosystem management and environmental protection. Jansen served for 8 years as the senior environmental officer to the Mahaweli River Basin Project, and as the GSL counterpart for the environmental impact assessment of the Accelerated Mahaweli Program.

Douglas Pool, agronomist on the Project Paper design team, also contributed advice to the analysis. His qualifications include a masters degree in tropical agriculture. Pool has written several environmental assessments for AID and OAS.

X. References

AID. 1987. AID Agricultural Pest Management Guidelines. Draft. December 13. 46pp.

Code of Federal Regulations (CFR). Section 22 part 216. International Development Cooperation Agency. Agency for International Development. Environmental Procedures. AID Handbook 3. Appendix 2D..

De Alwis, K.A. and G.J. Eriyagama. 1969. Some observations on soil-vegetation relationships in the lowland dry zone of Ceylon. The Ceylon Forester. Vol 9 (1 and 2): p.53-76.

Holmes, C.H. 1956. The Broad pattern of climate and vegetational distribution in Ceylon. The Ceylon Forester. Vol 2 (4): p. 209-225.

Kandiah, S. 1981. Ground water pollution in the north of Sri Lanka-An Analysis. Phyta. Vol 2 (1):9-12.

MFC News. 1983. The forest types of Sri Lanka. March for Conservation Newsletter. Issue 3. September. p.3-6.

MFC News. 1984a. Grassland types of Sri Lanka. March for Conservation Newsletter. Issue 4. January. p.3-6.

MFC News. 1984b. Fresh water, estuarine and maritime vegetation. March for Conservation Newsletter. Issue 5. June. p.3-6.

Sri Lanka. 1983. Chapter of a book. pp 158-171. (Doug P. received it from Mission?). Based on ARSAP Commissioned Study by Ranjith Ranadheera, "Imports, marketing and distribution of agro-pesticides in Sri Lanka, 1981"

Tillman, R.E. 1981. Environmental Guidelines for Irrigation. US Man and the Biosphere Program and US Agency for International Development. June. 74pp.

Tinsley, I.J. 1988. Environmental Toxicology of Pesticide Use in Sri Lanka. Department of Agricultural Chemistry, Oregon State University. A Report prepared for USAID/Colombo. 11pp.

Vitarana, Kamini. 1983. Usage of Pesticides in Agriculture, Floriculture, Food Storage and the Home. Marga Institute. Sri Lanka Centre for Development Studies. November 1983. 52pp.

Weeraratne, C.S. 1983. Pesticides - An overview with particular reference to Sri Lanka. Economic Review. (8): 10. pp 4-12.
Workshop on Critical Habitats in the Coastal Zone. 1987. Sponsored by the Coast Conservation Department, USAID, and the University of Rhode Island. 57pp.

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XI. Appendices

A. List of Pesticides Registered in Sri Lanka. February, 1988

B. World Bank Guidelines for use of Pesticides. 1985.

C. AID Funded Sources of Technical Assistance in Pest Management.

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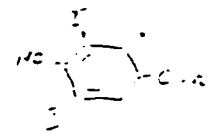
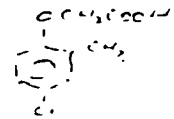
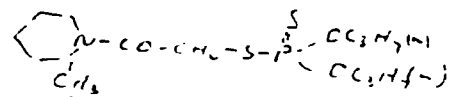
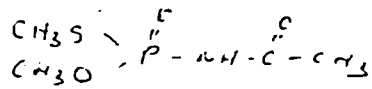
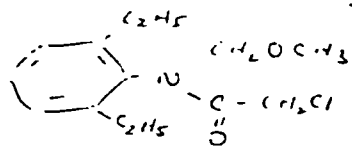
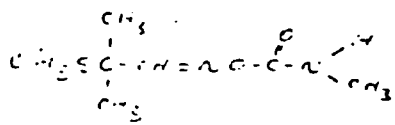
APPENDIX A

The Registrar's Office
23 Feb 1988
REGISTRAR
NATIONAL STATIONS

		1,2 - dichloropropane + 1,3 - dichloropropene (H)				C R
42	Lankem DD	Lankem Ceylon Ltd.	...	VP	Mixture	
		1 - naphtylacetic acid (P)				
177	Planofix	A. Baur & Co. Ltd.	4.5%	SL	.....	G + RSP
455	NAA Tech.	Union Carbide Ceylon Ltd.	100%	TC	.....	
465	Lankem Flowering Hormone	Lankem Ceylon Ltd.	20 g/l	SL	.....	
		2,4 - D (H)				
14	Hedonal D 55	Haychem Ltd.	550 g/l	SL	Potassium salt	G
105	2,4 D-Na salt 80 SP	Ceylon Petroleum Corporation	80%	WP	Sodium salt	
129	Fernoxone	Chemical Industries(Colombo) Ltd.	80%	SP	Sodium salt	
149	2,4 D	Harrisons & Crosfield(Colombo)Ltd.	80%	SP	Sodium salt	
264	Baurs 2,4 D	A. Baur & Co. Ltd.	720 g/l	SL	Amine salt	
411	Rhodiamine	Chemical Industries(Colombo) Ltd.	727 g/l	SL	Amine salt	
467	Fernimine	Chemical Industries(Colombo) Ltd.	720 g/l	SL	Sodium salt Amine salt	
479	Harrisons 2,4 D Amine	Harrisons & Crosfield(Colombo)Ltd.	720 g/l	EC	Amine salt	

Columns 1 - 6 denote
Registration No., Trade Name, Distributor, Concentration of active ingredient in product, type of formulation and observations, respectively.

		2,4 D + ioxynil octanoate (H) NS				NS
355	Actril DS	Chemical Industries(Colombo) Ltd.	100 g/l + 600 g/l toxic to fish	SL		
		2,4 D + MCPA (H)				R
481	Bi-Hedonal SL 70%	Haychem Ltd.	60% + 10%	SL	.....	
		2,4 D + piperophos (H) Not met in US.				
153	Harcros Rilof H	Harrisons & Crosfield(Colombo) Ltd.	330 g/l + 170 g/l	EC	.....	NS
		acephate (I)				G
144	Ortnene 75 SP	Harrisons & Crosfield(Colombo) Ltd.	75%	SP	.....	
422	Orthene 300 EC	Harrisons & Crosfield(Colombo) Ltd.	23.7%	EC	..... toxic to birds	
		alachlor (H)				G
52	Lasso	Lankem Ceylon Ltd.	455 g/l	EC	.....	
170	Red Star Alachlor	Anglo-Asian Fertilisers Ltd.	430 g/l	EC	.....	
476	Baurs Alachlor	A. Baur & Co. Ltd.	480 g/l	EC	.....	
		aldicarb (I,A)				R
278	Temik 10 G	Union Carbide Ceylon Ltd.	10%	GR		

aldicarb (I,A) contd.

418	Temik 10 G	Green Farms Ltd.	10%	GR	.....

aldrin (I)

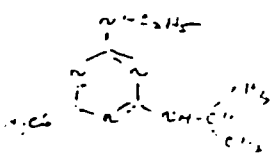
74	Aldrin 20	Lankem Ceylon Ltd.	200 g/l	EC	..... Cancelled

can only be used for termites

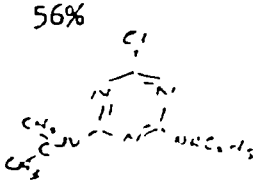
aluminium phosphide (I,T)

32	Phostoxin	Haychem Ltd.	56%	GE	TB/Pellets
435	Phostoxin Tablets & Pellets	Prima Ceylon Ltd.	56%	GE	TB/Pellets
472	Phostoxin	Ceylon Tobacco Co.Ltd.	56%	GE	TB/Pellets

R



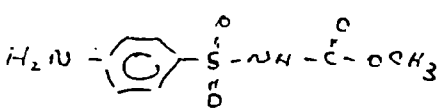
ametryn + atrazine (H)



157	Gesapax Combi	Harrisons & Crosfield(Colombo Ltd.	233 g/l + 243 g/l	SC	.....

G

asulam (H)



345	Asulox 40	Chemical Industries(Colombo) Ltd.	400 g/l	SL	.....

G

bacillus thuringiensis (I)

178	Thuricide HP	A. Baur & Co. Ltd.	16,000 iu/mg	WP	.....
382	Bactospeine	Mackwoods Ltd.	16,000 iu/mg	WP	.....

G

Status

benfuracarb (I)

63	Oncol 3 G	Lankem Ceylon Ltd.	3%	GR	.....	NS

experimental

benomyl (F)

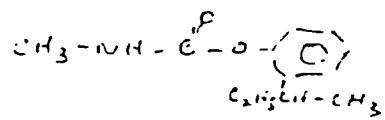
44	Benlate	Lankem Ceylon Ltd.	50%	WP	.....	G under review

toxic to fish

bitertanol (F)

25	Baycor EC 300	Haychem Ltd.	300 g/l	EC	.....	NS

experimental



B P M C (I)

10	Baycarb	Haychem Ltd.	510 g/l	EC	.....	?
56	Bassa 50	Lankem Ceylon Ltd.	500 g/l	EC	.....	
87	Hopcin 50 EC	Hoechst (Ceylon) Ltd.	500 g/l	EC	.....	
158	B P M C	Harrisons & Crosfield(Colombo) Ltd.	500 g/l	EC	.....	
169	Red Star BPMC 50	Anglo-Asian Fertilisers Ltd.	500 g/l	EC	.....	
212	Moricarb	J.L. Morison Son & Jones Ltd.	500 g/l	EC	.....	
288	B P M C 50% EC	Ceylon Petroleum Corporation	500 g/l	EC	.....	
320	B P M C Tech.	Union Carbide Ceylon Ltd.	95%	TC	.....	
321	Strike B P M C 50 EC	Union Carbide Ceylon Ltd.	500 g/l	EC	.....	
361	B P M C 50%	A. Baur & Co.Ltd.	500 g/l	EC	.....	
384	Harcros Strike 50 EC	Harrisons & Crosfield(Colombo) Ltd.	500 g/l	EC	.....	
448	Mackarb	Mackwoods Ltd.	500 g/l	EC	.....	

GA

450	B P M C Tech	Mackwoods Ltd.	95%	TC	.....	
451	B P M C 50% EC	Uniceyl Marketing	500 g/l	EC	.....	
500	B P M C Tech.	Chemical Industries(Colombo) Ltd.	95%	TC	.....	
501	Strike B P M C 50 EC	Chemical Industries(Colombo) Ltd.	500 g/l	EC	.....	
		brodifacoum (R)				
117	Klerat Wax blocks	Chemical Industries(Colombo) Ltd.	0.005%	BB	.....	R
		butachlor (H)				
51	Machete	Lankem Ceylon Ltd.	600 g/l	EC	.....	C
344	Machete EN	Monsanto Far East Ltd.	600 g/l	EC	.....	
397	Machete EC	Monsanto Far East Ltd.	600 g/l	EC	.....	
		butralin (P) (H)				
190	Tamex 36 EC	Union Carbide Ceylon Ltd.	360 g/l	EC	.....	NS D
			toxic to fish			
		captafol (F)				
145	Difoltan	Harrisons & Crosfield(Colombo) Ltd.	400 g/l	SC	.....	R
420	Sanseal	A. Baur & Co. Ltd.	1%	PA	.....	D
		captan (F)				
102	Captan 80% WP	Ceylon Petroleum Corporation	80%	WP	.....	G special review
263	Baurs Captan 50% WP	A. Baur & Co. Ltd.	50%	WP		

captan (F) contd.

415	Captan 50% WP	A. Baur & Co. Ltd.	50%	WP	.....	

carbaryl (I)

92	Carbaryl 85%	Ceylon Petroleum Corporation	85%	WP	.....	G
185	Sevin XLR	Union Carbide Ceylon Ltd.	480 g/l	SC	.....	
186	Sevin 85 S	Union Carbide Ceylon Ltd.	85%	WP	.....	
191	Sevin 5 D	Union Carbide Ceylon Ltd.	5%	DP	.....	
206	Sevin XLR	Harrisons & Crosfield(Colombo) Ltd.	480 g/l	SC	.....	
247	Dicarbam	Mackwoods Ltd.	85%	WP	.....	

carbendazim (F)

113	Bavistin	Mackwoods Ltd.	50%	WP	.....	NS

carbofuran (I)

16	Curaterr 3% G	Haychem Ltd.	3%	GR	.....	R
94	Carbofuran	Ceylon Petroleum Corporation	3%	GR	.....	
350	Furaden 3 G	Chemical Industries(Colombo) Ltd.	3%	GR	.....	General (granules)
389	Pillarfuran	Mackwoods Ltd.	79.0%	TC	.....	Restricted (powder & suspension)

carbosulfan (I)

95	Marshal 20 EC	Ceylon Petroleum Corporation	200 g/l	EC	.....	R
351	Marshal	Chemical Industries(Colombo) Ltd.	200 g/l	EC	.....	

		carboxin + Thiram (F)				
372	Vitavax	Anglo-Asian Fertilisers Ltd.	37.5% + 37.5%	WP	.....	G
		chinomethionate (AC,F)				
18	Morestan WP 25%	Haychem Ltd.	25%	WP	.....	G
		chlordane (I)				
182	Chlordane 8 EC	A. Baur & Co. Ltd.	960 g/l only for termites	EC	.....	Cancelled
		chlorfluazuron (G)				
513	Atabron	Chemical Industries(Colombo) Ltd.	50 g/l	EC	.....	?
		chlorothalonil (F)				
107	Fungicide D 50 WP	Ceylon Petroleum Corporation	50%	WP	.....	G
218	Daconil 75 WP	J.L. Morisons Son & Jones Ltd.	50%	WP	.....	
471	Clortosip 75 WP	Harrisons & Crosfield(Colombo) Ltd.	75%	WP	.....	
		chlorpyrifos (I)				
112	Mackfos	Mackwoods Ltd.	200 g/l	EC	.....	G
375	Lorsban	Anglo-Asian Fertilisers Ltd.	400 g/l	EC	.....	
470	Pyrinex 20 EC	A. Baur & Co. Ltd.	200 g/l	EC	.....	

copper oxychloride (F)

101	Copper oxychloride 50 WP	Ceylon Petroleum Corporation	50%	WP	.....	~~General~~ NS
159	Copper oxychloride	Harrisons & Crosfield(Colombo) Ltd.	67%	WP	.....	D
336	Cobox	Mackwoods Ltd.	50%	WP	.....	
402	Kocide 101	Anglo-Asian Fertilisers Ltd.	50%	WP	.....	
421	Copper oxychloride 50 WP	Chemical Industries(Colombo) Ltd.	87.7%	WP	.....	
499	Recop	A. Baur & Co. Ltd.	84%	WP	.....	

coumatetralyl (K)

231	Racumin Tracking Powder	Haychem Ltd.	0.75%	DP	.....	NS restrict or prohibit.
236	Racumin Ready Bait	Haychem Ltd.	2%	RB	.....	

cuprous oxide (F)

137	Perenox	Chemical Industries(Colombo) Ltd.	50%	WP	.....	G
174	Copper sandoz	A. Baur & Co. Ltd.	50%	DP	.....	D'86

cyfluthrin (I)

26	Baythroid 050 EC	Haychem Ltd.	50 g/l	EC	.....	G

dalapon (H)

250	Basfapon	Mackwoods Ltd.	85%	WP	.....	G
356	Dalapon	Harrisons & Crosfield(Colombo) Ltd.	85%	WP	.....	D
404	Dowpon 85%	Anglo-Asian Fertilisers Ltd.	85%	WP	.....	

		dazomet (F,H,N,)				
111	Basamid G	Mackwoods Ltd.	98%	GR	.....	R to ~~[illegible]~~ not food
		deltamethrin (I)				
80	Decis	Hoechst (Ceylon) Ltd.	25 g/l	EC	.....	NS or use ~~General~~
491	Decis	Lankem Ceylon Ltd.	25 g/l	EC	.....	
		diazinon (A,I)				
60	Diazinon 50 EC	Lankem Ceylon Ltd.	500 g/l	EC	.....	G not turf
146	Basudin 5 G	Harrisons & Crosfield(Colombo) Ltd.	5%	GR	.....	General
160	Basudin 50 EC	Harrisons & Crosfield(Colombo) Ltd.	500 g/l	EC	.....	
		dichlorvos (I)				
75	DDVP 48%	Lankem Ceylon Ltd.	480 g/l	EC	.....	R
443	Nuvan 100 SC	Harrisons & Crosfield(Colombo) Ltd.	1000 g/l	SL	.....	
		dicofol (A)				
135	Kelthane MF 42	Chemical Industries(Colombo) Ltd	420 g/l	EC	.....	G ~~[illegible]~~
		$(CH_3O)_2P(=S)-S-CH_2CONHCH_3$ **dimethoate (I,A)**	LD_{50} 215 mg/kg			G
59	Dimethoate 40	Lankem Ceylon Ltd.	400 g/l	EC	.....	
82	Roxion	Hoechst(Ceylon) Ltd.	400 g/l	EC	.....	

dimethoate (I,A) contd.

91	Dimethoate 40 EC	Ceylon Petroleum Corporation	400 g/l	EC	.....
134	Dimethoate 40 EC	Chemical Industries(Colombo) Ltd.	400 g/l	EC	.....
148	Harcros Demro	Harrisons & Crosfield(Colombo) Ltd.	400 g/l	EC	.....
215	Rogor 40	J.L. Morisons Son & Jones Ltd.	400 g/l	EC	.....
242	Red Star Dimitox	Anglo-Asian Fertilisers Ltd.	400 g/l	EC	..... General - if ustalek used.
246	Perfekthion	Mackwoods Ltd.	400 g/l	EC	.....
486	Dimethoate 40	Uniceyl Marketing Services (Pvt.)Ltd.	400 g/l	EC	.....

diuron (H)

G

24	Diuron WP 80%	Haychem Ltd.	80%	WP	.....
49	Karmex	Lankem Ceylon Ltd.	80%	WP	.....
85	Diuron	Hoechst (Ceylon) Ltd.	80%	WP	.....
93	Diuron 80 WP	Ceylon Petroleum Corporation	80%	WP	.....
130	Diuron 80 WP	Chemical Industries(Colombo) Ltd.	80%	WP	.....
147	Harcros Diuron	Harrisons & Crosfield(Colombo) Ltd.	80%	WP	.....
251	Diuron	Mackwoods Ltd.	80%	WP	.....
322	Red Star Diuron 80 WP	Anglo-Asian Fertilisers Ltd.	80%	WP	.....
332	Baurs Diuron	Baurs	80%	WP	.....
401	Direx 4 L	Anglo-Asian Fertilisers Ltd.	480 g/l	SC	.....
419	Baurs Diuron	A. Baur & Co. Ltd.	80%	WP	.....

edifenphos (P)

NS

31	Hinosan EC 50%	Haychem Ltd.	546 g/l	EC	.....

Kills fish

NS(B Call) rice outside U.S. but low LD-50 toxic to fish:

endosulfan (I)

79	Thiodan 35 EC	Hoechst (Ceylon) Ltd.	350 g/l	EC	.....	
93	Thiodan 35 EC	Ceylon Petroleum Corporation	350 g/l	EC	.....	
261	Baurs Endosulfan 35% EC	A. Baur & Co. Ltd.	350 g/l	EC	.....	

ethephon (P)

187	Ethrel latex stimulant	Union Carbide Ceylon Ltd.	26 g/l	PA	.....	
188	Ethrel Plant Growth Regulator	Union Carbide Ceylon Ltd.	480 g/l	SL	.....	Registered in U.S. on veg's
[illegible]	Ethrel	Harrisons & Crosfield (Colombo) Ltd.	5%	PA	.....	
[illegible]	Ethrel PGR 10%	Union Carbide Ceylon Ltd.	100 g/l	SL	.....	
413	Ethrel PGR 20%	Union Carbide Ceylon Ltd.	200 g/l	SL	.....	
469	Ethrel	Anglo-Asian Fertilisers Ltd.	100 g/l	SL	.....	

fenaminosulf +quintozene (F)

21	Morut WP	Haychem Ltd.	10% + 70%	WP	.....	for - R only on Hawaii pineapple

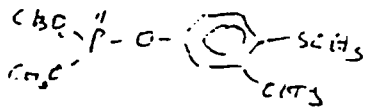
G

fenamiphos (F)

39	Nemacur 5% G	Haychem Ltd.	5%	GR	.....	R

fenthion (I)

17	Lebaycid EC 50%	Haychem Ltd.	500 g/l	EC	.....	G



		fenthion (I) contd.				
439	Lebaycid 3% Dust	Haychem Ltd.	3%	DP	.....	General only ticks
		fentin acetate + maneb (F,A)				
86	Brestan 60 WP	Hoechst (Ceylon) Ltd.	54% + 18%	WP	.....	NS denied reg
		fenvalerate (I)				
54	Sumicidin 25	Lankem Ceylon Ltd.	250 g/l	EC	.....	R
		folpet + ofurace (F) G NS				
386	Caltan	Harrisons & Crosfield(Colombo) Ltd.	410 g/l + 51 g/l	SC	.....	
		formothion (I)				
257	Anthio 33	A. Baur & Co. Ltd.	330 g/l	EC	.....	Dolfat US in US used elsewhere
		fosetyl- Al (F)				
132	Aliette 80% WP	Chemical Industries(Colombo) Ltd.	80% can only be used on ornamentals or pineapple	WP	.....	Not fruit R
		glyphosate (H)				
50	Roundup	Lankem Ceylon Ltd.	410 g/l	SL	IPA salt	G General
371	Roundup	Monsanto Far East Ltd.	410 g/l	SL	IPA salt	
383	Glyphosate	Ceylon Petroleum Corporation	410 g/l	SL	IPA salt	

glyphosate (H) contd.

416	Baurs glyphosate	A. Baur & Co. Ltd.	410 g/l	SL	IPA salt
496	Harcros Glycel	Harrisons & Crosfield(Colombo) Ltd.	410 g/l	SL	IPA salt
515	Spark	Monsanto Far East Ltd.	120 g/l	SL	IPA salt

high boiling tar acid (F)

302	Brunolium Plantarium	Hunter & Co. Ltd.	....	PA	.....

improdione (F)

343	Rovral	Chemical Industries(Colombo) Ltd.	95%	WP	.....	R not fwd

indol 3 butyric acid (P,F)

179	Seradix 1	A. Baur & Co. Ltd.	0.1%	DP	.....	R
267	Seradix 2	A. Baur & Co.Ltd.	0.3%	DP	.....	
268	Seradix 3	A. Baur & Co. Ltd.	0.8%	DP	.....	
457	Bauroot	A. Baur & Co. Ltd.	0.1%	DP	.....	

not fully tested yet.

R G G

indol 3 butyric acid + NAA + Thiram (P)

189	Rootone F	Union Carbide Ceylon Ltd.	57% + 1.3% + 4%	DP	.....

isofenphos (I)

438	Oftanol 5% G	Haychem Ltd.	5%	GR	.....	R non fwd

		isoprocarb (I)				
57	Mipcin	Lankem Ceylon Ltd.	500 g/l	EC	experimental	NS
		kasugamycin (F)				
100	Kasumin 2 E WSC	Ceylon Petroleum Corporation	20 g/l	SL	.....	R Not to be used in US.
		lindane (I)				
123	Gammalin	Chemical Industries(Colombo) Ltd.	200 g/l	EC	.....	R ~~General~~ Some C uses.
		magnesium phosphide (I)				
3.3	Degesch Magtoxin	Haychem Ltd.	66%	GE	TB/Pellets	R
34	Degesch Plates	Haychem Ltd.	32.3%	GE	Plates	
458	Degesch Plates	Food Commissioner, Food Department	32.3%	GE	Plates	
		mancozeb (F)				
45	Manzate 200	Lankem Ceylon Ltd.	80%	WP	.....	G General
90	Mancozeb 80% WP	Hoechst(Ceylon) Ltd.	80%	WP	.....	
106	Mancozeb 75%	Ceylon Petroleum Corporation	75%	WP	.....	
138	Dithane M 45	Chemical Industries(Colombo) Ltd.	80%	WP	.....	
216	Nemispor	J.L. Morisons Son & Jones Ltd.	80%	WP	.....	
265	Vondozeb WP	A. Baur & Co. Ltd.	80%	WP	.....	
459	Penncozeb	Hoechst(Ceylon) Ltd.	80%	WP	.....	

SEE

mancozeb (F) contd.

483	Harcros Mancozeb	Harrisons & Crosfield(Colombo) Ltd.	80%	WP	.....	

mancozeb + metalaxyl (F) G

151	Ridomil MZ 72 WP	Harrisons & Crosfield(Colombo) Ltd.	64% + 8%	WP	.....	G

mancozeb + metalic copper (F) G (Cu sulphate)

255	Trimiltox Forte	A. Baur & Co.Ltd.	20% + 21%	WP	.....	G?

mancozeb + oxadixyl (F) NS

390	Sandofan	A. Baur & Co. Ltd.	10% + 56%	WP	.....	NS

maneb (F)

245	Polyram M WP	Mackwoods Ltd.	80%	WP	.....	Gen. G
429	Manex 4 L	Anglo-Asian Fertilisers Ltd.	482 g/l	SC	.....	general

Kills fish

M C P A (H)

06	Hedonal M 40	Haychem Ltd.	400 g/l	SL	.....	R
07	Hedonal M 60	Haychem Ltd.	600 g/l	SL	.....	
58	Lankem M 50	Lankem Ceylon Ltd.	400 g/l	EC	.....	

M C P A (H)

88	M C P A 40	Hoechst(Ceylon) Ltd.	400 g/l	EC	.....
96	M C P A 40%	Ceylon Petroleum Corporation	400 g/l	EC	.....
128	Agroxone	Chemical Industries(Colombo) Ltd.	400 g/l	SL	.....
150	M C P A 40	Harrisons & Crosfield(Colombo) Ltd.	400 g/l	EC	.....
168	Red Star Veedem 400	Anglo-Asian Fertilisers Ltd.	400 g/l	SL	.....
204	M C P A 60	Harrisons & Crosfield(Colombo) Ltd.	600 g/l	EC	.....
225	Morice	J.L. Morison Son & Jones Ltd.	400 g/l	EC	.....
244	Red Star Veedem 600	Anglo-Asian Fertilisers Ltd.	600 g/l	SL	.....
248	U 46 M 4	Mackwoods Ltd.	400 g/l	SL	.....
249	U 46 M 6	Mackwoods Ltd.	600 g/l	SL	.....
337	Baurs M C P A 40	A. Baur & Co. Ltd.	400 g/l	SL	.....
349	M C P A	Chemical Industries(Colombo) Ltd.	400 g/l	SL	.....
474	Baurs M C P A 60	A. Baur & Co. Ltd.	600 g/l	SL	.....
494	M C P A Tech	Hoechst(Ceylon) Ltd.	94%	TC	.....

metaldehyde (M)

266	Meta Ready for Use	A. Baur & Co. Ltd.	6.7%	DP RB	.....
331	Meta Powder	A. Baur & Co. Ltd.	98%	DP	.....
463	Metaldehyde	Chemical Industries(Colombo) Ltd.	6%	RB	Pellets

methabenzthiazuron (H)

335	Tribunil WP 70%	Haychem Ltd.	70%	WP	.....

$CH_3O-P-NH_2$ 15-21 mg/kg
LD_{50}

R

methamidophos (I)

27	Tamaron LC 60	Haychem Ltd.	600 g/l	SL	.....
78	Methedrin 60	Lankem Ceylon Ltd.	600 g/l	SL	.....
103	Methamidophos 60 WSC	Ceylon Petroleum Corporation	600 g/l	SL	.....
116	Pillaron	Mackwoods Ltd.	600 g/l	SL	.....
161	Monitor 600 EC	Harrisons & Crosfield(Colombo) Ltd.	600 g/l	EC	.....
172	Red Star Aloran	Anglo-Asian Fertilisers Ltd.	600 g/l	SL	.....
223	Morithion	J.L. Morison Son & Jones Ltd.	600 g/l	SL	.....
241	Monitor 200	Harrisons & Crosfield(Colombo) Ltd.	200 g/l	EC	.....
424	Harcros Methamidophos	Harrisons & Crosfield(Colombo) Ltd.	600 g/l	SL	.....
427	Methamidophos 60 WSC	Ceylon Petroleum Corporation	600 g/l	SL	.....
447	Methion	Uniceyl Marketing Services (Pvt.)Ltd.	600 g/l	SL	.....
462	Methamidophos	Chemical Industries(Colombo) Ltd.	600 g/l	SL	.....
478	Bauron	A. Baur & Co. Ltd.	600 g/l	SL	.....

methomyl (I,A)

R

76	Lannate L	Lankem Ceylon Ltd.	180 g/l	SL	.....
77	Lannate 90 SP	Lankem Ceylon Ltd.	90%	SP	.....
274	Methavin 90 SP	Union Carbide Ceylon Ltd.	90%	SP	.....
275	Methavin 1.8 L	Union Carbide Ceylon Ltd.	240 g/l	SL	.....
502	Methavin 90 SP	Chemical Industries(Colombo) Ltd.	90%	SP	.....

} restricted

methyl bromide (I,A,N)

R

35	Degesch methyl bromide	Haychem Ltd.	100%	VP	Liquid
72	Methyl bron	Lankem Ceylon Ltd.	98%	VP	Liquid

methyl bromide (I,A,N) contd.

R

184	Baurs methyl bfomide	A. Baur & Co. Ltd.	98%	VP	Liquid
468	Methyl bromide	Food Commissioner, Food Department	100%	VP	Liquid

metribuzin (H)

G

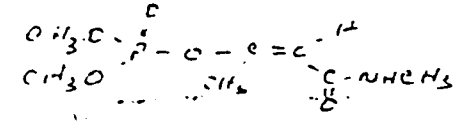
15	Sencor	Haychem Ltd.	70%	WP	.....

for H_2O rice in 0 - 6 for rice wheat.

molinate + propanil (H)

G for rice

428	Arrosolo 3-3E	Anglo-Asian Fertilisers Ltd.	330 g/l + 330 g/l	EC	.....



αD_{20} 8-23 mg/kg

monocrotophos I)

f

109	Monocrotophos 60 WSC	Ceylon Petroleum Corporation	600 g/l	SL	.....
115	Pillardrin	Mackwoods Ltd.	400 g/l	SL	.....
142	Monocrotophos	Chemical Industries(Colombo).Ltd.	600 g/l	SL	.....
162	Harcros Nuvacron 560 SCW	Harrisons & Crosfield(Colombo) Ltd.	560 g/l	SL	.....
171	Red Star Monocrotophos 60	Anglo-Asian Fertilisers Ltd.	600 g/l	SL	.....
222	Monocrotophos	J.L. Morison Son & Jones Ltd.	600 g/l	SL	.....
328	Monocrotophos	A. Baur & Co. Ltd.	600 g/l	SL	.....
329	Monocrotophos 60%	Lankem Ceylon Ltd.	600 g/l	SL	.....
426	Monocrotophos 60	Ceylon Petroleum Corporation	600 g/l	SL	.....
446	Monocrotophos	Uniceyl Marketing Services(Pvt.)Ltd.	600 g/l	SL	.....
480	Monocron	Mackwoods Ltd.	600 g/l	SL	.....
485	Nuvacron 60 WSC	Harrisons & Crosfield(Colombo) Ltd.	600 g/l	SL	.....

		omethoate (I,A)				
28	Folimat LC 50%	Haychem Ltd.	500 g/l	SL	.....	NS of use in US
		oxadiazon (H)				
125	Ronstar 25 EC	Chemical Industries(Colombo) Ltd.	250 g/l	EC	.....	R not for food
347	Oxadiazon Tech.	Chemical Industries(Colombo) Ltd.	92%	TC	.....	
		oxadiazon + propanil (H)				
346	Ronstar PL	Chemical Industries(Colombo) Ltd.	80 g/l + 230 g/l	EC	.....	R
		oxadixyl (F)				
511	Sandofan Paste	A. Baur & Co. Ltd.	4.0%	PA	.....	NS
		oxycarboxin (F)				
374	Plantvax 20 EC	Anglo-Asian Fertilisers Ltd.	200 g/l	EC	.....	?
		oxydemeton-methyl (A,I)				
29	Metasystox R, EC	Haychem Ltd.	250 g/l	EC	.....	R

oxyfluorfen (H)

131	Goal 2 E	Chemical Industries(Colombo)Ltd.	240 ~~235~~ g/l	EC	.....	?

paraquat (H)

61	Lankem Paraquat	Lankem Ceylon Ltd.	240 g/l	SL	dichloride salt	R
99	Paraquat 24%	Ceylon Petroleum Corporation	240 g/l	SL	dichloride salt	
136	Grammaxone	Chemical Industries(Colombo) Ltd.	240 g/l	SL	dichloride salt	
155	Harquat	Harrisons & Crosfield(Colombo) Ltd.	240 g/l	SL	dichloride salt	
180	Baurs Paraquat	A. Baur & Co. Ltd.	240 g/l	SL	dichloride salt	

permethrin I)

119	Ambush EC 25	Chemical Industries(Colombo) Ltd.	250 g/l	EC	.....	R

phenthoate (I,A)

55	Elsan 50	Lankem Ceylon Ltd.	500 g/l	EC	.....	R
213	Cidial	J.L. Morison Son & Jones Ltd.	500 g/l	EC	.....	for my use.

pirimiphos methyl (I)

140	Actellic 2% Dust	Chemical Industries(Colombo) Ltd.	2%	DP	.....	only for exported grain
141	Actellic 50 EC	Chemical Industries(Colombo) Ltd.	500 g/l	EC	.....	

pretilachlor (H)

385	Sofit 300 EC	Harrisons & Crosfield(Colombo) Ltd.	300 g/l	EC	.....	?

profenofos (I)

152	Selecron	Harrisons & Crosfield(Colombo) Ltd.	500 g/l	EC	.....	R.

propanil (H)

03	Surcopur	Haychem Ltd.	360 g/l	EC	.....	B MCP wheat
62	Lankem 3,4 DPA	Lankem Ceylon Ltd.	360 g/l	EC	.....	
81	Propanil 36	Hoechst (Ceylon) Ltd.	360 g/l	EC	.....	
97	3,4 DPA 36% EC	Ceylon Petroleum Corporation	360 g/l	EC	.....	
127	Stam F 34	Chemical Industries(Colombo) Ltd.	360 g/l	EC	.....	
154	Harcros 3,4 DPA	Harrisons & Crosfield(Colombo) Ltd.	360 g/l	EC	.....	
167	Red Star Weedex 36	Anglo-Asian Fertilisers Ltd.	360 g/l	EC	.....	
214	Riselect	J.L. Morison Son & Jones Ltd.	360 g/l	EC	.....	
287	3,4 DPA	Mackwoods Ltd.	360 g/l	EC	.....	
338	Baurs 3,4 DPA	A. Baur & Co. Ltd.	360 g/l	EC	.....	
432	Farmco Propanil	Kulaweera Associates	360 g/l	EC	.....	
437	Propanil	A. Baur & Co. Ltd.	360 g/l	EC	.....	
453	Propanil	Uniceyl Marketing Services(Pvt.) Ltd.	360 g/l	EC	.....	
454	Propanil 35 PCT EC	Mitsubishi Corporation	360 g/l	EC	.....	

propineb (F)

20	Antracol	Haychem Ltd.	70%	WP	.....	Not cleared for expert.
217	Airone	J.L. Morison Son & Jones Ltd.	70%	WP	.....	
273	Red Star Propocol	Anglo-Asian Fertilisers Ltd.	70%	WP	.....	

propineb + oxadixyl (F)

399	Fruvit WP 66%	Haychem Ltd.	56% + 10%	WP	.....	NS

propoxur (I)

04	Unden 1% Dust	Haychem Ltd.	1%	DP	.....	R not for food use
12	Unden 200 EC	Haychem Ltd.	200 g/l	EC	.....	

prothiofos I)

13	Tokuthion EC	Haychem Ltd.	500 g/l	EC	.....	NR US

quinalphos (I,A)

11	Bayrusil EC 25%	Haychem Ltd.	250 g/l	EC	.....	Don't use in US '86
175	Ekalux 1.5% Dust	A. Baur & Co. Ltd.	1.5%	DP	.....	G in '88
176	Ekalux 25 EC	A. Baur & Co. Ltd.	250 g/l	EC	.....	(expert.

sodium ortho nitrophenolate
sodium para nitrophenolate
sodium 5 - nitroguaiacolate (F)

417	Atonik	Lankem Ceylon Ltd.	0.2% + 0.3% + 0.1 %	SL.	.....

sulphur (F,A)

23	Sulphur WP 80%	Haychem Ltd.	80%	WP	.....
65	Lankem sulphur	Lankem Ceylon Ltd.	95%	WP	.....
83	Elosal WP	Hoechst (Ceylon) Ltd.	80%	WP	.....
103	Sulphur 80 WP	Ceylon Petroleum Corporation	80%	WP	.....
114	Kumulus S	Mackwoods Ltd.	80%	WP	.....
205	Harcros Sulphur 80 WP	Harrisons & Crosfield(Colombo) Ltd.	80%	WP	.....
219	Morisal WP	J.L.Morisons Son & Jones Ltd.	80%	WP	.....
243	Sulphur	Anglo-Asian Fertilisers Ltd.	80%	WP	.....
256	Thiovit WP	A. Baur & Co. Ltd.	80%	WP	.....
400	Super six	Anglo-Asian Fertilisers Ltd.	700 g/l	SC	.....
452	Unisal	Uniceyl Marketing Services(Pvt.) Ltd.	80%	WP	.....

thiabendazole (F)

482	Tecto 2%	Hansel Ceylon Ltd.	2%	DP	.....

thiodicarb (I)

276	Larvin 375 P	Union Carbide Ceylon Ltd.	375 g/l	SL	.....	expect G in '88
277	Larvin 75 WP	Union Carbide Ceylon Ltd.	75%	WP	.....	
319	Larvin Tech	Union Carbide Ceylon Ltd.	93%	TC	.....	

thiophanate-methyl (F)

220	Topsin M 70	J.L. Morison Son & Jones Ltd.	70%	WP	.....	G

G C

thiophanate-methyl + thiram (F)

221	Homai	J.L. Morison Son & Jones Ltd.	50% + 30%	WP	.....

thiram (F)

22	Formasol forte WP 80%	Haychem Ltd.	80%	WP	.....	C General
183	Thiotox	A. Baur & Co. Ltd.	80%	WP	.....	

trichlorfon (I)

01	Dipterex LC 50%	Haychem Ltd.	500 g/l	EC	.....	general

zineb (F)

324	Lankem Zineb	Lankem Ceylon Ltd.	80%	WP	.....	general

~~APPENDIX B~~

APPENDIX B

GUIDELINES FOR THE SELECTION AND USE OF PESTICIDES IN BANK FINANCED PROJECTS AND THEIR PROCUREMENT WHEN FINANCED BY THE BANK

Introduction

1. Pest control is widely recognized as an essential element in improving human welfare in all areas of the world. A wide range of insects, weeds, disease microorganisms, nematodes and rodents reduce food and fiber yields by attacking livestock, forests, crop plants and stored agricultural products in addition to directly damaging human health. Throughout the history of agriculture a variety of techniques have been used to combat this threat; control of pests has traditionally been accomplished through a combination of cultural practices, selection and breeding of resistant plant varieties, encouragement of natural enemies and the introduction of biological control agents, as well as the application of chemical control materials (including insecticides, acaricides, molluscicides, nematicides, fungicides, bactericides and herbicides as well as poison baits for rodent control). Properly used, chemical pesticides are essential elements in a pest management program. However, there is now great concern over the ever greater reliance on chemical pesticides throughout the world. The problem is particularly significant in the developing world where exclusive reliance on chemical control is a common response to the increased levels of infestation by pests, diseases and weeds which have accompanied recent increases in the intensity of crop and livestock production and human settlement. This approach is frequently taken without adequate safeguards for those who handle or may be exposed to the pesticides or for the environment, and with little regard to pest-induced crop losses or the cost-effectiveness of chemical control.

2. It is becoming increasingly evident that the unilateral chemical approach, in addition to posing potential threats to human health and to the environment, does not lead to sustainable and profitable agricultural production. The rapidly increasing cost of pesticides as well as the development of secondary pest species and the growing incidence of insecticide-resistance in pest populations limit the effectiveness of chemical pest control. For this reason and in line with Bank policy to promote sound technologies which do not carry with them excessive environmental costs, it is important that use of pesticides in Bank projects should be consistent with sound pest management practices and accompanied by safeguards to protect the users, the general public and the environment. Sound pest management should aim to reduce dependence on chemical pesticides through the establishment of economic control thresholds and through the use, wherever possible, of agronomic or related practices which reduce the severity of pest attack. The Integrated Pest Management (IPM) approach, which includes the prudent use of pesticides when damage reaches unacceptable levels, should be the objective of Bank strategy in agricultural development. In addition, it is important that appropriate attention be paid to technical suitability, safety and efficient procurement during

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the preparation, appraisal and supervision of all Bank projects which promote or increase the use of pesticides and particularly those which would finance the procurement of pesticides (either explicitly or through short term credit for production inputs).

3. The following sections provide guidance on the use of pesticides and their selection and purchases. Section A outlines the present state of the art in Pest Management Practices within the context of which a pest control program should be assessed. Section B concerns handling, storage and application safety. Section C discusses particular considerations in the selection of pesticides for a particular situation. Section D treats pesticide procurement. These sections may from time to time require more detailed treatment than is appropriate in this OPN. In such cases Supplementary Technical Notes will be issued jointly by the Agriculture Department (AGR) and the Environment Unit (PPDES) and will have the authority of this OPN with which they should be filed.

4. During appraisal and supervision of Bank lending operations in which financing is being provided for pesticides, it is the responsibility of Bank missions to ascertain whether pest management is or will be appropriate and safe, and if necessary, to make appropriate recommendations to correct the situation.

A. Pest and Pesticide Management Practices

5. Effective pest management involves maintaining quantity and quality of production or improving health by the least costly means and the maximization of net benefits should be the guiding principle of all pest management. While pesticides will continue to play an important part in pest management, an integrated approach combining the use of resistant varieties, biological control techniques and modified cultural practices where appropriate, together with judicious use of chemical pesticides, can offer better prospects for long term control and reduced environmental damage while increasing the margin between benefits and the costs of control measures.

6. The costs of pest control can be direct such as those for the purchase, distribution and application of pesticides and the increased costs of changing cropping practices, or indirect such as the harmful effects on human health and the environment which can arise from inappropriate and unsafe pesticide use. They can be short or long term, the latter including the cost of changing chemical control materials to combat increased pest resistance. Some costs are straightforward while others are difficult to quantify. Use of pesticides as well as other control measures should always be the result of a considered evaluation that the benefits to be gained outweigh the direct and indirect costs, in-so-far as these can be assessed.

7. Every effort should be made to promote the Integrated Pest Management concept within Bank agricultural projects by selecting pesticides and pesticide use patterns which are compatible with an IPM approach. Three major points should be considered:

(a) pesticides should be viewed as a short-term response to the build-up of a particular pest species to threshold levels which have been found as a result of field trials and past experience to be economically damaging. The overall control of pest populations should be attempted by other methods such as the use of crop varieties which are resistant or tolerant to the pest, biological control, and cultural practices including crop rotation, timing of planting to avoid the coincidence of particularly susceptible growth stages of the crop with peaks in pest populations or disease incidence, and timing of irrigation to discourage susceptibility of the plants to fungal infection.

(b) wherever possible, narrow-spectrum pesticide materials should be selected which are effective against the pest species but cause minimum harm to other useful insects (especially the important predators and parasites of the pest species). This approach requires that one or more key target pest species and, if possible, their principal natural enemies first be properly identified.

(c) application methods and timing also should be aimed at minimizing the risk of harming these natural enemies.

8. The build-up of pesticide resistance, particularly in insect populations, is a serious constraint on chemical pest control. Measures to reduce the rate of this build-up and thereby prolong the usefulness of effective materials include:

(a) using as few chemical pesticide applications as possible and delaying application until pest populations reach preset economic thresholds and susceptible life stages,

(b) refraining from using for agricultural pest control chemicals which are also in use in the same vicinity for human disease vector control,

(c) using application methods which minimize the area of pesticide exposure.

It has also been suggested that using combinations of chemicals which differ in mode of action may prevent or delay the development of resistance to any one material. This may involve changing chemicals from one season to another or using mixtures of chemicals, each at a relatively low concentration. However, the effectiveness of this approach remains uncertain.

8. Handling, Storage and Application Safety

9. Correct and careful handling and application of chemical pesticides is essential for safe and effective pesticide use. To reduce the risk of accidents and damage to health or environment resulting from

misuse of pesticides and to maximize the effectiveness of their application, it is essential that proper precautions be taken in the packaging, transport, storage and disposal of pesticides and surplus pesticide containers and that necessary equipment and proper training in application techniques be provided to the users.

10. Standards of packaging of pesticides should be specified in tenders and should be adequate to withstand the considerable abuse which can occur during transport and storage. Clear and durable labelling of all packages to depict the hazardous nature of the contents should always be required. The labels should be in an appropriate language and should be consistent with internationally accepted standards such as those specified in the FAO Guidelines on good Labelling Practices for Pesticides.[1/] The distribution of pesticides in single dose packages or small containers should be encouraged to reduce the need for measuring out concentrates and alleviate some of the problems of on-farm storage of open pesticide containers. Repackaging should only be permitted in properly licensed and inspected facilities meeting acceptable safety standards and preferably under the control of the bulk supplier who should be fully responsible for the suitability of the new package including labelling and use instructions, the quality of the repackaged product and the safety of the repackaging process.

11. While all empty containers should be destroyed, it would be unrealistic to expect adherence to this rule in countries where empty containers suitable for storing liquids are in short supply. To avoid this hazard, manufacturers should be encouraged to design containers which discourage such re-use and to adopt this type of container where a suitable design already exists. When such containers are available, the borrower should be required to specify them in tender documents. The Bank does not approve of re-use of pesticide containers and strongly recommends that all possible deterrent measures be taken but, in instances where the only available and suitable package offered by suppliers is a non-returnable drum and where destruction of all sound empty containers cannot be ensured, their thorough washing with an appropriate solvent and numerous water rinses should be required to minimize the risk in the event of re-use. Flammable containers should be incinerated in a site where fumes will not be carried into occupied areas by prevailing winds.

12. Stores should protect containers and their contents from the elements, be fenced to discourage unlawful entry, have a nearby water supply and be adequately ventilated. Containers should be stacked on a hard standing with a sill to contain spills and containers should not be stacked beyond the recommended stacking height. Drainage from the storage area should outfall into an evaporation pond to eliminate contamination of streams, canals or groundwater. Where substantial quantities of highly toxic pesticide materials are stored, their presence may require a

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1/ See FAO Plant Protection Bulletin No. 2 1983 Vol. 13.

Serious Hazard Assessment to be undertaken. This involves the consideration of the kinds of accidents which may occur, endangering the staff, people nearly and the surrounding environment. For such a situation the assessment would determine the adequacy of:

(a) the warning systems installed which would alert staff and the public to an emergency;

(b) the established procedures to deal with such an emergency including evacuation of people if it should be necessary;

(c) the availability and working order of emergency equipment; and

(d) the training of staff and their regular practice of emergency drills.

Guidance on this should be sought from PPDES.

13. To prevent contamination in the process of pesticide distribution, food materials should never be transported simultaneously with pesticides. Vehicles used regularly to transport pesticides should be clearly marked and should not be used to transport food products. When other, general purpose vehicles are used to transport pesticides they should be thoroughly decontaminated by washing immediately afterwards. When offloading containers into store, a ramp should be provided in the absence of fork lift equipment to avoid rupture and damage to containers resulting from dropping to the ground. Any damaged containers should be set aside and the contents transferred to sound containers under supervision.

14. Persons handling concentrated materials should have protective face shields or goggles, gloves, aprons and footwear and should be adequately supervised. It is unrealistic to expect workers to wear more complete protection and respirators in hot conditions but selection of pesticides should take into account the minimal protection which handlers will practice. Materials which are likely to become widely distributed should be made available only in relatively low-toxicity formulations. Arrangements should be made for the washing and decontamination of clothing and particular care should be taken to avoid workers contaminating their home environment. All spills should be promptly washed down.

15. Where pesticides are applied by contractors they should be required to take all necessary precautions to protect the public and the environment from damage due to spray drift or other accidental contamination. Licensing of operators on completion of an appropriate course of training is recommended when particularly hazardous materials are to be used. Operators and supervisory staff engaged in regular spraying operations should be trained in the specific first aid procedures for poisoning relating to the material being used. Medical services should be familiar with symptoms and treatment for such poisoning cases and specific antidotes should be readily available. With particularly toxic materials

it may be expedient to require the supplier to supervise the correct handling and application of the materials in accordance with accepted safety standards.

16. Where pesticides are being supplied to farmers it is essential that materials are selected which can be applied safely and effectively without close supervision and that the extension services are adequately supported and trained in the use of the materials so that they may demonstrate the correct techniques and give appropriate advice, including advice for on-farm storage of concentrates and eventual disposal of surplus pesticides and empty containers and calling on specialists in pest control when problems arise. Training should include the storage and handling of concentrates, dilution and mixing, application techniques and suitable application equipment, cleansing and maintaining spray equipment and precautions to avoid environmental damage through spray drift or leaching into streams or groundwater. Equipment and clothing needed for the safe and effective use of pesticides should be easily available and all reasonable measures should be taken to promote its proper use and maintenance. Farmers should be instructed on safety precautions, wearing of suitable protective clothing, the importance of decontamination and of avoiding introduction of pesticides into the household environment. They should also be able to recognize possible early symptoms of poisoning and be aware of the need to seek medical assistance quickly.

C. Selection of pesticide materials and pesticide formulations

17. The selection of chemical pesticides for use in agriculture should take account of the safety and effectiveness of alternatives under local climatic and environmental conditions, their compatibility with Integrated Pest Management, the existence of national or international regulations or recommendations regarding use of particular materials for particular crops and the reliability of potential suppliers to deliver products of a high quality, appropriately packaged and backed by well qualified technical advice and support. In addition the indigenous capability for handling toxic materials and regulating their distribution should be taken into account.

18. The World Health Organization periodically revises and reissues its Classification of Pesticides by Hazard. This lists technical products by their generic names, tabulating them in categories ranging from Extremely Hazardous to unlikely to present acute hazard in normal use. Guidance is given on use of the tables to assess the hazard of particular formulations. Materials listed in Categories Ia Extremely Hazardous or Ib Highly Hazardous are unsuitable for use by small farmers and should only be considered for use in large scale operations if all necessary training, protection and supervision can be assured. 1/

1/ A current copy of the Classification is available for reference in the Sectoral Library.

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19. Certain products, notably many of the chlorinated hydrocarbon insecticides have characteristics of excessive persistence in the environment, bioaccumulation in tissues, biomagnification in food chains and in some cases carcinogenicity or cause genetic abnormalities. They should not be used for agricultural purposes but some which have environmental hazards but low health risk may be considered for other purposes such as disease vector control where the risks are minimized and satisfactory alternatives do not exist. Compounds containing Mercury, Thallium, Lead, Cadmium or Selenium are all unsuitable for agricultural use. Fumigant products having high vapor pressures and relatively high toxicities are too hazardous for use by small farmers who do not have sealed storage compartments for grain. 1/

20. Not only active ingredients but contaminants in the formulation may also be harmful. Suppliers should be required, in appropriate instances, to provide analyses by an independent and reputable laboratory showing the formulation to be free of such a contaminant or that the content of such a contaminant meets internationally accepted limits for use of the formulation for specific purposes under close supervision.

21. Preference should be given to products which are registered in the country of proposed use, if such regulatory authority exists, or which are already registered for an identical use in a country where capability exists to evaluate their efficiency, toxicity and long term effects. Products which do not meet this requirement should be considered only if their use for the same purpose has been reviewed by the FAO/WHO Joint Meeting on Pesticide Residues 2/ and acceptable daily intake and maximum residue levels subsequently recommended to the Codex Committee on Pesticide Residues 3/ or if the material has been registered or reviewed for a similar rather than identical application. In both these latter cases special provisions must be made to monitor crop residue levels and the manufacturer may be required to submit information regarding residue decline rates and tolerances and an analytical method suitable for monitoring residues of the pesticide and significant metabolites and degredation products.

22. When pesticides are to be used on food crops it should be ensured as far as possible that FAO/WHO maximum residue limit recommendations will not be exceeded. In the case of crops which make a significant

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1/ AGR and PPDES intend issuing and periodically updating a Supplementary Technical Note listing specific materials and formulations, the use of which should be avoided or strictly limited.

2/ FAO publishes periodically reports and supplements recommending maximum residue limits in food and livestock feeds.

3/ The Codex Committee is responsible for development of international limits for residues in food within the Codex Alimentarius Commission which is a Joint FAO/WHO food standards program.

contribution to the diet, maximum residue levels must be viewed in the light of the need to ensure that acceptable daily intake levels are not exceeded. Where such materials are to be used on food crops for export, compliance with such accepted residue limits or tolerances established by the importing country must be assured. If a pesticide is being considered for which registration in developed countries precludes its use for treating forages and crop residues subsequently to be fed to animals, provision should be made to prevent such feeding of treated materials to animals.

23. If a proposed pesticide is not registered in the country of proposed use but a pesticide regulation authority exists, the necessary steps to assure registration should be taken before it is introduced into the country. Such registration should establish labelling requirements for the product and require the provision by the manufacturer of particular information on the material's toxicity and persistence and the movement of the material and possibly harmful breakdown products in the environment if it is not readily available in published literature.

24. Selection of pesticides should be based on a careful evaluation of possible hazard to the environment and to important natural resources. For example, materials having high acute toxicity to fish or aquatic invertebrates should not be used where there are aquatic resources which could be adversely affected by runoff, drift or soil erosion and those highly toxic to honeybees should not be used when they will present a threat to important pollinators. Information on toxicity to non-target organisms should be available from the manufacturer if it is not in the published literature. Any use of pesticides should be designed to minimize the area of exposure, but when materials known to present a significant environmental risk are used an environmental monitoring program should also be implemented.

D. Procurement of Pesticides

25. Wherever possible competitive tenders should be sought for the supply of pesticides. In order to evaluate tenders from different sources offering different materials for control of the same pest, prior comparison of the different materials in field tests is necessary to evaluate their relative efficiencies. Where adequate information is available, efficiency weightings may be given to different materials and used in the evaluation of bids but to do so, the weights must be made public in the documents supplied to potential bidders so that in making offers they are aware of the conditions under which their product will be evaluated. Such weights may be used to reflect the advantage a particular material might offer by controlling other pests besides the one for which the spray is intended, by being less harmful to predators, or by being less dangerous to handle and apply. Where data is insufficient to apply such efficiency factors, materials are compared on the basis of their cost per unit area when applied, in accordance with the local recommended practices in the country and taking account of the manufacturers recommendations, at the rate and frequency to control the pest concerned. Where one material has been shown in trials and in practice to offer a longer period of control than another,

so requiring fewer applications, the saving in application costs needs to be taken into account in evaluating bids.

26. To enable different suppliers, each formulating a particular active ingredient under one or more different trade names to compete, the invitation to bid and tender documents should use the accepted generic name or names of the material or materials which would be considered. The specification should define all the critical characteristics in the formulation covering such aspects as solvents, emulsifers, and surfactants in the case of emulsifiable concentrates, or particle size in the case of dusts or suspensions, which may affect the performance of the pesticide. The manufacturer should certify that the product is exactly the same (in terms of physical and chemical properties, formulating ingredients and manufacturing process) as that marketed and registered in the country of origin, or be willing to state any deviations and provide an acceptable rationale for them. Materials to be used for seed treatments should be formulated with warning colorants or dyes which will persist under anticipated storage and handling conditions.

27. The specification should indicate any special features of packaging and labelling which are necessary for product protection during handling and storage and to ensure effective use. It should require packaging and labelling to be consistent with accepted standards. Reference may be made to internationally accepted packaging and labelling standards such as those described in FAO Plant Protection Bulletin No. 2 1983 Vol. 13. In the case of products which are not water soluble, the manufacturer should be required to recommend and provide a suitable solvent for washing application equipment and containers. Where available, containers which discourage re-use for storing liquids should be specified.

28. Where only a single product from a single manufacturer is effective in controlling a particular pest or where a single product has such outstanding advantages over other products on the market that it would not be technically justified to use anything else, direct purchase may be resorted to following negotiations with the supplier. In such cases prudent enquiries should be made to determine the prices paid by other recent purchasers of the product in order to ascertain whether the price being quoted is a fair one, taking account of the quantity being ordered and delivery requirements.

29. Where quantities being purchased are small so that competitive bidding would not be an efficient means of procurement local shopping may be resorted to, obtaining quotations from at least three different suppliers.

S. Shahid Husain
Vice President, Operations Policy

March 1985

JCCollins/DKing:js

APPENDIX C

CHAPTER 5

AID FUNDED SOURCES OF TECHNICAL ASSISTANCE IN PEST MANAGEMENT

1. **Consortium for International Crop Protection**
   University of Maryland
   Project: IPM and Enivronmental Protection Including Bio-control
   Project No. 936-4142
   PACD: 09/30/90

Project Brief

The Consortium for International Crop Protection (CICP) provides technical assistance, training, research and networking to LDC's in the areas of insect and pathogen management and pesticide management. CICP member institutions include 13 universites and USDA. About half of the specialists listed in CICP's computer registry are entomologists and plant pathologists. Other disciplines represented are plant breeding, weed science, horticulture, nematology, soil science, agricultural economics. Services of the consultants are generally secured through a consulting agreement directly with the specialist.

The CICP project is centrally funded through S&T/AGR.

Technical Assistance

Short-term (1-4 weeks) professional consultant support services have been provided to countries in all three regions. Services provided by project staff and consultants include pest and pesticide assessments, project development and evaluation, and preparation of EA's.

CICP's Regional Pest Management Specialist for Central America, stationed at AID's Regional Office for Central American Programs (ROCAP) in San Jose, Costa Rica, provides assistance to ROCAP, AID missions in the ROCAP region, and Central American national institutions on a continuing basis.

Training

CICP has helped organize a range of short courses and conferences. Topics include a pesticide legislation workshop for West Africa (Togo-1985), pest and pesticide management (Ecuador, Kenya and Peru-1985), and integrated pest management (IPM) for basic food crops in the Sahel (1984).

CICP produces training materials. For example, a training manual was developed for use in pesticide safety training programs to train persons who teach, train or advise others in the safe and proper use of pesticides. It is available in both English and Spanish.

Special Publications

Specialized materials include an updated report of the status of crop protection in Tunisia (available only in French) and a photo-novel illustrating health hazards of pesticides (for use in Ecuador).

2. **Denver Wildlife Research Center**
Project: Vertebrate Pest Management
Project No. 936-4173
PACD: 12/31/90

Project Brief

The Denver Wildlife Research Center (DWRC) offers TA and training with the overall objective of reducing losses to vertebrate pests in both preharvest and postharvest situations. This project is centrally funded through S&T/AGR.

Technical Assisstance

Technical assistance with rodent and bird control problems is available. In 1987 the project worked in Botswana with the FAO Migrant Pest Officer and the Ministry of Agriculture with regard to the bird (quelea) damage on small grains. TA provided included:

* Quantitative data on quelea damage to small grains
* Demonstration of quelea colony control with low application rates of a chemical applied by fixed-wing aircraft
* Began a demonstration evaluating a combination of lethal and non-chemical/non-lethal crop protection techniques
* Conducted a training course/workshop for Ministry of Agriculture personnel on quelea biology and survey and management techniques

Training

Training courses in vertebrate pest control are available at DWRC.

3. **Department of Grain Science and Industry**
Kansas State University
Project: Postharvest Grain Systems Research and Development
Project No. 936-4144
PACD: 2/15/91

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Project Brief

This project provides technical assistance, training and research with the objective of improving the capability of LDCs to reduce post harvest cereal legume losses. This project is centrally funded through S&T/AGR with substantial funding via buy-ins.

Technical Assistance

TA is directed towards solving problems identified by the developing countries and USAID missions. Assistance is available in the following areas: feasability studies, marketing studies, policy actions, equipment requirements and design, grain reserves, improvements of grain storage and handling facilities and improvement of grain preservation. Assistance can be obtained via Purchase Orders (under $25,000) or via BOA (over $25,000).

In Belize during 1986 the project was involved in the following activities:

* Assistance in preparation of the Toledo Agricultural Marketing Project Paper
* Assistance for the installation and adjustments of rice mill equipment
* Conducted training for supervisory and operational personnel working in the Belize Marketing Board rice mill

Training

A grain storage and marketing short course (7 weeks) for LDC participants is conducted annually by the Food and Feed Grain Institute. Participants from 73 countries have completed this intensive course held on the Kansas State University campus.

Publications

In addition to publishing technical reports, the project maintains the Postharvest Documentation Service (PHDS). PHDS is a computerized data retrieval system created to provide a centralized collect of documents pertaining to the postharvest systems of cereal grains, legumes and oilseeds. Services available from PHDS include bimonthly acquistion lists, document copies and computerized document searches.

4. Postharvest Institute for Perishables
University of Idaho
Project: Storage and Processing of Fruits and Vegetables
Project No. 931-1323
PACD: 09/30/90

Project Brief

The objectives of this project are:

* Conduct adaptive research on the postharvest conservation of perishable fruits and vegetables
* Provide technical assistance to missions
* Train graduate students
* Collect and disseminate information on the postharvest conservation of perishables

This project is centrally funded through S&T/AGR with substantial funding via buy-ins.

Technical Assistance

TA is available to missions and host country institutions for training in improved storage and handling practices for perishables and design of improved processing systems for perishables. Feasibility studies for efficient domestic marketing systems, loss assessments and documentation services are also provided on request by LDCs.

The Postharvest Institute for Perishables (PIP) has been provided 75 short-term TA teams to 30 countries in the 6 years of its operation.

In the Philippines, Burundi, Jamaica and other locations the project has developed food dryers appropriate for local conditions. For each location, the dryers are constructed from local materials for under $25. Concurrent training takes place on site.

Training

In additions to short-term on-site training, PIP presents an annual postharvest course for foreign agriculturists.

Publications

A methodology manual for postharvest loss assessment for perishables is being tested in 6 LDCs. Additionally, PIP maintains an extensive library of technical postharvest loss control documents.

5. Department of Plant Pathology
   North Carolina State University
   Project: Crop Nematode Research and Control
   Project No. 936-4149

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Project Brief

The objectives of this project are:

* Conduct research on nematodes of economic importance on crop plants in developing countries
* Provide technical assistance relative to agricultural nematode pests
* Conduct training and serve as a research network coordinator

This project is presently functioning on an unfunded extension. Technical assistance, training and research services are available via buy-ins.

6. **Georgia Experiment Station**
University of Georgia
Project: Peanut Collaborative Research Support Program (CRSP)
Project No: 936-4048
PACD: 06/30/90

Project Brief

This project coordinates the collaborative resources of LDC and US institutions in a long-term research program to relieve constraints on the production and utilization of the peanut in LDCs. These activities include efforts in pest management. This project is centrally funded by S&T/AGR with funds also contributed as buy-ins.

Peanut CRSP funded disease surveys in Senegal, the Philippines and Thailand provide a focus for breeding and cultural control efforts. Studies on leafspot, rust and other foliar diseases conducted in Thailand have helped increase understanding of weather-based timing of fungicide applications.

Technical Assistance

Short-term technical assistance is available to missions via buy-ins.

Training

Short-term training is available in the areas of breeding for disease resistance, insect resistance and integrated pest management (including insects, viruses and foliar diseases).

ANNEX G.1. - LIST OF CONTACTS

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ANNEX G. 2 - LIST OF DOCUMENTS

TITLE	PREPARED BY
A Note on the Potential Role of NGOs in the Rehabilitation of the North and East of Sri Lanka (restricted distribution) - April 24, 1988	Sunimal Fernando, M.Sri Shanmugarajah S.P. Dharmadasa Silva and Willie Gamage, IRED for USAID
Agricultural Credit in Gal Oya Irrigated Settlement System	Agrarian Research & Training Institute
Agricultural Credit Schemes under the Kurunegala Rural Development Project: An Evaluation	P.J.Gunawardena, Agrarian Research & Training Institute
Annual Report - 1985	Sri Lanka Institute of Co-operative Management
Annual Report - 1986	Sri Lanka Institute of Co-operative Management
Annual Survey of Industries - 1986 Preliminary Report	Dept. of Census & Statistics, Ministry of Plan Implementation
Assessment of Shelter & Housing Annual Report 1985	
Assessment of Agricultural Needs Following Cyclonic Storms & Floods	
Assessment of Economic Needs Following Natural Disasters	
Assessment Report: Estimated Damages in the Housing Sector Caused by Civil Disturbances, Sri Lanka, 1983-1987 and Suggested Reconstruction Strategies - October 1987	Fred C. Cuny, Intertect for AID/OFDA
Aspects of Support-Based Rural Housing in the Galle, Matara, Puttalam & Jaffna Districts of Sri Lanka	IRED Development Innovations & Networks

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TITLE	PREPARED BY
Aspects of Support-based Rural Housing in the Galle, Matara, Puttalam and Jaffna Districts of Sri Lanka - October 25, 1987	Sunimal Fernando, Willie Gamage, Dharmawamsa Pieris, M.Sri Shanmugarajah and R.M. Ranaweera Banda, IRED for USAID
Brochure - Centre for Regional Development Studies (CRDS) Sri Lanka	
Central Bank of Sri Lanka Bulletin Nov. '87	
Census of Industry 1983 Preliminary Report	Department of Census & Statistics, Ministry of Plan Implementation
Central Bank of Sri Lanka Annual Report - 1986	
Cost of Cultivation of Agricultural Crops - Maha 85/86 Volume I - Paddy February 1987	Dept.of Agriculture Peradeniya
Cost of Cultivation of Agricultural Crops - Maha 85/86 Volume II - Other Field Crops - February 1987	Dept.of Agriculture Peradeniya
Credit for the Development of the Indigenous Marketing System	Tissa de Soyza/AGR USAID
Cultivation Loans Statistics - Yala '87 Volume 3 No.1 - Nov.'87	Dept.of Rural Credit, Central Bank of Sri Lanka
Culture and Management in Sri Lanka	Dr.Gunapala Nanayakkara, University of Jayewardenepura
Developing Sri Lanka's Private Sector and its Investment Opportunities - Volume I	Arthur D. Little International, Inc
Donor Co-ordination Meeting Emergency Reconstruction & Rehabilitation Programme	
Draft Implementation Guidelines 11 March 1988	National Housing Dev.Authority

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TITLE	PREPARED BY
DRCC Stafffing Plan - 14 March 88	
Emergency Reconstruction & Rehabilitation Programme - 15 March 1988 - Circular to all Government Agents	National Reconstruction Steering Committee
Emergency Reconstruction & Rehabilitation Project - For Consideration on March 15, '88 dated February 24, 1988	
Field Trip with Mahaweli Enterprise Development Project Design Team	
Financial Assistance under RAP Memo - Mar. 29, 1988	Ulrich F.W.Ernst, PRM/ECON, USAID
Gal Oya Farmer Organization Programme - Progress and Prospects	Agrarian Research and Training Institute
Guide to Banking in Sri Lanka	Central Bank of Sri LankaHousing
Reconstruction and Rehabilitation - Draft Implementation Guidelines - March 11, 1988	National Housing Development Authority
IRED & its programs in Asia	Asian Regional Office Colombo
IRED Forum - No.24/1987 - July-Aug-Sept	
Irrigation System Management Project Paper - August 25, '86	USAID/Sri Lanka
Irrigation Management Program Manawa Tank Loan Scheme for Reconstruction	
Libralization, Trade and Aid: The Sri Lankan Experience Since 1977 - April 1988	Ulrich F.W.Ernst PRM/ECON, USAID
Leading Ideas & Experiences from Relief, Rehabilitation & Development Work in Sri Lanka	Consortium Information Service CIS-No.1
Mahaweli Enterprise Development Strategy Report on Sub-task No.3	

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TITLE	PREPARED BY
Mahaweli - Rural Enterprise Sector Program	
Mahaweli Enterprise Development PP Draft: Submitted to USAID Wash.	Jean-Jacques Deschamps, Dev.Alt.Inc.
Mahaweli Settlers & the Problems of Rural Credit	N.G.P.Panditharatna Central Bank of Sri Lanka
Memo of Con. with H.M.R.Ellepola, Central Bank - Dated Nov.4, 87	Neal P. Cohen USAID
Memorandum & Recommendation of the International Development Association to the Executive Directors on a Proposed credit of SDR 55 million - December 24, 1987	
Minor Tank Water Management in the Dry Zone of Sri Lanka - Oct.'87	Agrarian Research & Training Institute
Office of Housing and Urban Programs Annual Report - Fiscal Year 1987	USAID, Washington, D.C.
Overall Assessment	
Paddy Marketing Board Statistical Bulletin - 1986	
Political Economy of Small Farmer Loan Delinquency	
Pre-Implementation - Chapter 10	
Price and Wage Statistics - 1985	Statistics Department, Central Bank of Sri Lanka
Project Indicators: Housing	
Project Indicators: Livestock	
Promotion of Savings & Credit Among the Rural Poor	D.Jaeger/K.P.G.M. Perera, Rural Development Research Institute
Rehabilitation of Persons, Properties & Industries Authority Act, No. 29 of, 1987	Government

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TITLE	PREPARED BY
Rehabilitation Assistance Project	
Relationship of Central Banks with Treasuries, Planning & Development Agencies in the Government	Warnasena Rasaputra Central Bank of Sri Lanka
Report on the 1985 Survey of Business Activities & Planned Investments in Sri Lanka 1983/84 to 1985/86	Statistics Dept. Central Bank of Sri Lanka
Report & Accounts 1986	Bank of Ceylon
Report of the Committee on Co-operative Rural Banking	
Results of USAID-GSL Housing Finance Seminar April 5 - 1988 - Memo April 6, 1988	Raymond Struyk
Review and Analysis of Crop Diversification Options in the Dry Zone of Sri Lanka	Rolando J.Jiron,PhD
Rice Supply, Demand and Self-Sufficiency Prospects in Sri Lanka	Senaka Abeyratne AGR/USAID
Role of Financial Markets in Providing Housing Finance in Sri Lanka - March 1988	Roger Tufts,USAID Washington, D.C.
Rural Savings Mobilization	Dr. Nimal Sanderatne, Central Bank of Sri Lanka
Rural Credit-Trends, Policies & New Directions - 11 May '87	G.M.P.De Silva Dept.of Rural Credit, Central Bank of Sri Lanka
Rural Banking and Staff Training College Program Calendar - 1988	Central Bank of Sri Lanka
Scheme of Assistance to Fishermen	
Shelter Sector Program as approved by the Cabinet - Annexure I	Statistics Department
Shelter Sector Program as approved by the NRSC	W.J.S.Karunaratna
Some Aspects of the Informal Rural Credit in Sri Lanka	Sri Lanka Institute of Co-operative Management

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TITLE	PREPARED BY
Sri Lanka - Reconstruction and Rehabilitation Program - Oct. 26, 1987	World Bank
Sri Lanka Reconstruction and Rehabilitation Program - Nov. 6, '87	
Sri Lanka: Low Income Shelter Program (383-HG-004) Project Paper - Aug.24,'87	Agency for International Development
Sri Lanka Appraisal of Mahaweli Ganga Development Project II March 31, 1977	South Asia Projects Dept. Agricultural Division A
Staff Training College - Program Calendar 1988	Sri Lanka
Staff Appraisal Report Sri Lanka - Mahaweli Ganga Devlp. Project III - May 26, 1981	South Asia Projects Department Agricultural Division A
Staff Appraisal Report Village Irrigation Rehabilitation Project - April 30, 1981	World Bank
Study of Capital Market in Sri Lanka	T.Penner, PSD, USAID
Survey of Bank Deposits and Advances - First Half of 1983	Central Bank of Sri Lanka
Survey of Bank Deposits and Advances - First Half of 1986	Central Bank of Sri Lanka
Survey of Household Economic Activities - 1984/85	Dept. of Census & Statistics
Tentative Information on Damages & Estimates for Rehabilitation of Terrorist affected Districts - Sept. 15, 87	
The Design of the Sri Lanka Rehabilitation Assistance Project	DAI Development Alternatives, Inc
The National Water Supply & Drainage Board - Volume II, Market Town Water Supply Jaffna Project - Master Plan	Engineering Science
The Role of Banking in Rural Development	Shri R.N.Malhotra

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TITLE	PREPARED BY
The State of the Housing Sector and the Construction Industry in Jaffna and Batticaloa (draft) - April 1987	CARE Sri Lanka
Thrift and Credit Cooperative Societies Movement - Sri Lanka	Centre for Development Communications
Thrift & Credit Cooperative Movement in Sri Lanka	Ranjith Hettiarachchi, Federation of Thrift & Credit Co-operative Societies Ltd.

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Bibliography input-Housing

Agency for International Development. Sri Lanka: Low Income Shelter Program (383-HG-004). Project Paper. August 24, 1987.

CARE Sri Lanka. The State of the Housing Sector and the Construction Industry in Jaffna and Batticaloa. Draft. April 1987.

Cuny, Fred C. Assessment Report: Estimated Damages in the Housing Sector Caused by Civil Disturbances, Sri Lanka, 1983-1987, and Suggested Reconstruction Strategies. Interect for AID/OFDA. Dallas, TX: October 1987.

Fernando, Sunimal, Willie Gamage, Dharmawamsa Pieris, M. Sri Shanmugarajah, and R.M. Ranaweera Banda. Aspects of Support-based Rural Housing in the Galle, Matara, Jaffna and Puttalam Districts of Sri Lanka. IRED for USAID. 25 October 1987.

National Housing Development Authority. Housing Reconstruction and Rehabilitation--Draft Implementation Guidelines. 11 March 1988.

World Bank. Sri Lanka--Reconstruction and Rehabilitation Program October 26, 1987.

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