2.25 UR-2: Sites and Services

"Noise," "solid waste" and social impacts have to be assessed in EIA.

Since this construction-oriented project will be implemented in urban areas, possible impacts are accordingly limited. Solid waste will increase as residents increase. EIA should review the existing waste disposal capacity of the targeted urban area and should propose a waste management system if needed Resettlement and land use are also items for careful assessment. No social conflict should happen in relation to land acquisition. In case a large facility is built under this project, higher noise levels and disturbance of local economy have to be assessed with respect to its construction.

2.26 EN-6: Wastewater Treatment for Fishery Communities

EIA is not particularly required for this sanitation project if the target communities fully understand the possibilities of noise, limited resettlement and land-use change to be caused by the construction of a simple, small-scale treatment system.

2.27 EN-8: Solid Waste Disposal Management

EIA should be done targeting the proposed dumping site and detailing the treatment method to be adopted.

Environmental impacts will significantly vary among the proposed alternative dumping sites. Ideally, dumping sites must be far from urban centers and located on unproductive land without any interference to water uses such as drinking, fishing and bathing. It is recommended to assess the following environmental items for each alternative dumping site and its surrounding areas: topography, land degradation, water use, groundwater, water quality, flora and fauna, noise and offensive odor, resettlement, religion and culture, and land use. Among these items, noise is the only one that can be caused by the transportation of waste. If access routes to the dumping sites run through densely populated areas, this can become serious. Appropriate sites with least adverse impacts must be selected through EIA.

Appendix 1

IEE Step-1 Check List for Agriculture

Will the project or program:

Questions	yes/no/?	Step 2
1. Lead to a substantial increase in acreage under cultivation?		A
2. Remove or change the natural vegetation in areas exposed to desertification, areas with tropical rain forest, or areas with especially productive or vulnerable types of vegetation?		C
3. Affect areas with animal and plant life which is worthy of protection, or areas with particularly vulnerable ecosystems?		C
4. Lead to a substantial increase in erosion?		A
5. Lead to a substantial pollution of water and soil?		A & B
6. Affect areas with historical remains or landscape elements which are of importance to the local population?		G
7. Change the way of life of the local population in such a way that it leads to a considerably pressure on the natural resource base?		G
8. Lead to major conflicts with regard to existing land use and ownership of land?		G
9. Obstruct, or lead to substantial changes in, the local population's exploitation or use of natural resources and land other than those directly affected by the project?		G

IEE Step-1 Check List for Livestock Holding

Will the project or program:

Questions	yes/no/?	Step 2
1. Lead to a considerable increase in water consumption in areas with limited water resources?		B
2. Change the vegetation in areas exposed to desertification, in areas with especially vulnerable types of vegetation, or areas with animal and plant life worthy of protection?		C
3. Lead to increased grazing and increased problems due to trampling in areas with limited pastures?		A
4. Lead to a substantial increase in erosion?		A
5. Create pollution problems?		A, B & D
6. Obstruct the protection and development, or traditional management, of wildlife stocks?		C
7. Change the way of life of the local population in such a way that it leads to a considerably increased pressure on the natural resource base?		G
8. Lead to major conflicts with regard to existing land use and ownership of land?		G
9. Lead to the spreading of diseases among domestic animals or people?		G
10. Obstruct, or lead to substantial changes in, the local population's exploitation or use of natural resources and land other than those directly affected by the project?		G

IEE Step-1 Check List for Forestry (excluding pure conservation projects)

Will the project or program:

Questions	yes/no/?	Step 2
1. Lead to a higher degree of felling than the natural rate of growth?		C
2. Lead to considerable encroachments on tropical rain forest or other particularly vulnerable areas?		C
3. Introduce tree species of which there is little ecological experience?		C
4. Lead to a substantial increase in erosion?		A
5. Affect areas with plant and animal life which are worthy of protection, or areas with especially vulnerable eco-systems?		C
6. Affect areas with historic remains or landscape elements which are of importance to local population?		G
7. Change the way of life of the local population in such a way that it leads to a considerably increased pressure on the natural resource base?		G
8. Lead to major conflicts with regard to existing land use and ownership of land?		G
9. Obstruct, or lead to substantial changes in, the local population's exploitation or use of natural resources other than those directly affected by the project?		G

IEE Step-1 Check List for Fisheries

Will the project or program:

Questions	yes/no/?	Step 2
1. Lead to catching of larger quantities of individual species of fish or shellfish than can be replaced by natural rate of growth?		C
2. Be based on a substantial increase in the exploitation of vulnerable eco-systems, such as mangrove swamps and coral reefs?		C
3. Introduce species of which there is little ecological experience?		C
4. Lead to catching of species worthy of protection, or to the destruction of their natural environment?		C
5. Create substantial waste or pollution problems?		B, D & E
6. Lead to a major increase in the demand for clean water or energy?		B
7. Change the way of life of the local population in such a way that it leads to a considerably increased pressure on the natural resource base?		G
8. Lead to major conflicts with regard to existing land use and ownership of land?		G
9. Obstruct, or lead to considerable changes in, the local population's exploitation or use of natural resources and land other than those directly affected by the project?		G

IEE Step-1 Check List for Aquaculture

Will the project or program:

Questions	yes/no/?	Step 2
1. Affect areas with animal and plant life which are worthy of protection, or areas with especially vulnerable ecosystems?		C
2. Be based on a substantially increased exploitation of, or influence, vulnerable eco-systems, such as for example mangrove swamps, and coral reefs?		C
3. Lead to introduction of species which have not previously existed in the area?		C
4. Create a risk for increased spread of water-borne diseases?		F & G
5. Lead to pollution problems or unwanted growth of algae and water plants?		B
6. Lead to a major increase in the demand for clean water or energy?		B
7 Change the way of life of the local population in such a way that it leads to a considerably increased pressure on the natural resource base?		G
8. Lead to major conflicts with regard to existing land use and ownership of land?		G
9. Obstruct, or lead to considerable changes in, the local population's exploitation or use of natural resources and land other than those directly affected by the project?		G

IEE Step-1 Check List for Hydropower Projects

Will the project or program:

Questions	yes/no/?	Step 2
1. Flood areas which are of major significance for human settlement, agriculture, animal husbandry, or similar?		G
2. Flood areas which support animal or plant life worthy of protection or especially vulnerable eco-system?		C
3. Flood areas which contain historic remains or landscape elements which are of importance to the local population?		G
4. Drain rivers or change the flow of water in such a way that it creates considerable changes for the environment and the utilization of natural resources?		B, C & G
5. Cause substantial changes in the flow of nutrient elements and fish production?		B & G
6. Create a risk for increased spread of diseases including water-borne ones?		F & G
7. Change the way of life of the local population in such a way that it leads to a considerably increased pressure on the natural resource base?		G
8. Alter or cut any existing roads regularly used by the local people?		G
9. Obstruct, or lead to considerable changes in, the local population's exploitation or use of natural resources other than those directly affected by the project?		G

IEE Step-1 Check List for Water Supplies/Irrigation

Will the project or program:

Questions	yes/no/?	Step 2
1. Flood areas which are of greater local importance of human settlements, agriculture, animal husbandry, or similar?		G
2. Flood areas which support animal or plant life worthy of protection or especially vulnerable eco-system?		C
3. Flood areas which contain historic remains or landscape elements which are of importance to the local population?		G
4. Lead to tapping of groundwater in such quantities that there is a danger for permanently lowering of the groundwater-table?		B & G
5. Cause a noticeable reduction in the flow of nutrient elements and fish production?		B & G
6. Create a risk for increased spread of water-borne diseases?		F & G
7. Change the way of life of the local population in such a way that it leads to a considerably increased pressure on the natural resource base?		G
8. Lead to substantial water logging or salinization of cultivated or cultivable land?		B
9. Create pollution problems?		A, B & D
10. Lead to major conflicts with regard to existing land use and ownership of land?		G
11. Obstruct, or lead to considerable changes in, the local population's exploitation or use of natural resources or land other than those directly affected by the project?		G

IEE Step-1 Check List for Transport

Will the project or program:

Questions	yes/no/?	Step 2
1. Affect areas with animal or plant life worthy of protection, or areas with particularly vulnerable ecosystem?		C
2. Create barriers to movement in areas with conservation-worthy or particularly large game stock?		C
3. Affect areas with historic remains or landscape elements which are of importance to the population?		G
4. Lead to substantial increase in erosion?		A
5. Lead to high rates of consumption of scarce material resources?		G
6. Lead to a considerable increased and unintended accessibility to vulnerable or conservation-worthy nature reserves or natural resources for others than the local population?		C & G
7. Change the way of life of the local population in such a way that it leads to a considerably increased pressure on the natural resource base?		G
8. Create pollution problems?		A, B & D
9. Lead to major conflicts with regard to existing land use and ownership of land?		G
10. Obstruct, or lead to changes in, the local population's exploitation or use of natural resources other than those directly affected by the project?		G

IEE Step-1 Check List for
Industry, Oil-Refinery, or Thermal-Power Projects

Will the project or program:

Questions	yes/no/?	Step 2
1. Lead to a substantial pollution of water, air or soil?		A, B & D
2. Affect areas which support animal and plant life worthy of protection or especially vulnerable eco-system?		C
3. Create a risk of accidents which may have serious consequences for the local population and the natural environment?		F
4. Create waste disposal problems?		E
5. Affect areas with historic remains or landscape elements which are of importance to the population?		G
6. Change the way of life of the local population in such a way that it leads to a considerably increased pressure on the natural resource base?		G
7. Lead to major conflicts with regard to existing land use and ownership of land?		G
8. Obstruct, or lead to considerable changes in, the local population's exploitation or use of natural resources other than those directly affected by the project?		G

IEE Step-1 Check List for Mining Activities

Will the project or program:

Questions	yes/no/?	Step 2
1. Create substantial pollution problems, and a risk of polluting land outside the actual mining area?		A, B & D
2. Affect areas which support animal and plant life worthy of conservation or areas with particularly vulnerable ecosystems?		C
3. Create a risk of accident which may have serious consequences for the local population and the natural environment?		F
4. Create substantial waste disposal problems?		E
5. Affect areas with historic remains or landscape elements which are of importance to the population?		G
6. Change the way of life of the local population in such a way that it leads to a considerably increased pressure on the natural resource base?		G
7. Lead to major conflicts with regard to existing land use and ownership of land?		G
8. Lead to major changes in the landscape, terrain or topography?		A & G
9. Obstruct, or lead to substantial changes in, the local population's exploitation or use of natural resources other than those directly affected by the project?		G

IEE Step-1 Check List for Waste Treatment & Disposal

Will the project or program:

Questions	yes/no/?	Step 2
1. Lead to considerable pollution of water, air and soil?		A, B & D
2. Lead to development of unwanted disposal site wildlife which displaces the original wildlife in the area?		C
3. Create a risk of spread of disease?		E & G
4. Occupy productive areas or areas worthy of conservation of a substantial size?		C
5. Affect areas with historic remains or landscape elements which are of importance to the population?		G
6. Lead to major conflicts with regard to existing land use and ownership of land?		G
7. Obstruct, or lead to considerable changes in, the local population's exploitation or use of natural resources other than those directly affected by the project?		G

IEE Step-1 Check List for
Development of Densely Populated or Urban Areas

Will the project or program:

Questions	yes/no/?	Step 2
1. Affect areas which support animal or plant life worthy of protection, or areas with particularly vulnerable ecosystems?		C
2. Affect areas with historic remains or landscape elements which are of importance to the population?		G
3. Lead to tapping of large quantities of water from limited sources?		B
4. Lead to a cutting of trees for fuel, etc. which is larger than the rate of growth?		C
5. Lead to substantial waste disposal and pollution problems?		A, B, D & E
6. Create major demands on other forms of infrastructure, such as transportation?		G
7. Change the way of life of the local population in such a way that it leads to a considerably increased pressure on the natural resource base?		G
8. Lead to major conflicts with regard to existing land use and ownership of land?		G
9. Lead to a health risk as a result of the growth of slums and bad sanitary conditions?		B & G
10. Obstruct, or lead to substantial changes in, the local population's exploitation or use of natural resources other than those directly affected by the project?		G

IEE Step-1 Check List for Tourism

Will the project or program:

Questions	yes/no/?	Step 2
1. Lead to considerable encroachments on tropical rain forest or other particularly vulnerable areas?		C
2. Be based on a substantial increase in the exploitation of vulnerable eco-systems, such as mangrove swamps and coral reefs?		C
3. Affect areas with animal and plant life which is worthy of protection, or areas with particularly vulnerable ecosystems?		C
4. Lead to a substantial increase in erosion?		A
5. Lead to a substantial waste or pollution of water and soil?		A , B & E
6. Lead to a major increase in the demand for clean water or energy?		B &G
7. Change the way of life of the local population in such a way that it leads to a considerably pressure on the natural resource base?		G
8. Create a risk of spread of disease?		G
9. Create major demands on other forms of infrastructure, such as transportation?		G
10. Obstruct, or lead to substantial changes in, the local population's exploitation or use of natural resources and land other than those directly affected by the project?		G

Appendix 2

IEE Step-2 Check List for Soil & Land Management (A)

For the projects/programs directed to "A" in Step 1:

Questions	yes/no/?	Related impacts
1. Are there any indications that accelerated soil erosion or degradation are, or could be, a problem in the project area? (Indicators include records of declining crop yields, visible gullying, downstream silt deposits, land slips and mud slides and presence of dust.)		soil erosion
2. Is a significant land area likely to be affected? ("Significant land area" includes steep terrain over 5 ha, hilly terrain over 10 ha, gently rolling terrain over 20 ha, and flat terrain over 50 ha.)		topography
3. Is the project area covered by forest or other largely natural vegetation?		flora & fauna
4. Is the present land use contributing to land degradation? (e.g., unmanaged chena, cropping without conservation measures, overgrazing, and unregulated logging)		soil erosion
5. Will the project result in the direct physical removal of significant volumes of soil? ("No" when the project includes countermeasures such as stockpiling and return of topsoil, and prevention of the soil erosion during construction activities, while "Yes" when the project will involve quarrying of rock, gravel and/or sand.)		topography
6. Could the project increase the extent of land degradation in the general region by facilitating access for resource exploitation?		land degradation
7. Will the project involve the use of agricultural chemicals, pesticides or herbicides?		land degradation

IEE Step-2 Check List for Water Management (B)

For the projects/programs directed to "B" in Step 1:

Questions	yes/no/?	Related impact
1. Are rivers or lakes downstream or near the project used for, or to provide water for, significant economic or domestic activities? (e.g., drinking, irrigation, livestock water, fishing, aquaculture, navigation, ports/harbors, industry, nature reserve, etc.)		water use
2. Is there a risk that any of the above uses could be affected by effluents, silt or changes in water flows resulting from project activities?		water use
3. Is there a risk that groundwater resources could be affected by effluents, silt or changes in water flows resulting from project activities?		groundwater
4. Is the quality of water available unsuitable for project requirements so that some solution should be required?		water quality
5. Could the project demand on the local water resources conflict with the demands of other water users?		water use
6. Could the project either raise or lower groundwater tables?		groundwater
7. Is saline groundwater present in the project area?		groundwater
8. Could the project exhaust groundwater reserves?		groundwater

IEE Step-2 Check List for Biological Management (C)

For the projects/programs directed to "C" in Step 1:

Questions	yes/no/?	Related impact
1. Are areas likely to be opened up by the project which presently have relatively low population densities?		resettlement
2. Are any of the significant natural habitats present in the project area or in its vicinity? ("Significant natural habitats" include natural forest, especially rain forest, coastal dune areas/mangroves, natural grasslands/ savannahs, land at an elevation over 2,500 m covered with any type of natural vegetation, very rocky county with numerous outcrops, wetlands/natural swamps, and coral reefs/atolls.)		flora & fauna
3. Are vegetation types present in the project area which significantly differ from those elsewhere in the region?		flora & fauna
4. Could the project lead to the introduction of plant or animal species not presently in the region?		flora & fauna
5. Are there any plant or animal species in the project area or vicinity which could be considered rare, endangered or have significant conservation value?		flora & fauna
6. Does the natural habitat in the region have cultural/religious significance or potential/actual value as a tourist resource?		religion & culture
7. Will the project lead to greater human activity in areas of natural habitat?		flora & fauna
8. Will the project impinge on natural habitats in other ways? (e.g., noise, effluents, etc.)		flora & fauna
9. Could hunting/gathering activities (subsistence or commercial), undertaken by the local population within or near the project area, be significantly affected by the project?		local economy

IEE Step-2 Check List for Air/Noise Management (D)

For the projects/programs directed to "D" in Step 1:

Questions	yes/no/?	Related impact
1. Is existing air quality good?		air quality
2. Is the likely contribution to pollution from the project large relative to other sources in the region?		air quality
3. Is land use downwind of the project likely to suffer from air pollution? (Note that most crops and natural vegetation are affected.)		air quality
4. Is there a substantial population downwind which would suffer health and comfort problems from air pollution?		air quality
5. Are local topography and wind conditions such that pollution may not be readily dispersed? (In valleys with calm conditions pollutants tend to build up, while in open windy situations they are quickly dispersed.)		air quality
6. Is the existing ambient noise level low?		noise
7. Will construction involve the use of heavy equipment, blasting, vibration or any tonal or impulsive noises?		noise
8. Will operation involve continuing generation of noise?		noise
9. Is the project located within 3 km of noise-sensitive zones such as residential areas, quiet recreational areas, hospitals, schools or wildlife reserves?		noise

IEE Step-2 Check List for Waste Management (E)

For the projects/programs directed to "E" in Step 1:

Questions	yes/no/?	Related impact
1. Have public/private arrangements been insufficient to ensure safe disposal of liquid and solid wastes?		solid waste
2. If waste water treatment is required, have public/private arrangements been insufficient for disposal of treatment sludges?		water quality
3. Will chemical treatment/conditioning of wastes be required?		water quality
4. Will the project involve the use of agricultural chemicals, pesticides or herbicides?		water quality
5. Are containment measures necessary for products, reagents and wastes?		solid waste
6. Are contingency plans required for handling spills, leaks and processing systems failures?		water quality

IEE Step-2 Check List for Risk & Hazard Management (F)

For the projects/programs directed to "F" in Step 1:

Questions	yes/no/?	Related impact
1. Have measures been excluded to protect against a credible mishap?		risk & hazard
2. Could the local human population be affected by a mishap?		risk & hazard
3. Have contingency plans, including emergency evacuation plans been absent?		risk & hazard
4. Are there indications that the project location is susceptible to natural disaster? (e.g., flood plain, seismic zone, close to a volcano, in a cyclonic region, in dry forest, etc.)		risk & hazard
5. Does the design exclude provisions to protect against natural disasters?		risk & hazard
6. Have contingency plans been insufficient to cope with natural disasters?		risk & hazard

IEE Step-2 Check List for Social Management (G)

For the projects/programs directed to "G" in Step 1:

Questions	yes/no/?	Related impact
1. Are people in and around the project area living in a relatively traditional lifestyle? (i.e., unaffected by outside influences)		religion and culture
2. Will the project directly or indirectly affect land tenure (including traditional land ownership) and traditional land usage in the region?		land use
3. Will a large- or small-scale resettlement of population be necessary?		resettlement
4. Will the project directly or indirectly encourage an influx of people from outside the region? (e.g., construction workers, tourists, etc.)		health
5. Will the project (during/after construction) impede any access routes around the project area? (e.g., roads, etc.)		local economy
6. Does any element of the population have religious or cultural affinity with any sites in and close to the project area?		religion & culture
7. Are there any archeological or historic sites in and close to the project area?		religion & culture
8. When any element of the population rely on access to the natural environment for subsistence, income or fuelwood, could this access be constrained by the project?		local economy
9. Could the project upset the local political and/or social structure of the community existing in or immediately around the development?		religion & culture

Project Profiles

PROJECT REPORT

PART 4 PROJECT PROFILES

A total of 143 projects and programs have been proposed by the Master Plan for Southern Area Development as a long list of projects/programs. Profiles have been prepared for all of them. All of them have been subjected to an initial environmental examination as reported in Part 3 of this volume. For some of them, more in-depth analyses have been conducted as reported in Part 1 and Part 2 of this volume.

Profiles of all the projects and programs are presented in the following order.

1. Anchor Projects

1.1 Strategic infrastructure

(SA-1) Galle Port Development,
(SA-2) Southern Highway Project (Colombo-Matara),
(SA-3) Intra-Regional Artery Road Establishment,
(SA-4) Coast Line Improvement and Upgrading,
(SA-5) Uma Oya Multipurpose Development,
(SA-6) Koggala and Weerawila Airfields Upgrading, and
(SA-7) Coal Thermal Power Plant.

1.2 Economic development

(SA-8) Paddy-based Mixed Farming Promotion,
(SA-9) Home Gardens Based Multi-storey Farming ,
(SA-10) Small Holder Integrated Farming Promotion,
(SA-11) Marine Fisheries Complex Development,
(SA-12) Gin-Nilwala Integrated River Basin Development,
(SA-13) Industrial Districts for Small- and Medium-Sized Industries, and
(SA-14) Comprehensive Radio Program for Market Information.

1.3 Social development

(SA-15) District Vocational Training Centers,
(SA-16) Community Enterprise Service Centers,
(SA-17) Secondary Education Development (extension),
(SA-18) Health Referral System Development,
(SA-19) Touristic Herbal Garden and Health Center, and
(SA-20) Rural Roads Improvement Program.

1.4 Environmental development

(SA-21) GIS-Oriented Regional Information System (GORIS) Establishment,
(SA-22) Environmental Fund for Southern Area,
(SA-23) Environmental Monitoring and Animating Center,
(SA-24) Integrated Management of Coastal Resources (Coastal and Lagoon Environmental, Education and Research Center,
(SA-25) Multiple-Use Forest Management,

(SA-26) Eco-Tourism Development, and
(SA-27) Appropriate Toilet Facilities for Households.

2. Special Program for Participatory Development

3. Local Projects/Programs

3.1 Agriculture

(AG-1) Seed-paddy Production and Supply System Improvement,
(AG-2) Tea Small Holdings Sector Improvement,
(AG-3) Sugar Plantation Development Project (Private Sector),
(AG-4) Strengthening of Cattle and Buffalo Breeding Program,
(AG-5) Beef Processing and Marketing Development in the Dry Zone (Private Sector),
(AG-6) Irrigation System Rehabilitation and Development,
(AG-7) Abandoned Tanks Renovation Project in Moneragala and Ampara Districts,
(AG-8) Private Sector's Irrigated Agriculture Development (Private Sector),
(AG-9) Enhancement of Training and Research Facilities in Faculty of Agriculture, University of Ruhuna, and
(AG-10) Alternative Irrigation Techniques Pilot Project

3.2 Fishery

(FI-1) Inland Fisheries Re-Establishment Program,
(FI-2) Prawn farming,
(FI-3) Strengthening of Faculty of Fisheries Science in the University of Ruhuna, and
(FI-4) Improvement of Fish Markets.

3.3 Industry

(IN-1) Integrated Urban Industrial Development Project,
(IN-2) Training and Technology Institute (Center),
(IN-3) Industrial Finance, and
(IN-4) Improved Availability of Manufacturing Inputs.

3.4 Tourism

(TO-1) Galle Fortified City Conservation,
(TO-2) Hambantota Hotel Construction,
(TO-3) Hotel School,
(TO-4) Unawatuna Bay Resort Development,
(TO-5) Arugam Bay North / South Resort Development,
(TO-6) Tissamaharama Archaeological Excavation with Gateway Facilities Complex,
(TO-7) Marine Archaeological Museum,
(TO-8) Sinharaja Forest Visitor Center,
(TO-9) Arts and Handicraft Center,
(TO-10) National Oceanarium and Indian Ocean Institute,
(TO-11) Walawe Spa Resort Development,
(TO-12) Bird Research Institute,
(TO-13) Tourism Promotion Program, and
(TO-14) Internet Tourism Informatin Center

3.5 Trade and other services

(SE-1) Producers' *Pola* Improvement,
(SE-2) Venture Capital Company for Southern Enterprises, and
(SE-3) Research on Introduction of Corrugated Paper Boxes for Agricultural Packaging.

3.6 Water and Sanitation

(WS-1) Weli Oya Diversion,
(WS-2) Mau Ara Diversion,
(WS-3) Menik Ganga Diversion,
(WS-4) Menik Ganga-Kumbukkan Oya Integrated River Basin Development,
(WS-5) Aparekka Reservoir Development,
(WS-6) Greater Galle Water Supply Improvement,
(WS-7) Matara Water Supply Improvement,
(WS-8) Hambantota Water Supply Improvement,
(WS-9) Water Supply to Lunugamwehera Villages,
(WS-10) Improvement of Beliatta Water Supply,
(WS-11) Walasmulla-Weeraketiya Water Supply,
(WS-12) Kirinda Water Supply,
(WS-13) Gate Dams for Prevention of Salinity Intrusion to Rivers,
(WS-14) Treatment Facilities for High Fluoride and Iron Contents in Water,
(WS-15) Setting Up Rain Water Collector Tanks for Schools, Hospitals and Houses,
(WS-16) Piped Sewerage System with Treatment and Disposal Facilities for Moneragala,
(WS-17) Piped Sewerage Systems for Major Coastal Urban Centers,
(WS-18) Innovative Sewerage Systems Pilot Installation,
(WS-19) Accumulated Sludge Treatment, and
(WS-20) Groundwater Development in SEDZ.

3.7 Transportation

(TR-1) Bypass Roads (National Highway A2),
(TR-2) Rehabilitation and Maintenance of National Highways,
(TR-3) New Road Construction (National Highways),
(TR-4) Provincial Road Rehabilitation,
(TR-5) Bus Terminal Improvement,
(TR-6) Rural Transport Services,
(TR-7) Commercial Distribution Center (truck terminal, storage facilities and markets), and
(TR-8) Technical Assistance to Provincial Council Department of Transport.

3.8 Telecommunications

(TL-1) Establishment of Galle Information Community (GIC),
(TL-2) Digital Wireless Local Loop System (DWLLS) to Rural Service Centers, and
(TL-3) Integrated Services Social Network (ISSN).

3.9 Energy

(EG-1) Distribution System Efficiency Improvement Program,
(EG-2) Extension of 33 kV Distribution Lines and Electrification of 19 Villages,
(EG-3) Expansion Plan of Distribution Network to 2000),
(EG-4) Solar Power System / Solar Water Supply System, and
(EG-5) 12MW Wind Power Plant.

3.10 Urban system

(UR-1) Local Development Planning Capability,
(UR-2) Sites and Services,
(UR-3) Urban Administration in Sri Lanka, and
(UR-4) Galle Downtown Redevelopment.

3.11 Environment

(EN-1) Wetland Conservation and Management,
(EN-2) Environmental Rehabilitation of the Nilwala and Nupe Canals,
(EN-3) Coastal Belt Protection,
(EN-4) Soil Resources Inventory at Scale 1:50,000 for Southern Area,
(EN-5) World Bio-Diversity Research Institute,
(EN-6) Wastewater Treatment for Fishery Communities,
(EN-7) Promotion and Extension of Efficient Fuelwood-Stoves in Rural Communities,
(EN-8) Solid Waste Disposal Management,
(EN-9) Gem-Mining Regulation and Health Project,
(EN-10) National Parks Infrastructure/Habitat Improvement,
(EN-11) Cooperative Planting (Taungya) Promotion,
(EN-12) Integrated Watershed Management,
(EN-13) Wood-Based Industry Improvement Project,
(EN-14) Environmental Wise-Use Research and Training Center,
(EN-15) Wet-Zone Forest Management through Community Participation,
(EN-16) General Conservation Center of Forest-cum-Wildlife Reserve Area in Southern Area,
(EN-17) Ecological Management of Soil Erosion and Minor Tanks in the South-East Dry Zone,
(EN-18) Biological and Environmental Zoning,
(EN-19) Commercial Forestry Promotion, and
(EN-20) Multiple Use Development on Protected Areas

3.12 Social development

(SO-1) Educational Resource Center Project Expansion of Secondary (1AB) Schools
(SO-2) Expansion of Secondary (1AB) Schools
(SO-3) Non-formal Education Program
(SO-4) Establishing Engineering Faculty in Ruhuna University
(SO-5) Pilot Project of Study on Budget Allocation for Education Sector in Southern Area
(SO-6) Master Plan of Health Development of Southern Area
(SO-7) Nutrition Campaign Program
(SO-8) Hospitals Improvement Program
(SO-9) Establishing Basic Training Center for Para-medical Personnel
(SO-10) In-Service Training for Health Personnel
(SO-11) Community Oriented Health Education and Training Program for Health Workers
(SO-12) Integrated Malaria Control and Prevention
(SO-13) Inter-disciplinary Research Program on Human Life in Dry Zone Area
(SO-14) Social Issues Research Project
(SO-15) Southern Area Vocational Education Committee (SAVEC)
(SO-16) Counselling and Placement Services
(SO-17) Employer Initiated Training/Skills Development Fund Southern Area Component
(SO-18) Technical Training and Commercial Centers : Financial and Technical Support Project
(SO-19) Master Instructor and Training Support Specialist Programme

(SO-20) Vocational Training and Development Committees (VTDC) : Design and Capacity Building Project

Project No. SA-1

1. PROJECT TITLE	Galle Port Development
2. LOCATION	Galle
3. IMPLEMENTING AGENCY	SLPA, private sector
4. OBJECTIVES	(1) To develop the port of Galle in stages as a key infrastructure project supporting Southern Area development; and (2) To stimulate the development of related trade, tourism and other services as well as manufacturing activities.
5. EXPECTED EFFECTS	Establishment of high images of Southern Area and the city of Galle as a dynamic and attractive place with diverse functions and opportunities for people of different backgrounds to interact.
6. PROJECT COSTS	US$ 290 million in Phase I and Phase II
7. IMPLEMENTATION SCHEDULE	F/S on stage development, D/D and initial implementation of first stage development during Phase I

8. PROJECT DESCRIPTION

The port of Galle will be developed in stages as a key infrastructure project supporting the Southern Area development. Its first stage is expected to be initiated in the nearest future to establish a regional port. A general/bulk berth and an oil berth may be provided as recommended by the JICA Study in 1991. A better location may be the central portion of the harbor just south of the existing port facilities. This would minimize the length of the breakwater initially.

To determine the most desirable yet realistic first stage development, clarifying the need for and broad environmental effects of dredging and breakwater construction, a feasibility study should be conducted urgently together with a comprehensive environmental inventory and impact analysis. Once the basic design is prepared, the development of port facilities may be entrusted to a consortium of private firms. A member shipping consortium would make capital contribution in the form of advance payment for a long-term lease of a container berth.

Project No. SA-2

1. PROJECT TITLE	Southern Highway (Colombo-Matara)
2. LOCATION	Bandaragama (Colombo Outer Circular Road) & Matara
3. IMPLEMENTING AGENCY	Ministry of Health, Highways and Social Services, Road Development Authority and private sector
4. OBJECTIVES	To have a faster highway to the south as a measure to cut down travel time by 40 to 50 percent.
5. EXPECTED EFFECTS	Enhanced development potential of the south to attract local and foreign investors, entrepreneurs, industrialists and tourists.
6. PROJECT COSTS	US$ 300 million (estimate as of July 1995)
7. IMPLEMENTATION SCHEDULE	5 years

8. PROJECT DESCRIPTION

The Government has proposed that the Alternate Southern Highway, 138 km of length, be constructed through private involvement. The highway will help to enhance the development potential of Southern Area.

Tollway

The proposed highway will be a four-lane dual carriage-way with five interchanges. When the highway is constructed as an access-controlled highway, it can reduce the travel time between Colombo and Galle by about one hour. Therefore, it will take 90 minutes from Colombo to Galle. The highway can carry heavy containers and bulk cargo freighters safely.

Service road

The project was started in January 1996 with the construction of embankments from the Matara side. The Government aims to use this road as a service road and seeks private investors for the construction of the main highway.

Project No. SA-3

1. PROJECT TITLE	Intra-Regional Artery Road Establishment
2. LOCATION	Matara — Embilipitiya — Tanamalwila — Wellawaya — Moneragala (ASH extension to SEDZ) Nonagama — Pelmadulla (A-18)
3. IMPLEMENTING AGENCY	Ministry of Health, Highways and Social Services, and RDA
4. OBJECTIVES	(1) To establish a strong intra-regional artery or spinal road; (2) To improve access to the SEDZ and most rural hinterlands; and (2) To contribute to inter-linking economies of several growth areas within Southern Area.
5. EXPECTED EFFECTS	(1) Southern Area as a coherent region with stronger physical and socio-economic linkages; and (2) Improved procurement and marketing and better social services delivery.
6. PROJECT COSTS	Matara — Tanamalwila US$ 30 million (estimate as of July 1995) Nonagama — Pelmadulla US$ 18 million (estimate as of July 1995)
7. IMPLEMENTATION SCHEDULE	F/S, D/D and initial implementation in Phase I; Completion as an upgraded class A road during Phase II

8. PROJECT DESCRIPTION

Road coverage for most part of Southern Area is reasonable, if not adequate, but road conditions are generally poor except for main roads. Most roads in the interior are difficult to pass during the rainy season. Poor road conditions make marketing difficult, increasing transportation costs and production losses. A new intra-regional artery road is proposed as a high grade road linking several high potential areas in Southern Area.

A proposed alignment of the intra-regional artery road links Matara, Embilipitiya, Tanamalwila, Wellawaya and Moneragala and Ratnapura/Colombo to Hambantota. It would improve the access to rural areas as well as the SEDZ. Probably 90% of the rural area, except the Yala National Park, would fall within one hour time distance from this future artery. It would contribute to improved marketing and social services delivery as well as complementary development of different areas along the artery.

Project No. SA-4

1. PROJECT TITLE	Coast Line Improvement and Upgrading
2. LOCATION	Coast line between Colombo and Matara
3. IMPLEMENTING AGENCY	Ministry of Transport, Environment and Women's Affairs Sri Lanka Railways
4. OBJECTIVES	(1) To reduce the journey time between Colombo - Matara; and (2) To increase the line capacity of the Coast line to facilitate more frequent train movement.
5. EXPECTED EFFECTS	(1) Much improved services to passengers and cargo transport; (2) Reduce congestion on the national highway A2; and (3) Facilitation of regular container movement on railway network.
6. PROJECT COSTS	US$ 60.6 million (for tracks, workshops, and locomotives; additional costs for other improvements
7. IMPLEMENTATION SCHEDULE	On-going project; further improvement in Phase II

8. PROJECT DESCRIPTION

The development of Southern Area requires a multi-transport network (road and railway). The Coast line of the Sri Lanka Railways has aged structures and therefore should be improved to meet future demand of the region. More factories will locate in the Koggala Export Processing Zone as the railway provides container facilities. Priority should be given to the rehabilitation and improvement of the existing facilities. Project components are as follows.

(1) Track rehabilitation (On-going project)

The OECF-funded project has started the rehabilitation of the Coast line to achieve a maximum speed of 120 km/h. The project includes following components:

- Track rehabilitation, Colombo-Galle,
- Blasting of 150 mm below sleepers,
- Replacing of timbers by concrete sleepers,
- Continuous long welding of rails,
- Construction of side drains, and
- Renewal of the Maradana-Angulana section (17.8 km) and increase of the maximum speed from 80 km/h to 120 km/h.

(2) Bridges (On-going project)

There are eleven bridges which are under speed restrictions due to their bad condition. Four shorter bridges are already under repairs. Rehabilitation of Panadura and Kalutara

bridges has started with German assistance. The remaining five longer bridges where the speed limit is applied should be rehabilitated to provide safe services. Their locations are shown below.

Table List of Bridges

km	Name	Length (m)	No. of Spans
62.48	Bentota South	30	1
81.17	-	37	2
102.68	Ratgama	36	1
109.74	Gintota	108	3
132.89	Kataluwa	73	2

Source: SLR

(3) Signaling system

Coast line sections between Kalutara and Matara have a very outdated signaling system. This system should be replaced with an electronic centralized traffic control system to achieve good services.

(4) Workshop rehabilitation (On-going project)

The OECF-funded project includes workshop rehabilitation to put more locomotives back into service.

(5) Purchase of locomotives and rolling stock

To increase service level of SLR, a purchase of locomotives and rolling stock is required.

(6) Doubling of track

The single track has made the crossing of passenger trains at certain stations complicated and time-consuming procedures and this restricts increasing rail line capacity. In the long term, the line has to increase its capacity to provide more train services that are safe and reliable because the service level of the paralleling highway may decline due to strong traffic demand from/to Colombo.

Project No. SA-5

1. PROJECT TITLE	Uma Oya Multipurpose Development
2. LOCATION	Moneragala
3. IMPLEMENTING AGENCY	CEB, Irrigation Department, SDA
4. OBJECTIVES	(1) To solve the water shortages foreseen in the Kirindi Oya, Malala Oya and possibly Walawe Ganga basins, (2) To generate hydropower to serve mainly the most power-deprived areas, and (3) To increase agricultural productivity in the dry zone with supplemental irrigation water.
5. EXPECTED EFFECTS	Much enhanced livelihood and environment in the most deprived part of Southern Area
6. PROJECT COSTS	US$ 350 million
7. IMPLEMENTATION SCHEDULE	Comprehensive F/S with alternative study, environmental inventory and impact assessment in Phase I

8. PROJECT DESCRIPTION

The waters of Uma Oya, a tributary of Mahaweli Ganga, can be diverted into Kirindi Oya or alternatively Weli Oya, a tributary of Walawe Ganga in Southern Area. A pre-feasibility study was completed in July 1991 of the scheme for diversion to Kirindi Oya, hydropower generation with 150 MW, and irrigation in the Kirindi Oya basin with 4,000 ha land upstream of Lunugamwehera, 1,350 ha and 2,500 ha committed under KOISP Phase I and Phase II, respectively.

Alternatively, the Uma Oya waters may be diverted to Weli Oya, a tributary of Walawe Ganga, and the diverted waters conveyed by contour canals to Kirindi Oya or even to Menik Ganga. Should the minimum monthly flow be maintained in the Uma Oya downstreams, some 180Mm^3 may be diverted annually. This amount may be large enough to solve foreseen water shortages in Kirindi Oya and Malala Oya, and to ease critical water situations in Walawe Ganga as well. The contour canals may serve as natural boundaries to separate elephants and irrigation/settlement schemes. While this scheme would allow the same hydropower generating performance, the use of diverted waters for irrigation and other purposes needs further investigation. Environmental effects of the diversion both in the Uma Oya basin and in Southern Area should be carefully assessed.

Project No. SA-6

1 PROJECT TITLE	Koggala and Weerawila Airfields Upgrading
2. LOCATION	Koggala and Weerawila
3. IMPLEMENTING AGENCY	Ministry of Media, Tourism and Aviation Department of Civil Aviation Airport and Aviation Services Ltd.
4. OBJECTIVES	(1) To facilitate tourists traveling to and from the South; and (2) To promote business activities and passenger/air cargo traffic from the Koggala Export Processing Zone and other industrial and commercial activities.
5. EXPECTED EFFECTS	(1) Reduced travel time to Southern Area; and (2) Increased tourists and other visitors
6. PROJECT COSTS	US$ 9.6 million for Koggala (TEAM, 1994) and US$ 9.8 million for Weerawila, Phase I and Phase II (TEAM, 1994) upgrading; additional costs for airfield expansion for Weerawila
7. IMPLEMENTATION SCHEDULE	

8. PROJECT DESCRIPTION

The improvement of airfields will bring more passengers, tourists and business travelers to the South. On the basis of airstrip upgrading plans prepared by UNDP consultants, the improvement of the two airfields could be implemented. The plans intend to upgrade the Koggala airstrip to Class D and the Weerawila airstrip to Class 3C airport. The UNDP-assisted feasibility study was done by a group of consultants (TEAM) in 1994. The Weerawila airport may be further upgraded subsequently. It may include extension of the runway and other facilities.

Project No. SA-7

1. PROJECT TITLE	Coal Thermal Power Plant
2. LOCATION	To be decided
3. IMPLEMENTING AGENCY	CEB
4. OBJECTIVES	Establishment of a coal thermal plant as a base-load station
5. EXPECTED EFFECTS	More reliable and stable power supply in Country and particularly in Southern Area
6. PROJECT COSTS	US$ 1,080 million (at January 1994 level)
7. IMPLEMENTATION SCHEDULE	Unit 1: 300 MW in 2013 commission Unit 2: 300 MW in 2014 commission

8. PROJECT DESCRIPTION

A site at Mawella was studied at pre-feasibility level together with other thermal options (*Thermal Generation Option*, Black and Veatch International, October, 1988). The study proposed a southern coast site for coal thermal development of up to 2 x 300 MW. One possible location was identified at Mawella to the east of Matara.

In the latest Long Term Generation Expansion Plan (1996-2015), CEB considers the construction of three coal thermal power plants (Puttalam, Trincomalee and Mawella) as base-load stations to meet the rapid increase of energy demand forecast for the Country. According to the Plan, the Mawella coal thermal plant project will be commissioned in 2013 for Unit 1 and in 2014 for Unit 2, each 300 MW.

CEB estimates that the sale energy demand in Southern province will reach 1,385 GWh in 2013 and 1,603 GWh in 2015 (Sale Energy Demand Forecast 1994-2015). The 2015 peak demand is calculated at 316 MW supposing the load factor of 58%.

In order to ensure energy security while reducing the dependence on oil, it is essential to expand the use of coal. While it has such advantages as abundant reserves and relatively even geographical distribution, coal has disadvantages including inconvenience of handling and high contents of pollutants like sulfur. Since coal can be turned into a clean, easy-to-handle energy source through gasification or liquefaction, active efforts are under way in many countries to develop these technologies.

The type of the plant and its location will be determined from social and environmental points of view as well as on economic ground. It will provide a much needed base-load power plant for more reliable and stable power supply in the Country and particularly in Southern Area.

Project No. SA-8

1. PROJECT TITLE	Paddy-based Mixed Farming Promotion
2. LOCATION	Irrigated paddy areas
3. IMPLEMENTING AGENCIES	DOA, Irrigation Department, Provincial Council
4. OBJECTIVES	(1) To increase crop intensities of OFCs and fruit trees in irrigated paddy lands to increase overall farm productivity, (2) To improve farming practices of paddy farmers for better land management.
5. EXPECTED EFFECTS	(1) Increased and stabilized agricultural production and farmer incomes in irrigated agriculture, (2) Increased supply of OFCs and fruits both for external and internal markets.
6. PROJECT COSTS	US$45 million
7. IMPLEMENTATION SCHEDULE	Phase I - Phase III

8. PROJECT DESCRIPTION

Paddy yields are generally low in Southern Area, due mainly to the neglect by most farmers in the wet zone and to the insufficient irrigation in the dry zone. Increasing the overall productivity of farm operation may contribute to enhancing paddy yields in the wet zone. This would be achieved by combining other crops with paddy in mixed farming. In the dry zone, where the availability of irrigation water is more limited, other crops can be introduced under supplemental irrigation. This would also contribute to enhancing paddy yields, if soil enriching crops are combined, such as pulses.

The project would provide (i) extension and information services for new crops to be introduced, (ii) improved seed and other inputs, (iii) credit for investments into better farm management, and (iv) related infrastructure. It can be implemented immediately under existing institutional arrangements.

Since well organized water management system is essential for crop diversification, priority schemes for the implementation of this project would be selected among schemes covered by the Irrigation System Rehabilitation Project. Coordination with other proposed project for Seed-paddy Production and Supply System Improvement would also be needed for the implementation of this project.

Project No. SA-9

1. PROJECT TITLE	Home Gardens Based Multi-storey Farming
2. LOCATION	Galle, Hambantota districts
3. IMPLEMENTING AGENCIES	Provincial Council and DOA in cooperation with DEA, Cashew Corporation, etc.
4. OBJECTIVES	(1) To rehabilitate home gardens to convert them effectively for multi-storey farming to increase land productivity, (2) To increase the production of marketable crops, and (3) To establish home industry for food processing.
5. EXPECTED EFFECTS	(1) Increase of farmer and regional income, (2) Earning of foreign exchange, and (3) Supply of raw materials to agro-based industry.
6. PROJECT COSTS	US$50 million
7. IMPLEMENTATION SCHEDULE	Phase I - Phase III

8. PROJECT DESCRIPTION

Home gardens occupy 162,000 ha or 15% of the total agricultural land in Southern Area. A variety of crops are cultivated there, but their productivity are generally low mainly due to lack of market outlets and neglect by farmers. Some crops suited to local conditions are more promising from viewpoints of marketing and processing prospects in Southern Area. Those crops can be selectively strengthened and combined to form various multi-storey farming systems. Promising combinations may include fruit trees (mango, citrus, rambutan, etc.) and aromatic plants (vanilla, cardamom, etc.). Some herbal medicine plants and mushrooms may also be combined. Processing of some products would be carried out by small holders themselves in their home industries to be established under the project supports technically and financially. Promising products may include dried fruits, candied fruits, home made-typed fruits wine, packed spices, dried mushrooms, etc.

A study should be carried out to identify more promising crops and their combinations and sites for pilot implementation. The project would provide (i) extension and information services, (ii) seeds and seedlings, (iii) farmers organizing and training, (iv) credit for home industry establishment and farm inputs, and (v) related infrastructure to support input procurement and marketing.

Project No. SA-10

1. PROJECT TITLE	Small Holder Integrated Farming Promotion
2. LOCATION	Hambantota, Moneragala, Ampara
3. IMPLEMENTING AGENCIES	DAPH, DOA, DEA
4. OBJECTIVES	(1) To establish integrated farming systems for small holders by combining livestock and crop cultivation for higher overall productivity and incomes, and (2) To protect rural environment in the Dry Zone from soil erosion and degradation by minimizing wastes and extensive agricultural practices.
5. EXPECTED EFFECTS	Expansion of raw materials base for local processing. Higher and more stable incomes for small holders.
6. PROJECT COSTS	US$48 million
7. IMPLEMENTATION SCHEDULE	Phase I - Phase III.

8. PROJECT DESCRIPTION

Farmers in Southern Area keep growing number of livestock but pay little attention to their condition and productivity. Traditionally, farmers prefer to grow a combination of different crops to ensure more stable incomes rather than concentrating on a single crop with potential higher return. High overall productivity and incomes can be obtained, if farmers combine livestock raising with crop cultivation in an integrated manner.

In the dry zone of Southern Area, the land area belonging to the estate sector is comparatively small: 9% in Hambantota, 15% in Moneragala, and 14% in Ampara. The majority of small holdings are crop farmers accounting for more than 80% of the total area of small holdings. Their overall productivity would be much enhanced if various integrated farming systems are established for small holdings.

Buffalo and cattle raising in the backyard may be combined with cultivation of various crops. Crops residuals can be used to feed animals. Those of low feeding value such as rice straw and corn stoves are still good roughages to maintain mature animals during lean months. Other feed materials abound in Southern Area. Goat may be introduced under tree crops. Composting and bio-gas digestion of manure will produce organic fertilizer for crops.

Project No.SA-11

1. PROJECT TITLE	Marine Fisheries Complex Development
2. LOCATION	Galle linked with other fisheries centers
3. IMPLEMENTING AGENCIES	CFHC and the Private Sector
4. OBJECTIVES	(1) To establish marine fisheries as a mainstream economic activity for coastal communities; and (2) To contribute to growth and export earnings as well as higher income for fisher folk and diversified regional economy.
5. EXPECTED EFFECTS	Southern Area as a center for advanced marine fisheries activities. Higher and stable income and diversified employment opportunities for coastal communities.
6. PROJECT COSTS	US$20 million
7. IMPLEMENTATION SCHEDULE	Fisheries resources inventory and improvement of selected fishing harbours in Phase I; establishment of a marine fisheries complex in Phase II.

8. PROJECT DESCRIPTION

While coastal fisheries may be approaching the maximum sustainable level of production, offshore fisheries resources have not been much exploited. This is due to small and poorly equipped fishing boats, poor infrastructure such as landing facilities, anchorages, ice plants and other preservation and marketing facilities, and unorganized fisher folk.

Fisher folk should organize themselves to enter into a larger scale operation for offshore fisheries with larger and better equipped ships. Encouraging small fisher folk to carry out offshore fisheries by providing engines and navigation aides on their small boats is a wrong approach.

The Program has several components for the short to medium term and the long term.

Short to medium term
(1) Improvement of selected fishing harbours and anchorages;
(2) Provision of associated facilities at these location including:
- Ice plant and cold storage,
- Slip ways (and winches),
- Fish preservation device on board and on land,
- Marketing facilities,
- Larger ships, some equipped with a live well, and
- Piers;

(3) Upgrading of the Tangalle Regional Fisheries Training Center;
(4) Fisher folk organizing; and
(5) Fisheries resources inventory as follows:
- Duration of 3 to 5 years,

- Survey ships of 30 to 60 ton (to be based in Galle),
- Maximum sustainable yield (MSY) estimate,
- Fishing methods / seasons for different fish species,
- Size and type of fishing boats, and
- Training for fishing methods etc.

Medium to long term

(6) Establishment of the marine fisheries complex in Galle linked with other fishery harbours between Matara and Kirinda and the Tangalle Regional Fisheries Training Center; the following facilities will be provided:

- Processing facilities for deep-frozen fish and shrimps, fish fillet and other fish products (e.g. dried bonito, fish paste),
- Part facilities,
- Ice plants and cold storage facilities,
- Marketing facilities,
- Wireless radio station, and
- Marine fisheries research and training center; and

(7) Establishment of related industries such as:

- Packaging,
- Packing materials,
- Fishing gear manufacturing, and
- Boat repair workshop.

Project No. SA-12

1. PROJECT TITLE	Gin-Nilwala Integrated River Basin Development
2. LOCATION	Gin and Nilwala river basins
3. IMPLEMENTING AGENCIES	SDA, ID
4. OBJECTIVES	To optimize the use of water and land resources in the Gin and Nilwala river basins; and To divert excess water to the dry zone.
5. EXPECTED EFFECTS	
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Master plan study in Phase I

8. PROJECT DESCRIPTIONS

The Gin and the Nilwala rivers have been identified by the Master Plan as potential water sources for the dry zone in Southern Area. However previous developments on these rivers, particularly for flood control, have produced unforeseen side-effects, such as acidification of soils, that has negated much of the benefits from these projects. Thus, to avoid repetition of such problems in future, it will be essential to investigate thoroughly the potential impact of any proposed developments on the Gin and Nilwala basins before proceeding with project implementation.

There are many inter-related issues that need to be addressed in these basins, such as increased flooding outside the flood protection areas during the wet season, water shortages during the dry season, acidification of soils, saline intrusion up river estuaries and the need to improve upper catchment management as well as to restore original eco-systems in natural wetland areas. In order for all these issues to be properly addressed, it will be essential to carry out an integrated river basin study to investigated all the options and recommend appropriate solutions.

Project No. SA-13

1. PROJECT TITLE	Industrial Districts for Small- and Medium-Sized Industries
2. LOCATION	Up to 10 locations over the Master Plan period
3. IMPLEMENTING AGENCY	Associations of Manufacturers (to be established), Industrial Development Board (IDB) and Regional Industries Services Committee (RISC)
4. OBJECTIVES	To provide developed industrial sites for small- and medium-sized industries.
5. EXPECTED EFFECTS	(1) Reduction of investment costs for the small industries by up to 50%; (2) Minimization of adverse environmental effects; and (3) Agglomeration economies for the producers and scale economies for services used by the industries.
6. PROJECT COSTS	Infrastructure costs per acre of industrial land are estimated around Rs. 240,000 (1995 prices). Average land area per district is 50 acres. The costs exclude in-site developments but include costs up to the perimeter. The figure translates into approximately US$ 120 per worker.
7. IMPLEMENTATION SCHEDULE	Throughout the Plan period

8. PROJECT DESCRIPTION

The implementing agency of the central government will acquire the land to be developed for small industries. In many cases this land will be owned by the Government and its acquisition will not have any costs. The primary criteria for the choice of location, however, should be the suitability of the site rather than its ownership. This will call for developing a mechanism for land acquisition from private owners through the right of eminent domain when necessary. The law allows this in Sri Lanka.

The choice of site and provision of infrastructure will be undertaken in cooperation with local agencies. The office of the Chief Minister will play a lead role. Local variations in developing industrial districts may occur by involving other agencies such as the Chambers of Commerce and Industry and the Urban Development Authority.

The development of these districts should not be undertaken by the Government but by the expected beneficiaries whenever possible. One possibility is to form an association of the beneficiaries in advance of actual development. All development works on the districts can be supervised by these associations.

The actual implementation procedures will vary from site to site. One possibility is for the Government to announce its intention to develop a district and solicit applications. All applicants will become members of an association of beneficiaries. Speculative activity will be prevented by allowing each prospective manufacturer to own only one plot. The association may receive funds from the Government as well as its members for infrastructure development.

Project No. SA-14

1. PROJECT TITLE	Comprehensive Radio Program for Market Information
2. LOCATION	Colombo (nationwide coverage)
3. IMPLEMENTING AGENCY	Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) Ministry of Public Administration, Home Affairs, Plantation Industries and Parliamentary Affairs Ministry of Fisheries and Aquatic Resources Development Sri Lanka Broadcasting Corporation (SLBC)
4. OBJECTIVES	(1) To disseminate daily information on Colombo prices (wholesale and retail) of fresh food items and on prevailing price levels of export crops in one national radio program; (2) To make available analysis of market trends and supply-demand situations/forecasts; and (3) To enlighten the public on the working of market.
5. EXPECTED EFFECTS	(1) Elimination of unduly low producer prices; (2) More competitive and transparent market transactions; (3) Smoother supply adjustment; and (4) Better public understanding of how to act in the market economy.
6. PROJECT COSTS	US$ 600,000 (technical training) Rs. (program sponsorship)
7. IMPLEMENTATION SCHEDULE	Year 1 Coordination setting-up and program design Training on analytical techniques for HARTI staff Training on educational program development for SLBC staff Year 2 Program to start Training continues as needed

8. PROJECT DESCRIPTION

In Sri Lanka, currently, prices of fresh food items (vegetables, fruits, fish, etc.) are generally set at the Colombo markets; regional prices are loosely pegged to them and move accordingly. Most export crops, on the other hand, are traded within well established systems and their prices are mostly set at regular auctions.

For the small-scale producers throughout the Country, Colombo price levels and their trends are important information in bargaining with buyers, in choosing among alternative agents, in calculating their fair shares of fish catch, or in adjusting their supply volume. To

disseminate market-related information, radio is the most appropriate medium, covering a wide audience with relatively little cost.

Three such programs are already being aired daily by SLBC: 1) an evening program for vegetable prices; 2) another evening program for fish prices; and 3) part of the Business Program covering the auction prices of coconuts and related products. Information provided in those programs, however, is limited to price levels.

This project basically extends and integrates those existing programs. Combining them into one comprehensive program, it is aired in a time slot most convenient for the targeted listeners. The new program has three features: wholesale (or auction) and retail prices and traded volumes in the Colombo markets covering a wider range of commodities; market trend analysis and supply-demand forecasts; and basic knowledge about market, price mechanism, distribution system, etc. for educational purposes.

The Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI), with assistance from USAID and UNDP, has acquired resources and experiences over the past decade to collect, analyze and disseminate price information in major markets including Colombo. The Institute is currently providing the price information on vegetables to the SLBC program. This project will be primarily coordinated by HARTI in conjunction with the Ministry of Public Administration, Home Affairs, Plantation Industries and Parliamentary Affairs and the Ministry of Fisheries and Aquatic Resources Development. SLBC will be responsible for the technical aspects of the program.

Necessary technical assistance should be granted to those agencies. Specifically, HARTI needs to improve its analytical capability to produce reliable trend analysis and forecasts. SLBC requires considerable inputs to develop an educational program which is attractive and effective.

Project No. SA-15

1. PROJECT TITLE	District Vocational Training Centers
2. LOCATION	Matara, Embilipitiya, Hambantota, Wellawaya
3. IMPLEMENTING AGENCY	RVEC and Vocational Training Authority (Ministry of Labour and Vocational Training), with district Vocational Councils
4. OBJECTIVES	Develop system of district level training centers to meet private sector needs for vocational level skills, with effective liaison between centers-trainees-enterprises.
5. EXPECTED RESULTS	Streamlined system providing qualified male and female workers for expanded employment.
6. PROJECT COSTS	US$20 million
7. IMPLEMENTATION SCHEDULE	Follow expansion of urban development and employment opportunities: Matara in phase 1, Embilipitiya and Hambantota in phase 2, Wellawaya in phase 3.

8. PROJECT DESCRIPTION

The current vocational training system is uncoordinated, with little justification for types, levels, and locations of courses offered by different institutions. Moreover, training quality is poor, and has almost no link with potential employers. The proposed District Vocational Training Centers (DVTCs) would focus on providing quality instruction in the artisan category of skills needed for expanded employment opportunities in the Southern Area. The location of each center would be consistent with areas where employment opportunities will expand.

DVTC courses would be identified by RVEC, in cooperation with the Employment Placement and Liaison Center. In addition to skills training, the trainees would be required to participate in courses to develop good work habits and employment seeking skills. Topics would include time management, team work, networking, verbal and written communication, and negotiation skills.

Two groups would be targeted: (1) unemployed males and females between the ages of 16 and 30 and (2) workers in selected skills needing upgrading. It is recommended that at least 30 % of trainees be women, and that courses be offered without gender bias.

The Employment Monitoring and Placement Center (EMPC) would provide prospective students with career counseling (including aptitude tests) and trainees and graduates with counseling and placement services (see Project Profile for EMPC).

DVTCs would use Center of Excellence provided guidelines for course development and instruction quality. It would conduct continuous internal monitoring and evaluation and supply M&E data to the Employment Monitoring and Placement Center on a quarterly basis. M&E data would be used to refine the system, by identifying the most productive kinds of training and evaluating the quality of training and trainers. M & E information should include the following:

1) trainees - age, sex, formal education level, previous employment history;
2) training - skill training, certification and other information showing achievement level; and
3) subsequent employment - length of time between training and job acquisition, job type, name and type of employer, location, work days, salary and other remuneration and benefits, job performance indicators, duration of service.

Project No. SA-16

1. PROJECT TITLE	Community Enterprise Service Centers
2. LOCATION	Initial target area: Moneragala, upstream of Uda Walawe
3. IMPLEMENTING AGENCY	Consortia of NGOs with demonstrated expertise in credit, enterprise development, and marketing.
4. OBJECTIVES	Build on the foundation of social mobilization to move communities toward sustainable income generation
5. EXPECTED RESULTS	Produce community enterprises, with an emphasis on partnerships with investors
6. PROJECT COSTS	US$4 million

7. IMPLEMENTATION SCHEDULE

8. PROJECT DESCRIPTION

A major goal of the Project will be to develop investment driven enterprises for communities or groups who can demonstrate organization and some initial ventures toward viable enterprise development. It would assist groups to define specific production activities that will be feasible as a result of improved access and other support (electricity, water) and to "sell" these products to private investors.

The Project would provide enterprise development services for community groups through Enterprise Service Centers (ESCs), administered by non-profit organizations and NGOs with demonstrated experience in credit, small enterprise development and management, and entrepreneurship and marketing. To avoid competition and help assure cooperation, NGOs would be responsible for discrete support activities. For example, the Janashakhti Banks and Sanasa might be responsible for credit and community investment training and services, while the Chambers of Commerce could coordinate investor related activities.

Raw materials and other support needs would be provided by investors who would purchase the finished product. For example, the Ceylon Institute of Scientific and Industrial Research (CISIR) has identified companies who are willing to support semi-processing of fruits and vegetables.

The ESC approach would work in the following way:

1) identify of members and establishment of the ESC members;
2) identification of community groups demonstrating organization and some activities toward development of a viable enterprise;
3) assessment of group's assistance requirements (credit, investor linkage, money management, business management, production and quality control);
4) initial group training, undertaken by respective members of ESC;
5) pilot production period;
6) evaluation of results; and
7) upgrading of skills where needed, followed by periodic evaluations and continued skill development (as needed).

Project No. SA-17

1. PROJECT TITLE	Secondary Education Development (extension)
2. LOCATION	All areas
3. IMPLEMENTING AGENCY	Ministry of Education
4. OBJECTIVES	(1) To revise the curriculum for year 6-13 to make it more relevant to the needs of the economy and society; (2) To improve quality pre-service and in-service education of teachers; (3) To reorganize the process of educational evaluation; and (4) To improve the physical quality of schools
5. EXPECTED EFFECTS	Quality of teachers will be improved. Quality of education will be improved by better quality teachers and facilities. Graduates will become more suited to needs of the society.
6. PROJECT COST	US$ 45 million
7. IMPLEMENTATION SCHEDULE	1998-2002

8. PROJECT DESCRIPTION

At present, general education is said to have several deficiencies such as low quality of education, resulting from low quality of teachers, inadequate facilities and lack of equipment in schools, and inadequate curriculum not suited to the needs of the modern economy. To overcome those problems, Secondary Education Development Project is under implementation with the assistance of Asian Development Bank from 1993-1998. Curriculum development for Year 6-13, and teacher education and training are included in the project.

The on-going ADB project covers four components: 1) curriculum development, 2) teacher education and training, 3) examination and testing, and 4) school development and upgrading. Curriculum development includes the review and revision of syllabi for 6-13 to make it more relevant to the needs of the economy and society. In this component syllabi in languages, science, mathematics, computer education, rural technology, and environment education is focused. It also includes development of curricular materials, production of prototype textbooks, development of teacher guides and handbooks.

Teacher Education and Training focuses on curriculum development and methodology of teacher education, preparation of teacher trainers. Multi-media and distance teaching is emphasized as the methodology. It also supports pre-service education, in-service training of untrained teachers and short-term refresher courses.

Examination and Testing component supports examination reforms and development of evaluation and testing system. Following the curriculum reforms, examination of G.C.E. O/L and G.C.E. A/L will be revised. It also supports the improvement of capability of Department of Examination for preparation of test item, data base, data processing facilities, and training of evaluation practices.

School development and upgrading includes upgrading of type 1AB schools and type 2 schools such as refurbishing of existing buildings, extension of laboratory facilities and provision of computer rooms. Besides, selected type 1AB and type 1C schools will be provided with science laboratory equipment, audio-visual materials and computers.

In the beginning of the extended program, the teachers training program will be implemented. Since the teacher education curriculum is being prepared and teachers trainers are being trained in the existing program, actual training of teachers will be conducted by those trainers, utilizing the new curriculum. The priority should be put on training of unqualified teachers especially from Hambantota, Ampara, Moneragala and Ratnapura districts. At the same time some schools will be selected as model schools in each district of Southern Area for application of the new curriculum, testing and evaluation system, and physical improvement.

The trained teachers will be deployed to those model schools. The necessary facilities and equipment such as laboratory facilities, computers and water facilities will be provided, to follow the newly developed curriculum. The new curriculum of secondary education will be applied to the model schools for monitoring and evaluation. The newly developed testing and evaluation system will be also conducted.

The performance of teachers and students will be monitored and evaluated, and problems will be identified for further improvements. The findings will be sent to the National Institute of Education for analysis and revision. Both local and foreign experts will work on it.

After necessary changes are made, the new curriculum will be used in whole Southern Area in the phase 2 of the extension program. Improvement of physical quality of schools will be conducted for selected type 1AB, 1C and 2 schools. The disadvantaged schools will be put priority for the physical improvement.

Project No. SA-18

1. PROJECT TITLE	Health Referral System Development
2. LOCATION	Matara or Galle
3. IMPLEMENTING AGENCY	Ministry of Health, Provincial Ministry of Health Services
4. OBJECTIVES	(1) To develop technical and operational linkages of a formal referral system; and (2) To establish a network of health institutions to reinforce links between preventive and curative care.
5. EXPECTED EFFECTS	Continuity and quality of health care would be maintained and improved. Over-crowd in higher institutions will be eased. More efficient use of resources and specialties will be achieved.
6. PROJECT COST	US$ 5 million in Phase I
7. IMPLEMENTATION SCHEDULE	1997-2001 (pilot project in phase 1 and full implementation in phase 2)

8. PROJECT DESCRIPTION

There is no formal referral system which causes people's bypassing lower health institutions and over-crowding in higher level institutions. This results in undermining cost-effectiveness and the desired quality of care of each level, especially at higher level hospitals.

The project will be implemented in a selected area initially as a pilot phase. The project includes 1) the analysis of current services and people's preferences in the area, 2) building information base, 3) preparing for the referral system, 4) initiating an intra-hospital referral system, 5) replacing out-patient departments of teaching, provincial and base hospitals by referral clinic.

The analysis includes the quality of health services in health institutions in the pilot area; and sample study on people's recognition and preferences of the health institutions, and other factors which affects the project. Building an information system includes making a directory of health facilities and services in the area, and the names, addresses and telephone numbers of key personnel in each institutions; mapping of the locations and communication systems of institutions; providing all institutions with those information as network. Preparing for the referral system includes providing training for both management and health personnel; disseminating information of health institutions and services to the community; improvement of facilities and equipment in health institutions; providing institutions with logistic support; monthly regular meetings of all institutions in the area at DDHS for better communication.

Initiating an intra-hospital referral system includes development of the referral procedures, introduction of referral cards, implementation, monitoring and evaluation; disseminating the information continuously to the community. Replacing out-patient departments of higher level hospitals by referral clinic includes training of care providers with health care services provided in each level of health institutions and referral system; opening referral clinics, orientation of community and public education; logistics support.

The pilot project will be conducted, monitored and evaluated with the assistance of both local and foreign experts. Based on the evaluation and revision made, the referral system will be expanded to other areas in Southern Area.

Project No. SA-19

1. PROJECT TITLE	Touristic Herbal Garden and Health Center
2. LOCATION	Intermediate zone
3. IMPLEMENTING AGENCY	Private Sector supported by Ministry of Indigenous Medicine
4. OBJECTIVES	(1) To establish a touristic herbal garden as a man-made attraction for foreign and domestic tourists, (2) To diversify tourism resources and income sources in Southern Area, and (3) To increase job opportunities and income, and health service for local people.
5. EXPECTED EFFECTS	Tourist will increase including repeaters. Local people will get higher income. Awareness of local people for preventive health care will be enhanced.
6. PROJECT COSTS	US$ 0.5 million
7. IMPLEMENTATION SCHEDULE	1997-99

8. PROJECT DESCRIPTION

The Ayurvedic health care is well established and widely accepted/practiced in Sri Lanka, but it is not well known to foreign countries. A variety of plants potentially useful for herbal medicine exist in Southern Area, but most people do not recognize their utility.

The Project will establish a touristic herbal garden with accommodation, medical and other facilities for multiple objectives. Ayurvedic physicians and health personnel will be recruited and trained. Local people can get jobs of growing the herbs and working in the facilities. Visitors can stay in cozy accommodations surrounded by a garden with various herbal and other plants, receive treatment by herbal medicine and Ayurvedic facilities, take short courses on the use of herbal medicine and preparation of natural foods, and buy some of the products produced in or around the garden. This would contribute to creating repeaters for tourism, selling high images of Sri Lanka in this aspect. It will also enhance awareness of local people for preventive health care and opportunities of health services as well as generating employment opportunities and additional incomes.

Project No. SA-20

1. PROJECT TITLE	Rural Roads Improvement Program
2. LOCATION	Region-wide
3. IMPLEMENTING AGENCY	Local governments supported by MHHS
4. OBJECTIVES	To maintain and repair rural roads in Southern Area by supporting self-help efforts of people in rural areas.
5. EXPECTED EFFECTS	Better overall conditions of rural road system. Competitive and cooperative minds of villagers.
6. PROJECT COSTS	US$8 million
7. IMPLEMENTATION SCHEDULE	Phase I - Phase III

8. PROJECT DESCRIPTION

Conditions of rural roads in Southern Area are generally poor. This situation poses constraints to marketing agricultural and other products, making transportation costs higher particularly in the Maha season. Production losses are also high for fresh products such as green leaves of tea, banana and vegetables.

Although the Government has increased the expenditure on transport sector significantly in recent years, it is not sufficient even to cover all national roads. In line with the general devolution policy, a Provincial Road Authority implements the maintenance and rehabilitation of C and D class roads within each province, and a Division Secretary has responsibilities to maintain class E roads. The budget for the maintenance and rehabilitation depends mainly on MHHS.

To improve conditions of rural roads under financial and man power constraints, participation of local communities should be encouraged. The program would provide (1) simple machinery and tools for road works, (2) training of community leaders for villagers organizing, and (3) technical guidance for gravelling, drainage improvement and repair/maintenance of rural roads. Asphalting of rural roads in the next stage may be implemented by the Provincial Road Authority depending on the performance of self-help efforts.

Project No. SA-21

1. PROJECT TITLE	GIS-Oriented Regional Information System (GORIS) Establishment
2. LOCATION	Hambantota (main location) with network linking several locations
3. IMPLEMENTING AGENCY	SDA, RDD in cooperation with related agencies (NARA, DWLC, FD, CEA)
4. OBJECTIVES	To establish a regional database applying, to the extent possible, a geographic information system (GIS) to store socio-economic and resource inventories of Southern Area for easy access by planners, policy makers, investors and local people.
5. EXPECTED EFFECTS	Much enhanced public awareness for existing conditions and opportunities in Southern Area
6. PROJECT COSTS	US$ 5 million
7. IMPLEMENTATION SCHEDULE	Phase I

8. PROJECT DESCRIPTION

A geographic information system (GIS) has been extensively utilized to prepare the master plan for Southern Area Development. Most map data obtained from various agencies have been digitized, and a wide range of socio-economic data have been input as attribute data. Various secondary maps and tables have been prepared for analytical and planning purposes through the master planning. All these data combined and properly coded constitute an initial form of a GIS-oriented regional database. Additional efforts should be made to prepare ecological zone maps as spatial information to complement the CEA1s District Environmental Profilest.

The database can be further expanded to include other data such as those essential for investment decisions and practical knowledge on wise use of resources such as recycling, agro-forestry, organic agriculture and renewable energy use. It should be used to modify or update the master plan as external conditions change. The project will provide (1) center facilities to house the database possibly with other essential facilities and equipment for SDA, (2) computer and related facilities with software for a GIS, and (3) training on a GIS technology, data management, and regional planning and management.

Project No. SA-22

1. PROJECT TITLE	Environmental Fund for Southern Area
2. LOCATION	Head office in Galle City, and branch offices in the other district capitals
3. IMPLEMENTING AGENCY	SDA, CEA, Central Bank, Pollution Control and Abatement Fund(PCAF), major NGOs, etc.
4. OBJECTIVES	(1) To establish regional grant/soft-loan facilities for environmental protection or rehabilitation ; (2) To provide the private sector with soft-loan funding for required EIA not covered by other public funding, and anti-pollution equipment or rehabilitation measures not covered by the existing PCAF framework; and (3) To provide local communities or NGOs with small grant for conservation projects.
5. EXPECTED EFFECTS	Provision of financial support for environmental protection and conservation. Promotion of financial incentives to observe environmental regulation and to carry out voluntary conservation activities.
6. PROJECT COSTS	Rs. 1,500 million including seed fund
7. IMPLEMENTATION SCHEDULE	Phase I for formulation of appraisal plan and system, and Phase II for actual implementation of funding

8. PROJECT DESCRIPTION

The subjects for the funds are for IEE/EIA activities and mitigative/rehabilitation measures of the private sector including commerce, agriculture, fishery, tourism, forestry, etc. and environmental NGO activities. Main bottlenecks in environmental conservation are lack of money as well as poor protection techniques. The Project aims at mitigating the financial constraint, emphasizing preventive approaches such as EIA's and waste treatment facilities, rather than rehabilitation or restoration measures which cost much more. The fund will study and introduce economic tools such as environmental taxation and pollution-right markets for its own revenue in the long term.

Project No. SA-23

1. PROJECT TITLE	Environmental Monitoring and Animating Center
2. LOCATION	Head office and laboratory within the University of Ruhuna in Matara, and linked with branch offices in the other district capitals and other facilities
3. IMPLEMENTING AGENCY	Provincial/District Environmental Committees, CEA, Department of Meteorology, FD, DWLC, NARA, universities, NGOs, etc.
4. OBJECTIVES	(1) To establish a simple monitoring system and analysis laboratory for Southern Area; (2) To collect and update environmental data and information as regional profiles; (3) To provide EIA implementers and the public with monitored and analyzed data : and (4) To train or educate students, officials and the public as animators for monitoring.
5. EXPECTED EFFECTS	Increased awareness of environmental conditions among the whole regional people. Quick and exact prediction of natural & man-made impact in association with future development in the region.
6. PROJECT COSTS	Rs. 500 million in total
7. IMPLEMENTATION SCHEDULE	Phase I for basic study and plan formulation, Phase II for institution/system building, training and monitoring

8. PROJECT DESCRIPTION

The extent of environmental consideration largely depends on how much people know of their surrounding environment including natural resources and pollution. For this purpose and because of regional nature of potential development, the Project is envisaged to establish a focal center and monitoring systems to systematically accumulate and disseminate data/information on pollution, flora and fauna, land and water resources, marine ecology, meteorology, etc. Multiple monitoring stations and equipment will be set up in each district to collect data for analyses, while the center will conduct research and provide training on monitoring/analysis techniques as well as environmental education to local governmental officials, EIA experts, students, local people, NGO staff, etc.

Project No. SA-24

1. PROJECT TITLE	Integrated Management of Coastal Resources (Coastal and Lagoon Environmental Education and Research (CLEER) Centre)
2. LOCATION	Hikkaduwa, Habaraduwa and Galle Cities in the Galle district, and Rekawa lagoon in Hambantota
3. IMPLEMENTING AGENCY	CTB, CEA, CCD, DWLC, NARA, SDA, etc. in cooperation with the local offices concerned and NGOs of the Galle and Hambantota districts
4. OBJECTIVES	(1) To protect and improve environmental resources including sceneries and coral reefs; (2) To enhance institutional capacity and to establish a management system; and (3) To introduce environmentally-sound income generators to resource abusers.
5. EXPECTED EFFECTS	Increased environmental and tourism value leading to further tourism/fishery income and local welfare. Sustainable and wise use of resources.
6. PROJECT COSTS	US$ 20 million
7. IMPLEMENTATION SCHEDULE	Establishment of the CLEER Center in Phase I

8. PROJECT DESCRIPTION

A considerable amount of research has been carried out to protect the coastal areas including "Coastal 2000", "Coastal Environmental Profile Project" and "Special Area Management Plan Study". Problems, solutions and intervention measures have already been identified.

The President Task Force for the Southern Area Development has established a steering committee for the CLEER Center project proposed recently by USAID. Initial emphasis will be to provide a field laboratory for students, researchers, NGOs and government agencies, and to establish a marine and lagoon aquarium featuring Rekawa reef marine life and Rekawa lagoon fish and prawns. Actions for the subsequent stage will be formulated introducing practical elements.

Project No. SA-25

1. PROJECT TITLE	Multiple-Use Forest Management
2. LOCATION	Multiple-use forests in Galle and Matara districts
3. IMPLEMENTING AGENCY	Forest Department (FD), Divisional Forest Offices, local communities, NGOs
4. OBJECTIVES	(1) To survey forest inventory from natural forests; (2) To formulate management plan for multiple-use forests; (3) To encourage local villagers to establish organizations for forest conservation; (4) To improve productivity of 'non-wood forest products (NWFP) ; and (5) To develop market of NWFP.
5. EXPECTED EFFECTS	Conservation of remaining natural forests. Sustainable timber production from natural forest based on management plan. Income generation of local villagers. Increase production of NWFP.
6. PROJECT COSTS	US$5 million
7. IMPLEMENTATION SCHEDULE	Project duration 5 years: consisting of Phase I (1.5 years) for inventory survey, formulation of management plan with local communities and strengthening local organizations to be able to manage natural forests and Phase II (3.5 years) for actual timber production, and production and market development of NWFP .

8. PROJECT DESCRIPTION

Forest reserves are categorized into conservation forests and multiple-use forests. The multiple-use forests are for sustainable production of wood as well as non-wood forest product (NWFP) for the benefit of adjacent communities. Management plans for multiple-use forests need to be formulated for sustainable timber production. Forest inventory in natural forest needs to be surveyed for formulation of management plans.

In this project, management plans for multiple-use forests are formulated on the surveyed inventory data. Local organizations will be identified/established and trained for forest management and production of NWFP. Appropriate mechanism to produce NWFP by local communities such as land lease for individuals, local groups, or companies will be established by collaborative planing by local communities and FD. The selected local villagers will be involved in the planning stage of the project. Market for NWFP is also developed in this project.

Project No. SA-26

1. PROJECT TITLE	Eco-Tourism Development
2. LOCATION	Kanneliya, Dadiyagala and Nakiyadeniya (KDN) Forest Complex, Kottawa Forest Reserve in Galle District and Welihena, Oliyagankele, Kekanadura Forest Reserves in Matara District
3. IMPLEMENTING AGENCY	Ceylon Tourist Board (CTB), Forest Department (FD), Local communities, NGOs
4. OBJECTIVES	(1) To develop infrastructure for tourism activities; (2) To identify/establish and train local organizations to work for tourism activities; and (3) To promote tourism in these forests with advertisement.
5. EXPECTED EFFECTS	Conservation of the KDN Forest Complex and the WO Forest Reserves. Income generation of local communities.
6. PROJECT COSTS	US$3 million
7. IMPLEMENTATION SCHEDULE	Phase I (1.5 years) for planning, infrastructure development, and identification of local organizations and Phase II (3.5 year) to start and promote tourism activities.

8. PROJECT DESCRIPTION

The Kanneliya, Dadiyagala and Nakiyadeniya (KDN) forest complex is the second largest lowland tropical evergreen forest which is regarded to be more attractive for tourists than Sinharaja. The KDN forest is located within easy access from Galle and Hikkaduwa city. In the KDN forest, there are several destroyed and abandoned bungalows which used to be owned by the Ceylon Plywood Corporation (CPC). Roads to these bungalows in the forest reserve are relatively good though some bridges need to be reconstructed. The KDN forest complex is an ideal place for tourists to stay overnight from Colombo and day-trip from Galle and Hikkaduwa city to enjoy nature.

The Welihena-Oliyagankele and Kekanadura forest reserves located near Matara have several tanks where tourists can enjoy boat riding and fishing. The Kottawa forest reserve has a very nice Arboretum where tourist can easily walk through primary forest.

The project is to develop tourism activities in these forests with participation of local communities. Management plans for these forest reserves have been already completed. Appropriate local organizations will be identified/established and trained for acceptance of tourism activities. Infrastructure needed for tourism such as conservation centers, visitor lodges, roads, bridges will be built or renovated based on the management plans.

Project No. SA-27

1. PROJECT TITLE	Appropriate Toilet Facilities for Households
2. LOCATION	Galle, Matara, Hambantota, Moneragala, Ratnapura
3. IMPLEMENTING AGENCY	MHCPU
4. OBJECTIVES	To improve sanitation of rural and urban communities; and To reduce social costs associated with water borne diseases.
5. EXPECTED EFFECTS	Improved sanitation and better prepared work force
6. PROJECT COST	US$6 million
7. IMPLEMENTATION SCHEDULE	Continuous implementation from Phase I through Phase III

8. PROJECT DESCRIPTION

Water-borne and parasitic diseases are still prevalent in Southern Area due to unsanitary conditions. Especially, diarrhoea is one of the major causes of infant/child morbidity and mortality.

Availability of appropriate toilet facilities still is limited in the districts of Southern Area, as shown.

Availability of Different Types of Toilets

	Water Sealed	Permanent Pit	Temporary Pit	None
Galle	91,000	24,000	30,000	33,000
Matara	96,000	11,500	25,700	15,560
Hambantota	35,940	29,387	27,665	16,086
Moneragala (6 divisions)	8,820	8,700	14,250	15,760
Ratnapura (2 divisions)	3,920	6,775	6,350	10,870

For sanitation, a water sealed toilet with septic tank is a mininum requirement for rural and urban households. Given the low level of dissemination and the expected population growth, a long-term program is necessary to satisfy the requirement.

Special Program (1)

1. PROJECT TITLE — Integrated Fisheries Organization

2. LOCATION — Hikkaduwa

3. IMPLEMENTING AGENCIES — Divisional Secretary, Grama Niladaries, fishing communities and NGOs.

4. OBJECTIVES

(1) To strengthen fishing communities through awareness and advancement of knowledge on new technology,

(2) To identify needs of the fisheries sector with a view to mobilizing all other related organizations in the sector and in the area,

(3) To assist in funding mobilized from financial organizations, and

(4) To mobilize technical advice to upgrade the industry.

5. EXPECTED EFFECTS — Fisheries communities empowered to serve as a key economic base for stablising income of this sector.

6. PROJECT COSTS

7. IMPLEMENTATION SCHEDULE — Two years

8. PROJECT DESCRIPTION

The project is meant to initiate building up an integrated society which will be responsible for the total development of fisheries sector in the division, articulating the community, building up financial means for investments and coordinating the total development effort to solve the problems of fisher families in the area: namely unsteady income and under-employment, and to minimise the intervention of an intermediator providing initial investment and in return capture both the market and profit. Financial and technology components are built into the project to optimise the resource use.

The fisheries society once formed, can function as the liaising body between the relevant central government organisations, provincial/district/divisional authorities, NGOs, banking sector and the community. The fisheries society will represent the community coopting financial and technical advisors.

Special Program (2)

1. PROJECT TITLE — Center for Tourism Development

2. LOCATION — Hikkaduwa

3. IMPLEMENTING AGENCIES — Coordinating committee of the community assisted by the Divisional Secretariat, village level officials and other interested NGOs.

4. OBJECTIVES

(1) To strengthen institutional development to harness tourist potential of the area with community participation,

(2) To develop subsidiary industries supportive of tourism and to promote awareness of self employment and small scale enterprises,

(3) To create awareness on the evils of drug and its menacing effect on social/family harmony,

(4) To conduct training programmes to all those involved in the tourist industry to sensitize them on how to handle such situation where temptations and misguided benefits unnecessarily draw in the unemployed/under employed youth.

(5) To offer guidance and treatment to those who have become addicted,

(6) To coordinate with national level organisations and NGOs dealing with the problem, and

(7) To activate legal mechanisms and the custodians of law to enhance their vigilance.

5. EXPECTED EFFECTS — Institutional stability for tourism industry. Community awareness of the preventive measures to combat the drug menace.

6. PROJECT COSTS

7. IMPLEMENTATION SCHEDULE — Two years

8. PROJECT DESCRIPTION

The project is to build up an institution/center which will be responsible for the tourism development in Hikkaduwa area, articulating the community, building up financial assistance for investments and coordinating the total development effort to contribute to increasing problems in the area: namely unsteady income and under employment. One of the responsibilities of this institution is to take preventive measures simultaneously to avoid/minimise adverse effects. Therefore, the project will attempt to attend to these identified issues with an effective coordinating committee supported by divisional level

organisations and the anti-drugs establishments/NGOs with the idea of developing an effective institutional mechanism to create awareness, disseminate information, educate and guide youth/alert. Another task of the project will be the establishment of a legally sound organisation operation on awareness creation. Training and education programmes articulation of the community to alert vigilance on the party guardians of the law and curb the power of the drug traders. Financial and technology components are built into the project to optimize the resource use.

The executive committee of the institution/center operating with the guidance of the Divisional Secretariat and assistance of NGOs involve with dealing with drug menace and attending curative services. Community will be represented by an executive committee of the institution coopting financial and technical assistance from the relevant authorities.

Special Program (3)

1.	PROJECT TITLE	Vocational Training-Guidance-Counselling
2.	LOCATION	Hikkaduwa
3.	IMPLEMENTING AGENCIES	Samurdhi Task Force assisted by Grama Niladaries, Divisional Secretary and Assistant Director-Planning
4.	OBJECTIVES	(1) To set up a data-bank on availability of employment opportunities for the benefit of school leavers, (2) To promote self employment in order to reduce the pressure on formal job availability through appropriate small scale entrepreneurial training and funding, (3) To sensitize youth that through employment they could derive mental satisfaction and change their inertia for active participation to enhance their welfare, and (4) To provide youth with knowledge and skills to match employment opportunities.
5.	EXPECTED EFFECTS	Identification of employment opportunities and making appropriate trade training available for the school leavers at divisional and village levels to relieve them of unemployment. Establishment of a scientific data system to facilitate embarking on appropriate training programmes and to ensure proper placement. Change of attitudes in a positive manner and developing confidence and self reliance on their skills and capacities.
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	Two years

8. PROJECT DESCRIPTION

The project will create opportunities for facilitating school leavers of the Hikkaduwa division to receive job oriented training and skill development through updated data bank operative at divisional and village levels. The youth of the area will gain confidence on getting jobs after the vocational training programmes and they would be quite equipped with the knowledge to match the proficiency in vocational skill to employment opportunities. Therefore the project seeks to fulfill its objective through identification of ideal target groups for self-employment identification of a appropriate small scale enterprises and training the target groups in such development effect so as to make them self-sustaining and rewarding expense. Appropriate institutional development on making

credit available, on supply of raw materials and making of products are necessary pre-requisites for the project to succeed. Means of Initiation to obviate the problems of negative attitude and lack of awareness on employment opportunities available, is another factor that is being expected to be looked into in the implementation of this project. Attitudinal change is aimed at areas relevant to attitudinal change and positive thinking will be identified. Skilled resource persons will be engaged and awareness programmes for the school-leaver youth will be mounted.

The following components are included in the project:

- Establishment of the information center at divisional level,
- Updated data bank in accordance with needs analysis,
- Computerisation of data for ready retrieval,
- Monthly distribution of essential data to village levels,
- Establishment of village level information center,
- Identification of the employment opportunities and relevant training at the local level, and
- Technical and financial assistance and, liaise with respective organisations / institutions.

The project will be operational at the Divisional Secretariat, Hikkaduwa with the assistance of Assistant Director Planning. Grama Niladaries and Samurdhi animators of the village will be responsible in monitoring and reviewing the operations. Employment opportunities will be identified in accordance with the Southern Area Development Master Plan as well. The sponsorship of SSEP Foundation who participated as a resource base for the workshop, extended their willingness to facilitate the specific target group of school leavers with necessary skills provision and credit facility.

When re-organising the data system following points has to be borne in mind when operationalizing the project:

- Classification of the unemployed in accordance with educational qualifications,
- Skill development/vocational training already received,
- Preferred employment,
- necessary skills for such job expectations, and
- Various training programmes and job opportunities in matching them.

Special Program (4)

1.	PROJECT TITLE	Self-Employment Promotion
2.	LOCATION	Kamburupitiya
3.	IMPLEMENTING AGENCIES	Samurdhi animators, Samurdhi managers, Assistant Director Planning, Divisional Secretary and members of Pradeshiya Sabha
4.	OBJECTIVES	(1) To increase of income through self-employment, (2) To initiate grass-root level organisational activities, (3) To imparte knowledge on enterprises for self-employment, (4) To identify sources of financing and developing the infrastructure, (5) To infuse technology, and (6) To establish an effective communication center on job opportunities available, skills required, sources of skills development, vocational training and enterprise oriented marketing development.
5.	EXPECTED EFFECTS	Increase in income. Smooth cash-flows through steady sources of financing and resource management.
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	Two years

8. PROJECT DESCRIPTION

The proposed project has several components of an information center detailing self-employment opportunities, skills development avenues, sources of financing etc. together with creating awareness on resources, technology and know-how with managerial skill development to enhance entrepreneurial productivity and beneficiaries reaching a satisfying level of income generation through self-employment. The promotional effort in this direction reduces over dependency on the Government and the private sector where job opportunities are less accessible.

The components are so designed to function as a synergistic whole. The project emphasizes the necessary co-ordination among the local authorities, central authorities, Samurdhi managers/animators and the community.

Special Program (5)

1. PROJECT TITLE		Crop Diversification and Productivity Enhancement
2. LOCATION		Gathara-west and Malwathugoda, Kamburupitiya
3. IMPLEMENTING AGENCIES		Farmer organisations, youth organisations, assistant director-planning, divisional secretary, members of Pradeshiya Sabha
4. OBJECTIVES	(1)	To revitalize organisations in the area concerned with agricultural and agro-industrial production,
	(2)	To enhance productivity in the agricultural activities,
	(3)	To make technical advice readily available and infuse technology in the production process,
	(4)	To enhance the knowledge of the farmers to use advanced farming systems,
	(5)	To promote agro-based rural industries based on the resource potential in the village, while creating access to obtain appropriate technology,
	(6)	To establish linkages with the market, and
	(7)	To promote savings habit.
5. EXPECTED EFFECTS		Optimum use of resources with enhanced productivity. Increased income level in the sector. Diversification of cropping, use of better/proper land-use methods. Technology infusion.
6. PROJECT COSTS		
7. IMPLEMENTATION SCHEDULE		Two years

8. PROJECT DESCRIPTION

The project is designed to take in the elements of:

Re-organisation/revitalisation,

Planned land utilization with diversification process playing a crucial role,

Making available advisory/technological/physical inputs,

Facilitating savings and recycling investments, and

Establishing rural industries.

Authorities for local and divisional administration, village level authorities such as Samurdhi Movement together with the existing farmer/youth organisations have been entrusted for the commitment of the purpose.

Special Program (6)

1. PROJECT TITLE		Employment Motivation
2. LOCATION		Gathara-west and Malwathugoda, Kamburupitiya
3. IMPLEMENTING AGENCIES		Youth organisations/sports society, clergy, village heads and Samurdhi managers / animators
4. OBJECTIVES	(1)	To sensitize youth for improved attitudinal development towards employment through sports and connected activities, and
	(2)	To generate the capacities of youth lurking within, for subsequent social harnessing for productive effort.
5. EXPECTED EFFECTS		Youth getting oriented to productive effort. Making a mechanism available for social and cultural upliftment. Talents of the youth harnessed which generates multiplier effects on their own community on self identity, self respect and social recognition.
6. PROJECT COSTS		Minimal and is expected to be generated within the community.
7. IMPLEMENTATION SCHEDULE		Two years

8. PROJECT DESCRIPTION

Common interest of the youth on sports and such physical activities and, community recognition of such talents and possible openings to develop village leadership are brought together for a re-emergent youth with a better feel of fresh air of new thoughts and action processes. The project thus hopes to capitalize on an immediately available opportunity of harnessing and harmonising youth through sports and such village recognised events to develop better attitudes and personality development awakening within themselves to be engaged on sustainable production activities.

The project envisages attitudinal improvement when the youth orgnisations, clergy and village community based organisations embark on a more or less an inexpensive but yet an effective mechanism to bring together, to awaken the spirit of coordination and cooperation and harmony team effort and leadership.

Special Program (7)

1. PROJECT TITLE	Revitalization of Handloom Industry
2. LOCATION	Kamburupitiya
3. IMPLEMENTING AGENCIES	Samurdhi Management together with Divisional Secretary and line ministry concerned
4. OBJECTIVES	To harness idle-hands in the village on a self satisfying process of creativity development
5. EXPECTED EFFECTS	Dry art resuscitated Attitudinally self reliance promoted
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Two years

8. PROJECT DESCRIPTION

The handloom sector of the textile industry was an important component, infusing into village youth specifically young girls with industrial orientation in a predominantly agricultural community. Self respect, self reliance, the twin beams of beacon light in the village where dimmed by the powerloom and subsequent interventionists' policy of open economy and privatisation. Several economic considerations and options ultimately made this self satisfying but poor returner of capital receded to the background. The rural community specially consisting of young girls view with some extent of optimism and wish to re-introduce some outlets for innovation, mastery of skill and display. It is in this context described above, the project is identified to satisfy some lurking creative need felt in the society. Policy decisions govern its revitalization.

Special Program (8)

1. PROJECT TITLE		Tanks Renovation for Drinking Water and Agriculture
2. LOCATION		Thanamalwila
3. IMPLEMENTING AGENCIES		Organised agricultural groups, Divisional Secretary, Sanurdhi Management, village level officers
4. OBJECTIVES	(1)	To rehabilitate appropriately selected technically feasible village tanks to provide palatable water and to provide irrigation water for agricultural production,
	(2)	To establish sound village organisations to rehabilitate the tanks and appropriately maintain them with better water management practices,
	(3)	To maintain agricultural productivity through protection of irrigation and crop systems through creation of awareness to cattle owners and minimise losses by ensuring the system works through appropriate punitive action against offenders, and
	(4)	To re-establish the forest cover progressively in the reservation areas.
5. EXPECTED EFFECTS		Steady supply of good drinking water and sufficient irrigation water for crop production.
6. PROJECT COSTS		
7. IMPLEMENTATION SCHEDULE		Two years

8. PROJECT DESCRIPTION

The project aims at first building such cohesive agricultural production groups conducting feasibility studies through technical expertise and rehabilitating and maintaining the tanks protecting them against animal damage and enhancing crop productivity and ensuring steady supply of drinking water for the entire area.

Thus the following components are included in the project:

Organisation building at divisional and village levels to harness group efforts for sustainable development,
Rehabilitating appropriately feasible tanks for drinking water and irrigation purposes,
Establishing community oriented organisations for continued maintenance and

systematic water management, and

Devising protection measures against animal damage to irrigation channel systems and crops and adopting re-forestation measures through community effort on the tank in forest reservation areas.

Divisional Secretary, community leaders, village level officers and Samurdhi Management will initially take all steps on building up organisations at divisional and village levels to harmonise human effort for rehabilitation and maintenance work. Technical support of appropriate line agencies will be harnessed through the Divisional Secretary/Provincial Secretary for surveys and feasibility studies. Cattle owners will be educated and their conscience will be awakened for more responsible handling of their livestock. Legal provisions will be tightened against the stray cattle menace.

Special Program (9)

1. PROJECT TITLE	Improved Farming Systems
2. LOCATION	Thanamalwila
3. IMPLEMENTING AGENCIES	Established farmer organisation, Divisional Secretary, village level officers, Samurdhi management and animators, agricultural agencies, agricultural officers and CWE.
4. OBJECTIVES	To operationalize an improved farming systems to enhance agricultural productivity in the area.
5. EXPECTED EFFECTS	Synergistic effects of homogeneous farmer groups institutionalized to optimise production distribution marketing and fund management in the area. Improved system of agriculture with adequate technology base built up and farmers motivated to undertake diversified agriculture with emphasis on short term cash crops resulting in greater income. Scientific crop mix and cropping patterns appropriate to the area introduced and sustained.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Two years

8. PROJECT DESCRIPTION

Institutional infrastructure building of farmer groups exploiting the potential of small groups of cultivators on homogeneous cultivations articulating them for fund management, market identification and all production and distribution processes at the village level constitute an important project component. A very important component on technology infusion and technical training are given to the groups and where necessary they are inducted into new systems by personal visits to places where such systems are in operation. The farmer groups develop capacities to identify their resources in the area and are given knowledge and exposure to select systems of training practices appropriate to their area. They are also inducted on short term cash crops so that their income could increase while at the same time agricultural practices consonant with sustainable crop production. A component on maintaining and evaluating their own efforts and results, capacities, fund flows and fund management forms a dynamic element in the project. They are able to produce their own seed and would be eligible to be selected as certified seed farmers in the area. This too is an important component.

Divisional Secretary, and senior officials of Department of Agriculture, Agrarian Services and Cooperatives should initially interface to assist the farmers community to establish

their own institutional infrastructure. Resource mobilisation for the technology and technical inputs to the farmer groups should receive their initial intervention. Once these two steps are over, the farmer groups themselves will automatically organise for further resource identification and mechanisms of utilizations. The official group should educate them on the new systems of farming and water management for higher productivity. Monitoring process will be built in as a participatory process of self evaluation.

Special Program (10)

1. PROJECT TITLE	Crop-Animal Conflicts Minimization
2. LOCATION	Thanamalwila
3. IMPLEMENTING AGENCIES	Divisional Secretary, Grama Niladhari, specially established organisations and sub-committees, agrarian animators, community mobilisers and authorised cattle seizures and officers dealing with land work and cultivation
4. OBJECTIVES	(1) To undertake institution building for preventing cattle damage to crops, farmland and irrigation systems, (2) To activate organizations to liaise with area officials to prevent cattle damage, (3) To establish a system of proper land use through regulatory measures to prevent lands falling into disuse by non-cultivation, and (4) To adopt specific measures to prevent damage by wild elephants.
5. EXPECTED EFFECTS	Damage by animals minimised. Farmers organised for self-reliance. Proper land use established. Community and area politicians sensitised and cattle owners become concern and respond positively.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Two years

8. PROJECT DESCRIPTION

The project will activate the whole community an adequate building up of institutional infrastructure to organize and prevent crop damage and other damages by animals including elephants. Thus one component of the project aims at organisation of the community by soliciting social and political support for losses and consolidating agricultural production. Another component is to provide proper land use to minimise uncultivated land so that removing stray cattle becomes obligatory. Cattle seizures, stray cattle, cattle owners and cultivators shall meet, discuss and arrive at consensus of a avoiding future damage. Electric fencing to prevent damage by elephants is another important component.

Divisional secretary has to officially give sanction for the various processes. Hence the agrarian groups with the assistance of other divisional and village level officers should organise themselves to implement the crop protection project.

Project No. AG-1

1. PROJECT TITLE	Seed-paddy Production and Supply System Improvement
2. LOCATION	Bata-ata Seed Farm, Hambantota district and irrigated paddy fields in the South
3. IMPLEMENTING AGENCIES	DOA and Provincial Council
4. OBJECTIVES	(1) Establishment seed certification center in Southern Area, (2) Increase of registered seed-paddy supply for private sector multiplication.
5. EXPECTED EFFECTS	Increased and stabilized paddy production and farmer incomes.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I ; Feasibility study , Detailed Design, Construction, System establishment Phase II; Increase production and supply of certified seed-paddy,

8. PROJECT DESCRIPTION

In recent years, paddy production is stagnant in Sri Lanka. Secondary data shows that the annual increase of national paddy production during 1983-93 period was only about 0.5% p.a. This rate was much lower than the national population growth of 1.27% p.a. during 1988-94 period. In Southern Area, paddy production increase was higher than the national average with an increase rate of 2.4 % p.a. during 1980-93 period. However, average yield in the South is only about 3.1 ton/ha which is still lower than the national average.

For production increase of paddy, use of quality seed is one of the important practices. According to the experience of the Provincial Agriculture, Southern Province, 100-150 kg/ha yield increase is easily obtained using certified seed-paddy.

However, seed-paddy supply has been affected adversely due to production decline of certified seed in the channel of DOA. Following the privatization policy of seed sub-sector, subsidies given to the DOA for seed production has been cut down. DOA supplies only original seeds and new varieties seeds for multiplication which is carried out mainly by private sector (including farmers). Seed-paddy produced by private sector is certified, before its distribution to the market, mainly at Gannoruwa Seed Certification Center of DOA.

In the South, the Bata-ata Seed Farm in Hambantota district is responsible for production of registered seed-paddy. Multiplication of seed-paddy is made by several organizations/ individuals, e.g. agrarian service centers, Multi-purpose Cooperative Societies, private rice millers, and seed-paddy dealers. However, certified seed-paddy covers only about 6.8% in Maha and 3.2% in Yala of the total requirements in the South. Most of the farmers depend on seed-paddy produced by themselves which quality is generally poor.

Major constraints prevailing in the seed-paddy sub-sector in the South are summarized as follows:

1) DOA's seed certification service at the Gannoruwa center is usually delayed in seed certification, and accordingly timely supply to the farmers is difficult to carry out.
2) Insufficient supply of registered seed-paddy from Bata-ata Seed Farm,
3) Seed-paddy growers often sell their seed to dealers as commercial paddy, seeking higher profits,

The proposed project aims to remove these constraints to a certain extent from the seed sub-sector in Southern Area. By installing required facilities and equipment, the Bata-ata Seed Farm will take responsibility for the another function of seed certification, in addition to the present role of registered seed production. The present responsibility for registered seed production in the Bata-ata Seed Farm will also be strengthened with an additional allocation of production inputs and labors.

For the further promotion of private sector in seed-paddy production and distribution, the Government is expected to adopt proper pricing policy to seed-paddy marketing. As the medium-term target, the Government should withdraw from commercial seed sales and distribution, and would be responsible only for breeding, variety trials, testing and certification.

Project No. AG-2

1. PROJECT TITLE	Tea Small Holdings Sector Improvement
2. LOCATION	Galle and Matara districts
3. IMPLEMENTING AGENCIES	Tea Small Holdings Development Authority (TSHDA) in cooperation with the Provincial Council, Road Development Authority, Provincial Land Commissioner and TSHDSs.
4. OBJECTIVES	(1) To construct and rehabilitate rural roads in the tea production areas, (2) To establish TSHDS's Marketing Centers for leaf collecting and fertilizer storing, (3) To provide training to TSHDSs' representatives, and (4) To provide land titles to small holdings.
5. EXPECTED EFFECTS	(1) improved quality of low grown green leaves tea and processed tea, (2) Higher farm gate prices of green leaves tea and increased farmer incomes, (3) Strengthened TSHDSs in their management in marketing of farm inputs and outputs, (4) Increased land productivity with land titles in the tea small holdings sector.
6. PROJECT COSTS	Rs. 212.9 million (without price contingencies)
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

(1) Background

The production of tea in Southern Area accounts for 33% of the national total production. Tea alone contributes about 12% of GRDP in Southern Area in 1995. Tea is classified into high, mid and low grown teas according to the elevation at which it is produced. Southern Area produces only low grown tea, contributing to 74,100 tons or 70% of the national production of this type of tea. Average yield of low grown tea is 1.7 ton/ha, which is about three times higher than mid grown tea and 1.8 times higher than high grown tea. Private small holdings, located mostly in the low country, have much higher productivity than government estate plantation in the up and mid countries.

Total area of tea plantation is about 39,300 ha in Southern Area of which about 33,000 ha or more than 80 % are occupied by the small holdings. Since there are nearly 100,000 tea small holdings in the South, mainly in Galle and Matara districts, the average holding size is estimated at 0.33 ha in the tea small holdings sector. With the nature of small holding size in this sector, tea production increase is to be achieved only through the improvement of crop productivity.

About 50% of the tea small holdings have been organized into the Tea Small Holders Development Societies (TSHDSs). TSHDS has a legal entity under the TSHDA act, and is responsible, among others, for farm input supply and marketing services to their members, and coordination with extension services provided by TSHA. In most TSHDS, however,

staff management ability is lacking and related facilities for marketing and farm input supply are limitedly available. The most TSHDSs insufficiently perform their responsibilities, in spite of their important role in the development of tea small holdings sector.

Other constraints in the tea small holdings sector pointed out are:
a) Access to their tea plantation is not well arranged in most cases. This makes transportation cost high for their production of green leaves tea to factories, and increases quality losses during transportation.
b) A large number of tea small holdings are encroachers and they have any land title deeds or documents. Because of this nature, small holdings are not a subject of the on-going subsidy scheme for replanting and new planting.

(2) Project Components

The proposed project has been formulated for mitigation of the above mentioned constraints prevailing in the tea small holdings sector. The project will include the following components:

a) Construction and rehabilitation of about 200 km rural roads for about 70 locations,
b) Construction of seven TSHDS's Marketing Centers (for leaf collecting and fertilizer storing) in production area,
c) Training of TSHDS's representatives (about 1,000 representatives),
d) Supply of additional survey team for acceleration of the on-going land titling program for regularizing the ownership of lands, and
e) Consultant services for project planning, implementation and impact assessment,

Rural roads will be constructed and rehabilitated by involvement of TSHDS members as labor force. The project will provide equipment, materials and technical services. The TSHDS's Marketing Centers will also be constructed following the same concept of farmer involvement. The training will be provided by TSHDA for improvement of TSHDSs' management ability mainly in accounting, and marketing services both for farm inputs and outputs. The project will support the land titling program providing surveyors to be hired by the project. The survey results will be confirmed by the Land Commissioners in the respective provinces who registrar the lands and provide title deeds to tea small holdings.

(3) Implementing Arrangements

TSHA will be the project executing agency. For the implementation, coordination arrangement will be established with the Provincial Council, Road Development Authority, Provincial Land Commissioners and TSHDSs.

(4) Project Costs

	Component	Cost (Rs. Million)
a)	Road development (Rs. 750,000 x 200 km)	150.0
b)	TSHDS Marketing Centers (Rs. 2.5 million x 7 centers)	17.5
c)	Training of TSHDS's staff (Rs. 500/day x 1,000 representatives x 2 days x 2 times)	2.0
d)	Survey for land titling program (Rs. 2,400 x 10,000 units)	24.0
e)	Consultant services (10% of the above)	19.4
	Total	212.9

Project No. AG-3

1. PROJECT TITLE	Sugar Plantation Development Project (Private Sector)
2. LOCATION	Dry and intermediate zones (Moneragala district)
3) IMPLEMENTING AGENCIES	Private sector including sugar factories (Sevenagala and Pelwatta) supported by Dept. of Plantation Industries
4. OBJECTIVES	(1) To expand cane production areas through development of potential areas which are now unused and/or occupied by chena farmers, (2) To increase sugar production for reduction of its import, and (3) To convert lower productive agriculture into higher productive one.
5. EXPECTED EFFECTS	(1) Increase in self-sufficiency rate of sugar, (2) Saving of foreign exchange, (3) Increase of farmer and regional income, and (4) Reduction of government expenditures for rural poor.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

Sugar production in Sri Lanka meets only about 15% of the local consumption. Although the Government policy on sugar production is unclear, there are huge potential areas for the cultivation of sugarcane which is one of promising crops to be introduced to rainfed areas in the dry and intermediate zones.

Based on the result of GIS analysis, it is estimated that about 39,200 ha of new lands will be suitable for rainfed agriculture. Out of these lands, 30,000 ha will be allocated to the production of sugarcane.

Sugar cane area will be expanded in three stages. In the first stage, cane area will be expanded up to the full capacity of existing two sugar factories in Southern Area. In the second stage, it will be expanded through increase of milling capacities of the two factories. At the third stage, if it is necessary, cane production will be expanded for new factory/ies to be established in the region.

Project No. AG-4

1. PROJECT TITLE	Strengthening of Cattle and Buffalo Breeding Program
2. LOCATION	All Southern Area districts
3. IMPLEMENTING AGENCIES	DAPH in cooperation with Provincial Council and Provincial Ministry of Agriculture
4. OBJECTIVES	(1) To improve productivity and production of cattle and buffaloes through upgrading the local stock, (2) To increase the per capita availability of milk and milk products, and (3) To reduce the pressure on grass lands by decreasing cattle and buffalo population through improvement of unit yields.
5. EXPECTED EFFECTS	(1) Increased production of milk and farmer incomes, (2) Improvement of nutritional standard of the rural population, and (3) Reduction of conflict between livestock and crop farmers.
6. PROJECT COSTS	Rs. 300 million for five-year operation
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

Cattle and buffalo are the most important livestock in Southern Area. There are about 199,500 heads of cattle and 140,800 heads, accounting for 12% and 17% of national population of respective animals. About 22% of total cattle and 18% of buffaloes are milking at present, and they produce about 9% and 22% of the national production, respectively. Unit yield of milk is low, at 1.42 litter/day for cows and 1.82 litter/day for buffaloes (as annual average). The present low level productivity can be improved through adequate supply of breeds, feeds and health care which are insufficiently available in Southern Area. According to ADB report, the Second Livestock Development Project, 1996, Sahiwal cows produce about 5 litter/day or 1,250 litter/lactation, and Nili-Ravi buffaloes produce 1,700 litter/ lactation under higher level management system in low-wet zone.

This project aims at breeds improvement by strengthening of on-going supporting program including; (1) strengthening the artificial insemination (AI) service to upgrade local stock by utilizing unemployed youths as private AI technicians, (2) heat synchronization of large herds of cattle and buffaloes in inaccessible areas to hasten the upgrading process, (3) intensive castration of unimproved bull calves and bulls, (4) supply of improved heifers in exchange of unproductive cattle, and (5) support AI or naturally upgraded heifer calves to accelerate the growth rate and to arrest the mortality rate.

Project No. AG-5

1. PROJECT TITLE	Beef Processing and Marketing Development in the Dry Zone (Private Sector)
2. LOCATION	Hambantota, Moneragala and Ampara districts
3. IMPLEMENTING AGENCIES	Private sector
4. OBJECTIVES	To construct semi-modernized abattoirs and related facilities in SEDZ by private sector investment
5. EXPECTED EFFECTS	(1) Increased unit price of animals, as a result of introduction of legalized slaughtering, and increased farmer incomes, (2) Increased supply of hygienic beef meat to urban areas, (3) Reduced large herd sizes and conflicts between crop and livestock farmers, (4) Increased supply of hides for leather processing industries,
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

Cattle and buffalo are the most important livestock in Southern Area, particularly in the dry zone. Hambantota district alone has 93,300 cattle or 5.4% of the national total cattle, and 95,900 buffaloes or 11.5% of the national total buffaloes. On an average, small holdings raise 9.8 heads of livestock (cattle and buffaloes) in Hambantota district. This herd size is more than double of the national average of 4.6 heads per small holding.

The traditional production system is a major constraint that hinders better utilization of farm animals. Farmers pay little attention to the condition of animals and their productivity. Feed shortages coupled with imbalanced ratios of feed ingredients have led to low reproduction and high mortality rates. Increasing conflicts with crop cultivation constitute another major constraint for livestock farmers especially in Hambantota district, where grazing lands are decreasing due to settlements. Many farmers keep livestock, but allow them to graze freely, resulting in crop damages.

Since abattoirs are not available in this livestock region, backyard slaughtering is a common practice for meat processing and marketing, although this is illegal. Because the slaughter of female (unless certified unproductive) cattle and buffaloes is banned, these animals are also slaughtered illegally in backyards. Small holdings have to bargain away their live animals of cow and buffaloes to middlemen when it is necessary to sell. In the dry zone supply of animals always exceeds the demand in general.

With the above nature, private sector has an interest in investment for beef meat processing and marketing. The feature of proposed project is as follows:
a) Construction of semi-modernized abattoir for slaughtering of 20-30 animals per day,
b) Construction of cold room to sore carcasses after slaughter,
c) Procurement of refrigerated vehicle for transportation of carcasses to required destinations,

d) Construction of small meat meal factory,

The above listed facilities will be established firstly in Hambantota district within one location. After a few years operation, this unit for beef processing and marketing will consecutively be constructed in other districts based on experience to be obtained through its operation.

In order to encourage this private sector investment, the public sector supports required are:
a) Termination of the ban on the slaughter of cow and buffaloes, and
b) establishment of proper guidelines for the approval of slaughter houses or for meat inspection processes.

Project No. AG-6

1. PROJECT TITLE	Irrigation System Rehabilitation and Development
2. LOCATION	Whole Southern Area
3. IMPLEMENTING AGENCIES	Irrigation Department, Mahaweli Authority, Department of Agrarian Services and Provincial Councils
4. OBJECTIVES	(1) To rehabilitate existing irrigation systems through continuation/ implementation of on-going and planned projects, and (2) To develop new irrigation areas through continuation/ implementation of on-going and planned projects.
5. EXPECTED EFFECTS	(1) Increased crop production, (2) Increased farmers and regional income
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

In Southern Area, there are 1,957 irrigation schemes covering a total area of 76,500 ha, consisting of 43,100 ha anicut systems and 33,400 ha tank systems. In the wet zone, anicuts are commonly used to regulate and divert water. In the dry zone, water storage tanks are built to collect water to supplement limited rain water.

In these schemes, O&M performance has been generally poor. Maintenance work is not carried out regularly causing deterioration of facilities and wastage of water resulting in loss of production. In principle, O&M is expected to be done by beneficial farmers. However, maintenance is rarely done due to poor farmer participation and insufficient budget allocations resulting in malfunction of the facilities. Poor operation of systems often result in wastage at the head of the canals and shortage at tail ends.

A large number of irrigation schemes are in the process of rehabilitation under different projects. These projects are NIRP, SPRDP and Moneragala Irrigation and Community Development Project. The IRDPs in Matara and Hambantota also cover rehabilitation of some irrigation schemes. Rehabilitation of some minor schemes is covered by the National Trust Fund.

Feasibility study for three priority irrigation schemes (Liyangastota, Muruthawela Reservoir, and Badagiriya schemes) with about 11,000 ha rehabilitation area is nearly completed by JICA and proposes for the implementation. The Walawe Left Bank Irrigation Upgrading and Extension Project is at detailed design stage and expected to rehabilitate 2,900 ha of existing irrigation facilities (and expand 6,400 ha of new irrigation area).

If all the on-going and planned rehabilitation projects are implemented, about 20,000 ha of annual harvested areas would become irrigable. Introduction of proper O&M would bring an additional increase of cropping intensities as a result of effective use of water resources. In general, the irrigation rehabilitation together with introduction of proper O&M is better than new irrigation development in terms of economic return and environmental viewpoint.

It is therefore proposed to implement on-going and planned rehabilitation projects as soon as possible.

In addition to the rehabilitation projects, a total of 19 in-basin irrigation development projects has been proposed for expansion of about 8,000 ha new irrigation areas. Since all these projects are for irrigation development in the dry and intermediate zones, those implementation is also proposed. The Walawe Left Bank Extension Project is now at under preparation for detailed design. For other 18 projects, feasibility study would be needed to be carried out.

Moreover, there are several proposals for river diversion projects for irrigation development in the dry zone. A feasibility study would be needed for promising projects in Phase I and those would be implemented in Phase II. If the most promising Uma-Oya Diversion Project is implemented, present water shortage in the Lunuganwehera Scheme would be solved. As far as economically and environmentally feasible, the river diversion projects should also be implemented for agricultural development in the dry and intermediate zones.

Project No. AG-7

1. PROJECT TITLE	Abandoned Tanks Renovation Project in Moneragala and Ampara Districts
2. LOCATION	Moneragala and Ampara districts
3. IMPLEMENTING AGENCIES	Irrigation Department, Ministry of Irrigation, Power & Energy in coordination with Provincial Councils
4. OBJECTIVES	To renovate abandoned tanks and expand irrigation area.
5. EXPECTED EFFECTS	Increased and stabilized agricultural production and farmer incomes.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I; Feasibility study for priority ranking of renovation, Phase II; Project implementation.

8. PROJECT DESCRIPTION

ID has already identified 21 schemes having a total command area of 2,400 ha in Moneragala district, and 6 schemes having 2,000 ha in Ampara district. According to ID, all these schemes are not functional at present and need renovation.

The hydrological study made under the present study revealed that there are still exploitable water resources in these regions for irrigation purpose. In order to use these water resources for irrigation purpose, abandoned tanks will be renovated and present rainfed farming in and around the scheme areas will be converted into irrigated farming.

Project No. AG-8

1. PROJECT TITLE	Private Sector's Irrigated Agriculture Development (Private Sector)
2. LOCATION	Moneragala district
3. IMPLEMENTING AGENCIES	Private sector in assistance with SDA, Land Commissioner, ID
4. OBJECTIVES	To develop new irrigation schemes and production system by private sector investment
5. EXPECTED EFFECTS	(1) Effective utilization of limited water resources for agriculture, (2) Introduction of new irrigation technologies, (3) Introduction of new income generation activities into the region, and (4) Saving of government subsidies spent on O&M.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

There are large number of small scale tank irrigation schemes which are abandoned in the dry zone, requiring renovation. ID has identified 21 such locations having a potential for 2,400 ha irrigation development in Moneragala district. The command area of these schemes varies from 20 ha to 100 ha.

The proposed project envisages to conduct a pilot study to investigate the potential for development of these schemes through private sector participation. After the feasibility studies conducted under the proposed project for Abandoned Tanks Renovation Project in Moneragala and Ampara Districts, some promising schemes would be selected for this project for private sector investment. Offers can be invited from private sector investors to lease out the land and water rights and to develop these schemes for agriculture purposes. Leasing options available needs to be studied taking into consideration the interest of all the stakeholders. The proposed strategy should be essentially an attempt to maximize the efficient use of the irrigation assets and water resources within perceived equity and existing land policies. Crops to be introduced would be HVCs mainly for external markets.

Project No. AG-9

1. PROJECT TITLE	Enhancement of Training and Research Facilities in Faculty of Agriculture, University of Ruhuna
2. LOCATION	Kamburupitiya, Matara districts
3. IMPLEMENTING AGENCIES	Faculty of Agriculture, University of Ruhuna
4. OBJECTIVES	To enhance the facilities of the faculty of agriculture to provide quality teaching, research and out-reach programs to cope with increasing agricultural needs to the region and country as well.
5. EXPECTED EFFECTS	(1) Improved agricultural education in the university, (2) Increased research capability to cater private sector needs, (3) Improved production systems to be introduced to the region, and
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I

8. PROJECT DESCRIPTION

University of Ruhuna was established in 1984. The university has three faculties, i.e. Agriculture, Humanities and Social Science, Science, and Medicine in three different locations in the Southern Province. The Faculty of Agriculture located at Kamburupitiya, Matara district consists of six departments, i.e. Crop Science, Agricultural Biology, Agricultural Engineering, Agricultural Chemistry, Agricultural Economics, and Animal Science.

The researches undertaken by the faculty of agriculture include many subject areas in crops, livestock sciences and disciplines concerned with production and management. These are carried out at different locations in the region. However, facilities and equipment for research works are limitedly available in the faculty for present teaching, research and put-reach programs.

The faculty has the advantage of flexibility in research works covering a wide rage of corps and production systems including livestock and fishery, although other research institutes cover limited crops with less coordination among institutes. Availability of highly educated human resources in one location is another advantage of the faculty. The faculty also can provide research works required by private sector. In the light of the important role of the faculty in the agricultural development in the region, enhancement of training and research facilities/ equipment is needed.

Project No. AG-10

1. PROJECT TITLE	Alternative Irrigation Techniques Pilot Project
2. LOCATION	Hambantota district
3. IMPLEMENTING AGENCIES	SDA/Farmers Organization
4. OBJECTIVES	To increase water use efficiency under traditional tank irrigation system, To increase cropping intensity, To encourage crop diversification, To reduce Operation and Maintenance (O&M) cost of irrigation systems, To facilitate the effective participation of the farmers in water management, To minimize environmental negative effects such as water logging caused by excessive water use, and To enhance the environmental sustainability of the irrigation system.
5. EXPECTED EFFECTS	
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Selection of a suitable site for the pilot study and design the system in Phase I, followed by implementation in Phase II

8. PROJECT DESCRIPTION

Existing design of the water delivery system under tank irrigation allows very limited flexibility for the operator to deliver water to meet actual field water requirement. Present design adapted by ID explicitly assumes the control of the irrigation water is always from the top. In this mode of operation, very little adjustments are possible to meet actual crop water requirements, attitudes of individual farmers, soil conditions or climatic variations.

However by transferring the control of the irrigation deliver system to the downstream end or to the farmers themselves most of the difficulties encountered in the conventional approach can be overcome. For this purpose, several techniques can be used. One of the very promising techniques which can be adapted in Sri Lanka is to use pipes instead of canals for the delivery of irrigation water. Pipes can be low cost concrete pipes or PVC pipes. Unlike canals, there is hardly any seasonal maintenance requirement for piped system except emergency repairs necessary. Downstream control irrigation system facilitate user friendly water delivery mechanism having very high irrigation delivery efficiency. Water saving is also achieved through minimizing seepage which is very high in unlined earthen canals and also through flexibility of the operation.

As though the initial capital investment is higher than that for the conventional canal systems, the long terms gains can be very promising in piped systems. Project will be planned and implemented taking all the aspect of the watershed into consideration with close participation of farmers both in the command area as well as in the water shed.

Project No. FI-1

1. PROJECT TITLE	Inland Fisheries Re-Establishment Program
2. LOCATION	Hambantota, Moneragala, Galle and Matara Districts
3. IMPLEMENTING AGENCY	MFAR and community organizations (private sector)
4. OBJECTIVES	- To re-establish inland fisheries through rehabilitation and upgrading of existing facilities for efficient management of the facilities. - To improve fingerling stocking and rearing systems involving rural communities. - To provide freshwater fish at sustainable level to meet self-sufficiency of rural communities.
5. EXPECTED EFFECTS	- Inland fisheries as small but essential part of economic activities for rural communities. - Improved nutrition
6. PROJECT COSTS	US$10 million
7. IMPLEMENTATION SCHEDULE	Phase I - Rehabilitation/upgrading of existing facilities at Udawalawe and Muruthawela Stations, establishment of fingerling stocking and rearing system in an organized manner. Phase II - Full implementation

8. PROJECT DESCRIPTION

Inland fisheries declined after the withdrawal of government support in 1990. The Program will re-establish inland fisheries through rehabilitation and upgrading of existing facilities at Udawalawe and Muruthawela, and the establishment of fingerlings stocking and rearing system in an organized manner. The two stations will involve in supply of fingerlings for stocking of reservoirs and tanks, and rearing of fingerling by farmers using village tanks and seasonal water bodies, and extension and other assistance.

The following projects will be implemented initially.
(a) Upgrading and Rehabilitation of the Udawalawe Inland Fishery Station
(b) Upgrading and Rehabilitation of the Muruthawela Inland Fishery Station
(c) Stocking of Perennial Village Tanks and Reservoirs with Fingerlings
(d) Rearing of Fingerlings for Stocking of Perennial Village Tanks and Reservoirs Using Fry from the Udawalawe & Muruthawela Fishery Station
(e) Rearing of Fingerlings by Farmers Using Potential Seasonal Ponds and Other Water Bodies
(f) Integrated Fish Culture with Poultry Rearing

A study will be conducted in Phase I to identify suitable seasonal tanks to be rehabilitated, identify villagers willing to and capable of rearing fingerlings, design viable systems for fry production, fingerling purchases and performance monitoring.

Project No. FI-2

1. PROJECT TITLE	Prawn farming
2. LOCATION	Selected sites in Southern Area
3. IMPLEMENTING AGENCY	Private sector - Development of the industry MFAR/NARA - Monitoring and regulations
4. OBJECTIVES	To use marginal land and adjacent land adjoining brackish water area for aquaculture (shrimp farming)
5. EXPECTED EFFECTS	- Employment opportunities for locals in prawn farming - Alternative income activities - Development of common amenities by the private sector such as roads, electricity, drinking water, etc.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I - Zoning of area suitable for shrimp farming detail topographical surveys, minimization of user conflicts, construction of ponds and other infrastructures, and selection of out-growers Phase II - Expansion to other areas

8. PROJECT DESCRIPTION

At present, all existing prawn farms are located in the Northwestern Province. The Government, realizing the potential of prawn farming, offered various incentives, including tax benefits; the banks are also willing to give loans. These enticed some small-scale entrepreneurs and a few large multinational companies into prawn farming. All farms are constructed on land categorized as shrubland, mangroves and sparsely used cropland adjoining brackishwater areas. Most of this land is marginal for agricultural development and is lowlying.

A preliminary study by NARA and MFAR has revealed that the southern coastal belt between Tangalle and Kirinda offers conditions suitable for development of prawn farming. Some shallow lagoons, mangrove swamps and saline marshes represent potential areas for aquaculture, and these land could be made available for prawn farms. Preparation of the zonal plans of the sites is entrusted to NARA and the criteria for zoning is based on technical aspects and socio-economic aspects. The government should firmly define the areas for the expansion of prawn farming.

Interested parties are major prawn culturists and financial institutions. Prawn farming is planned to be developed on community based program with the involvement of the local inhabitants. Major investors will construct the necessary infrastructure such as access roads, electricity, seawater intake and discharge, etc. and suitable size of ponds will be leased to out-growers, who will have to purchase inputs such as post larvae, feed, etc., and to manage and raise the prawns. Technical advice by experts will be provided. The whole prawn farming is planned to be on cluster basis.

The project will cover selection of suitable sites (zonal planning), detail topographical surveys, construction of ponds and infrastructure, development of shrimp hatchery for seed supply, financial assistance to small farmers, community participation, development of processing facilities, monitoring and regulations by government agency.

The developer should address the user conflicts (if any) in order to minimize or avoid the conflicts: land ownership, conflicts with traditional agriculture activities; conflicts with traditional animal husbandry practices; conflicts over traditional uses of mangroves and land resources; salination of agricultural land; flood control, environmental impact assessment(EIA/IEE)

Zonal plan for about 1000 acres has been completed and plans are already drawn for this area by a leading financial institution and a major prawn farm operator, and an IEE report has been submitted to the Government and waiting approval for implementation.

Culturing of brine shrimps as feed supply to local hatcheries should also be investigated to reduce import of expensive larval feed. A NARA study has indicated the potential for harvesting and culturing brine shrimp (artemia) in the dry zone salt pans and seasonal brackish water tanks

Project No. FI-3

1.	PROJECT TITLE	Strengthening of Faculty of Fisheries Science in the University of Ruhuna
2.	LOCATION	Matara, Matara District
3.	IMPLEMENTING AGENCY	Ministry of Education and MFAR
4.	OBJECTIVES	- To generate trained personnel in fishery - To conduct applied research marine and inland fishery - To conduct hydrobiological study of the marine and freshwater bodies
5.	EXPECTED EFFECTS	- Provide self-employment opportunity - Acquire graduates for aquaculture industry
6.	PROJECT COSTS	US$6 million
7.	IMPLEMENTATION SCHEDULE	
8.	PROJECT DESCRIPTION	

At the tertiary level, the Department of Fisheries Biology of the University of Ruhuna offers marine biology and fisheries studies as part of the their general courses. The department was established in 1988 for the following reasons: the university has a sea frontage and is close to coastal fishing areas (Dondra, Gandara and Mirissa); most of the undergraduates of the Ruhuna University are from coastal areas such as Mirissa, Dondra, Gandara, Dickwella, Tangalle and Hambantota, and a reasonable number of students are from families actively involved in marine fishery industry and also from Hambantota where several perennial and seasonal reservoirs are located.

The Fisheries Biology Department, which is currently housed in the Faculty of Sciences Complex, is facing shortage of space and necessary facilities such as laboratory equipment and other facilities. Owing to these limitations, the department has to limit the intake of students to 36 and offer fisheries biology as an optional course. Improvement of facilities may increase the research capacity of the department which in turn would offer more scientific approach to the fishery industry. One of the constraints in the fishery development is the shortage of skilled personnel in various disciplines.

The asset of this department should be used in the development of fisheries in Southern Area, in terms of basic and applied research, and the graduate students further trained as extension and training workers and aquaculturists. The department should be strengthened for fisheries related training in the form of short vocational and general courses. Particularly, the faculty of zoology which offers courses in fishery science should be strengthened by provision of laboratory equipment and facilities in order to assist the development of freshwater fish breeding and rearing techniques to support the stocking of inland water bodies.

The project will cover buildings for office, and laboratory, freshwater aquarium unit, sea water aquarium unit, out-door cement and earthen ponds, and provision of furniture, various laboratory equipment, etc.

Project No. FI-4

1.	PROJECT TITLE	Improvement of Fish Markets
2.	LOCATION	Markets in Towns and Rural Areas (Southern Area)
3.	IMPLEMENTING AGENCY	Local governments
4.	OBJECTIVES	To improve fish quality by improving fish market physical facilities
5.	EXPECTED EFFECTS	- Improved quality of fish for consumers - Improved working conditions in markets - Maximize value of fish - Elimination of waste
6.	PROJECT COSTS	US$7 million
7.	IMPLEMENTATION SCHEDULE	Phase I - Investigation of all markets and formulation of plans. Phase II - Full implementation

8. PROJECT DESCRIPTION

Fish stalls in retail markets and road-side stands in Southern Area need improvement. All markets should be surveyed and a priority list for improvements should be made based on present conditions and volume handed. Fishes are displayed in unhygienic conditions without ice and directly exposed to sun and flies. Unsold fish are dried on road pavements. There are no storage facilities for fish

The project will cover detail investigation of all markets, rehabilitation and construction facilities, relocation of markets where necessary, provision of equipment and facilities such as cold store for wet and dry fish, etc.