Project No. IN-1

1. PROJECT TITLE	Integrated Urban Industrial Development Project
2. LOCATION	Three to five growth centers identified by the Master Plan
3. IMPLEMENTING AGENCY	Municipal and Urban Councils Southern Development Authority Related line agencies in central and provincial governments
4. OBJECTIVES	To provide the necessary infrastructure and coordinate development activities in selected growth centers.
5. EXPECTED EFFECTS	(1) Desirable living conditions in the critical urban centers targeted for rapid growth; (2) Orderly development of the growth centers increasing their attractiveness for new industries; and (3) Creation of synergy of involved agencies and increase in development multipliers.
6. PROJECT COSTS	Will depend on detailed implementation arrangements to be developed.
7. IMPLEMENTATION SCHEDULE	Immediately after the establishment of SDA

8. PROJECT DESCRIPTION

SDA will make the final of choice of urban centers where the project will be implemented. Initially, up to three centers will be chosen. A new center will be added to these every year after a trial period of two years.

A project implementation unit will be established in each development center. The unit will be under the administrative control of the provincial government. Liaison with other agencies will be provided by the local representative of SDA.

The bulk of required resources will be provided from the existing budgets of line agencies. Additional funds will be provided from the special funds made available for priority development projects in the South. Technical assistance will also be requested from donor agencies and specialized multilateral agencies.

The implementing agencies will identify local infrastructure projects for implementation by the private sector at an early stage. This is expected to provide substantial additional resources. Access to publicly owned land is another resource to be tapped for local development.

Project No. IN-2

1. PROJECT TITLE	Training and Technology Institute (Center)
2. LOCATION	Galle and Hambantota
3. IMPLEMENTING AGENCY	A foundation with membership of the Federation of Industries of Sri Lanka, BOI, Ministry of Labor and other related agencies
4. OBJECTIVES	To develop specialized skills for potential products which are critically important to the region's industrial development.
5. EXPECTED EFFECTS	(1) Provision of trained labor to new fields with comparative advantages; and (2) Function as a specialized service center providing testing and referral services and assistance in technology adaptation.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	To be initiated concurrently with the investment schedules of a few, large, internationally well-known firms which have committed to start production in the region.

8. PROJECT DESCRIPTION

The project will establish a specialized institute in each commodity group where a major expansion is expected in the region. The concept is similar to that of existing Clothing Industry Training Institute (CITI). A major function will be training of workers. It is expected that the trainees will be those with around eight years of schooling. Short-term specialized training may also be provided for the unemployed educated youth. The proposed Institute may also provide specialized central services to the industry on commercial basis using its full equipment to undertake testing and quality control for the product.

Labor intensive skills in which Sri Lanka is believed to have comparative advantage include gem cutting and jewelry, electronics, leather goods, and automotive parts and components. The project will provide trained labor in one of these fields initially. The second center will be established in a different location for a different product line after an evaluation of the results of the first.

Operating costs of the Institute will be financed by the Government with strong private sector participation. Without a ready market for trained workers in such new fields, training activities will not be undertaken by the private sector without government support. On the other hand, this government support must be restricted to a fixed period. Furthermore, it would be conditional on a parallel private sector commitment. Thus, the first specialized Institute should be established only after a few large firms, internationally well known in the respective fields of production, have made a firm commitment to start production in the region. The Institute will be initiated concurrently with the investment schedules of these companies. These companies will provide assistance on the type of training to be provided and equipment requirements. They may also provide trainers whose costs could be borne by the Institute. Simultaneously, contacts need to be

established with the international agencies and training institutes abroad to receive technical cooperation and funding.

Electronics may be one of the first such products. There is already considerable investor interest in a new site at Kandy and the Government is determined to promote this industry in Sri Lanka. The Government has formulated a special scheme of financial assistance to encourage investments in advanced technology electronics. BOI makes financial grants to eligible enterprises through a Technology Transfer Fund. These grants may cover the cost of training and acquiring testing equipment. The mandate of this Fund may be expanded to cover the other product lines. It is possible but not very desirable to create a new Fund.

Project No. IN-3

1. PROJECT TITLE	Industrial Finance
2. LOCATION	National
3. IMPLEMENTING AGENCY	National Development Bank, DFCC and intermediary banks
4. OBJECTIVES	To finance manufacturing enterprises in Southern Area.
5. EXPECTED EFFECTS	(1) Provision of credit to manufacturing enterprises at positive but reasonable interest rates; and (2) Least distortive support mechanism leaving the entrepreneur to make his own choice of production technology and input combination.
6. PROJECT COSTS	Total lending of up to $50 million over the first five years of the Master Plan implementation.
7. IMPLEMENTATION SCHEDULE	Initially for five years. (Can then be discontinued if the commercial interest rates have fallen to reasonable levels.)

8. PROJECT DESCRIPTION

The nominal cost of loan financing for the manufacturing companies varied from 18 to 22% during the last five years. Given inflation rates of around 10%, this has meant real interest rates of around 10%. This is three times the real costs of capital in developed countries and elsewhere in Southeast Asia.

Under the project, the Government will make a loan available to the National Development Bank (NDB) and DFCC for on-lending to manufacturing enterprises through participating commercial banks. The financing source may be domestic or a foreign loan. The interest on the loan from the Government to the NDB and DFCC will reflect the cost to the Government which may be zero under the available concessionary facilities. Unlike the ongoing SMI credit scheme supported by the World Bank and ADB, the real rate of interest under the proposed scheme will not exceed 3%.

The Government will establish a credit risk guarantee scheme, as it is proposed for the whole Country under the current Five Year Public Investment Program, to remove the repayment risk and therefore the cost to the commercial banks. Given the present practice, this by itself will reduce the interest rates by up to six points. Other incentives will also be provided (such as exemption from or lower reserve requirements) to reduce the cost of loans to the participating commercial banks.

In the medium to long run, it would be desirable if this loan scheme is operated by a specialized industrial development bank. In the short term, the loan will be administered by the participating commercial banks. The collateral requirements of these banks may discourage small investors from applying. A separate facility, therefore, may be created in Regional Rural Development Banks and similar local financing institutions for the small scale investors.

Project No. IN-4

1. PROJECT TITLE	Improved Availability of Manufacturing Inputs
2. LOCATION	Galle, Matara and Hambantota
3. IMPLEMENTING AGENCY	Customs Department, BOI and other ministries
4. OBJECTIVES	To provide the same facilities as are presently available in Colombo for access to imported inputs in Galle, Matara and Hambantota districts.
5. EXPECTED EFFECTS	(1) Provincial industries less dependent on central government functions in Colombo; (2) Reduction of shipment costs for locally unloaded cargoes; and (3) Support for the decentralization of industry to provinces.
6. PROJECT COSTS	Negligible if existing Colombo-based staff is assigned.

7. IMPLEMENTATION SCHEDULE

8. PROJECT DESCRIPTION

The project will establish an office in each of the three districts which has the power to carry out all foreign trade-related functions of the central government ministries. This will include all new facilities (for licensing, finance and other support measures), as well as fully authorized offices of the Customs Department. The offices will also have the authority to act on behalf of other related agencies that may be required to monitor the performance of manufacturing enterprises for fulfillment of export and incentive-related commitments.

The present system of access to imported raw materials should also be simplified. All manufacturing enterprises will be given free access to imported raw materials provided that they can account for inputs thus acquired within a reasonable period. Such accounting would include both direct as well as indirect exports.

The Government may consider further incentives to provincial industries by giving them the right to sell a proportion of their output in the domestic market even when such production benefits from all export related privileges. An additional incentive would be inclusion of all office equipment and vehicles in the list of goods imported duty free.

A critical component of this project will be an expansion in the coverage and duration of the Advanced Technology Program being implemented by the Ministry of Industry. The present minimum size requirements of new investment should be reduced from Rs. 10 million to one million and for expansion projects from Rs. 2.5 million to 0.5 million. The eligibility should also be made automatic with the companies using this facility as a right and not a privilege granted by the Government. The reduced size requirement and the simpler procedural steps are expected to result in a large expansion in applications. Such an increase in the number of applicants should not create problems if this program, along with other government programs, is managed from the proposed one-stop service centers to be located in the regional centers.

Project No. TO-1

1. PROJECT TITLE	Galle Fortified City Conservation
2. LOCATION	Galle Fort and quarters inside the fort (approx. 40 ha)
3. IMPLEMENTING AGENCY	Department of Archaeology, Ministry of Cultural Affairs, Galle Municipality in cooperation with CTB
4. OBJECTIVES	(1) To conserve/rehabilitate the old fort of Galle and quarters which are important national cultural properties; (2) To educate people about the Country's history through exposure to a living open-air museum; (3) To attract more tourists by creating new tourism functions for further growth of tourism and its related industry; and (4) To improve living conditions in the area.
5. EXPECTED EFFECTS	(1) Increase of tourism revenue with increasing number of arrivals and tourists' expenditure; and (2) Educational effect to both domestic and foreign people through live experience.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	

8. PROJECT DESCRIPTION

The project will be composed of the following sub-projects:

(1) Designation of conservation area and buildings with several grades;
(2) Control of new development and physical changes in accordance with design guideline with consideration on tourism development;
(3) Laying power and telephone cables underground;
(4) Improvement of major streets and alleys;
(5) Façde conservation/restoration/beautification and cleaning;
(6) Designation of non-vehicle quarters, except dwellers'; and
(7) Promotion of tourism use of old buildings.

Project No. TO-2

1. PROJECT TITLE	Hambantota Hotel Construction
2. LOCATION	Hambantota Point
3. IMPLEMENTING AGENCY	Private sector, with CTB's support
4. OBJECTIVES	(1) To construct a major accommodation base for visitors to the southeastern areas of the island; and (2) To promote tourism's development in the area as a leading industry.
5. EXPECTED EFFECTS	(1) Supplying accommodation facilities to meet requirement for establishing the function as the gateway city to the southeastern tourism; (2) Leading hotel investment to the areas; (3) Offering employment opportunities to local people; and (4) Direct/indirect economic effect to tourism/tourism-related industries.
6. PROJECT COSTS	US$ 20 million
7. IMPLEMENTATION SCHEDULE	Second phase (up to 2005), starting operation with new Wirawila airport in service

8. PROJECT DESCRIPTION

The Project will have the following specifications:

(1) Three-star class hotel with 300 rooms on an approximately 2-ha site,
(2) With seafood barbecue house, and
(3) Annexed shopping arcade or art and handicraft center.

The hotel will meet the increasing number of tourists, and offer accommodations to tourists arriving at the Weerawila airport. The structure will be of high-rise symbolizing Hambantota tourism. Both sunrise and sunset can be observed from the site, which makes the site quite attractive. The hotel will be the place to accept trainees from hotel schools.

Project No. TO-3

1.	PROJECT TITLE	Hotel School
2.	LOCATION	Weligama or Matara
3.	IMPLEMENTING AGENCY	CTB
4.	OBJECTIVES	(1) To train young educated people to develop manpower in tourism industry to meet future requirement; (2) To expand women's opportunities to participate in tourism industry; and (3) To develop service skills in tourism to meet the requirement of international tourism.
5.	EXPECTED EFFECTS	(1) Enhancing opportunities of local manpower employment; and (2) Promotion of hotel industry investment with guarantee of providing sufficient manpower with enough skills.
6.	PROJECT COSTS	
7.	IMPLEMENTATION SCHEDULE	Urgent

8. PROJECT DESCRIPTION

At present CTB is operating hotel schools in Colombo, Kandy, Anuradhapura and Trincomalee, with a small branch in Weligama. The employment ratio of graduates is reported 100 %. Foreign tourist arrivals to Sri Lanka are estimated at 874,000 in 2015, to Southern Area 192,000 in 2001 and 345,000 in 2005. At parallel with this estimated growth, hotel investment is also growing. A total of 5,860 rooms will be available in 2001, increasing from 3,277 rooms in 1995. Given this growth projection, CTB is planning to up-grade the Weligama branch. The project will have the following favorable effects:

(1) Increase in local employment with vocational training of local people,
(2) Improvement of investment atmosphere with providing skilled manpower,
(3) Attracting tourists to Southern Area by providing high-level services,
(4) Reducing conflicts between locals and new tourism developments which create local employment, and
(5) Contributing to income redistribution and future investment.

Location of the school should be a town easily accessible from other local towns: Weligama or Matara. Establishment of a branch in Hambantota should be considered.

Project No. TO-4

1. PROJECT TITLE	Unawatuna Bay Resort Development
2. LOCATION	Unawatuna, Galle district
3. IMPLEMENTING AGENCY	Private sector
4. OBJECTIVES	(1) To up-grade the existing resort; (2) To meet future room requirement; and (3) To increase opportunities for local employment.
5. EXPECTED EFFECTS	(1) Attractive beach resort within easy access from Galle; and (2) Increase in local revenue with increased number of tourists and expenditure per tourist.
6. PROJECT COSTS	US$ 16 million
7. IMPLEMENTATION SCHEDULE	Phase I

8. PROJECT DESCRIPTION

The location is situated on a hill in Unawatuna overlooking the Galle city and its port. The plan has already been proposed in the CTB/UNDP Master Plan. Implementation of the project is subject to coordination with local people.

Project No. TO-5

1. PROJECT TITLE	Arugam Bay North / South Resort Development
2. LOCATION	Arugam Bay, Pottuvil
3. IMPLEMENTING AGENCY	Private sector with support of CTB
4. OBJECTIVES	Identified in the CTB/UNDP Master Plan
5. EXPECTED EFFECTS	
6. PROJECT COSTS	First stage: US$ 15.4 million
7. IMPLEMENTATION SCHEDULE	Phase I

8. PROJECT DESCRIPTION

Scale: Phase 1 Chalet hotel with 100 rooms

The project site is outside Southern Area. However, it can be expected that the project will favorably affect cluster D-2, Moneragala, Buttala and Wellawaya, and would be a base station for safari tourism, when the ongoing war situation comes to an end and tourist arrivals increase.

Project No. TO-6

1. PROJECT TITLE	Tissamaharama Archaeological Excavation with Gateway Facilities Complex
2. LOCATION	Tissamaharama and its environs
3. IMPLEMENTING AGENCY	Department of Archaeology, Ministry of Cultural Affairs, in cooperation with UDA, CTB, the local government and the private sector
4. OBJECTIVES	(1) To establish an airport hotel ready at the time when the new Weerawila airport comes into operation; and (2) To create a base for wildlife tourism in the Yala, Bundala and Uda Walawe National Parks.
5. EXPECTED EFFECTS	(1) Improvement of convenience for tourists and increase of the airport operation; and (2) Provision of core facilities to a new town relocating some of the existing town facilities due to archaeological excavation.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	

8. PROJECT DESCRIPTION

Charter flights from Colombo will be required, considering estimated 600,000 tourist arrivals to Southern Area in 2015. The proposed facility will offer accommodations to some of arriving/departing tourists for their convenience and time saving.

The complex will become an attractive urban center with cultural and commercial facilities for local residents when the Tissamaharama archaeological excavation starts in earnest and relocation of existing quarters is required.

The site is situated near the Bundala, Yala and Uda Walawe National Parks. Thus facilities will also serve as a base for wildlife-oriented tourists, offering accommodations, information and other safari-related services such as group tours, vehicle arrangement and guides.

Project No. TO-7

1. PROJECT TITLE	Marine Archaeological Museum
2. LOCATION	Galle or Hambantota
3. IMPLEMENTING AGENCY	Archaeological Department, Ministry of Cultural Affairs in cooperation with CCD, CTB, etc.
4. OBJECTIVES	(1) To exhibit materials concerning maritime history in the Indian Ocean and objects retrieved from wrecked ships; (2) To function as a center of underwater archaeological study in Sri Lanka; (3) To educate people about Sri Lanka's history as a maritime country; and (4) To offer a qualified cultural attraction to tourists.
5. EXPECTED EFFECTS	(1) To promote national identity through understanding the Country's history; (2) To contribute to establishing underwater archaeological study which is quite new in the Country; and (3) To promote tourism industry in the area through offering a high-quality tourist attraction.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	

8. PROJECT DESCRIPTION

In the past Galle was an important trading post, providing a convenient anchorage to trading ships plying between the East and the West through the Strait of Malacca. The sea route is sometimes referred to as the "Silk Road on the sea." To attest this past history, there reportedly exist many wrecked ships along the south coast of Sri Lanka.

The proposed Museum will serve as the core institution to carry out survey of those wrecks, retrieve some of their cargoes, and exhibit the objects. In addition to its scientific and educational benefits, it will also create tremendous value by becoming a new tourist attraction.

Project No. TO-8

1. PROJECT TITLE	Sinharaja Forest Visitor Center
2. LOCATION	Deniyaya, Matara district
3. IMPLEMENTING AGENCY	Ministry of Forestry in cooperation with CTB, DWLC, etc.
4. OBJECTIVES	(1) To provide visitors' information required to visit the Forest Reserve, e.g., natural history, the flora and rules and regulations to be observed in the forest; and (2) To control visitors' activities and to give advice as needed.
5. EXPECTED EFFECTS	(1) To educate visitors about the importance of natural conservation; (2) To promote tourism with sufficient facility and information; and (3) To protect the forest from inappropriate tourism use and development.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I

8. PROJECT DESCRIPTION

The Sinharaja forest is a precious natural resource, which is listed on "the World Heritage" of UNESCO. Contrast between black forest and man-made tea plantation rushing to mountains, and heavy rains and misty fogs offer a surprising and impressive landscape which cannot be seen in the West or the Far East.

A tourist stop facility on the top of a hill in Deniyaya will provide a convenient place to observe and enjoy magnificent landscape panorama and contribute to the diversification of tourist attraction.

In coordination with the Visitor Center which is proposed by UNDP, a promenade through the forest will be carefully designed and constructed for forest bathing walk. Walking through the forest will be a unique experience, reminding visitors of the importance of natural conservation. Sri Lankan visitors will become aware of their own precious natural heritage.

Project No. TO-9

1. PROJECT TITLE	Arts and Handicraft Center
2. LOCATION	Galle; Weligama or Matara; and Hambantota
3. IMPLEMENTING AGENCY	Ministry of Cultural Affairs in cooperation of local governments
4. OBJECTIVES	(1) To promote local handicraft industry; (2) To improve local technical skills; (3) To sell products as souvenirs; and (4) To organize local art performance groups capable of local folklore dances, music, drama, etc.
5. EXPECTED EFFECTS	(1) Increase in revenue from handicraft sales; (2) Handicraft quality improvement; (3) Revenue from exhibition of local folklore performances; and (4) Strengthening of local cultural identity.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I

8. PROJECT DESCRIPTION

Souvenir handicrafts in Southern Area have not attained high standards. To meet foreign tourist requirements, handicrafts of high quality should be produced such as lace works and curved masks. Showing the production processes of these handicrafts will make the items more memorable and impressive. The Arts and Handicraft Center will thus contribute to increasing sales by exhibiting time-honored production processes. At the same time, local folklore performance, dance, music, drama, etc., will add to attraction for tourists. This will also encourage local culture to revive and prosper. Production of such handicrafts as lace work will offer a valuable income opportunity for village women.

Project No. TO-10

1. PROJECT TITLE — National Oceanarium and Indian Ocean Institute

2. LOCATION — Galle

3. IMPLEMENTING AGENCY — Ministry of Fishery and Aquatic Resources Development in cooperation with Ministry of Cultural Affairs, CTB and CCD

4. OBJECTIVES
   (1) To exhibit marine lives and offer information about them and the Indian Ocean;
   (2) To educate visitors about the oceanic eco-system and its resources;
   (3) To enlighten visitors on the importance of ocean conservation; and
   (4) To establish an oceanic study institute and a cooperation network with other domestic and foreign institutes.

5. EXPECTED EFFECTS
   (1) Raising social awareness of fishery through better understanding of oceanology;
   (2) Educational effect on young students;
   (3) Exhibition of unique oceanic characters to foreigners; and
   (4) Multiplier effect to attract tourists by linking with other facilities like Galle old quarters and the Marine Archaeological Museum.

6. PROJECT COSTS

7. IMPLEMENTATION SCHEDULE

8. PROJECT DESCRIPTION

Sri Lanka at present has no large-scale aquarium. The project is proposed to fill this vacancy. It will be a good place for young pupils to learn about the ocean. Their visits will help them understand the necessity of environmental conservation and raise their awareness of the importance of fisheries as a potential production activity. For foreign tourists, the oceanarium will offer a big attraction, exhibiting unique marine lives found in the Indian Ocean. The oceanarium will be composed of a series of aqua cases, but an underwater promenade of glass or acrylic tubes can also be considered.

The Indian Ocean Institute will be one of the oceanic study centers in the Country which develops its study in cooperation with other institutes both domestic and overseas.

Project No. TO-11

1. PROJECT TITLE — Walawe Spa Resort Development

2. LOCATION

3. IMPLEMENTING AGENCY — Private sector in cooperation with CTB

4. OBJECTIVES
   (1) To offer a site and facilities for people's health, welfare and recreation; and
   (2) To appeal an existence of healing spa on the Island, and its effects.

5. EXPECTED EFFECTS
   (1) Diversification of the nation's activities on health and welfare;
   (2) Adding an attraction for foreign tourists as an element of "the Land of Diversity, Southern Ceylon"; and
   (3) Channeling tourism revenue to local residents with reasonable participation.

6. PROJECT COSTS

7. IMPLEMENTATION SCHEDULE

8. PROJECT DESCRIPTION

Healing effects in bathing in spas is recognized worldwide. Based on detailed surveys, the spas may become one flag-ship attraction for both domestic and foreign tourists. Recommended facilities and activities are as follows:

- Bathing and healing rooms of at least 250 m^2 with one hall and six individual rooms,
- Accommodation facility with 50 rooms,
- Swimming pool,
- Well maintained garden,
- Attractive vegetation, and
- Promotion at nearby tourist destinations.

Project No. TO-12

1. PROJECT TITLE	Bird Research Institute
2. LOCATION	Bundala National Park, Hambantota district
3. IMPLEMENTING AGENCY	DWLC in cooperation with CTB and CCD
4. OBJECTIVES	(1) To establish a research institute on migrant birds, as a center of wildlife study in the Country; (2) To control and guide development for educational and tourism use; and (3) To attract tourists interested in birds' ecology.
5. EXPECTED EFFECTS	(1) Diversification of tourist attractions; and (2) Promotion of marketing of bird-watch tours.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	

8. PROJECT DESCRIPTION

Sri Lanka is an attractive country for bird lovers with a wide variety of migrant and domestic birds. The institute will be an information center on birds and their ecology, in cooperation with other institutes and societies in and outside Sri Lanka. In the Bundala National Park, circuit routes, bird hides and huts with information panels and signs will be carefully prepared.

In cooperation with CTB's promotion activities, bird watch tour will become an attractive tour programme, and build up a favorable image of Sri Lankan tourism. Also special programs will be provided to train guides.

Project No. TO-13

1. PROJECT TITLE	Tourism Promotion Program
2. LOCATION	
3. IMPLEMENTING AGENCY	Ministry of Media, Tourism and Aviation, CTB and related agencies
4. OBJECTIVES	(1) To raise popular awareness of tourism; (2) To improve service skills; and (3) To gather detailed and accurate data on foreign tourists.
5. EXPECTED EFFECTS	(1) Unbiased popular view of the tourism industry and their correct understanding of its economic benefits; (2) High-standard services and tourist satisfaction; and (3) More effective promotional activities based on detailed information on foreign visitors.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	To be implemented immediately

8. PROJECT DESCRIPTION

Tourism promotion is an important activity for the Ministry of Media, Tourism and Aviation, CTB and other related agencies to continue and improve. In their programs, emphasis should also be placed on so-called soft factors: hospitality, high-quality services, and activities to expedite the implementation of the proposed projects. This program consists of three subprograms.

(1) Exit survey: Monthly survey of foreign tourists leaving from the Colombo International Airport about their itinerary in Sri Lanka and their detailed attributes. Frequency should be twice a month during the tourist season. Collected information will be used to devise effective promotional activities.

(2) Activities to enhance popular awareness of tourism: School teachers and local NGOs are two main target groups of this subprogram. Separate programs will be arranged for the two groups. "Tourism Awareness and Training Program for School Teachers" will target students at teachers' colleges and school teachers. "Tourism Awareness Raising Program for NGOs" will foster unbiased views among local NGO people and community leaders.

(3) Improving service techniques: Experts on service techniques are called in from overseas to train CTB instructors. The instructors are then dispatched to hotels and tourism facilities to provide on-the-job training to their staff workers.

Project No. TO-14

1. PROJECT TITLE	Internet Tourism Information Center
2. LOCATION	Colombo/Galle or Matara
3. IMPLEMENTING AGENCY	Ceylon Tourism Board/Southern Area Development Authority
4. OBJECTIVES	(1) To establish national tourism information center on the Internet as a web server; (2) To provide credible tourism information including attractive sites, tourism attractions, transportation, accommodation, local tours through the Internet; (3) To establish tourism data base linked with the Web server and accumulate tourism information in well organized and accessible manner; (4) To control quality of tourism operators and accommodation providers' performance by organizing them through data base registration.
5. EXPECTED EFFECTS	Better dissemination of tourism information worldwide as well as inside the country.
6. PROJECT COSTS	US$2 million dollars
7. IMPLEMENTATION SCHEDULE	To start immediately

8. PROJECT DESCRIPTION

Provision and dissemination of correct and necessary tourism information toward abroad as well as inside the Country are imperative for promotion of Sri Lanka's tourism. This issue has been a subject for the tourism sector. Providing required tourism information to anybody who wishes it in a quick manner is a desirable measure to be taken by the government and/or semi-government sector.

Emerging Internet is a proper means for provision and dissemination of tourism information worldwide as well as inside the Country. On the Internet, required data are available through web server connected to its own data base or by linking to the other web servers.

Since recently web servers have been proliferated in chaotic manner, retrieval of necessary information is becoming time consuming and difficult. In this circumstance, establishment of web server by reliable organization means emergence of a credible and easy to access reference center in the Internet.

This project establishes a national tourism information web server which would provide Sri Lanka's general information and information regarding its tourism attractions, accessibility, accommodation, and local tours. It is preferable that reservation of accommodation and local tours can be made through the server.

Registered accommodation and tour operators are able to place their data in the connected data base and linkage between their own home pages. Data include quality, price, size, schedule, availability, etc. Data placement is to be executed through Internet

communication or through computers which are connected by Internet placed in CTB. CTB has responsibility for all the information provided by the web server and endorses the registered operators' quality.

Project No. SE-1

1. PROJECT TITLE	Producers' *Pola* Improvement
2. LOCATION	Selected producers' *pola* (provisionally, Akuressa, Morawaka, Urubokka, Hakmana, Wiraketiya, Middeniya, Barawakumbuka, Pannegamuwa, Moneragala)
3. IMPLEMENTING AGENCY	Provincial Council (Southern province, Uva province)
4. OBJECTIVES	(1) To bring producers' *pola* under government ownership and management, by ceasing the tender-out system currently practiced in most cases; and (2) To provide basic amenities and better access by improving physical facilities at and around *pola* .
5. EXPECTED EFFECTS	(1) Increased volume of traded produce by attracting more sellers and buyers; (2) More competitive market transactions; (3) Increase in smallholders' income; and (4) Transparent rent/fee schedule of *pola*.
6. PROJECT COSTS	Rs. 100 million
7. IMPLEMENTATION SCHEDULE	One year for study, design and preparation Two years for 2-phase construction

8. PROJECT DESCRIPTION

Each major urban and rural town has at least one *pola*. Most of them are consumers' *pola*; some in vegetable and fruit producing areas also serve as producers' *pola*. Usually, local government owns the land but right to hold fairs and collect rent is tendered out to an individual on an annual basis.

Problems associated with *pola* are two: its particular system of ownership and management does not conduce to the market's proper functioning and maintenance; and its physical conditions are invariably poor. From the regional development points of view, priority should be given to producers' *pola* because it provides small-scale farmers with a vital market access to earn income. Current poor conditions, however, are quite detrimental both to sellers and buyers, thus restricting their attendance and often lowering the prices farmers get.

Under this project, *pola* should first be brought under respective municipalities' ownership and management. Up-grading and maintenance of the market place becomes a clear responsibility of them. Physical facilities to be provided or improved include: 1) access roads (within catchment areas); 2) parking lots; 3) ground pavement; 4) permanent sheds; 5) water outlets; 6) drainage; 7) toilets; 8) pay phones; 9) office (municipality officer, mobile bank).

Project No. SE-2

1. PROJECT TITLE	Venture Capital Company for Southern Enterprises
2. LOCATION	Head office in Galle
3. IMPLEMENTING AGENCY	Southern Development Authority in conjunction with interested private concerns
4. OBJECTIVES	(1) To provide entrepreneurs with a medium- to long-term equity finance to expand or set up businesses in Southern Area; and (2) To assist the investee companies with management and technical support.
5. EXPECTED EFFECTS	(1) Expansion of private sector production and services; and (2) Employment creation.
6. PROJECT COSTS	Rs. 500 million (equity) US$ 150,000 (feasibility study) US$ 500,000 (training)
7. IMPLEMENTATION SCHEDULE	Phase 1 Feasibility study Phase 2 Operation with technical assistance Phase 3 Full operation

8. PROJECT DESCRIPTION

Prospective investors in Southern Area face difficulties to finance projects: commercial banks generally do not provide long-term credits; national long-term credit institutions on the other hand concentrate their operations in the Colombo metropolitan areas.

A venture capital company (VCC) is thus proposed to provide medium- to long-term equity finance exclusively to investors, and infant projects with high risks in particular, in Southern Area. Generally, the VCC holds 20 to 49% stake of an investee company in the form of ordinary shares. The holding period is typically 5 to 10 years, but can be extended longer (possibly up to 20 years) as necessary. As a stake-holder of the investee company, the VCC also participates in its management assisting with technical as well as managerial support services. The VCC will exit from the venture at an appropriate time, off-loading its shares in the market for capital gain and to recycle the fund.

A feasibility study must be carried out to establish the VCC's viability. It has to probe into, among others things, the potential pool of clientele, its needs, and the practicability of the exit mechanism. Since such a business area is still new in Sri Lanka, shortage in expertise needed to launch and manage the VCC is clearly foreseen. A package of technical assistance should be included as a project component: 1) expert dispatch (organization and operation, appraisal technique, support services, monitoring); and 2) overseas training in appropriate institutions.

Project No. SE-3

1. PROJECT TITLE	Research on Introduction of Corrugated Paper Boxes for Agricultural Packaging
2. LOCATION	Nationwide (with emphasis on Southern Area)
3. IMPLEMENTING AGENCY	National Packaging Center (NPC) in conjunction with Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI)
4. OBJECTIVES	(1) To identify obstacles which prevent the usage of corrugated paper boxes in packaging agricultural produce; (2) To clarify socio-economic implications of the corrugated boxes' introduction; and (3) To appraise economic and financial feasibility of the introduction.
5. EXPECTED EFFECTS	(1) Informed and effective policy formulation to facilitate the introduction of corrugated paper boxes in the medium to long run; and (2) Ultimately, reduced wastage of agricultural produce during transportation.
6. PROJECT COSTS	Rs. 4 million
7. IMPLEMENTATION SCHEDULE	Two years

8. PROJECT DESCRIPTION

At present, gunny bags and wooden crates are the packaging means most commonly used in Sri Lanka for agricultural produce. Partly because of this, a considerable portion of produce is routinely damaged and lost during transportation. To solve this problem, plastic crates were introduced some time ago but failed to replace gunny bags and wooden crates. This was so because lorries refused to transport the crates back to the starting point without being paid the fare comparable to that of the same volume of load. It has since been suggested to subsidize the use of plastic crates or to introduce collapsible crates.

Perhaps more appropriate in the long run would be the use of corrugated fiberboard boxes. Corrugated boxes of high quality are sufficiently smash proof, lighter than plastic, collapsible, and can be reused several times. One drawback, however, is that they are susceptible to moisture. Currently, several companies domestically manufacture corrugated paper boxes using imported materials. One brown box of the size and make typically used for produce costs Rs. 40-50. However, various considerations appear to prevent the usage of the boxes in spite of their ready availability and apparent advantages. Although it would be premature in Sri Lanka to switch right now to this packaging method, there is no doubt that it should eventually be adopted nationwide as economy develops.

This research is a pre-feasibility study on the introduction of the corrugated paper boxes for the packaging of agricultural produce. Extensive field surveys are to be carried out to identify 1) the extent of wastage due to poor packaging and rude handling, 2) the reasons why producers, traders and transporters do not use corrugated paper boxes, and 3) possible socio-economic implications the introduction of the boxes might have on the distribution systems. Based on the findings, a financial and an economic evaluation shall be conducted.

Project No. WS-1

1. PROJECT TITLE	Weli Oya Diversion
2. LOCATION	Tributary of Walawe Ganga
3. IMPLEMENTING AGENCY	Irrigation Department
4. OBJECTIVES	To augment irrigation water supplies to the upper catchment of the Mau Ara
5. EXPECTED EFFECTS	Provide additional water to existing tank schemes and allow restoration of ancient abandoned schemes
6. PROJECT COSTS	Rs. 350 million (current scheme)

7. IMPLEMENTATION SCHEDULE

8. PROJECT DESCRIPTION

The Weli Oya diversion would comprise the construction of an anicut across Weli Oya below the confluence of Weli Oya with Kalkan Oya and a 15 km canal. The original scheme envisaged diverting 21 million m^3 annually from the Walawe catchment to supply existing tanks in the upper Mau Ara catchment.

A major enhancement to the scheme would be to extend the diversion canal to the Malala Oya basin and construct a short link tunnel through to Kuda Oya to supply the Kirindi Oya basin. Additional water could then be diverted to Weli Oya anicut by re-routing the Uma Oya diversion via Haputale instead of Ella as currently planned.

A full feasibility study would need to be carried out in conjunction with Uma Oya to evaluate this proposal.

Project No. WS-2

1. PROJECT TITLE	Mau Ara Diversion
2. LOCATION	Uda Walawe National Park
3. IMPLEMENTING AGENCY	Irrigation Department
4. OBJECTIVES	To divert about 40 million m^3 from Mau Ara to Malala Oya basin
5. EXPECTED EFFECTS	Alleviate water shortages in Malala Oya Basin
6. PROJECT COSTS	Rs. 600 million
7. IMPLEMENTATION SCHEDULE	Feasibility study currently underway

8. PROJECT DESCRIPTION

The Mau Ara diversion would involve the restoration of an ancient tank within the Walawe Wildlife Reserve on the Mau Ara, one of the tributaries of the Walawe Ganga. The purpose of the diversion would be to relieve existing water shortages in the Malala Oya basin. According to the water balance study, the proposed diversion would not adversely affect existing downstream irrigation schemes in the Walawe basin.

Implementation of this project would require re-classification of part of the Walawe Wildlife reserve which may not be possible. An alternative to this scheme would be extension of the Weli Oya diversion project.

Project No. WS-3

1. PROJECT TITLE	Menik Ganga Diversion
2. LOCATION	Menik Ganga above Kataragama
3. IMPLEMENTING AGENCY	Irrigation Department
4. OBJECTIVES	Diversion of 95 million m^3 form Menik Ganga to Lunugamwehera reservoir
5. EXPECTED EFFECTS	Alleviate water shortages in Lunugamwehera reservoir
6. PROJECT COSTS	Rs. 350 million

7. IMPLEMENTATION SCHEDULE

8. PROJECT DESCRIPTION

This scheme would involve the construction of a diversion weir on the Menik Ganga to the east of Kirindi Oya with a anal to convey water to Lunugamwehera reservoir. The weir would be able to provide a mean annual diversion of 95 Mm^3/yr to the Kirindi Oya basin.

However the hydrology of the Menik Ganga is such that principal diversions would only occur at times when Kirindi Oya was also experiencing high flows and it would not be able to make diversions during the critical months from June to September when inflows to Lunugamwehera are low. The consequence of this is that only part of the diverted flow would be usable. A reservoir operation study of Lunugamwehera reservoir with Menik Ganga diversion has shown that of the 95 Mm^3 diverted only 55 Mm^3 could be stored in the reservoir with the rest being spilled. Hence the Menik Ganga diversion cannot, by itself, solve the water shortage problem of Kirindi Oya.

The diversion canal would also cut right through the proposed Lunugamwehera wildlife reserve and across an elephant corridor. If the diversion were to be built, it would preclude any further in-basin development along the Menik Ganga.

Project No. WS-4

1. PROJECT TITLE	Menik Ganga-Kumbukkan Oya Integrated River Basin Development
2. LOCATION	Menik Ganga and Kumbukkan Oya river basins
3. IMPLEMENTING AGENCIES	SDA, ID
4. OBJECTIVES	To optimize the use of water and land resources in the SEDZ by balancing water endocuments and land potentials; and To stabilize settlements in the SEDZ at a sustainable level.
5. EXPECTED EFFECTS	Environmentally sound and sustainable development in the SEDZ with minimal man-animal conflicts
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Master plan study in Phase I

8. PROJECT DESCRIPTION

According to the water balance analysis conducted as part of the Southern Area development master planning, Menik Ganga and Kumbukkan Oya have surplus water that can be developed. Also these river basins have 10,600 ha of prime lowland that may be developed for irrigated agriculture. The Menik Ganga water may be diverted at an early stage to alleviate the existing water shortage in the Kirindi Oya basin. For optimum use of the remaining resources, water demands should be analyzed for the two basins together.

A master plan study should be conducted in Phase I. The study should be conducted in Phase I. The study should address all the inter-related issues including alternative production systems for irrigated agriculture suited to the SEDZ, alternative irrigation technologies and management, and man-animal conflicts.

Project No. WS-5

1. PROJECT TITLE	Aparekka Reservoir Development
2. LOCATION	Nilwala Ganga basin
3. IMPLEMENTING AGENCIES	ID, SDA
4. OBJECTIVES	To provide supplementary irrigation water to existing irrigation system in the Nilwala basin.
5. EXPECTED EFFECTS	Increased paddy production and enhanced and stabilized farmers' income
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	F/S and initial implementation in Phase I

8. PROJECT DESCRIPTION

The project envisages the construction of a 25 m high dam across Aparekka Ara in the Nilwala basin to provide supplemental irrigation water to lands presently fed by anicuts and a system of canals constructed under the Nilwala Flood Protection Project. The command area of the reservoir is protected from flood damages by the Stage II of the Nilwala Project. At present, 400 ha of land is cultivated in Maha and only 125 ha in Yala.

Project No. WS-6

1. PROJECT TITLE	Greater Galle Water Supply Improvement
2. LOCATION	Galle city and its urbanizing hinterland
3. IMPLEMENTATION AGENCIES	National Water Supply and Drainage Board
4. OBJECTIVE	To expand the water supply for the Greater Galle area to meet growing demand due to rapid urbanization, and To improve quality of water and service delivery for both residents in and visitors to the area.
5. EXPECTED EFFECTS	More reliable supply of better quality water for industries and tourism as well as residents
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Study on improvement of reticulation system in Phase I followed by its implementation; expansion of supply sources in Phase II; continuous improvement through Phase II.

8. PROJECT DESCRIPTION

The water supply capacity for the Greater Galle area needs to be expanded to meet the growing demand due to rapid urbanization. The urban population in the area is expected to increase from 100,000 in 1995 to over 250,000 in 2015 at the average annual rate of about 5%. The per capita consumption will also increase significantly from the current level of 160 l/day. Also, in view of diversifying functions of Galle as a regional center and an international city, the water supply quality needs to be improved over the planning period.

To meet these requirements, the following actions should be taken in steps;
(1) Improvement of the water reticulation system in the Galle city,
(2) Expansion of water supply sources for the Greater Galle area,
(3) Expansion of related treatment and transmission facilities, and
(4) Installation of treatment facilities to improve the water quality.

The existing water supply system for Galle has a high water loss ratio close to 50% of the supply. This is due to continuos use of old distribution pipes without maintenance and repair. Defective distribution pipes should be replaced as a top priority.

Detailed design for major expansion of water supply sources and related facilities may proceed in parallel with this reticulation improvement. Specifications should be in line with the expected improvement in the loss ratio as well as the expected increase in urban population based on functional rather than administrative definition.

The quality of water as well as service delivery should be improved in steps. The high chloride content due to sea water intrusion needs to be controlled. The water from Gin Ganga also contains a high levels of iron, and the most appropriate method to remove it can be identified to suit local conditions.

Project No. WS-7

1. PROJECT TITLE	Matara Water Supply Improvement
2. LOCATION	Areas covered by Existing water supply schemes in Matara
3. IMPLEMENTATION AGENCIES	National Water Supply and Drainage Board
4. OBJECTIVE	To improve the water supply capacity and quality of existing schemes in Matara; and To expand the service coverage of these water supply schemes.
5. EXPECTED EFFECTS	Improved and broadened water supply to support various socio-economic activities
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	F/S covering all the existing schemes in Phase I; prioritized implementation during Phase II.

8. PROJECT DESCRIPTION

The existing water supply schemes in Matara face various problems. Those taking water from Nilwala Ganga suffer from salt water intrusion. Some others relying on streams and springs face limited supply capacity. High iron contents are observed in some water sources both surface water and tubewells.

To improve the water supply for urban centers in Matara under financial constraints, prioritization is necessary. A comprehensive feasibility study will be carried out covering all the major water supply schemes in Matara. It will cover Matara, Devinuwara, Gandara, Dikwella, Kottegoda, Urubokka, Weligama, Akuressa, Hakmana, Kamburupitiya and Morawaka. Improvement plans will be formulated including capacity expansion, reticulation improvement and treatment to remove chorine and iron contents. Alternative water sources will be identified for those schemes with limited supply capacity. Implementation will be prioritized based on urgency of problems, costs, growth prospects and expected functions of different urban centers clarified by the Southern Area Master Plan.

Project No. WS-8

1. PROJECT TITLE	Hambantota Water Supply Improvement
2. LOCATION	Hambantota, Ambalantota, Tangalle, Tissa-Debarawewa, Kudawella, Ranna, Hungama, Beliatta, Bandagiriya, Ridiyagama, Kirama, Katuwana and Walasmulla
3. IMPLEMENTATION AGENCIES	National Water Supply and Drainage Board
4. OBJECTIVE	To improve the water supply capacity and quality of existing schemes in Hambantota, and To expand the service coverage of these water supply schemes.
5. EXPECTED EFFECTS	Improved and broadened water supply to support various socio-economic activities
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	F/S and implementation of priority schemes in Phase I, further implementation through Phase II-III

8. PROJECT DESCRIPTION

Most of the existing water supply schemes in Hambantota face limited supply capacity. Supply expansion is planned for some, but development of new water sources is almost always costly. Improvement in water supply capacity and quality for different schemes needs to be prioritized.

A comprehensive feasibility study will be carried out to identify new water sources for different schemes and to formulate improvement plans. Quality of source water is another important consideration. Groundwater in Hambantota suffers from high contents of iron and fluoride in some areas. Along the coast, salinity is common. Some surface water suffers from high turbidity as well as saline intrusion. These conditions affect treatment costs and thus the prioritization.

Project No. WS-9

1. PROJECT TITLE	Water Supply to Lunugamwehera Villages
2. LOCATION	Hambantota
3. IMPLEMENTATION AGENCIES	National Water Supply and Drainage Board
4. OBJECTIVE	To expand water supply to villages closely located to the Kirindi Oya Irrigation and settlement Project (KOISP).
5. EXPECTED EFFECTS	Expanded water supply to support the growing population
6. PROJECT COSTS	US$ 1.5 million
7. IMPLEMENTATION SCHEDULE	Phase I

8. PROJECT DESCRIPTION

The project will supply water to villages of Mattala, Ranawaranewa, Bogahapelessa and Padawkema which are located in close proximity of the KOISP area.

Project No. WS-10

1. PROJECT TITLE	Improvement of Beliatta Water Supply
2. LOCATION	Beliatta, Hambantota district
3. IMPLEMENTATION AGENCIES	National Water Supply and Drainage Board
4. OBJECTIVE	To improve the existing water supply system to Beliatta
5. EXPECTED EFFECTS	Increased service coverage of population from 7,500 at present to 13,000 expected by 2017.
6. PROJECT COSTS	US$ 1.0 million
7. IMPLEMENTATION SCHEDULE	Phase I

8. PROJECT DESCRIPTION

The existing water supply scheme for Beliatta town, which was commissioned in 1960 and augmented in 1983, is presently serving a population of about 5,000 for 12 hours a day. The present production capacity is 1,030 m^3/day. Since reliable surface resources are not available in the area, three deep bore holes have been constructed by NWSDB for an additional yield of 870 m^3/day.

The proposed project area includes the existing service area and its surroundings. The water demand is expected to increase to 3,250 m^3/day by 2017 with projected population of 13,000.

Project No. WS-11

1. PROJECT TITLE	Walasmulla-Weeraketiya Water Supply
2. LOCATION	Western part of Hambantota district
3. IMPLEMENTATION AGENCIES	National Water Supply and Drainage Board
4. OBJECTIVE	To expand the existing water supply systems to solve current water shortages
5. EXPECTED EFFECTS	Induce local economies supported by more reliable water supply
6. PROJECT COSTS	US$ 14 million
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

The existing water supply system for Weeraketiya extracts water from Udukiriwelawewa to supply only for two hours a day. The existing scheme for Walasmulla uses the Kirama Oya water to supply for 10 hours/day. These schemes will be augmented to provide a 24 hours per day water supply. The service area will be expanded to Muruthawela, Julampitiya, Madamulana, Galahitiyawa and Mulkirigala.

Project No. WS-12

1. PROJECT TITLE	Kirinda Water Supply
2. LOCATION	Kirinda, Hambantota district
3. IMPLEMENTATION AGENCIES	National Water Supply and Drainage Board
4. OBJECTIVE	To expand the existing distribution system to cover additional areas in Kirinda town and surrounding areas
5. EXPECTED EFFECTS	Reliable water supply to support local economies
6. PROJECT COSTS	US$ 2 million
7. IMPLEMENTATION SCHEDULE	Phase I

8. PROJECT DESCRIPTION

The existing scheme, commissioned in 1983, supplies at present 600 m^3/day. As reliable surface water sources are not available, NWSDB has constructed a bore hole to yield 600 m^3/day.

Project No. WS-13

1. PROJECT TITLE	Gate Dams for Prevention of Salinity Intrusion to Rivers
2. LOCATION	Gin Ganga and Nilwala Ganga
3. IMPLEMENTING AGENCIES	Ministry of Irrigation and National Water Supply and Drainage Board
4. OBJECTIVES	(1) To protect the existing giant sources of water to the two districts Galle and Matara, from saline intrusion from sea. (2) To prevent excessive salt deposits in ground causing the crop soils unproductive.
5. EXPECTED EFFECTS	(1) More suitable quality in water within the source itself. (2) Reduced treatment complications. (3) Protection to the arable land surrounding the river due to salt deposits in the crop soil and underground.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	F/S and implementation of priority schemes in Phase I. Further implenientation through Phase II-III

8. PROJECT DESCRIPTION

The largest threat to the waters of main rivers covering the supply to most of the large cities and suburbs in Galle and Matara district is the salinity intrusion from the sea. Depending on fluctuation of the flows, the salinity wedge movement in these rivers vary from 15 to 25 km upwards from the river mouth. As a local measure to avoid high salinity conditions, the intakes for water supply schemes are presently located at distant sites from the supply area than required resulting in excessive transmission costs.

Following the phenomenon that prevention is better than cure, construction of gate dams to the two rivers is suggested as an economical measure to overcome the salinity problem in consumptive water to a great extend.

With the increase of the intake of river water year by year for various utilization purposes the wedge of salinity can be shifting to further up and make the conditions more and more complex, if the preventive measures are not provided. The salt condition developing extensively in the crop soils under the above conditions due to permeation of brackish water into the surfaces and deeper zones of the ground directly or through irrigation.

Project No. WS-14

1. PROJECT TITLE	Treatment Facilities for High Fluoride and Iron Contents in Water
2. LOCATION	Galle and Hambantota
3. IMPLEMENTATION AGENCIES	National Water Supply and Drainage Board
4. OBJECTIVE	To identify most effective and efficient methods for removal of high fluoride and iron contents in water; and To contribute to better health conditions.
5. EXPECTED EFFECTS	Better health conditions with improved quality of drinking water
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Study and analysis in Phase I; implementation in Phase II will start with pilot facilities for priority water supply schemes

8. PROJECT DESCRIPTION

High contents of fluoride and iron constitute characteristic problems in water supply in Southern Area. These problems need to be addressed separately, in parallel with feasibility studies for water supply improvement.

Deep aquifers of the eastern part of Hambantota show high levels of fluoride, which affect existing and possible future water supply schemes. The Pitigala water supply scheme in Galle fed by borehole suffers also from high fluoride contents. High iron contents in source water are common for several water supply schemes in Galle and Hambantota. The Pitigala scheme suffers also from this problem together with the Hikkaduwa, Balapitiya and Ambalangoda schemes in Galle relying on Gin Ganga. In Hambantota, nine existing schemes face high iron contents, consisting of six schemes fed by rivers and three relying on tube wells.

High fluoride contents can be removed by passing water through bone char filters. Cost of this treatment system is comparatively low. Treatment methods for high iron contents can be identified for different local conditions.

Project No. WS-15

1. PROJECT TITLE	Setting Up Rain Water Collector Tanks for Schools, Hospitals and Houses
2. LOCATION	High water short areas such as Kudawella, Lunugamwehera, Beliatta, etc. in Hambantota district and other dry zone areas
3. IMPLEMENTING AGENCIES	Ministry of Housing and Construction
4. OBJECTIVES	To ease the acute problems due to very high shortage of water resources, in the dry zone, by introduction of economical means for collecting and storing rain water during wet periods to utilize during the dry periods.
5. EXPECTED EFFECTS	The facility will play a role of an independent limited, source of water to each unit which it serves, at least to fulfill the essential needs during the dry periods of the year. The convenience that the people receive by the facility will realize by saving time spent for hunting of water during the drought to a very fair extent. The facility will help to maintain the basic hygienic requirements of the people in areas with less common facilities.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	F/S in Phase I, D/D and pilot installation in Phase II

8. PROJECT DESCRIPTION

The project is proposed firstly to locations or areas where the water resources are naturally scarce and the supply schemes are not feasible or viable depending on the costs and the affordability by the public at present.

Secondly the facility proposed by the project may act as a permanent means to supplement the supply from other sources with limitations or at high costs.

The facility will consist a covered and protected storage tank elevated on ground simple conveyance arrangement to direct the rain water on roof through an eaves-gutter and a suitable type outlet, or delivery arrangement.

The capacity of a collector tank for a dueling with $30m^2$ roof area is recommended to be $15m^3$, based on the assumption; 20mm/day rainfall over 25 days during the year. This storage capacity is assumed to be suffice for a period of 100 day during the dry period for a house with five members, at a consumption rate of 30 liter/day capita. The collector tank capacity for public institutions such as schools etc. can be decided separately.

Project No. WS-16

1.	PROJECT TITLE	Piped Sewerage System with Treatment and Disposal Facilities for Moneragala
2.	LOCATION	Moneragala town
3.	IMPLEMENTING AGENCY	NWSDB
4.	OBJECTIVES	To establish a complete sewage disposal system to protect the environment; and To improve community sanitation.
5.	EXPECTED RESULTS	Improved sanitary conditions and protected groundwater
6.	PROJECT COST	
7.	IMPLEMENTATION SCHEDULE	F/S in Phase 1

8. PROJECT DESCRIPTION

The Moneragala town area has limited water sources of good quality, and the current water supply is predominantly through bore holes. Protection of ground water is of utmost importance. The Project will establish a complete sewage disposal system for Moneragala. The system will consist of piped sewers, treatment facilities and disposal/application system for treated wastewater. A feasibility study will be carried out first, and the implementation will be in stages.

Project No. WS-17

1.	PROJECT TITLE	Piped Sewerage Systems for Major Coastal Urban Centers
2.	LOCATION	Galle, Ambalangoda, Matara, Hambantota towns
3.	IMPLEMENTATION AGENCY	NWSDB
4.	OBJECTIVES	To improve community sanitation; and To protect surface water and groundwater from sewage related pollution
5.	EXPECTED EFFECTS	Improved sanitary conditions. Enhanced potential for tourism in coastal resort areas
6.	PROJECT COST	
7.	IMPLEMENTATION SCHEDULE	F/S of all systems and D/D for a priority scheme in Phase I

8. PROJECT DESCRIPTION

At present, sewage from urban areas is disposed to the ocean without treatment, typically at some 2 km offshore. As the urban population increases in major urban centers, this will become a serious threat to tourism, fishery and other activities. Provision of sewage treatment facilities, however, is an expensive option.

The Project will install piped sewerage systems for the towns of Galle, Ambalangoda, Matara and Hambantota for better disposal of sewage into the ocean. The system consists of piped sewers, screening and pumping system, and offshore disposal drains. A feasibility study will be conducted for all the four towns, and implementation will be in stages according to the priority to be established through the F/S.

Project No. WS-18

1.	PROJECT TITLE	Innovative Sewerage Systems Pilot Installation
2.	LOCATION	Ambalangoda, Tangalle and Kirinda
3.	IMPLEMENTING AGENCY	NWSDB
4.	OBJECTIVES	To install innovative sewerage systems utilizing recycled sewage and sea water
5.	EXPECTED EFFECTS	Demonstration of the innovative systems for wider application
6.	PROJECT COST	
7.	IMPLEMENTATION SCHEDULE	F/S in Phase I, D/D and pilot installation in Phase II

8. PROJECT DESCRIPTION

For the dual purposes of saving costly water to be developed newly and for protecting the environment, innovative sewerage systems will be installed in a pilot scale to safeguard important future options. One is to recycle treated sewage, and the other is to use sea water to flush water sealed toilets and for other purposes.

The recycling system will be experimented in a medium size town in the coastal resort area, and Ambalangoda may be selected. The sea water utilization system will be installed in a coastal town in the water short area, and Tangalle and Kirinda are candidates.

The recycling system consists of piped sewers, treatment and purification plant (oxidation pond), recycling system and effluence storage. The sea water utilization system consists of supply and delivery system of sea water, sewerage piping system, screening facilities and return pumping system to the offshore.

Project No. WS-19

1. PROJECT TITLE	Accumulated Sludge Treatment
2. LOCATION	Coastal and other major urban centers. Galle, Matara, Hambantota, Moneragala and Embilipitiya are priority candidates
3. IMPLEMENTING AGENCIES	National Water Supply and Drainage Board
4. OBJECTIVES	To keep the septic tanks active in decomposition of solid waste and maintain effluent water quality
5. EXPECTED EFFECTS	(1) Improved sanitation, and; (2) Reduce social costs associated with water borne decreases
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	F/S and implementation of priority schemes in Phase I. Further implementation through Phase II.

8. PROJECT DESCRIPTION

As an important step in the environmental and sanitation improvement programmes a water sealed toilet by every house hold has been proposed. In the purpose of a septic tank, one of most important aspects, is to maintain the effluent water quality at hygienically satisfactory levels. Low quality effluent water from septic tanks can result in water water-borne and parasitic diseases. Hence it is very important to maintain the septic tank active in decomposition of sludge.

Removal of sludge from septic tanks at regular intervals (3-4 years) and the central treatment are the two major facilities of the project.

The process will involve settling sludge, dehydrate by filter or centrifuge followed with drying in sand bed and reclamation or burning; and the treatment for effluent by aerated lagoon method (detention time 7 to 10 days).

Project No. WS-20

1. PROJECT TITLE	Groundwater Development in SEDZ
2. LOCATION	Hambantota, Moneragala, and Ampara districts
3. IMPLEMENTING AGENCIES	Water Resources Board (WRB)
4. OBJECTIVES	(1) To prepare hydrogeological maps which show potential area for groundwater development in SEDZ, (2) To develop groundwater for settlers in rainfed agriculture areas.
5. EXPECTED EFFECTS	(1) Improved living standard of settlers with clean domestic water supply, (2) Acceleration of rainfed agriculture development, (3) Reduced heavy burden in drawing water, particularly for women and children.
6. PROJECT COSTS	Rs. 160 million for survey
7. IMPLEMENTATION SCHEDULE	Phase I; identification of potential areas and implementation, Phase II; Expansion of drilling for production wells

8. PROJECT DESCRIPTION

The results of GIS assessment show that about 118,000 ha of prime uplands have a potential for new rainfed agriculture development. However, it is evaluated that less availability of domestic water will restricts the development of these lands. Even in the existing rainfed agriculture areas, small holders are now facing difficulties in securing domestic water, particularly during the dry season. Surface water for domestic water supply is limitedly available in the most potential lands for rainfed agriculture development, there is a need to develop groundwater in these lands.

Groundwater development potential in SEDZ varies in locations depending on several factors such as geology, structure, and rainfall intensity, etc. Studies conducted by WRB under IRDPs in Hambantota and Moneragala districts indicate that groundwater is found in three difference regions, i.e. the coastal sand dune, weathered zone and fractures beneath the weathered zone. As groundwater potential depends on thickness of the weathered rock and fracture intensity, it is necessary to carry out systematic geological and geophysical surveys. Drilling will be carried out at suitable areas to be identified in the surveys. Pumping tests will also be carried out on the drilled boreholes to determine aquifer characteristics. With results of all the studies, hydrogeological maps will be prepared.

Project No. TR-1

1. PROJECT TITLE	Bypass Roads (National Highway A2)
2. LOCATION	Galle and Matara
3. IMPLEMENTING AGENCY	Ministry of Health, Highways and Social Services Road Development Authority
4. OBJECTIVES	(1) To divert inter-regional traffic flows; and (2) To mitigate traffic problems in the urban centers.
5. EXPECTED EFFECTS	(1) Increased mobility of inter-regional traffic; and (2) Decreased traffic problems within the cities.
6. PROJECT COSTS	US$25 million
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

When inter-regional traffic passes through city centers, traffic problems can become very serious. The traffic may cause congestion, pollution and accidents in the city centers. While the levels of traffic congestion are high in built-up areas, they are still low on the national roads in rural areas which have not reached their capacity levels yet and will not in the foreseeable future. To mitigate the situation, national highways should have an alternate route to avoid city centers.

The project aims to build bypass roads on national highway A2 to divert through traffic from the city centers of Galle and Matara. The bypasses will have four-lane carriage way. Land use will be partly restricted along the alignment to avoid future uncontrolled development.

Project No. TR-2

1. PROJECT TITLE	Rehabilitation and Maintenance of National Highways
2. LOCATION	National Highways A2, A4, A5, A17, A18 and B57
3. IMPLEMENTING AGENCY	Ministry of Health, Highways and Social Services Road Development Authority
4. OBJECTIVES	(1) To reduce road transport costs; and (2) To strengthen RDA's capability of supervising road construction, maintenance and rehabilitation.
5. EXPECTED EFFECTS	(1) Lower operating costs and increased product availability for road users; (2) Improved implementation capacity of RDA; and (3) Employment opportunities for local people.
6. PROJECT COSTS	Rs. 1,265.5 million (World Bank III project for the region) ¥12,314 million (total foreign currency for the OECF loan) Rs. 5,296 million (total local currency for the OECF project)
7. IMPLEMENTATION SCHEDULE	Partly on-going (WB3/3 and OECF projects)

8. PROJECT DESCRIPTION

(1) On-going projects

Road surface

The World Bank and OECF have carried out major highway rehabilitation projects covering A2, A4, A17, and A18. The World Bank project consists of the rehabilitation of primary roads, bridge strengthening and replacement, and new construction of roadway. The OECF project aims to carry out rehabilitation and maintenance of class A and B roads not covered by IBRD/ADB funded projects. The project includes asphalt concrete overlay and sand sealing.

Bridges

The World Bank project will rehabilitate ten narrow and unsafe bridges on A2 between Galle and Weerawila (seven bridges) and on B 57 between Matara and Hakmana (three bridges).

(2) Future projects

Maintenance and rehabilitation of the national highways

The on-going projects only cover a part of the national highways in the region. The following sections should receive priority in the next stage:

A2	Hambantota-Wellawaya
A4	Beragala-Wellawaya
A22 and A5	Moneragala-Badulla

B47	Nakala-Ambanporuwa
A17	Deniyaya-Madampe

Improvement and widening of the national highways

The existing national highways should be improved to provide additional capacity to meet future traffic demand and support development activities in the region. This component aims at widening the roadway as well as improving the structure on the following sections:

A2	Matara-Hambantota
A18	Pelmadulla-Ambalantota

Project No. TR-3

1. PROJECT TITLE	New Road Construction (National Highways)
2. LOCATION	Route A: Interchange of the Southern Highway - Akuressa - Deyiyandara - Middeniya - Embilipitiya -Tanamalwila - Kataragama Route B: Galle - Nagoda - Pitigala - Ratnapura
3. IMPLEMENTING AGENCY	Ministry of Health, Highways and Social Services Road Development Authority
4. OBJECTIVES	(1) To provide an easy and faster access to the Southeast Dry Zone, Kataragama and Ratnapura; (2) To open up the hinterland; and (3) To establish a highway network in the region.
5. EXPECTED EFFECTS	(1) Enhanced development potential for economic activities; and (2) Reduced traffic on the coastal highway.
6. PROJECT COSTS	US$575 million
7. IMPLEMENTATION SCHEDULE	Phases I - III

8. PROJECT DESCRIPTION

The Master Plan Study identifies Galle as the regional center to supply urban services to the region. The Galle port will also be developed as a regional port and become an international access point in the region. The city of Galle, however, has a very weak road network around it providing poor connections to major cities and hinterland. To support economic activities in the region, this road network should be strengthened. The new roads will reinforce the existing road system of the region.

Route A

The proposed highway, approximately 150-km long, will be a four-lane dual carriage-way, the same standard applied to the Southern Highway. The Southern Highway, from Colombo to Galle, has already been proposed to connect Colombo and the region. The new highway will become a part of the national highway network. The purpose of this highway is to provide easy access to Galle from Hambantota and Moneragala districts and from the hilly areas in the wet zone. With this new highway, the whole of Southern Area will fall into the 3-hour traveling time zone from Colombo.

Route B

To promote development of the Galle city as the major urban center of the region, the road network around it should be strengthened to provide easy access to the center. This route B is to connect Galle to Ratnapura, a major urban center of Sabaragamuwa province, with a class A road.

Project No. TR-4

1. PROJECT TITLE	Provincial Road Rehabilitation
2. LOCATION	Southern province, Uva province and Sabaragamuwa province
3. IMPLEMENTING AGENCY	Ministry of Health, Highways and Social Services Provincial Road Development Authority
4. OBJECTIVES	(1) To provide easy and faster access to markets; and (2) To support village level economic activities.
5. EXPECTED EFFECTS	Improved access to markets for villagers
6. PROJECT COSTS	US$27 million
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

The maintenance and rehabilitation of class C and D roads (provincial roads) are responsibility of Provincial Councils. Since the provincial roads have no appropriate design and maintenance standards, the Provincial Councils only carry out patching and sand sealing for periodic maintenance. The problem is that most provincial roads were not properly designed before construction. Because of inappropriate designs and lack of maintenance, the roads deteriorate rapidly, causing high maintenance costs.

This project intends to improve all class C and D roads to ensure villages' accessibility to centers/markets. The project has two basic components: technical assistance and road maintenance equipment purchase.

(1) Technical assistance (TA)

Technical assistance will be provided for the following purposes:

1) Provincial road master plan,
2) Standard drawing of road structure and road maintenance procedure, and
3) Training of provincial staff.

(2) Road maintenance equipment purchase

The provincial governments' maintenance and rehabilitation activities are severely limited by poor machinery. The project enables them to purchase machinery for provincial road repair. Road testing facilities are included as part of this component.

Project No. TR-5

1. PROJECT TITLE	Bus Terminal Improvement
2. LOCATION	Galle, Matara, Akuressa, Tangalla, and Passara
3. IMPLEMENTING AGENCY	Ministry of Transport, Environment and Women's Affairs Provincial Council
4. OBJECTIVES	(1) To provide basic facilities to private and public bus passengers; (2) To promote bus transport sector; and (3) To provide comfort to bus passengers.
5. EXPECTED EFFECTS	Better services and passenger comfort
6. PROJECT COSTS	US$ 4 million
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

Existing bus terminals do not have basic facilities like bus shelters, toilets or information desks. As bus transport is the most important mode in the region, the Government should install basic facilities to improve the levels of bus services.

This project consists of installation of bus parking lots, passenger shelters, toilets, and provision of bus information possibly at new locations with easy access to railway station or to market. The costs of the improvements can be financed with license duties paid by the shops around the bus terminal and license tax on private buses. The implementing agency will be the local government.

Asian Development Bank has provided funds for improvement of bus terminals under the urban development sector project. Locations selected for this purpose include Galle, Ambalangoda, Moneragala and Matara. This new project will select those locations which are not covered by the ADB project. Some candidates are as follows.

Galle
Sri Lanka Railways has a plan to relocate the Galle station to avoid operational delay at the existing station. To facilitate bus and rail coordination, a new bus terminal is necessary near the new railway station. It should have enough space to meet future demand and be equipped with basic facilities for passengers. The project should be implemented jointly with Urban Development Council and Sri Lanka Railways.

Matara
The existing Matara bus terminal is located in a coastal area adjacent to Fort and has been improved to have basic facilities and sufficient space. A problem is that it is far from the Matara railway station. An additional bus terminal is required near the station to promote better road and rail connection. A study has been done by local consultants to determine the location and costs. The costs are estimated at Rs. 32 million for the bus terminal and Rs. 220 million for additional road linkages.

Akuressa and Tangalle

The existing bus terminals will be improved together with commercial complexes. A preliminary study was done by UDA.

Passara

Passara is located in Badulla district, just outside of Southern Area. However, the bus terminal in Passara is important to residents of Moneragala district because it is the focal point of bus operations in this area. The existing bus terminal is limited with space and facilities.

Project No. TR-6

1 PROJECT TITLE	Community Based Transport Services
2. LOCATION	Region-wide
3. IMPLEMENTING AGENCY	Ministry of Transport, Environment and Women's Affairs Pradeshiya Sabha or private sector
4. OBJECTIVES	(1) To provide transport services to rural communities; and (2) To promote economic activities in villages.
5. EXPECTED EFFECTS	(1) Communities with transport services to urban centers; and (2) Farmers able to sell their products to the market and with higher living standards.
6. PROJECT COSTS	US$4 million
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

The existing bus transport, both private and public, fails to provide appropriate services to remote areas because these routes are uneconomical. Villagers in those remote areas are thus deprived of vital access to market.

This project intends to provide rural transport services to such rural communities. The services will be managed privately. The project consists of training of interested youths and loan arrangements for rural transport providers.

(1) Training

A basic training will be given to youths who are interested in providing rural transport services in the region. The training covers basic management skills and technical knowledge and skills necessary for rural bus operation.

(2) Loan arrangement

The Government should provide low interest rate loans to the prospective rural transport providers who have completed the training course. Multipurpose vehicles, small-size tractors and trucks with passenger seats are the types particularly suitable for the purpose and should be promoted.

Project No. TR-7

1. PROJECT TITLE	Commercial Distribution Center (truck terminal, storage facilities and markets)
2. LOCATION	Matara and/or Embilipitiya
3. IMPLEMENTING AGENCY	Ministry of Transport, Environment and Women's Affairs
4. OBJECTIVES	(1) To provide basic facilities to truck industry; and (2) To promote private activities in the transport sector.
5. EXPECTED EFFECTS	(1) More efficient truck industry operation; and (2) Reduced traffic volume within the city, especially of heavy vehicles.
6. PROJECT COSTS	US$10 million
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

As Southern Area develops, demand for transporting goods and commodities will also increase. To promote an efficient transport system in the region, goods and commodities from/to the region should be handled at some terminals which are equipped with truck terminal(s), storage facilities and wholesale markets. This project aims to build such facilities in the region.

Project No. TR-8

1. PROJECT TITLE	Technical Assistance to Provincial Council Department of Transport
2. LOCATION	Provincial Councils
3. IMPLEMENTING AGENCY	Ministry of Transport, Environment and Women's Affairs Department of Transport
4. OBJECTIVES	(1) To provide basic private bus monitoring facilities; and (2) To provide technical training for the staff of Department of Transport of Provincial Councils.
5. EXPECTED EFFECTS	Better services for private bus passengers
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	

8. PROJECT DESCRIPTION

Provision of transport services has been handed over to the private sector that is playing a major role in the region. While government intervention to the private sector should be kept minimal, routine monitoring and inspection of its activities are still necessary to ensure public interests. The Department of Transport of Provincial Council, therefore, has to bear broader responsibility to monitor private operations than simply issuing route permits. It should extensively collect and analyze data on private bus operations to formulate transport policy pertinent to the province. This project consists of the following two components:

(1) Technical training

Training of department staff should focus on planning and monitoring. The training course may deal with such subjects as basic computer skills, public transport planning, financial management, and transport law and regulation.

(2) Purchase of equipment

Some basic equipment should be purchased on the basis of future activities. The equipment may include a computer set and basic survey equipment.

Project No. TL-1

1. PROJECT TITLE	Establishment of Galle Information Community (GIC)
2. LOCATION	Galle
3. IMPLEMENTING AGENCY	Ministry of Industry
4. OBJECTIVES	In line with the concept of the new city of Galle proposed in *South 2001*, a park will be developed in Galle as the information base in Southern Area. This Information Community aims at dissemination of information throughout Southern Area.
5. EXPECTED EFFECTS	Promotion of the information-oriented society in Southern Area
6. PROJECT COSTS	US$ 50 million
7. IMPLEMENTATION SCHEDULE	1997 - 1998: design 1999 - 2000: construction/installation

8. PROJECT DESCRIPTION

Backbone networks connecting Galle to Matara, Hambantota, Moneragala and Ratnapura will be completed by Sri Lanka Telecom by 1997. Relying on the networks, a new information city of Galle will be developed whose core is the Galle Information Community. On an appropriate location with some historical background and surrounded by scenic environment, a park of the size of about 40 ha will be developed. The park, so-called Galle Information Community, will host research centers, private companies and laboratories, a satellite earth station for cable TV, a telecommunications art museum and a theme park focusing on computers and communications.

Project No. TL-2

1. PROJECT TITLE	Digital Wireless Local Loop System (DWLLS) to Rural Service Centers
2. LOCATION	All rural service centers (Kadamandiya)
3. IMPLEMENTING AGENCY	Ministry of Posts and Telecommunications
4. OBJECTIVES	To provide telephone services to rural areas
5. EXPECTED EFFECTS	To stimulate economic and social activities in rural areas
6. PROJECT COSTS	US$ 10 million
7. IMPLEMENTATION SCHEDULE	F/S in 1997, funding in 1998, D/D in 1999, installation 2000

8. PROJECT DESCRIPTION

The digital wireless local loop system (DWLLS) is a latest technology applied widely whose main advantages are shorter construction time and low cost. Separate from the SLT's networks, private operators will be selected by the Government to implement the project and provide wireless telecommunications services in Southern Area.

Project No. TL-3

1. PROJECT TITLE	Integrated Services Social Network (ISSN)
2. LOCATION	16 Divisions in Galle, 14 Divisions in Matara, 11 Divisions in Hambantota, 6 Divisions in Moneragala, 2 Divisions in Ratnapura, 1 Division in Ampara
3. IMPLEMENTING AGENCY	Ministry of Plan Implementation, Ethnic Affairs and National Integration
4. OBJECTIVES	To establish a region-wide network of computers and communications connecting public and social organizations such as schools and hospitals to share knowledge and information.
5. EXPECTED EFFECTS	Various applications are possible using the network. Basic benefits will be heightened levels of economic transactions, social contacts and administrative functions.
6. PROJECT COSTS	US$ 10 million
7. IMPLEMENTATION SCHEDULE	F/S in 2003, funding in 2004, design in 2005, installation in 2006

8. PROJECT DESCRIPTION

A very high speed link of 2 Mbps is installed between the Internet hub station in Colombo and Galle via high speed transmission lines. The 2 Mbps speed will be available for Southern Area to get connected to Colombo and the rest of Sri Lanka for information made available within Sri Lanka by various organizations such as universities, research institutions, financial institutions, commercial organizations and so on. This project aims at breaking the information barriers lying between organizations and at sharing knowledge and information to come up with better ideas, decisions, actions, etc. needed to develop Southern Area.

Project No. EG-1

1. PROJECT TITLE	Distribution System Efficiency Improvement Program
2. LOCATION	Entire Southern province
3. IMPLEMENTATION AGENCY	CEB, Southern Province
4. OBJECTIVES	Loss reduction in distribution system
5. EXPECTED EFFECTS	More reliable and stable power supply
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	By 2000

8. PROJECT DESCRIPTION

A recent study by CEB revealed that the present level of energy losses in the 33 kV and 11 kV network in Southern province was in the region of 3.6%. The study recommended three proposals (Case 1-Case 3) to reduce the losses possibly down to 2.3%. If implemented, this would save Rs. 60 million per year.

Case 1: Installation of new ABS, auto reclosors commissioning of new feeder bays and upgrading CTs at Grid substation.

Case 2:
1) Construction of 8 km of new 33 kV lines,
2) Shifting of a primary substation,
3) Conversion of 90 km of 11 kV lines to 33 kV, and
4) Reconductoring 4 km of Weasel lines to Racoon.

Case 3: Placement of 20 Nos Capacitor Banks equivalent to 7,800 kVA at selected location on feeders for the entire province.

Project No. EG-2

1. PROJECT TITLE	Extension of 33 kV Distribution Lines and Electrification of 19 Villages
2. LOCATION	Siyambalanduwa, Buttala and Wellawaya divisions in Moneragala district
3. IMPLEMENTATION AGENCY	CEB, Badulla
4. OBJECTIVES	Electrification in rural areas
5. EXPECTED EFFECTS	Enhanced life standard and environment in electricity-deprived areas
6. PROJECT COSTS	Rs. 67 million
7. IMPLEMENTATION SCHEDULE	By 2000

8. PROJECT DESCRIPTION

This project covers six divisions of Moneragala district which are part of Southern Area (Moneragala, Siyambalanduwa, Buttala, Wellawaya, Tanamalwila and Kataragama divisions). These six divisions are sparsely populated and the provision of public utilities is very poor, especially electricity supply. Electrification rates are 16.9% of 48,400 total households and 9.7% of 691 total villages.

CEB Badulla DGM's office in Uva province is carrying out operation of their distribution systems and power sales to consumers in four divisions, excluding Tanamalwila and Kataragama divisions which are under the service of CEB Southern province.

CEB Badulla is planning to carry out the Extension of Distribution Line and Electrification of Villages by 2000 under the Southern Area development. Main components are as follows.

(1) 33 kV line between Weliara-Ulvita, 13 km in Wellawaya and Badalkumbura
(2) Electrification of 4 villages between Obbegoda-Liyangolla line in Siyambalanduwa
(3) Electrification of 3 villages between Amunumulla-Horabokka in Buttala
(4) Electrification of 4 villages between Pelwatta-Handapangala line in Wellawaya
(5) Electrification of 2 villages between Weliara-Ulvita line in Wellawaya
(6) Electrification of 3 villages between Telulla and Tanamalwila in Wellawaya
(7) Electrification of 3 villages between Kudaoya and Balaharuwa in Wellawaya

The projects will be instrumental in transforming the life standard and environment of the most electricity-deprived Siyambalanduwa division (3.5% household electrification), and the expansion in Wellawaya division will facilitate future distribution extension to another electricity-deprived division of Tanamalwila (2.7%).

Project No. EG-3

1. PROJECT TITLE	Expansion Plan of Distribution Network (1996 to 2000)
2. LOCATION	Embilipitiya and Kolonna divisions in Ratnapura district
3. IMPLEMENTATION AGENCY	CEB, Kahawatta
4. OBJECTIVES	Electrification in rural areas
5. EXPECTED EFFECTS	Enhanced life standard and environment in electricity-deprived areas
6. PROJECT COSTS	Rs. 474 million
7. IMPLEMENTATION SCHEDULE	1996 to 2000

8. PROJECT DESCRIPTION

Two divisions of Embilipitiya and Kolonna of Ratnapura district are included in Southern Area. Public utilities (electricity, telecommunications and water supply) are very poorly provided in these divisions. Electricity supply is thus given top priority in the divisions under the Southern Area development.

CEB Kahawatta DGM's office in Sabaragamuwa province is carrying out operation of their distribution systems and power sales to consumers in Embilipitiya and Kolonna divisions.

CEB Kahawatta is planning to carry out the Extension Plan of Distribution Network in Embilipitiya and Kolonna divisions between 1996-2000 under the Southern Area development. Main components are as follows.

(1) Extension of medium voltage line, 325 km
(2) Extension of low voltage line, 750 km
(3) Distribution substation, 150 sites

The projects will be instrumental in transforming the life standard and environment of electricity-deprived areas in Embilipitiya and Kolonna divisions.

Project No. EG-4

1. PROJECT TITLE	Solar Power System / Solar Water Supply System
2. LOCATION	Area without access to electricity supplied by the national grid
3. IMPLEMENTING AGENCY	National Housing Development Authority
4. OBJECTIVES	Electricity supply to maternity clinics, hospitals, schools and community centers
5. EXPECTED EFFECTS	Uplifting of living standards
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Initial implementation in Phase I

8. PROJECT DESCRIPTION

The solar power system consists of a solar panel, a control box, a battery and a charge indicator only. The panel generates direct current (DC) electricity and feeds a selected number of batteries starting from a 12 V supply. The energy stored in the batteries may then be used for lighting, refrigeration, or to operate small electrical appliances like a television set.

The solar water supply system consists of a solar panel, an inverter, a bore hole, a water pump, a flow switch, a water tank, an over flow control and water pipes. Electric energy generated by the solar panel may be converted to alternating current (AC) through an inverter. Here no batteries are involved. The generated electricity is directly supplied to the pump which is submerged in the bore hole and automatically starts pumping with day break. Water is collected in a storage tank. When the tank is full, a float switch mounted on top of the tank prevents further operation of the pump. As the water level recedes in the tank, the pump automatically becomes operative again. A flow switch prevents the pump from running without water.

Maintenance of the solar power and the solar water supply systems is simple, limited to occasional cleaning of module glass surface and topping up of the batteries with distilled water, twice a year. An average teenage child can easily do the tasks.

This project is a sequel to a project which has installed solar power systems in rural villages of Uva province. The preceding project was implemented by the National Housing Development Authority during 1991/1992 under the direction of the Ministry of Housing and Construction. Its Rs. 60 million costs were funded by the Australian Food Aid Counterpart Fund of the Australian government as arranged by the Australian International Development Assistance Bureau (AIDAB). The project at present consists of 84 sites in Uva province. Out of them, 19 sites of schools, hospitals, and community centers have received solar water supply systems.

Project No. EG-5

1. PROJECT TITLE	Wind Power Plant
2. LOCATION	Hambantota district (in the vicinity of the Bundala National Park and salterns)
3. IMPLEMENTING AGENCY	PPI (Private Power Investors)
4. OBJECTIVES	To generate power through a number of windmills harnessing the wind energy
5. EXPECTED EFFECTS	Wind energy as a viable future energy option in economic and environmental terms
6. PROJECT COSTS	Rs. 762 million
7. IMPLEMENTATION SCHEDULE	By 2000

8. PROJECT DESCRIPTION

Initial investigations have indicated the availability of wind energy resources particularly in the Hambantota area. A survey has been conducted on a limited scale by CEB and available data indicate that average wind speeds of around 6 meters per second can be expected.

A further study conducted by the Energy Unit of CEB revealed an overall wind potential of 8 MW/km^2 of open land area or an overall potential of approximately 200 MW in the southeastern quarter of Sri Lanka. The southeast of the Country is exposed to both southwest and northeast monsoons and hence wind plants in this region can yield acceptable levels of plant factor.

This project is proposed to generate power through a number of windmills, using the wind energy in Hambantota district. The plant will be located in the vicinity of the Bundala National Park and salterns. Several foreign private investors have submitted proposals for the project and CEB now is in process of review of their proposals and negotiation.

Project No. UR-1

1. PROJECT TITLE	Local Development Planning Capability
2. LOCATION	Growth centers in the region, including Galle, Matara, Hambantota and Embilipitiya
3. IMPLEMENTING AGENCY	Urban/Municipal council of the locality
4. OBJECTIVES	(1) To train and assist the local staff to prepare urban development plans and zoning regulations; (2) To improve the local capability for project implementation and monitoring.
5. EXPECTED EFFECTS	Improved urban planning and administrative capacity transferable to other councils
6. PROJECT COSTS	US$ 2 million dollars per center over a two year period
7. IMPLEMENTATION SCHEDULE	To start immediately for one center

8. PROJECT DESCRIPTION

The local development plans are presently prepared by the Ministry of Housing in Colombo, because the capability for this does not exist in the provinces. This project will hire consultants to prepare these plans in the local area. Output will be urban development plans with the necessary legal status as well as trained local staff.

There will be two components of this project. At the first phase of the first project, the consultants will review the legal and administrative framework for efficient preparation and implementation of local development plans in Sri Lanka. They will make proposals, as necessary, on the legal changes needed, administrative arrangements at the local level for plan preparation/implementation, and will detail the manpower requirements to undertake these tasks. The second actual preparation stage will start only after the government has taken the necessary steps identified in stage (1).

Project No. UR-2

1. PROJECT TITLE	Sites and Services
2. LOCATION	Major urban centers
3. IMPLEMENTING AGENCY	Southern Development Agency and Urban Development Agency in cooperation with local governments
4. OBJECTIVES	To produce urban building plots at affordable prices for the low and medium income families.
5. EXPECTED EFFECTS	Improved urban environment
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	To start in Phase I

8. PROJECT DESCRIPTION

Limited financial resources of the local communities prevent them from building infrastructure in areas where it is desirable to lead development into. They are thus forced to follow private locational decisions and try to provide a minimum level of service. This has to be done even when the locations chosen are not desirable from a social viewpoint.

The proposed project will create developed urban lots in locations where the local government plans propose to lead development. Land will be acquired for large tracts at a time. Development agencies should be able to acquire land even when it is owned by private individuals by paying appropriate compensation to the owners.

The project will create the capacity to perform tasks that are undertaken in the developed capitalist countries by real estate development companies. One major difference will be the provision of developed urban sites while house construction is undertaken or organized by individuals themselves. In some cases, this will involve construction in stages with the family expanding its housing quarters as its finances improves and the family gets larger with the birth of new children.

The public agencies will play a leading role. They will provide the infrastructure and assist with finance for development work. They will thus be able to guide development into areas where growth is considered desirable and gives the local agencies the possibilities to create the urban form conducive to efficient urban development.

For the individual households, the project will provide the possibility of acquiring a site below the market prices. This low price will be possible, because large tracts of land will be developed at a time. The organization form envisions that the developers may get land owned by the government for free. Additionally, land developers will receive assistance in providing the infrastructure from local government. The economies of scale in developing large tracts of land will also be substantial. The savings that result from these should be passed on to the purchasers. This will assist the low income families to acquire a developed urban lot, ready for construction, at a lower price.

The public gain from the project is the creation of an urban form conducive to development and easy to control for environmental reasons. The large scale home ownership that results from such projects contributes to political stability by giving the majority of people a reason to protect the existing order.

Project No. UR-3

1. PROJECT TITLE	Urban Administration Restructuring
2. LOCATION	National project
3. IMPLEMENTING AGENCY	Ministry of National Planning
4. OBJECTIVES	(1) Asses the existing administrative system for the urban areas; (2) Recommend legal and administrative measures to improve the administration and management of urban areas; and (3) Make recommendations for the appropriate urban administrative forms and their powers.
5. EXPECTED EFFECTS	Established urban development policies to guide future urbanization
6. PROJECT COSTS	US$ 2 million dollars
7. IMPLEMENTATION SCHEDULE	To start in Phase I

8. PROJECT DESCRIPTION

The present forms of urban administration are inappropriate for the needs if urban areas. The legal changes introduced in 1987 seem to have reduced the capability for efficient urban administration and has actually limited the degree of local control over the local development.

Recommendation for an appropriate system can not be made without an analysis of powers and responsibilities under different administrative forms, including the three present systems. The expected evolution of these under the administrative reforms prepared by the government also needs to be taken into account.

The project will analyze the legal and administrative powers of the different urban administration forms in Sri Lanka. For each, it will analyze the structure and level of revenues. These will be compared with the responsibilities assigned to each.

The project will detail the tasks to be undertaken at each administrative level and will asses the required capability to undertake these tasks efficiently. The recommendations will be valid for the whole country and are expected to be adopted for the whole country.

Project No. UR-4

1. PROJECT TITLE	Galle Downtown Redevelopment
2. LOCATION	Galle
3. IMPLEMENTING AGENCY	SDA, UDA, Galle municipal council
4. OBJECTIVES	To redevelop central areas of Galle city as part of efforts to make it an international city.
5. EXPECTED EFFECTS	Galle city as a dynamic and attractive regional center with diverse functions and opportunities
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I - Phase II

8. PROJECT DESCRIPTION

The Project includes relocation of the Galle railway station to reduce the trip time between Colombo and Matara by enabling trains an uninterrupted trip at the Galle station. Subsequent replacement of the bus stand, located beside the current railway station, is imperative for the convenience of railway travellers when the station is relocated.

Together with the development of vicinity area of the new railway station and bus stand, redevelopment of the old station and bus stand and surroundings as an integrated downtown upgrading project is recommended. Provision of high grade infrastructure and services such as water supply and sewerage, electricity supply, telecommunication, waste disposal, etc. by the Government is imperative. The construction of individual buildings, including some public facilities, can be undertaken by the private sector.

Since the project creates completely new focal point of the Galle city and vicinity area as well as the region, the ongoing work to prepare a structure plan of the Galle and vicinity area should not be finalized prior to initiation of this project.

Project No. EN-1

1. PROJECT TITLE	Wetland Conservation and Management
2. LOCATION	Important inland wetlands requiring further protection (Udawalawe reservoir, Koggala lagoon, Bundala National Park, Palatupana Maha Lewaya, and Karagan Lewaya)
3. IMPLEMENTING AGENCY	CEA, DWLC, local offices, NGOs, etc.
4. OBJECTIVES	(1) To maintain diversity in habitats and wildlife/bird populations; (2) To retain a hydrological regime benefiting both human and wildlife/birds; and (3) To involve local communities in the management of the wetland.
5. EXPECTED EFFECTS	(1) Enrichment of biological diversity, scenic beauty and scientific value; and (2) Regulation of water quality and quantity. Promotion of tourism and recreation.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I (Udawalawe, Koggala and Bundala with the most urgency), and Phase II (Palatupana Maha Lewaya and Karagan Lewaya with the second priority).

8. PROJECT DESCRIPTION

Many wetlands in Southern Area have been so far indiscriminately exploited for commercial, agricultural, residential and industrial development including the Koggala Free Trade Zone. This may continue at an increasing pace in the future. They are used also as dumping grounds for domestic, agricultural and industrial wastes. An increase in environmental awareness and CEA's studies such as "Wetland Conservation Project" have recently resulted in evaluation of conservation needs as well as preparation of conservation management plans for some important wetlands in the region.

The Project is to take conservation actions such as strict enforcement of regulations, participatory management of the resource and introduction of "wise-use", based on the refined management plans available. The project is desired to link or cooperate with a an on-going nation-wide project: "Wetland Conservation and Protected Area Management Project" (~ 1999) for financial and technical input.

Project No. EN-2

1. PROJECT TITLE	Environmental Rehabilitation of the Nilwala and Nupe Canals
2. LOCATION	Nilwala and Nupe canals in the Matara
3. IMPLEMENTING AGENCY	District Environmental Committee, Nilwala Project Office, Irrigation Department, Urban Council, etc.
4. OBJECTIVES	(1) To facilitate the smooth flow of water; (2) To prevent intrusion of saline water; and (3) To improve environmental quality in and along the canals.
5. EXPECTED EFFECTS	(1) Increased agricultural production, and (2) Improved environmental welfare to local people and tourists.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I for a feasibility study, Phase II for detailed design and implementation.

8. PROJECT DESCRIPTION

This project idea has also been submitted to the Matara IRDP office by the University of Colombo, based on different organizations1 recommendations. The only step taken to date is the cleaning of sediments once a year. Dumping of garbage and discharge of industrial wastes along the canals have quite often happened. Pesticides provided by the Urban Council to vegetable cultivators are not properly utilized and contaminating the canal water, resulting in dense growth of ugly water-vegetation as well as offensive odor somewhere. Besides, groundwater levels in the canals are low and saline water is easily intruding. Such environmental degradation of the canals has obstructed smooth flow caused damages to the surrounding agricultural areas and deteriorated environment of the local residents.

The project activities include canal rehabilitation and clean-up most suitable to these canals, making full use of important technical experiences from the on-going projects such as "Greater Colombo Flood Control and Environment Improvement" and "Restoration for Urban Water Bodies", in addition to construction of a reservoir upstream, frequent dredging and clearing of sediments and strict pollution regulation.

Project No. EN-3

1. PROJECT TITLE	Coastal Belt Protection
2. LOCATION	Between Bentota and Matara (Kosgoda, Kahawa, Hikkaduwa and Boosa)
3. IMPLEMENTING AGENCY	Coast Conservation Department (CCD) in cooperation with the concerned offices in Galle and Matara
4. OBJECTIVES	(1) To arrest the sea-erosion on the coast-line and the highway in a short term; (2) To permanently protect the coast-line against the wave movement in a long term; and (3) To set up the coastal road park attractive to tourists and local visitors.
5. EXPECTED EFFECTS	(1) Prevention of future damages to traffic, tourism and other social activities; (2) Additional value to coastal beauty; and (3) Pilot experience in protection of erosion as well as sea-level rise due to global warming.
6. PROJECT COSTS	Rs. 125 million
7. IMPLEMENTATION SCHEDULE	Three years in all consisting of Phase I for F/S and D/D and Phase II for implementation

8. PROJECT DESCRIPTION

The southwest coastline is one of the areas severely suffered from coastal erosion in the Country. This erosion phenomenon has not only damaged households and the main highway along the beach, but also decreased potential tourism resources such as scenery and bathing beaches. CCD had constructed physical anti-erosion protections mainly using rocks, but further protection should be of sea-level rise due to global warming likely in the next century and to enhance environmental/recreational value-added for local residents and tourists. Erosion is mainly a natural phenomenon aggravated by coral and sand mining by local people. Specific measures will be formulated based on studies by CCD.

Project No. EN-4

1. PROJECT TITLE	Soil Resources Inventory at Scale 1:50,000 for Southern Area
2. LOCATION	Southern province; southern parts of Sabaragamuwa, Uva and Eastern provinces
3. IMPLEMENTING AGENCY	Land Use Division of the Irrigation Department
4. OBJECTIVES	To prepare an updated digital soil map of Southern Area at a scale of 1:50,000 to facilitate divisional and provincial agricultural planning and research.
5. EXPECTED RESULTS	(1) Availability of scientifically determined update, detailed reconnaissance level soil maps of Southern Area to facilitate land use and agricultural planning at the division level, and (2) Promote use of advanced planning tools like GIS for database creation, updating and planning purposes.
6. PROJECT COSTS	US$2 million
7. IMPLEMENTATION SCHEDULE	Three years

8. PROJECT DESCRIPTION

At present, the 1:500,000 scale soil map of Sri Lanka, compiled by the Soil Survey staff of the Land Use Division of the Irrigation Department, is the only comprehensive soil information available for the Study Area. This soil map shows the aerial distribution of the more important great soil groups and sub-groups. These soil data, though suitable for regional land use and agricultural planning purposes, have severe limitations when applied to more detailed district or division level planning.

This Project will remedy this problem and, thereby, facilitate scientific and rational land use planning at the division level. The Project will use a Geographical Information System (GIS) to support database creation and updating, as well as for use in land use and agricultural planning.

Project components would include detailed reconnaissance surveys for identifying soil types, and a surveying and mapping component using GIS. Technical assistance and training needs for GIS use, as well as appropriate grant for GIS related hardware and software acquisition, would be part of the project.

Project No. EN-5

1. PROJECT TITLE	World Bio-Diversity Research Institute
2. LOCATION	Tissamaharama or Yala National Park
3. IMPLEMENTING AGENCY	Consortium of private sector parties supported by DWLC and international organizations
4. OBJECTIVES	1) To establish a major institute for higher education and research in the fields of environment and natural resources management; and 2) To provide opportunities for local people to improve further their lifestyles to live with nature as well as to earn extra incomes.
5. EXPECTED EFFECTS	(1) High images of Southern Area as a world center for environmental education and bio-diversity preservation, and (2) Unique lifestyles of Sri Lanka southerners widely known to attract more visitors.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase II

8. PROJECT DESCRIPTION

Southern Area has favourable conditions in terms of environment and natural resources. They include the diversity in physical features such as climate, vegetation, topography, water bodies and soil, long and varied coastlines, and bio-diversity of global importance with a wide variety of fauna and flora supported by extensive natural reserves. Southern Area also has unique cultural and historical backgrounds, which are reflected in the current lifestyles of people.

To utilize these conditions and to enhance environmental awareness and lifestyles of local people, a major institute should be established for higher education and research in the fields of environment and natural resources management. The institute should be a world center to appeal to the international community, the existing bio-diversity and efforts to preserve them in Sri Lanka. It would contribute also to increasing tourists and other visitors to Southern Area. Links should be established with other similar institutes in other countries.

The institute will serve also as an information center for more efficient and consistent management of various types of reserves in Southern Area. Training components of forest/wildlife conservation projects will be increasingly conducted at the institute.

Project No. EN-6

1. PROJECT TITLE	Wastewater Treatment for Fishery Communities
2. LOCATION	Fishery communities in Galle, Matara and Hambantota such as Puttalam, Galle and Matara
3. IMPLEMENTING AGENCY	Department of Fisheries and Aquatic Resources (DFAR) and the district offices concerned
4. OBJECTIVES	(1) To manage and control wastewater and night-soil from the communities; (2) To improve fishery community sanitation; and (3) To clean up direct waste water discharge into the sea or surrounding water bodies.
5. EXPECTED EFFECTS	(1) Decreased damage to coastal resources such as fish, coral, coastal vegetation, etc. and (2) Environmental improvement of communities, beaches and lagoons as resort points.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	5 years in all, consisting of Phase I (for pilot-basis implementation) and Phase II (for extension to other areas).

8. PROJECT DESCRIPTION

Direct sources of coastal and lagoon water pollution, subsequently causing environmental deterioration, are fishermen's communities along the coastal line. They lack treatment facilities to control environmental negative loads, so that any dirty water including urine flows away into their neighbors, the ocean or lagoons. In order to improve their living conditions and resource value for fishery and tourism, installation and management of a small-scale and most simple wastewater treatment system (e.g. oxidation pond) can be an effective measure.

The Project is regarded as complement to the other two projects for fishermen welfare proposed by SDA, i.e. "Provision of Housing for Fishing Communities in the Southern Province" and "Provision of Welfare Facilities for Fishermen in the Southern Area", which exclude this water-discharge treatment idea. Experiences accumulated through the past and on-going "Community Water Supply and Sanitation" projects should be utilized.

Project No. EN-7

1. PROJECT TITLE	Promotion and Extension of Efficient Fuelwood-Stoves in Rural Communities
2. LOCATION	Rural communities, especially in mountainous areas
3. IMPLEMENTING AGENCY	Ceylon Electricity Board (CEB) and FD, in association with village offices and local NGOs
4. OBJECTIVES	(1) To survey on usage of fuelwood, stoves and environmental/health impacts; (2) To develop or improve application strategy for usage of efficient fuelwood stoves; and (3) To train and extend on application of the stoves, with pilot installation of them.
5. EXPECTED EFFECTS	(1) Decreased cutting of fuelwood from the nearby forests; (2) Increased agricultural production by decreased usage of livestock dung as fuel which will be otherwise used as organic fertilizer; (3) Decrease of respiratory diseases due to smog; and (4) Saving of money and time to be used for fuelwood collection.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I for basic survey, strategy formulation and pilot application in selected communities, and Phase II for further extension.

8. PROJECT DESCRIPTION

Forest destruction or illegal cutting could be regulated not only by supply-side activities such as replanting and managed deforestation, but also by demand-side activities. This project idea typically contributes to sustainable development as well as conservation of forests and environment. Major households in rural areas or even in some urban areas have still consume wood as livelihood energy because of lack of affordable alternative energy. It will contribute to improving people's health conditions, in particular from diseases of respiratory organs which are relatively serious problems in rural communities using fuelwood as major cooking energy.

Project No. EN-8

1. PROJECT TITLE	Solid Waste Disposal Management
2. LOCATION	Matara and Galle cities, and other coastal areas in Galle and Matara
3. IMPLEMENTING AGENCY	Municipal Councils and Urban Councils of Galle and Matara, divisions concerned, etc. in cooperation with local communities and NGOs
4. OBJECTIVES	(1) To prevent dumping of garbage from households, factories, hospitals, hotels, commercial and recreational areas, etc.; (2) To establish efficient solid waste collection/disposal systems; and (3) To clean up these urban areas as well as their neighboring coastlines.
5. EXPECTED EFFECTS	(1) Increased awareness for recycling and garbage classification among the public and (2) Environmental improvement in urban and coastal areas for welfare of local residents and tourists.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I for feasibility study, Phase II for detailed design, and implementation.

8. PROJECT DESCRIPTION

Population density is and will be the highest in the Galle and Matara cities followed by their surrounding coastal areas. This urbanization has caused environmental problems especially due to solid waste dumping. Equipment, laborers and institutional systems necessary for solid waste management are insufficient at present.

Although there will be some difficulty in finding sites for appropriate dumping, sanitary dumping in designated areas would be preferred to garbage incinerator, composting factory or metanization system, because of technical simplicity and least-costs. The Project includes training on recycling and voluntary collection through workshops and garbage-site visits by the public.

Project No. EN-9

1. PROJECT TITLE	Gem-Mining Regulation and Health Project
2. LOCATION	Kolonna and Embilipitiya divisions of Ratnapura, Moneragala and Buttala divisions of Moneragala, and Kotapola and Pitabeddara divisions of Matara
3. IMPLEMENTING AGENCY	National Gem and Jewelry Authority (NGJA) in association with the Health Department and FD
4. OBJECTIVES	(1) To regulate strictly illegal gem-mining activities; (2) To improve gem-mining laborers' and local residents' health related to mining; and (3) To prevent indiscriminate tree-cutting for gem-mining.
5. EXPECTED EFFECTS	(1) Increased awareness for health and environmental impacts of gem-mining among laborers as well as local communities, and (2) Improvement on gem-mining control, forest conservation and health of people in and around the gem-mining pits.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I for institutional and legal build-up, Phase II for pilot implementation in the Embilipitiya Division with higher priority, extension to the other divisions.

8. PROJECT DESCRIPTION

The Project is a follow-up of the finalized NGJA's project "Awareness Program for Gem-miners" which is nation-wide but of ad-hoc nature. Effective regulation of gem-mining would require legal and institutional changes in line with forest protection and reduction of mosquito-vector diseases such as malaria. Project actions include increase of the deposit charged on a gem-mining license, strengthened supervision on illegal gem-mining as well as filling in of gem-pits and replanting, no more issue of fresh licenses to defaulting licenses, provision of anti-malaria medicines at local medical clinics, and health extension programs specialized in mosquito-vector diseases.

Project No. EN-10

1. PROJECT TITLE — National Parks Infrastructure / Habitat Improvement

2. LOCATION — Yala, Uda Walawe, Bundala and Lunuganvehera National Parks and their Buffer Zones

3. IMPLEMENTING AGENCY — Department of Wildlife Conservation (DWLC), Ceylon Tourist Board (CTB), in association with the local offices concerned

4. OBJECTIVES
(1) To develop the infrastructure to improve the protection in the National Parks;
(2) To restore the habitat and implement management plan in National Parks;
(3) To mitigate the human elephant conflict; and
(4) To improve wildlife tourism and promote awareness for biodiversity conservation and benefit for rural people.

5. EXPECTED EFFECTS
(1) Efficient biodiversity and wildlife conservation of National Parks globally threatened species of Asian elephant; and
(2) Benefit for rural people who live around National Parks and for foreign and local visitors.

6. PROJECT COSTS — US$ 5.6 million

(Unit: Rs. Million)

Construction/Improvement of roads	42.5
Construction of buildings for patrolling, offices, visitor centers, staff housing etc.	70.0
Equipment(vehicles, earth moving, motor boats, radio-communication, etc.)	153.0
Survey and demarcation of boundaries	6.0
Restoration/construction of tanks	24.5
Elephant management	25.5
Total	321.5 US$ 5.6 Million

7. IMPLEMENTATION SCHEDULE

Phase I (for Block III of Yala during 2 years), Phase II and Phase III (for other blocks of Yala and other national parks).

8. PROJECT DESCRIPTION

The protected areas in Southern Area are critically important for the conservation of several unique species ecosystems. In addition, Southern Area National Parks are vital for the

long term conservation of Sri Lankan elephant of which over one third of the country's population lives in the region. Equally important is the need for urgent action to resolve the severe Human Elephant Conflict that prevails in several parts of Southern Area.

Outline of the project:

1) augmenting the infrastructure including: road and trail construction, improvement and maintenance, buildings for protection and training needs (check points, patrol posts, observation towers) and equipment (earth moving equipment, motor vehicles, boats, radio communication, computers, binoculars, generators, solar panels, camping equipment);
2) survey and visible ground demarcation of National Parks boundaries by concrete pillars;
3) habitat restoration in National Parks by construction/restoration of tanks and fodder;
4) improving of elephant management (Elephant Transit cum Rehabilitation Facility in Uda Walawe National Park, erection of strategic electric fences, elephant corridor revival between Uda Walawe and proposed Samanala Wewa National Park farther north in the intermediate zone) ;
5) organization of tourist facilities such as park interpretation, guide services, tourist movements in time and space;
6) promotion of awareness for conservation audio visual equipment.

Project No. EN-11

1. PROJECT TITLE	Cooperative Planting (Taungya) Promotion
2. LOCATION	Abandoned chena sites in Moneragala
3. IMPLEMENTING AGENCY	Forest Department (FD), Agriculture Department (AD)
4. OBJECTIVES	(1) To select abandoned chena sites suitable for reforestation agricultural production; (2) To select farmers who work for tree planting and agricultural activities; (3) To plant seedlings on selected sites; and (4) To cultivate agricultural crops in the first three years.
5. EXPECTED EFFECTS	(1) Increase in agriculture production; (2) Establishment of forest plantation with lower cost; and (3) Income generation of local villagers.
6. PROJECT COSTS	US$ 1 million
7. IMPLEMENTATION SCHEDULE	Four years consisting of the first year for planning and site selection, the second to fourth year for agricultural production with maintenance of planted trees.

8. PROJECT DESCRIPTION

Reforestation scheme with temporal agricultural activities on plantation site until canopy covers the site (Taungya) has been operative in Moneragala and Hambantota on an ad hoc basis. The Taungya is effective for poverty alleviation by offering new land and income by tree planting and maintenance to poor farmers and can reforest land with relatively low cost for labor. In Moneragala large barren land is available for the Taungya, however, usually available land for the Taungya is not fertile. In order to improve land status degraded by chena farming, the Taungya can be revised in a modern way by improving agricultural productivity and the long-term planning to ensure continuos land availability to farmers after one site rotation. This project plans the Taungya in the long-term by selecting available land and operates the Taungya with advanced agricultural technology to improve productivity.

Project No. EN-12

1. PROJECT TITLE	Integrated Watershed Management
2. LOCATION	Walawe, Kirindi Oya Basins
3. IMPLEMENTING AGENCIES	SDA, CEA, AD, FD, DWLC, ID, Land Commissioner, Provincial Councils, District Secretaries, local NGOs/CBOs concerned
4. OBJECTIVES	(1) To establish institutional mechanism for an integrated watershed management; (2) To formulate land use management plans for the watersheds; (3) To develop guidelines/strategies to promote better land and water resource management; and (4) To promote and implement specific sub-projects for better land and water resource management in the watersheds.
5. EXPECTED EFFECTS	(1) Mitigation of water related conflicts; (2) Increase of water availability for agriculture; and (3) Income generation by higher agricultural productivity.
6. PROJECT COSTS	US$ 6 million
7. IMPLEMENTATION SCHEDULE	Project duration: 7 years (2 years for planning and 5 years for implementation).

8. PROJECT DESCRIPTION

Land degradation in Walawe and Kirindi Oya basin cause serious problems: to reduce available water and shorten life period of reservoirs. Unclear water right creates conflict between upstream communities and down stream communities. In order to solve the problems, integrated management for both land and water in whole basin must be undertaken. Tank renovation, conservation farming and participatory forestry should be promoted with proper land and water management plan together with sufficient economic incentives to local people. The project will 1) establish institutional mechanism for an integrated watershed management, 2) survey bio-physical and socio-economic status and estimate future water demand and supply for the basins, 3)prepare land use management plans for each river basin indicating potential land use for efficient water utilization, and 4) develop guidelines/strategies for better land and water resource management, 5) implement selective scheme for in-basin development. The implementation includes renovations/ rehabilitation of tanks with farmer's participation, technical assistance to farmers, local communities and NGOs on conservation farming and participatory forestry. The new models for better water management will be studied and attempted with voluntary farmers groups. The significant time will be spent for both top-down and bottom-up planning to minimize conflicts and create national, regional and local consensus.

Project No. EN-13

1. PROJECT TITLE	Wood-Based Industry Improvement Project
2. LOCATION	Entire Southern Area
3. IMPLEMENTING AGENCY	Ministry of Industrial Development, Forest Department (FD), State Timber Corporation (STC), National Paper Company (NPC), private companies concerned
4. OBJECTIVES	(1) To review and analyze technical level of sawmills, pulpmills and plywood factories; (2) To provide technical assistance to these sawmills and factories including STC, NPC and private companies; (3) To research potential species for wood based industry; and (4) To develop market for plywood in wood based industry.
5. EXPECTED EFFECTS	(1) Improved productivity of wood based industry; (2) Reduction of plywood import; and (3) Encouragement for local people to plant trees in their home gardens.
6. PROJECT COSTS	US$ 3 million
7. IMPLEMENTATION SCHEDULE	Project duration: 5 years: Phase I (1 year) for planning and Phase II (4 years) for technical assistance (TA), research and market development.

8. PROJECT DESCRIPTION

Approximately 80 % of plywood, paper and paperboard is imported in Sri Lanka. This figure is high considering self-sustaining level of sawnwood production. In order to maintain lower prices of wood products, productivity of wood based industries needs to be improved. This project first reviews and analyzes potentials and technical level of wood based industries in Southern Area. Then technical/financial assistance will be provided to sawmills and factories belonged to STC and NPC as well as private companies. Improved quality of products and productivity of these factories will reduce import of wood based products. Research on potential lesser known species will also be promoted.

Project No. EN-14

1. PROJECT TITLE	Environmental Wise-Use Research & Training Center
2. LOCATION	Hambantota City or Kataragama Town
3. IMPLEMENTING AGENCY	SDA, DWLC, FD, CEA, UDA, CTB in cooperation with the local universities and NGOs
4. OBJECTIVES	(1) To establish a regional/national center for practical environmental wise-use, not for pure sciences; (2) To collect and study on sustainable approaches of natural resources and wise-use of environment; and (3) To train public/private personnel involved in environmental management and eco-business by transferring techniques and concepts.
5. EXPECTED EFFECTS	(1) Promotion of active and sustainable utilization of environmental and natural resources; (2) Increased awareness on wise-use principle on regional and national levels; and (3) Further contribution to national tourism.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I for center construction, Phase II for transfer of study/training methods, and Phase III for study/training implementation.

8. PROJECT DESCRIPTION

For sustainable economic growth, environmental/natural resources have to be not only conserved but also utilized. The project aims at accumulation and distribution of practical knowledge on how to generate income from such resources simultaneously protecting them, i.e. practical approaches of "sustainable development". Eco-tourism is a typical production sector concerned with every environmental items ranging from public pollution, aesthetics, solid waste, etc. to forests, biodiversity, indigenous culture and marine resources. Trainees include environmental planners, local animators, businessmen, tourism staff, park rangers, NGOs, hotelmen, local officials involved in pollution, etc. But wise-use envisaged also covers local-level ones such as recycling and agro-forestry.

Project No. EN-15

1. PROJECT TITLE	Wet-Zone Forest Management through Community Participation
2. LOCATION	Kanneliya, Dediyagala and Nakiyadeniya (KDN) Forest Complex in the Galle District
3. IMPLEMENTING AGENCY	FD, divisional offices concerned, NGOs
4. OBJECTIVES	(1) To reduce level of dependence of village communities on forests by providing alternative means of income; and (2) To strengthen village's capacity to work as a community by providing training and technical know-how on forest and its buffer-zones management to villages.
5. EXPECTED EFFECTS	(1) Promotion of wise-use techniques and awareness of forest conservation; (2) Locally strengthened conservation capacity of nationally important biodiversity; and (3) Provision of a good case of community forestry application.
6. PROJECT COSTS	Rs. 12 million in total
7. IMPLEMENTATION SCHEDULE	5 years consisting of Phase I for action planning and Phase II for implementation

8. PROJECT DESCRIPTION

The KDN Forest Complex is the second largest lowland tropical evergreen forest, available in the south-west wet zone, which represents a very high level of species diversity and a unique floristic composition. Hence, wise management of this resource is important for conservation of bio-diversity and sustainable utilization of the resource. Attitude and awareness of local people or communities living along the forest buffer zone is the most critical, so that they should be duly involved in sustainable conservation and usage by participating in action-plan formulation of their own.

This project activities should cooperate with an nation-widely on-going project called "Participatory Forestry Project" (~ 1999) in order to make use of its methodological experiences and accumulated techniques suitable to the wet-zone forests, on the other hand, linking in terms of geology and ecosystem to another on-going project titled "Sinharaja Conservation Project" (Phase II, ~ 1998).

Project No. EN-16

1. PROJECT TITLE	General Conservation Center of Forest-cum-Wildlife Reserve Area in Southern Area
2. LOCATION	Within the Uda Walawe National Park
3. IMPLEMENTING AGENCY	SDA, DWLC, FD, CEA, etc.
4. OBJECTIVES	(1) To establish a consortium base for integrated conservation of reserve area such as biosphere reserve, protected forest, national park, natural reserve, sanctuaries, etc.; (2) To coordinate public conservation activities, providing wildlife or forestry officials with necessary information; and (3) To study and develop on a joint strategy for conservation of the reserve areas.
5. EXPECTED EFFECTS	(1) Strengthened link and cooperation between FD, DWLC and CEA, and (2) Efficient and coordinated management of reserve areas, ignoring resource waste.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I for basic study and workshops, and Phase II for institutional and physical setting.

8. PROJECT DESCRIPTION

In Southern Area exist or are proposed several levels and kinds of reserve area ranging from national park, sanctuary, etc. from wildlife-side to biosphere reserve, protected forest, etc. from forestry-side. Nevertheless, the areas are sometimes duplicated with unclear definition for development or conservation, leading to complication, confusion and mis-management both to concerned official conservators and the public.

This center could be a institutional and information base for more efficient and consistent conservation management by linking various existing/planned actions as well as strategies, especially for wildlife, forest and their biodiversity in Southern Area.

The center's activities would be closely related with the other forest/wildlife conservation-oriented projects proposed herewith, providing a place and opportunities for institutional /technical coordination and cooperation. The on-going "Development of Wildlife Conservation" and "Institutional Strengthening of FD" projects also have close relevance.

Project No. EN-17

1. PROJECT TITLE	Ecological Management of Soil Erosion and Minor Tanks in the South-East Dry Zone
2. LOCATION	Steep-slope and small-scale cultivated area with minor tanks in the Hambantota, Moneragala and Ampara Districts
3. IMPLEMENTING AGENCY	FD, AD, Irrigation Department, etc. in cooperation with the divisional offices concerned and farmers in the dry zone
4. OBJECTIVES	(1) To utilize tank-water efficiently; (2) To minimize the intensity of soil erosion; and (3) To manage water and soil together as an agricultural micro-ecosystem.
5. EXPECTED EFFECTS	(1) Increased productivity of farmers with efficient use of limited water and mitigation of soil erosion, and (2) Decreased damage at downstreams due to soil sedimentation or water pollution.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I for study on erosion & tank system, Phase II for pilot implementation in a small basin, and Phase III for extension to the others.

8. PROJECT DESCRIPTION

Incorrect farming practices have reduced the potential of dry zone minor tank systems in addition to soil erosion. The scarce water resources has not been used optimally. The project is to improve the productivity of steep-slope & small-scale cultivated lands which lead to the sustainable use of tanks and to regulation of soil erosion. Major emphasis is on the joint-management of land and water on a micro-catchment basis.

The proposed tank management & soil erosion control measures include (1) agro-forestry cultivation, (2) awareness program on soil erosion and efficient tank-water usage, (3) introduction of proper cultivation systems to mitigate soil erosion and water loss, (4) contour-bunding methods reducing the run-off and helping to increase the soil moisture, (5) better indigenous tank-water management practices supplementing the other measures, and (6) construction of ridges/furrows and terracing, considering financial support.

Project No. EN-18

1. PROJECT TITLE	Biological and Environmental Zoning
2. LOCATION	Whole area of Southern Area
3. IMPLEMENTING AGENCY	RDD, Southern Development Authority (SDA), NARA, DWLC, FD, CEA, etc. in cooperation with the concerned offices of the 5 Districts
4. OBJECTIVES	(1) To sort out all the existing information and data accumulated for natural resources and environment; (2) To evaluate quantitatively or economically environmental values; and (3) To formulate integrated ecological-zone maps with full-use of GIS techniques.
5. EXPECTED EFFECTS	(1) Provision of overall, master and spatial database for future development or environmental planning, and (2) Active appeal of environmental importance.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Phase I (for data collection and analyses), Phase II (for environmental evaluation), and Phase III (for making of ecological zone map).

8. PROJECT DESCRIPTION

The area has a lack of coordinated, quantitative and collective baseline for sustainable development, although there exist a lot of study or fact-finding reports, including CEA's "District Environmental Profiles", related to all aspects of environment covering wetlands, wildlife, coastal resources, water, forests and so on, unfortunately without any data management nor uniformity. For due consideration of environment, spatial and quantitative/monetary perception is quite essential. This project will offer development/conservation planners and the public a easy but very useful reference for environmental standpoints in the region as well as the country.

This project has the first priority among the proposed environment-oriented projects herewith and sounds very suitable as an initial activity of the proposed "Environmental & Animating Center", providing various kinds of the other proposed projects with consistent environmental database and assessment sources for their full environmental impact assessment (EIA) procedure.

Project No. EN-19

1. PROJECT TITLE	Commercial Forestry Promotion
2. LOCATION	Available reforestation sites in Moneragala
3. IMPLEMENTING AGENCY	Forest Department (FD), private sector
4. OBJECTIVES	To establish forest plantation by the private sector.
5. EXPECTED EFFECTS	(1) Establishment of plantation; (2) Increase in timber production; (3) Job creation for tree planting and maintenance; and (4) Reduction of plantation work by FD.
6. PROJECT COSTS	
7. IMPLEMENTATION SCHEDULE	Product duration: 33 years, the first three years for planning and selection of the private sector and 30 years for land lease to the private sector.

8. PROJECT DESCRIPTION

Scarce public funds are used to finance costly planting operations without ensuring that all the plantations are successfully established, managed and utilized. The National Forest Policy of 1995 emphasizes the key role of the private sector in the establishment and management of industrial forest plantations.

This project is designed to lease out barren state lands to private individuals or companies for the establishment of forest plantations. The initial lease period is 30 years and lease holders are expected to bear the entire cost of plantation establishment. FD assists them by providing technical assistance. Lease holders are entitled for interim and final harvest from the forest crop as well as the income from cash crops grown in between forest crop during the early stage of plantation development.

In Moneragala, 3000 ha was proposed to the private sector for establishing private industrial plantations in 1995. However, no private sector showed interest. This project is a pilot project to gain experience on a land lease and profit sharing with the private sector. An appropriate institutional framework in forest sector to attract private investment needs to be established for implementation of this project.

Project No. EN-20

1. PROJECT TITLE	Multiple Use Development of Protected Areas
2. LOCATION	Uda Walawe, Bundala and Lunugamwehera National Parks
3. IMPLEMENTING AGENCY	Department of Wildlife Conservation (DWLC), Ministry of Livestock Development and Rural Industries, Local Farmers Organizations/NGOs
4. OBJECTIVES	(1) To control illegal over grazing on National Parks; (2) To improve productivity of livestock grazing; and (3) To provide welfare and sustainable support to the agriculture and cattle farmers in vicinity of National Parks.
5. EXPECTED EFFECTS	(1) Enrichment of Elephant Habitat in National Parks; (2) Reduction of sedimentation to reservoirs; and (3) Reduction of illegal encroachment on National Parks.
6. PROJECT COSTS	US$ 1 million
7. IMPLEMENTATION SCHEDULE	Project duration: 5 years: Phase I (1 year) for planning and Phase II (4 years) for introducing better breed and establishing fodder farms and milk collection center.

8. PROJECT DESCRIPTION

Over grazing by cattle/buffalo causes serious land degradation in National Parks. Degraded land causes the loss of elephant habitat as well as increase of sedimentation into the reservoirs. Habitat enrichment, growing grasses attractive to elephants and restoring tanks for fresh water supply, is necessary, however, continuous over grazing by cattle/buffalo must be mitigated before enrichment program is implemented. The over grazing by cattle/buffalo is especially serious in south-east part of Uda Walawe, Bundala and Lunuganwehera National Parks. In order to mitigate it, alternative packages as well as legal actions must be presented/taken to local farmers who are engaged in grazing practices. This project will legalize and start controlling limited cattle/buffalo grazing in National Parks as multiple use of protected areas. The project will provide technical support to cattle farmers by introducing better breed of cattle, building fodder farms and milk collection centers with chilling plant etc. Additional welfare programs to farmers will be considered under the conditions to protect the area. Careful planning to protect National Parks and negotiation with local farmers as well as legal commitment between government and farmers are required in project implementation.

Project No. SO-1

1. PROJECT TITLE	Educational Resource Center Project
2. LOCATION	All areas
3. IMPLEMENTING AGENCY	Ministry of Education, Provincial Ministry of Education
4. OBJECTIVES	(1) To provide in-service training for teachers, (2) To provide opportunities for teachers to exchange knowledge and information, (3) To improve the curriculum of sub textbook suited to Southern Areas, and (4) To provide secondary school students with career guidance and counselling.
5. EXPECTED EFFECTS	Quality of teachers will be improved. Contents of Education will be more suited to needs of Southern Area. Secondary school students will have wider opportunity of their career.
6. PROJECT COST	US$ 2 million
7. IMPLEMENTATION SCHEDULE	1997-2001

8. PROJECT DESCRIPTION

Matara district has conducted "Educational Resource Center Project" after SIDA finished its education program. An educational resource center has been established in each division in Matara district, for the purpose of improving quality of primary education teachers. It covers 12 programs, such as school family program, pupil evaluation, teacher evaluation, orientation and training of teachers and principals, design and distribution of learning aids to schools, and school and community environmental health and nutrition

Those educational resource centers are located within school compounds, and equipped with TV, video deck, video cassettes which are produced at National Institution of Education, audio cassettes, and others. School family sub-program combines 3 to 6 isolated schools as a group in one geographical area, conducting the activities of monthly supervision and progress review meeting. Evaluation activities include evaluating school administration, student attendance rates, drop-out rates, repetition rates, and others.

The project will be expanded to other districts, and secondary schools. Phase 1 starts with the evaluation of the activities of existing educational resource centers by educational experts. Then an educational resource center for primary schools will be established in each division of Galle, Hambantota, Moneragala, and Ratnapura districts, with some modifications which are based on the evaluation. Educational experts, and experienced teachers and officers of Matara district will be sent to other districts to provide the information and training, and also teachers and officers of other districts will come to Matara to see them.

The resource centers will be extended for secondary schools in a phased manner in Phase 2. The programs of educational resource centers for secondary schools will be designed by educational experts and teachers, established in selected divisions to monitor, and then the centers will be expanded to other divisions. The centers should have the counseling

service, including dissemination of information on vocational and technical schools, career development, counseling & placement center (CPS) which is recommended by the Team, and job opportunities. The team recommends that technical and vocational training will not be included in the activities of resource centers, since resources are limited and vocational training activities should be consolidated with other ministries. Some selected teachers from all districts will have training at Colleges of Education on career guidance and counseling on students' aptitude, preferences, career information, and career development.

Development of sub textbook will be included in the activities of resource centers for both primary and secondary schools, which is suited to the needs of the society, especially of Southern Area. The present curriculum focus on rotte learning and not relevant for the changing needs of the society. Primary school children need to get not only knowledge but thinking ability, creativity, adaptability, importance of various types of occupations.

The utilization of existing and potential resources of Southern Area should also be reflected in the curriculum of sub textbook. For instance, Hambantota district is suited for agriculture with irrigation schemes of Uda Walawe and Kirindi Oya. However, the contents of the agriculture subject which are offered at secondary schools in the district do not give the students those information, technology and practical exercise to fully utilize the resources available. The curriculum of sub textbook should include relevant knowledge, technology and practical exercise, reflecting the area's resources. Necessary facilities and equipment will be provided where necessary. Education experts assist teachers for preparing those sub textbooks and necessary equipment.

Project No. SO-2

1. PROJECT TITLE	Expansion of Secondary (1AB) Schools
2. LOCATION	Disadvantaged areas in Southern Area
3. IMPLEMENTING AGENCY	Ministry of Education, Provincial Ministry of Education
4. OBJECTIVES	To construct and improve about 20 of type 1AB schools in disadvantaged areas which do not have enough number of those schools.
5. EXPECTED EFFECTS	There will be an expanding number of graduates with higher education specially for science.
6. PROJECT COST	US$ 2 million
7. IMPLEMENTATION SCHEDULE	2000-2002

8. PROJECT DESCRIPTION

Type 1AB schools offer year 1 to 13 education with G.C.E. A level for all streams which are science, arts and commerce. They are only schools with advanced science stream which is becoming important for new economy. Currently the number of those schools are concentrated in Western Province, occupying 25% of total 1AB schools. Southern Area, especially Matara, Hambantota and Moneragala has inadequate number of those schools, causing students not to study advanced science.

Twenty of type 1AB schools will be constructed and/or improved. Necessary facilities will be provided to both new and existing 1AB schools under this project. Those schools should be provided with physical infrastructure and equipment of a minimum level of essential services, and some selected schools will be provided with science laboratory, computers, audio-visual equipment as model schools. Living quarters for teachers will be built where necessary, and trained teachers will be deployed.

Disadvantaged areas should be selected for improvement and expansion of the schools, such as mountainous areas in Galle and Matara districts, and remote areas in Hambantota and Moneragala districts. They should be selected in consideration of the future plan of road and transportation development. Living quarters for teachers will be provided where necessary.

Project No. SO-3

1. PROJECT TITLE	Non-formal Education Program
2. LOCATION	All areas
3. IMPLEMENTING AGENCY	Ministry of Education
4. OBJECTIVES	(1) To expand non-formal centers for out of school children and adults; and (2) To improve the contents of non-formal education suited to Southern Area.
5. EXPECTED EFFECTS	Out of school children and adults can study in a flexible manner and acquire necessary knowledge and skills to get a job.
6. PROJECT COST	US$ 0.8 million
7. IMPLEMENTATION SCHEDULE	1999-2001

8. PROJECT DESCRIPTION

There are still not a few drop-out children, and people who never went to school. They are left behind since some of them do not have enough literacy and other basic skill training and languages. The project will include the evaluation of existing non-formal education in the Area and revision of curriculum of non-formal education program according to the needs of drop-out students and society in Southern Area. Those will be done by educational experts. Although the current curriculum of non-formal education includes vocational training, the Team recommends that vocational training courses should be consolidated with ones by Ministry of Labor because of the limited resources and overlap.

In the area where parents generation have little education such as Moneragala and Hambantota districts, adult education to teach the importance of children's education as well as literacy and numeracy is also needed. Foreign languages, especially English which is becoming more important with the increase of foreign tourists, should be emphasized for drop-out students of younger generation. Since there may not be enough English teachers, English teachers will be trained. Present English teachers and university students will be recruited as trainers of English teachers. The program will utilize existing non-formal education centers or other institutions, and provide necessary learning and teaching materials and equipment. The project will also establish non-formal centers where necessary.

Project No. SO-4

1. PROJECT TITLE	Establishing Engineering Faculty in Ruhuna University
2. LOCATION	Galle
3. IMPLEMENTING AGENCY	Ministry of Education and Higher Education, Ruhuna University
4. OBJECTIVES	(1) To create engineers for development of Southern Area and Sri Lanka, and (2) To conduct research activities.
5. EXPECTED EFFECTS	The demand for engineers will be met. The technology of engineering will be upgraded.
6. PROJECT COST	US$ 20 million
7. IMPLEMENTATION SCHEDULE	1999-2003

8. PROJECT DESCRIPTION

The contents of university and other higher education need to be revised to respond to the changing demands of the economy. Transformation of economy to a more industrialized one requires people with a good scientific and technological education. However, there are only two faculties of engineering in Sri Lanka, in University of Peradeniya and University of Moratuwa. The Sri Lanka Government has a plan to establish the Faculty of Engineering in Ruhuna University. Considering that there will be an increased demand for engineers with the development of Southern Area and Sri Lanka, the plan will be supported, while the Government also should consider strengthening the existing faculties of the two universities in the short term, since the budget and the number of qualified engineering teachers are limited.

The project includes the study of the demand for engineering to decide courses taught in Ruhuna University and number of students. The area of engineering should reflect both the regional and national needs. Since the existing faculties focus on civil, electrical and mechanical engineering, the new faculty will focus on non-traditional areas, such as computer, telecommunication, energy, and environment.

Project No. SO-5

1. PROJECT TITLE	Pilot Project of Study on Budget Allocation for Education Sector in Southern Area
2. LOCATION	Southern Province
3. IMPLEMENTING AGENCY	Ministry of Local Government, Provincial Ministry of Education
4. OBJECTIVES	(1) To analyze the budget allocation on education sector in Southern Area, and (2) To improve the budget planning.
5. EXPECTED EFFECTS	The budget allocation for education will become more efficient and effective to improve the quality of education.
6. PROJECT COST	US$ 0.2 million
7. IMPLEMENTATION SCHEDULE	1997-1998

8. PROJECT DESCRIPTION

The large proportion of the education budget is allocated to teacher salaries and student support programs, and only a small proportion is available for items needed to improve the quality of education.

Each province has a decentralized budget from the Central government. The study will include the analysis of current budget allocation on education sector in Southern Province, to identify the problems and possible improvement. The study will cover the projections of students of each school year, the required number of qualified teachers for each year and subjects, training needs for teachers, teaching materials and activities required to improve the quality of education, and others. Based on the analysis, it will propose future plans of budget allocation on education in Southern Province for short-term and mid-term period. This can be applied to other provinces included in Southern Area. The study is conducted by both local and foreign experts of budget and education.

Project No. SO-6

1. PROJECT TITLE	Master Plan of Health Development of Southern Area
2. LOCATION	All areas
3. IMPLEMENTING AGENCY	Ministry of Health, Divisional Director of Health Services, Provincial Ministry of Health Services
4. OBJECTIVES	(1) To study present condition of health status, problems, and causes, present health services and health needs in each area; (2) To prepare a plan which effectively reflects each area's needs; and (3) To prepare an investment plan.
5. EXPECTED EFFECTS	Local people will have access to adequate health services when necessary. Health services will be delivered in more effective and efficient way.
6. PROJECT COST	US$ 0.7 million
7. IMPLEMENTATION SCHEDULE	1997-1998

8. PROJECT DESCRIPTION

Southern Area does not have a comprehensive health development plan. Although the causes of hospitalization and morbidity differ among specific areas, they are not analyzed. A health plan should be prepared based on the analysis of each area's problems and needs.

The study includes the following: analysis of number and causes of hospitalization and mortality in each district and/or specific areas, the quality and supply of both preventive and curative health care services, the degree of people's health awareness and health promotion activities, and management capability. The study investigates the requirement of health services in each area with necessary facilities and health personnel, an effective way of linking preventive and curative services with adequate referral system, and cost-effectiveness of several kinds of health services such as regular health checks, mobile clinics and improvement of existing health institutions in specific areas. The study also investigates the possible way to strengthen management capacity, promote indigenous medicine and private sector involvement, and assess the possible user charge system. An investment plan will be prepared based on the study with a realistic budget estimate.

Project No. SO-7

1. PROJECT TITLE	Nutrition Campaign Program
2. LOCATION	All areas
3. IMPLEMENTING AGENCY	Ministry of Health, Divisional Director of Health Services, Provincial Minister of Health
4. OBJECTIVES	(1) To change inadequate food practices to nutritious one for women and children, and nutritious weaning food for infants; and (2) To reduce under-nutrition of women and children which is prevalent all over the island.
5. EXPECTED EFFECTS	Health status of women and children will be improved. Under-weight birth will be decreased.
6. PROJECT COST	US$ 0.5 million
7. IMPLEMENTATION SCHEDULE	1997-2001

8. PROJECT DESCRIPTION

Southern Area as well as Sri Lanka have a high under-nutrition rate especially of women and children. Under-nutrition is caused by various factors including poverty, food practices, water availability, food distribution among family members, and so on. Women eat the last among family members by the cultural influences. Pregnant women do not eat adequately since there are many taboo foods for them and suffer from anemia, which will affect both women and babies. Weaning food is inadequate, without enough calories, protein, and vitamins. Babies also have several taboo food such as oily and cold food.

Nutrition education is being carried out in some districts, however it does not have enough impact to change people's food practice. Nutrition campaign should be national such as successful breast feeding campaign and EPI (Expanded Programme on Immunization) in the past, and this program would assist campaign implementation in Southern Area. The program includes the analysis of causes of under-nutrition of women and children, and utilize media such as TV, videos, radios, flip-chart and posters to enhance awareness of people on nutrition and to promote the change of food practices. Existing public health workers and voluntary workers will be given training and mobility by cars and/or motor cycles. The program will provide those necessary equipment and materials.

Project No. SO-8

1. PROJECT TITLE	Hospitals Improvement Program
2. LOCATION	Empilipitiya, Galle, Hambantota, Matara, Moneragala.
3. IMPLEMENTING AGENCY	Ministry of Health, Ministry of Education and Higher Education, Provincial Ministry of Health
4. OBJECTIVES	(1) To improve the quality of the existing hospital; and (2) To provide people with better health services
5. EXPECTED EFFECTS	People can get health services when necessary in Southern Area
6. PROJECT COST	US$ 50 million
7. IMPLEMENTATION SCHEDULE	1998-2012

8. PROJECT DESCRIPTION

Since a Base Hospital is the lowest order of health institution with specialist services, each district should have one base hospital. All districts in Southern Area have base hospitals and/or higher level hospitals, however, they are not equipped and manned properly.

The Embilipitiya District Hospital was established in 1981 and is expected to be upgraded to a base hospital soon. It has grossly insufficient equipment, facilities, and staff. The Hambantota Base Hospital was upgraded in 1983, but it lacks specialists, nursing staff, and facilities such as X ray machine, ECG, ICU, ambulances, water supply and power supply. The Moneragala Base Hospital was established in 1993, requiring facilities and equipment such as ICU, premature baby unit, and sewerage system. The Matara Provincial Hospital was upgraded in 1994, but it lacks specialists such as cardiology, pathology, and physiotherapy. It has insufficient water storage and electric capacity, facilities and equipment such as a pathology laboratory, and X ray machines. The Karapitiya Teaching Hospital in Galle district is inadequately equipped with both teaching and clinical facilities. It also lacks ambulances, and basic amenities such as water supply and sewerage. Mahamodara Teaching Hospital also requires facilities and equipment, and manpower.

The program includes the assessment of the current condition and needs for facilities, equipment and manpower of each hospital above, prepare improvement and investment plan, and invest in a phased manner with deployment of required personnel.

Project No. SO-9

1. PROJECT TITLE	Establishing Basic Training Center for Para-medical Personnel
2. LOCATION	Karapitiya Teaching Hospital, Galle
3. IMPLEMENTING AGENCY	Ministry of Health, Provincial Ministry of Health Services
4. OBJECTIVES	(1) To train para-medical personnel, (2) To deploy para-medical personnel to under-served areas
5. EXPECTED EFFECTS	The quality of health services will be improved.
6. PROJECT COST	US$ 10 million
7. IMPLEMENTATION SCHEDULE	1997-2001

8. PROJECT DESCRIPTION

Health system depends not only on doctors and nurses, but on the availability of trained paramedical personnel, including pharmacists, medical laboratory technicians, radiographers, physiotherapists, and occupational therapists. The capacity of training courses for those para-medical personnel is limited with comparison of the needs in Southern Area and nationally, therefore basic training is urgently needed.

The project establishes Basic Training Center for Para-medical Personnel in Karapitiya Teaching Hospital. It includes the review of the existing training capacity, assessment of current and future needs especially in Southern Area, investigation of course established, preparation of curriculum, preparation of development and investment plan of training facilities, recruitment and training of trainers, and investment.