

CHAPTER FIVE

RIVER BASIN PLANNING AND MANAGEMENT DIVISION

The Executive Director (River Basin Planning & Management) directly reports to the Director General of MASL and is responsible for overall operations of the Division. The Division is responsible for supervision of the projects and programmes implemented by the following four sub Divisions of the MASL;

1. River Basin Planning & Management Division
2. Kala Oya Basin Organization
3. Water Management Secretariat and
4. Environment & Forest Conservation Division

The activities carried out in the year 2005 by the Office of the Executive Director, River Basin Planning & Management under the above Divisions are as follows.

(1) The Preparation of a comprehensive river basin plan for Kala Oya Basin.

Five Studies/Reports were in progressed during the year 2005 under River Basin Planning & Management Division at a total cost of Rs.4.820 million. The balance work of four consultancy assignments will be continued in 2006 and the requirement of funds is estimated as Rs. 2.927 million to complete the assignments.

Details of progress achieved during the year are given below.

No.	Activity	Contract Value	Physical Progress %	Financial Progress %	Paid up to end of 2005 (Rs M)	Total Paid up to end 2005 (Rs.m)	Funds needed in 2006 (Rs. m)	Remarks
1.	Ground water Assessment in KOB	2.18	100	100	0.737	1.394	--	Completed
2.	Development of water quality standards in KOB (SLSI)	0.15	89	41.3	0.048	0.062	0.085	On going
3.	Bio-diversity & wetland issues & options for their sustainable management in KOB	5.29	95	93	3.068	4.920	0.37	On going
4.	Water quality Assessment in KOB (UOC)	5.65	75	65	--	3.672	1.978	On going
5.	Water quality Monitoring study (UOC)	0.997	98	50.5	0.503	0.503	0.494	On going

Apart from above Rs. 7.89 m worth of activities carried out in the Kala Oya Basin as pilot projects during the year 2005. The details of activities carried out are given under the Kala Oya Basin Organization.

- (2) Preparation of Draft Proposal for Development of Ma Ya Basin
- (3) Preparation of a comprehensive Report for rehabilitation of Left Bank System 'B' irrigation system.
- (4) Completion of balance work of the Tissue culture laboratory and Nursery at Kotmale at a cost of Rs. 11.0 m and commenced production of plants.

Works carried out by each division are given below in details.

River Basin Planning & Management Division consists of 3 units namely;

- 1.1 Water Resources Planning Unit.
- 1.2 Land Use Planning Unit.
- 1.3 Environment & Natural Resource Planning Unit.

The progress and activities carried out during the year 2005 are given below.

1.1 Water Resource Planning Unit

1.1.a. Following studies /reports have been completed by the Water Resource Planning Unit of River Basin Planning and Management Division during year 2005.

	Activities Implemented during 2005	Actual Progress of Work	Financial Provisin 2005
1.	Study on long-term rainfall variations in Mahaweli basin using moving averages of historical records.	Completed	Direct
2.	Literature review on deforestation and sedimentation of Mahaweli Reservoirs	Completed	Direct
3.	Planning for the preparation of a Water Resource Management Plan for 2 Cascades Mahagalkadawala & Manewa in Kala Oya Basin	In Progress	Direct
3.1	Computation of Cascades poulation related to the above 2 Cascades using recent population figures, population calculations in clustered settlements, density, present mode of supply of drinking water & condition of the existing supply & needs for improvements.	Completed	Direct
3.2	Cascade water balance calculations for Mahagalkadawala & Manewa using available data on small tanks.	Completed	Direct

3.3	Preparation of BOQQ for Roof water harvesting tanks, Dug wells & Tube wells, Cattle sheds & homestead development	Completed	Direct
3.4.	Compilation of data from 1:10,000 maps on tank catcements, land use, command areas and demarcation of recharge zone & water utilization zone for future planning purposes.	Completed	Direct
4.	Preparation of Terms of reference for the Socio Economic Survey & Ground Water study conducted by INWRA and evaluation of consultants final report on Ground Water study in Attanagalu Oya basin	Completed	Direct
5.	Post evaluation of projects implemented by RNP & M division in Kala Oya Basin	In progress	Direct

1.2 Land Use Planning Unit

1.2.a Following studies/reports have been completed by the Land Use Planning Unit of River Basin Planning & Management Division during the year 2005.

Item No.	Activities Implemented	Progress	
		Physical	Financial
1.0	Preparation of Kala Oya River Basin Management Plan (Land Management Section)		
1.1	Preparation of Land Management Plan for Kala Oya Upper Watershed area	Completed	Direct
1.2	Preparation of Land Management plan for Mahagalkadawala Cascade constraints	Completed	Direct

Item No.	Activities Implemented	Progress	
		Physical	Financial
2.0	Mahaweli River Basin Plan		
2.1	Compilation of relevant database for land management in Mahaweli Basin (DSDwise)	Completed	Direct
3.0	Maya Basin Development Plan		
3.1	Identification of development project for land and infrastructure development in (Ma Oya + Yan Oya) Maya Basin. (Draft Report)	Completed	Direct
3.2	Preparation of development plan for Maya Basin (draft report)	Completed	Direct
4.0	Development Plan for System 'B' area		
4.1	Development Proposal for proper land utilization in System 'B' (draft report)	Completed	Direct

1.3 Environmental and Natural Resource Unit

1.3.a. Following activities were carried out by the Environment and Natural Resource Unit during the year 2005.

No	Activity	Contract Value	Physical Progress %	Financial Progress %	Total paid upto end 2005(Rs.M.)	Funds needed in 2006 (Rs.M.)
1	Development of Water Quality Standard in KOB (SLS)	0.15	65	36	0.048	0.085
2	Bio-diversity & Wetland Issues & Options for their Sustainable Management in KOB	5.29	95	89	3.068	0.37

No	Activity	Contract Value	Physical Progress %	Financial Progress %	Total paid upto end 2005(Rs.M.)	Funds needed in 2006 (Rs.M.)
3	Water Quality Assesment KOB (UOC)(i) Model	5.65	50	--	--	1.978
4	Water quality monitoring KOB (UOC) (ii)	1.00	98	50.5	0.503	0.494

1.3 b Other Activities carried out during the year 2005.

Co-ordination of work on Integrating wetland Eco-System values into River Basin Management in the KOB. (IUCN/ Pilot Project)

Successfully completed the following residential work shops:

- Third International regional learning and sharing workshop of WANI Economics February 2005. In addition draft Terms of Reference for Strategic Environment Impact Assessment for KOB and Environmental Flow Assessment for KOB also prepared.
- Integrating Wetland Economic Values into River Basin Management - Pilot Project being implemented in KOB in January, April and May 2005.
- Training workshop on Use of Environment Economics of Watershed Management June 2005 - PGIA - Peradeniya.
- Also conducted a Siltation Study of three Small Tanks in KOB.

Total funds provided by the IUCN. (US\$ 38,700)

Physical Progress	-	100%
Financial Progress	-	95%

1.3c Co-ordination and facilitate the procedure for environmental approval of projects.

1. Proposed Kundasale W.S.S. Phase I Balagolla Treatment Plant Augmentation.
2. Proposed Salinity Barrier in Walawe Ganga.
3. Mini Hydro Power Projects of Kosgama and Talawantenna.
4. Proposed Sewerage Treatment Plant at Gannoruwa.
5. Heenganga Mini Hydro Power Project.
6. Expansion of Culture Club Resort - Dambulla.
7. Kandy Town South Water Supply Project.
8. Makaba Chem (Pvt) Ltd. Pallekelle Industrial Estate.
9. Kandalama Lake Resort Hotel Project.
10. 100 MW Power Plant in Embilipitiya.
11. Proposed New Highway Bridge at Manampitiya.
12. Dambulla Paranagama Kandalama Hotel Project.

Environmental Impact Assessment for Mini Hydropower Projects

During the latter part of year 2004 Environmental Impact Assessment for following 4 Mini Hydro Power Projects were commenced and the work will continue during year 2006 too.

- i) Gatambe Mini Hydro Power Project - on Mahaweli Ganga
- ii) Rajamma Mini Hydro power Project - on Sudu Ganga
- iii) Lenadora Mini Hydro Power Project - on Mahaweli Irrigation Canals (Dambulu Oya Feeder Canal)
- iv) Kandalama Mini Hydro Power Project - on Mahaweli Irrigation Canals (Huruluwewa Feeder Canal)

No.	Mini Hydro Power Project	Submission of transmission path by CEB	Due date for the submission of 2 nd Draft Final Report by Project Proponent	Current Status
1	Kandalama	Completed	23.01.2006	Waiting for submission of 2nd Draft Report by Project Proponent
2	Lenadora	Completed	23.01.2006	Waiting for submission of 2nd Draft Report by Project Proponent
3	Rajjammana	Completed	30.10.2005	Waiting for submission of 2nd Draft Report by Project Proponent
4	Gatambe	Completed	30.10.2005	Waiting for submission of 2nd Draft Report by Project Proponent

1.3e Other Activities conducted by Environmental & Natural Resources Unit during the year 2005.

- Establishment of Water Quality Laboratory at KOB.
- Cascade Development and Natural Resource Management of KOB.
- Involving the preparation of Proposed System B Development Project.
- Moragahakanda Agriculture Development Project - involved in obtaining the extension for the EIA approval.

2. KALA OYA BASIN ORGANIZATION (KOBO)

Activities/Programmes carried out by Kala Oya Basin Organization (KOBO) during the year 2005.

The Kala Oya Basin Organization is headed by a Basin Manager who is responsible to the Director General -MASL through Executive Director (River Basin Planning & Management)/ MASL.

Kala Oya Basin (KOB) is the 93rd basin in Sri Lanka and the Government of Sri Lanka has selected it as the pioneering basin to be developed under basin concept. The extent of the basin is about 2870 sq. km. It falls in three provinces namely, North Central, North Western and Central and come under four administrative districts of Anuradhapura, Matale, Puttalam and Kurunegala. There are 20 Divisional Secretary Divisions (DSD) in the basin. The vision of Kala Oya Basin Organization (KOBO) is, “ A prosperous society and healthy eco-system in the Kala Oya Basin(KOB)”

The Objectives of the Kala Oya Basin Organization (KOBO) are,

1. Ensure availability of water in quality and quantity wise for drinking, domestic and irrigation purposes throughout the year while maintaining much needed social and ecological balance, study the ground water potential areas, the sensitive areas and declarations.
2. Conserve water Resources and Natural Resources in the KOB
3. Ensure optimum productivity per unit of land & Water, achieve higher level of Cropping intensity and water productivity, Introduce market oriented agriculture to the stakeholders.

In order to achieve these objectives, programmes were implemented through following components.

1. Water Resources
2. Natural Resources
3. Productivity Enhancement

According to the River Basin Concept, the Kala Oya Basin Organization (KOBO) has to play a facilitating role and the state organizations such as Divisional Secretary Offices, Department of Agrarian Service, Department of Agriculture, Department of Irrigation and NGOs are responsible in implementing above programmes in the field. But, the KOBO had to implement all activities in 2005 programme with the corporation of state organization and NGOs as the proper mechanism to get these work implemented through the above organizations has not been materialized yet.

During the year 2005, KOBO spent Rs. 7,890mn from the allocated budget. Due to the financial constraint at the end of year, Rs. 2.05mn of total scheduled allocation for 2005, were not received by KOBO and as a result this amount has been spilled over to year 2006.

Following are the highlights of achievements during the year 2005

1. Conducted awareness Programmes on,
 - a. Integrating Wet Land economic Values into River Basin concept jointly with IUCN for District Secretaries, Divisional Secretaries, Deputy Commissioners of Agrarian Services, Regional Directors of Irrigation and their staff.
 - b. Glericidia plantation for energy, fodder and soil conservation purposes for farmers in selected cascades.
 - c. Environment friendly paddy cultivation for farmers in Mahagalkadawala cascade.
 - d. Sedimentation of small tanks jointly with IUCN for farmers in Mahagalkadawala cascade.
 - e. Environmental enrichment and Natural resources development for school children.

2. Water and Natural resources development and conservation Programmes as well as productivity enhancement programmes were planned and implemented jointly with stakeholders and line agencies in two cascades selected on pilot basin. 06 tanks were completed under these programmes. 04 tanks were desilted to increase the dead storage for maximum ground water recuperation and storage during rainfall.
3. Prepared a manual on efficient water management practices for small tanks in Cascades. It is intended to improve the productivity of water by conducting awareness programmes for farmers in cascades systems using the above manual.
4. Arrangements were made to run the water resource management model with available data. At the same time, monitoring of stream gauges and well water levels at selected important points in the basin were carried out continuously throughout the year.
5. Demonstrations were carried out to promote rain water harvesting to meet the drinking water demand in selected locations. 27 rain water harvesting tanks were constructed under this programme.
6. Demonstrations were carried out to introduce micro irrigation techniques in selected water stress areas. 06 systems were installed under this programme.
7. Demonstrations were carried out to promote run off harvesting tanks and rain water harvesting ponds (Pathaha) for irrigated agriculture and ground water recharging with soil and water, conserving techniques in selected areas. 45 run off harvesting tanks and 05 ponds were constructed under this programme.
8. Demonstrations were carried out to promote low water consuming high value cash crops to uplift farmers' income.

9. Land use updating with GIS/GPS data base was prepared for Mahagalkadawala cascade in Galgamuwa DS Division and Manewa cascade in Ippalogama DS Division.
10. Demarcation and identification of Mahagalkadawala and Manewa Cascade Sub water shed areas.
11. Essential equipment, glassware and chemicals were ordered for the establishment of water quality Laboratory in Thambuttegama.
12. Orders have been placed to purchase a GPS instrument and a digital camera for the Kala Oya Basin Office.
13. Tree planting programmes were carried out in riverine areas, upper catchments in cascades, reservations, wetland etc. About 50,000 plants were planted under this programme.
14. Homestead development programme were implemented to promote environmental friendly home gardens in cascades with the woman participation.
15. 03 cattle sheds were constructed on pilot basis in order to promote integrated farming in cascades.
16. Introduce Glerecidia plantation in cascades for fodder and soil conservation.

The progress of the components pertaining to Water Resources, Natural Resources and Productivity Enhancement during the year are shown in table 08 and 09 respectively.

3. WATER MANAGEMENT SECRETARIAT

Introduction

The functions of the Water Management Secretariat are associated with the Water Management Panel which is headed by Director General, MASL.

The Water Management Panel (WMP) is the decision making body responsible for setting water management policies.

The Water Management Secretariat (WMS) provides information and recommendations to the WMP and is responsible for preparation of an operation plan for each cultivation season and subsequent coordination and monitoring and operations.

Seasonal Operation Plan

The seasonal operation plan gives operation policy, Allocation/Distribution priorities, and programme for the cultivation season for Mahaweli and other allied basins. The cropping data required for preparation of the Seasonal Operation Plan such as crop type, extent of each type, date and durations etc. are obtained from Irrigation Department and Resident Project Managers of Mahaweli systems while Ceylon Electricity Board provides the projected energy and peak power demand and particulars of plant availability.

Maha 2004/2005 (from 1st October 2004 to 31st March 2005)

The seasonal Operation Plan approved by the Water Panel Proposed to cultivate 100% of the extent in all irrigation schemes which receive Mahaweli water, as inflows to irrigation reservoirs can be expected during Maha season. However, the cultivation was delayed in most of the irrigation schemes as a result of very low initial storages in the irrigation reservoirs. By mid November, cultivations in all schemes were in progress.

The rainfall received during the first three months of this Maha season, in the irrigation areas and in the catchment of major reservoirs was more than expected values under average conditions. Due to heavy rains experienced in late November and early December most of the irrigation reservoirs were spilling in mid December.

During this Maha season, the reservoirs in upper catchments received fewer inflows while the reservoirs in intermediate and lower catchments received more inflows than expected under average conditions. The storages at the end of the season in Kelani and Walawe catchments were below the expected values. The storage in the reservoirs in Mahaweli system were above the expected values under average conditions.

The actual diversions to System 'H', 'D', 'G' and Minipe LB were below the planned values as more rains were experienced in the irrigation areas of those systems. The water duties in almost all the schemes were better than the average Maha values.

Power generation by Mahaweli system during the season was 489 Gwh and by Kelani system was 867 Gwh.

Yala 2005 (from 01st April 2005 to 30th September 2005)

The reservoir storages in irrigation areas at the end of Maha season were satisfactory. Hence, the cultivation extents proposed for most of the irrigation schemes were 100% except for Huruluwewa, Nachchaduwa and system H. However, the farmers in system H managed the available water to cultivate 100% of the extent in H area while the extents cultivated under Minneriya and Kaudulla were slightly reduced.

The inflows to all reservoirs were very low during the first three months of this Yala season. The first half of this Yala season can be identified as one of the driest periods in Mahaweli areas in the recent past. During last two months of the season hydrological condition improved but the total inflows to the reservoirs were less than the expected values under average conditions. As a result the reservoir water levels at the end of the season were lower than the anticipated values.

The total diversion from Polgolla was less than the expected value. Diversions to Systems 'D' and 'G' were also less than the expected values under average conditions. But farmers managed with the reduced diversions as the cultivation extents under Minneriya and Kaudulla were cut down due to dry weather prevailed at the beginning of the season. The diversions to Systems 'H' and Kandalama - Huruluwewa canal were more than the expected values. The diversions to Systems 'H', 'D', 'G' and KHF mainly depended upon the diversions from Polgolla as the inflows to Ambanganga system were very low.

Dry weather conditions prevailed in Walawe system also and Walawe reservoir was operated at a very low level throughout the season.

The water duty of most of the irrigation schemes during this season was better than long term averages.

The water duty of most of the irrigation schemes during this season was better than long term averages.

The power generation from Mahaweli system was 16% less than the expected value. The power generation from Kelani system was also less than the anticipated value. Hydropower generation in this season by Mahaweli system was 630 GWh while other hydro power generation was 647 GWh.

Maha 2005/2006 (From 01st October 2005 to 31st March 2006)

The seasonal operation plan approved by the Water Panel proposed to cultivate 100% of the extent in all irrigation schemes which receive Mahaweli water as inflows to irrigation reservoirs can be expected during Maha season. However, the cultivation was delayed in Walawe system as expected inflows were not realized. By mid November, cultivations in all schemes were in progress.

The rainfall received during first three months of this Maha season, in the irrigation areas and in the catchments of major reservoirs were more than the expected values under average conditions. Due to heavy rains experienced in late November Kalawewa and Rajangana reservoirs were spilling. By the end December most of the irrigation reservoirs and Kotmale and Victoria reservoir had satisfactory storages.

The energy generation during the year under Mahaweli reservoirs is as follows.

Energy Generation (GWh)

	Year 2005
Kotmale	299
Victoria	346
Randenigala	224
Rantembe	129
Ukuwela	168
Bowetenna	43
Total	1,209

The total extents cultivated in Yala/Maha seasons are shown in Table 10.

IV. ENVIRONMENT AND FOREST CONSERVATION.

The main objective of this unit is to promote the protection and scientific management of the Mahaweli Upper catchment area.

The major activities carried out in the Upper Mahaweli catchment area are; Soil and water conservation, Environmental Education, solid waste management, conservation farming, Bio-diversity Conservation, Geographical Information Systems and Remote Sensing based mapping and database preparation, land use planning, Sediment and river flow monitoring and Pavithra Ganga Programme.

Hydrological Monitoring of the catchment Area

Hydrological monitoring programme continued to assess the sediment yield and water yield at the gauging stations in the following catchments.

1. Nilambe Oya at Gurukelle
2. Upper Uma Oya at Welimada
3. Hulu Ganga at Narampanawa
4. Maha Oya at Maha Oya
5. Belihul Oya at Lemasooriyagama
6. Atabage Oya at Atabage
7. Mahaweli River at Ambagamuwe (Abandoned)
8. Mahaweli River at Nawadevita (Only water discharge is monitored).

River Discharge Monitoring Programme

River discharge was continuously monitored using the installed automatic water level recorder at each of the sediment gauging stations.

Land Use Planning

Land Use Planning is a decision support activity which provides information and guidelines on sustainable land resources management. This section works in the field of land use mapping, provision of technical guidance on land resource assessment, environmental management activities, land use planning and watershed management.

Land Use Planning (Internal)

- I. Updating were completed for 12 Land use maps at scale 1:10,000 in the Upper Mahaweli catchment area (selected land use maps including seasonal crop area and marginal tea land on or above 30% slope) based on air photos and detailed maps.
- II. Preparation of 12 micro catchment level land use plans/maps for selected areas within Upper Mahaweli Catchment.
- III. Completed two sustainable land use plans for Neelawala and Tsipane micro catchments.
- IV. 12 presentations were completed on land use planning for Mahaweli officers, school children, teachers etc.
- V. 15 programmes were conducted on environmental management activities for local government bodies (Pradeshya Sabhawa)
- VI. Prepared 02 updated land use maps for Mahagalkadawala and Menewa cascades of Kala Oya Basin based on the air photo maps.

(2) Land Use Planning (Special Assignments)

Land use mapping programme was undertaken at the request of Upper Watershed Management Project (UWMP) under the Environment Ministry. Accordingly, mapping of replanted forest lands and soil conservation areas were completed for Balangoda, Imbulpe, Haldummulla D.S. Divisions.

Budgetary allocation for the land use planning section was Rs. 24,000/- and total expenditure was Rs. 22,500/- for the year 2005.

Geographical Information System

During the year, GIS/RS section provided its services to fulfill the demands of the Unit. River Basin office - Thambuttegama and other divisions of the MASL, External Government Organizations, post graduate and under graduate students, school children/teachers, various projects through Natural Resources Management Services (Pvt) Ltd., as well as external customers. These services varied from simple map preparation to database development and capacity building programmes.

The principal activities of the section are,

1. Database Development.
2. Internal & External GIS/GPS/RS activities.
3. Capacity building.
4. Demonstrations and awareness for students and visitors.

Natural Resource Conservation

In the year 2005 Natural Resource Conservation Section (NRCS) has been assigned following responsibilities.

1. Field planning and implementation of Natural Resources Conservation Programmes which related to Watershed Management in the Upper Mahaweli Catchment area (UMCA).
2. Implementation of soil and water conservation activities in the selected mini catchments in collaboration with local government institutions and other agencies in the UMCA.
3. Maintenance of two training and demonstration farms at Doragala and Pallekele for the promotion of conservation farming and plant sapling production. Except training and demonstration farms, all other activities were carried out under Mahaweli Pavithra Ganga Programme.

Training and Demonstration Farms

Objective

The main objective of maintenance of two training and demonstration farms are to make awareness and train farmers, field officers, NGO and GO personnel for the catchment conservation activities.

Activity	Target		Progress	
	Physical	Financial (Rs.)	Physical	Financial (Rs.)
Continuation of Doragala Training and Demonstration Farm	01	} 660,000.00	01	364,545.00
Continuation of Pallekele Training and Demonstration Farm	01		01	306,580.42
Plant production (at Pallekele Farm)	15,000 Nos	15,049 Nos		671,125.42
Material purchasing for Training and Demonstration Farm		40,000.00		50,803.25
Total		Rs. 700,000		Rs. 721,928.67

Demonstration Farms:

Plant	Balance stock from 2004	No. of plants produced 2005	No. of plants issued in 2005	Remaining plants at the end of 2005	Dead & Discarded
Forest	} 6,392	} 15,049	11,472	2,666	} 2,373
Bamboo			631	130	
Medicinal			2,359	1,663	
Total	6,392	15,049	14,462	4,629	2,373

Plant Purchasing For Catchment Conservation

Activities

Physical Target : 10,000 No of plant

Financial Target : Rs. 80,000.00

Implemented Activity

Purchased From	Implemented Activity							Financial Progress (Rs)
	Stream & Reservoir Bank Planting (Nos)	Avenue Planting (No's)	Home Garden Planting (No's)	Community Forestry Planting (No's)	Medicinal Garden Planting (No's)	School Temple/ Parks/ Planting (No's)	Total Plants (No's)	
Registered Plant Nurseries (03)	1,929	1,870	2,753	2,230	20	659	9,462	
Mahaweli Plant Nursery Sys. 'C'	--	--	1,000	--	--	--	1,000	77,264.00
Forest Department	--	--	--	--	--	103	103	
Total	1,929	1,870	3,753	2,230	20	762	10,565	

- **Financial allocation for year, 2005 - Rs. 780,000.00**

- **Financial progress for year, 2005 - Rs. 799,192.67**

Environment Education

The principle of operation for the Environmental Education strategies are used varying means of mediate communication, news letters, radio programmes, exhibitions, video films, slide shows, competitions, leaflets, posters, booklets, exposure tours, training programmes, seminars, workshops, field days etc.

Training Centres.

Environment Forest Conservation Unit has three training centres in Polgolla, Pallekele and Doragala. They are equipped with all audio-visual facilities and other training needs. Pallekele training centre has accommodation facilities for 20 persons. There are demonstrations on soil, water conservation and medicinal plants, nursery and watershed related demonstration. Doragala training centre has demonstration on integrated farming and organic agriculture related activities.

School Programmes.

Objectives:

1. To improve the knowledge and skills of school children on Natural Resource Management.
2. To make children active participation in environmental conservation activities.

Different methods were adopted to enhance the knowledge, skill and attitude of school children for better environmental conservation activities in the premises of schools and out of the schools.

Environment Education Section conducted the watershed management training and awareness programme for farmers, line agency staff, NGO's staff, school children, teachers youths, undergraduates etc.

Training Programmes

Main Activity	Sub activity	Target		Progress		No. of participants
		Phy.	Fin Rs. Cts.	Phy.	Fin Rs. Cts.	
1. Staff Training	1.1 Liquid solid waste management training program	03	30,000.00	03	21,776.00	127
	1.2 Unscheduled programme (According to the need assesment)	08	47,000.00	08	30,272.00	204
2. Beneficiaries Training Programme	2.1 Inegrated farming system	08	40,000.00	08	29,112.00	301
	2.2 Home Garden development programme	10	40,000.00	04	10,005.00	224
	2.3 Mini catchment protection programme through PRA process		80,000.00			
	• Sramadana	12		12	16,598.00	438
	• Field days	10		10	35,714.00	436
	• Field visit	10		16	27,916.00	306
	Total		61	237,000.00	69	171,393.00

Environmental education implemented exhibition programmes for awareness of general public & school children. The programmes specially considered on environmental issues and conservation activities for better conservation.

Environmental Education Programme

Main Activity	Sub activity	Target		Progress		No. of participants
		Phy.	Fin Rs. Cts.	Phy.	Fin Rs. Cts.	
3. School Environm-Programme	3.1 Planning workshop	02	12,000.00	03	11,567.00	99
	3.2 Review meeting	02	20,000.00	02	11,036.00	78
	3.3 Explorer project (for students)	2,000	70,000.00	1,801	83,306.00	2,000
	3.4 Exposure tour(soil, water & biodiversity) for teachers	02	50,000.00	02	32,961.00	73
	3.5 Environmental activity training schools (medicinal arboreta, garden development)	30	75,000.00	26	92,552.00	334
	3.6 G.I.S. for school children	04	16,000.00	04	9,628.00	86
	3.7 Parisara Puwath	04	10,000.00	03	8,000.00	--
	3.8 Material development (films, handouts, photos)	05	50,000.00	05	85,846.00	
	No. of projects	2,049	303	1,846	334,896.00	

Distribution of Publications.

The section has distributed 4700 publications to enhance the knowledge and awareness of the general public, extension officers, school teachers, children and NGO's members on environmental conservation.

MAHAWELI PAVITHRA GANGA PROGRAMME

“Mahaweli Pavithra Ganga Programme” is a concept in which the theme is to keep Mahaweli river and reservoirs clean in a sustainable manner.

Goal

The goal of the programme is to keep sufficient quantity of water throughout the year with good quality in Mahaweli river and reservoirs.

Contribution for the Solid Waste Management

The unit has intensively contributed for the preparation of solid waste management plans for five Pradeshiya Sabha i.e. Gangawatta PS, Kundasle PS, Udunuwara PS, Yatinuwara PS and Akurana PS. An invitation has been received for such a contribution for Nawalapitiya UC too. Public pressure on solid waste management seems to be increasing considerably. Consequently, both capacity and capability, are to be further developed in terms of resource allocation and Human Resource Development to cater such requirements.

Water Quality Monitoring.

Water Quality Testing was commenced in March of the year. Accordingly, quality of water is testing using newly purchased photo meter and portable conductivity meter for selected parameters aiming at two objectives.

1. How quality of water varies in different locations of the Mahaweli River from Hatton to Polgolla Barrage.

Monthly sample collected at Hatton, Ginigathhena, Nawalapitiya, Gampola, Gelioya and Polgolla of the Mahaweli river are tested for this purpose.

2. How major tributaries around Kandy City are threat to the Mahaweli river in terms of water quality.

Fortnightly, sample collected from Nanu Oya, Meda Ela, Hali Ela and Pinga Oya are tested for this purpose.

In addition, water samples collected from same locations were tested in December at the Water Supply and Drainage Board (WSDB) laboratory at Peradeniya for the verification of photo meter and conductivity meter readings. It has been revealed that some readings of WSDB are not strongly different with EFCU samples. These differences do not make effort to achieve EFCU objectives. These verification testings have been planned to carry out in every three month from next year.

As EFCU does not have facilities to carry out microbiological testing, water samples tested for such parameters at the WSDB laboratory in December. These testings have been planned to carry out in every three month from next year.

Results of all these testings conducted so far indicate that;

1. Quality of water in the Mahaweli River is still satisfactory both in chemically and biologically except Hatton.
2. Water in Mahaweli four tributaries is biologically polluted and will threat to drinking water supply in near future.
3. Water in Meda-Ela and Hali-Ela are worse polluted in terms of biologically and chemically. Water of these streams are frequently exceeds the limit that has been declared by the Central Environmental Authority of Sri Lanka when the industrial or any other effluent adds to a waterways.

4. Monitoring of water quality in other environmentally sensitive streams has a future importance.

In addition, testing for hardness has been commenced by December by using a Mini testing kit. It has been planned to develop this programme in next year according to the availability of funds.

Contribution for the Control of Invasive Weeds.

Public interest on the invasive terrestrial weed Giant Mimosa (*Mimosa Pigra*) has gone up as it had spread and a common seen in sides along the Mahaweli river and its tributaries. They had been identified it as a weed that is a threat to the present eco system and bio-diversity of such locations and get into a manageable level. Requests were made through LG11 to initiate a wider public awareness programme in this regard. Accordingly, 11 sramadana programmes were conducted in 11 locations where Giant Mimosa had been spread mostly. The purpose of these programmes was merely not to control mimosa in such particular locations, but to educate the people on Mimosa and its control through a practical experience.

Also EFCU took part in the National Invasive Weed Control Programme co-ordinated by the Department of Agriculture (DOA). As a result, two biological agents for controlling Japan - Jabara (Water Hyacinth) were released as a pilot to the Japan - Jabara invasion near the Polgolla barrage in Rawanoya. Besides, the Departmenta of Agriculture (DOA) funded to establish a mini breeding pond of same biological agent at the EFCU premises at Polgolla.

Tree Planting Programme.

EFCU contributed for many tree-planting programmes organized by LGII, schools and various other institutions.

Riverine Bamboo Project

The objective of the project is to re-forest river banks with bamboo through bio-technical propagating to minimize bulk erosion at the Mahaweli riverine and tributaries.

The tissue culture laboratory was established on 28.10.2005 and thereafter, the production of tissue cultured Giant Bambo plants was started. 750 jars of *Dendrocalamus hookaria* were produced by the end of December 2005.

In the year 2005, Rs. 10.5 million was spent to establish the laboratory.

Financial review as at 31-12-2005.

Project/ Components/ Activities	Financial Allocation - 2005 Rs. m.	Expenditure upto Nov. in 2005 Rs.m	Financial Progress %	Remarks
Establishment of Tissue Culture Laboratory and Nursery	11.50	10.5	91.3	Funds requested 11.5 m Funds received 10.5 m Outstanding payments 0.55 m