

CHAPTER TWO

TECHNICAL SERVICES DIVISION.

The Executive Director (Technical Services) reports directly to the Director General ,and is responsible for,

1. The overall planning and implementation of projects relating to consolidation, rehabilitation, upgrading and new developments.
2. The management of physical assets including up keeping, operation and maintenance of hydraulic infrastructure used for storage and conveyance of water for irrigation and power generation inclusive of safety assurance of facilities.
3. Development of Mini Hydro Power Projects through Private Sector Participation.

The major activities carried out by this Division under item 1 above during the year 2005 are as follows.

Mahaweli Restructuring and Rehabilitation Project (MRRP) in system 'H'.

MRRP Project came to a close by end of year 2003. However, there were some outstanding payments resulted due to lack of funds amounting to nearly Rs. 200 million which amount was received under year 2005 allocation and outstanding payments amounting to Rs. 176 million has been settled up to now.

Mahaweli Consolidation Project (MCP) in system 'G' and Zone 2 of Mahaweli System 'C'.

The rehabilitation of the irrigation canal system in system 'G' and Zone 2 of Mahaweli system 'C' were undertaken through the European Union Funds. Though the project ceased by the end of 2002, there were outstanding payments to tune of Rs. 45 million which money has been requested from European Union through Ministry of Finance and yet to be received.

Development works of system 'C' under Kuwait Fund for Arab Economic Development (KFAED)

With the approval granted by KFAED to proceed with works for the utilization of the loan balance amounting to Rs 81 million, the following works were identified for execution and achievements to dates are as follows.

1. Drainage improvement of Dehiattakandiya Township aiming to control pollution in Dolakanda Tank. - 90%
2. Construction of petty shops in Dehiattakandiya Township - 100%
3. Supply of electricity to 16 hamlets in System 'C' - 100%
4. Improvement of road network in Dehiattakandiya Township - 100%
5. Construction of an electric fence to minimize damages to settlers from wild elephants. - 100%

The KFAED fund is to be ceased by end December 2005. However, in order to process reimbursement claims, extension of the loan up to March 2006 have been requested from the Funding Agency.

Mahaweli System ‘C’ upgrading Project (MUP) in Zones 3-6 of system ‘C’ under Japan Bank for International co-operation (JBIC) Fund.

All major work identified in the original schedule for MUP were completed by the end of 2004.

As there was considerable amount of savings on the loan at the completion of the original programme, the additional items have been taken up with the approval of the donor agency (JBIC) with an extended period for the project by two years (Up to November 2006).

1. Improvements to the spillway of Ulhitiya Reservoir, repairing of the sluices of Ulhitiya and Ratkinda reservoirs and Maduruoya link tunnel inlet and outlet.
2. Concrete lining of branch canal No.2 in the stretch from 21,000 km to 29,033 km.
3. Concrete lining of minor branch canal MBC (RB) of Zone 6.
4. Clearing the village tanks covered by vegetation.
5. Improving drainage in the system.

preliminary site survey is being done for item 4. Progress of item 1 and 3 is 50%. Progress of item 2 is 95%. Tender process for item 3 is in progress.

Development works of the Left Bank of Mahaweli System ‘B’ under Saudi Fund for Development (SFD).

SFD and MASL agreed upon the Work Programme for the remaining loan balance of Rs.260 million and the progress of the activities of the Work Programme as at end 2005 are as follows. The original completion date of this Programme was to end 2005. However, extension has been granted up to end 2006.

	<u>Activity</u>	-	<u>Progress</u>
1.	Construction of 06 water supply schemes to supply pipe borne water to settlers.	-	30%
2.	Metalling and tarring of Singhapura -Kandakadu road.	-	88%
3.	Metalling and tarring of Damminna-Alawakubura Maduruoya L.B, road.	-	50%
4.	Metalling and tarring of Manampitiya - Ganedevalaya road.	-	100%
5.	Construction of internal roads in Hamlet for Pubudugama sub-families.	-	100%
6.	Improvements to Pimburettewa Tanks fill aiming at the arrest of downstream (d/s) erosion.	-	01%
7.	Improvements to Pimburettewa Tank Bund with provision of a toe filter.	-	100%

8. Improvements to Randiyawewa spillway. - 100%
9. Irrigation Infrastructure Development (D-Canals & F- Canals) in Ransaratenna and Mahawelitenna aiming to develop 750 hec.

Contracts of Rs. 200 million were awarded upto date and preliminary site survey is being done for the work worths Rs. 20 million in Mahawelitenna area. The overall progress of the work programme upto date is 60%.

The progress has been affected due to,

1. Sporadic incidents happened in relation to security in the area during preliminary investigations & survey work.
2. The reluctance and poor response of the contractor in bidding for the works in other areas in fear the incidents happened earlier.
3. Shortage of labours and other construction materials.
4. Delay in supply of electricity for water supply schemes.

Dambulla - Bakamuna -Kalagahawela Road Project (DBKRP) under Japanese counterpart Funds (JCF).

The construction works of the road in certain stretches came to a standstill due to land acquisition problems. However, the issues were settled towards the end of the year 2004 with an approval given by the Cabinet to follow special guidelines for land acquisition aiming the speeding up of the process.

During the year 2004, Wildlife Conservation Department granted approval to improve the 9 km stretch which they refused earlier and award was made to CECB.

Earthwork and structures along the entire road stretch continued throughout the year 2005 and satisfactory progress was achieved up to now.

With a view to carry out surfacing of the road during the year 2006, preliminary site survey, designs and preparation of Bidding Documents for 4 contract packages have been completed.

The total expenditure during 2005 is Rs. 200 million (100% utilization of allocation) and the overall progress up to end 2005 is 62%.

Development Work in System 'L'

During the year, improvements to the Sapumalwewa Tank that includes the improvements to the tank bund, construction of sluice was carried out and the work is almost complete except provision of the rip rap protection.

48 small scale contracts were awarded for the rehabilitation of canal system and some urgent works in the minor tanks and link roads. All such works were undertaken by Farmer Organizations of the area.

The percentage of utilization of capital funds during the year 2005 is 92.7%

Walawe Left Bank Irrigation Upgrading and Extension Project - Phase I -(SL-P48)

Construction of Irrigation & Social Infrastructure in units 1,2,3,4,5,6,7 and 8 was conducted under Contrat Package No.WLB/IUEP/Phase II/03. Contract for construction of Irrigation & Social Infrastructure in units 9,10,11&12 under contrat No.WLB/IUEP/Phase II/04 were awarded in January 2005 and works are prodeeding.

The total Budget allocation for the year (DFA, RFA,DF & Recurrent)	= Rs. 1,557.85 m
Expenditure upto December 31, 2005	= Rs. 1,437.86 m

The percentage of utilization of capital funds for the year 2005 is 92%.

Moragahakanda Development Project

The feasibility report on the project was completed by Messrs Lahmeyer International, the consultant engaged in studies in August 2001. The cost for the study was covered from a loan from Kuwait Fund for Arab Economic Development. Department of National Planning has given the concurrence indicating that action will be initiated through the Department of External Resources.

A number of meetings were held during the year by a panel appointed by the Director General, MASL to make proposals on the implementation of the Project and a presentation was made on the approach for implementation including the various options for implementation depending on the level of funding that could be obtained. The implementation, however, hinges onto funding a source of funding for the implementation of the project.

Meanwhile, the validity period for the approval of Environmental Impact Assessment (EIA) for the project provided by Central Environmental Authority (CEA) lapsed by October 2004 and a request to CEA has been launched. A meeting of the Technical Evaluation Committee was arranged by the Ministry of Agriculture, the approving agency nominated by CEA, but the formal approval is yet to be granted.

Kaluganga Development Project

A feasibility study in respect of harnessing inflow from the Kaluganga basin was carried out as an extension of the studies for Moragahakanda Development Project by Lahmeyer International and the Final Report was completed during the previous year. This report has been forwarded to the Department of National Planning for their scrutiny. An EIA on the project is yet to be carried out, which is a prerequisite for implementation.

Management of Physical Assets

Necessary directions and guidance in respect of design, approval of estimates and tender process connected with the Asset Management in Headworks as well as in Downstream infrastructure were given as appropriate by this Division.

Dam Safety and Reservoir Conservation Unit

The Consultant Jacobs GIBB, who carried-out a comprehensive study of 32 dams under the Mahaweli Restructuring and Rehabilitation Project (MRRP)/Dam Safety and Reservoir Conservation Programme has given the following main recommendations in their reports.

- To carry out structural and operation reliability improvements of some of the 32 dams as a safety measure.
- To have Standing Operation Procedures (SOP) for each and every main dam.
- To have an Emergency Action Plan for every dam.
- To legalize obligations of dam owners to comply with formulated code of practice and institutionalized Dam Safety Management Centre as a regulatory body.
- To establish a Dam Safety Management Centre under the dam safety programme.

The following works were carried out in the year 2005.

- ❖ Training sessions were conducted for HAO & M on the preparation of SOP for each dam under USBR format.
- ❖ The Draft SOP was completed for Bownntenna dam which will be published in January 2006.
- ❖ Assistance given to HAO & M Sub Division for necessary structural and reliability improvements of Victoria, Kotmale and Ulhitiya dams.
- ❖ The Data Management Centre has collected around 50% of the data on Mahaweli dams which is now available at the centre in GIS based electronic and hard copy version. Work is continuing. A catalogue of available information will be published by end of the year.
- ❖ Copies of the Draft “Code of Practice” were circulated to all dam owners SLNCOLD, IESL inviting for discussion of course of action for implementation.
- ❖ A compulsory requirement of the SOP is the inspection and Safety Review of dams by a professional team. Terms of reference and other procedural requirements have been completed for inspections.

Development of Mini Hydro-power Projects through Private Sector participation.

Letter of intents was issued for following projects and Feasibility Reports submitted by the Project Proponents (PPs) are being evaluated by Environmental Unit of MASL.

1. Lenodara & Kandalama (1.22 Mw)
2. Gatambe (12 Mw)
3. Palapathwela (Rajjammana) (2.8 Mw)
4. Atabage (3 Mw) to be cancelled due to interference with CEB long term power project.

Press notices were published in the National Newspapers on 04 September 2005 and Request for Proposals (RFP) are being issued to Project Proponents (PPs) for following projects and proposals were closed by 29 December 2005.

- Along Sudu Ganga 1 .Ukuwela (1.6 MW) 2. Branford (2.5 MW)
Along Maduru Oya Left Bank Main Canal 3. Sluice itself (2.8 MW)
4. Drop structure at 24 + 140 (1.6 MW)
5. Drop structure at 28 + 450 (0.6 MW)

Kalawewa main reservoir.

6. R.B Sluice (0.7 MW)
7. L.B Sluice (0.3 MW)

Downstream Development Work

The major function of this sub-division is to co-ordinate all technical activities in systems under Mahaweli Authority that performed by the Technical Services Units of each RPM. During the year routine repairs and maintenance works in respect of buildings, camp premises, irrigation structures, access roads, tanks and irrigation canals including weeding, desilting, earth works and gravelling were carried out by the technical units of each RPM. These were carried out by awarding contracts through contractors, mainly Farmer Organizations.

In all systems, the budgetary allocation for the year has been utilized and financial progress is nearly 100%.

I Headworks, Operation and Maintenance

Operation and maintenance of major Headworks are managed by the HAO & M Division, which was formed in 1985. Polgolla, Bowatenna, Kotmale- Gamini Dissanayake Reservoir, Victoria, Randenigala/ Rantembe, Mapakada, Maduruoya and Udawalawe Projects including Ulhitiya, Rathkinda, Minipe, Transbasin canal come under the purview of this Unit and managed by the respective Engineers -in-charge (EIC).

The unit is mainly responsible for development and implementation of Dam Safety Programme that consists of surveillance (inspection), operation and maintenance activities to ensure the dams and appurtenance structures are safe for continued operation. There are eight major dams and two Transbasin canals under its administration. They are,

- * Kotmale dam inclusive of reservoir, spillway and gates.
- * Pollgolla barrage and gates and tunnel intake.
- * Bowatenna dam inclusive of reservoir, spillway and related structures.
- * Victoria dam inclusive of reservoir, ,spillway and related structures.
- * Randenigala dam inclusive of reservoir, spillway and related structures.
- * Rantembe dam inclusive of reservoir, spillway and related structures .
- * Minipe Transbasin canal and related structures.
- * Ulhitiya Ratkinda dams inclusive of spillway gates and sluices.
- * Maduruoya dam, reservoir and related structures.

Activities Implemented during the year under review.

- On-site examinations and dam behavior monitoring.
- Maintenance in accordance with operation and Maintenance Manuals.
- Repairs, rehabilitation and improvement works based on Annual Inspection Reports.
- Development of standing operating practices and emergency action plans

- Reservoir conservation.
- Water quality monitoring
- Planning for future upgrading and rehabilitation works

Actual progress of work pertaining to routine operations and maintenance activities achieved during the year under review.

- Regular maintenance in accordance with preventive maintenance schedule for all dams - Completed
- Collection of Instrumentation data and analysis - As Planned
- Water quality maintaining activities as scheduled - Completed
- Reservoir conservation activities and recovery of encroached areas - Being Continued

In addition to routine operation and maintenance activities, the following works were also implemented by the unit.

Kotmale

- * Purchasing of a dip meter - Completed
- * Maintenance of water supply schemes - Completed
- * Spillway gate painting - A contrat awarded to SEC.
- * Twenty four hour vigilance of operation of control gates of the dam. - Being continued

Polgolla

- * Disposal of waste and debris collected at the intake - Being continued
- * Removal of unauthorized constructions within the reservation of the barrage - Being continued
- * Servicing the panels, recalibration of indicators and replacing of relays in gate control system - Completed
- * Fabrication of new grapping beam required to lift gated - Being attended

- * 24 hour vigilance of operation of control gates of the dam and intake. - Being continued
- * 24 hour vigilance of operation of control gates of the dam. - Being continued

Bowatenna

- * Removal of water weeds of K-H canal and vegetation management of the bund - Completed
- * Repair and repainting of steel works at irrigation intake - Completed
- * Preparation of SOP - Completed
- * Touch up painting of spillway gates - Completed
- * 24 hour vigilance of operation of control gates of the dam - Being continued

Victoria

- * Touch up painting of spillway gates - Completed
- * Repair of nitrogen accumulators to correct the fault in the positioning the gate - Completed
- * Compensation water valves replacement of seals - Completed
- * Replacement of pressure gauges and hydraulic line repairs of low level outlet - Completed
- * In house inspection was carried out
- * 24 hour vigilance of operation of control gates of the dam - Being continued

Randenigala / Rantembe

- * Provision of idipoc P7 (a read out unit) - Completed
- * Rectifying the detective alarm monitoring - Stage I Completed
- * Removal of loose rock part at Randenigala drainage gallery of beams - Completed
- * Provision of spare parts for control system of the gates - Completed
- * Repainting of spillway gates at Randenigala and Rantembe - Completed
- * Replacement of limit switches
- * Painting of hand rails at both dams - Completed
- * Replacement detective instruments - Completed
- * 24 hour vigilance of operation of control gates of the dam. - Being continued

Mapakada

- * Cleaning embankments of Minipe Transbasin canal - Completed
- * Cleaning embankments of Loggaloya & Diyabana Oya dams - Being continued
- * Maintenance of level crossings - Completed

Maduruoya

- * Cleaning of embankment - Completed
- * Repair & repainting of steel works (RB Sluice) - Completed
- * Trash rake operating machine repairs (RB Sluice) - Completed
- * Repairs to link tunnel access road - Completed
- * Overall repairs to NDK outlet gates, gate stem and spindle in hoisting mechanism - Being attended
- * Temporary repairs to link tunnel gate - Completed

Special assignments undertaken and the actual progress achieved during the year under review.

- * Early warning system at Randenigala - Completed
- * Sedimentation studies on Kalawewa Reservoir - A contract was awarded to NARA.

The budgetary allocation and the actual expenditure incurred for the year 2005 are as follows;

Description	Budgetary Allocation by MASL (Rs. Million)	Actual Expenditure (Rs. Million)
Capital	72.00	60.175
Recurrent	113.00	111.159

(Value of work done
Rs.65.4 million.)