

# **Water Environment Management in Sri Lanka & role of the Central Environmental Authority**

Ramani Ellepola  
Director General  
Central Environmental Authority

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## 1. Status of water resources in Sri Lanka

- Annual Rain fall –wet zone – over 2000mm/year
- Intermediate zone – between 1500- 2000 mm/year
- Dry Zone – 1500 mm/year
- River basins – 103 Total length – 4,500km
- Total area of irrigation & multipurpose reservoirs – 169,941 hectares
- Ground water Resources – 7,800 million m<sup>3</sup> about 72% of the rural population rely on ground water.
- Total Annual Fresh Water Withdrawals - 13 billion m<sup>3</sup> (2005)
- Annual Fresh Water Withdrawals by sectors
- Agriculture 87.3%
- Industry 6.4%
- Municipal (including domestic) 6.2 %

(Source : Central Bank Report 2010)

## Status of water resources in Sri Lanka - Contd

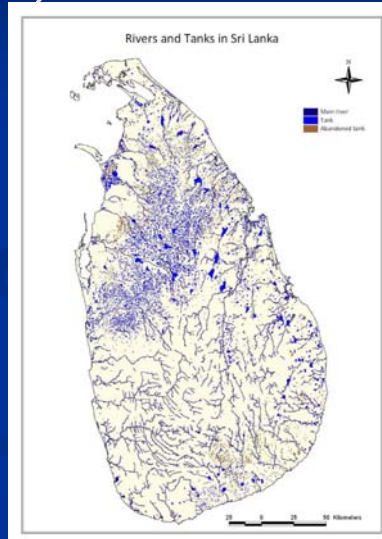
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# DISTRIBUTION OF RIVERS AND TANKS (INCLUDING THOSE ABANDONED)

## Ground Water Resources

The total groundwater availability in the island from infiltration, percolation and sub-surface circulation is estimated to be around 7,250 – 7,800 million m<sup>3</sup> per annum, which is about 15% of the country's surface water resources  
(Source: Sector Vulnerability Profile Water August, 10 2010)



## Planned Irrigation and water supply projects

- There are several irrigation and water supply projects presently being implemented and planned
- Approval Granted Projects
  - Proposed Rambaken Oya Reservoir project in Ampara
  - Moragahakanda Agricultural Development Project. – PAA Ministry of Agriculture
  - Proposed KaluGanga Reservoir and Agricultural Extension Project
  - Proposed Uma Oya Multipurpose Development Project
  - Proposed Kandy South Water Supply Project 2006 July 03
  - Badulla Hali Ela and Ella integrated Water Supply Project

### ■ Processing Projects

- Kivul Oya Reservoir Project in Vavunia District
- Lower Malwathu Oya Reservoir Project in Mullativu District
- Morana Reservoir Project in Badulla
- Kalugal Oya Reservoir Projects in Ampara
- Talpitigala Reservoir Project in Badulla
- Construction of Reservoir across Per area for water supply in Vavunia
- Diversion of Mahaweli water to North Western Province
- Proposed Upper Elehera Canal Project.
- North Central Province Canal Project
- Construction of a weir across Keleniganga to supply water to the Seethawaka Industrial Zone
- Proposed Mahagona Wewa Reservoir Project
- Supplemental EIA for the Uva Oya multipurpose Development Project
- Increasing the Height of Minipe Ancient at Elehera.
- Proposed Yan Oya Reservoir Project

## Status of Kelani River

- Kelani River, having the total length of 145 km and 2292 sq km of river basin is the second largest watershed.
- Kelani River is an important source of drinking water for the Colombo District, where water supply intake point at Ambatale is 14 kilometers from the river mouth
- Kelani River has the most potential for pollution due to passing through most populated capital of Colombo and proximity of industries.
- The main sources of water pollution are the land based sources such as treated and untreated industrial effluents, agricultural runoff, domestic and municipal effluents.
- Siting of high polluting industries which discharge large quantities of waste water is being controlled at present, in order to minimize pollution of the river.

## Water quality of Kelani River

- BOD,COD&DO of the river are within standards stipulated by CEA. Fluctuation of Chemical Oxygen Demand , Dissolved Oxygen is reported due to receiving effluent from industrial zones.
- EC of the river water is within acceptable range except for seasonal variation due to salinity intrusion.

## Activities Contributing to Deterioration of Water Quality

- Untreated wastewater discharge
  - Domestic
  - Industrial
- Haphazard dumping of solid waste.
- Agricultural run off
  - Agro chemicals
  - Fertilizers
- Sand mining activities
- Unplanned development activities
- Recreational activities
- Unlimited water usage rather than requirement.

### 3. Effects of Water Pollution

- Contamination of surface & ground water by nitrate & bacteria.
- Eutrophication of lakes & reservoirs.
- Bio accumulation of heavy metals.
- Increasing turbidity
- Decrease in water flow.
- Salt water intrusion
- Contamination by oil

### 4. Institutes for Water Environment Management in Sri Lanka

\* *Central Environmental Authority*

Overall responsibility for protecting water Environment

- *National Water Supply & Drainage Board*- Drinking water and sewage Management
- *Water Resources Board* –responsible for preparation of comprehensive and integrated plans for conservation, utilization, control and development of the groundwater resources in Sri Lanka.
- *Department of Irrigation* – Regulation & control of inland waters
- *Mahaweli Authority* – Maintenance of Mahaweli River and its reservoirs for development of lands for agriculture.
- *Department of Coast Conservation* – Conservation of the coastal zone and management of its resources.
- *Marine Pollution Prevention Authority*- protect the marine environment from ship based and shore based maritime related activity.
- *National Aquatic Resources Agency* –Aquatic Researches

## Environmental Protection In Sri Lanka

- The need for environmental safeguards is enshrined in the constitution
- Article 27 states that “the state shall protect, preserve and improve the environment for the benefit of the community”
- Article 28f states that “the exercise and enjoyment of rights and freedoms is inseparable from the performance of duties and obligations and accordingly it is the duty of every person in Sri Lanka to protect nature and conserve its riches”.

## Environmental Protection in Sri Lanka

- In Sri Lanka there are a multitude of laws (more than 100!) with some provisions relating to environmental protection and Management.
- Some of the earliest legislation dates back to the last century (eg. Forestry, Protection of high elevations)

## Environmental Protection In Sri Lanka

- The National Environmental Act no 47 of 1980, is the first comprehensive piece of legislation dealing exclusively with environmental Protection and Management.
- The Central Environmental Authority (CEA) was set up in 1981 to implement the provisions in the National Environmental Act.

## HISTORY OF THE CEA

- CEA was set up in 1981, under the provisions in the national Environmental Act no 47 of 1980.
- At the inception, the CEA was a **COORDINATING AND POLICY MAKING** body with no regulatory authority.
- In 1988, amendments were made to the NEA which transformed the CEA into a regulatory Agency.



## Central Environmental Authority

- The Central Environmental Authority is the National Agency for Environmental Protection and Management in Sri Lanka
- CEA acts as a regulatory agency in approving new infrastructure and industrial projects.
- It also maintains water quality through the stipulation of emission standards as well as ambient standards

## Regulatory tools & standards

### Part IV- Environmental Management and Protection

#### Part IV A- Environment Protection

Environment Protection Licence (EPL) Procedure

Hazardous Waste Management Licence (HWML) procedure

#### Part IV B- Environment Quality

Environmental Standards for Emissions

(Wastewater, Noise, Air emission, Vibration)

#### Part IV C- Environment Management

Environmental Impact Assessment (EIA),

Strategic Environmental Assessment(SEA)

## Management of Water Environment under 02 main Divisions

- Environmental Pollution Control Division
  - Environmental Pollution Control Unit
  - Waste Management Unit
  - Laboratory
- Environmental Management & Assessment Division
  - Environment Impact Assessment Unit
  - Natural Resources Management Unit
  - Geo Informatics Unit

## Environmental Pollution Control Division (EPC)

- Implementation of Environmental Protection Licence (EPL) procedure for industries.
- Environmental Recommendation (ER) procedure for new industrial sites, - Administrative procedure
- Implementation of Scheduled Waste management Licence for operating a facility for scheduled waste - regulation No.1 of 2008
- Solid waste Management regulation on Municipal Solid Waste No.1 of 2009.
- Monitoring of Industrial effluent quality.
- Water Quality monitoring of selected surface water bodies.

## Environmental Management & Assessment Division (EMA)

- Environmental Impact Assessment (EIA) for major projects & Initial Environmental Assessment (IEE) for small scale projects.
- Strategic Environmental Assessment (SEA)
- Environmental Clearance for activities not listed in Part iv c of the NEA.
- Declaration of Environmental Protected Areas under section 24C and 24D of NEA – 6 environmentally important areas have been declared.
- Preparation of management plans and implementing administrative procedure for EPA s.
- Management of wet lands.

## Environmental Education and Awareness Division

- This division deals mainly with educating the public on environmental issues
- The “Pioneer Brigade programme” is a programme for school children spread out islandwide
- School children earn badges upto the level of a Presidential badge

## Provincial Setup of the CEA

- Establishment of regional offices island wide in 2007
- At present 08 provincial offices  
08 district offices
- Power delegation to Local Government Authorities to perform duties of CEA ( for selected activities gazette No. 1533/16 dated 2008.01.25)

## PILISARU PROJECT

- Haphazard disposal of municipal solid waste is a major contributory factor to water pollution
- Pilisaru Project is being implemented by the CEA for setting up proper waste management systems islandwide.
- As of today, a total of 95 small scale composting projects have been set up islandwide
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## Mahinda Chintanaya- Vision for the Future

- This policy document sets out the development Policy Framework of the Government of Sri Lanka.
- Environmental priorities-
- Inland surface water protection targets
- Coastal and marine protection targets

## National Programme for Environment

### Haritha Lanka Programme

- Mission 07 “Water for all & always”
  - Strategy 04 – keep drinking water sources free from contamination
  - Strategy 06 – enforce polluter pays principle for water pollution industries & activities
  - Strategy 08 – Reduce fertilizer leaching and eutrophication
- Mission 09 “Greening the Industries”
  - Strategy 01 - Consolidate cleaner production in industries
  - Strategy 02 - Eco Industrial parks
  - Strategy 03 – Certification of industries ISO 14000
  - Strategy 04 – Greening the supply chain
  - Strategy 06 – Incentives for environmental friendly investments

# THANK YOU

