

# **Water Environment and its Management in Sri Lanka**

**Dr. Saranga Alahapperuma  
Director General  
Central Environmental Authority  
Sri Lanka**

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# Basic country information

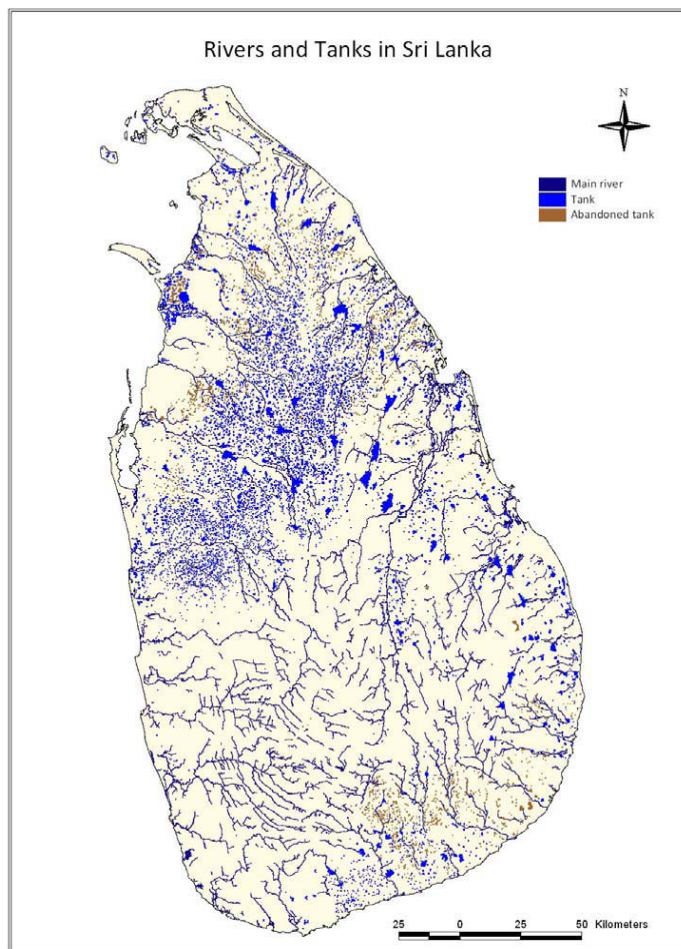
- **About Sri Lanka**

- Rich in Natural Resources
  - 103 Rivers Cover All Island
  - More than 1000 Lakes
- 9 Provinces and 25 Districts
- Capital is Sri Jayawardenapura Kotte in Colombo District
- 65610 Km<sup>2</sup> of Total Land Area
- 20 million Population
- 2000 mm of Annual Average Rainfall Provides 131230 millions m<sup>3</sup> of Fresh Water

## Status of water Resources in SL

- 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)



## Rivers & Tanks in Sri Lanka

### Water Quality Status (BOD, COD) of few Major Water Courses in Sri Lanka

River/Lake	BOD, mg/l	COD, mg/l
Kelani River	2	10
Bolgoda Lake	1-2	20
Mahaoya	4-5	10
Mahaweli River	5-10	15-20
Gregory Lake	2-4	20
Kandy Lake	7	18
Lunawa Lagoon	25	50

## Major Pollution Sources

- Industrial Effluent
- Domestic Effluents
- Agricultural Activities
- Solid Waste Disposal

## **Major Industrial Sectors contributing to water pollution**

- Chemical Industries
- Food and Beverages
- Alcohol and alcoholic beverages
- Metal finishing Industries
- Dairy Industries
- Textile Industries
- Leather Tanning Industries
- Rubber Processing Industries
- Desiccated coconut Industries
- Agrochemical Industries
- Pharmaceutical Industries
- Clay & Glass Industries

# Sewerage Generation and Treatment Plants

## • Sanitation Type & Estimated Population Coverage

- Piped Sewerage (Offsite) - 507,435 (02.5%)
- Onsite Sanitation - 16,887,200 (83.2%)
- Without Proper Sanitation - (Includes Type Unknown/Other, Pit Latrines) - 2,902,500 (14.3%)

Type	constructed for EPZ to treat industrial effluents	Constructed for Housing schemes to treat domestic WW	On going Projects major / minor
Number	10	13	18

## Institutional Arrangements

- *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.
- *National Aquatic Resources Agency* – Conduct Researches on Aquatic Resources
- *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.

## Legal frame work

- 1980 - National Environmental Act (NEA) No. 47
- 1981 - CEA Established
- 1988 - NEA Amended to include Regulatory Provisions – Amendment Act No. 56 of 1988 Regulatory tools.
  - Environmental Impact Assessment Procedure (EIA Procedure for major projects)
  - Environmental Protection Licencing Procedure (EPL procedure for prescribed Industries/Activities)

1990 Regulations gazetted in relation to EPL and Waste Water Discharge Standards.  
Gazette Extraordinary No. 595/16  
dated 1990 February 02.

2000 - NEA Amended to Prescribe the EPL Requiring Activities – Amendment Act No. 53.

- Gazette Extraordinary No. 1159/22 dated 2000 November 22
- Gazette Extraordinary No. 1533/16 dated 2008 January 25. Regulations gazetted in relation to scheduled waste management and revised waste water discharge standards. Gazette Extraordinary No. 1534/18 dated 2008 February 01

## Ambient Water Quality Standards

- Draft stage
- Need comments to review and gazette

# Waste Water Discharge Standards

- Tolerance limits for the discharge of Industrial waste into Inland Surface waters.
- Tolerance limits for Industrial waste Discharged on land for irrigation Purposes.
- Tolerance limits for Industrial and Domestic waste Discharged into Marine Coastal Areas.
- Tolerance limits for waste from Rubber Factories being Discharged into Inland Surface waters.
- Tolerance limits for waste from Textile Factories being Discharged into Inland Surface Waters.
- Tolerance limits for waste from being Discharged from Tanning Industries.
- Tolerance limits for discharged of effluents into public Sewers with Central Treatment Plants.

## Recent developments in water Environment Management

- Policy & regulatory developments
  - Haritha Lanka Programme
  - Review existing ED standards with introduction of new discharging modes
  - WDF Programme
- Sewerage network expansion
- Introduction of new strategies to control industrial wastewater
  - Establish Compliance Assistance Centers and introduce low cost methods to treat effluents
  - Regular monitoring and strengthening of EPL scheme
- Regular monitoring in selected water bodies

# 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

## Achievement of the policy development

- Initiate programmes related to Haritha Lanka Mission 07 & 09
- Improvement & review of regulatory provisions and introduction of new legal tools (WDF) to the Act amendments
- Improvement of sewerage networks and projects under NWSDB (Mahinda Chinthanaya Programme)



## **Current & Future Challenges**

- Lack of affordable pollution control techniques for small & medium scale enterprises.
- Weaknesses in law enforcement and lack of regular monitoring.
- Lack of awareness for environmental concerns among industrialists hence failures in self reporting system.
- Improper law enforcement by local government authorities. Unavailability of proper zoning plans in local government authorities in the country as a whole.
- Lack of systematic collection system for data and periodical analysis and issues such as quality and availability with respect to access.
- Lack of coordination in relevant institutions.
- Strengthen capacity building programmes and compliance monitoring.

**THANK YOU**