WEPA Water Environment Partnership in Asia
アジア水環境パートナーシップ

Updates of Water Environment Governance in Sri Lanka

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Water Environment Partnership in Asia
WEPA
Cambodia • China • Indonesia
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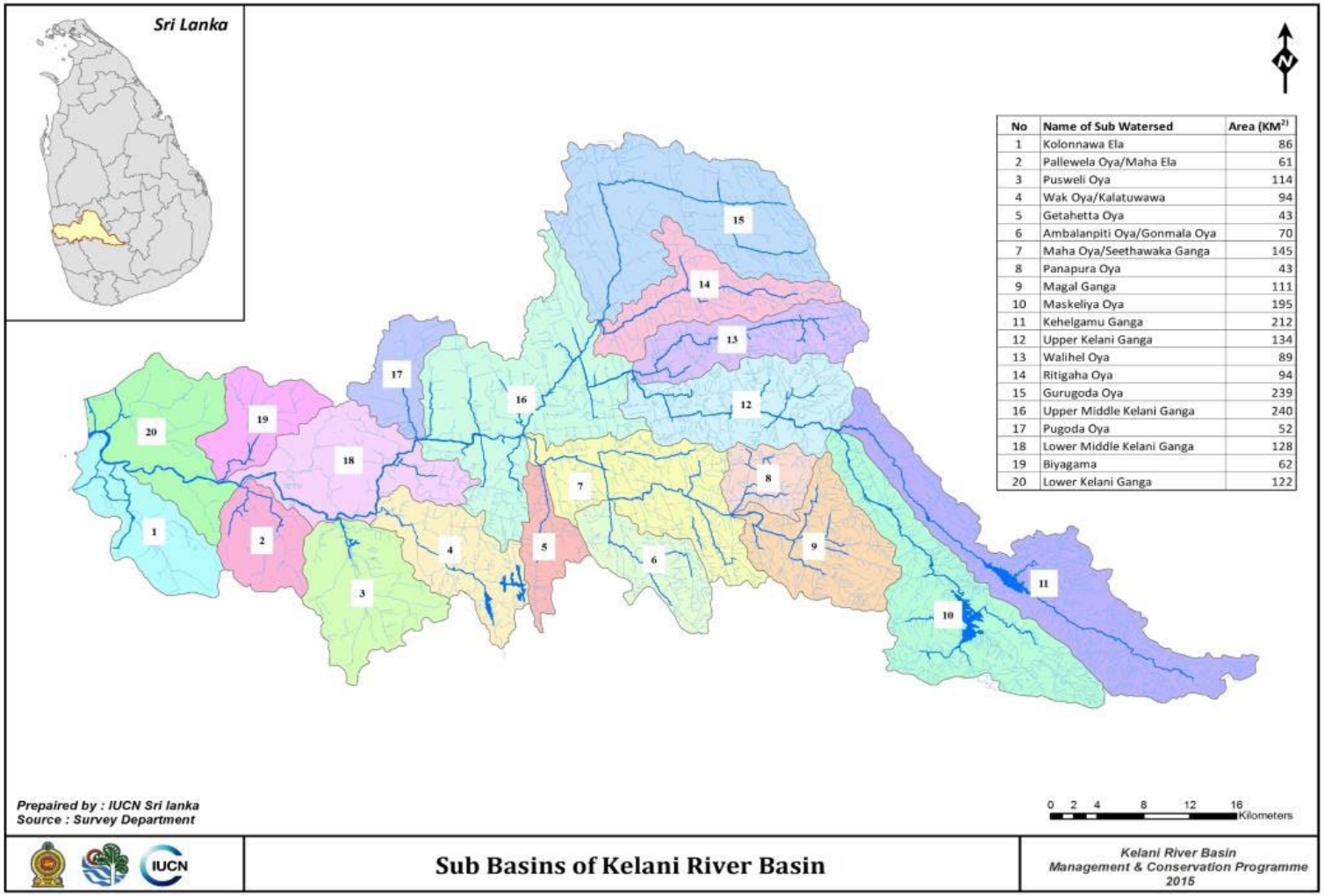
The 20th Annual Meeting

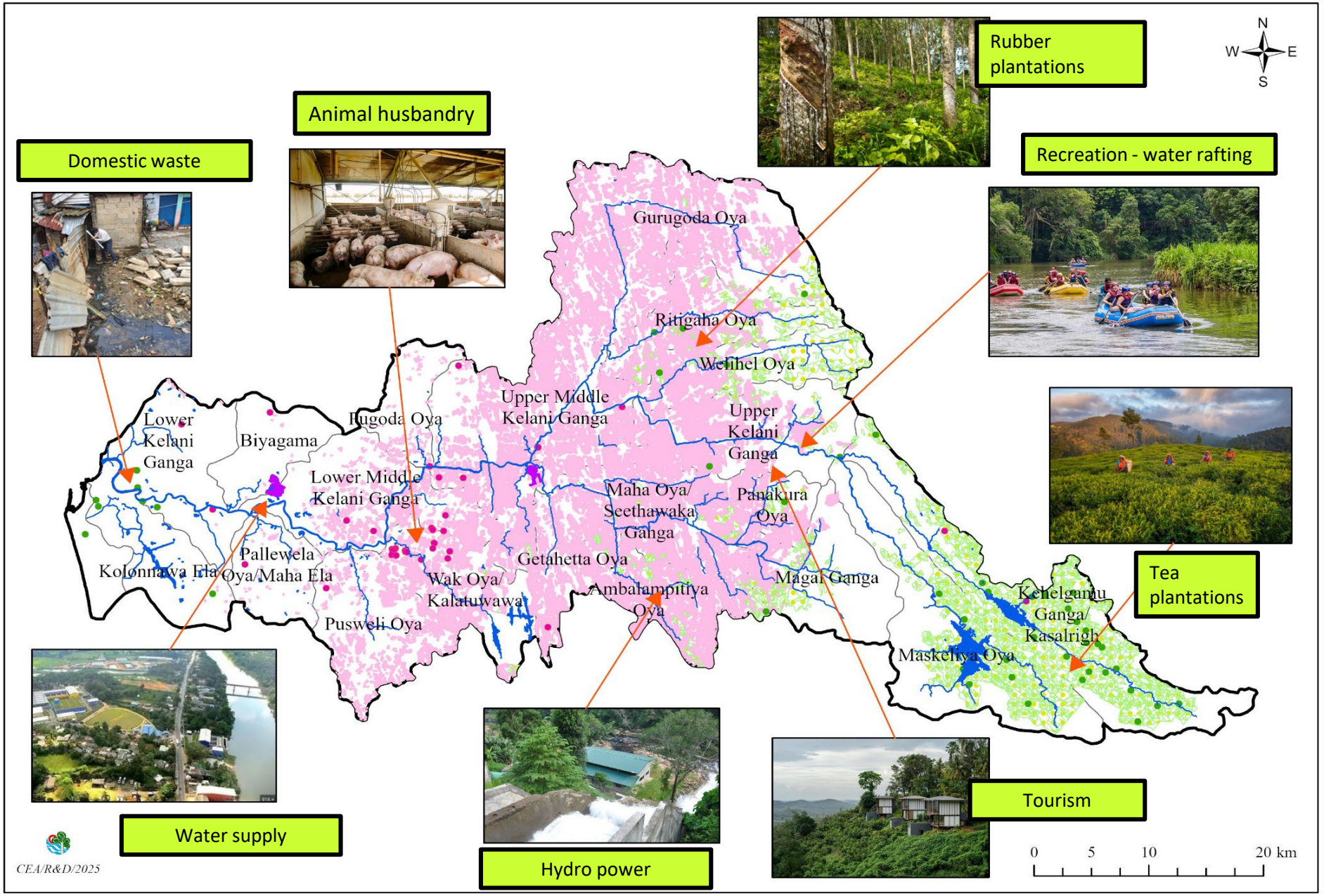
Vientiane, Lao PDR

1. Kelani River Water shed



The Kelani River Basin (KRB), is located in the western region of Sri Lanka which drains fresh water through 20 Sub Basins . It is the third largest watershed with a drainage area about 2300 km^2

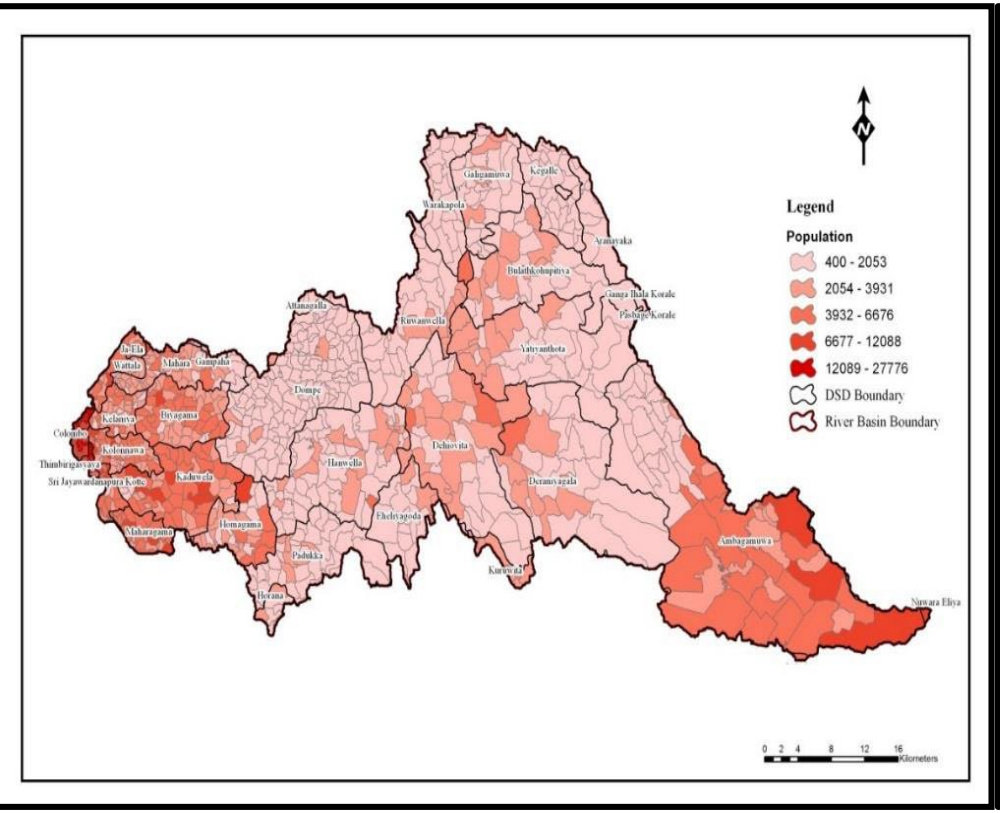
2. Generation points of Pollution loads

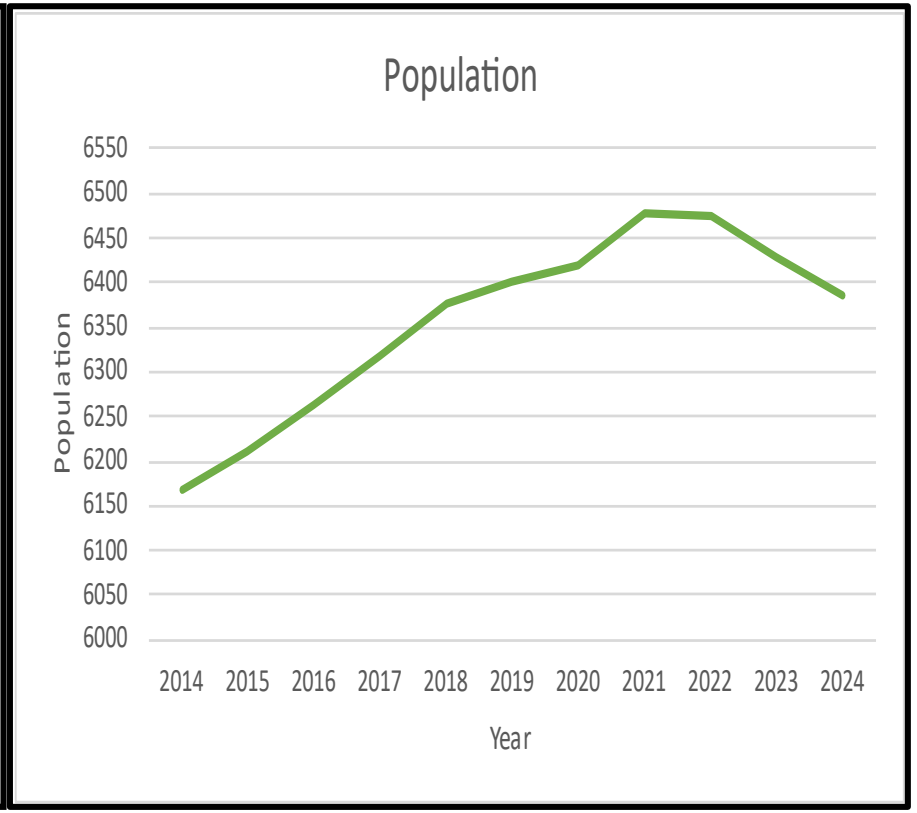


2. Generation points of Pollution loads

- Tea Plantations and dwellings of workers – **High**
- Hotels, tourists destination & recreational – **High & Mid**
- Hydro Power generation including mini hydro PP – **High & Mid**
- Rubber plantation and factories – **Mid & Low**
- Agriculture & farming – **High, Mid, & Low**
- Industrial zones and industries – **Mid & Low**
- Domestic waste discharge from houses – **through out the river**
- Waste dumping sites – **along the river**

Population & Housing

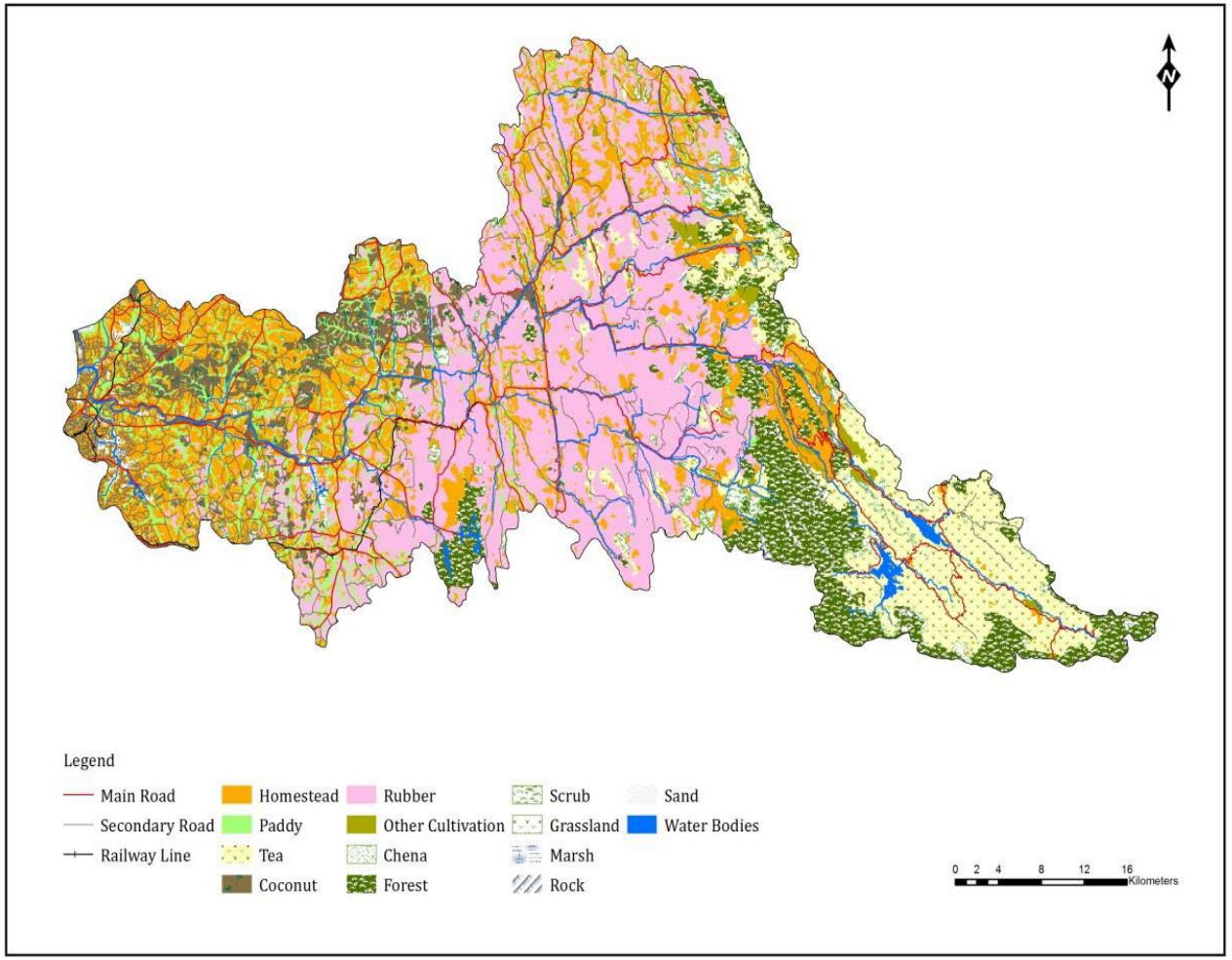




KRB is home for 25% of the Sri Lankan population.

Population increased from 2014 to 2024 within 10 years from 6168 to 63758 making the region most vulnerable to environmental pollution

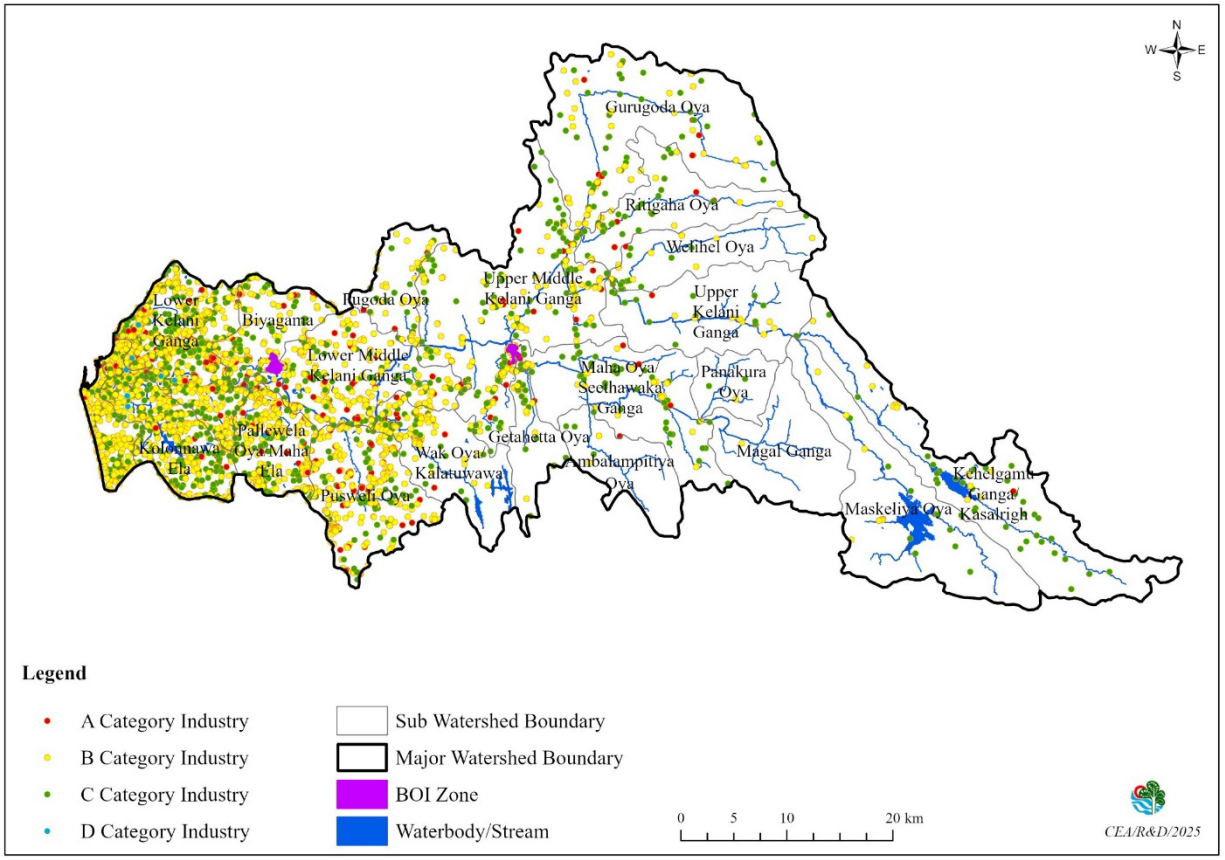
Land Use Pattern of KRB



The largest land use categories are Rubber 30% , Home Gardens 27.9% Forest 10.2% and Tea 12.9% and Paddy 6.5%.

Run off from crop lands and excessive use of fertilizers and pesticides may cause water pollution .

Industry Types & Distribution

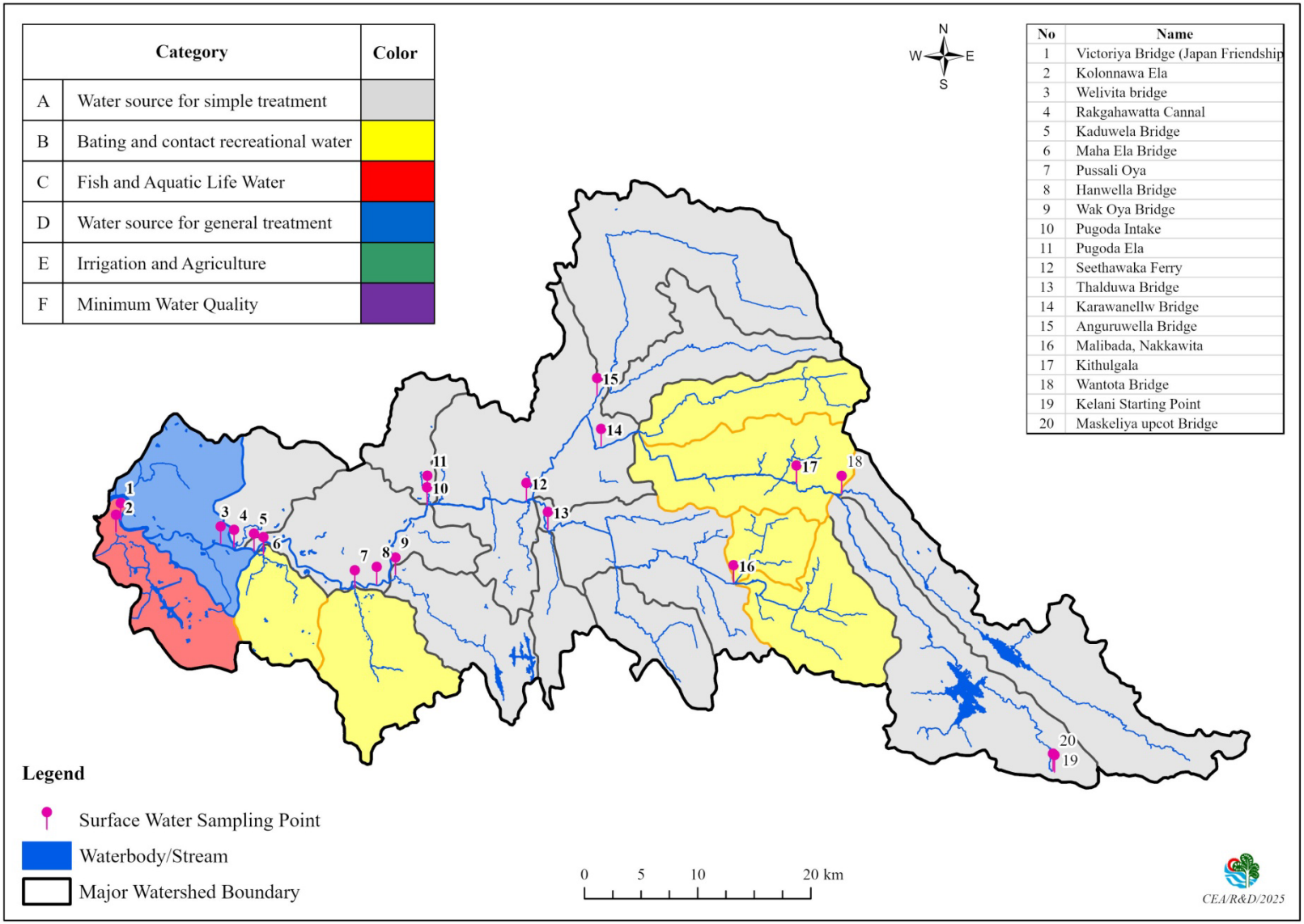


• Two major industrial zones are located in the watershed due to Convenient location and Availability of water and other infrastructure facilities. Number of Industries have been in the rise making the river water pollute by discharging wastewater and solid waste.

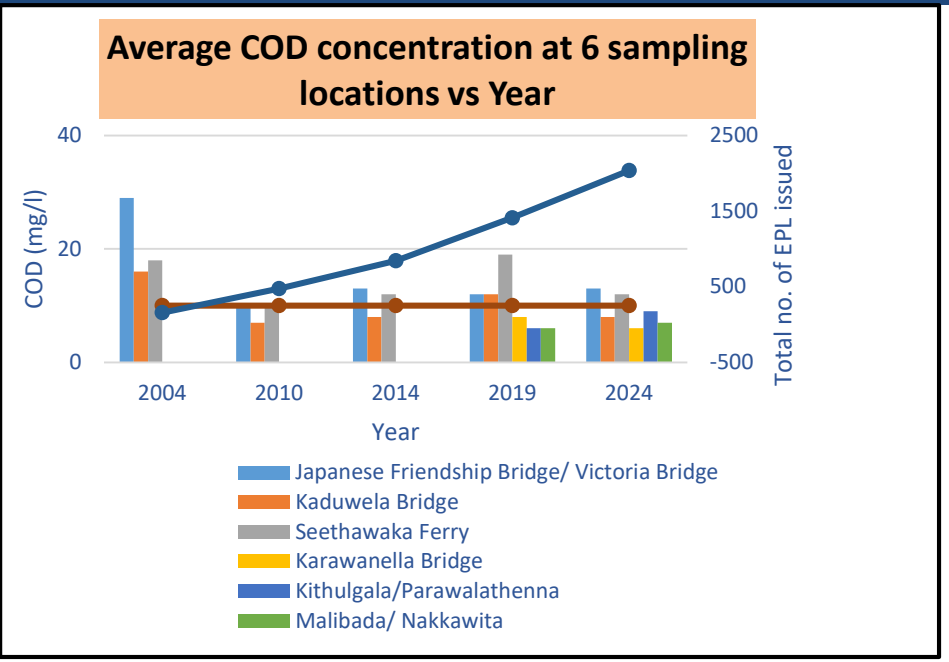
• There are 17 water supply schemes along the river which serve 80% of the people living in Colombo metropolitan area.

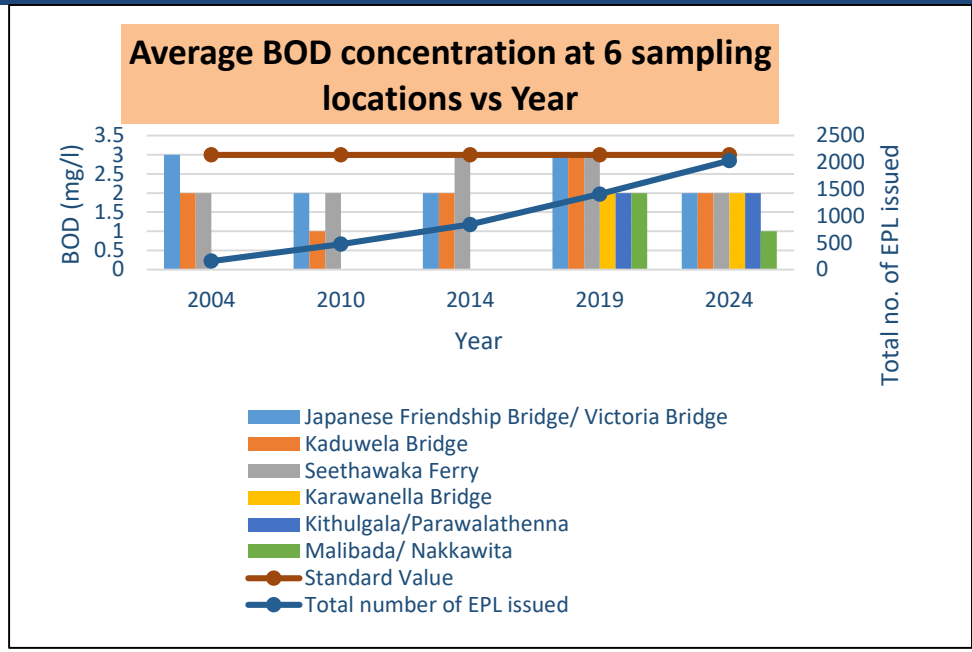
• Two upland tributaries of the river, Maskeli Oya & Kehelgamu Oya serve electricity to the national grid with a total capacity of 335 MW and average annual energy is 1,382 Gwh.

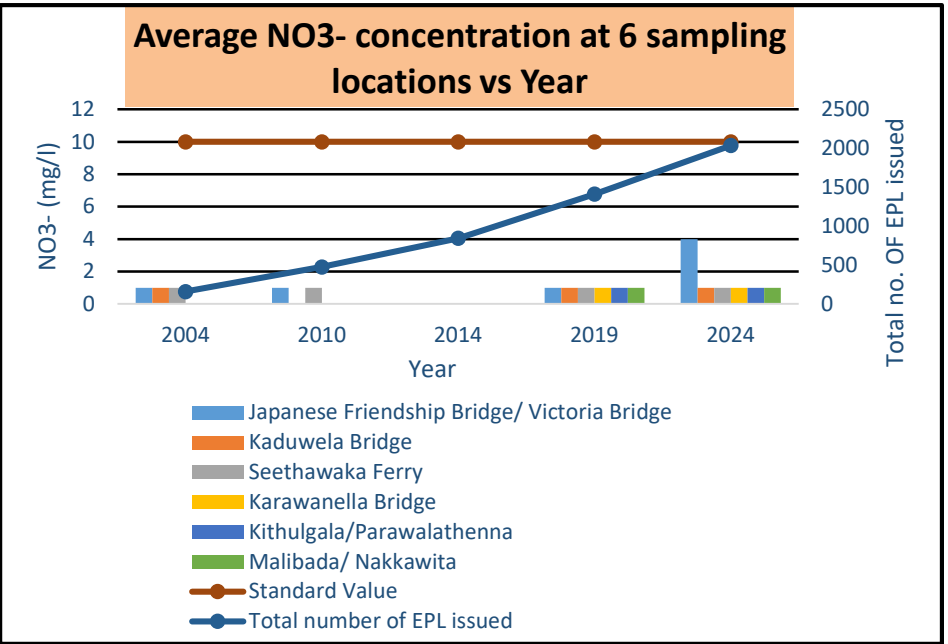
Water Quality Monitoring Points in KRB

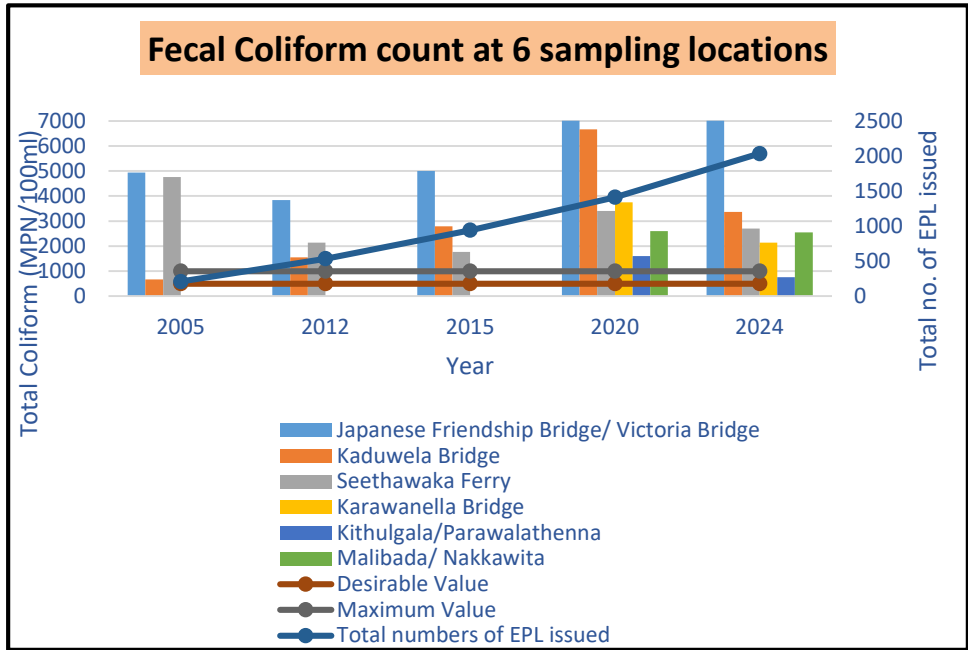


3. Pollution concentration in selected sampling points

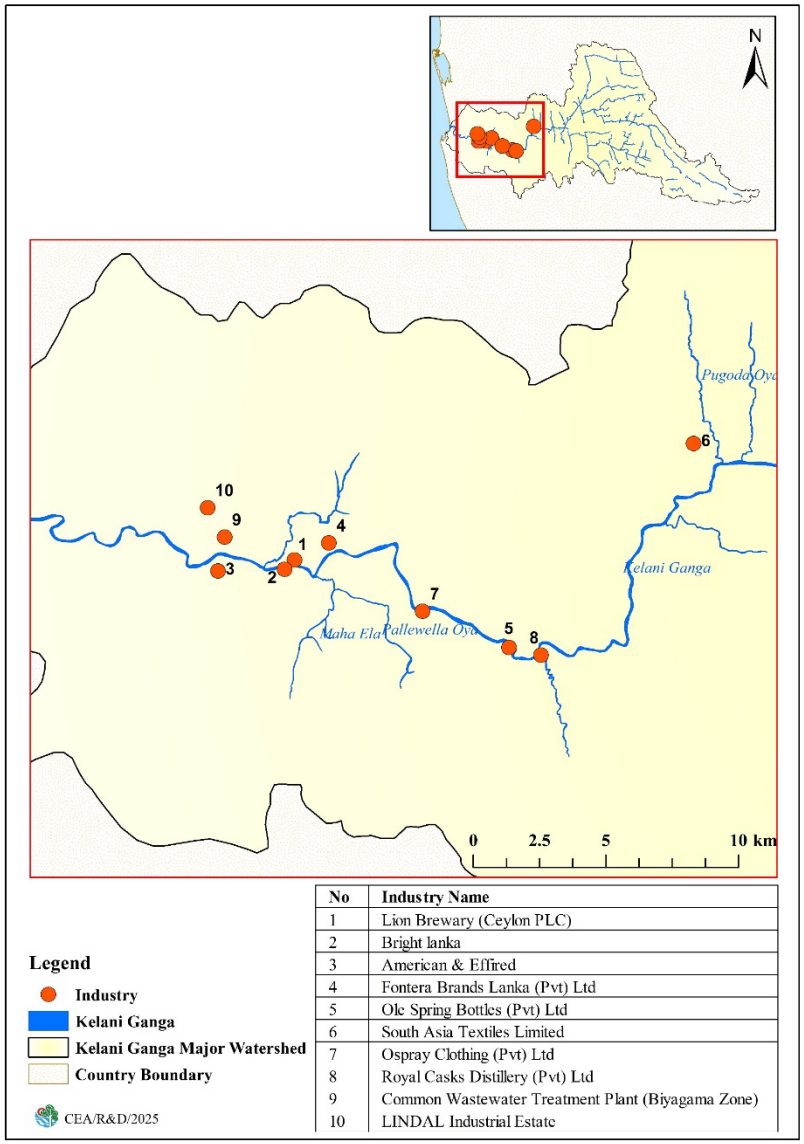




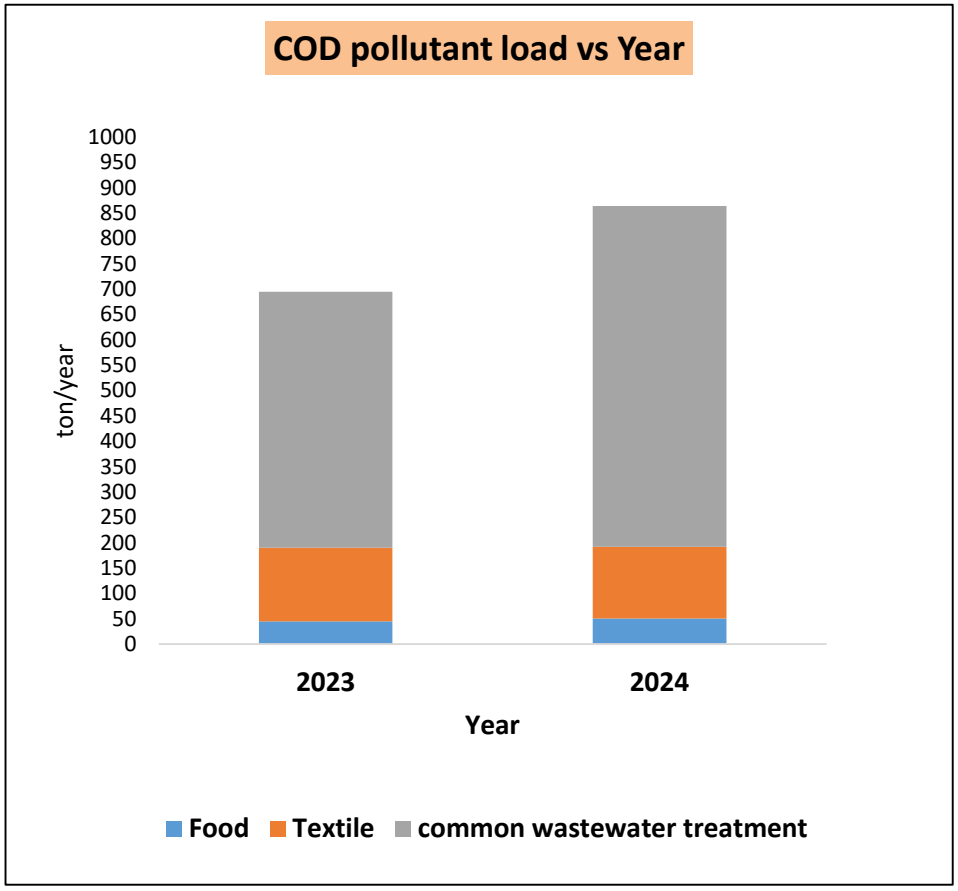




COD Pollutant load in a selected area in the watershed



No	Industry Name
1	Lion Brewary (Ceylon PLC)
2	Bright lanka
3	American & Effired
4	Fontera Brands Lanka (Pvt) Ltd
5	Olc Spring Bottles (Pvt) Ltd
6	South Asia Textiles Limited
7	Ospray Clothing (Pvt) Ltd
8	Royal Casks Distillery (Pvt) Ltd
9	Common Wastewater Treatment Plant (Biyagama Zone)
10	LINDAL Industrial Estate



4. Measures taken to address issues

- ***National Legislations***
- **The National Environmental Act (NEA) No. 47 of 1980 and its amendments of 1998, 2000**
- **Water Resources Boards (amendment)Act No 42 of 1992**
- **Colombo District (Low Lying Areas) Reclamation & Development Board Act No. 15 of 1968**
- **Irrigation (amendment) Act No 23 of 1983**
- **Water Supply & Drainage Board (amendment) Act No 13 of 1992**
- **Municipal Council Ordinance 1987**
- **Urban Development Authority Act No 41of 1988**
- ***Policy / Memorandum***
- **National Policy on protection & conservation of water sources, their catchments and reservations – Ministry Land & Land Development (Land use policy planning Department)**
- **Cabinet Memorandum for siting of industries in the Kelani River Basin, 1993**

Environmental Laws & strategies to control pollution

- **To address industrial wastewater issues**
  - **Implement provisions in the National Environmental Act**
  - **Environmental Protection License**
  - **Environmental Impact Assessment Process**
  - **Scheduled Waste Management License**

  - **Medium to Long-term Multi-stakeholder Strategy and Action Plan for Management and Conservation of the Kelani River Basin (2016 – 2020)**
  - **Special water quality monitoring programs & industrial monitoring to find point & non point sources discharge in to the kelani river since 2003.**
  - **Siting of industries in the Kelani River Basin through a special Committee**
  - **Awareness programs for stakeholders, general public & improve coordination**
  - **Public Private Partnership programs for river cleaning**
  - **Register and monitor effluent transport facilities**

- **Amend National Environmental Act to include Wastewater Discharge Fee system**
  - **Waste load assessment for large scale industries to quantifying and analyzing assimilation capacity of the river water to regulate the discharges**

Environmental Laws & strategies to control pollution

National Programs launched to Protect Kelani River Basin

- **Pavithra Ganga (1998)**
- **Haritha Lanka Program (2016 – 2022)**
- **Surakimu Ganga (2021)**
- **Clean Sri Lanka 2025 onwards**

To address domestic wastewater issues

- Implementation of regulation & laws for construction apartments, housing facilities etc.
- Restrict constructions / houses in river reservations
- Improve sewerage systems and treatment facilities and expand sewerage network
- Improve onsite sewerage disposal facilities and introduce and promote Johkaso treatment systems to small scale domestic entities

Ongoing Activities by Key stakeholders

No	Ongoing Activities	Agency
1	Conservation and management of catchment areas.	Forest Department (FD), Land use Policy Planning Department(LUPPD)
2	Protection of river banks	Irrigation Department (ID), Coast Conservation and Coastal Resource Management (CC & CRM), within2Km from river mouth.
3	Water Quality Monitoring	Central Environment Authority (CEA), National Water Supply and Drainage Board (NWSDB), Water Resource Development Board (WRDB)
4	Law enforcement to protect riverine environment	Central Environmental Authority
5	Water purification, supply and regulation and sewerage management	National Water Supply and Drainage Board (NWSDB)
6	Developing and Institutionalizing Water Safety Planning	National Water Supply and Drainage Board (NWSDB)
7	Regulating sand mining by issuing license	Geological Survey and Mines Bureau (GSMB)
8	Establishment of soil conservation demonstration sites and awarding for soil conservation activities	Natural Resource Management Center of Department of Agriculture

Ongoing Activities by Key stakeholders

No	Ongoing Activities	Agency
9	Management of solid waste	Solid Waste Management Authority, Local Authorities (LAs)/ Central Environmental Authority (CEA)
10	Education and Awareness	CEA, NWSDB, Education Department, Relevant Agencies
11	Sustainable use of Agricultural lands	Department of Agriculture (DoE)
12	Mapping of land use patterns	Land use Policy Planning Department (LUPPD) / Central Environmental Authority (CEA)
14	Protection of Peak Wilderness Sanctuary	Department of Wildlife Conservation (DWC)
15	Protection of Forest reserves in Kelani river Basin	Forest Department

5. Outcomes

- Reduction of COD BOD, Nitrate & Phosphate loads in the river.
- Increase in industries having EPL and installation of WTPs.
- Increase in sewerage Connections in cities and suburbs.
- Improving the criteria for siting of industries in river basins by special emphasis on ;
  Categorize the industries as type A, type B, type C
- Review & Streamline existing laws, regulations & guidelines for better implementation.
- Increase in Public Private Partnerships in protecting Kelani river waster shed.

6. Further Challenges

- Problems found in other areas – river mouth
- Pollution of coastal water- high levels of coliform
- Plastic & micro plastic pollution in an increasing trend in rivers and coastal waters.
- No ambient standard established for coastal waters
- No control over soil and ground water pollution (as no regulations so far)
- No laboratory facilities to measure coliform and sea water samples

7. Future Plans

- **Present Legal system control only pollution concentration the new Act amendment introduce Load based Licensing**
- **Restrict high polluting industries in Kelani river reservation and impose no built area in river reservation within 500m of the river.**
- **Streamline and implement projects for domestic wastewater treatment**
- **Strengthen wastewater treatment facilities and proper waste disposal facilities for Industrial Zones/estates**
- **Comprehensive water quality monitoring programs and implementation of rectification measures for improper wastewater and waste management facilities.**
- **Public Private Partnership programs to conserve river water (Sripada program)**

THANK YOU