

Country proposal - **SRI LANKA**

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Asia Water Cycle Symposium,
9-10 January 2007, Tokyo, Japan

Water Resources in Sri Lanka

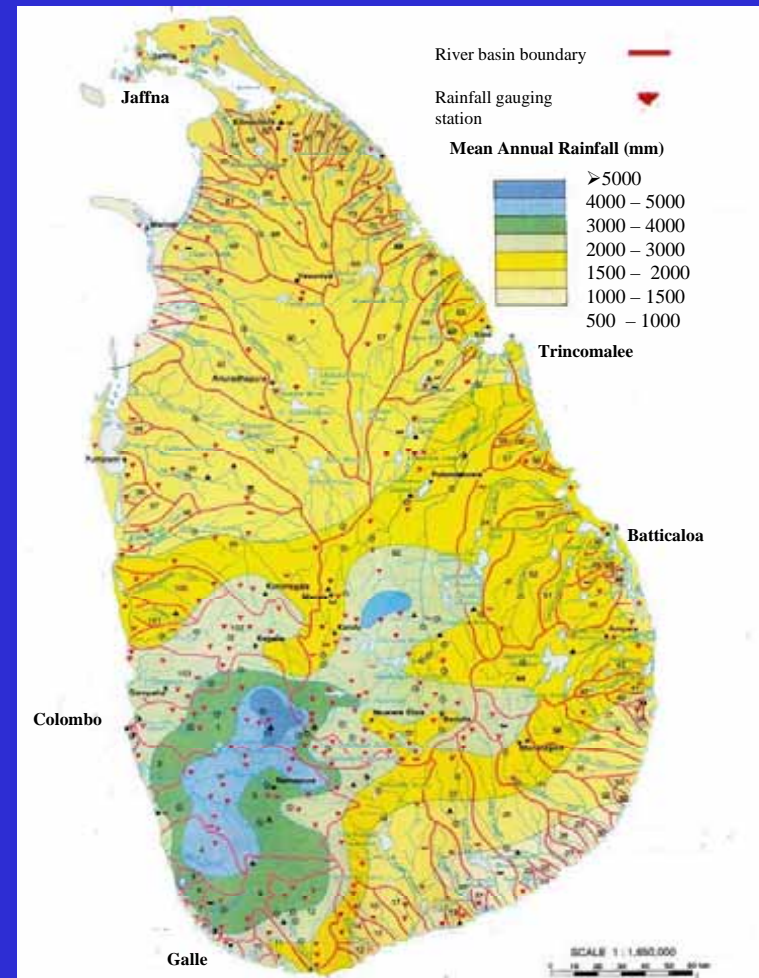
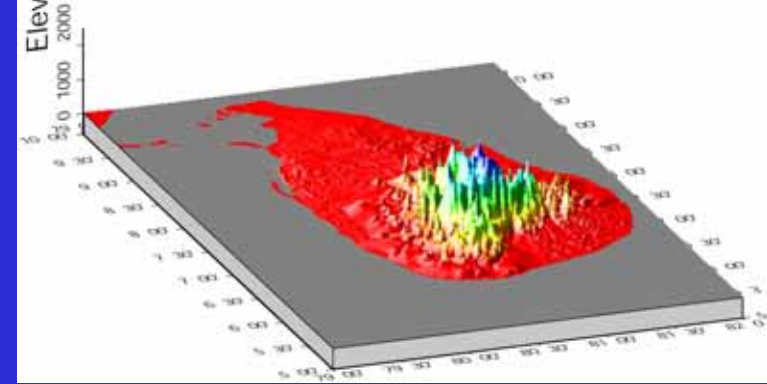
- Sri Lanka has 103 river basins with sizes varying from 10 - 10³ km².

- High spatial and temporal variation of rainfall

Water resources issues -

- Floods
- Water scarcity

- There are only 35 stream flow measuring stations

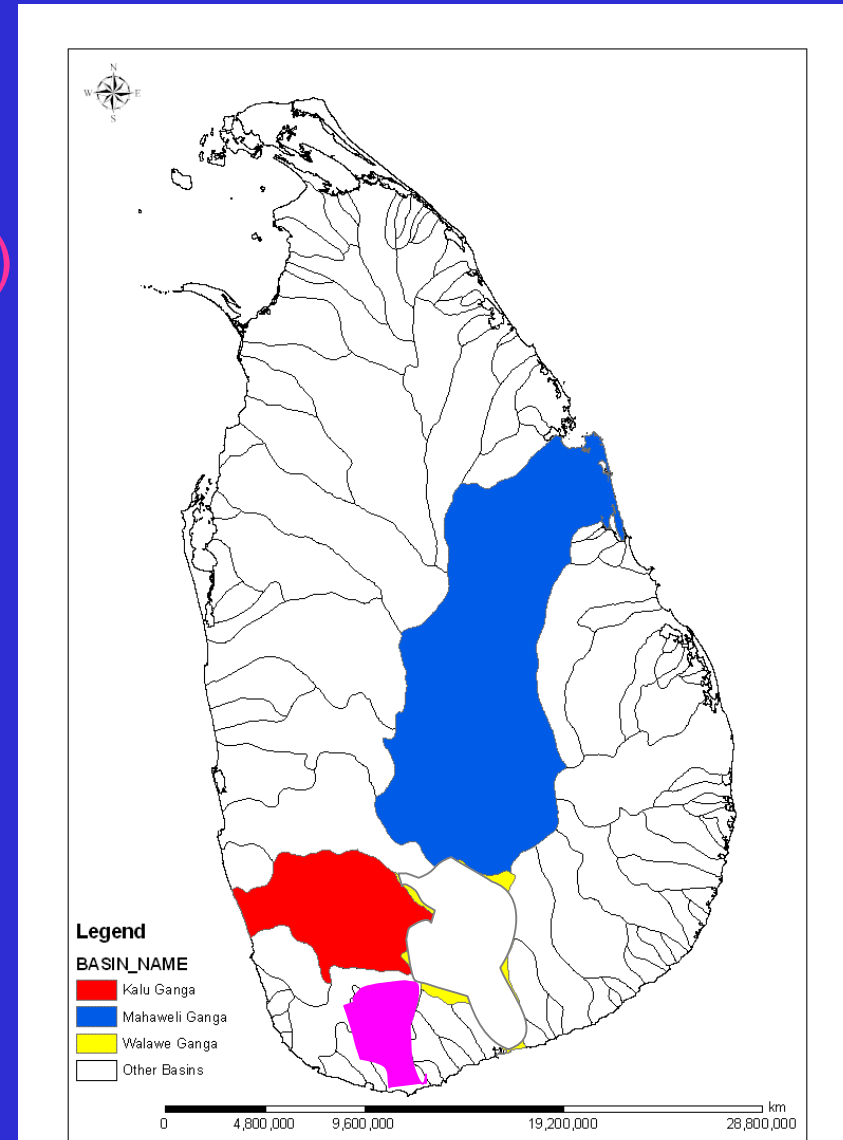


Proposed basins and their issues

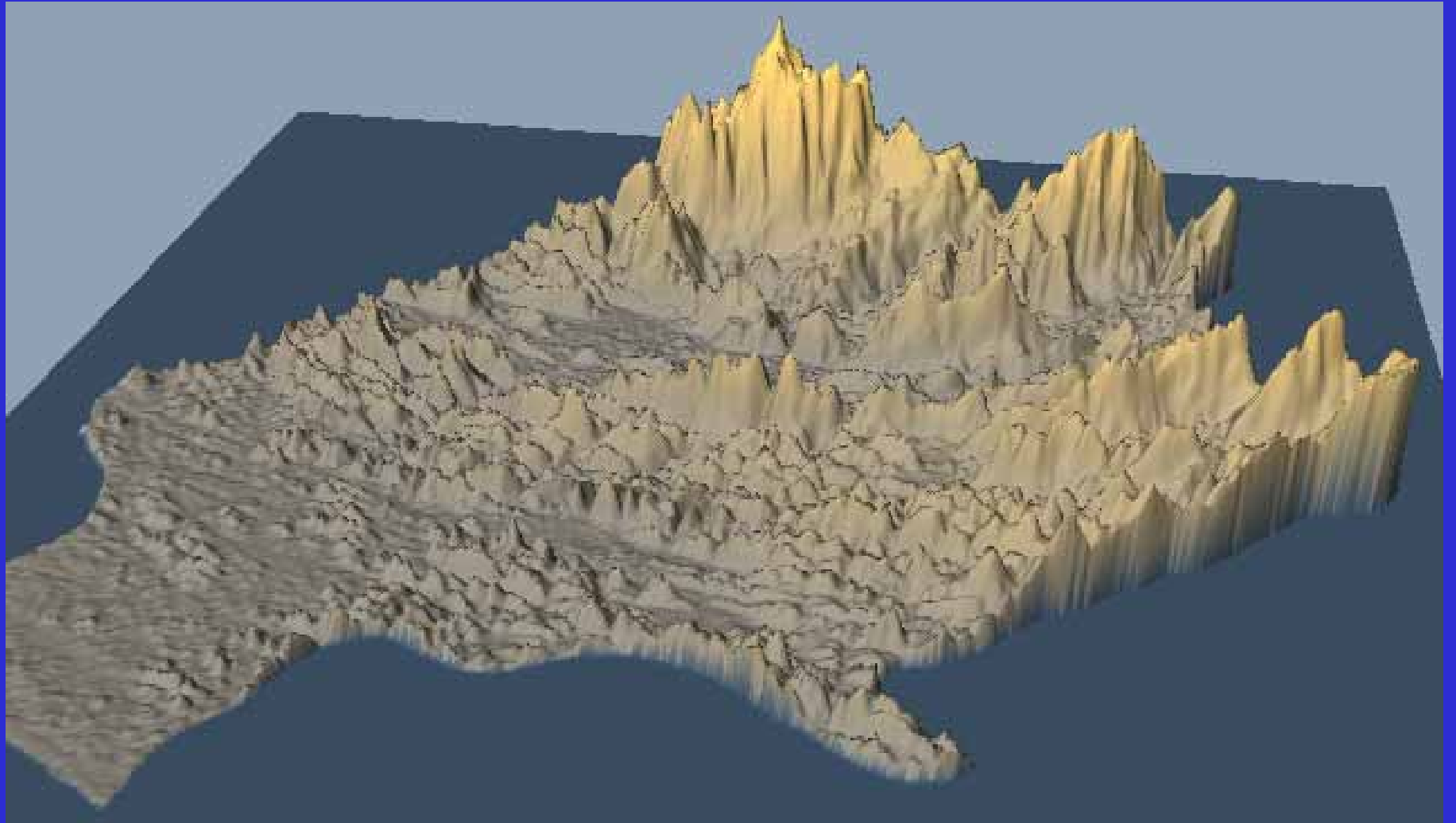
Kaluganga basin (2720 sq km)
Floods

Mahaweli basin (10450 sq.km)
Water management under
multi-uses

Nilwala basin
Floods,
Irrigation water management

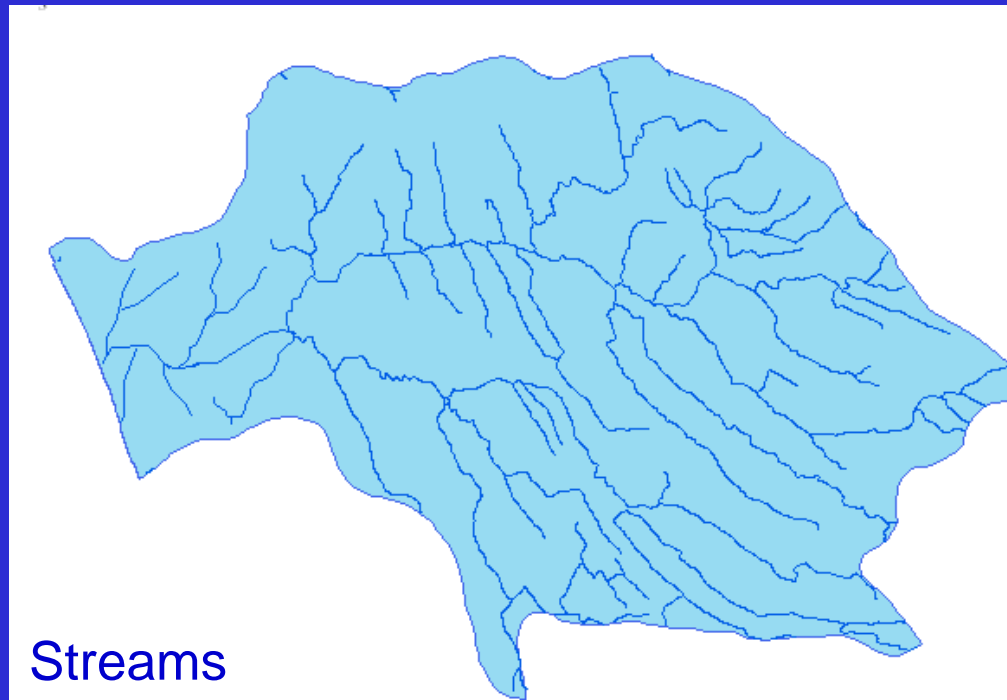


Kaluganga Basin

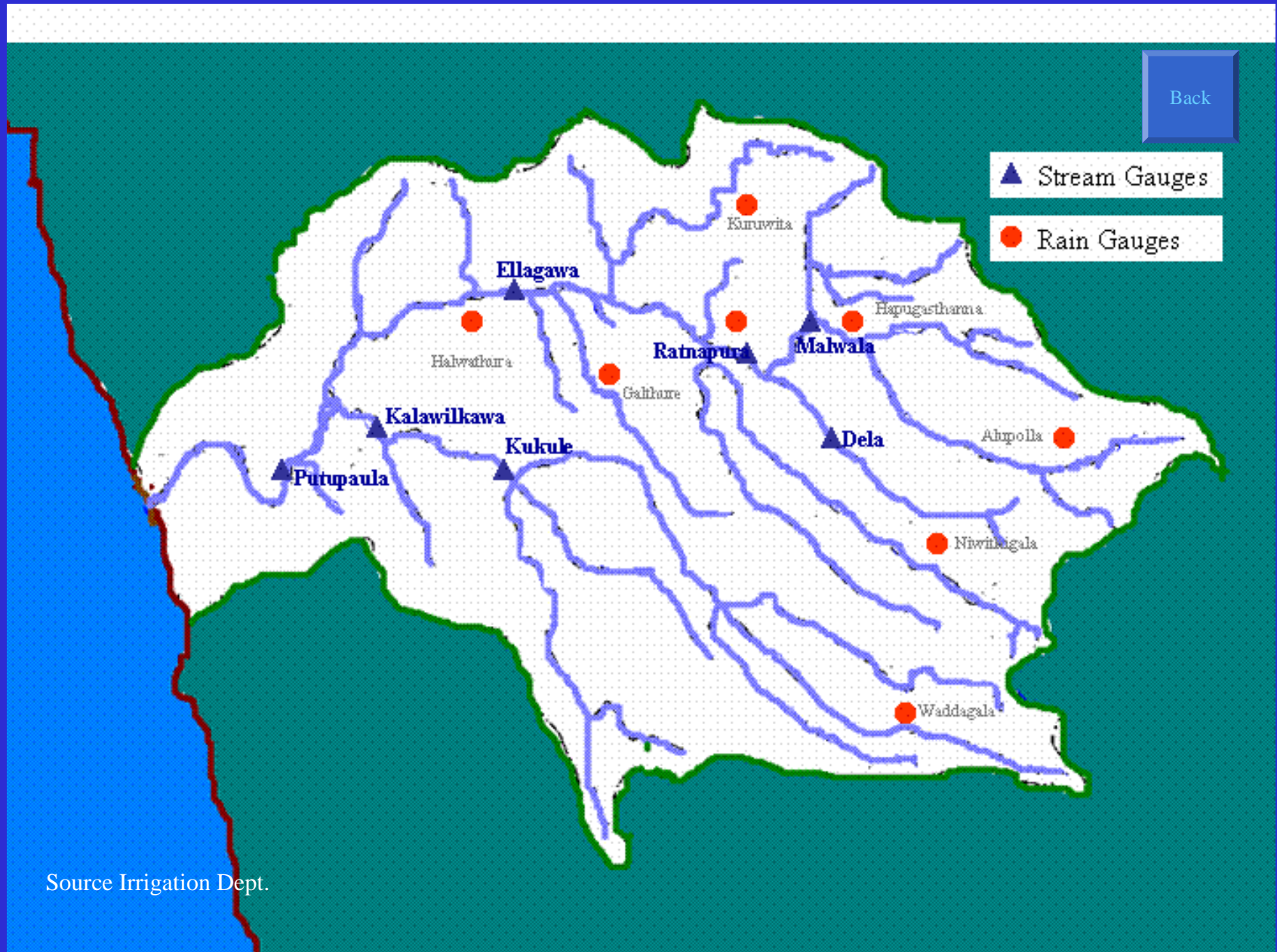


Kaluganga Basin

Magnitude of the annual flow volume	4000 MCM
Catchments area	2690 sq. km
Average annual rainfall	4000 mm (3000-5000mm)
Elevation up to	2250 m
River length	129 km
Length to Ratnapura	65 km



Kaluganga Basin



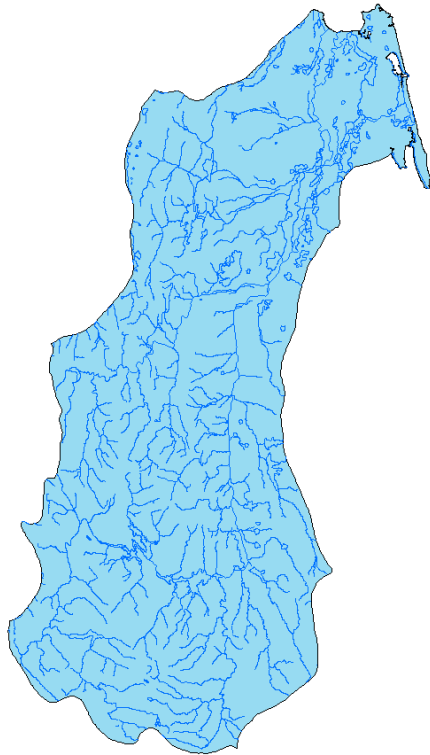
Mahaweli Basin

Catchments area

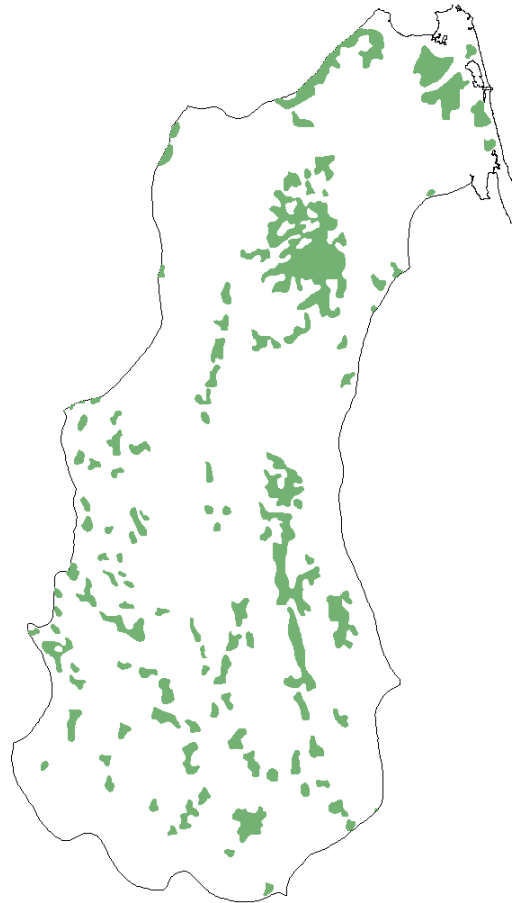
10450 sq. km

Average annual rainfall

1500-5000 mm



Streams



Paddy



MAHAWELI SCHEME

LEGEND

-  System Developed
-  System in Master Plan
-  Nature Reserve
-  Reservoir (existing)
-  Reservoir (constructed under AMP)
-  Reservoir (in Master Plan)
-  Tunnel for conveying water
-  Main Road (existing)
-  Main Road (constructed under AMP)
-  District Capital / Town
-  New Township
-  Power Station



Mahaweli Basin (Kotmale Subbasin)

300sq km

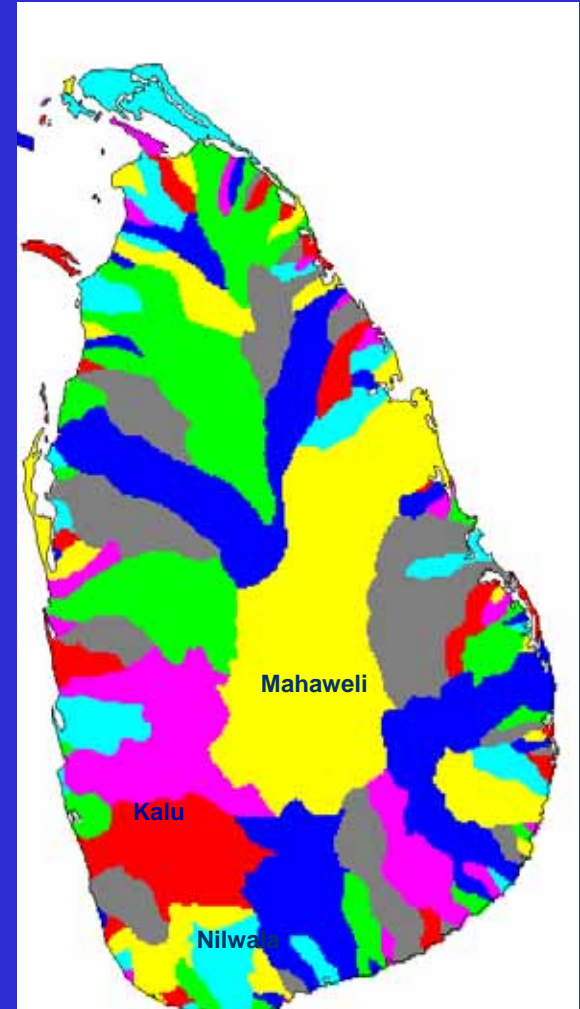


Nilawala Ganga basins

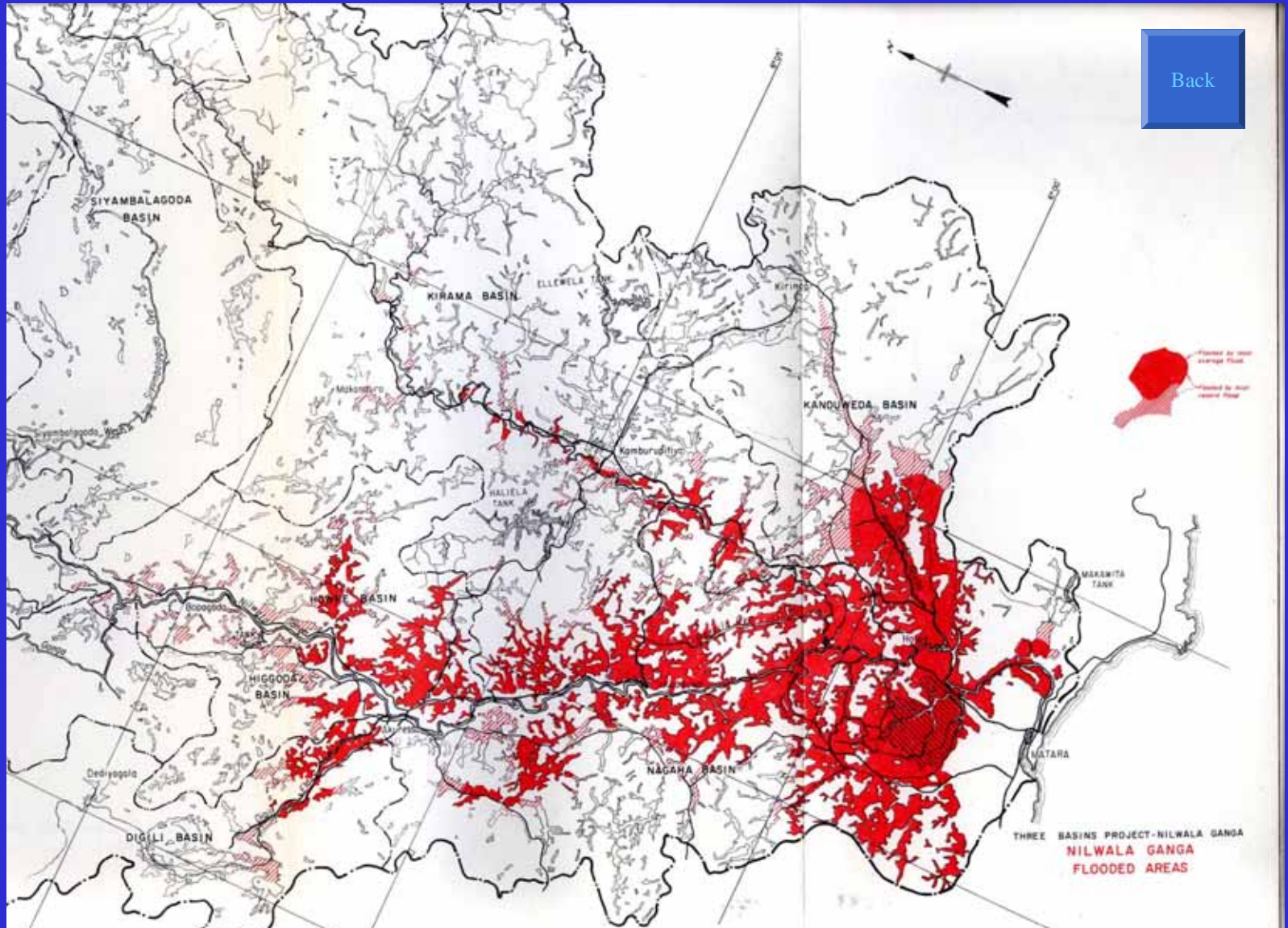
Nilwala basin (971 sq km)

Floods

Irrigation water management



Nilwala Ganga Basin



Back

Data availability of proposed basins

Reference basin	Sri Lanka Mahaweli Basin	Sri Lanka Kaluganga Basin	Sri Lanka Nilwalaganga Basin
METADATA (River Basin Description)			
Location (longitude and latitude extent)	(06°45' N, 80°40' E to 08°30' N, 81°15' E)	(06°25' N, 80°00' E to 06°50' N, 80°40' E)	(06°00' N, 80°25' E to 06°30' N, 80°45' E)
Catchment outlet longitude and latitude	08deg30min N, 81deg15min E	06deg35min N, 80deg00min E	06deg00min N, 80deg30min E
Catchment area	10448 sqkm	2719 sqkm	971 sqkm
Number of MOLTS points in the basin	1	1	1
MOLTS point1 longitude and latitude	07deg20min N, 80deg38min E	06deg41min N, 80deg24min E	06deg09min N, 80deg25min E
MOLTS point1 elevation	477 meters	34 meters	25 meters
Basin Maps	Available	Available	Available
Basin Pictures	Available	Available	Available
River Network Maps	Available	Available	Available
Soil Maps and Soil Characteristics	Available	Available	Available
Land Use Maps and Vegetation Characteristics	Available	Available	Available
River Constructions (dams, weirs, etc.) - type, location (longitude, latitude)	Available	Available	Available
OBSERVATION DATA - HYDROLOGICAL			
Streamflow	Available	Available	Available
Reservoir (Water level, Outflow)	Available	Available	Available
Groundwater Table	Unavailable	Unavailable	Unavailable
Others - please specify (each data type on a single line)			
OBSERVATION DATA - SUB-SURFACE			
Soil Temperature	Available	Available	Unavailable
Soil Moisture	Unavailable	Unavailable	Unavailable

Data availability of proposed basins


Reference basin	Sri Lanka Mahaweli Basin	Sri Lanka Kaluganga Basin	Sri Lanka Nilwalaganga Basin
OBSERVATION DATA - SURFACE			
Air Temperature	Available	Available	Available
Humidity	Available	Available	Available
Wind	Available	Available	Available
Pressure	Available	Available	Available
Precipitation	Available	Available	Available
Snow	Unavailable	Unavailable	Unavailable
Skin Temperature	Unavailable	Unavailable	Unavailable
Upward Shortwave Radiation	Unavailable	Unavailable	Unavailable
Downward Shortwave Radiation	Unavailable	Unavailable	Unavailable
Upward Longwave Radiation	Unavailable	Unavailable	Unavailable
Downward Longwave Radiation	Unavailable	Unavailable	Unavailable
Upward Photosynthetically Active Radiation	Unavailable	Unavailable	Unavailable
Downward Photosynthetically Active Radiation	Unavailable	Unavailable	Unavailable
Net Radiation	Unavailable	Unavailable	Unavailable
Sensible Heat Flux	Unavailable	Unavailable	Unavailable
Latent Heat Flux	Unavailable	Unavailable	Unavailable
Ground Heat Flux	Unavailable	Unavailable	Unavailable
Momentum Flux	Unavailable	Unavailable	Unavailable
CO2 Flux	Unavailable	Unavailable	Unavailable
Evaporation	Available	Available	Available
Vegetation	Available	Available	Available
OBSERVATION DATA - Atmosphere			
Planetary Boundary Layer Tower	Unavailable	Unavailable	Unavailable
Radiosonde	Unavailable	Unavailable	Unavailable
Radar	Unavailable	Unavailable	Unavailable
Lidar	Unavailable	Unavailable	Unavailable
Profiler	Unavailable	Unavailable	Unavailable
RASS	Unavailable	Unavailable	Unavailable
ADDITIONAL COMMENTS			
Radar and Radiosonde observations are available in Colombo (06°54' N, 79°85' E) but outside of the three selected basins			

Organizations for data acquisition

- Meteorology Department
 - rainfall, radiation data, etc.
- Irrigation Department, Mahaweli River Authority
 - stream flow,
- Survey Department
 - topography, land use, soil data
- Social Services Dept., National Disaster Management Centre
 - inundation damages, social aspects..
- Other: Universities, NSF(SL) , ..- available specific data

Data Availability at Candidate River Basins Mahaweli, Kalu & Nilwala for Demonstration Project, AWCI

- **Mahaweli Ganga Basin**
65 rain gauge stations, 14 stations over 100 years
Number of river gauge stations are ten. Four at the main river and six at tributaries
- **Kalu Ganga Basin**
There are 22 rain gauges stations, 4 stations over 110 years.
Number of river gauge stations six. Three at the main river and three at tributaries.
- **Nilwala Ganga Basin**
There are 16 rain gauge stations, 8 stations over 100 years.
Number of river gauge stations two in the main river



Devon waterfall
(Mahaweli Basin)

Thank You