

Country reports based on the questionnaire -

SRI LANKA

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Water Resources in Sri Lanka

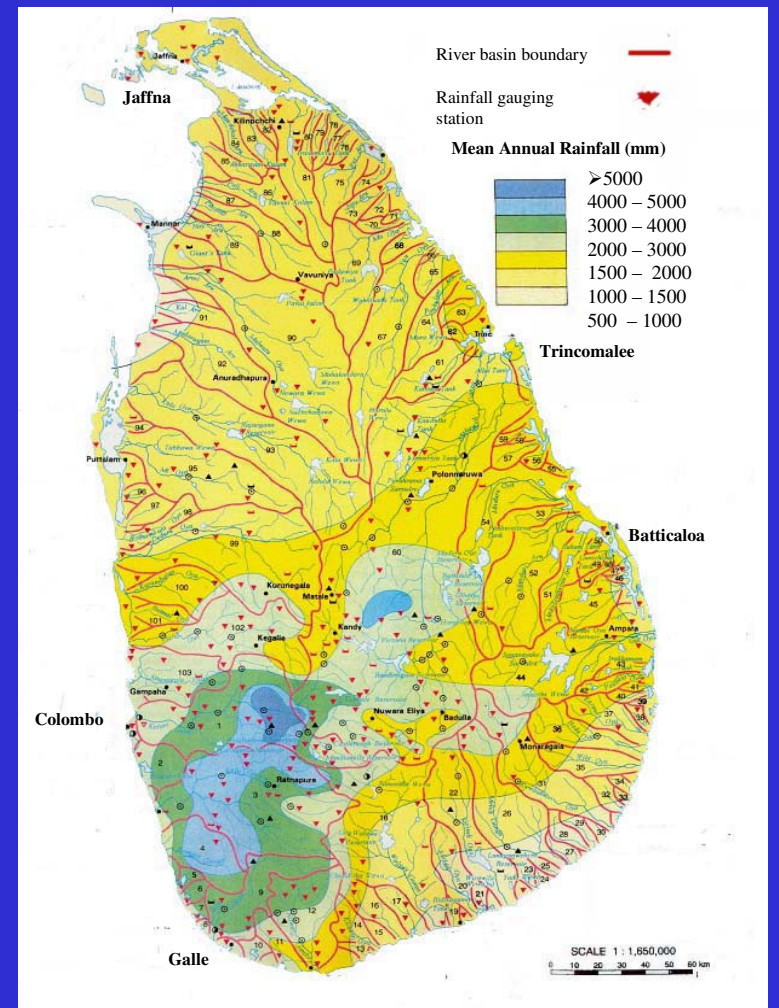
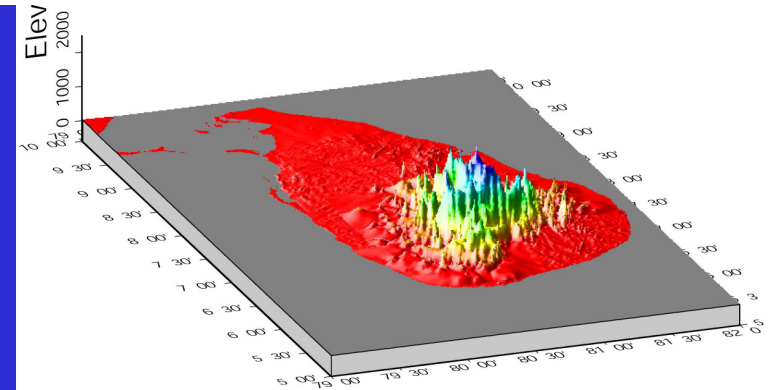
- Sri Lanka has 103 river basins with sizes varying from 10 - 10³ km².

- High spatial and temporal variation of rainfall

Water resources issues -

- Floods
- Water scarcity

- There are only 35 stream flow measuring stations

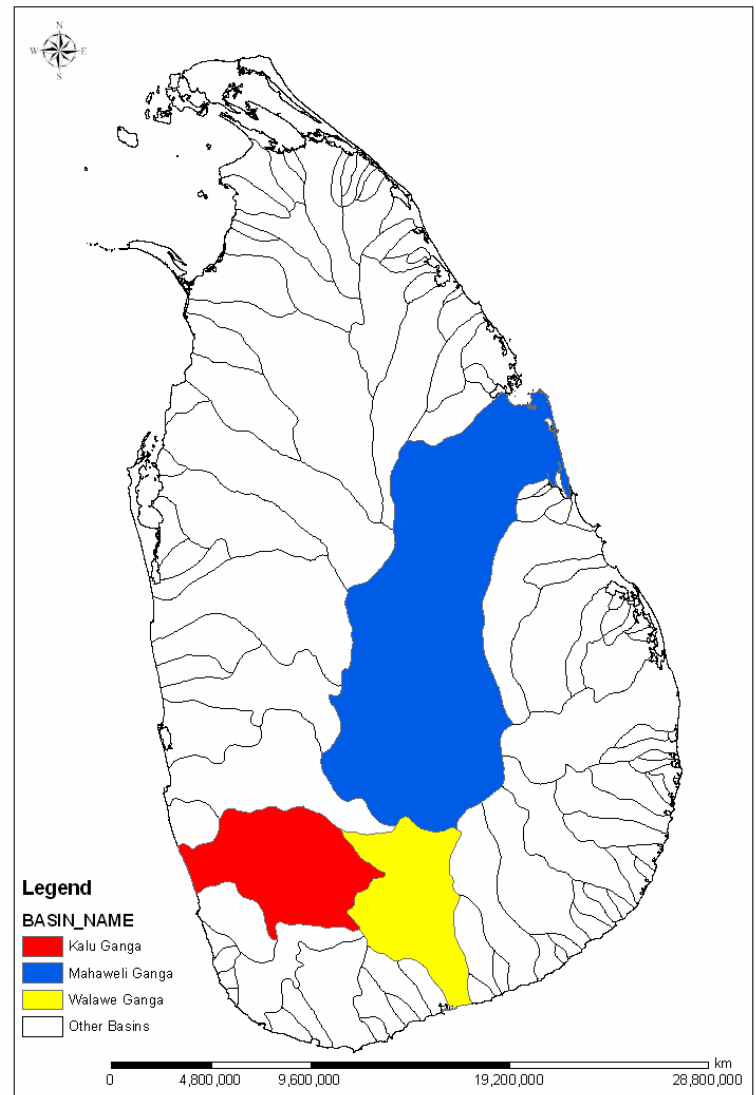


Issues in three basins

Kaluganga basin (2720 sq km)
Floods

Mahaweli basin (10450 sq.km)
Irrigation water management

Walawe basin (2470 sq.km)
Irrigation water management



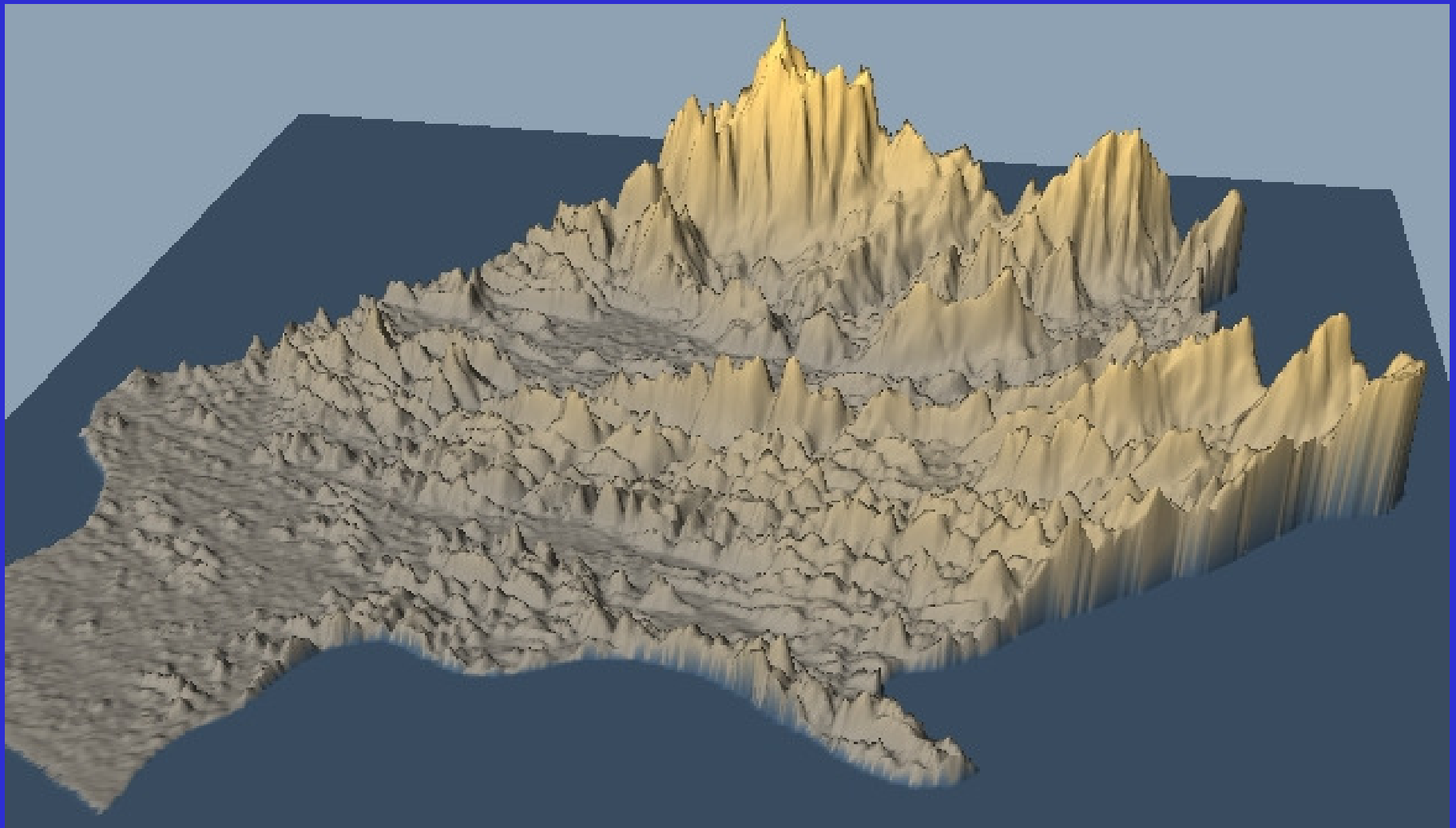
Data Availability at Candidate River Basins Mahaweli, Kalu & Nilwala for Demonstration Project AWCI

- 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

Organizations

- Met Department is responsible for forecasting heavy rainfalls.
- Irrigation Department is responsible for flood forecasting
- Different Government Institutions involves in Disaster Management activities
- Survey Department is responsible for topography, land use data

Kaluganga Basin

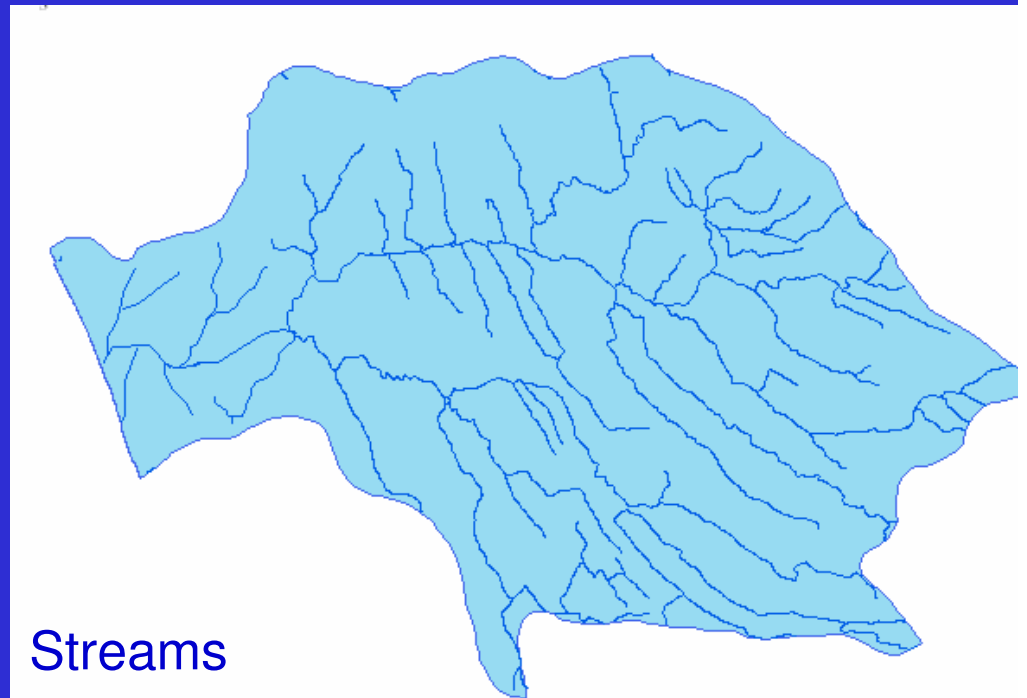


Kaluganga Basin

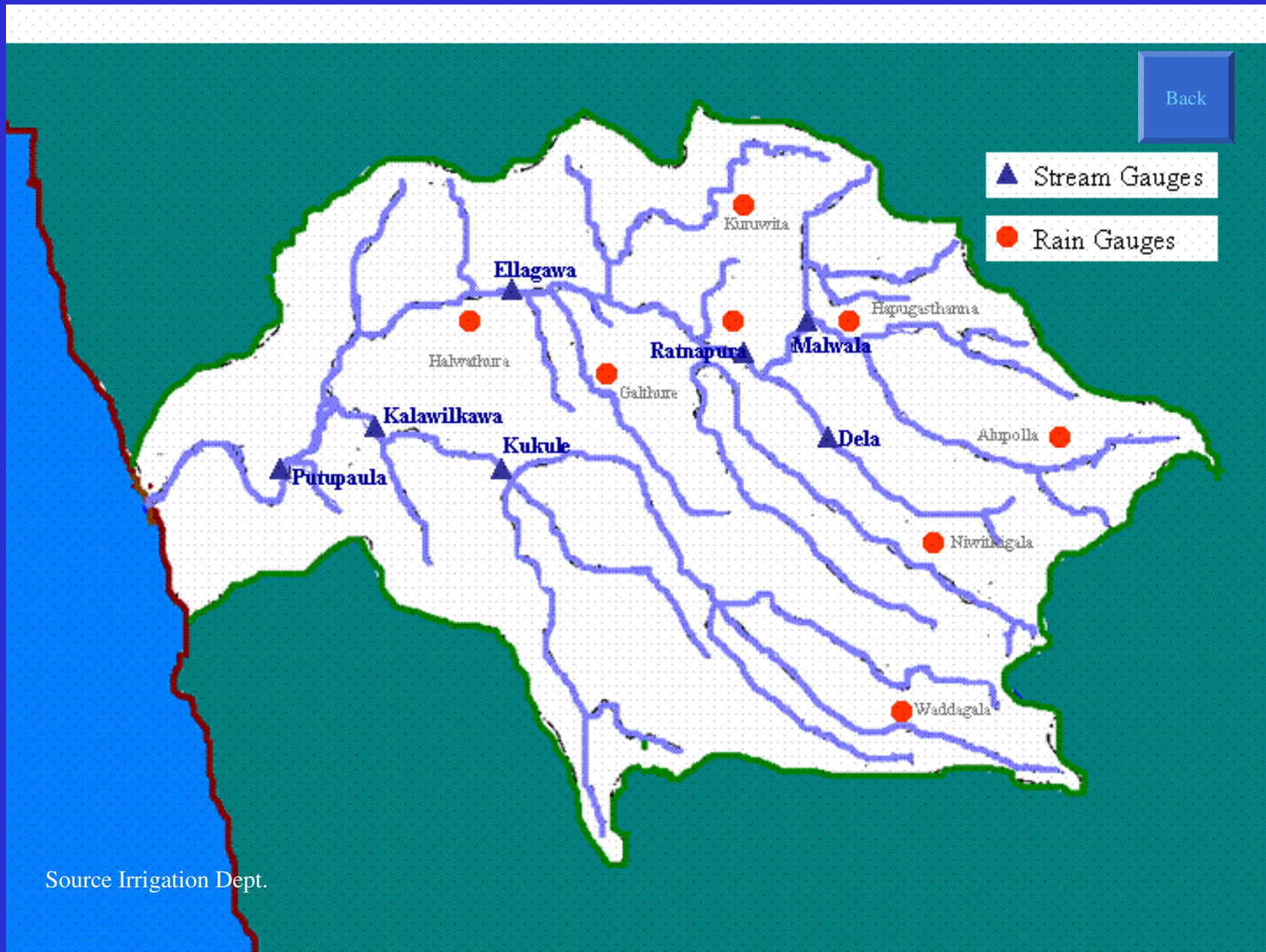
| | |
|-------------------------------------|-----------------------|
| Magnitude of the annual flow volume | 4000 MCM |
| Catchments area | 2690 sq. km |
| Average annual rainfall | 4000 mm (3000-5000mm) |
| Elevation up to | 2250 m |
| River length | 129 km |
| Length to Ratnapura | 65 km |

Major floods to Ratnapura 20mMSL

| Year | Water level/(m MSL) |
|------|---------------------|
| 1913 | 24.6 |
| 1940 | 24.3 |
| 1941 | 24.4 |
| 1947 | 24.8 |
| 2003 | 23.7 |



Kaluganga Basin



Source Irrigation Dept.

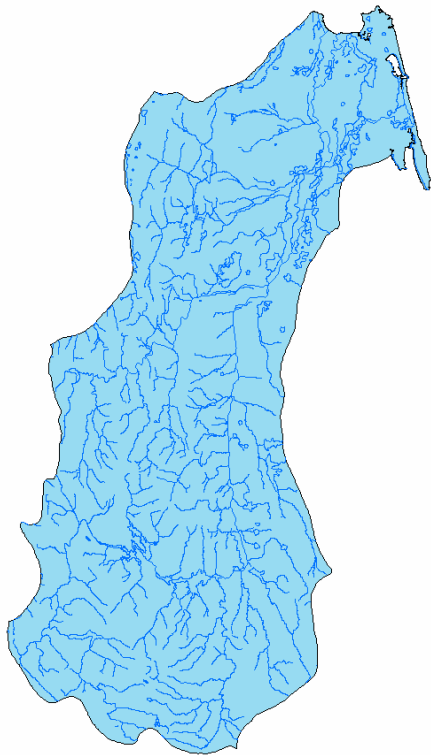
Mahaweli Basin

Catchments area

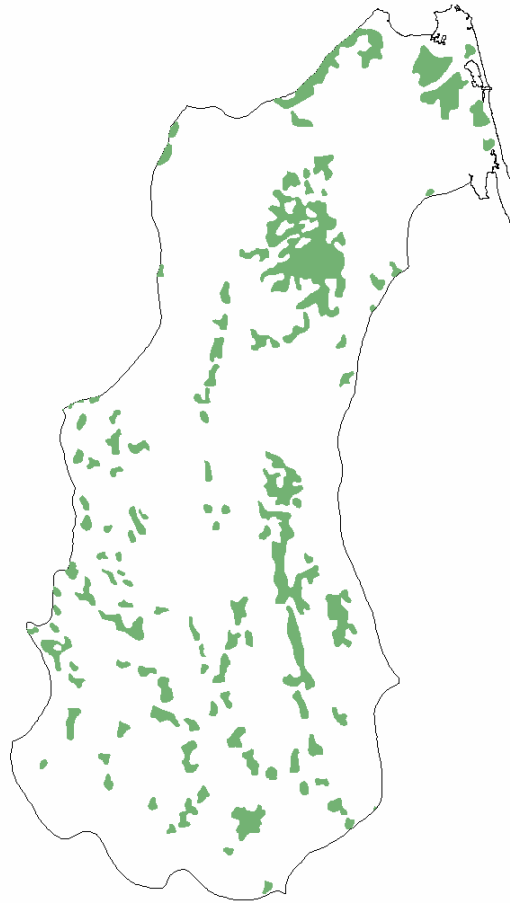
10450 sq. km

Average annual rainfall

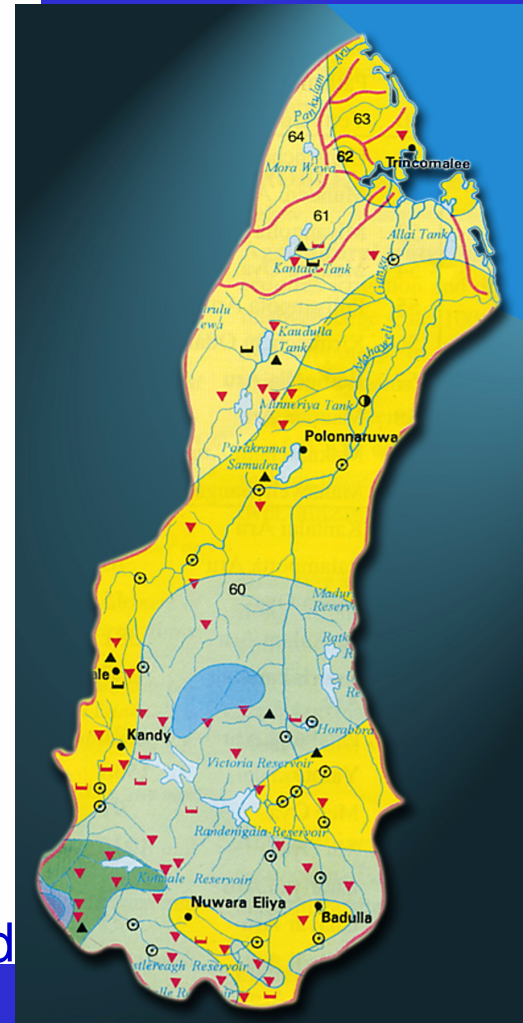
1500-5000 mm

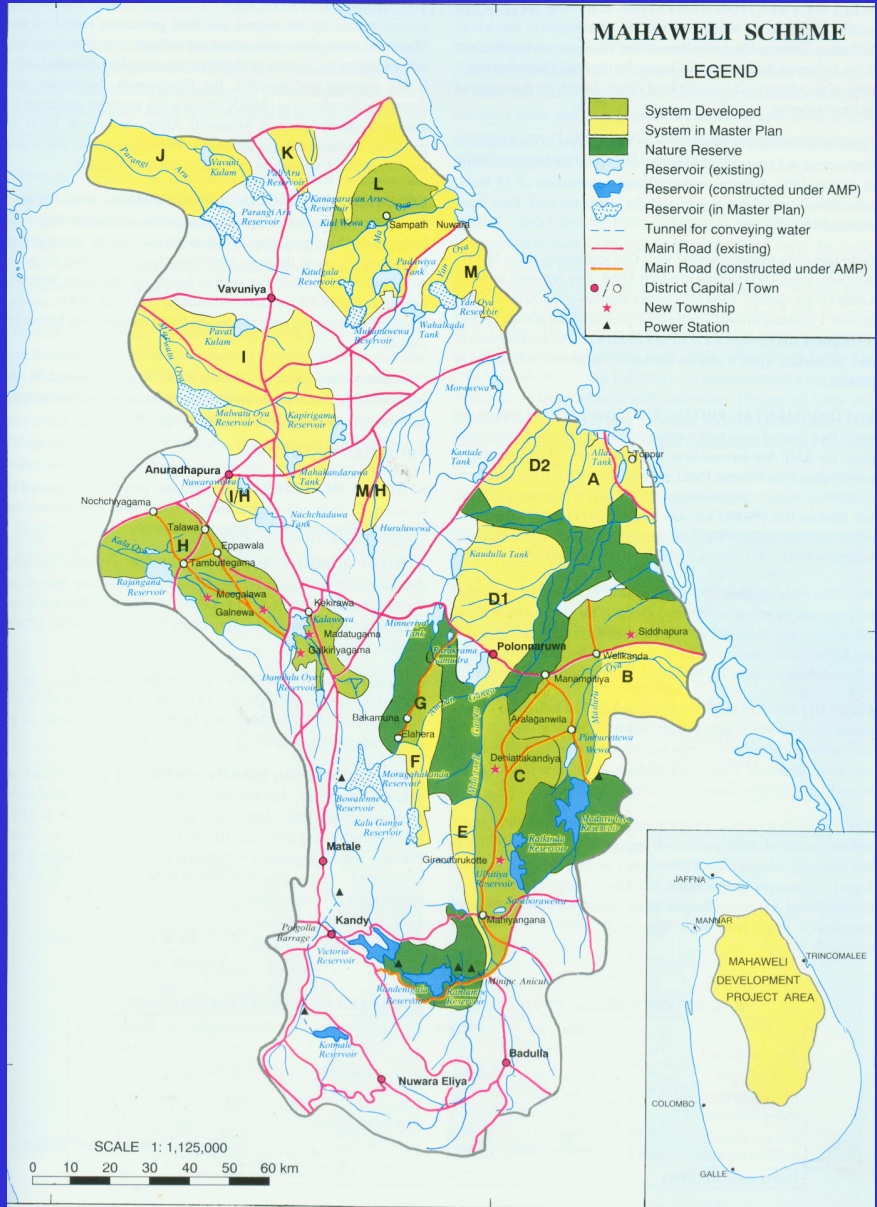


Streams



Paddy





Upper Kotmale Subbasin

300sq km

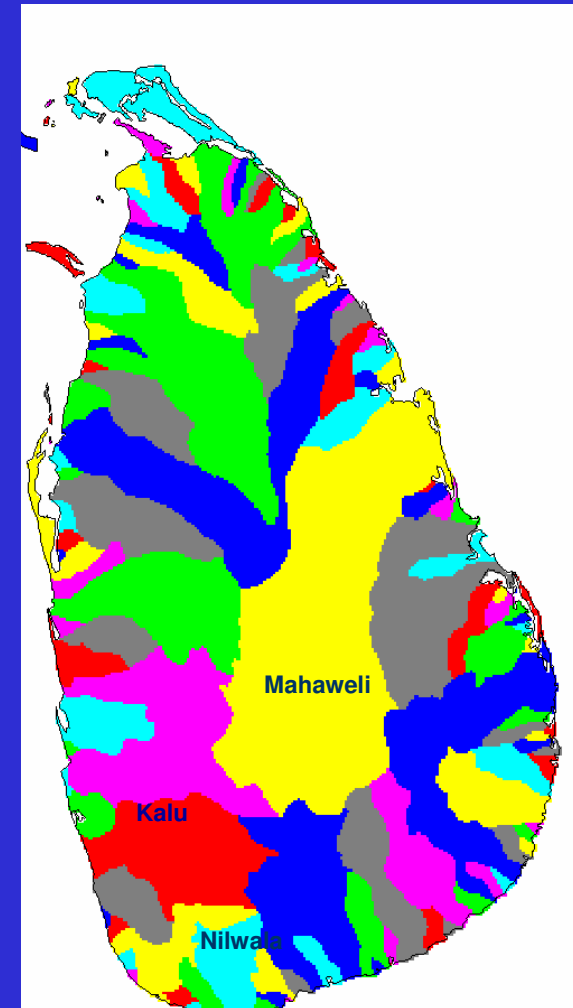


Nilawala Ganga basins

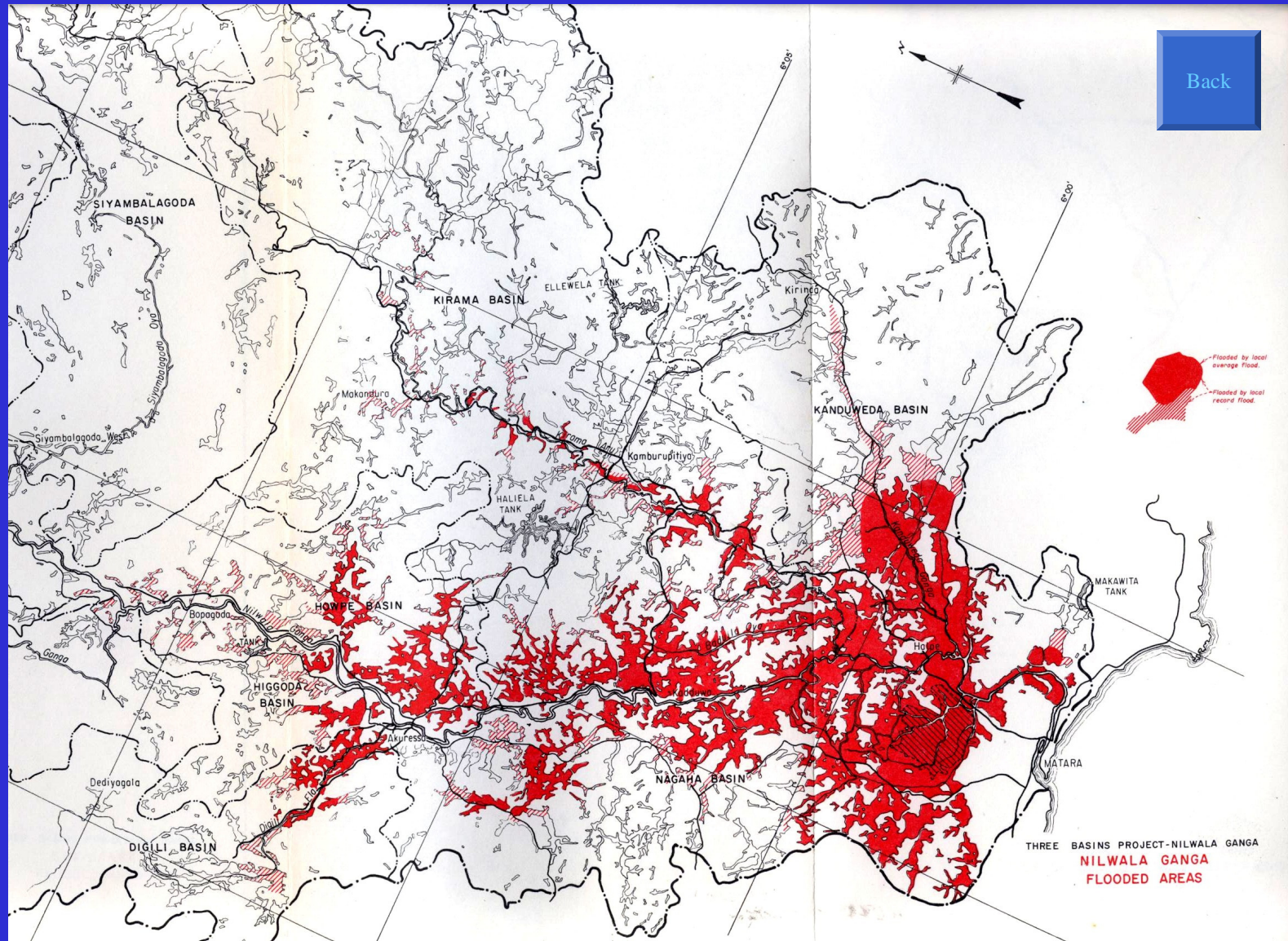
Nilwala basin

Floods

Irrigation water management



Nilwala Ganga Basin



Source Irrigation Dept.



Devon waterfall
(Upper Kotmale Subbasin)

Thank You

Hydrometric Net Work

Department of Irrigation

- 69 hydrometric stations in 17 River Basins
 - Discharge-Stage Rating Curves for 39 gauging stations
 - Network Density - about one station for 250 Sq.Km.
(WMO Standard 300 Sq. Km.)

| | |
|---|----|
| • Number of rivers gauged | 17 |
| • Number of river gauging stations | 69 |
| • River gauging stations with Automatic Water Level Recorders | 16 |
| • River gauging Stations with Cable Ways | 16 |
| • Number of Rain Gauging stations | 33 |
| • Ordinary Rain Gauges | 25 |
| • River Gauging Stations equipped with Automatic Rain Gauges | 08 |
| • Number of Evaporation Pans | 11 |
| • Number of Weather stations | 04 |

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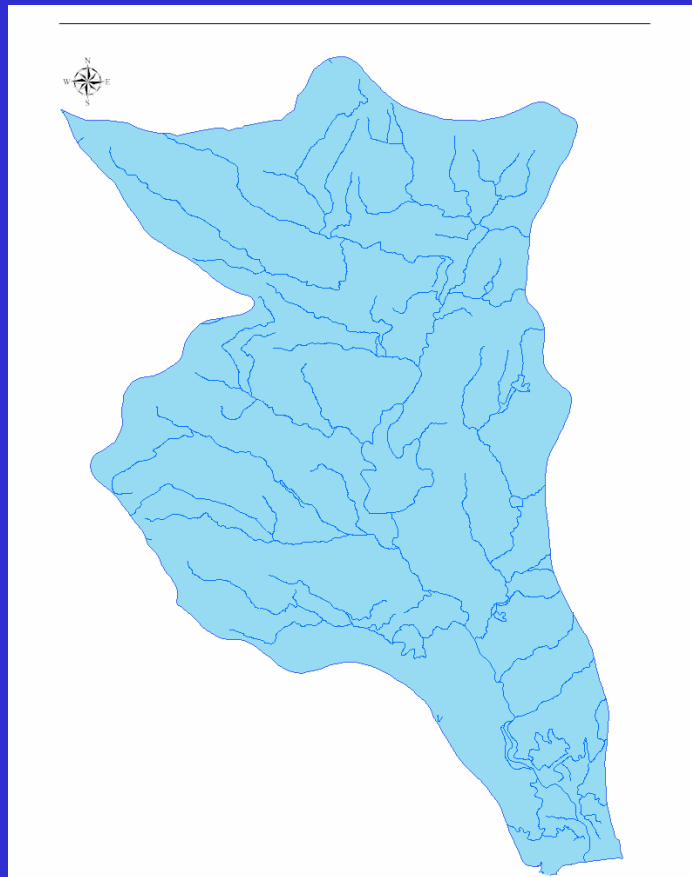
Walawe Basin

Catchments area

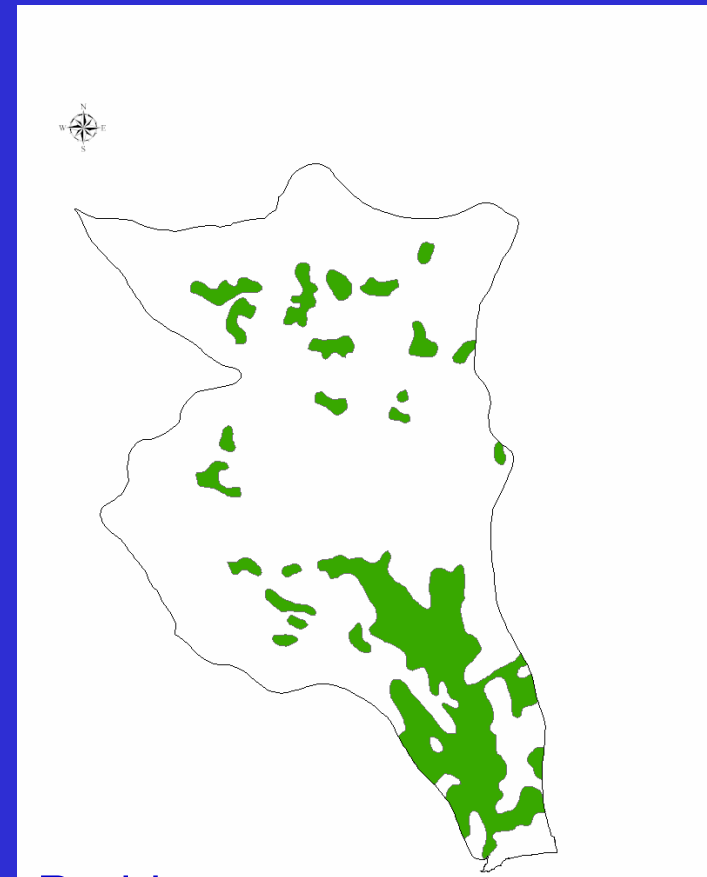
2690 sq. km

Average annual rainfall

1000-3000 mm

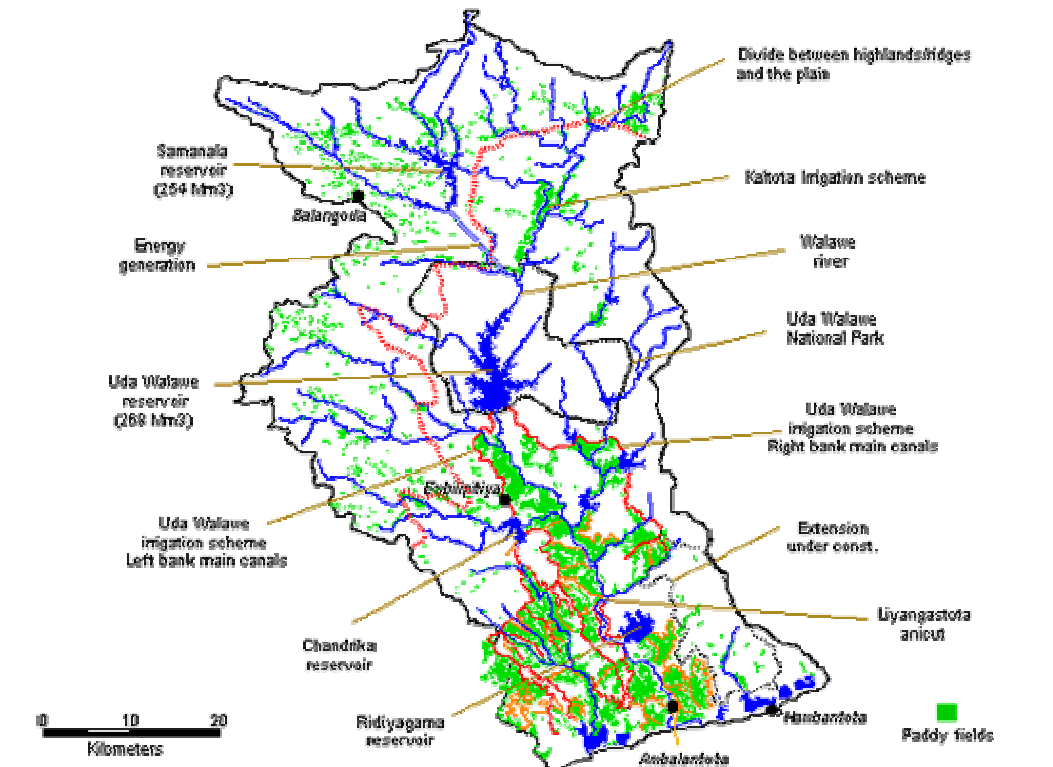


Streams



Paddy

Walawe basin



In Sri Lanka the only source of fresh water is rainfall




- Which gives from SW & NE monsoons and also from two Inter monsoons.
- Sri Lanka annual mean rainfall is 1850 mm, which is about 2 ½ times the Global mean rainfall of 750 mm

- Country is having about 103 river basins.
- There are seven major river basins in the SW quarter with their area ranging from 620 -2700 sq.km.
- Average mean annual rainfall in the Wet Zone area is 2300 mm. In the Dry Zone it is 1300 mm, while that in the NW and SE coastal region is less than 1000mm.

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- During very heavy intense rainfall, floods occur due to excessive Rainfall within short period which cannot be accommodated in natural river system.
- Met Department is responsible for forecasting heavy rainfalls.
- Irrigation Department is responsible for flood forecasting
- Different Government Institutions involves in Disaster Management activities

River System of Sri Lanka

- 103 river basins in Sri Lanka 
- Mahaweli Ganga, longest river (335 km)
Basin area 10,448 sq.Km. 
- 6 River Basins - Basin Area between 3500 – 2000 Sq.Km.
- 10 River Basins - Basin Area 2000-1000 Sq.Km.
- 11 River Basins - Basin Area Between 1000-500 Sq.Km.
- 32 River Basins - Basin Area between 100-500 Sq.Km.
- 43 River Basins - Small Coastal basins with Basin Area less than or equal to 100 Sq.Km. 

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

- **Mahaweli Ganga Basin**

There are 65 rain gauge stations, Data availability: eight from 1930, eight from 1940, three from 1950, one from 1960, eight from 1980, fifteen from 1990 and fourteen 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, Data availability: four from 1930, two from 1940, four from 1950, one from 1980, five from 1990, one from 2001 and four stations over 110 years.

Number of river gauge stations six. Three at the main river and three at tributaries.

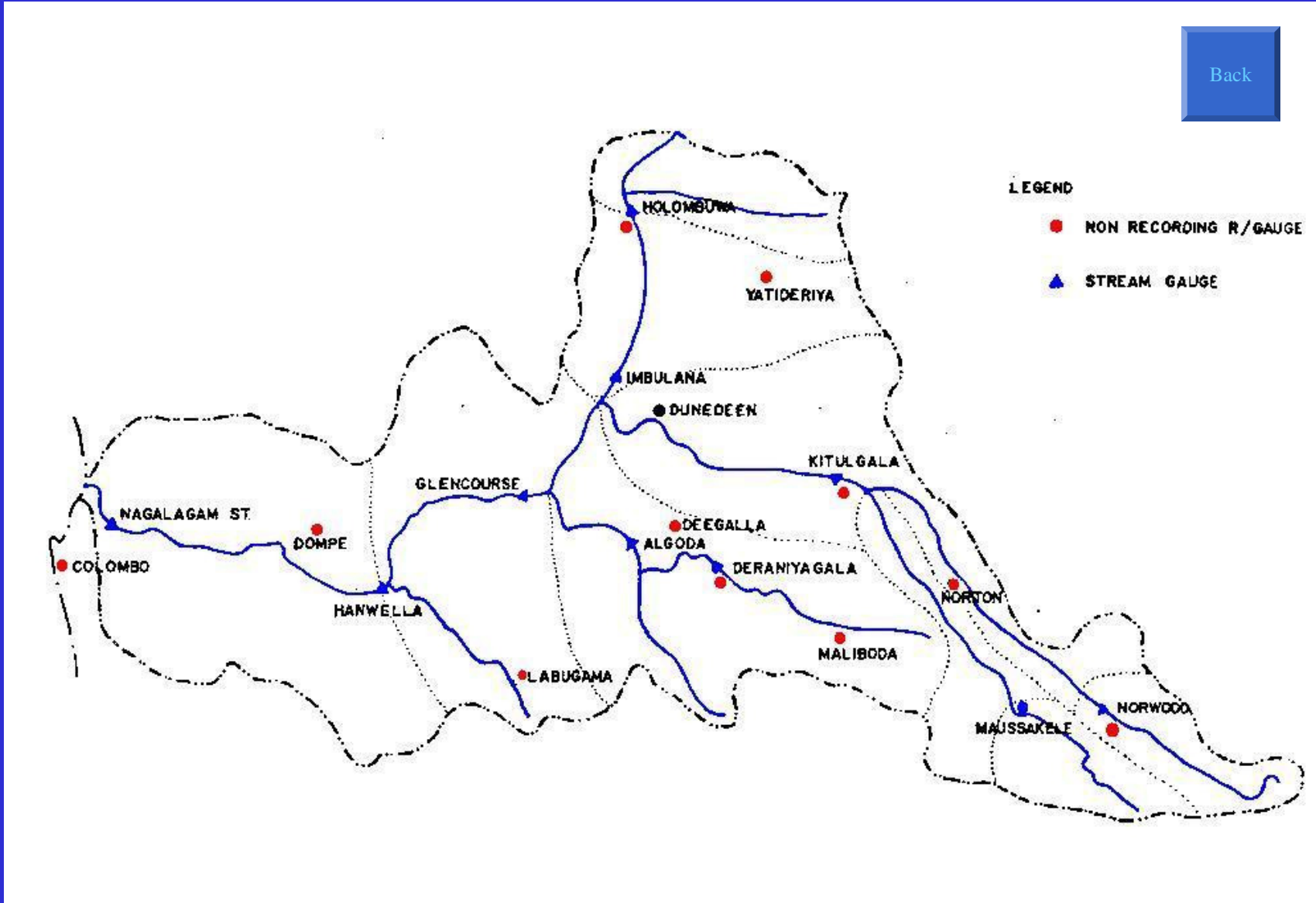
- **Nilwala Ganga Basin**

There are 16 rain gauge stations. Data availability: two from 1930, two from 1940, one from 1950, one from 1960, two from 1980, four from 1990, one from 2000, one from 2005 and one station over 110 years.

Number of river gauge stations two. Two at the main river

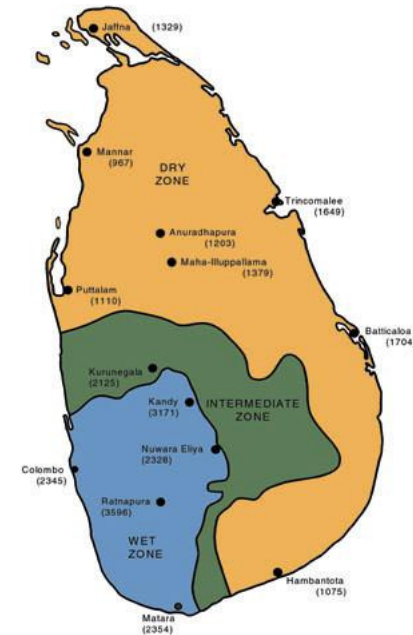
Kelani Ganga Basin

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River Gauge Distribution

- Wet Zone - 35 river gauging stations
- Intermediate Zone - 10 river gauging stations
- Dry Zone - 24 river gauging stations



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