Lalith Chandrapala
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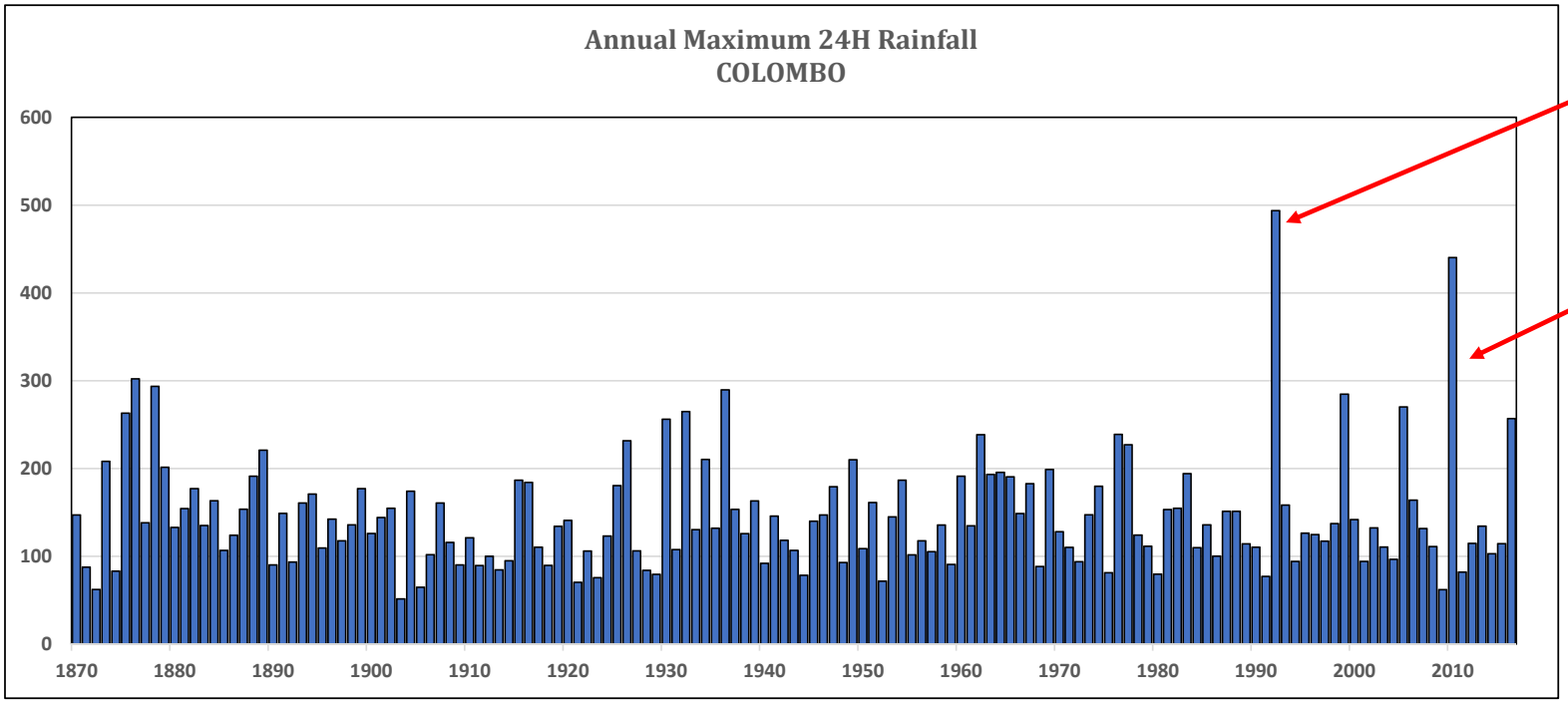
EXTREME RAINFALL EVENTS ARE BECOMING MORE AND MORE FREQUENT!

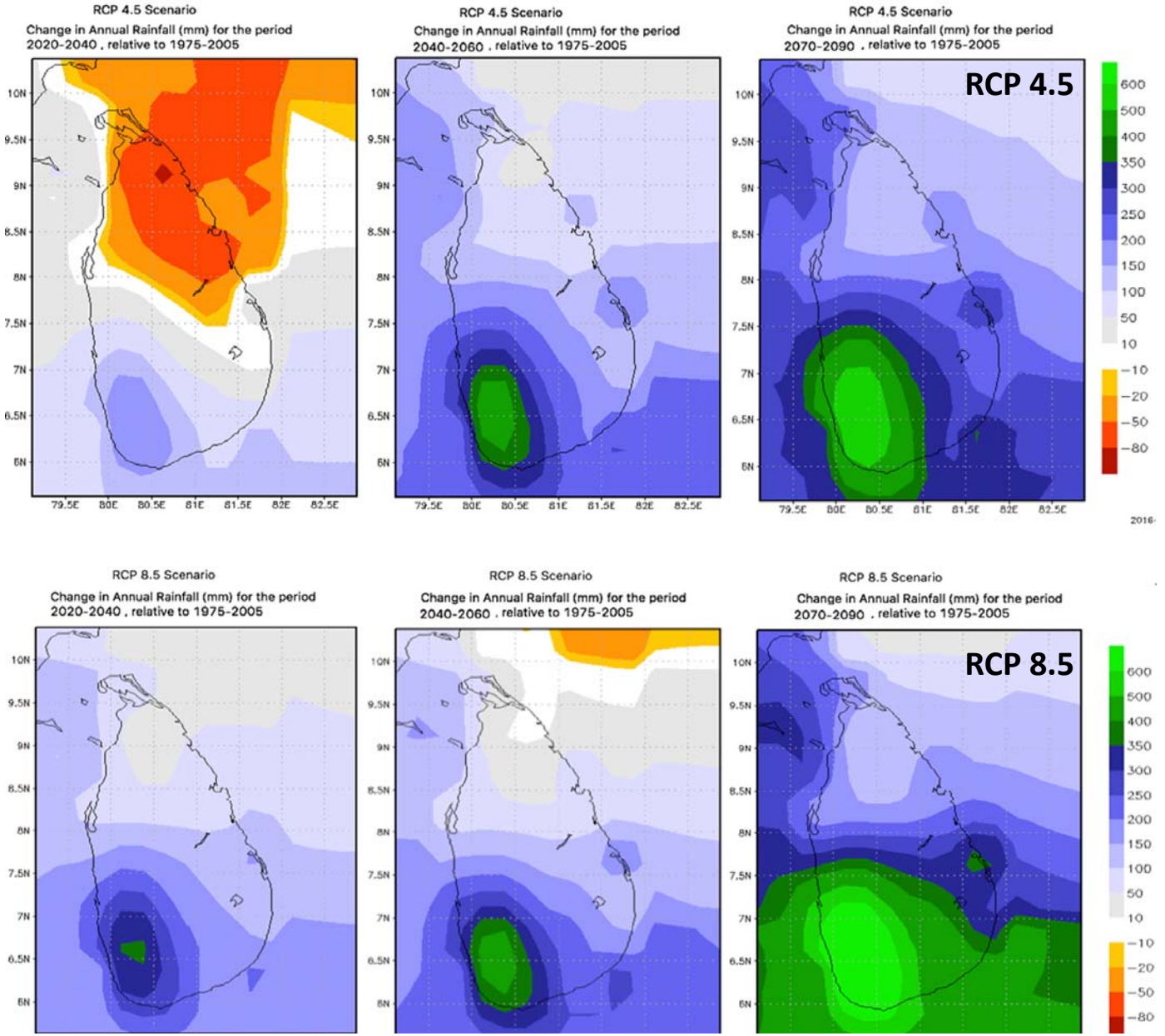


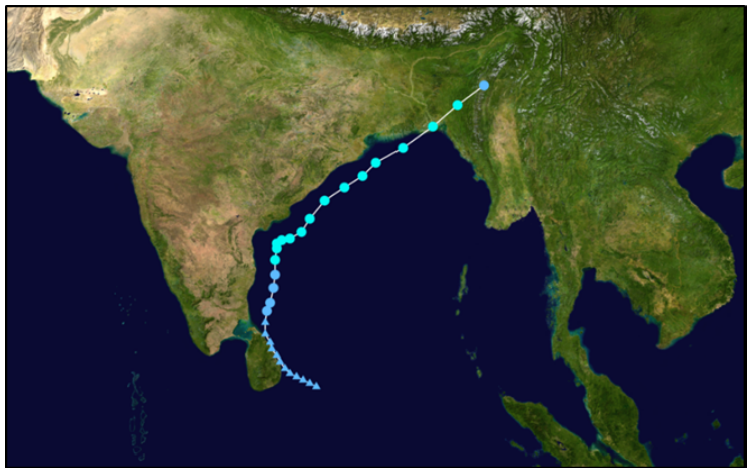
493.7 mm
4th June 1992

440.2 mm
10th November 2010

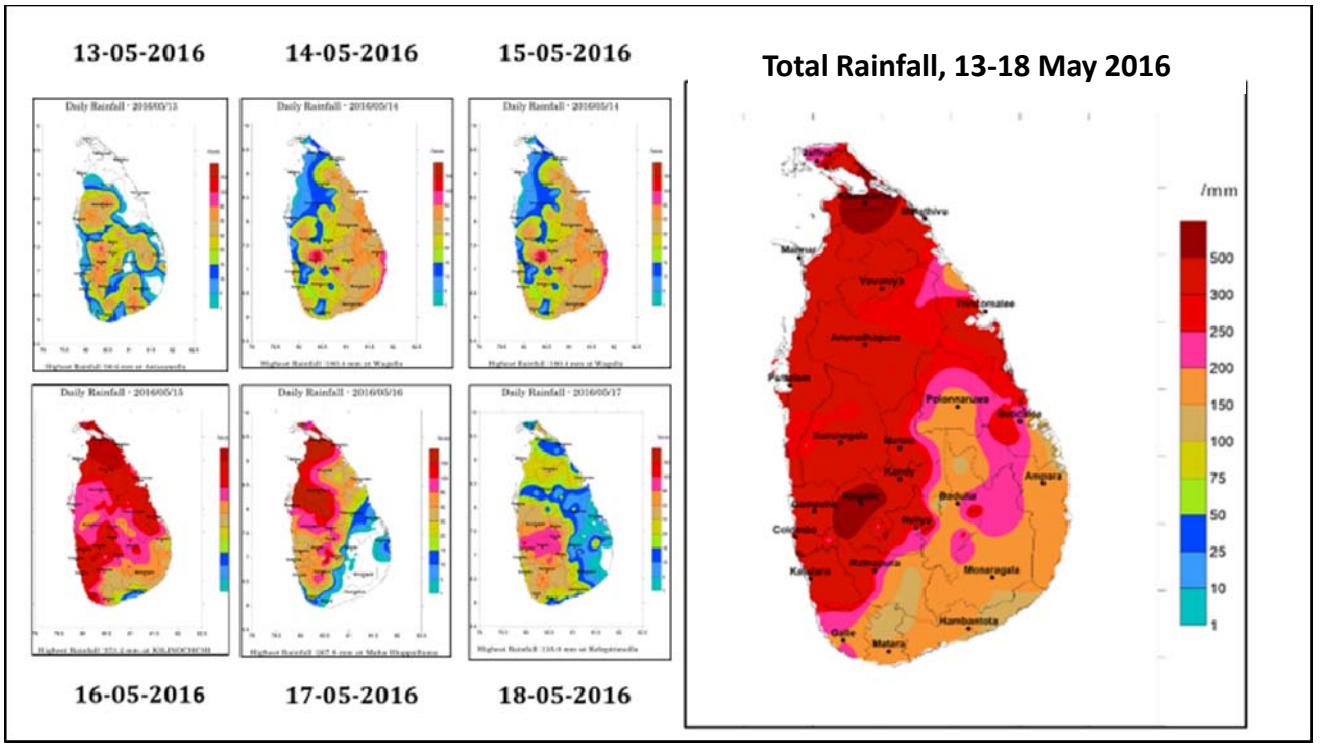
Increase in the <u>severity</u> and <u>frequency</u> of extreme events

CLIMATE CHANGE SCENARIOS FOR SRI LANKA USING CMIP5 DATA SHOW A SIGNIFICANT INCREASE OF RAINFALL IN THE WET ZONE OF SRI LANKA.

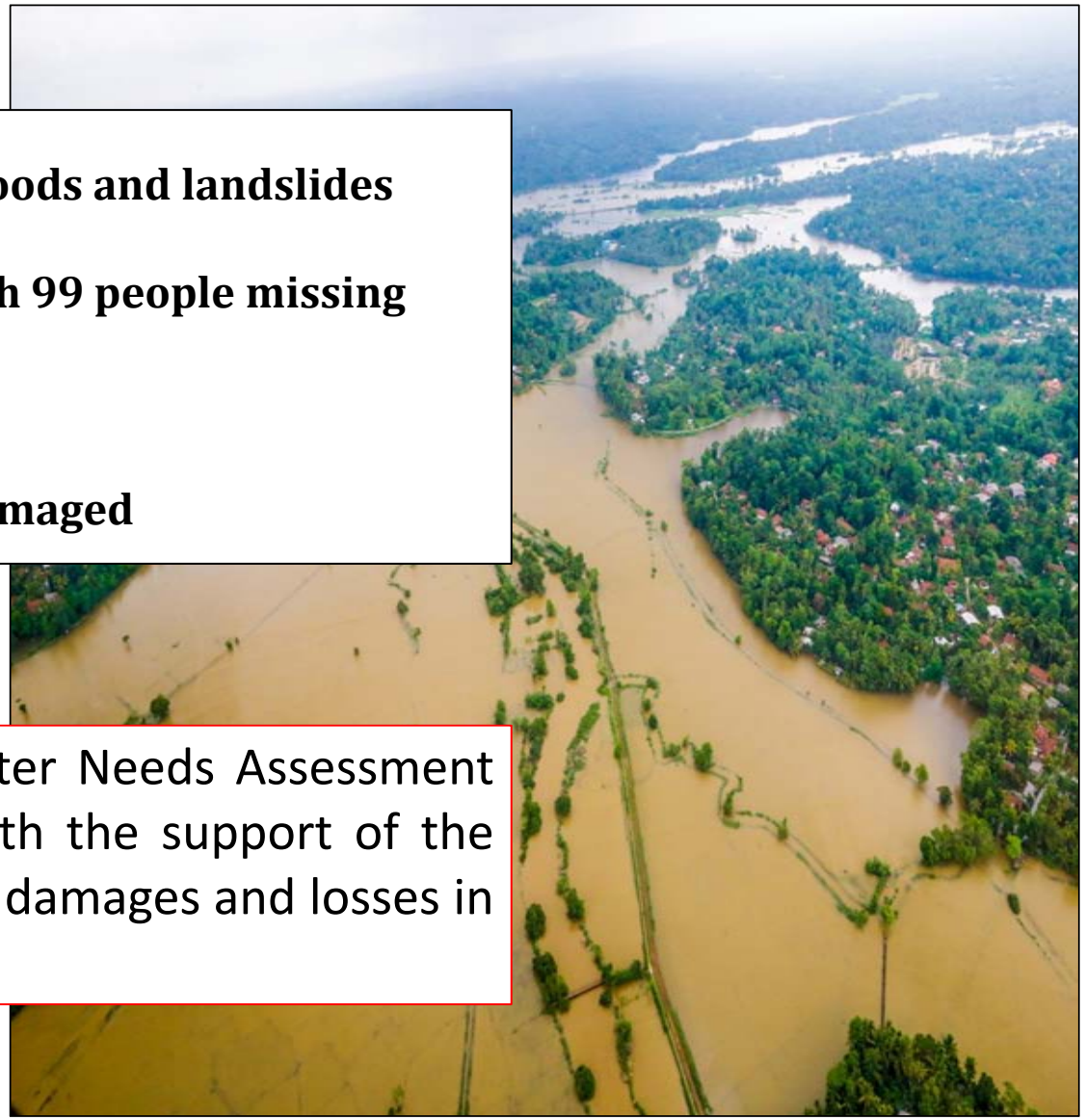




Movement of the depression, which later became tropical cyclone ROANU



- **Over 300, 000 people directly affected by floods and landslides**
- **Total number of confirmed deaths – 104 with 99 people missing**
- **21, 500 people displaced**
- **623 houses totally destroyed with 4, 400 damaged**



The preliminary findings of the Post Disaster Needs Assessment (PDNA) conducted by the government, with the support of the United Nations and World Bank, show total damages and losses in excess of US$ 570 million," – World Bank

Severe catastrophe of May-2016 resulted in identifying the need for an **Integrated Flood Management System**

Major Issues:

- ❑ Overlapping responsibilities of many agencies
- ❑ Coordination among partner agencies
- ❑ Man power related issues
- ❑ Duplication of efforts

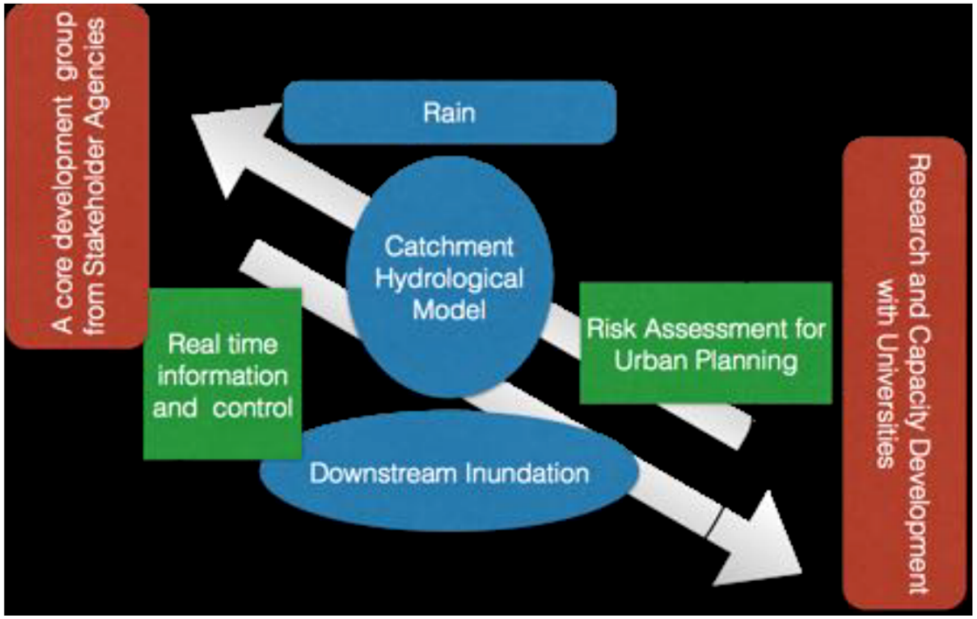
After several rounds of discussions, it was decided to develop a **Prototype Integrated Flood and Water Management System** for the Kelani river basin by an inter-agency working group.

The agencies involved are,

- Irrigation Department – *mandated for riverine floods*
- Department of Meteorology – *mandated for weather forecasting*
- Sri Lanka Land Reclamation and Dev. Corp (SLLRDC) – *flash floods*
- Disaster Management Centre
- National Water Supply & Drainage Board
- Water Resources Board
- Colombo Municipal Council

The major functions of the Integrated Flood and Water Management System are,

1. Monitoring
2. Collection and integration of data
3. Simulation and forecasting
4. Real time dissemination
5. Short and long term risk assessment



Agreed sequence of development of the System,

1. Develop a water information and communication system
2. Implement real time control and implementation of risk based response procedures
3. Improving current level of flood safety through structural and non-struct. measures

The system once fully functional would provide,

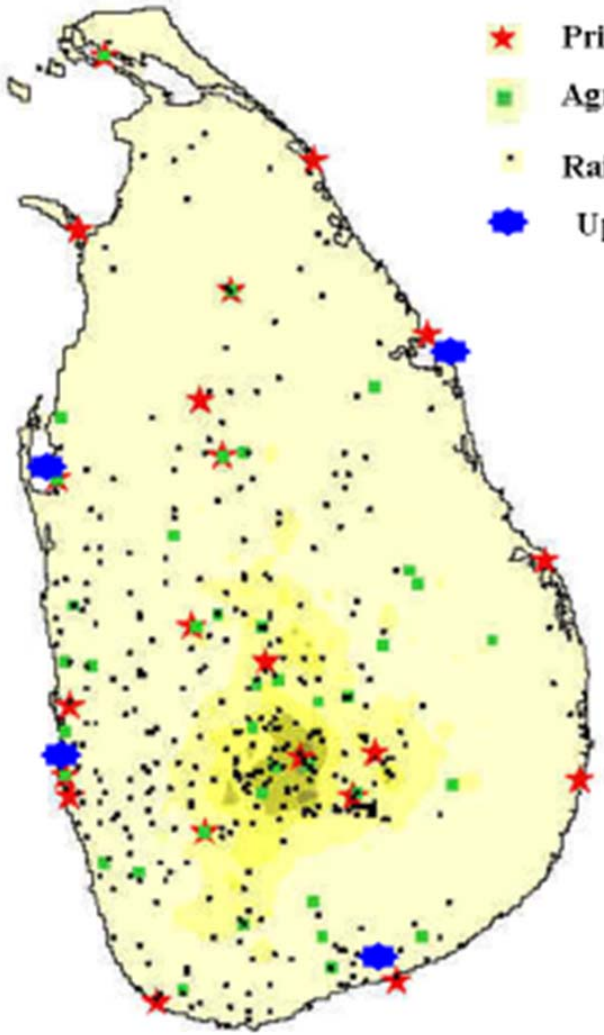
- Real time forecasting to assist disaster response and relief support
- Scenario analysis to develop optimal strategies for operation of control structures
- Short and long term risk assessment to support development planning

Assistance Expected from IFI partners:

- Capacity Development in Numerical Weather Prediction
  - Short-term fellowships at major NWP centres
- Capacity Development in the development of High Resolution Climate Change scenarios
- High Speed computer facilities

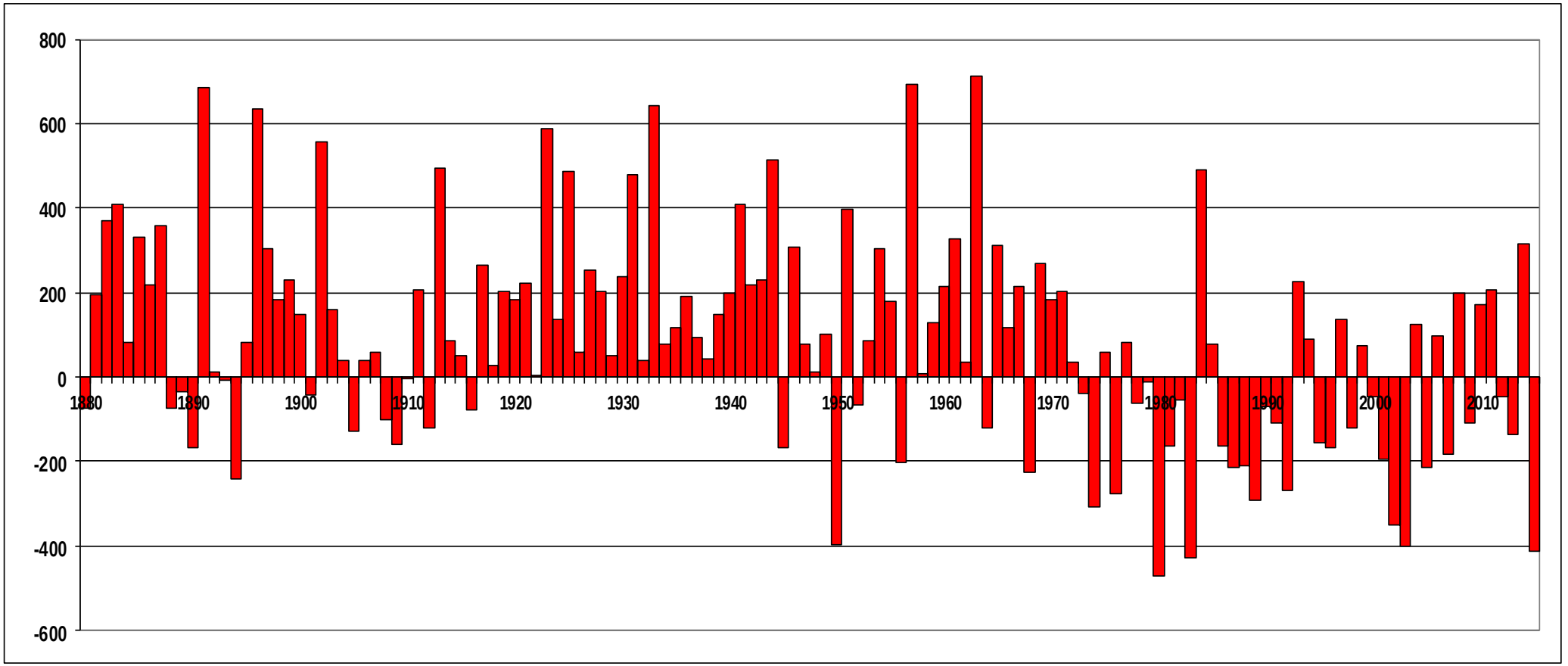
Thank You

RAINFALL OBSERVATION NETWORK



- Synoptic Meteorological Stations -22 nos.
  3 Hourly Manual Observations
- Agrometeorological Stations – 35 nos.
  Twice daily Manual Observations
- Rain-gauge Stations – 400 nos.
  Once daily Manual Observations
- Automatic Weather Stations – 38 nos.
  10 Minute automatic observations
- 02 nos. Doppler Weather Radars (by 2010)

Variability of Annual Rainfall of Sri Lanka (1880-2016)



Already the World Bank has undertaken a project to strengthen the capacity of the Department of Meteorology, the Department of Irrigation, and the Disaster Management Centre to meet their shared obligations to minimize loss of life, livelihoods, and property due to hydro-meteorological hazards in Sri Lanka.

The first phase of the project is presently underway and the major focus of the Second phase due to start in late 2017 is on improving the services of the Department of Meteorology and the Hydrology Division of the Irrigation Department.

Major Components in Meteorological Upgrading

- Improvement of Observation Networks, Forecasting Systems, Communication and IT Infrastructure
- A "DATA RESCUE" Initiative
- Real-Time Data and Information Access to relevant stakeholders
- Nowcasting and Short-Range Forecasting with availability of gridded products