



# Role of Irrigation Department in Flood Management

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First River Gauge at Nagalagam Street established in 1920s



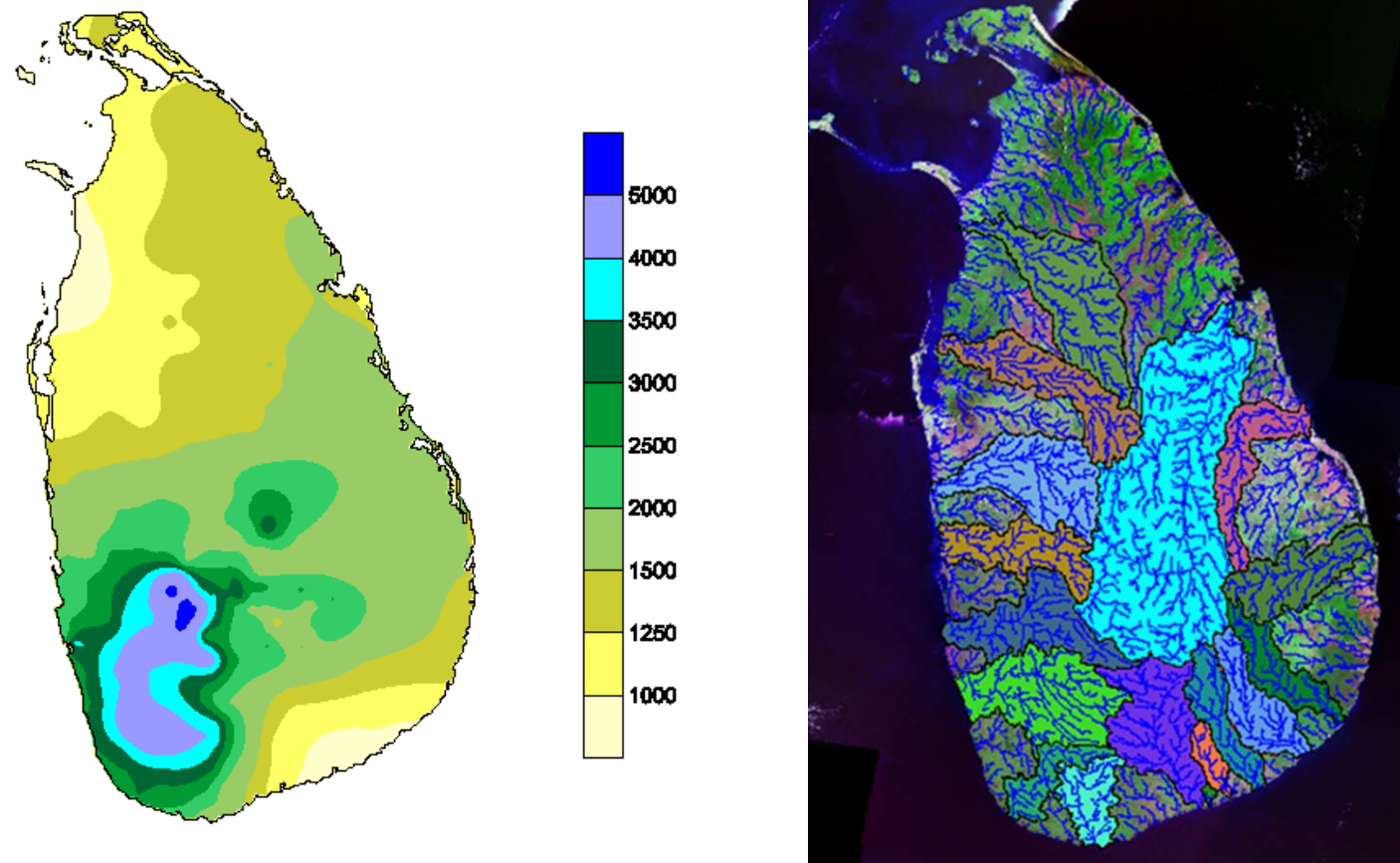
A River Gauge in Kalu River



Automatic Hydrometric Stations



## Flood situation in Sri Lanka



- Sri Lanka is a highly a flood prone country
- 25 River Basins out of a total of 103 is found to be vulnerable for floods

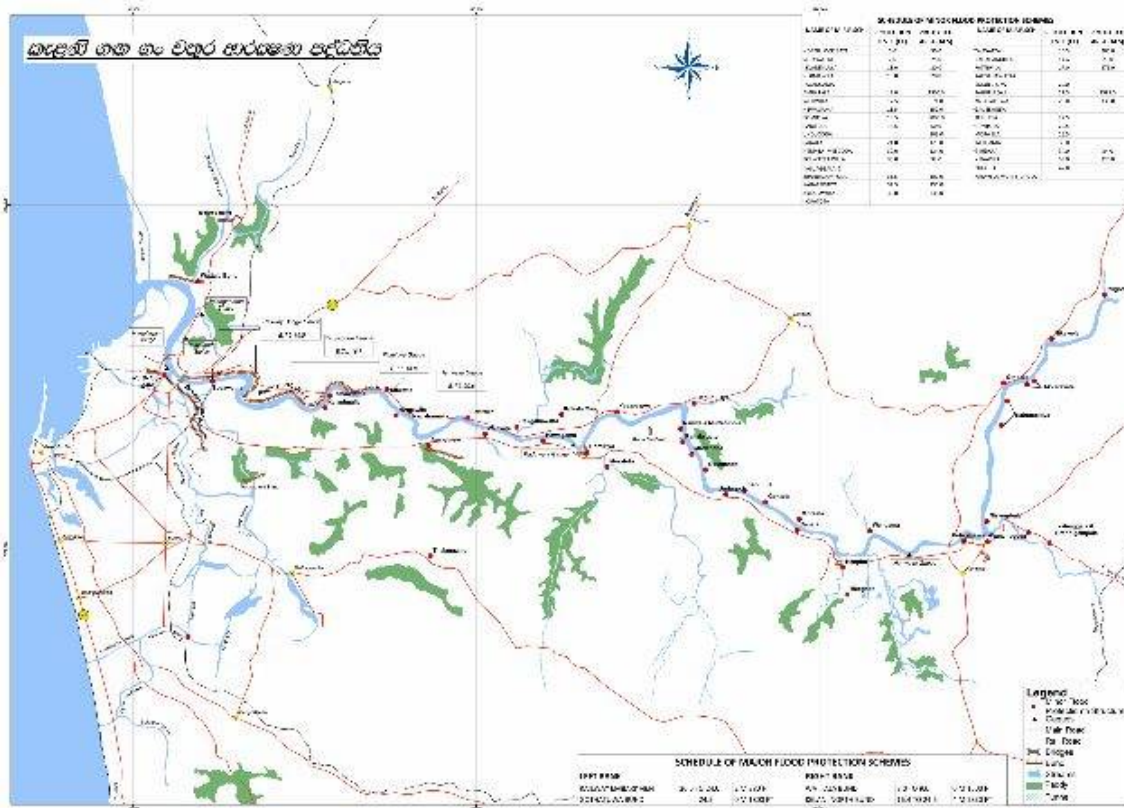
## Key functions of ID relevant to flood management

- Flood monitoring and forecasting
- Planning, designing and constructing structural flood countermeasures
- Operation and maintenance of flood control systems
- Reservoir Operations in order to minimize downstream floods
- Carrying out temporary flood

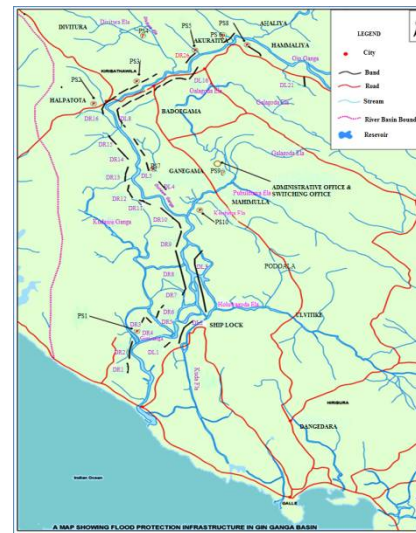
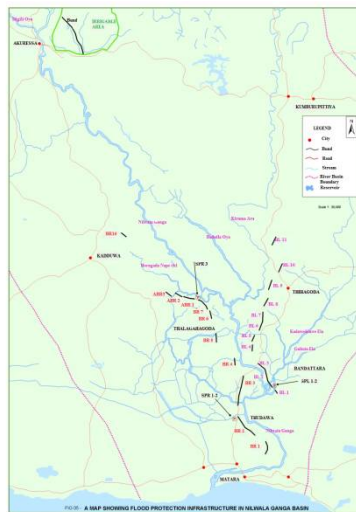


Current Metering of  
river flow by ID  
officers





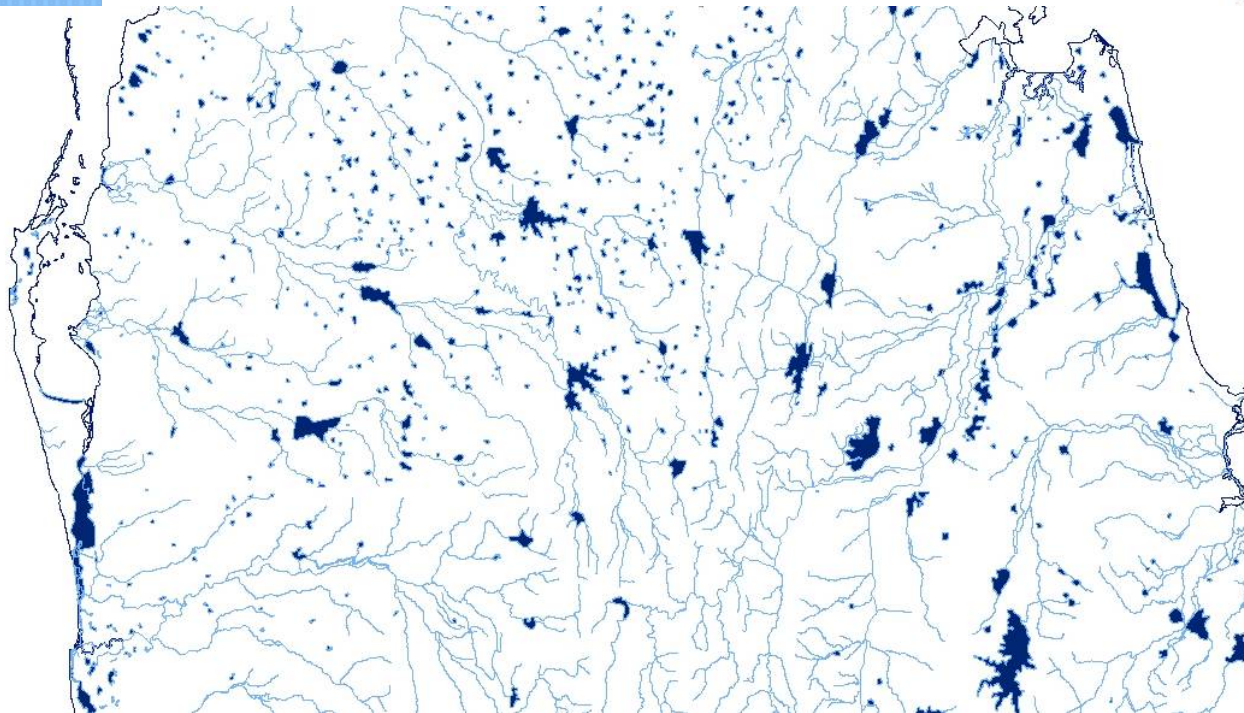
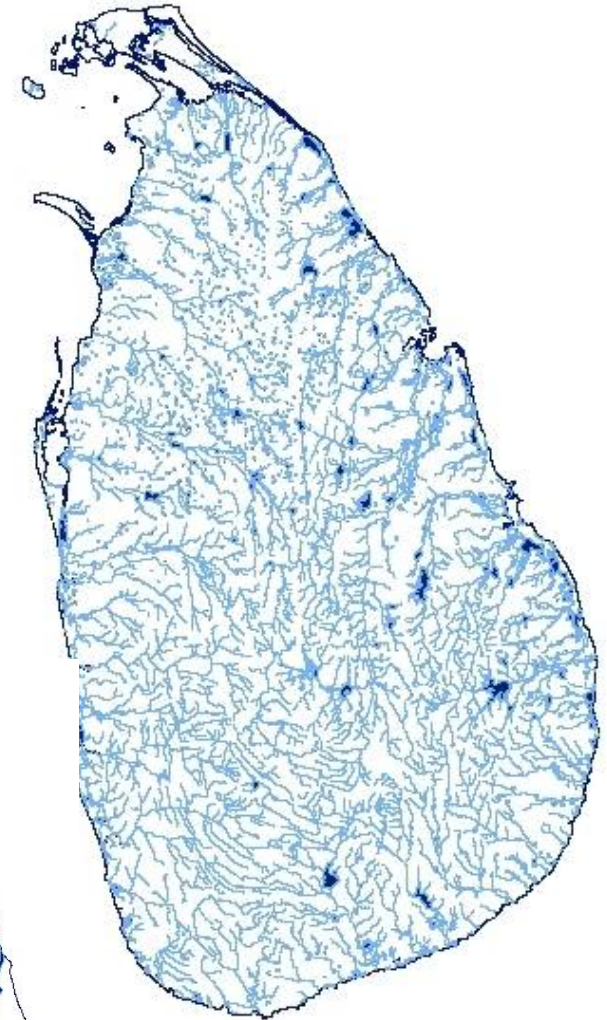
Flood Protection Scheme Maps of Kelani River, Nilavala River and Gin River





## Flood Categories in Sri Lanka

- River Floods
- Reservoir Induced Floods
- Urban Floods or Local Floods



# Current River Flood Warning System

- Present flood warning system is based on monitoring of river gauges in critical locations and rainfall observations.
- Floods are categorized as Minor, Major, Dangerous and Critical according to water level of river gauge.
- Gauge readings are observed in every hour round the clock rainfalls are observed 3 hourly and data are transferred to head office over the phone. Hydrology division analyze these data and issue warnings based on the trends observed using trend curves, model results and past experiences.
- Reservoir floods are monitored based on the water levels of reservoirs and incoming flows

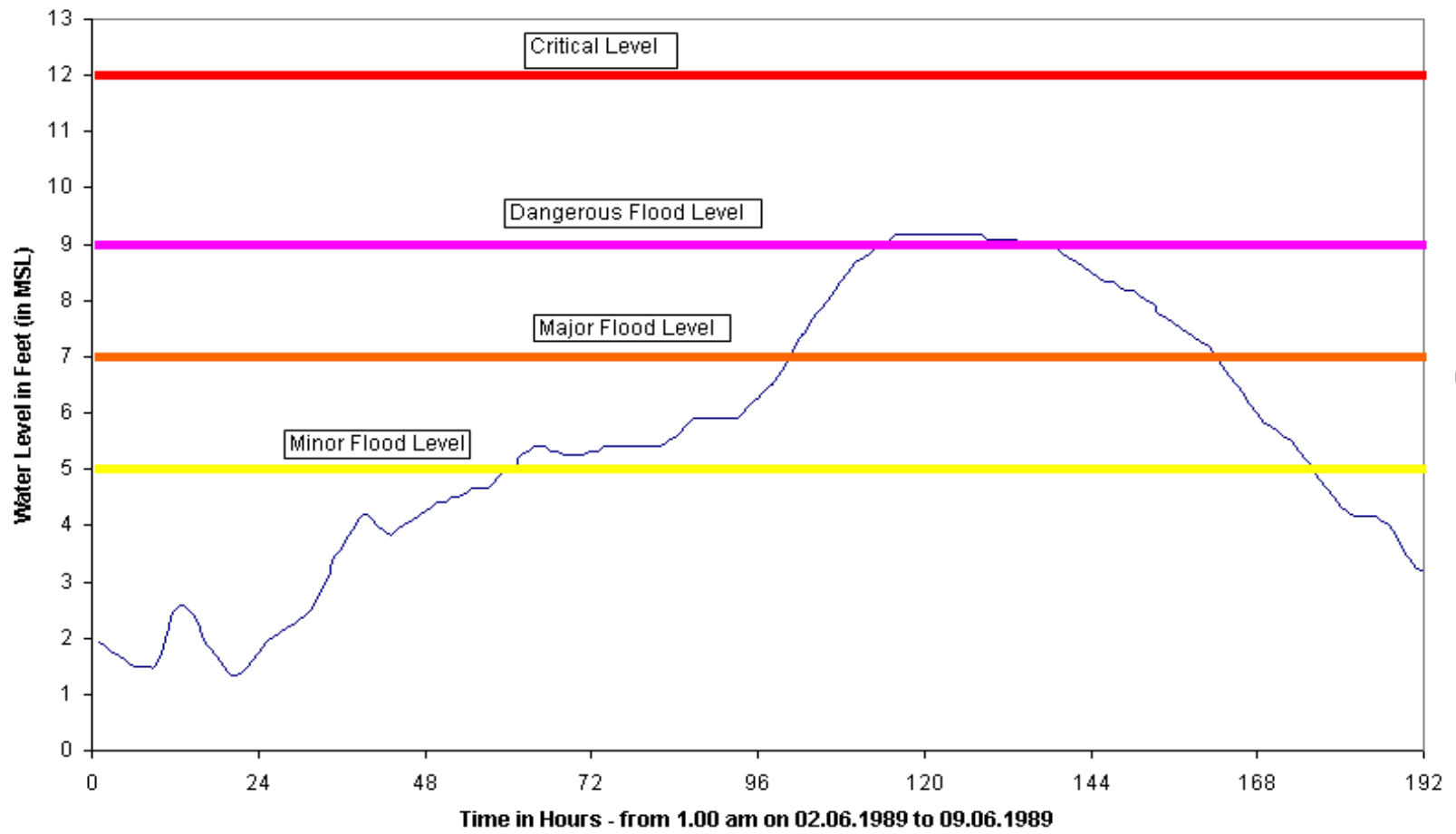


## Classification of Kelani River Floods for Colombo city and suburbs

With water level at Nagalagam  
Street

- Minor Flood                      above 5  
Feet
- Major Flood                      above 7  
Feet
- Dangerous Flood                above 9  
Feet

### Dangerous Flood in 1989 - Kelani Ganga at Nagalagam Street





## Common Causes of Flooding

- *Heavy rainfall,*
- *High intensity rainfall,*
- *Clogging natural drains and outlets,*
- *Poor maintenance of drainage systems,*
- *Encroachments of streams, flood plains, lakes and wetlands,*
- *Increase of population and unplanned urbanization,*
- *Climate Change.*

Land Slide with 2014  
June – Flood, Kukule  
Ganga





Land Slides with 2014 June - Flood

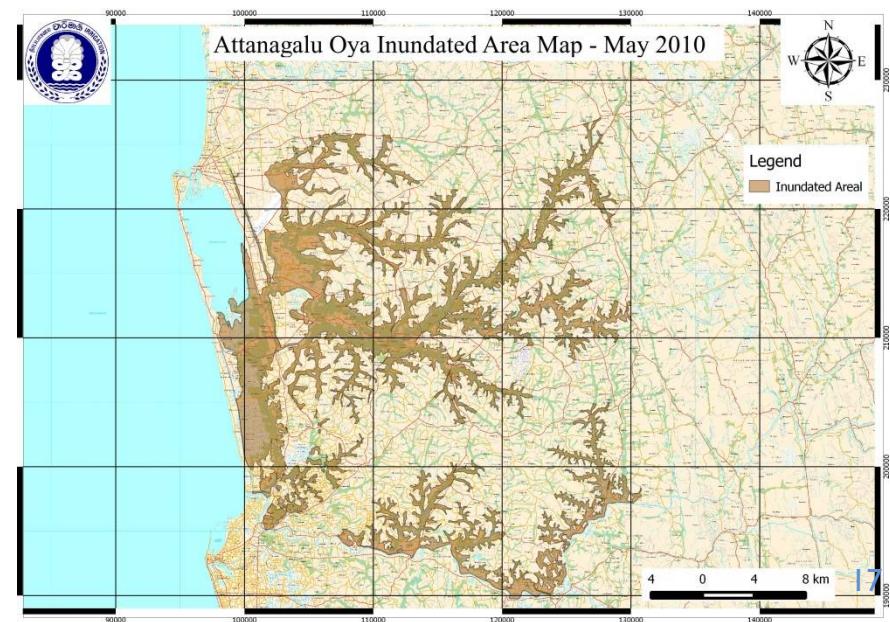
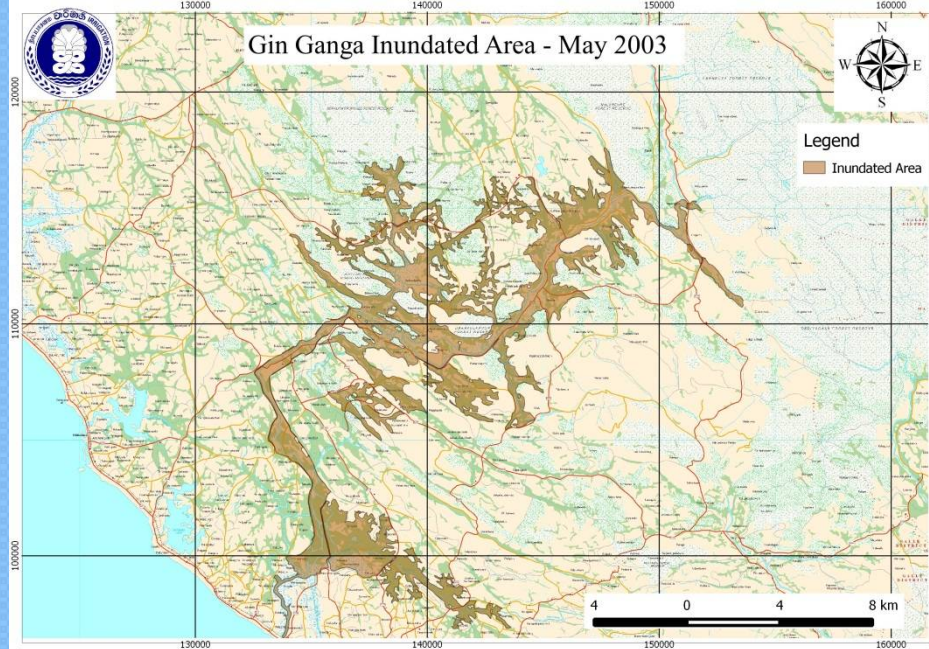
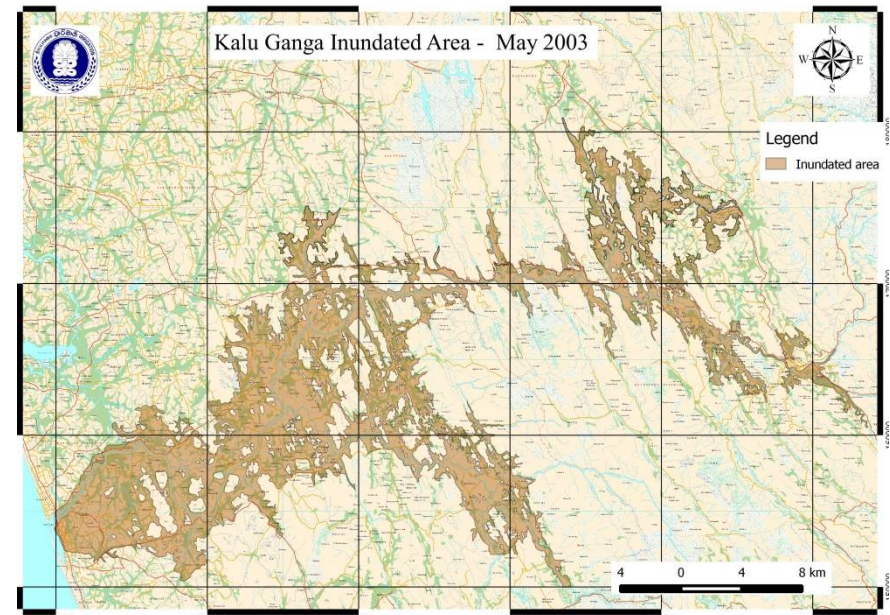
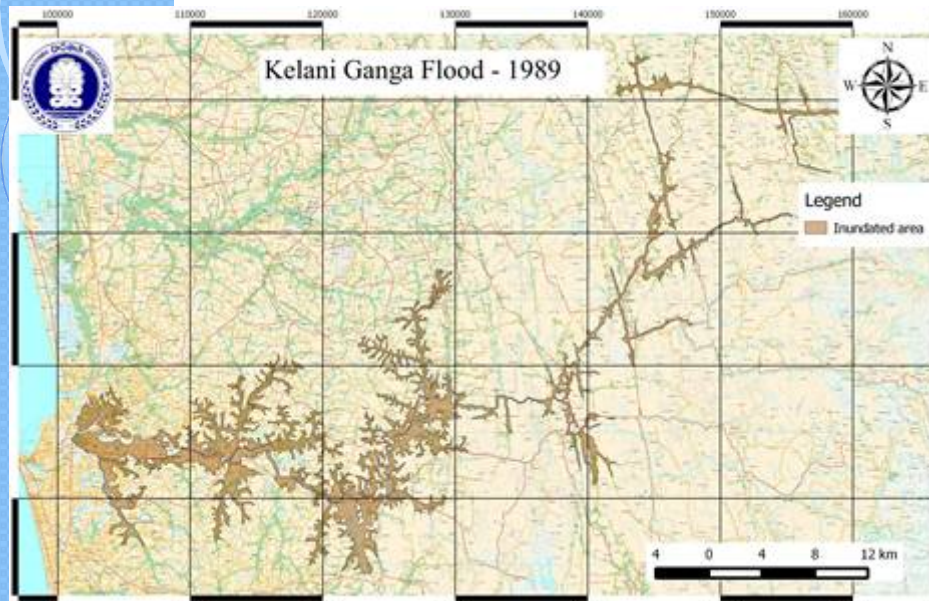
Land Slide with 2014 June – Flood, Kukule Ganga



Main roads under water



# Food inundation maps at recent critical events





## Shortcoming faced by ID in flood management.

- Non availability of accurate digital elevation data for flood modeling
- No access for radar images during flood times
- Lack of proper training for staff in image analysis, flood modeling etc.

Hope National and International organizations will help us for overcoming these problems



*Thank you !*