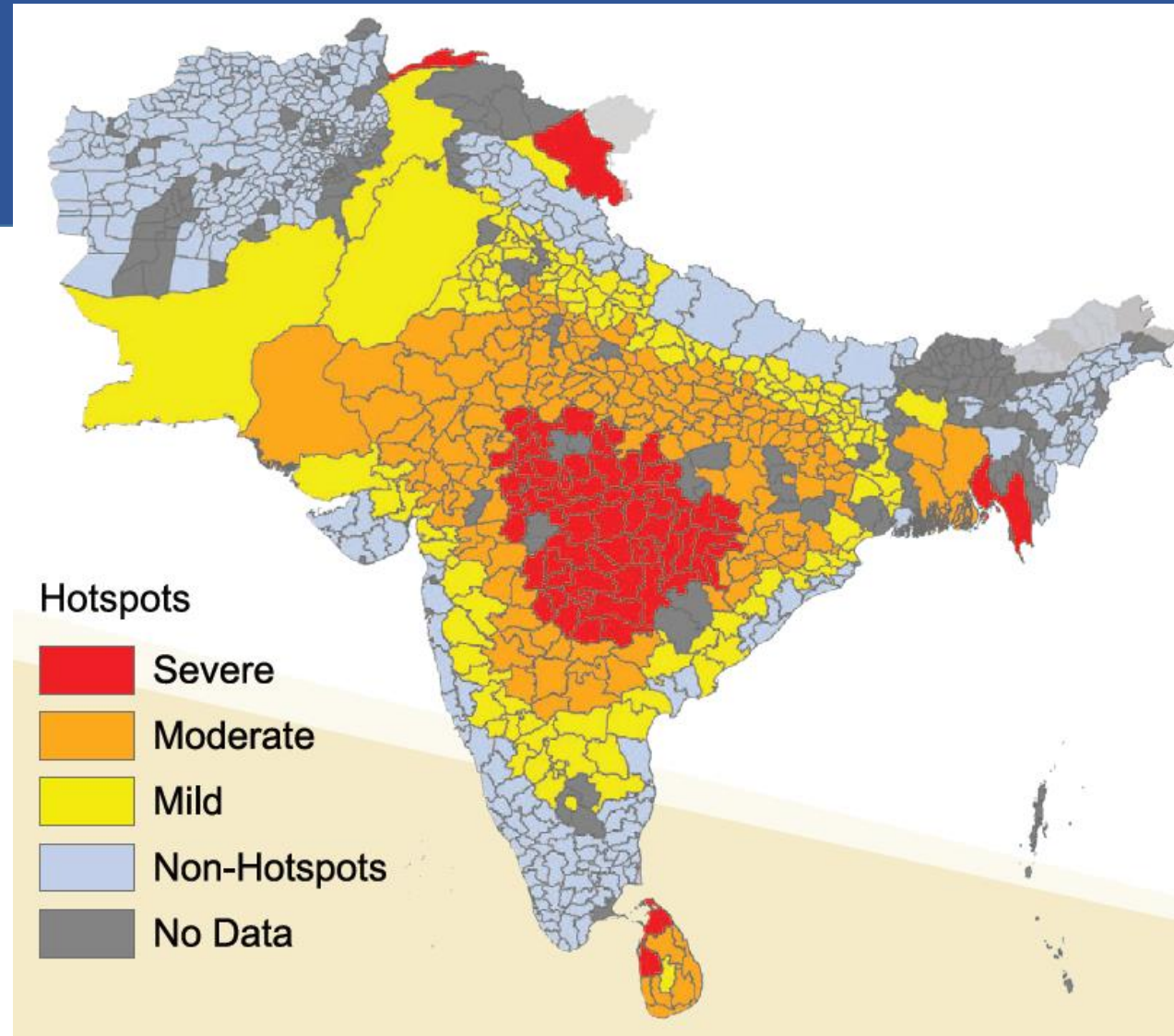# Understanding Risk to Investments

Anoma Pannala
Director, Ministry of Irrigation and Water Resource Management, Sri Lanka

87% of Sri Lankan population lives in hotspots
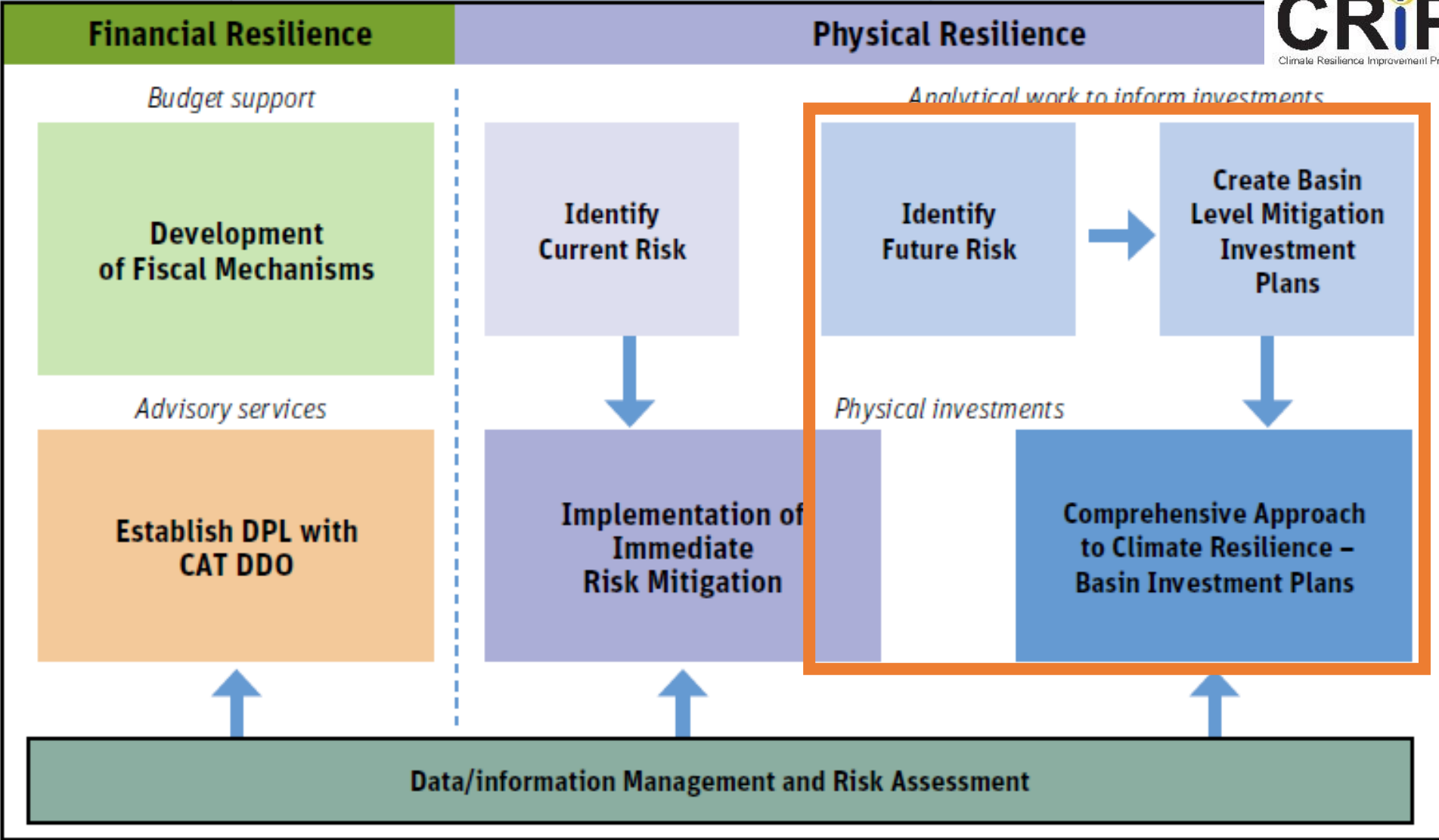

Hotspots
- Severe
- Moderate
- Mild
- Non-Hotspots
- No Data

Recurrent climate-induced disasters pressure national economy

Annual Average Disaster Loss: US$ 380 million

Disasters	Affected population	Estimated impacts
2017 Floods	879,778	US$ 470 M
2016 Floods	493,319	US$ 720 M

Comprehensive Climate and Disaster Resilience Program

Financial Resilience

Physical Resilience

CRiP
Climate Resilience Improvement Project

Budget support

Development of Fiscal Mechanisms

Advisory services

Establish DPL with CAT DDO

Identify Current Risk

Analytical work to inform investments

Identify Future Risk

Create Basin Level Mitigation Investment Plans

Physical investments

Implementation of Immediate Risk Mitigation

Comprehensive Approach to Climate Resilience – Basin Investment Plans

Data/information Management and Risk Assessment

4

Major Challenge

CRiP — Climate Resilience Improvement Project

Financial Resilience	Physical Resilience		
Budget support	*Analytical work to inform investments*		
Development of Fiscal Mechanisms	Identify Current Risk	Identify Future Risk	Create Basin Level Mitigation Investment Plans
Advisory services		*Physical investments*	
Establish DPL with CAT DDO	Implementation of Immediate Risk Mitigation		Comprehensive Approach to Climate Resilience – Basin Investment Plans

Data/information Management and Risk Assessment

Restriction on budget allocation for analytical works

Analytical works informing US$ 3 billion+ investment plans

- Critical two river basins completed (Kelani and Mundeni Aru)

  → Being prepared as a new project financed by WB and AIIB

- 9 basins to be completed by May 2019

  → Ready for financing by the national budget and/or development partners
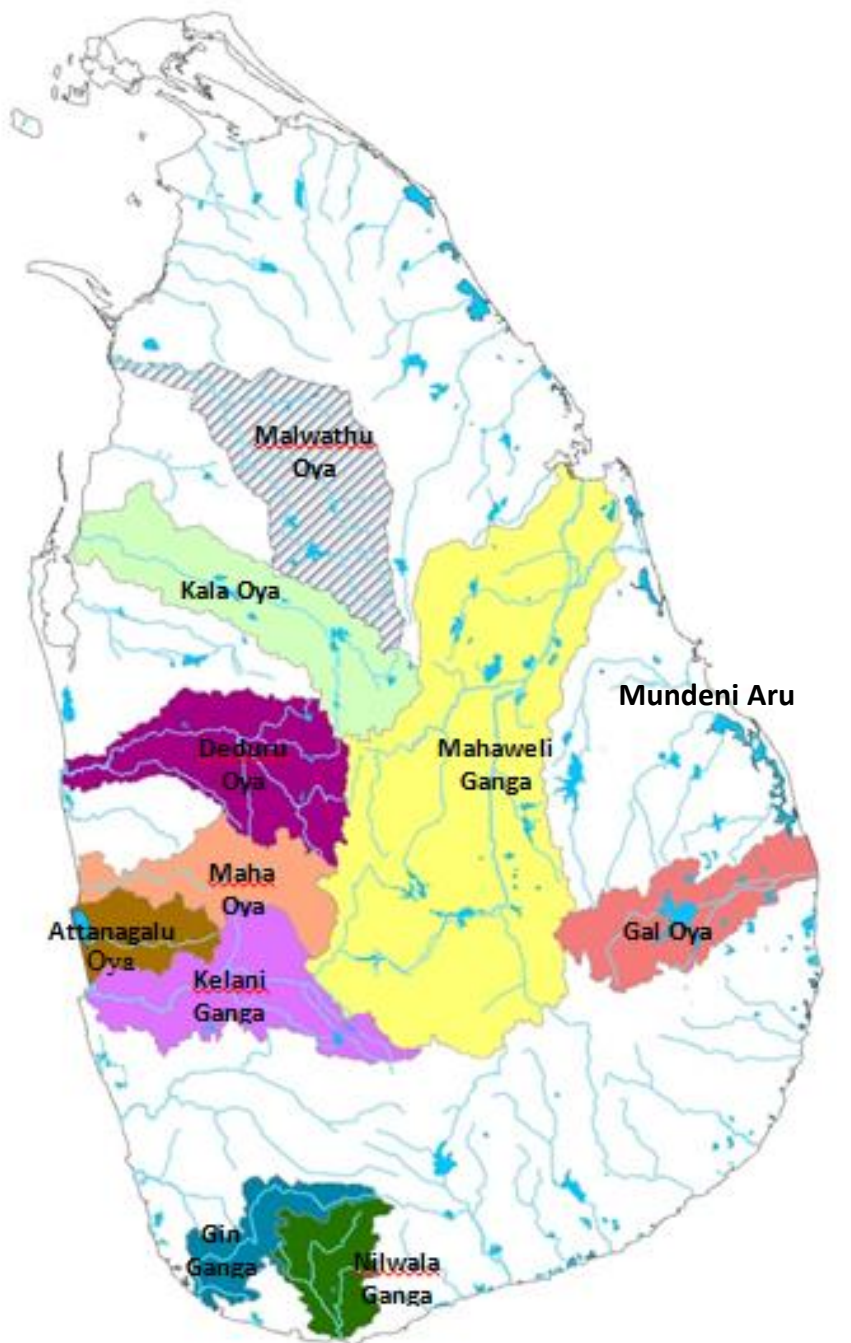
Modeling for Investment Plans
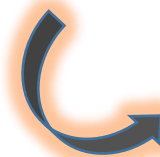
- Development of Computational Framework
- Flood and Drought Modeling
- Integrated Flood and Drought Risk Assessment
- Identification of Flood Risk Reduction measures
- PFS for integrated Flood & Drought reduction measures
- FS for prioritized measures for Implementing

Modeling

 Platform for SWAT

 GIS Data Processing and Analysis

 Data Processing and Analysis

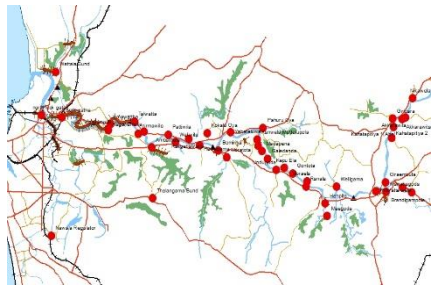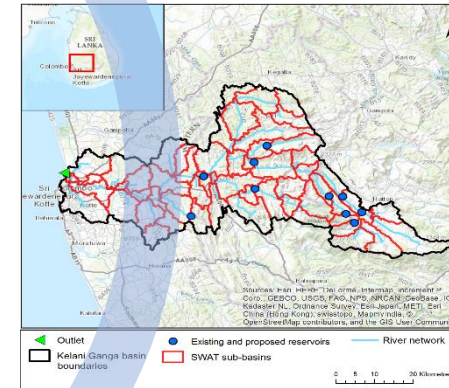Flood Modeller — Rating Conceptualization, Flood Analysis

TUFLOW — Detailed/2D Flood Analysis

Soil & Water Assessment Tool SWAT — Rainfall Runoff Modeling
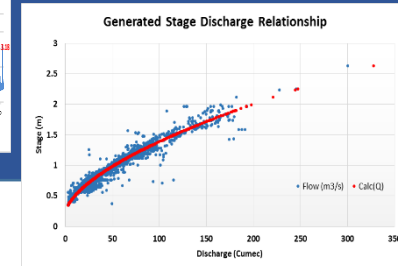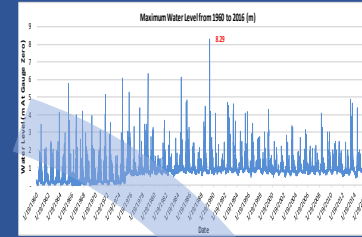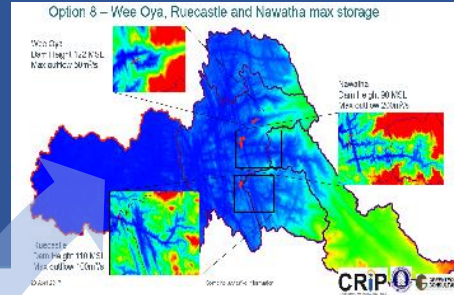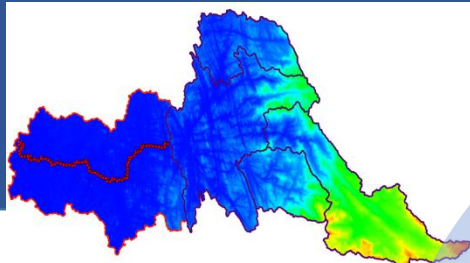
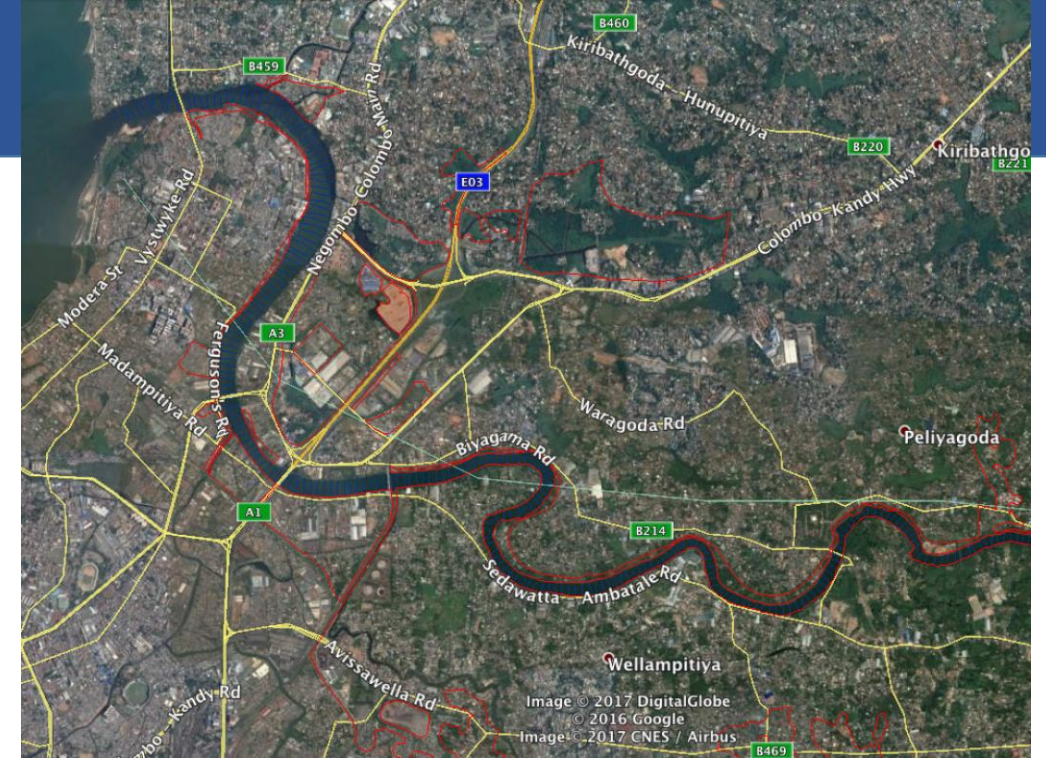Water Evaluation And Planning WEAP — Water Demand Allocation

Flood Modeling for Kelani
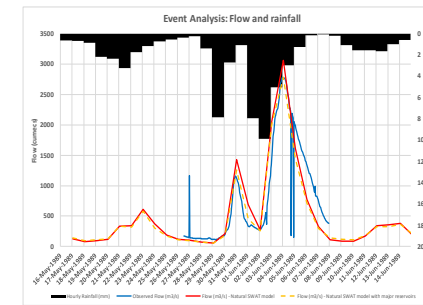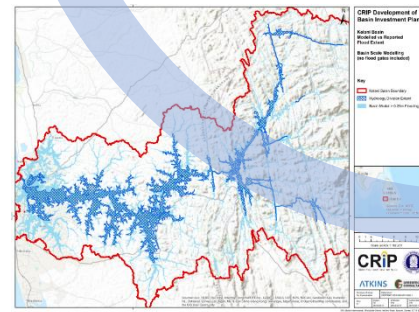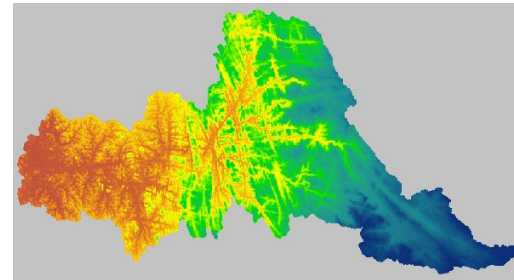
Proposed Structural Measures for Kelani

Upstream reservoirs

Embankments for lower stream (1:50 year)

Proposed Non-Structural Measures

- Prepare an integrated flood risk management plan

- Establish a real-time monitoring and operation system

- Improve operation of existing reservoirs

- Improve the drainage systems

- Land use planning

Lessons from Sri Lanka

❖ MoF's engagement is critical to allocate budgets

❖ Instruments like DPL with Cat DDO and Fiscal Risk Assessment ensures MoF engagement

❖ Sustainability through full-time, on-the-job engagement of Government staff

❖ Breaking data barriers and multi-agency collaboration

Thank you very much for your attention

Climate Change Adaptation for Sustainability