



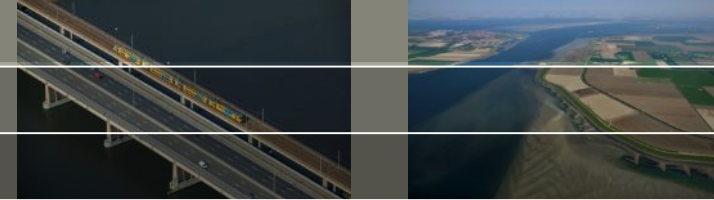
## TA 9307: Strengthening Climate and Disaster Resilience of Myanmar Communities Disaster Risk Modelling

# GIS application



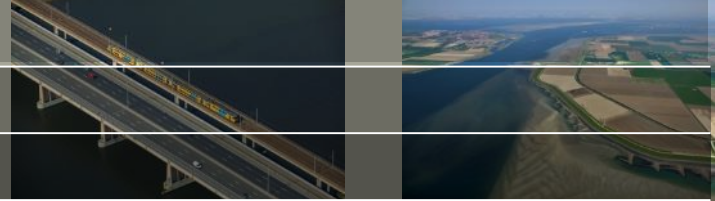
26 September 2018

# Project synopsis



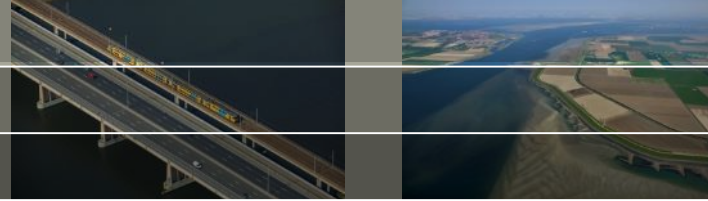
- Title:** Disaster Risk Modelling
- Part of:** TA 9307: Strengthening Climate and Disaster Resilience of Myanmar Communities
- Aim:** Improving understanding of disaster and climate risk among government officials at national level and officials in Ayeyarwady Region
- Duration:** 10 Months
- Starting:** 18 January 2018
- Client:** Government of Myanmar / Asian Development Bank
- Implementing agencies:** MSWRR (Relief and Resettlement Department), MOTC (Department of Meteorology and Hydrology ), MONREC (Environmental Conservation Department)
- Consortium:** Deltares, subcontracting RoyalHaskoningDHV and Wageningen University & Research

# Scope of Work



- **Undertake disaster risk modeling** at the national level and for Ayeyarwady Region;
- **Strengthen capacity of government staff** on disaster risk management (DRM) and climate change adaptation (CCA);
- **communicating the results** to the decision makers from different ministries and to the Township Planning and Implementation Committee and Township Disaster Management body in Ayeyarwady Region;
- presenting the data and the results of the disaster risk modeling in an **open source GIS platform** to be housed by the Government of Myanmar.

# Products of this project



## Flood and storm risk models

**Open GIS Platform** which contains data and model results

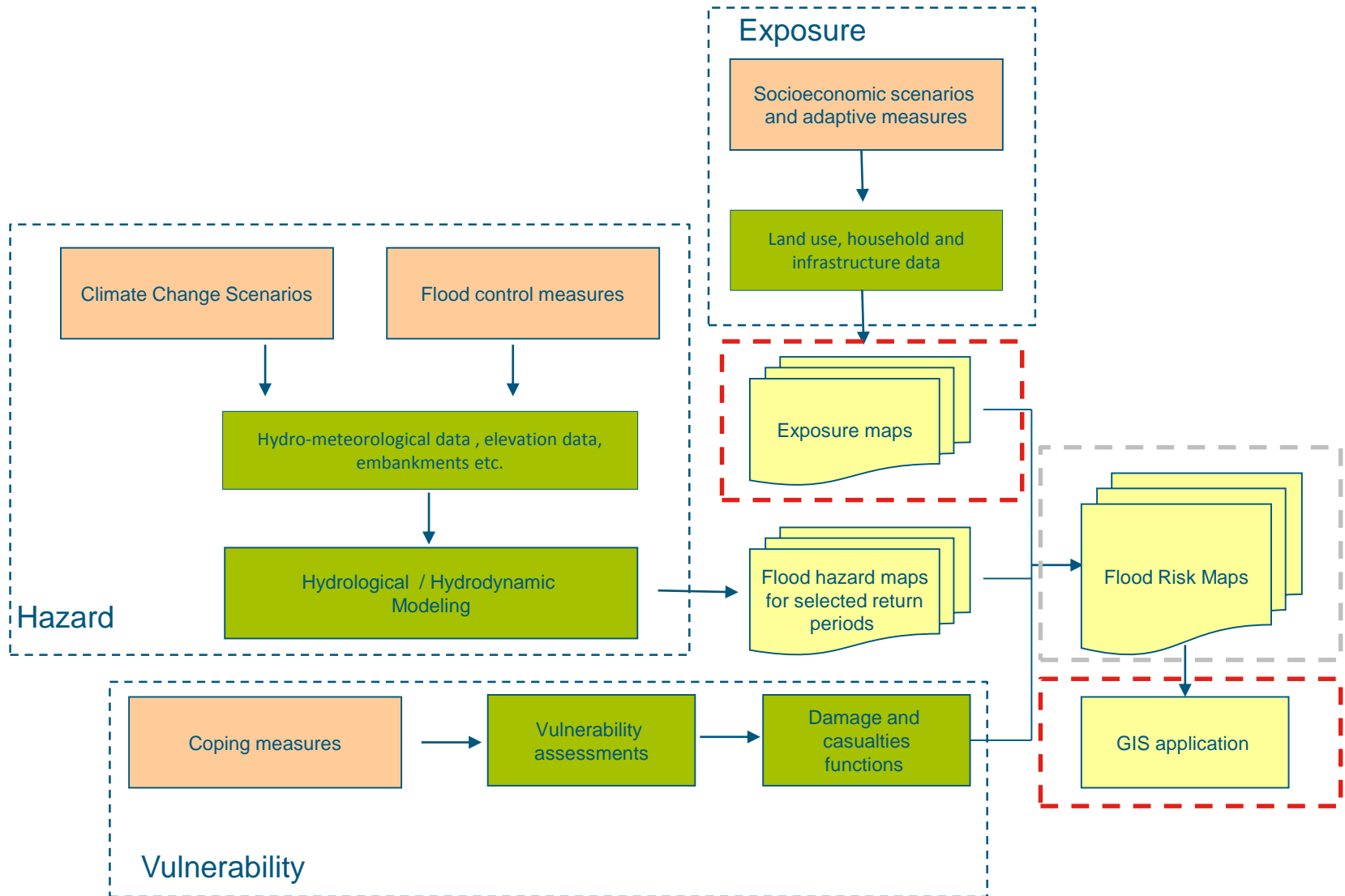
**Disaster risk maps** (for floods and cyclone storm surge and winds)

- “What are the most risky places?”
- “Who / What is at risk?”
- “How much is at risk (monetary value)?”
- Will the risk change in the future (e.g. CC)?”

## Can be used for:

- Planning purposes (land use planning)
- Investment decisions (public / private)
- Protection measures (costs and benefits=avoided damage)
- Preparedness measures / planning for relief
- Impacts of Climate Change
- And more...

# The project



# Modeling

- **National scale flood model**
  - HEC-HMS & WFLOW-SMB (Simple Bucket Model, CSIRO)
- **Cyclone Wind Hazard Model**
  - DMH developed tools for cyclone wind hazard modelling
- **Storm Surge Hazard Model**
  - Delft3D in FEWS storm surge forecasting system

## Modeling on Ayeyarwady level

- **Sobek is used (2D model)**

# Exposure

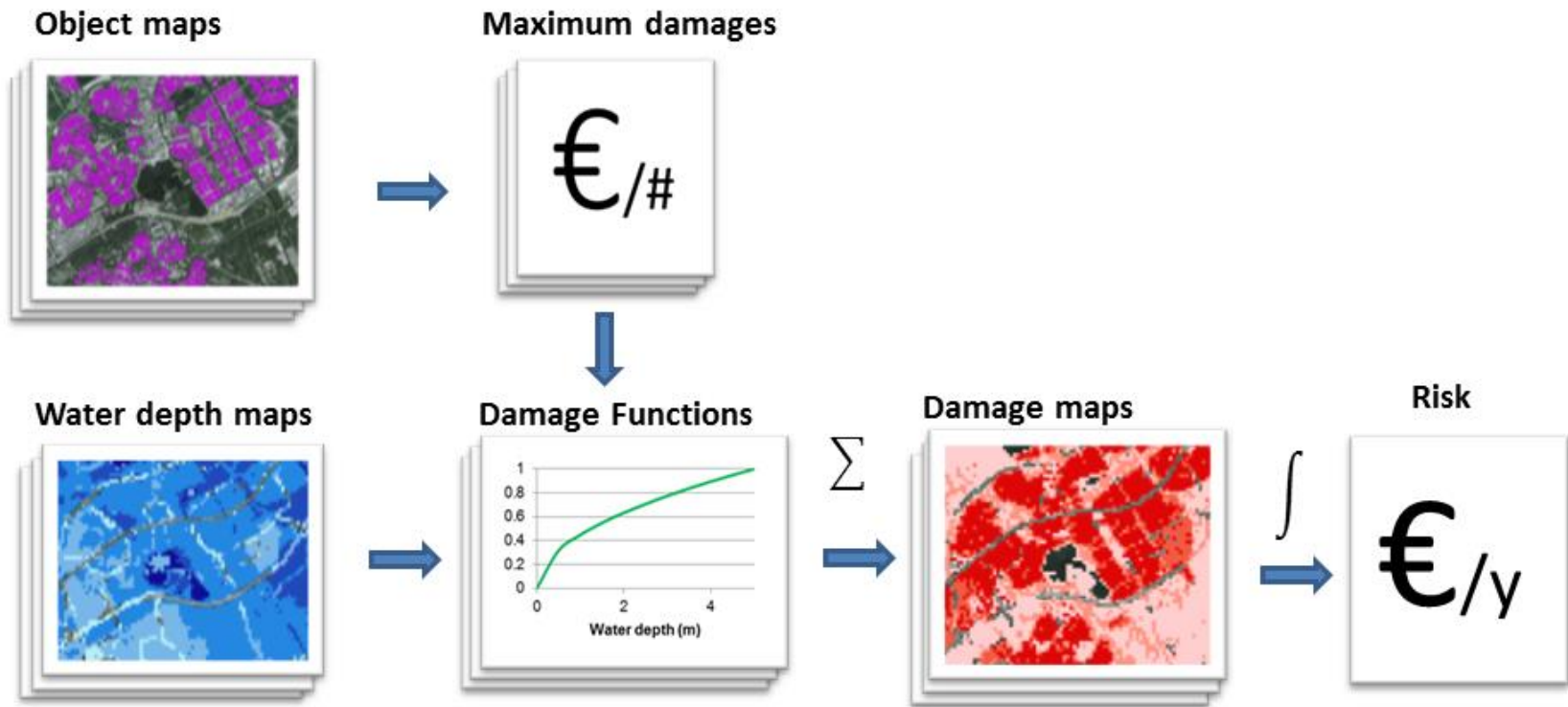
- Population data (including % male, Female, population groups, female headed households)
- Agricultural data
- Livestock
- Aquaculture
- Housing data
- Landcover map
- GDP
- Schools
- Power plants / power lines
- Post offices
- Highways (& main roads)
- Rural roads
- Special economic zones
- Projects van DRD for Water supply, offgrid, evergreen project.

# Still looking for GIS data on

- Rail roads (we have a pdf map but no GIS data)
- Powerplants (we have a pdf map but no GIS data)
- Highway data (OSM but doesn't cover everything)
- Hospitals
- Firestations
- Other public buildings



# Calculate the risk with the Delft Fiat tool



# Demo

■ <https://arcg.is/85b4y>

Welkom to the Myanmar Disaster Risk GIS Platform  
This platform is developed for the TA project "Strengthening climate and disaster resilience in Myanmar". The spatial data from this project is stored in this platform. The data will help you to:

- Understand climate and disaster risk in Myanmar
- undertake disaster-resilient investments

Information in this platform can be found on:

- [Hazard](#)
- [Exposure](#)
- [Risk](#)

On the [last slide](#) it's possible to combine and create your own maps.

Hazard maps

# Exposure data