



United Nations
Educational, Scientific and
Cultural Organization

ICHARM

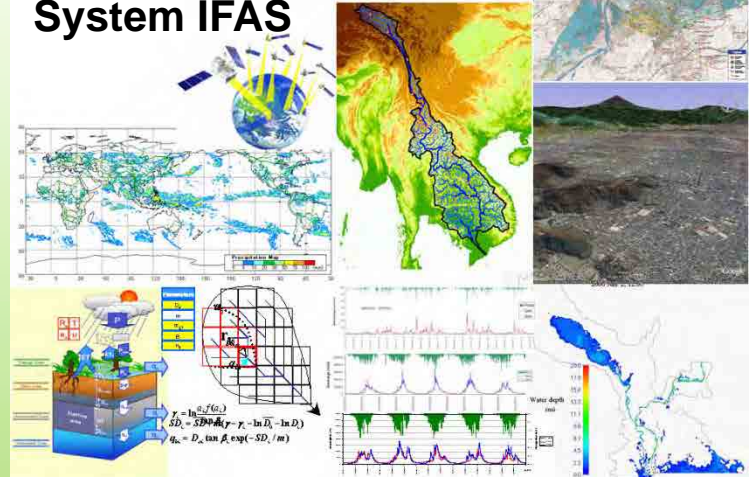
International Center for
Water Hazard and Risk
Management
under the auspices of UNESCO
hosted by PWRI, Tsukuba

Objective: To serve as the Global Center of Excellence to provide and assist implementation of best practicable strategies to localities, nations, regions and the world to manage the risk of water related hazards including floods, droughts, land slides, debris flows and water contamination

6 March, 2006
at Tsukuba



Advanced Early Warning System IFAS



$$\gamma = \ln \left(\frac{D_c}{D_0} \right)$$

$$SD = SD_0 \exp(\gamma - \ln D) - \ln D_0$$

$$D_c = D_0 \exp(\gamma + SD, / m)$$

ICHARM members

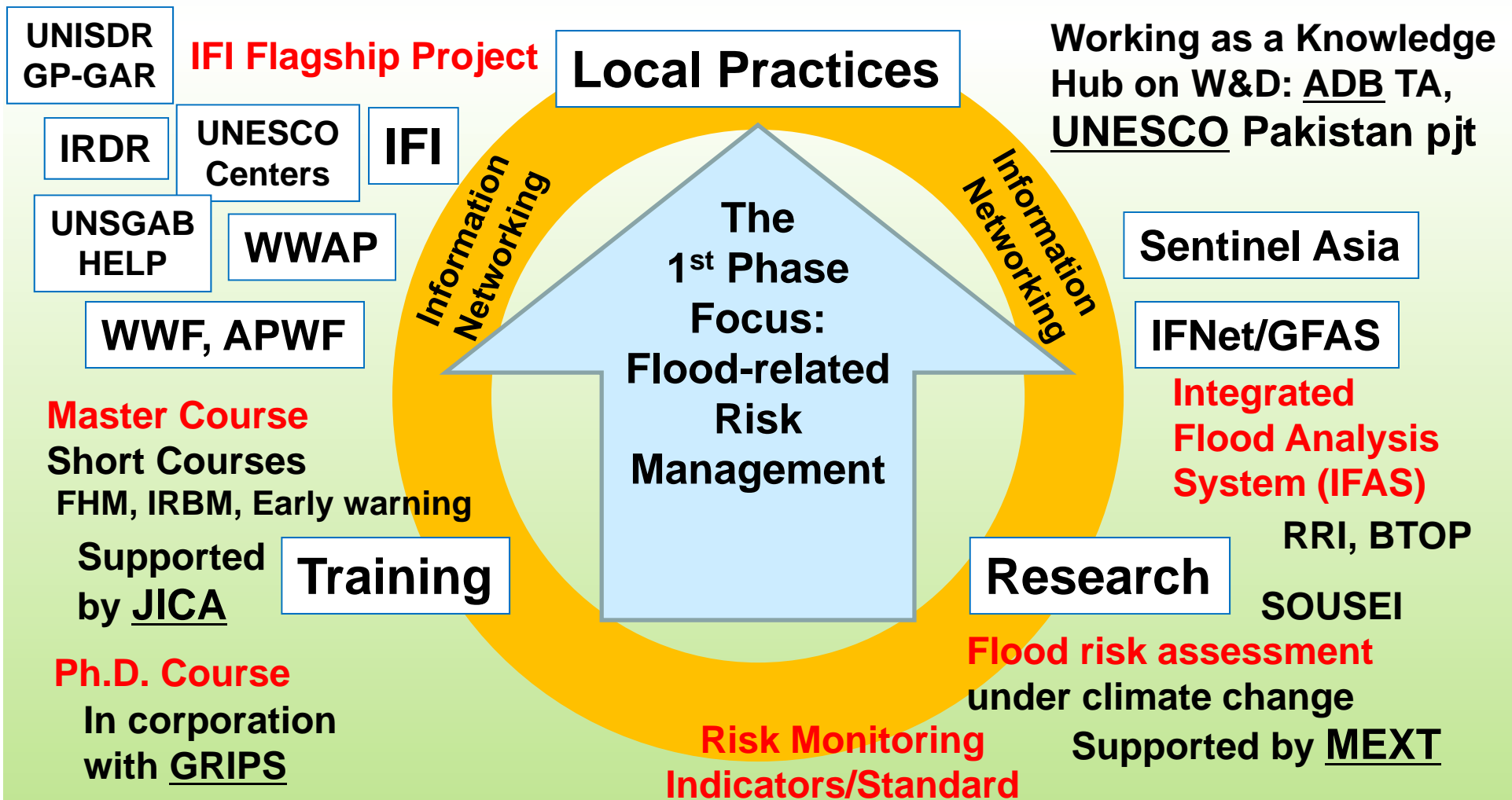
(July 2016)



Total 44 members + 6 PhD members

ICHARM's Challenge: Localism

Delivering best practicable knowledge to local practices



Long Term Targets

4

Data & Statistics



Risk Assessment



Risk Change
Identification



Support in
Sound Policy-making



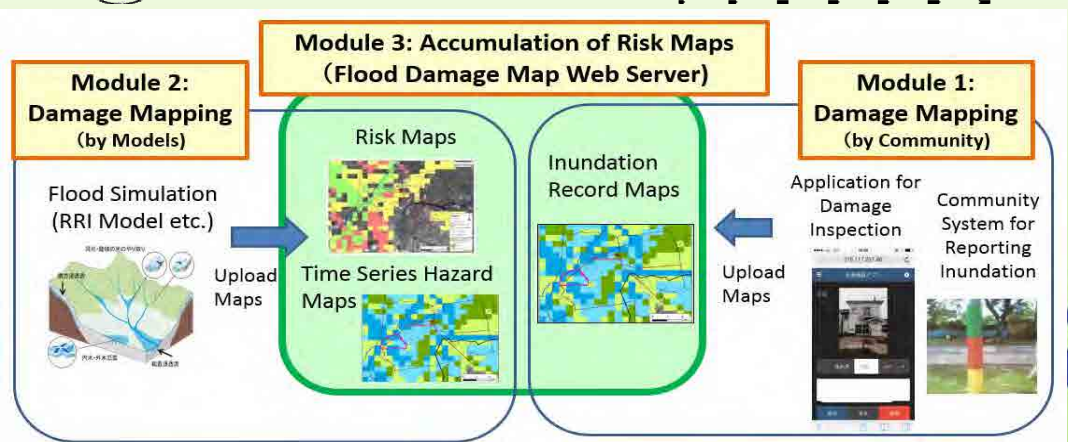
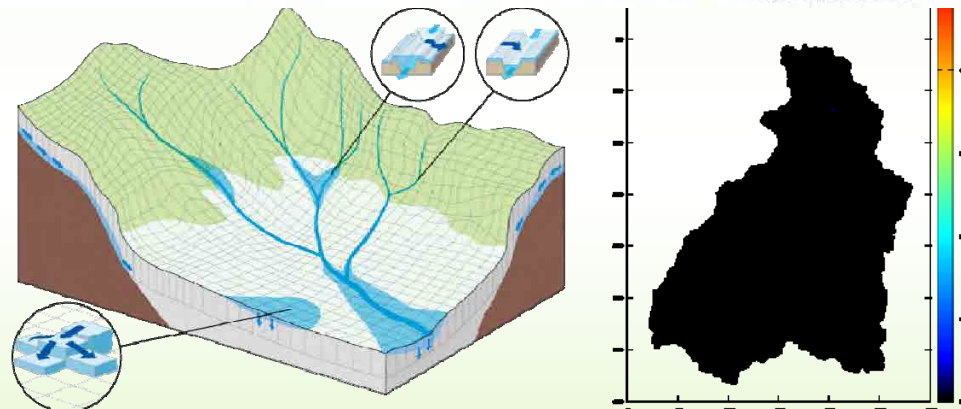
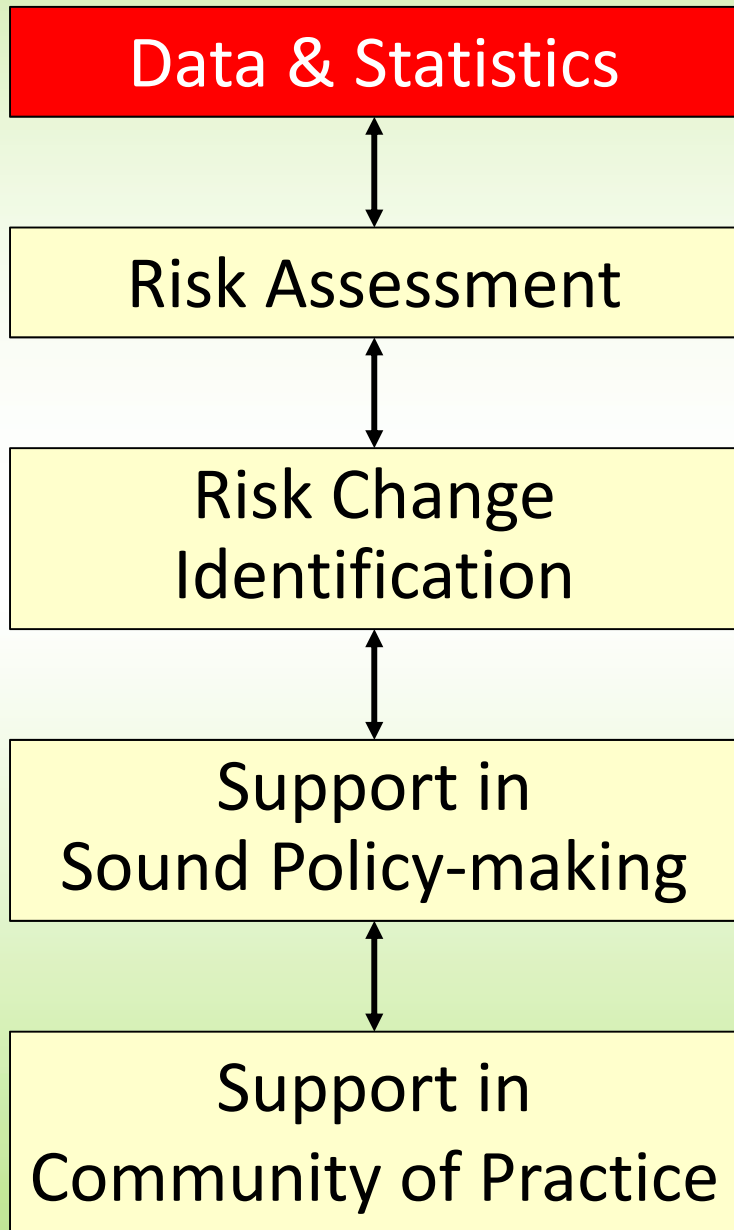
Support in
Community of Practice

- Promoting data collection, storage, sharing, and statistics
- Integrating local data, satellite observations and model outputs
- Developing integrated disaster risk assessment
- Identifying locality and commonality
- Monitoring and predicting changes in disaster risk
- Identifying locality and commonality
- Analyzing and formulating policy ideas
- Visualizing values of preparedness and investment efficiency
- Improving disaster literacy
- Promoting co-design and co-implementation among stakeholders

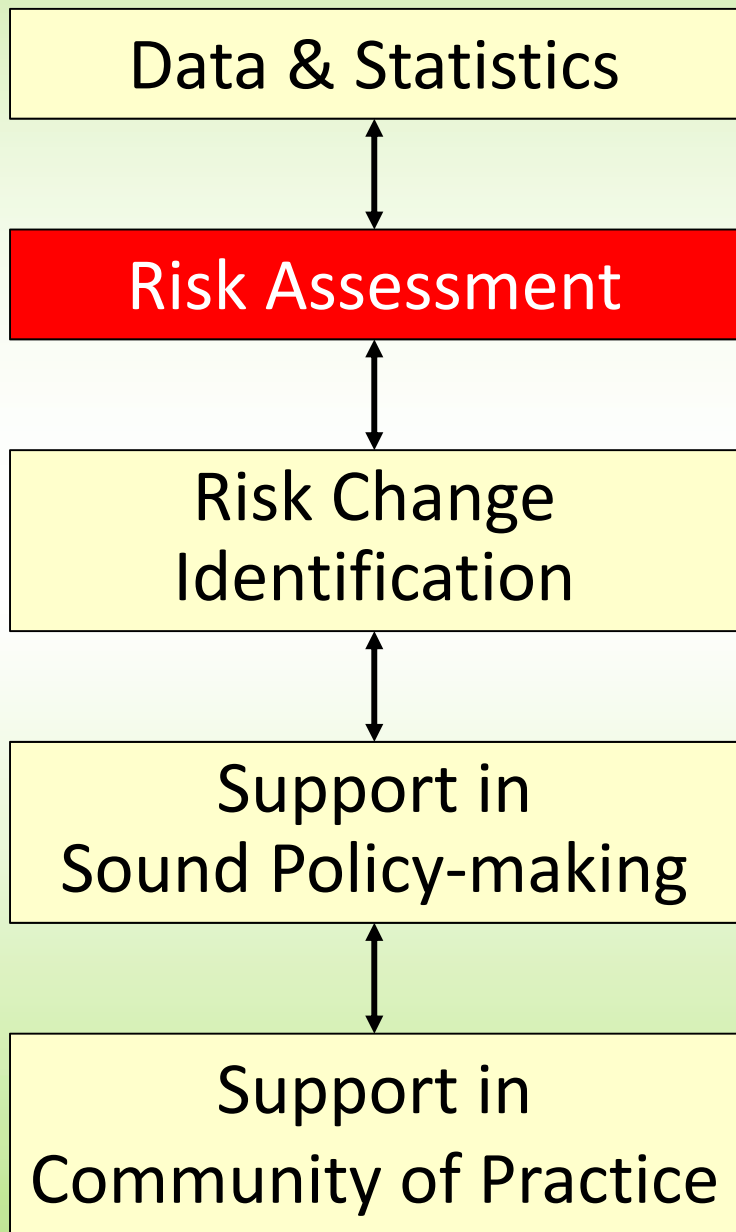


Long Term Targets

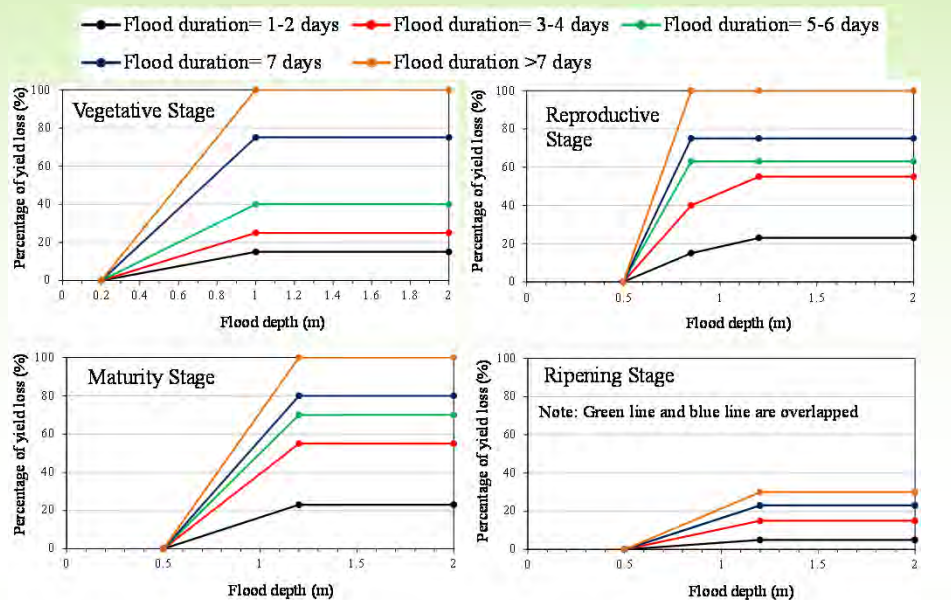
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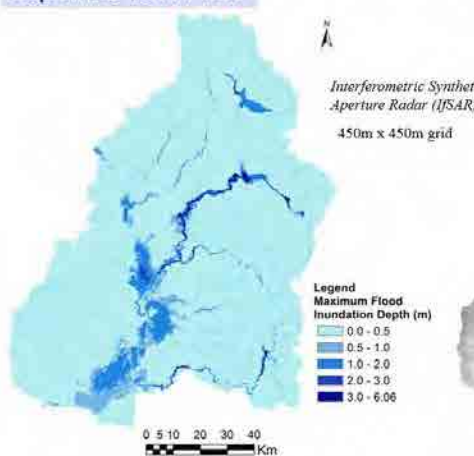
Long Term Targets



Crop Damage Function

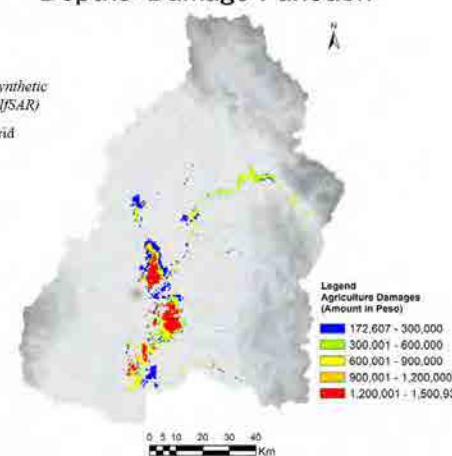


September 2011 Flood



Flooded areas (>0.5m depth) = 45,056.25 ha

Depths*Damage Function

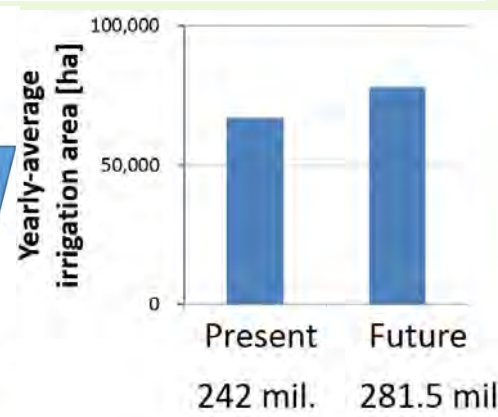
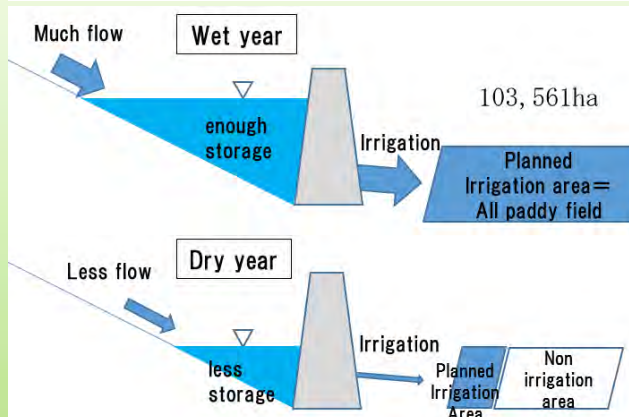
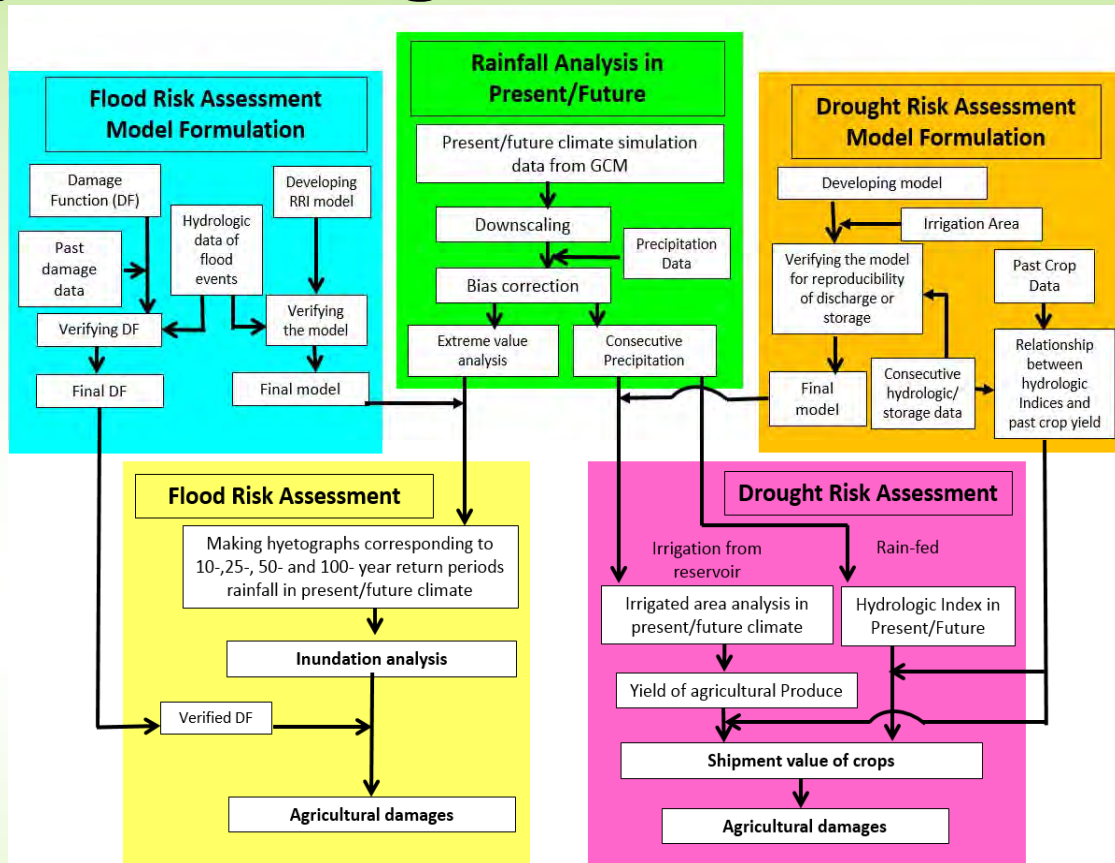
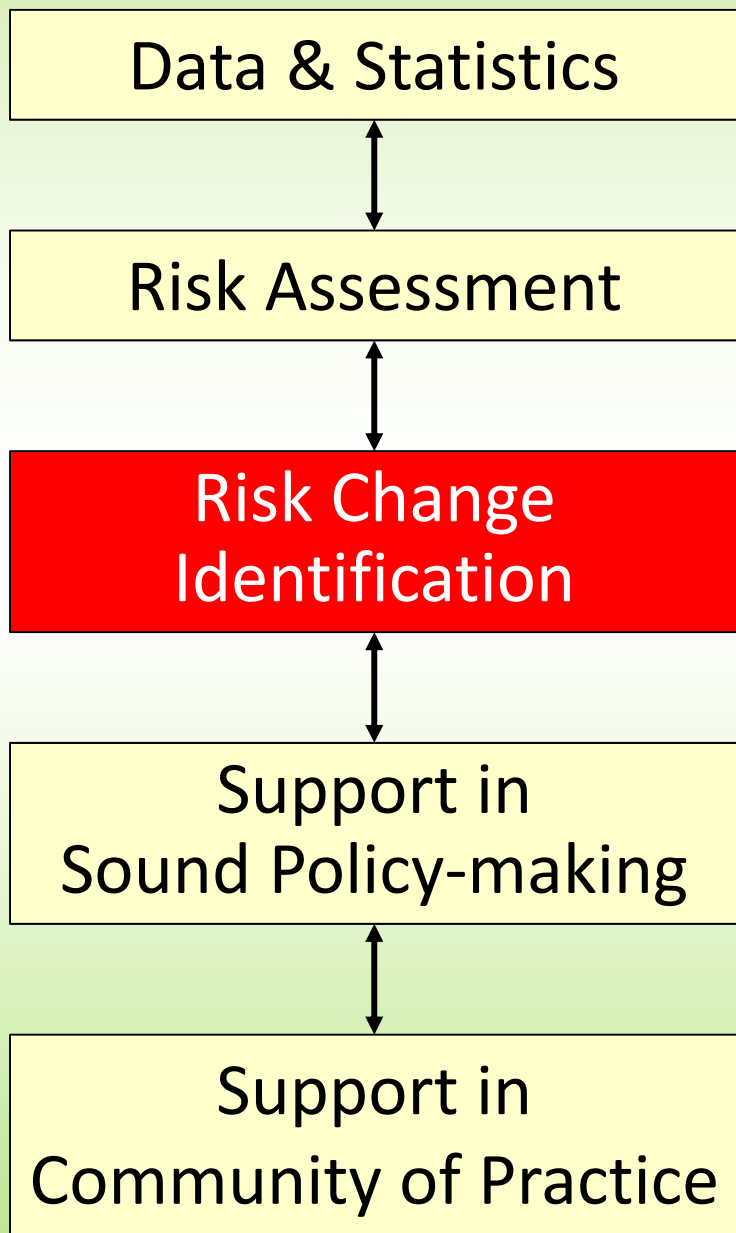


Damages: 1,475.78 million Peso

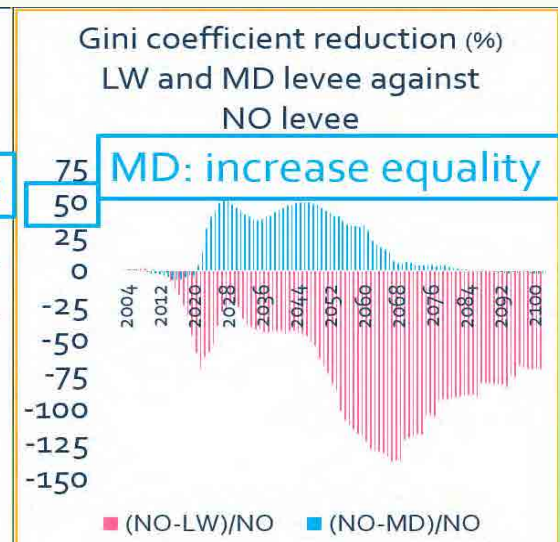
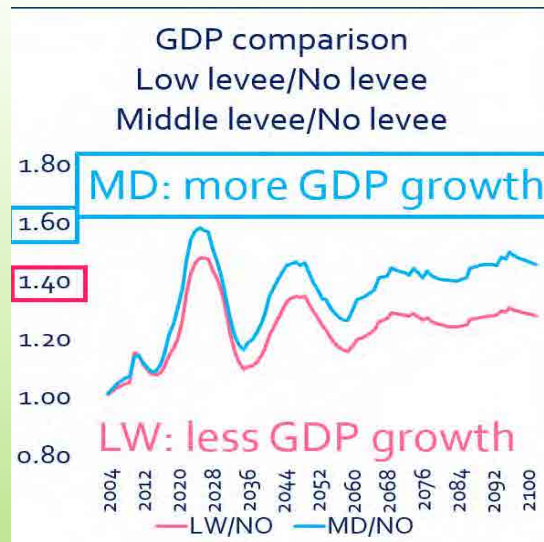
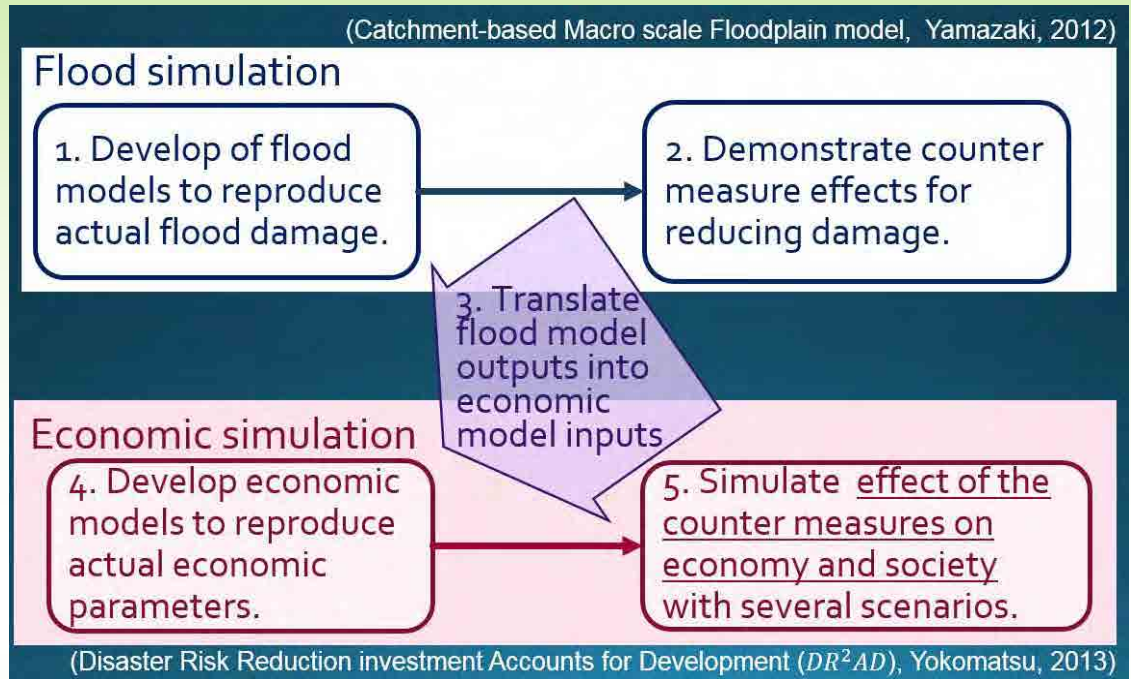
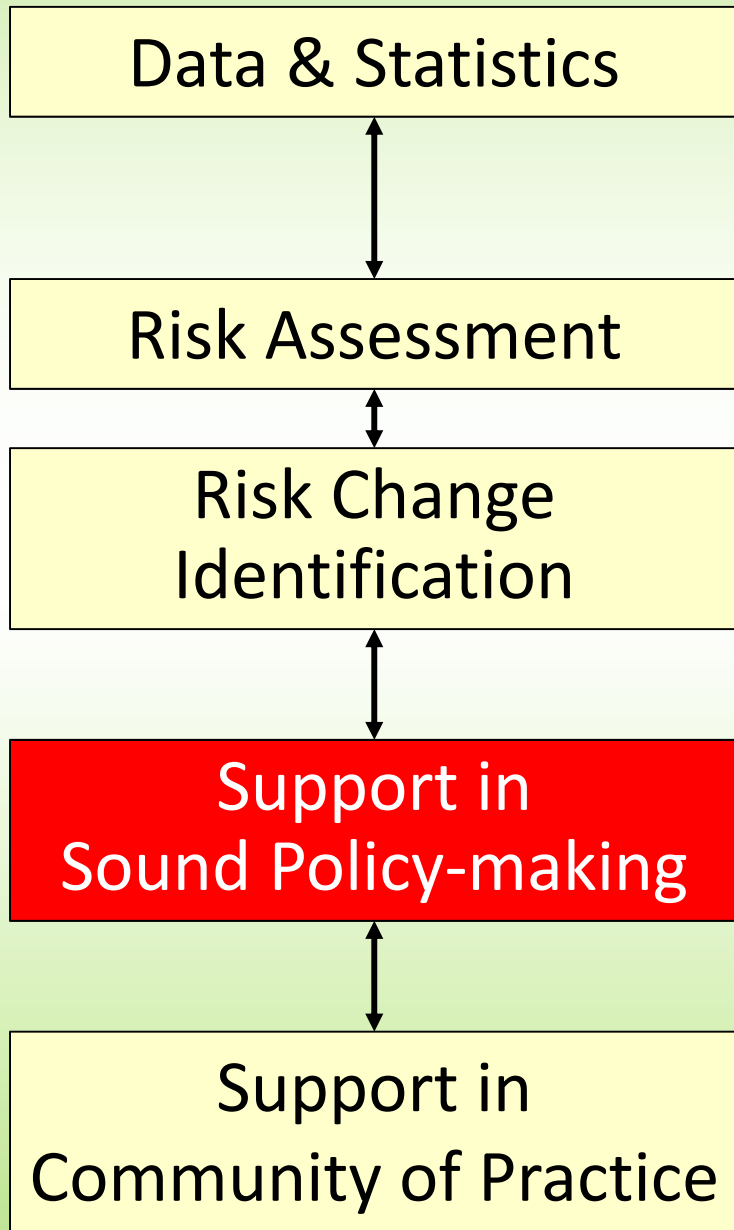
Rice Yield = 4360 kg/ha
Farm gate price of rice = 17 Peso/kg



Long Term Targets



Long Term Targets



Long Term Targets

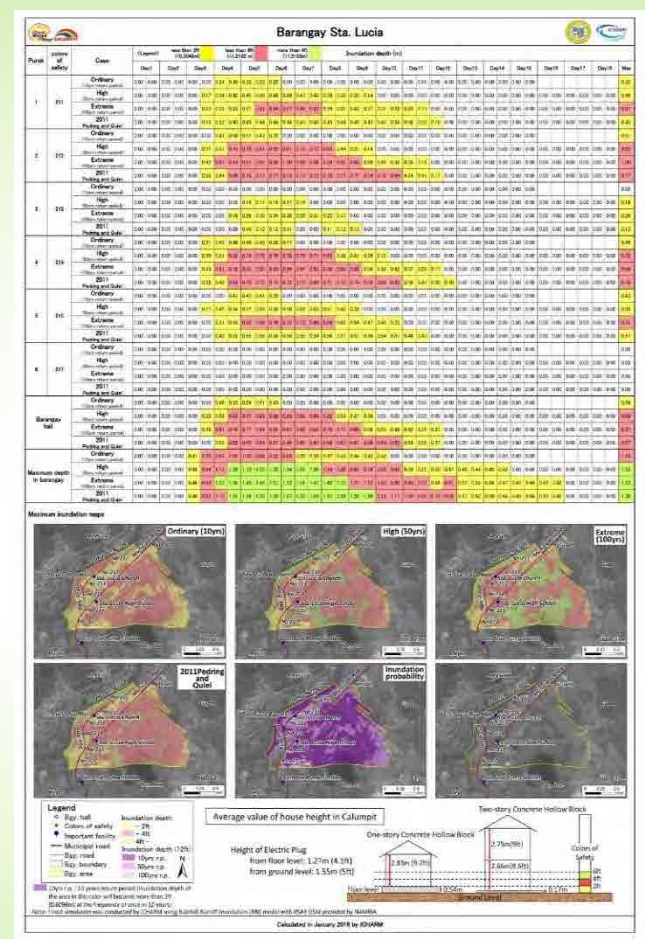
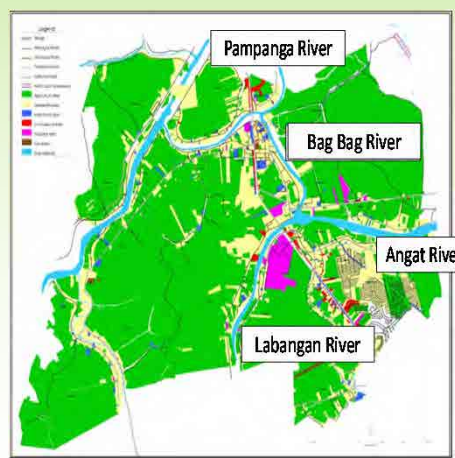
Data & Statistics

Risk Assessment

Risk Change Identification

Support in Sound Policy-making

Support in Community of Practice



Cooperation with water centers and other UNESCO activities

- UNESCO-IHE, Delft
- IRTCES, Beijing
- ICWaRM, Washington, DC
- RCUWM, Tehran
- ICWRGC, Koblenz
- RCTWS, Cairo
- HTCKL, Kuala Lumpur
-
- IHP RSC (Regional Steering Committee) since 1993
- WWF, Regional WWF
- UNSGAB, HELP
- IHP IGC, Kovacs Colloquium



Thank you for your support for 10 years!



10th Anniversary