



INSTITUTE OF WATER RESOURCES PLANNING

Training – Workshop on Climate Change Adaptation in Watersheds for Water, Food,
and Environmental Security in Southeast Asia

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Watersheds management in Vietnam in the context of climate change

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Climate change risks in Vietnam

1. Sea-level rise
2. Storm surges
3. Salt water intrusion
4. Increased flooding
5. Severe storms/extreme rainfall
6. Extreme heat events
7. Drought



Climate changes observed and projected

1. Vietnam will become more arid
2. Drastic change in rainfall pattern
3. Increasing of hot days
4. Inundation of 5.3% of total land and 39% of the Mekong Delta
5. Increasing the effects of storm surges
6. Saline water intrusion will increase by 4-9 km with 1m msl rise



Future impacts on economics

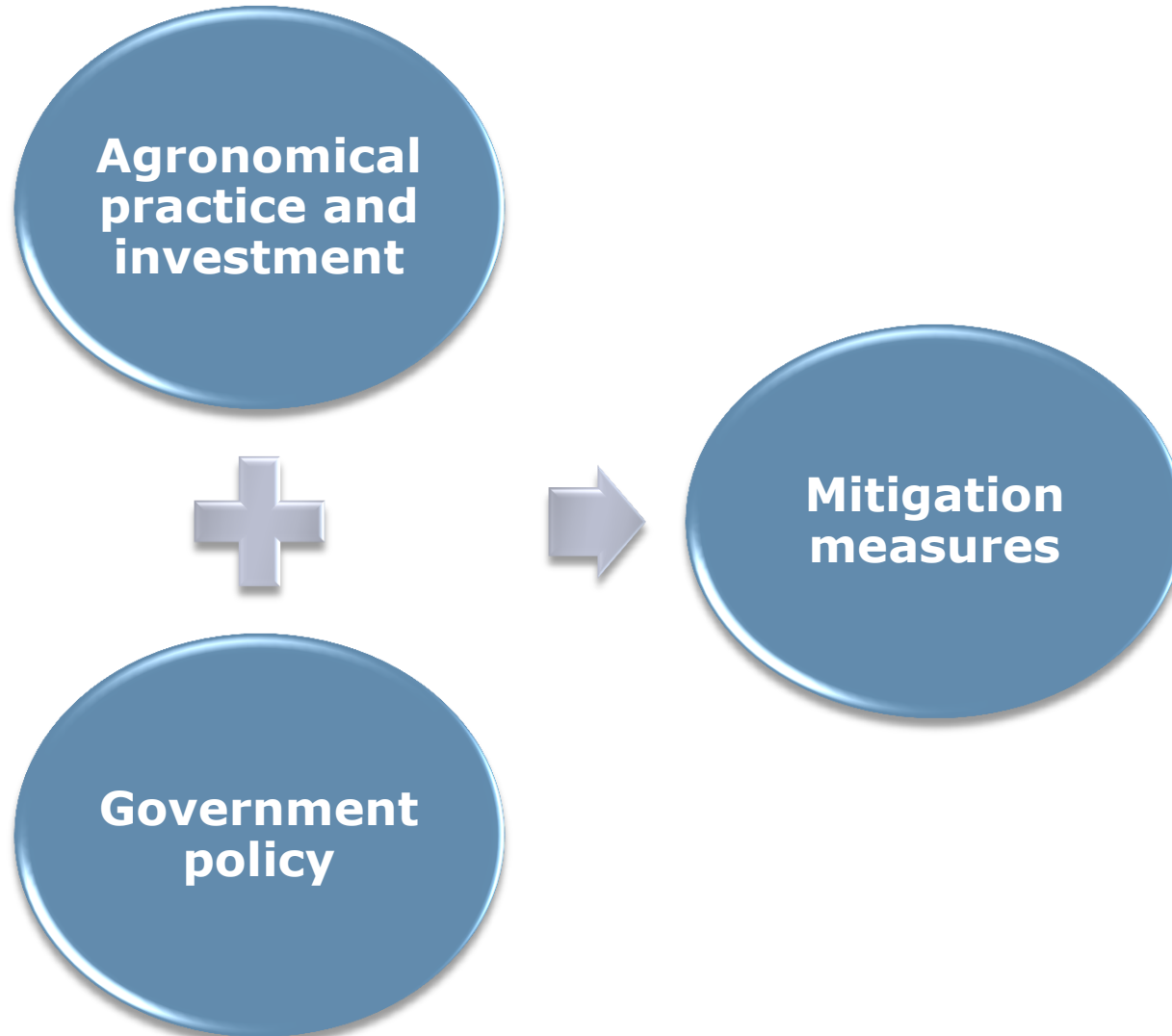
- The impacts of climate change on the economy are limited to 2040, and after that become significant especially because of the effects of sea level rise (Uo Copenhagen/CIEM 2012)
- Agriculture is significantly affected by climate change (floods, sea level rise, storms, droughts, saline water intrusion)
- Ho Chi Minh City: GDP loss from floods in 2006-2050: US \$48.3 billion for regular floods and US \$0.48 billion for extreme floods (ADB 2010).



Future impacts on food production

- Total GDP in 2050 could be reduced by 0.7%-2.4% because of impacted agriculture (WB)
- 1.6 million ha cultivation land in the coastal areas (0.9 million ha of paddy rice) by sea level rise
- By 2030, sea level rise in the Mekong Delta – expose 45 % of the land to extreme salinisation and crop damage, with rice productivity falling by 9 % (UNDP)
- Climate change effects could hit rice and coffee production in Viet Nam from as early as 2020 (ADB)

Impacts mitigation for agriculture





Challenges and opportunities

Challenges

- Transboundary issue in river basin management
- Water use conflicts
- Inadequate understanding of climate change and climate extremes;
- Integrated institutional system for climate change and responding to climate extremes;
- Private sector engagement and co-benefit sharing remain limited;
- Policy development and mainstreaming into SEDP remains slow and inadequate;
- Limited technology and experience.



Challenges and opportunities

Opportunities

- Experience to live /cope with disasters are available in communities;
- Scientific communities are producing significant findings on climate change and climate extremes;
- Government sets top priority for responding to climate change;
- New knowledge and technology to respond to climate change are available at international and national levels.

Policy for climate change adaptation



National Target Programme to respond to climate change (NTPRCC);

National Climate Change Strategy (NCCS)

Ordinance on Flood and Storm Mitigation (1993 - 2000) → The Law on Natural Disaster Mitigation

Climate change oriented integrated water resources planning in different river basins across Vietnam

Program on Public Awareness Raising and Community Based Disaster Risk Management (2009).

Mitigation and adaptation measures

People

- Assist rural, migrant and poor urban communities to increase climate change resilience (CBDRM)
- Policies that address poverty and inequality must be strengthened, eg affordable land and housing, notably for female headed households
- Invest in early warning systems, also in urban areas
- Enhance capacity of local governments for risk assessment, in the context of a changing climate

Infrastructure

- Planning for industrial zones and economic development must include detailed assessments of climatic vulnerabilities
- Locate strategic infrastructure outside vulnerable areas – on higher ground (Uo Copenhagen/CIEM 2012)
- Climate proofing of new infrastructure and housing
- Encourage public and private sectors to invest in climate proofed infrastructure development

Mitigation and adaptation measures (cont)

Agriculture

- Improve efficiency of water use (irrigation investment)
- Develop heat, drought and flood resistant varieties
- Avoid locations with most climate related stress
- Diversify

Urban

- Spatial planning, and especially urban planning must incorporate, mainstream climate risks: to high ground
- Synergies are possible between some adaptation and mitigation actions (e.g. building designs)
- Action Plans (of sectors, provinces and cities) should address climatic risks, based on popular consultations and participatory analysis



**THANK YOU FOR YOUR
ATTENTION!**