



**Asia-Pacific
Economic Cooperation**

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Agenda Item: 7.2.2

Prevention of Natural Disasters in Viet Nam

Purpose: Information
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Meeting
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Science and Technology Policies and research programs on Prevention of Natural Disaster in Viet Nam

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Outline

- Science and technology policies of the Party and Government on disaster prevention and mitigation as well as climate change
- Research programs on disaster prevention and mitigation
- Some achievements and outstanding results from research programs
- Orientations for international cooperation (within APEC) on science and technology on natural disaster prevention, mitigation and response to climate change

Science and Technology Policy on Climate Change

- **Resolution No. 20-NQ / TW (2012) of the Central Committee Party XI:** Enhance scientific and technological capacity to master advanced technology, high technology, advanced management methods; Rational use of natural resources, protection of the environment, protection of human health; Timely forecasting, preventing, mitigating and overcoming the consequences of natural disasters.
- **Science and technology development strategy for the period 2011-2020:** Research identifies the nature, causes and effects of natural disasters and climate change as a scientific basis for the proposal and implementation of mitigation, prevention and adaptation measures to climate change, especially the impact of sea level rise.

Science and Technology Policy on Climate Change

Resolution No. 24-NQ / TW (2013) of the Central Committee Party XI (Point of views)

Climate change is a global problem, a serious challenge for all human beings in the 21st Century. Responding to climate change must be placed in a global relationship; It is not only a challenge but also an opportunity to promote the transformation of the growth model towards sustainable development. Adaptation and mitigation must be carried out at the same time, in which adaptation to climate change, active prevention and mitigation of natural disasters is central.



Science and Technology Policy on Climate Change

Resolution No. 24-NQ / TW (2013) of the Central Committee Party XI (Detail goals)

- To improve capacity for forecasting, warning of natural disasters, monitoring of climate change by specialized agencies. Forming for every member of the society a sense of active prevention, disaster prevention and adaptation to climate change. Gradually reduce the damage to people and property caused by natural disasters.
- To actively prevent and control the effects of high tides, floods and salt intrusion due to sea level rise in coastal areas, especially in the Mekong river delta, Red river delta and coastal Central Vietnam. All in Ho Chi Minh City, Can Tho, Ca Mau and other coastal cities..

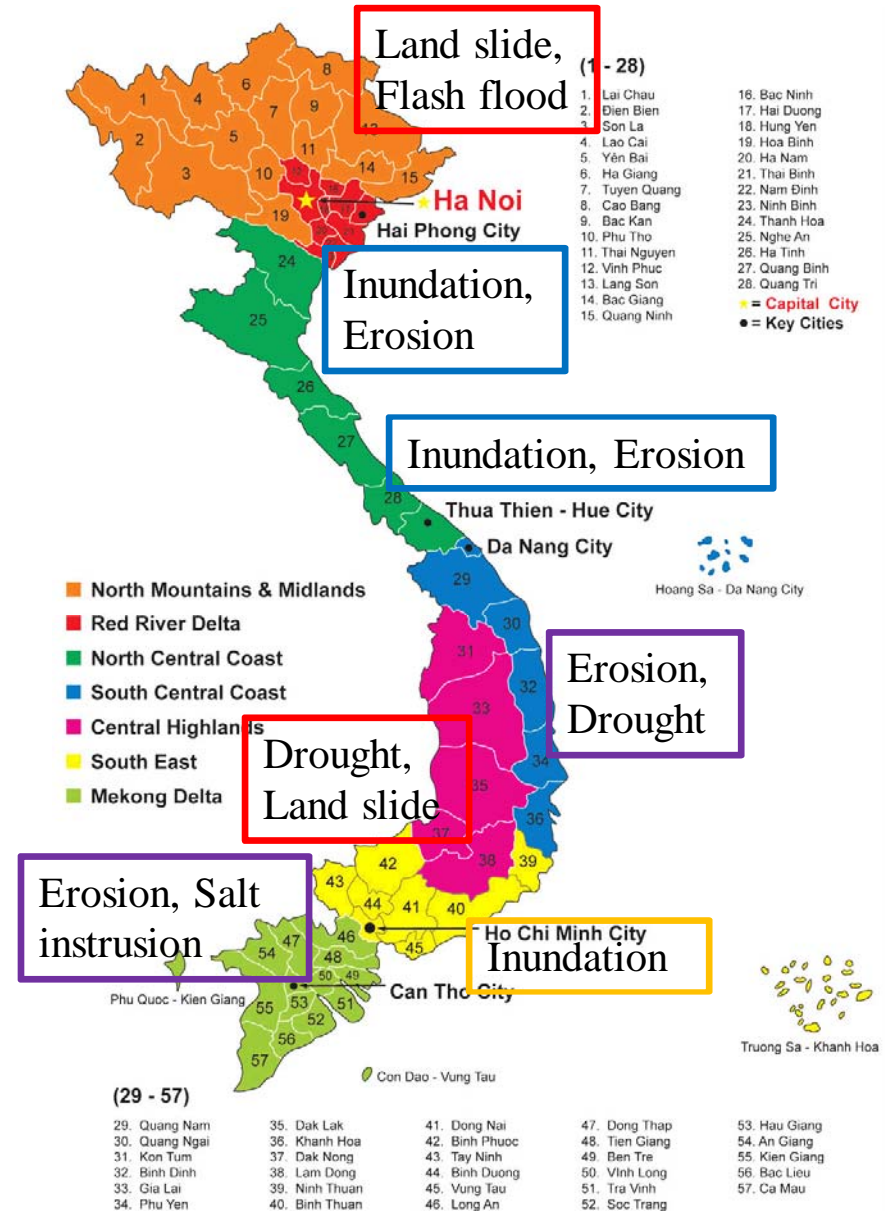
Research programs on disaster prevention and mitigation



- Programs: KC 08 (three periods: 2006-2010; 2011-2015 and 2015-2020)
- Programs: Climate Change (two periods: 2010-2015 and 2015-2020)
- Other research programs (Regional and international co-operation programs)

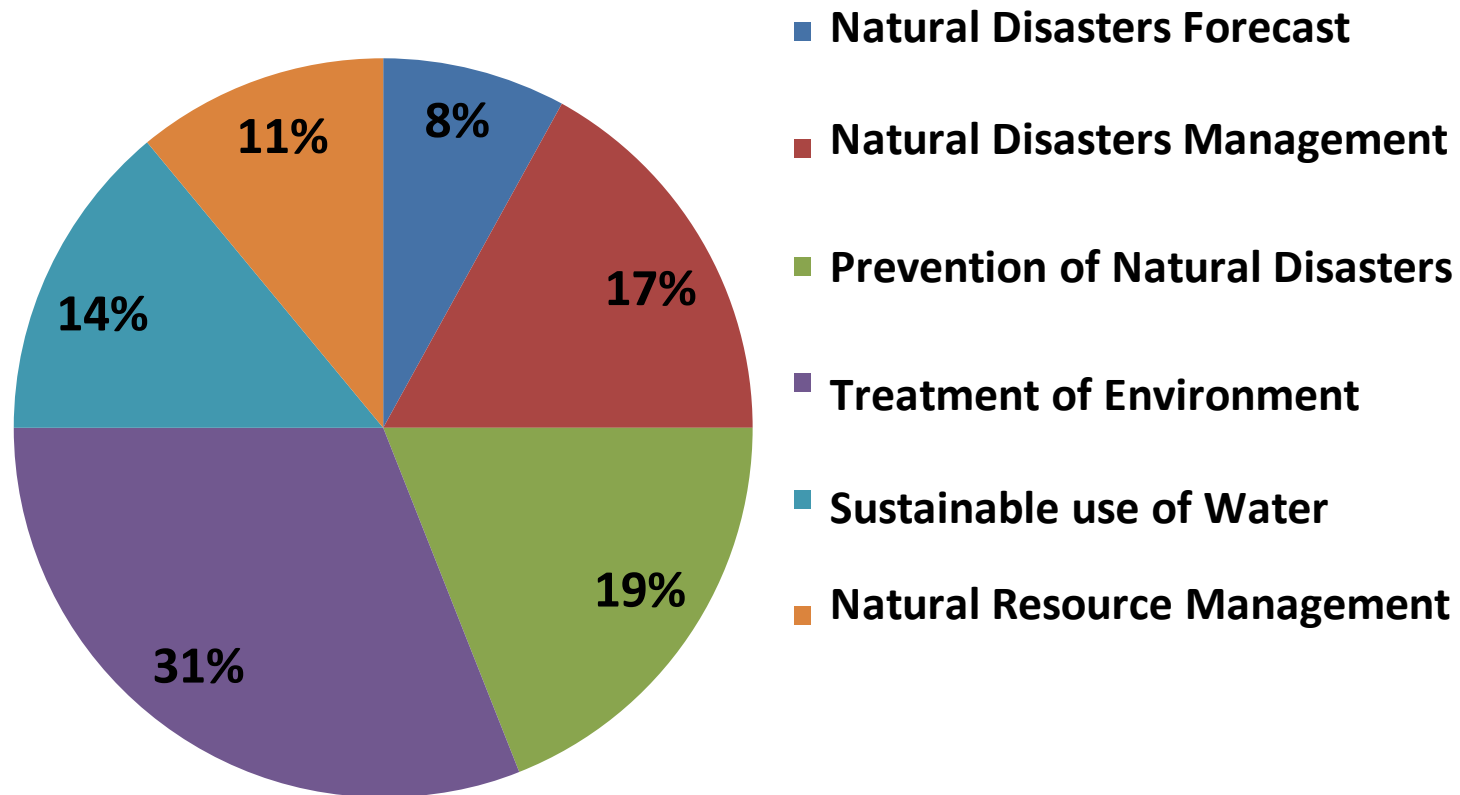
Goals of Research Program (KC.08)

1. To develop and perfect modern tools and models for forecasting and early warning of some types of meteorological and hydrological disasters occurring in Vietnam
2. To build and test advanced solutions and technologies to prevent and overcome the consequences of some typical natural disasters in Vietnam and to propose solutions for risk management in service of response. Effective with disaster



Main contents

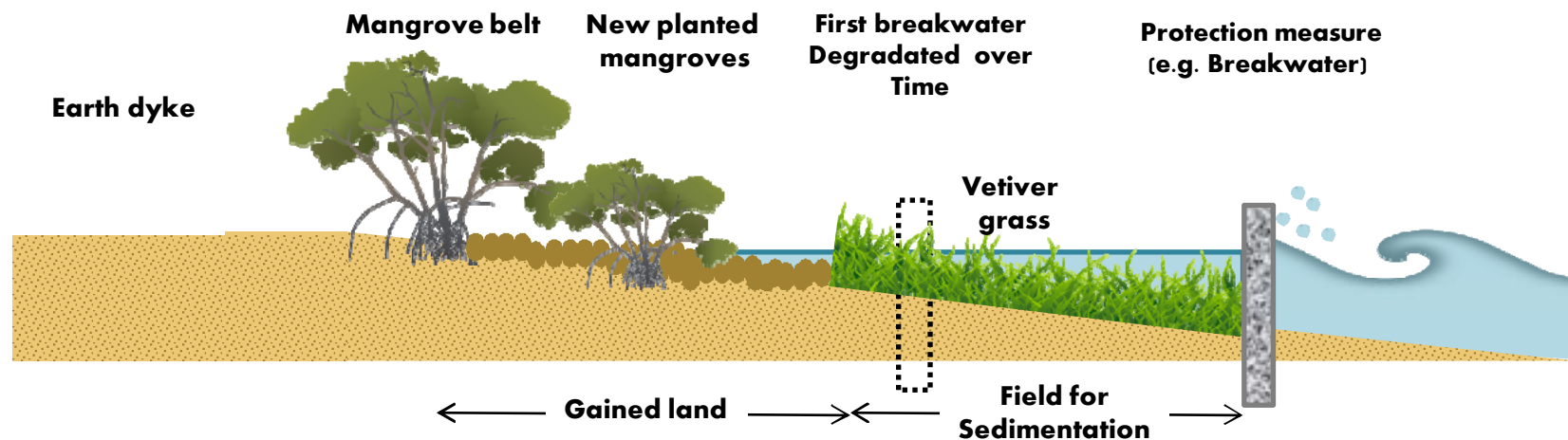
To apply research and development of forecasting technologies, warning of extreme hydro-meteorological phenomena (storms, heavy rain, floods, hot and cold weather).



Percentage of research themes in research program K08 (2011-2015)

Main Contents

Research, develop and propose technical solutions to forecast, prevent, and mitigate the consequences of natural disasters (drought, salt intrusion, flood, land slide, land subsidence, river and coastal bank erosion).

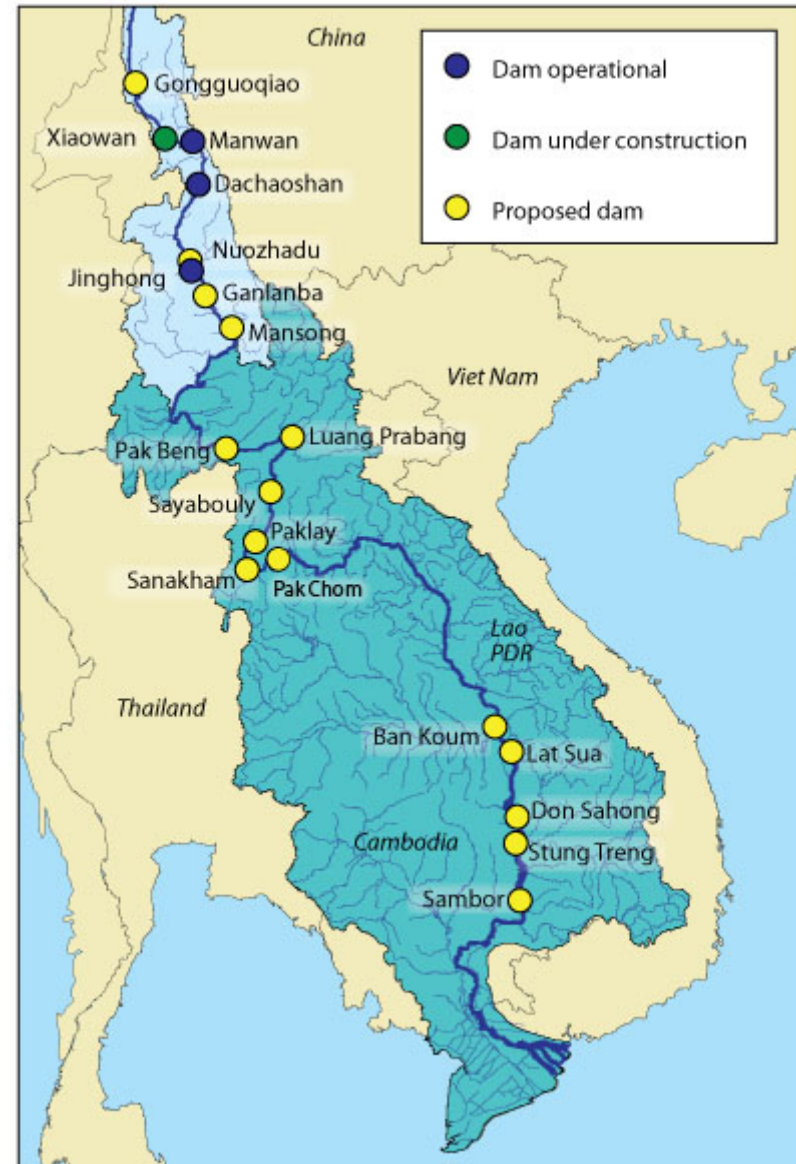


Proposal project in cooperated with Germany

Main Contents

Propose technical solutions for management of multi-disaster risks and building decision support systems for host areas.

- Salt intrusion;
- Irregular flood regimes;
- Drought;
- Decreasing in sediment and nutrient;
- Coastal line erosion;
- Decreasing in ground water table ;
- Land subsidence;
- Environmental pollution;
- Negative impact for ecological system



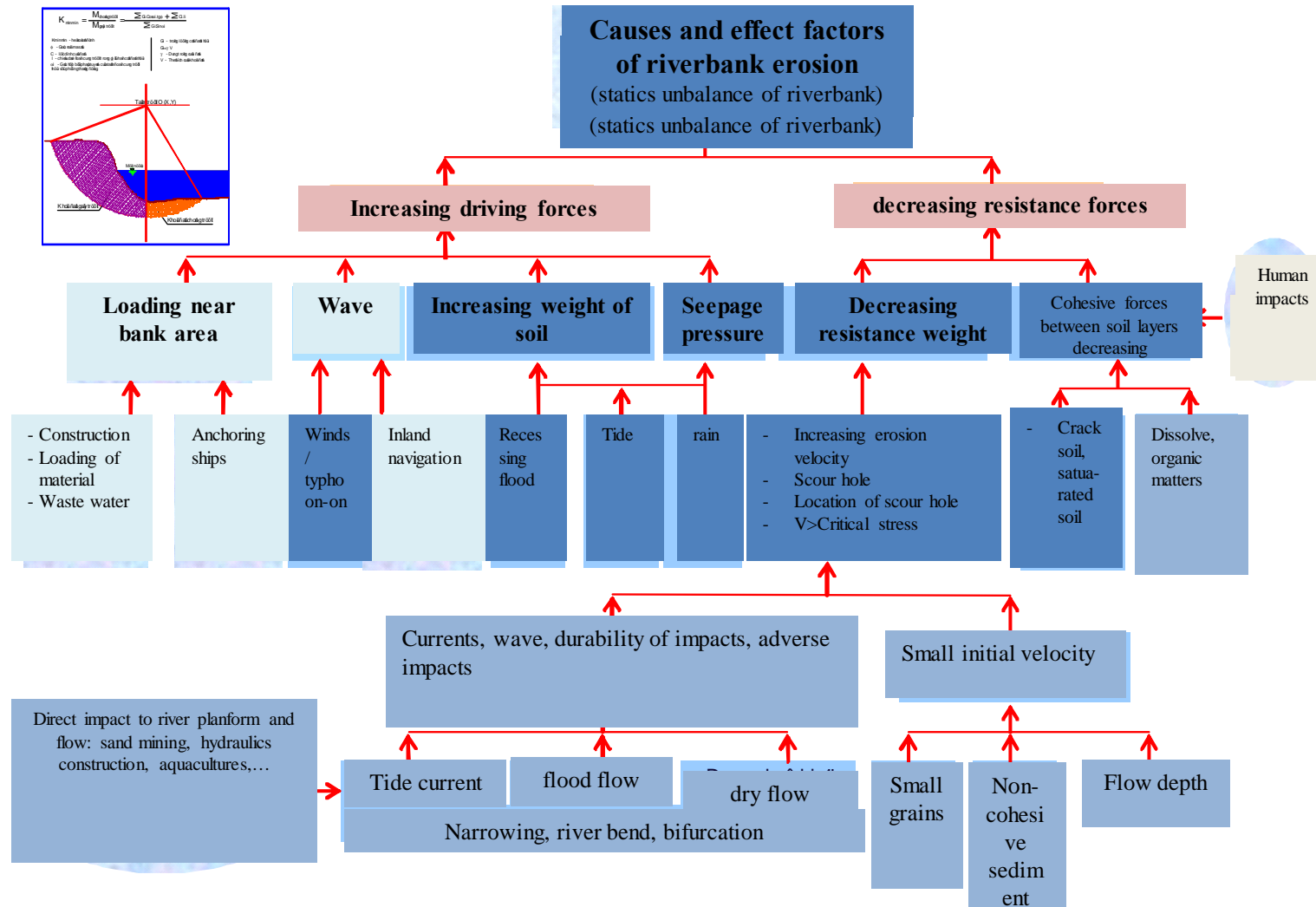
Climate Change Programs

Goals: Apply effectively advanced tools and models in climate change monitoring and mitigation of greenhouse gas emissions (suitable to Vietnam's conditions); Propose effectively solutions on mitigation of the tide effects, floods, droughts, saline intrusion due to climate change and sea level rise in key areas (Mekong River Delta Long, Central Coast and Red River Delta).

Contents: Propose measures to take initiative in adaptation to climate change suitable to each sectors and regions, especially coastal, highland and vulnerable areas. Focus on adaption of climate change such as crop varieties, livestock, seasonal adjustment, agricultural techniques.

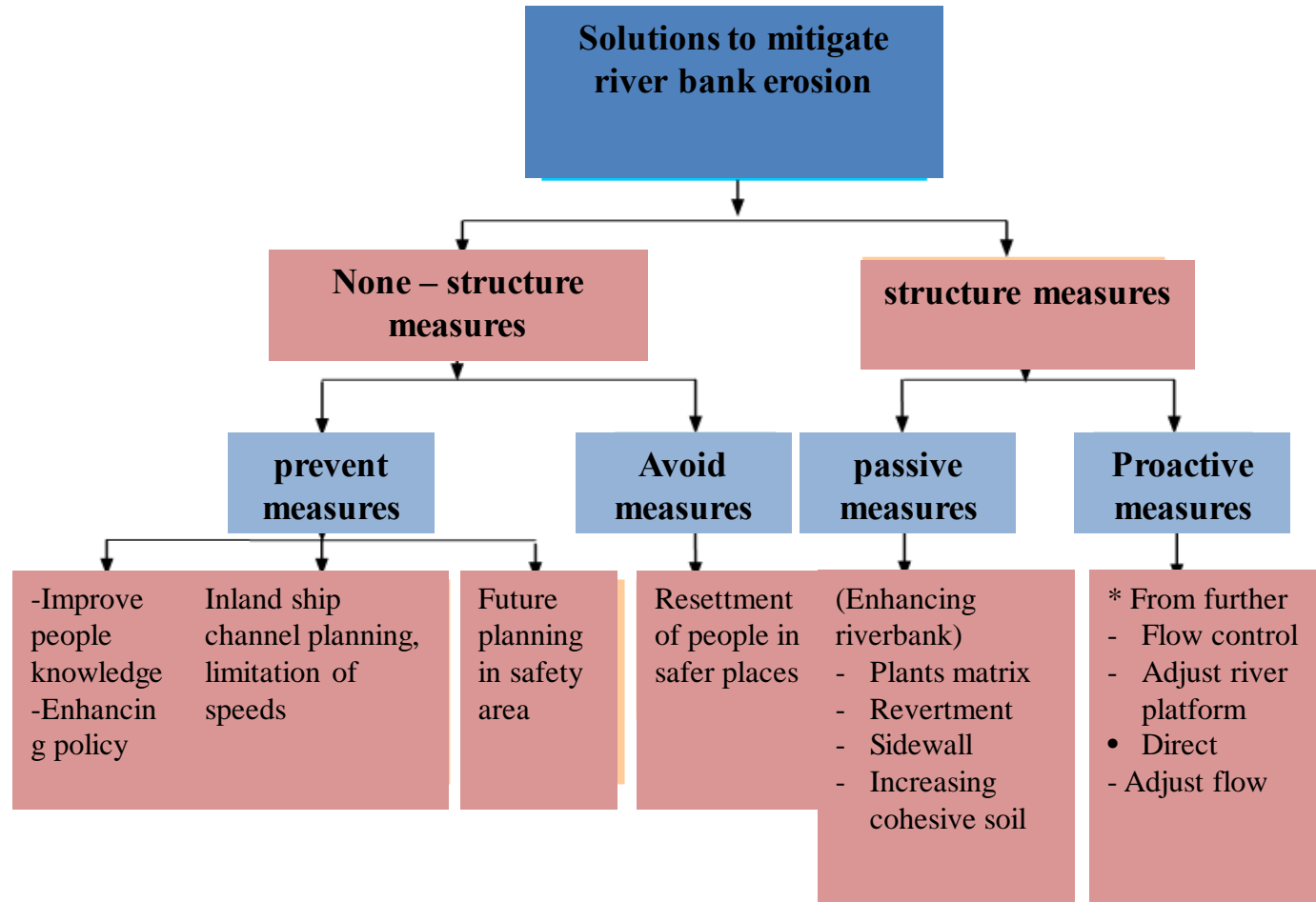


Achievements and outstanding results



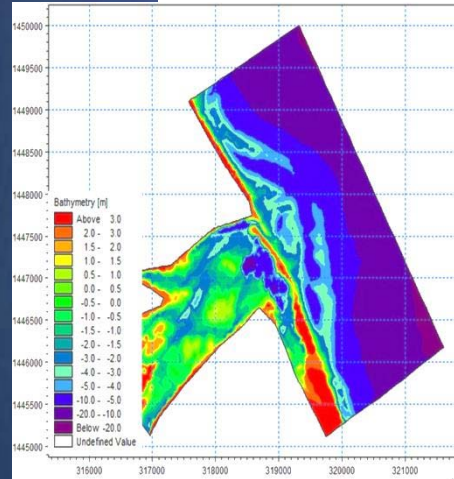
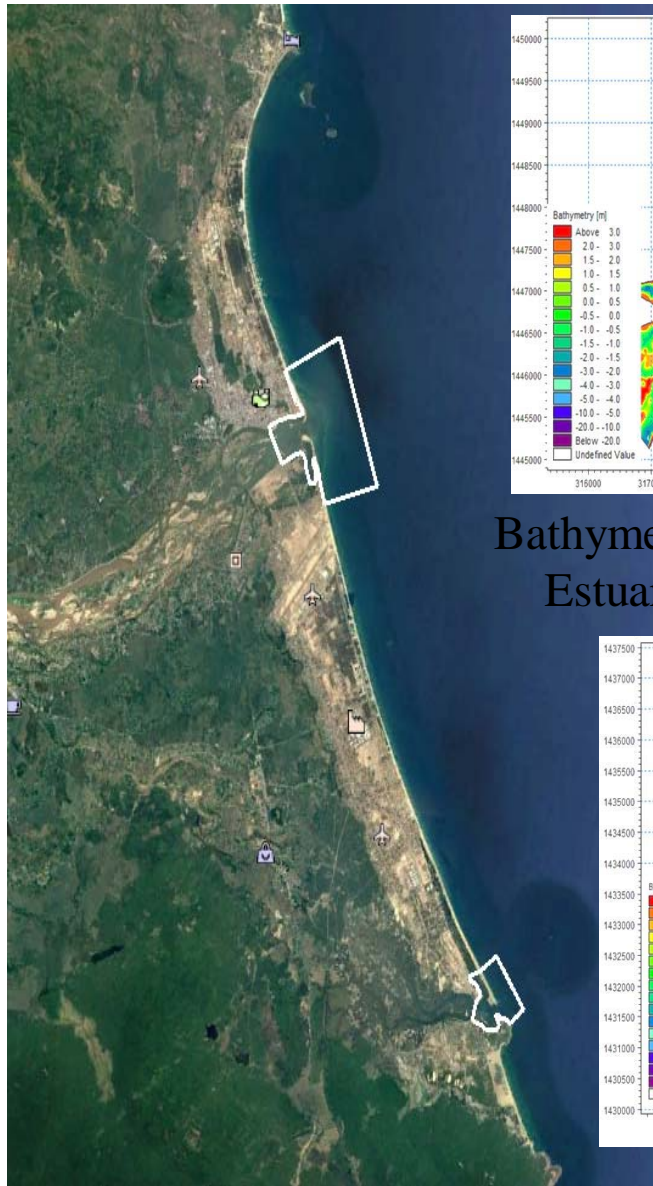
Bank erosion causes by changing of flow regime and human activities

Achievements and outstanding results

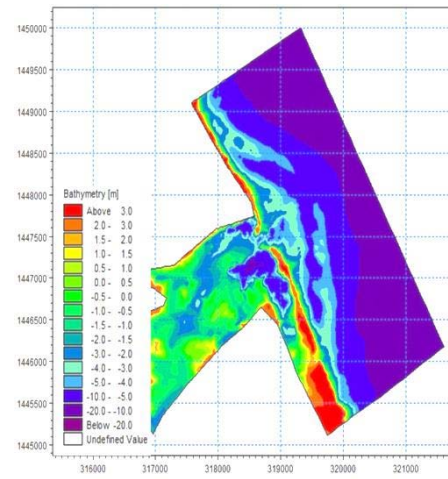


Non structure solutions should be selected: Integrated plan: Keeping ecology systems, sustainable development of social economy

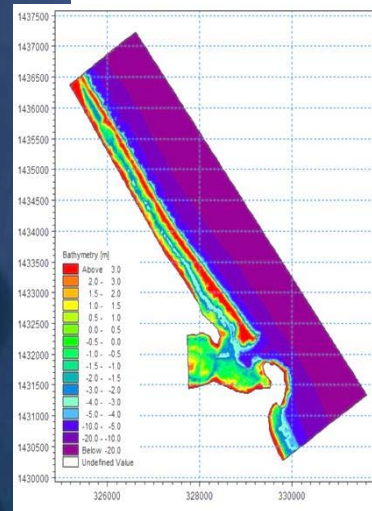
Achievements and outstanding results



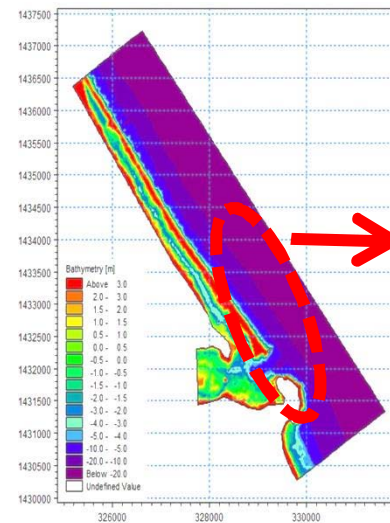
Bathymetry of Da Dien Estuary Mar 2016



Bathymetry of Da Dien Estuary Sep 2016



Bathymetry of Da Nong Estuary Mar 2016



Bathymetry of Da Nong Estuary Sep 2016

Revealed the roles of submerged sand jetties/bars around Da Dien river mouth in preventing the long-shore sand transportation and stimulating the deposition of river sediment

Revealed the roles of Da Nong river mouth dredging activities on the erosion in the estuary

Achievements and outstanding results

Constructed a technological process to forecast storm trajectories and intensities in the Pacific Northwest and the East Sea for 5 days

Achieved a forecast and warning system for drought in Vietnam for up to 3 months

Constructed a professional system for forecasting rainfall in the South of Vietnam and warning of extremely heavy rainfall in Ho Chi Minh City.

Orientations for international cooperation (within APEC) on natural disaster prevention and mitigation

- Vietnam has been striving to create a good environment for science and technology transfer in disaster prevention and mitigation, climate change respond (adaptation and mitigation).
- Technologies are selected and applied flexibly in accordance with natural conditions, socio-economic (by regions).
- Finding suitable foreign partners (APEC countries, countries with similar natural conditions and natural disasters) is essential for scientific and research organizations in Vietnam.

Summary

- To apply, develop and complete the advanced technologies in order to raise the capacity of forecasting, early warning and managing the risks of dangerous natural disasters such as storms and floods as well as to develop and complete new technologies in structural solutions for natural disaster prevention as a guideline of the Party and the Government of Vietnam;
- Research activities under the science and technology programs are key to unlocking the mechanisms of formation and the pattern of disaster types encountered by Vietnam, particularly river bank and coastal line erosion. In addition to that, it is necessary to find solutions in order to prevent and mitigate natural disasters and their effects.
- International cooperation (in the APEC region in particular) and the international community in general aim to share data (data) and experiences in forecasting. On the other hand, transferring the advanced technology is an urgent need for Vietnam now day.

Thank you for your attention!

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