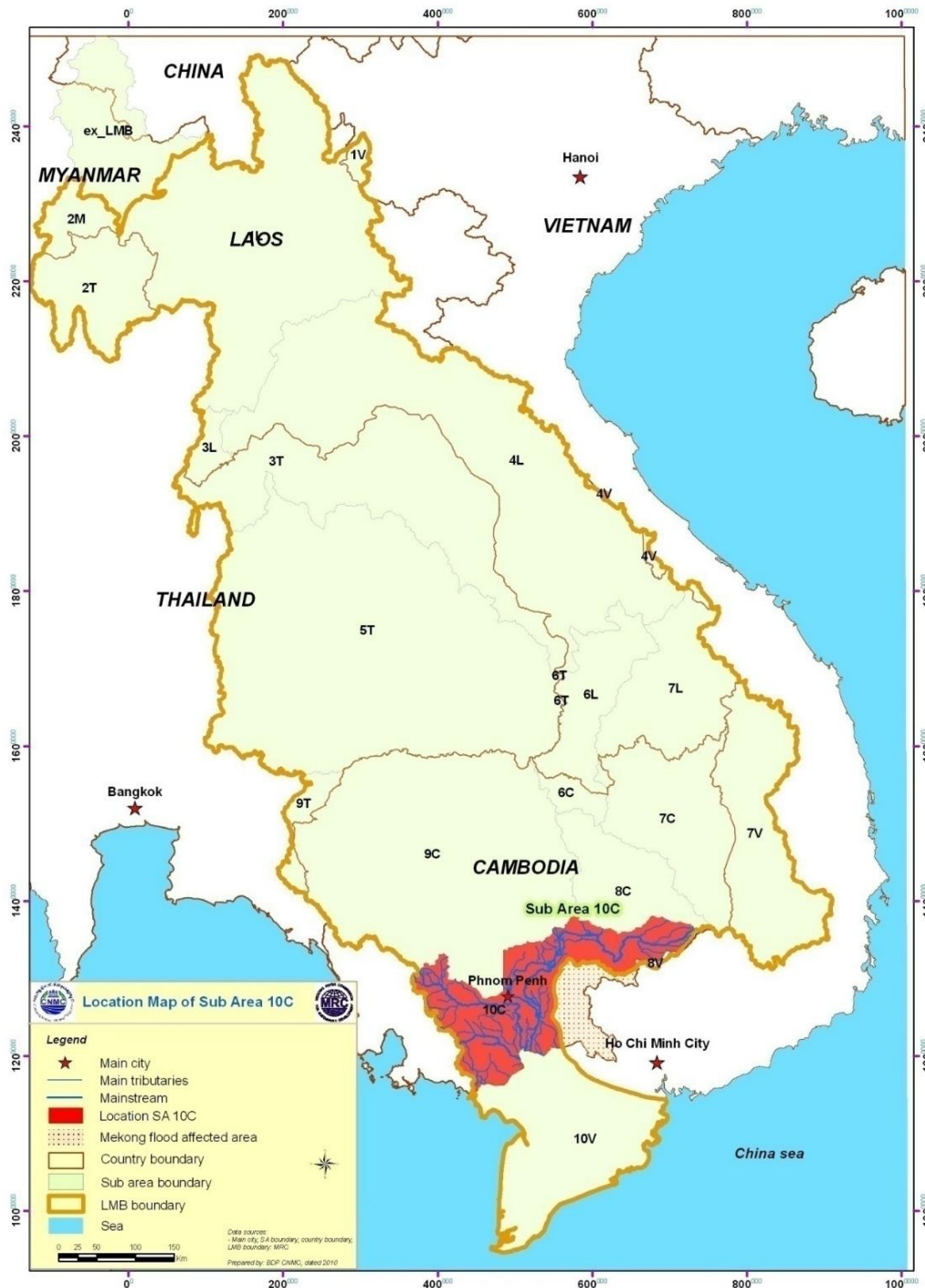


Project on Transboundary
Cooperation between Cambodia
and Viet Nam: IWRM in the
Mekong Delta

Contents of presentation

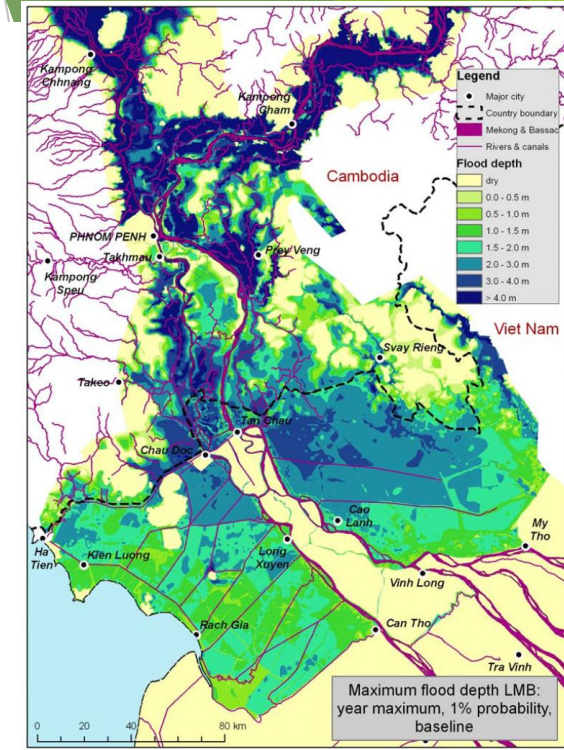
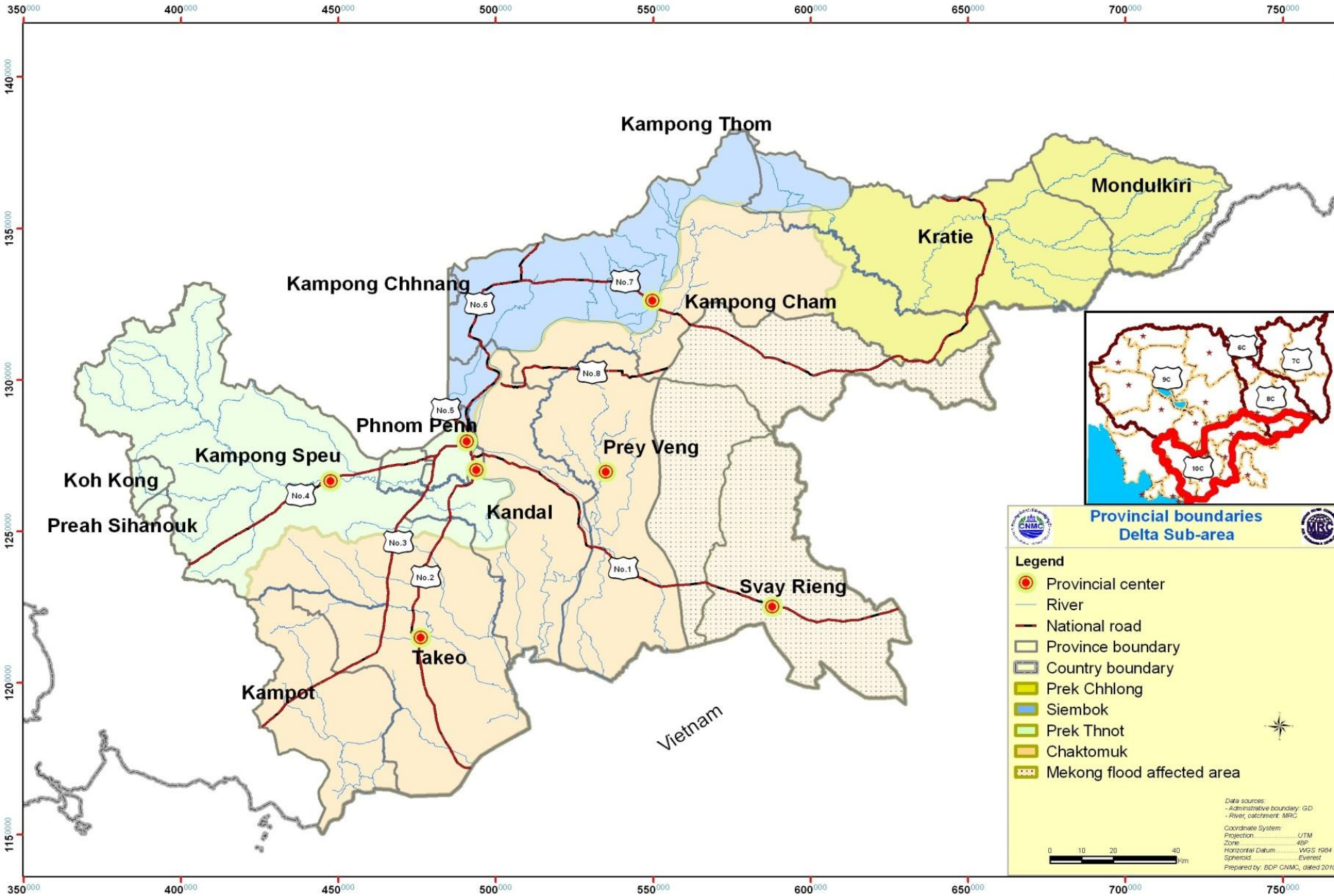
1. Profile of the Mekong Delta
2. Activities progress
3. Challenge A head

II. Profile - Mekong Delta

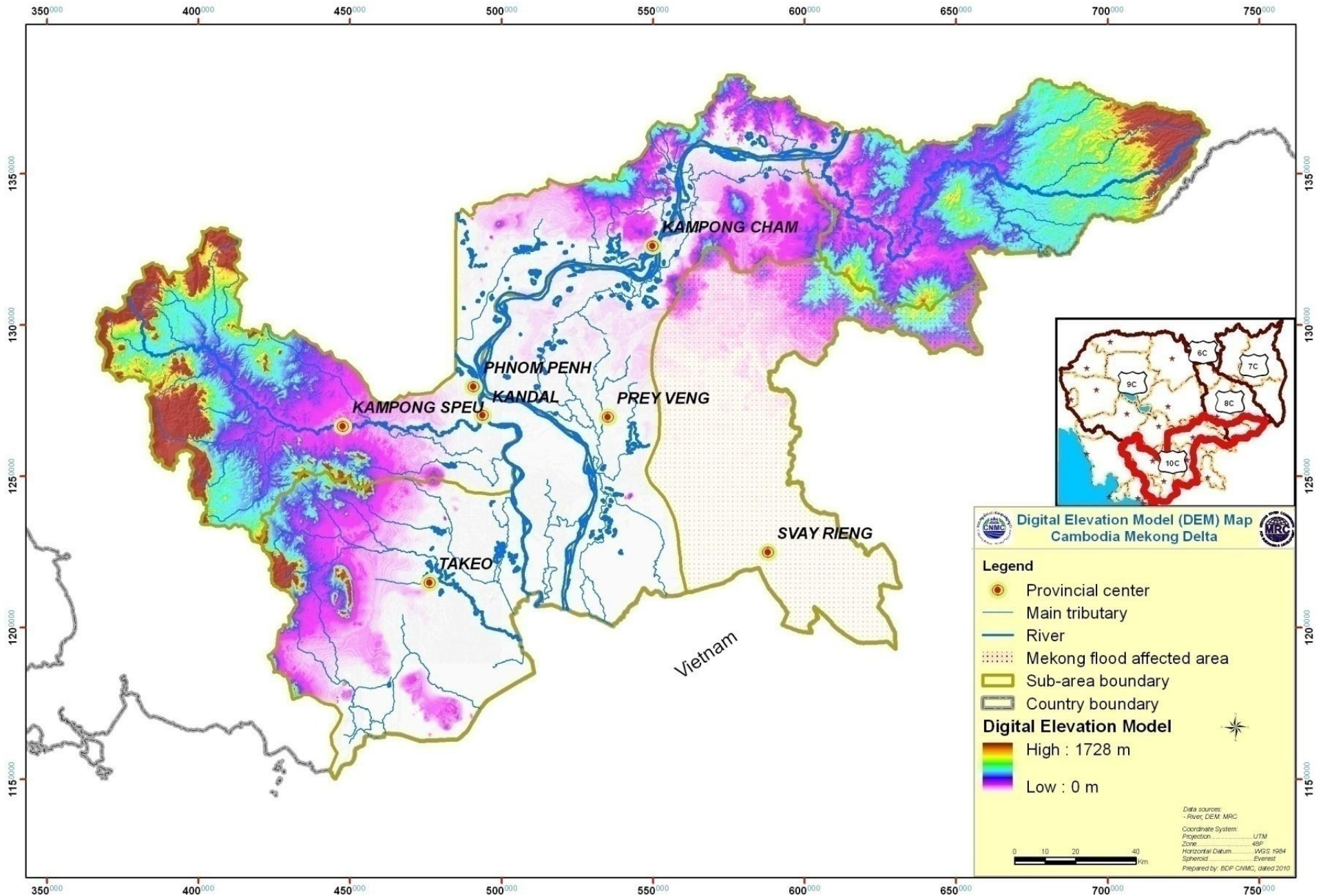


Disclaimer:
 © Mekong River Commission 2016. Not for commercial distribution or resale. All reproduction of this map, however altered, information or otherwise, shall bear the following notice: The Mekong River Commission makes no warranties about the data or information on this map and assumes no responsibility and liability for all expenses, losses, damages and costs which may be incurred as a result of the data being inaccurate or incomplete in any way and for any reason. The boundaries are not necessarily authoritative.

Provinces in the Mekong Delta

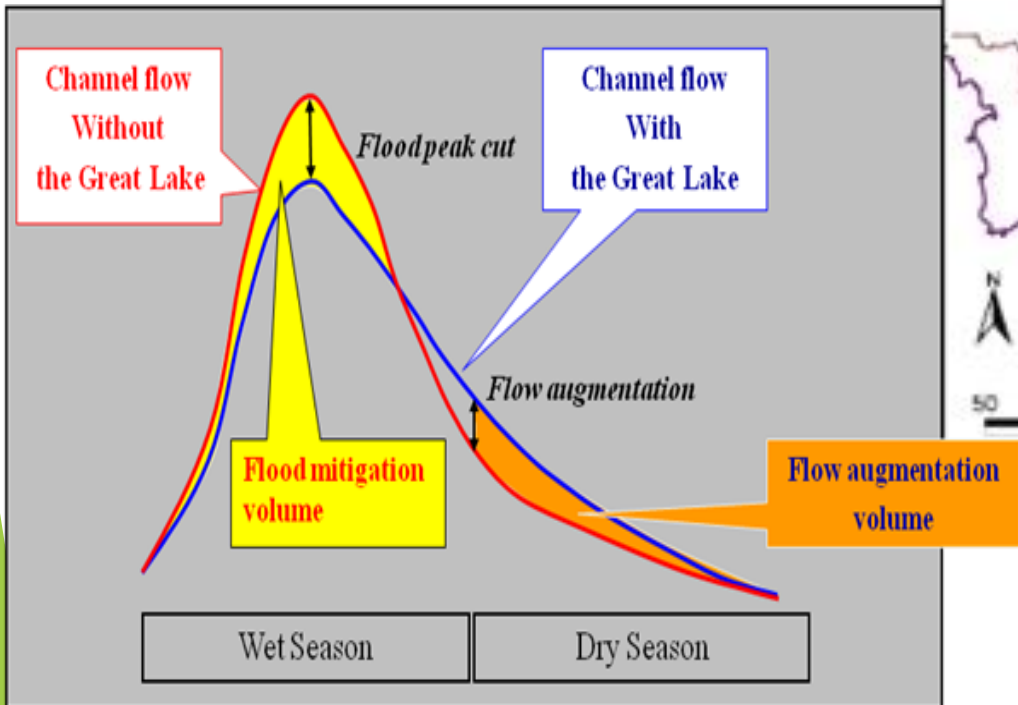


Land elevation in the MD

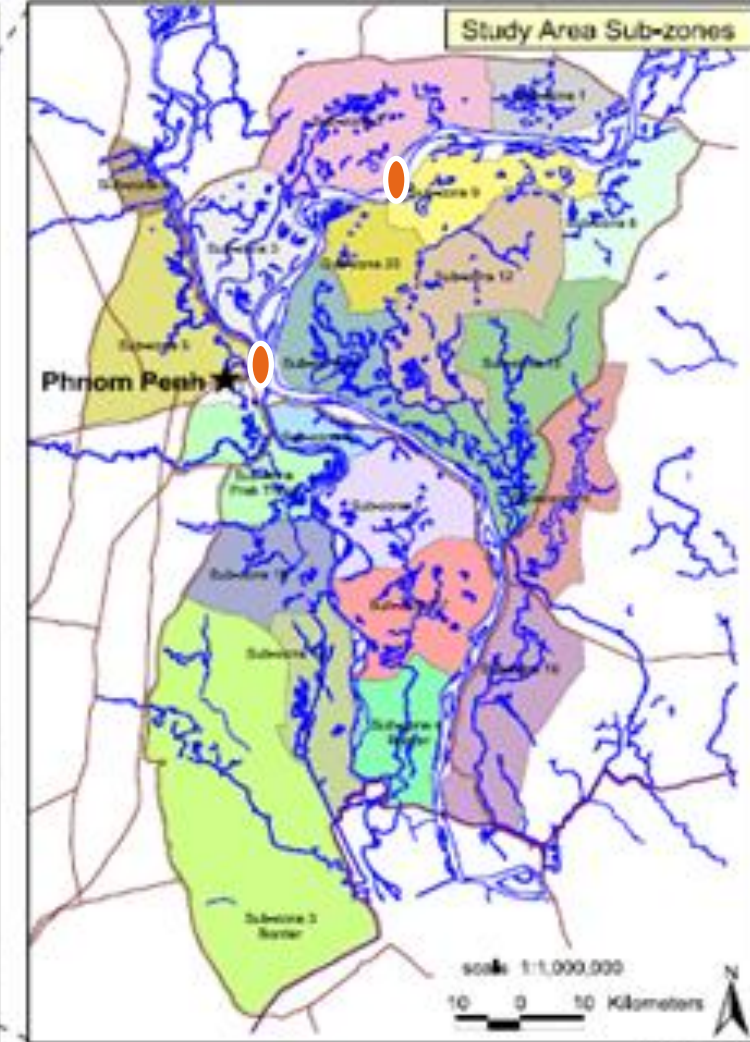
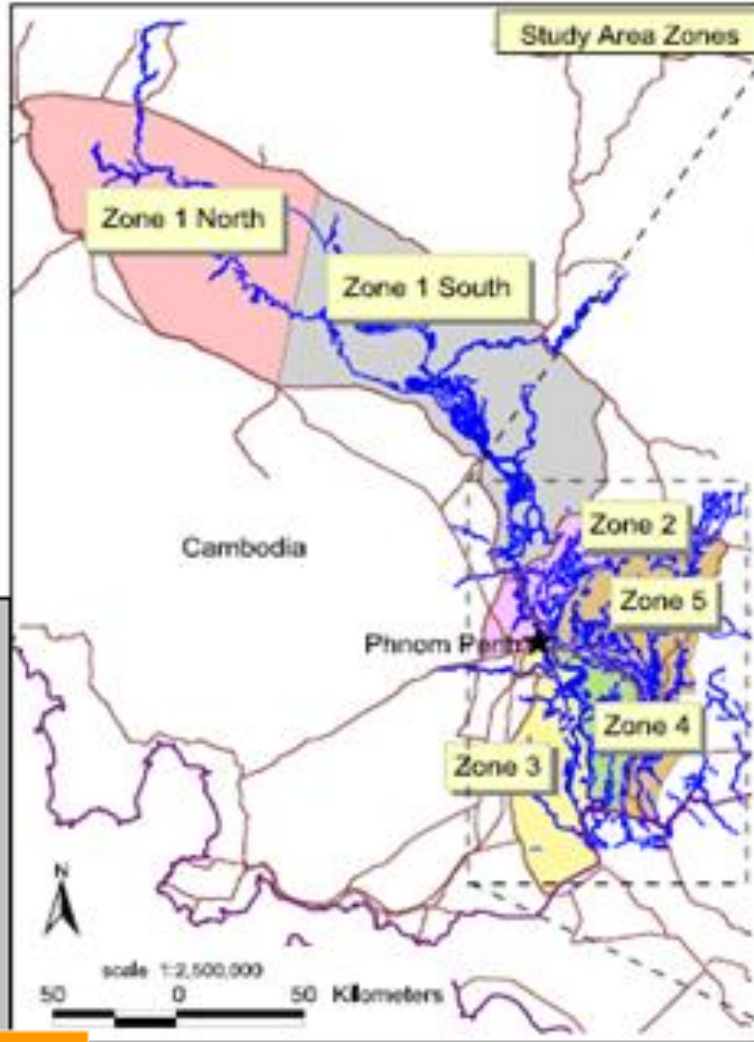


Flood flow attenuation of the Great Lake and Flood Plain

- the flood peak in Phnom Penh in 2002 was reduced by 13,300 m³/s
- in Viet Nam was cut by 12,116m³/s by flood plain in Cambodia



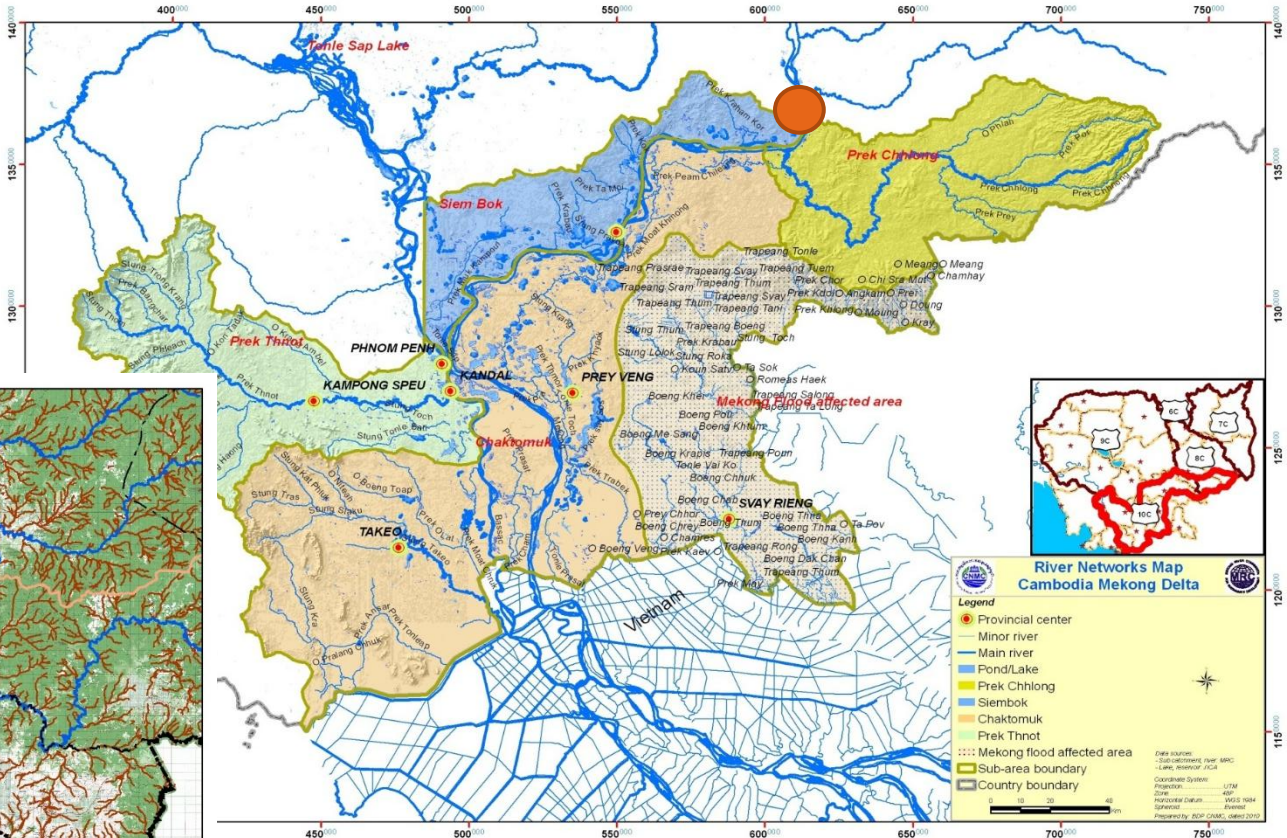
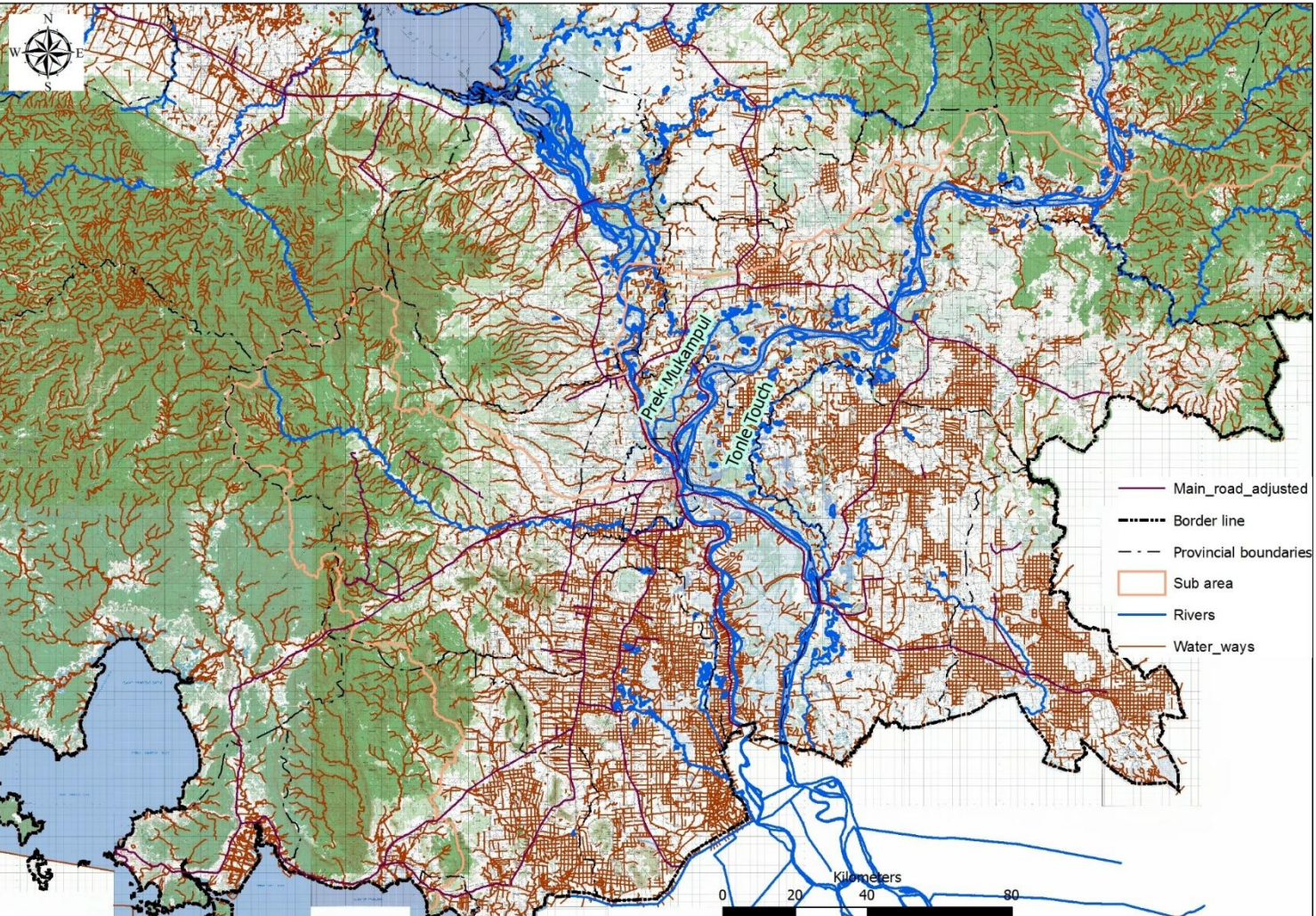
Study area Zones and Sub-zones, Cambodia.



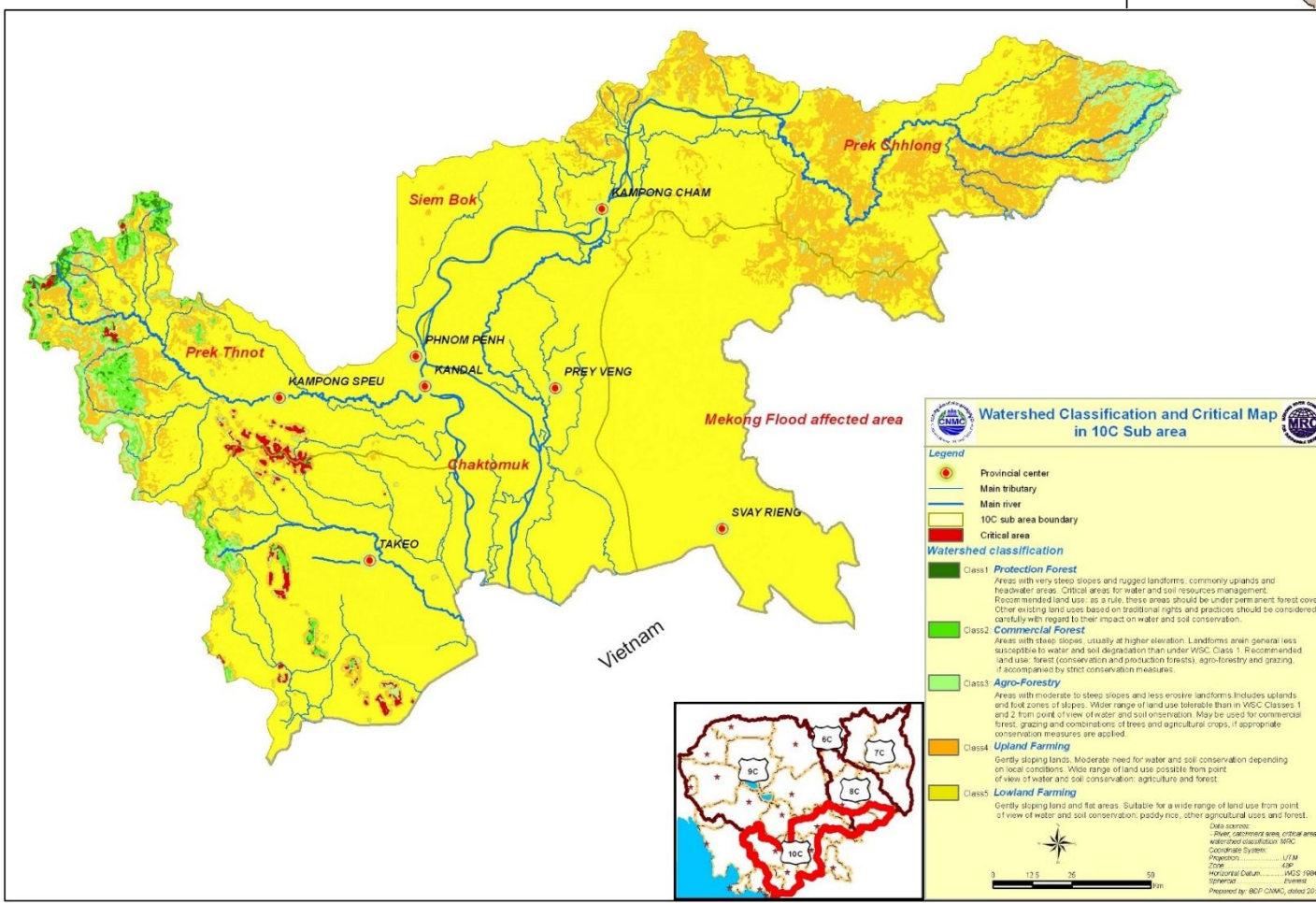
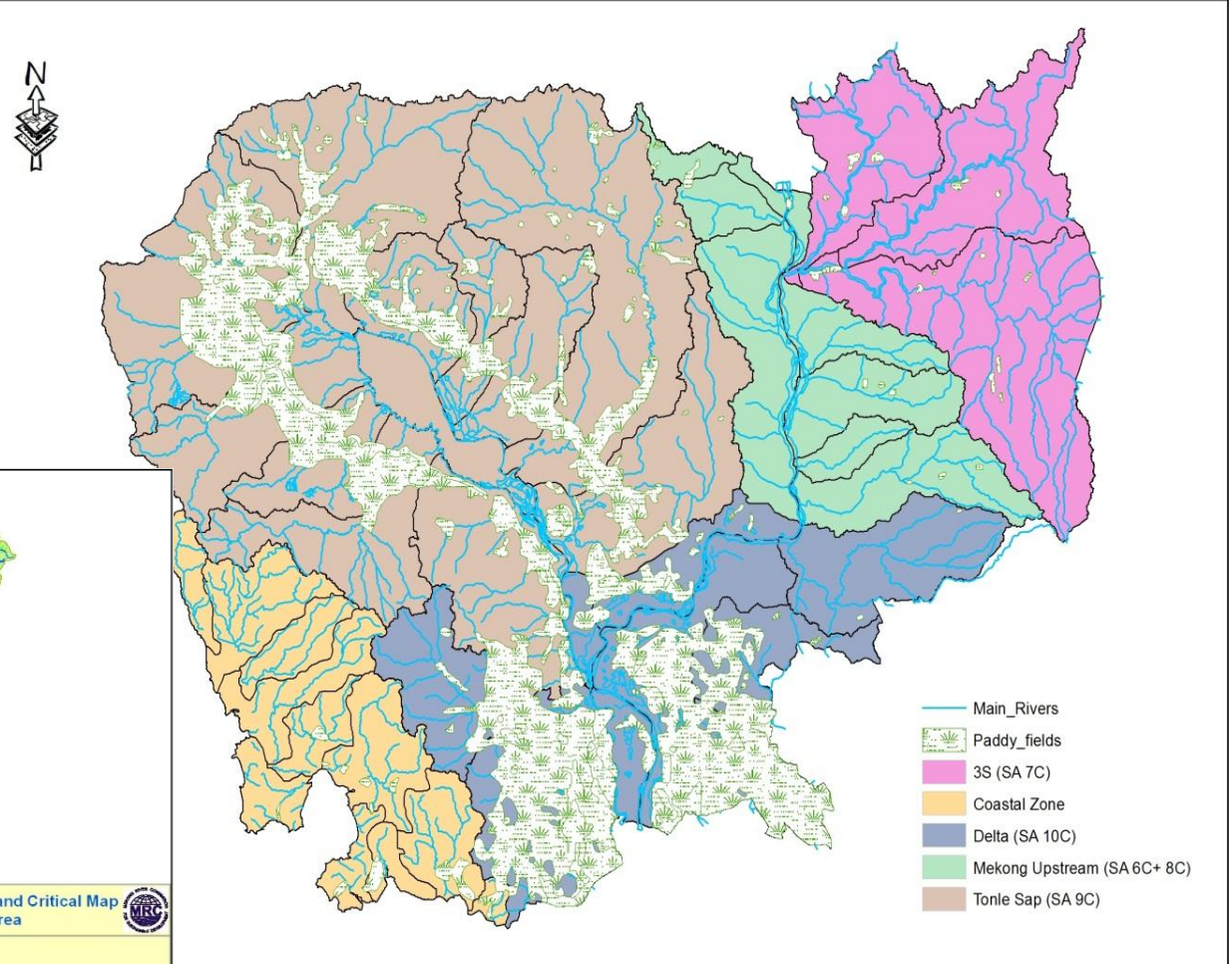
LEGEND

- International Boundary
- Major Rivers
- Major Roads

River Networks in Cam MD



Rice Growing Areas in the Cambodia MD



Watershed Classification and Critical Map in 10C Sub area

Legend

- Provincial center
- Main tributary
- Main river
- 10C sub area boundary
- Critical area

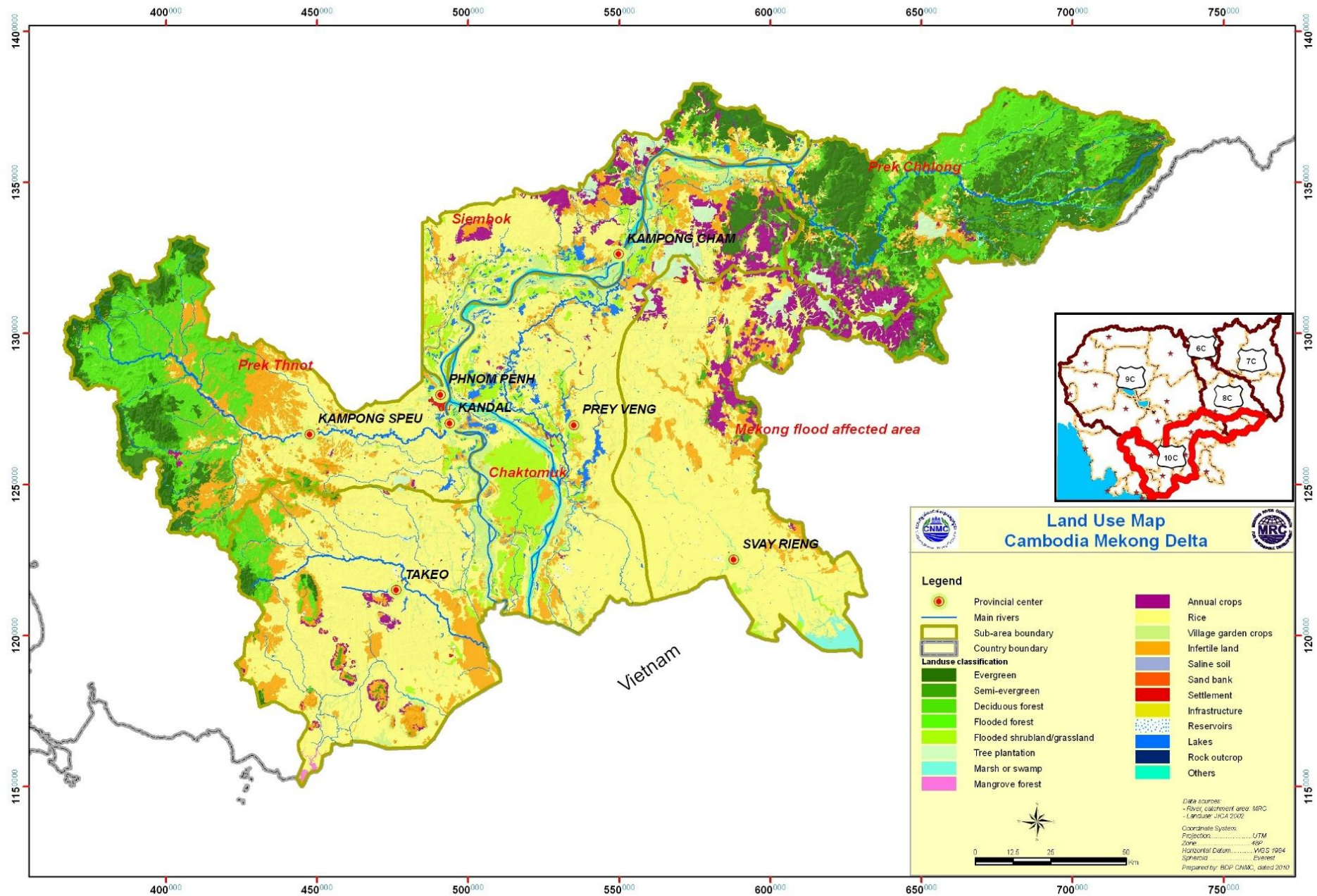
Watershed classification

- Class1 Protection Forest**
Areas with very steep slopes and rugged landforms, commonly uplands and headwater areas. Critical areas for water and soil resources management. Recommended land use, as a rule, these areas should be under permanent forest cover. Other existing land uses based on traditional rights and practices should be considered carefully with regard to their impact on water and soil conservation.
- Class2 Commercial Forest**
Areas with steep slopes, usually at higher elevation. Landforms are in general less susceptible to water and soil degradation than under WISC Class 1. Recommended land use: forest (conservation and production forests), agro-forestry and grazing, if accompanied by strict conservation measures.
- Class3 Agro-Forestry**
Areas with moderate to steep slopes and less erodible landforms including uplands and foot zones of slopes. Wider range of land use tolerable than in WISC Classes 1 and 2 from point of view of water and soil conservation. May be used for commercial forest, grazing and combinations of trees and agricultural crops, if appropriate conservation measures are applied.
- Class4 Upland Farming**
Gently sloping lands. Moderate need for water and soil conservation depending on local conditions. Wide range of land use possible from point of view of water and soil conservation: agriculture and forest.
- Class5 Lowland Farming**
Gently sloping land and flat areas. Suitable for a wide range of land use from point of view of water and soil conservation: paddy rice, other agricultural uses and forest.

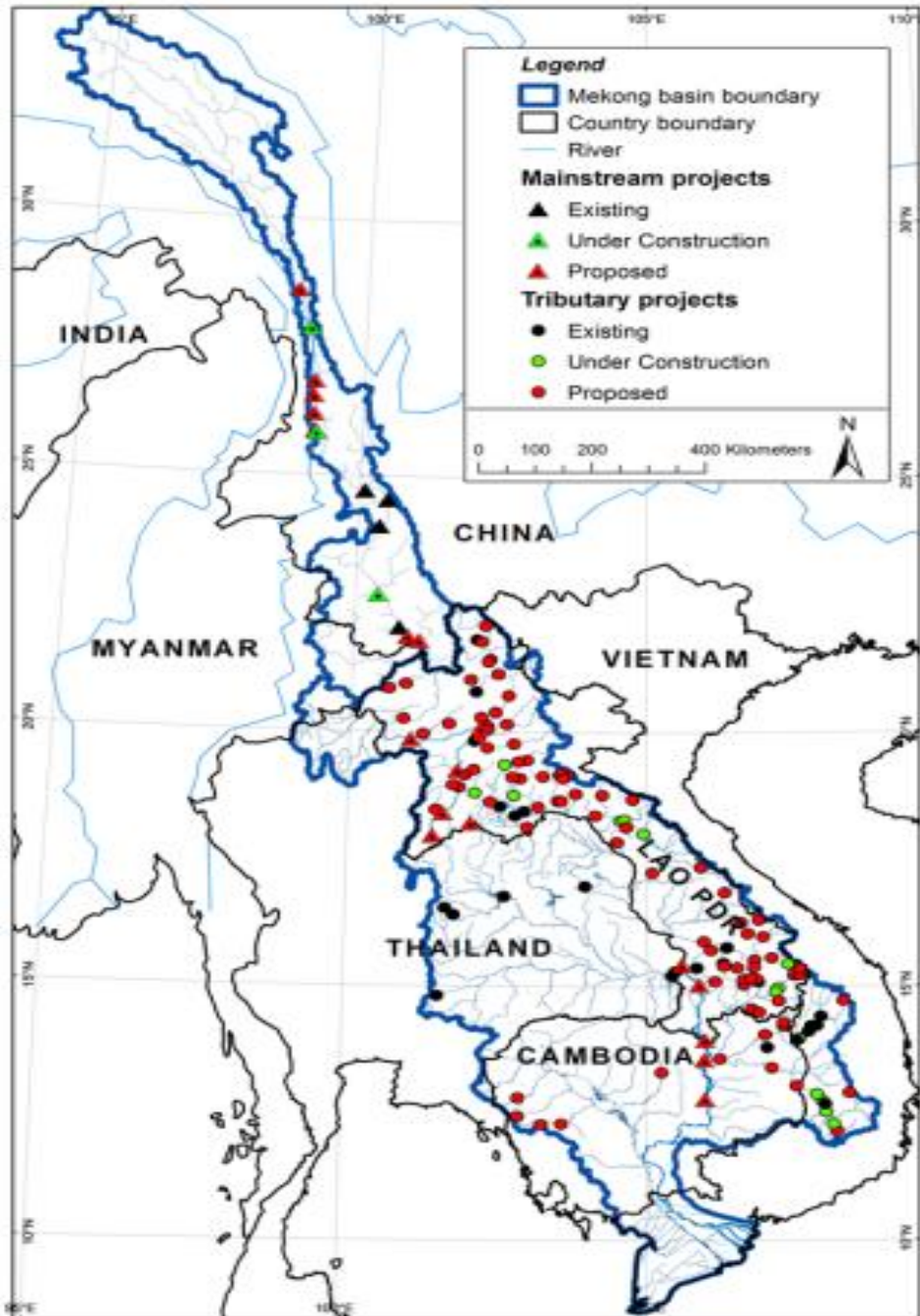
Data source:
River, watershed base, critical areas, watershed classification 10C
Coordinate System: UTM
Projection: UTM
Zone: 48N
Horizontal Datum: WGS 1984
Vertical Datum: Everest
Prepared by: BCF/CIAT, dated 2010

- Main_Rivers
- Paddy_fields
- 3S (SA 7C)
- Coastal Zone
- Delta (SA 10C)
- Mekong Upstream (SA 6C+ 8C)
- Tonle Sap (SA 9C)

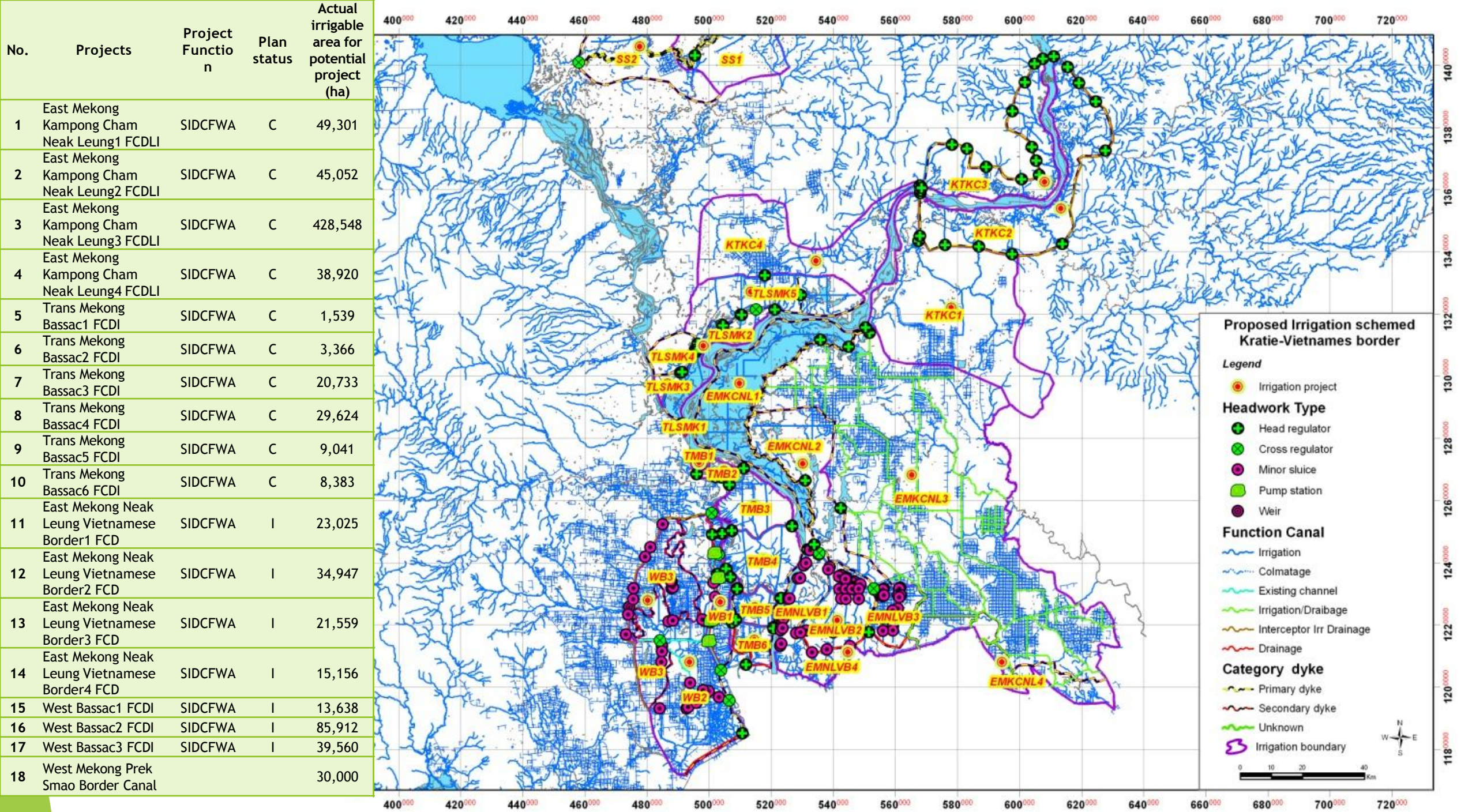
Land use in the Cam,

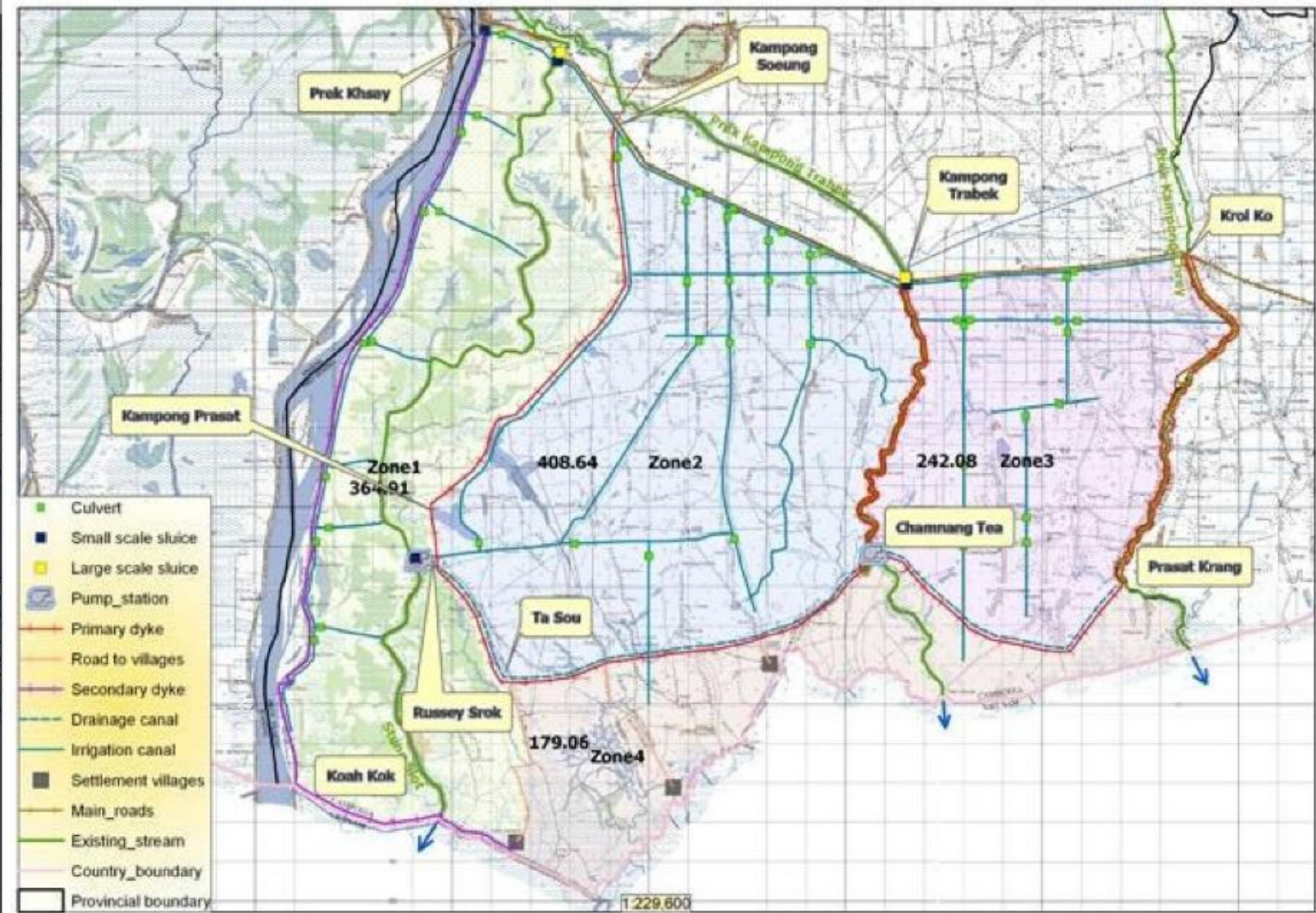
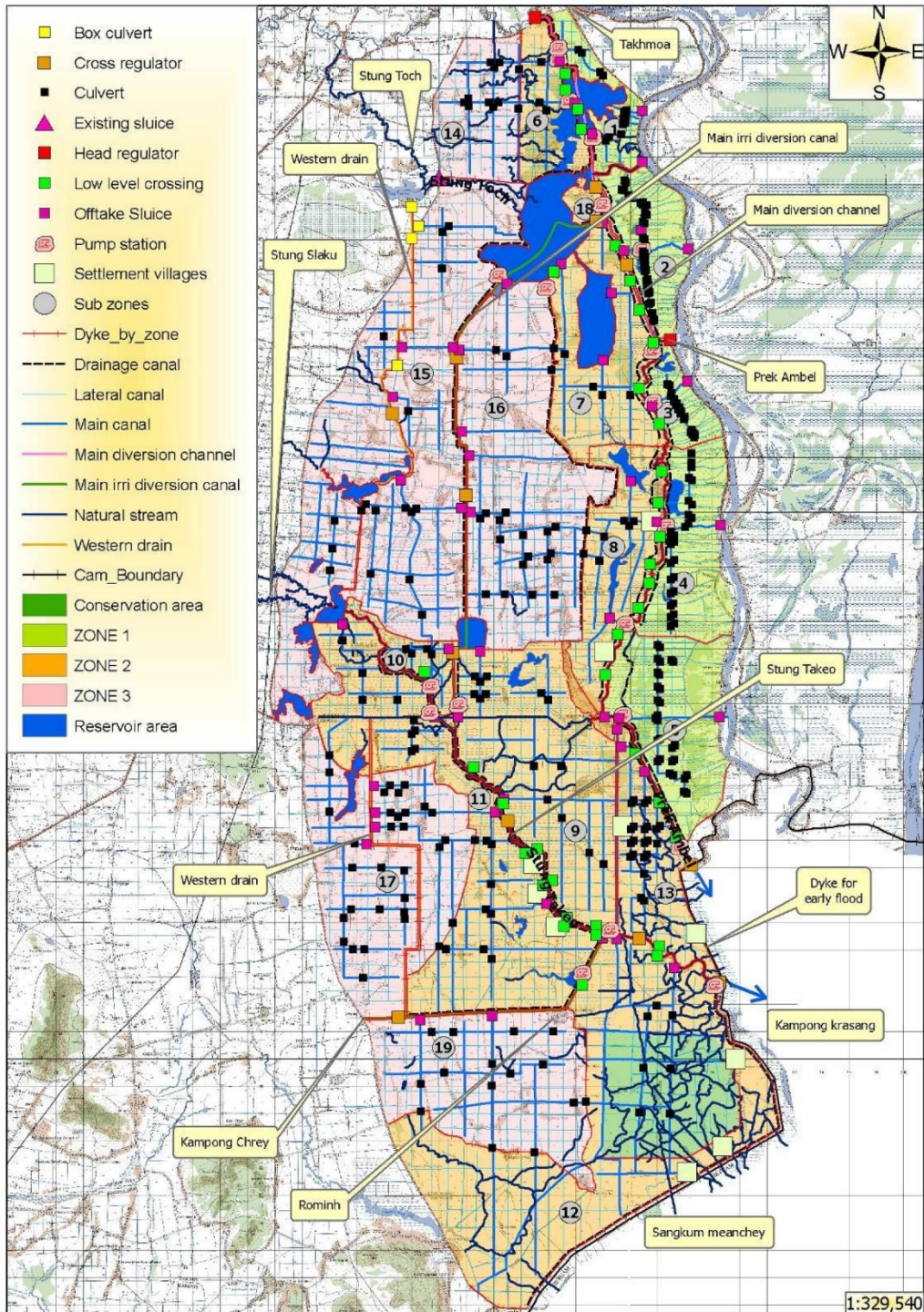


Hydropower

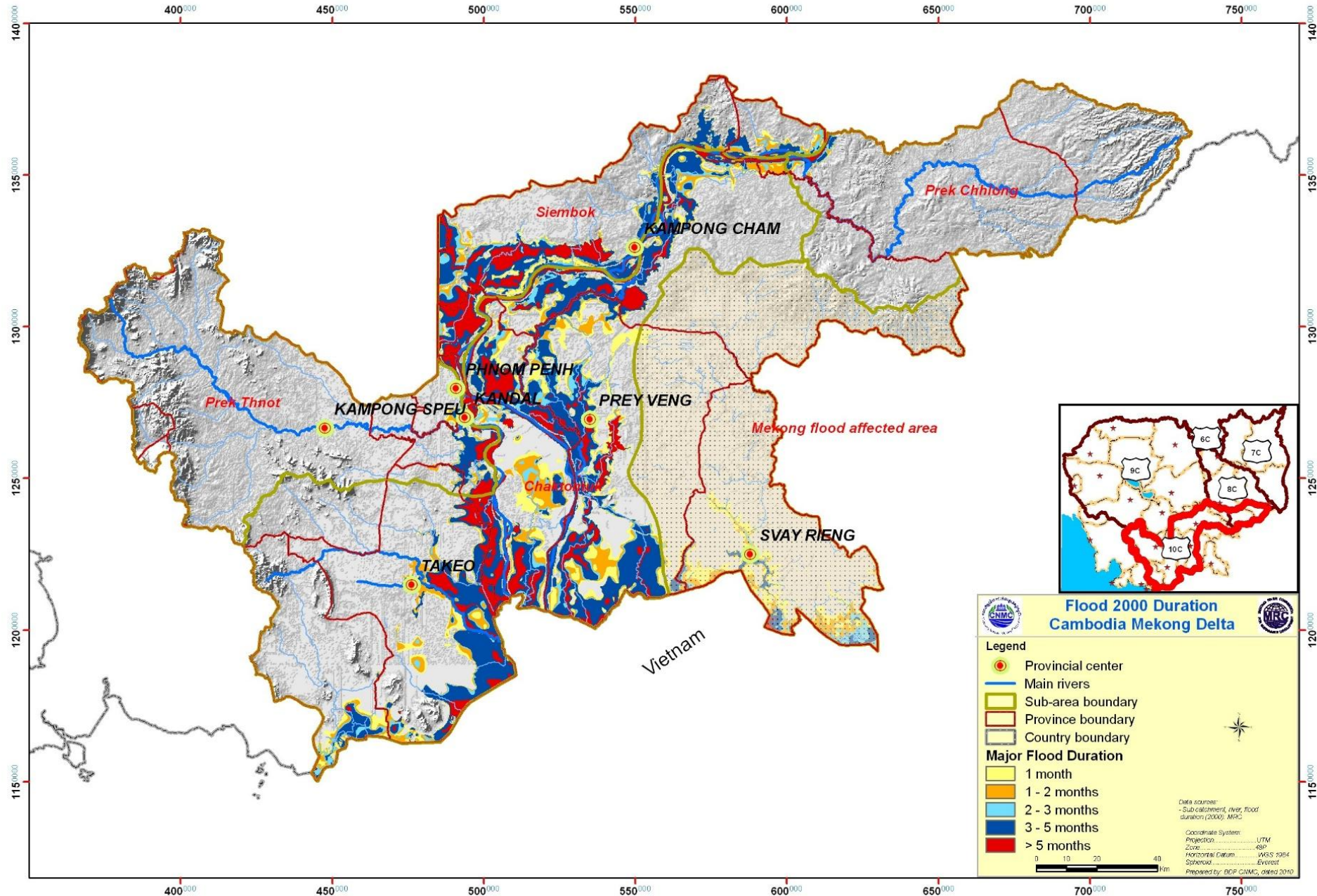


1. No hydropower potential development in the MD as it is too low lying region, but
2. Cascading hydropower development u/s reach of the river impacts on the flow regime, sediment movement now and in the future,
3. MD has high economic potential for both countries due to fertile soil, abundant water resources during the dry season and access to major cities and ports,
4. Extensive irrigation development and flood control system have been built on the Viet Nam side in the Mekong Delta, but there is still not enough effective irrigation infrastructure to manage the water resources in the Cambodian MD.
5. Cambodia is vulnerable to the operations of hydropower dams in the upstream Mekong and the flood control system in the MD in Viet Nam.

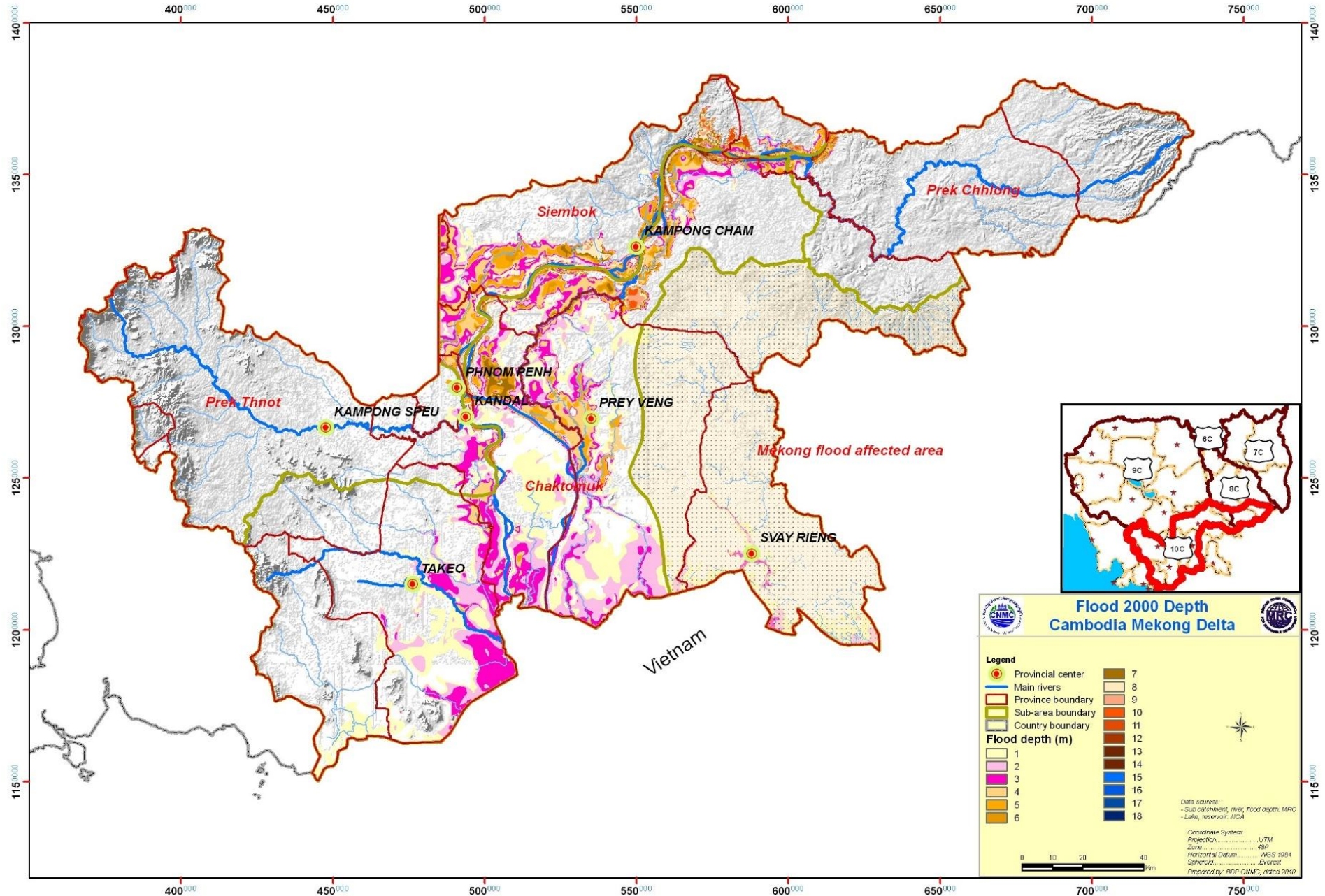




Flood duration map CA MD



Flood depth, Cam MD





III. Project Implementation Plan



Project Implementation Plan

Outcome 1: A joint paper to identify common issues/challenges, information and data sharing needs, and coordination requirements.

Outcome 2: Development of an agreed upon coordination mechanisms to address transboundary management and coordination needs (main issues)

Outcome 3: Development of a Joint Action Plan to implement priority coordination and management activities. (Some of these activities may potentially be financed through the respective National Projects.)



Project Objectives

1. Overall objectives
 - ✓ To enhance dialogue between the LMB countries
 - ✓ Improvement of the IWRM-based transboundary cooperation and dialogue between Cambodia and Viet Nam in the Mekong Delta, focussing at provincial and basin level
2. Specific objectives
 - ✓ The Transboundary Significant Water Management Issues between Cambodia and Viet Nam in the Mekong Delta are identified
 - ✓ An effective transboundary data and information processing sharing mechanism between Cambodia and Viet Nam in the Mekong Delta is established, and
 - ✓ An effective IWRM-based transboundary dialogue between Cambodia and Viet Nam for a future transboundary river basin monitoring plan in the Mekong Delta is established.



II. Activities Progress



Project progress

- Working group meeting to discuss National Issue Papers, organized on January 19 2016



National consultation workshop on draft national issues papers, organized from 04-05 April 2016

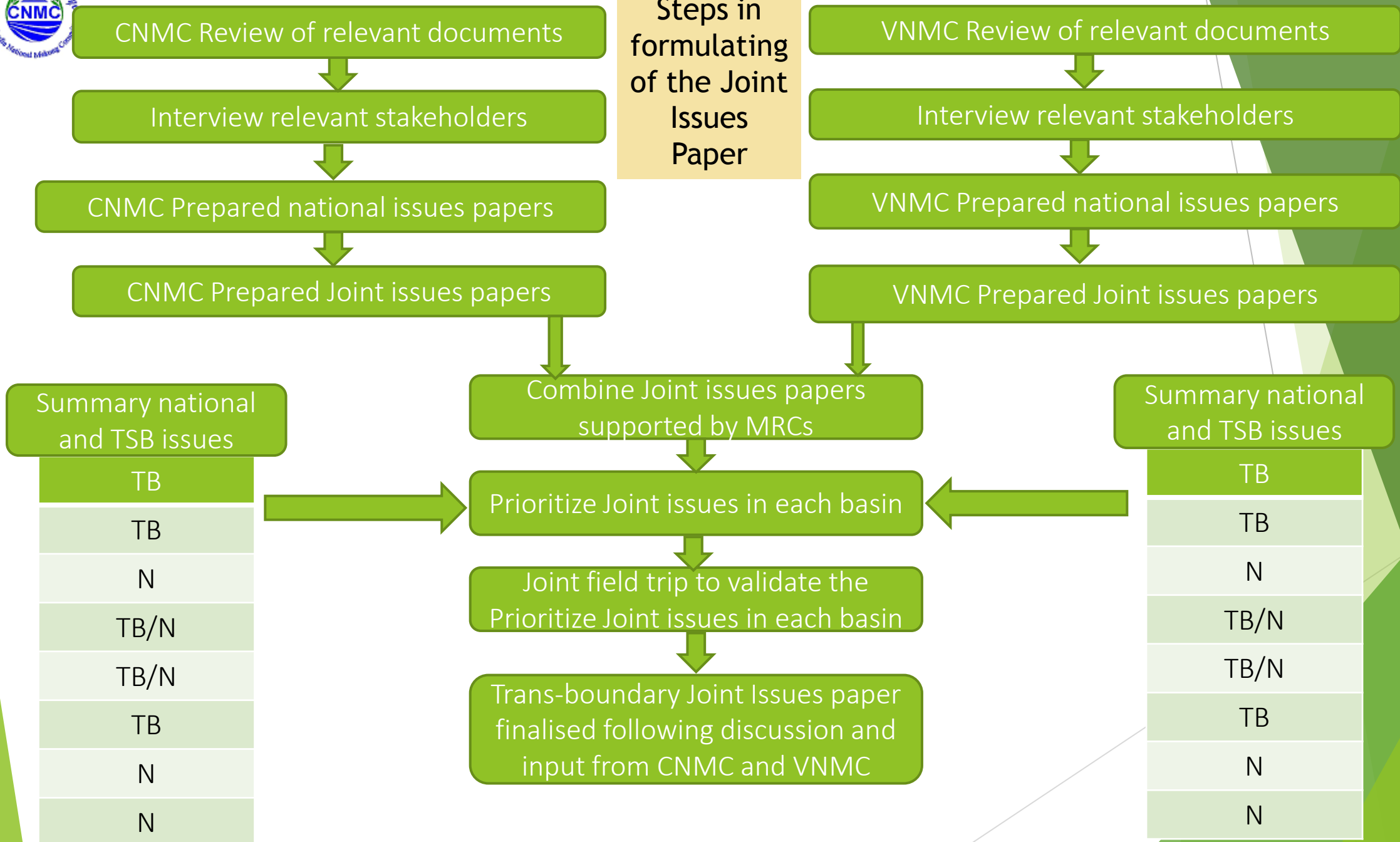


- ▶ Joint Workshop in Phnom Penh, organized on Oct 22-23 2015
- ▶ Joint Workshop in Hanoi, organized on March 22-23 2016





Steps in formulating of the Joint Issues Paper



CAMBODIA	JOINT ISSUE PAPER	VIET NAM
Priority issues		Priority issues
Flood and drought management in MD	Flood and drought management in MD (Delta Master plan to be included) (Flood and drought strategic planning)	Shortage of water in border river doesn't meet requirements for domestic use and production leading to dispute and effect to other cooperation initiatives
Joint Fisheries Management and Technology (Aquaculture Development)	Inappropriate solution of infrastructure to cause inundation and bank erosion, instability and risks to safety for residential routes (Infrastructure development and investment)	Early flood water increase due to not proper operation of infrastructures
Technical Commissions for Joint Water Management (there is no or not clear coordination mechanism yet existed)	Improvement of coordination and monitoring (including water quality, hydromet etc. including sharing of data and information) (Coordination and communication mechanism)	Inappropriate solution of infrastructure to cause inundation and bank erosion, instability and risks to safety for residential routes
Not sufficient sharing of Hydromet data and information (including poor maintenance stations)	Capacity building (Human and institutional capacity building at the managerial and technical level)	Water pollution because of agriculture development, aquaculture, navigation, industry and urbanization etc
Limited human and Institutional capacity for Transboundary water resources management	Impact of u/s development under climate change. (Environmental, social and economic impacts of development and climate change)	Change of flow in mainstream and transboundary tributaries, sediment and nutrient due to hydropower development and large scale water diversion project and climate change
Effective implementation of Inland navigation Agreement of both countries	Improvement of the implementation of Navigation agreement signed by two countries (Implementation of the navigation agreement between Cambodia and Viet Nam)	Lack of solution for joint integrated management
Water quality monitoring		
Development partners supporting to the Delta are not equally		
There is no comprehensive Water Resources Management Master plan for whole MD		
River channel and River bank improvement		
Effects of hydropower dams		

Agreed joint issues in the MD

CAMBODIA	JOINT ISSUE PAPER		VIET NAM
Priority issues			Priority issues
Coordination of flow <ul style="list-style-type: none"> Support development & environmental flows Flash Flood /emergency Dry season & emergency Regulation of water releases to meet water demands	Monitoring and assessment of flows to downstream <i>(Monitoring and assessment of flow)</i>		Sesan diurnal release as per Operation Rule is minimized through re-regulating dam which minimum/environment flow may be revised when/as necessary
Potential environmental impacts (e.g. sediment, nutrients etc)	Flood forecasting/flood control and warning mechanisms <i>(Flood forecasting and flood control and flood warning mechanism)</i>		Srepok re-regulating system is to operate as per Operation Rule
Communication system improvement for transboundary cooperation	Improved communication and coordination mechanisms on information/data sharing <i>(Communication and coordination Mechanism on Information/Data Sharing)</i>		Reservoir operation aiming to reduce flood peaks as per Operation Rule is a risk with inaccurate flow forecasting and energy losses
Water quality degradation & pollution (dam, intensive agriculture, urban drainage)	lack of mitigation measures to address social and environmental (biodiversity, ecosystems, water quality) impacts as a result of upper Sesan and Srepok hydropower development <i>(Mitigation measures to address Social and Environmental Impacts)</i>		Ineffective communication for water release warning systems, especially in rainy season
Weak coordination in water use/ management (technical)	Lack of institutional and technical Capacity to improve/transboundary coordination and cooperation <i>(Institutional and technical Capacity to Improve Transboundary Coordination and Cooperation)</i>		Lack of mitigation plans for Lower 2S which need to reflect the post-re-regulating operation
Improve flood forecasting/warning systems	Inadequate Stakeholder engagement and awareness on water management <i>(Stakeholder Engagement and Awareness on Water Management)</i>		EaH'Leo & La Drang transboundary streams - needs assessment
Decline of biodiversity/ecosystems			Ineffective transboundary coordination mechanisms
Management & coordination (e.g. feedback/participation of local communities)	Agreed joint issues in the 2S		
Limited IWRM resources/ technical capacity			



National Workshop Activities



Existing Coordination Mechanism at National Level

1. Permanent Joint Commission for Coordination on Dike and Canals/Standing Committee for Water use along the border
2. Committee for management of Sesan river Water Utilization

Existing Coordination Committees at Sub National Level

1. Provincial Coordination Committee (Provincial delegation) – Led by provincial governor with members coming all provincial Departments
2. Provincial border committee
3. Technical coordination committee
4. Provincial committee for disaster management
5. Several others
6. Ad hoc committees
7. Existing Information sharing mechanism

Activities progress

1. Preparation of the draft National Coordination Mechanism papers

Issue 1: Flood and drought strategic planning

Data/information requirement	Coordination mechanism requirements for sharing of data/information	Resources & constraints
<p><u>Sharing of data/information between Sub National and National Level</u></p> <ul style="list-style-type: none"> • Water projection demand/supply relationships • Maps presenting areas that are prone to floods, extent of past flooding, and flood damages sustained in the basin. • Present flood damage and future increases in flood damage potential with growth of population and economic activity. • Water quality data • Water availability data • Rainfall data • Maps showing the annual drought affected crop areas. • Statistical data on present damages caused by drought • Suspended Sediment and bed load data • Water quality data • Data on existing flood damages and • Data on future increases in flood damage potential with growth of population and economic activity. • Planning for present and future alternatives for flood damage reduction • Country Water resources master plan studies by the government and by different donor agencies. • Water Resources annual strategic planning. • Country annual flood extend maps. <p><u>Sharing of data/information between Cambodia and Viet Nam</u></p>	<p>1. <i>Should the joint coordination mechanism be established as formal or none formal?</i></p> <ul style="list-style-type: none"> • Formal <input checked="" type="checkbox"/> • None formal <input type="checkbox"/> <p>2. <i>Members of the joint coordination mechanism should selected from what institutions, at National or at sub national level? Are NGOs or relevant stakeholders could be the members of the mechanism? Please describe?</i></p> <p>Answer:</p> <ul style="list-style-type: none"> • Members of the coordination committee should comprise the directors of provincial offices of PDWRAM, PDA, PoE, PWT, PCDM and PoEM from the three provinces. From Viet Nam side may be same structure. <p>3. <i>Should the setting up mechanism is permanent or temporarily body?</i></p> <ul style="list-style-type: none"> • Permanent <input checked="" type="checkbox"/> • Temporarily <input type="checkbox"/> <p>4. <i>What should be the mandate of the setting up transboundary coordination mechanism?</i></p> <p>Answer:</p> <p>a decisional mandate, having power to make decision in the name of the government.</p>	<ul style="list-style-type: none"> • The provincial departments/future setting up Coordination Mechanisms between the two countries might face resources constraints accessing to communication equipment such as WebEx, Skype and Internet connection speed for video conferences, • Require an average expenditure on task operations for coordination and facilitation activities and expenditures on internet bill. • Difficulties may arise in finding consensus between the two countries on types of data/information to be shared, agreement on data format, method of analysis, share to whom and for what purpose. It would take long time to build trusts between each other on cooperation work. • Human and financial resources between the two countries could lead to an unclear information for dialogue and resolution of the joint issues.

Activities progress

Field data collection in the MD on March 02 2017



Field data collection in the 2S on March 02 2017



Preparation of summary table

► Preparation of summary table

1 Flood and drought strategic planning

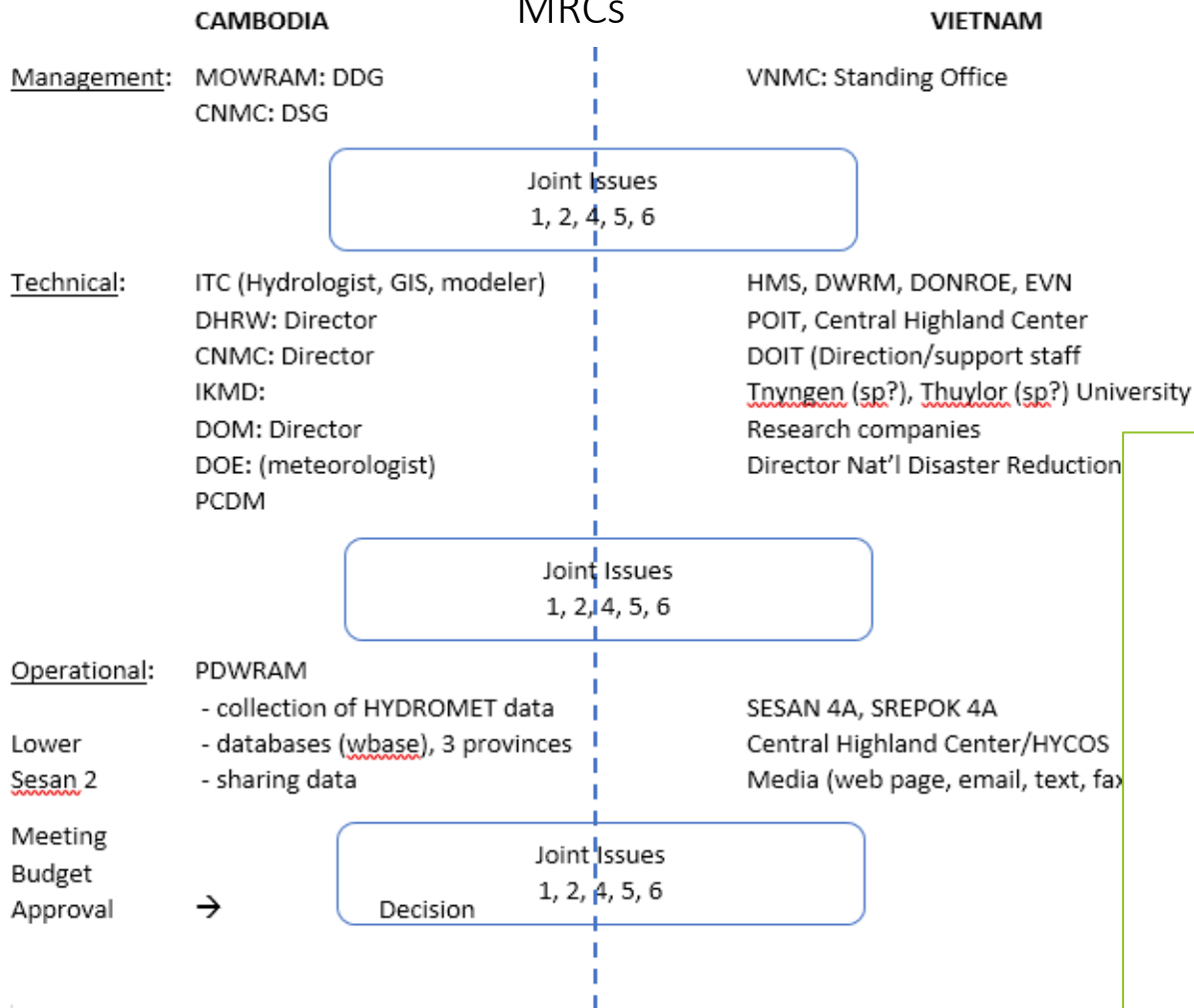
No	JOINT ISSUES	NATIONAL COORDINATION MECHANISM			FUNCTION	FREQUENCY	POTENTIAL MEMBERSHIP
		Type	Instrument	Existing (E) or			
				Potential (P)			
1	Flood and drought strategic planning	Management	River Basin Planning Committee (CNMC, <u>MoWRAM</u> and MAFF)-executive management or Catchment management body	P	<ul style="list-style-type: none"> Practice of long-term vision planning and priority investment planning for the MD and to develop a trans-boundary strategic approach on disaster risk management for both Cambodia and Vietnam. develop and implement joint activities to meet public and business water demands; Development of Flood and Drought strategic and management plans and their measures with the use of indicator systems to follow up 	<ul style="list-style-type: none"> Two times per year 	<ul style="list-style-type: none"> Department directors from both Ministries and Provincial Department directors from provinces in the basin. Inter-Ministerial NIP² Working Group BDP NIP Technical Working Group National Committee for <u>Disaster Management</u> Stakeholders at sub national level (local communities and authorities) and NGOs

Preparation of summary table (Cont's)



Group 2 – 2S

Facilitating by
MRCs



Group 1 – MK DT

Management: CNMC – VNMC (MRC) (Chair)
Provincial (Governor)

JOINT ISSUES

Technical: Provincial line dept
Ministerial line agencies
Consulting companies

Operational: Data Information Exchange
(flow, hydromet, infrastructure plan)
Joint study program

Flood and Drought

Web Based Data Information Exchange
(flow, hydromet, infrastructure plan)
Joint study program

**Environment/Social
Economic Impact**

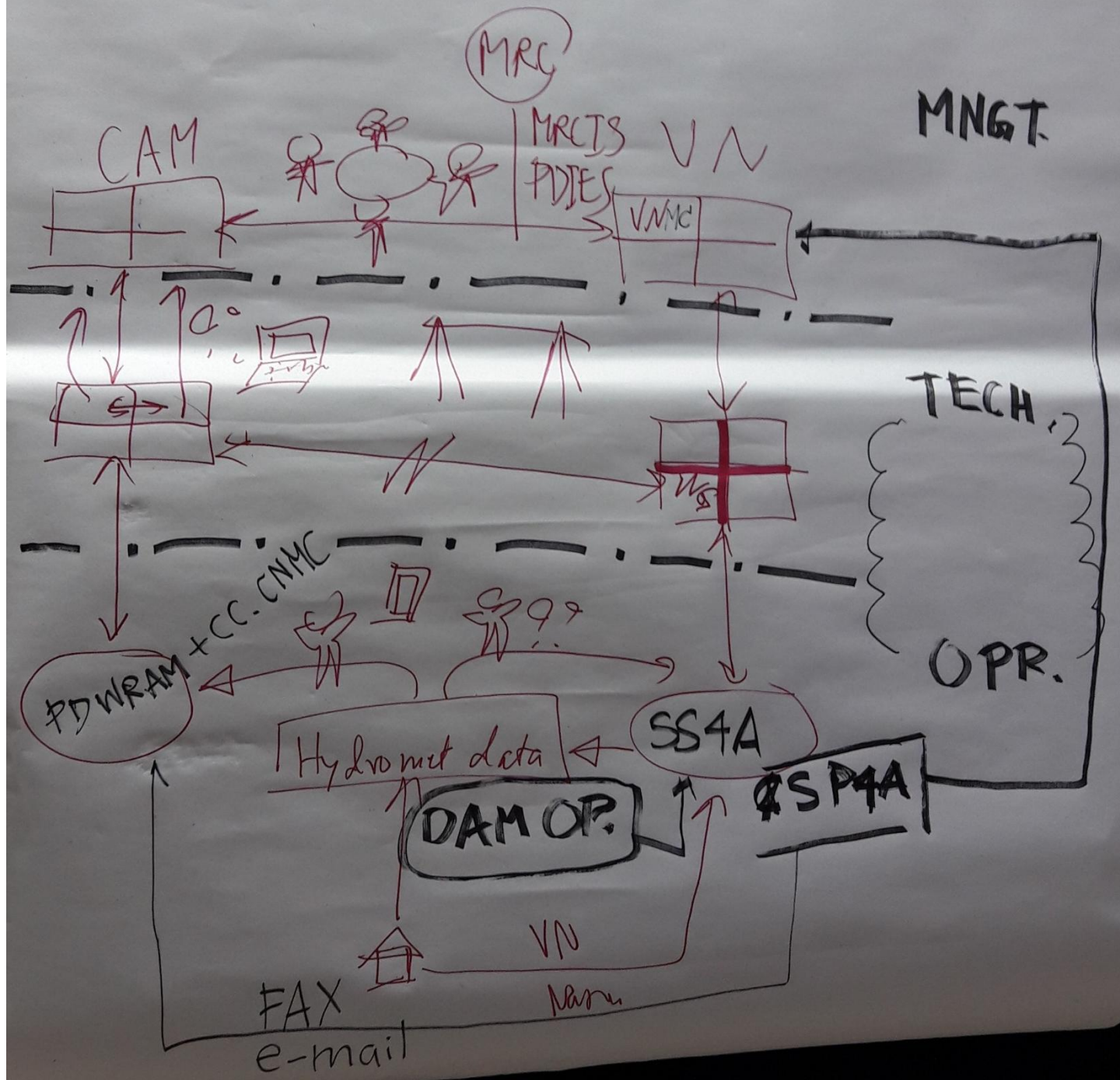
Low capacity
Lack of tools
DSF (DSS)

Capacity Building

National Stake Holders Consultation Meeting

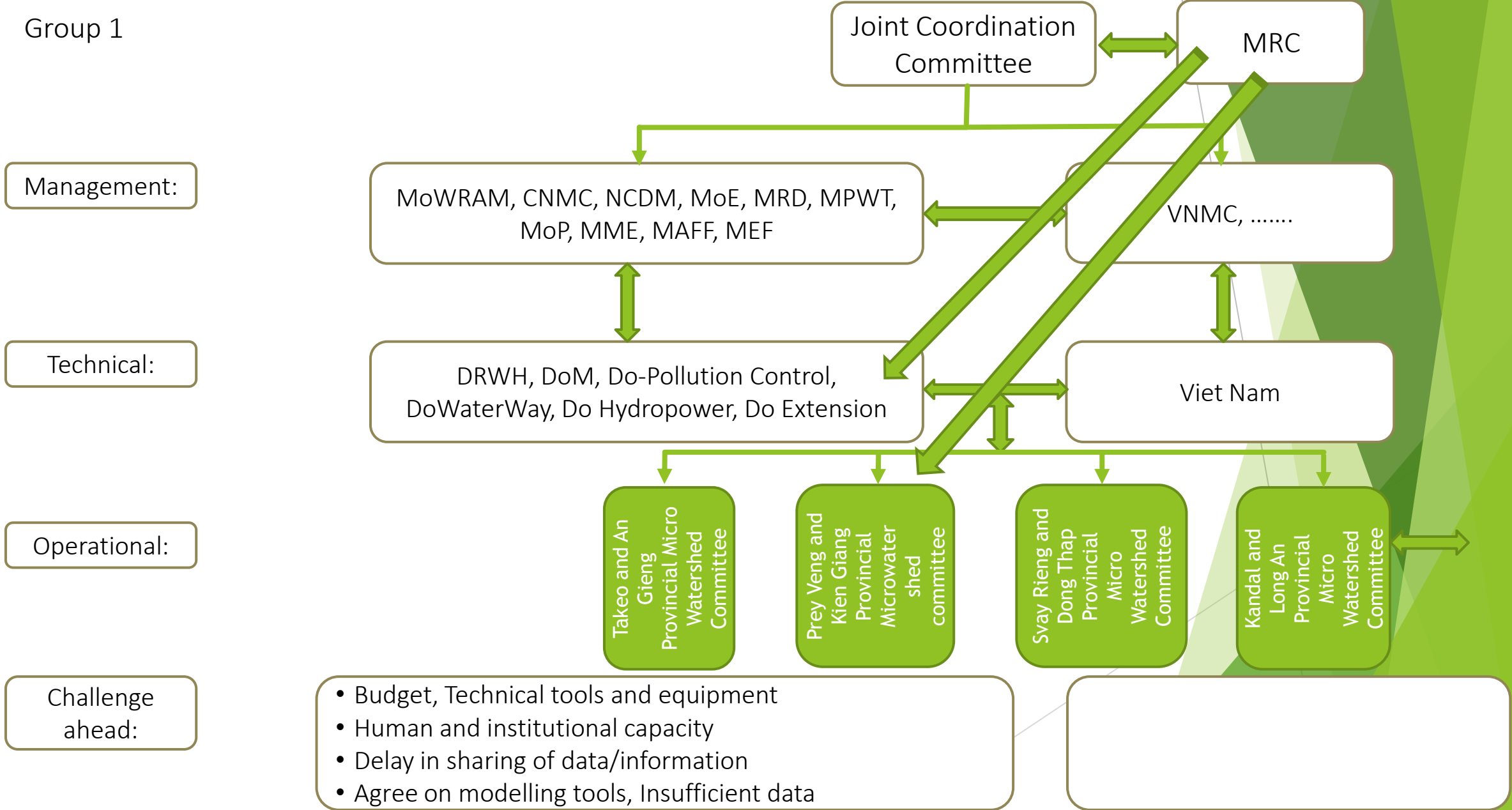
1. On July 12 2017 a National Stake Holders Consultation Workshop was Organized with Stake Holders from Different Line Ministries/Agency for the MD
2. The objective of the Workshop is
 - i. Assess the current situation of the existing coordination mechanism
 - ii. Identification of Type of data and information which have been shared so far between the two countries
 - iii. Identification for the need of type of data and information and the need for coordination mechanism for sharing of the data addressing the joint TSB Issues
 - iv. Identification of the Constraints, difficulties and operational inefficiency of the current mechanism
 - v. Working out for the new propose Mechanism and
 - vi. Provide feeding back from the Joint the Workshop and the Sub National Consultation Workshop





Group Discussion Results from National Stakeholders Consultation Workshop in The MD

Group 1

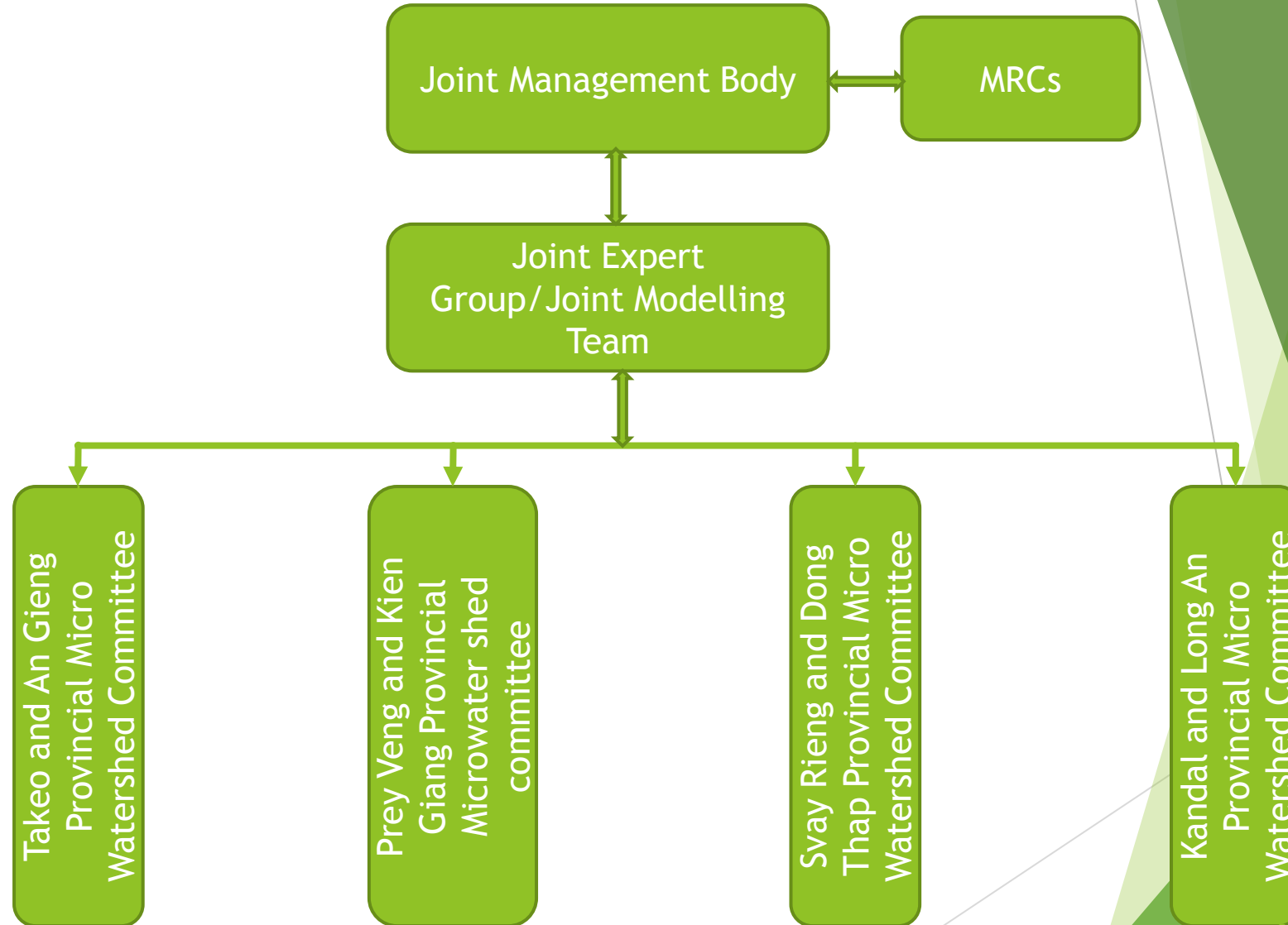


Exercise Templates

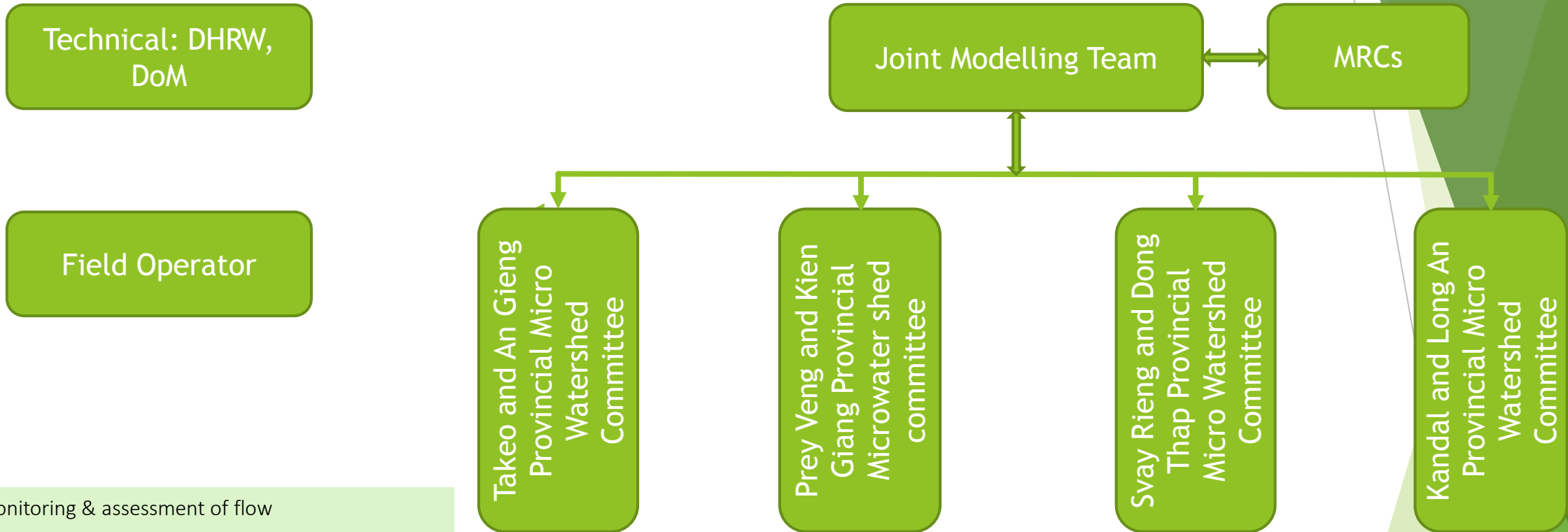
Management

Technical

Field Operators

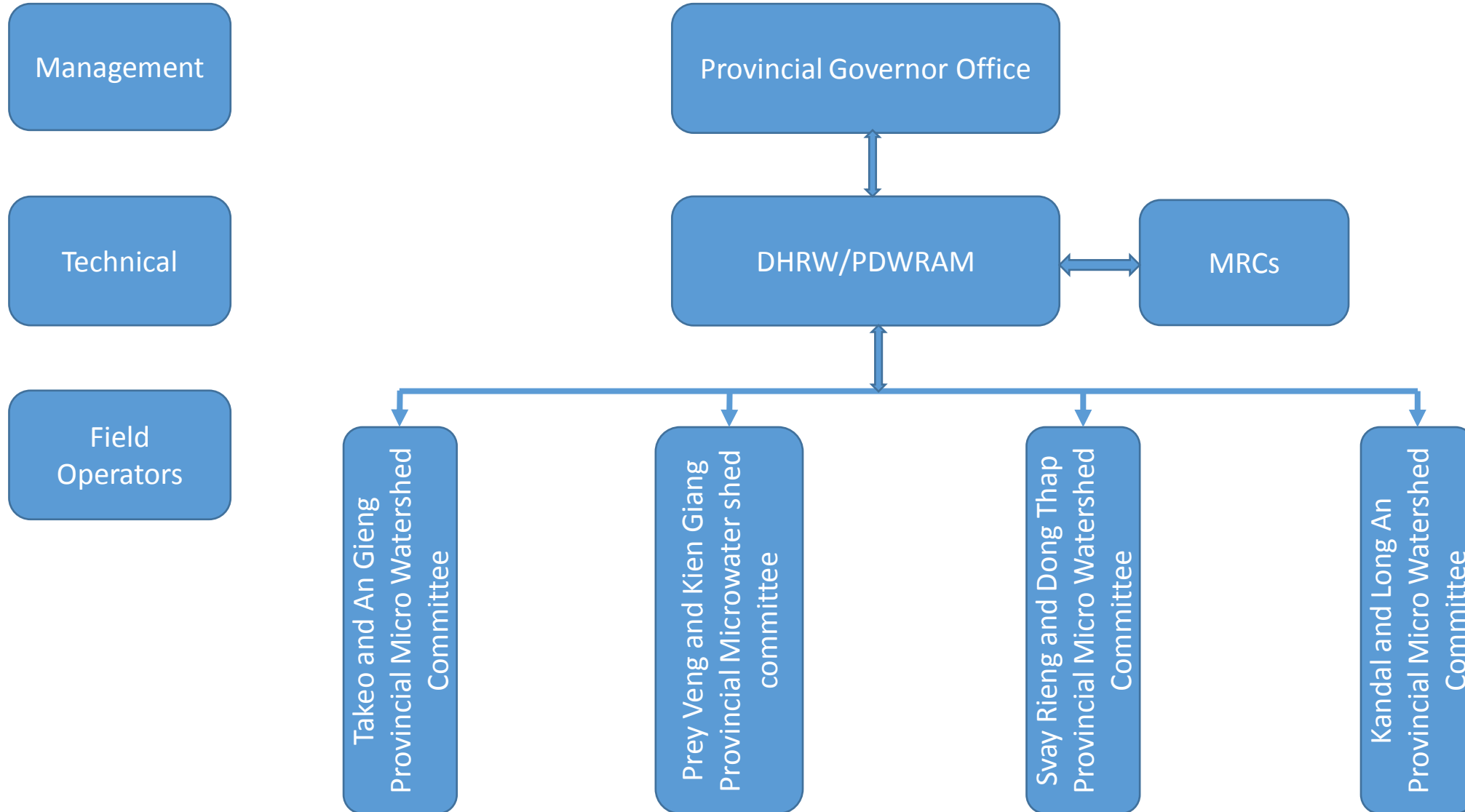


Exercise Templates

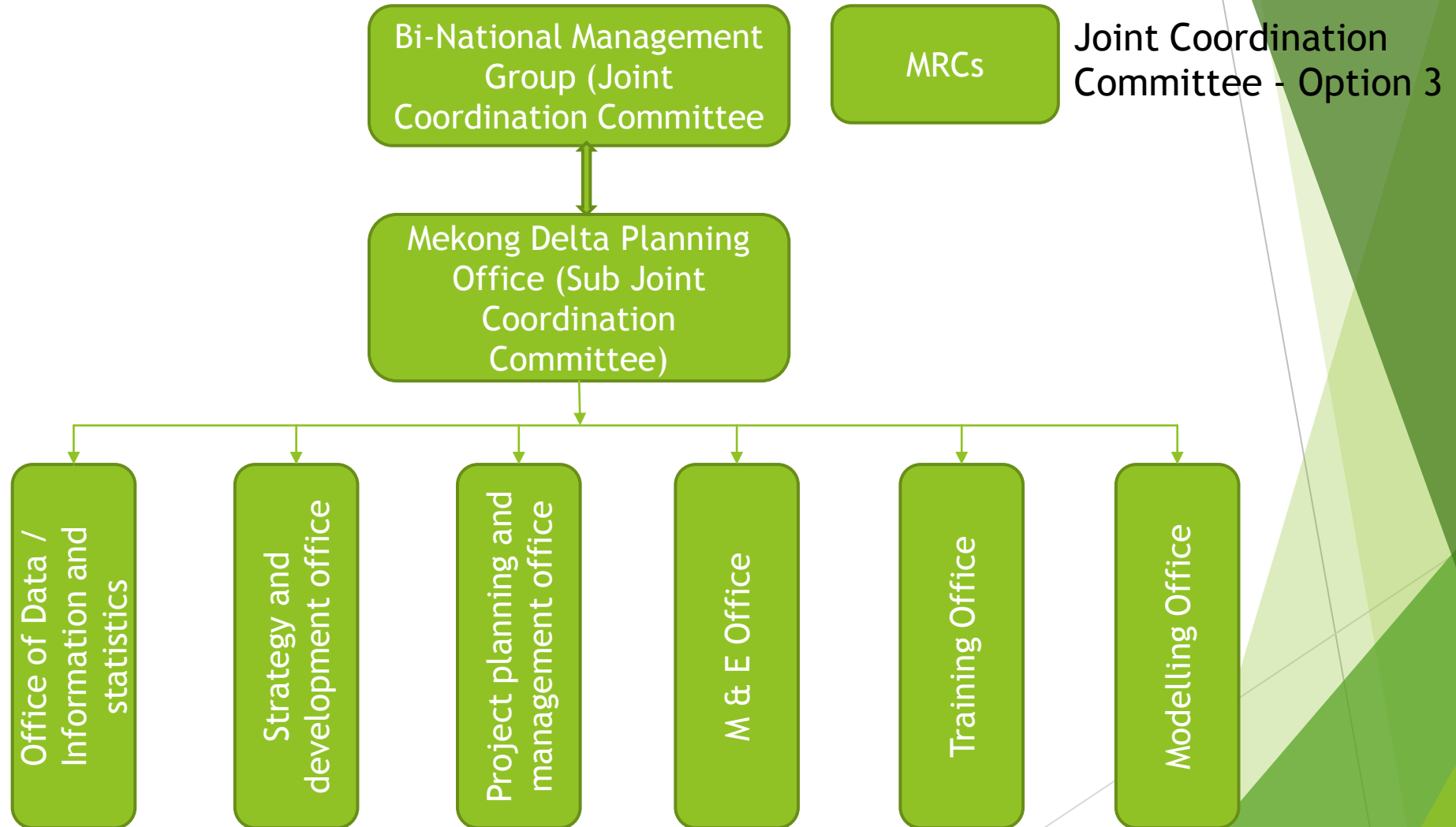


1. Monitoring & assessment of flow
2. Flood forecasting, flood control and flood warning mechanisms
3. Communications and coordination mechanisms on information & data sharing
4. Mitigation measures to address social and environmental impacts
5. Institutional and technical capacity to improve transboundary coordination and
6. Implementation of the navigation agreement between Cambodia and Viet Nam

Provincial Joint Transboundary Coordination Committee (PJTCC)



Joint Coordination Committee



Challenge a head

- ▶ Water resources data and information is still scatted, Monitoring networks are insufficient, data quality is not high
- ▶ Developing and upgrading water Resources monitoring network-Integrated river basins planning and Management,
- ▶ Long term financial investment strategy
- ▶ Information exchange network among the water resources coordination and management agencies for international rivers.-Water resources information system and provide timely and accurate information for the water resources users. -Effective operation of water resources inspection.
- ▶ Level of awareness, skills and technology for integrated water resources management fairly low at both the national and provincial level.
- ▶ Constraints are anticipated concerning long term financial strategy including state budget, international assistance for the operation of the coordination committee



Conclusions

- ▶ The Transboundary rivers of the 2S and the MD are coming under growing pressure from climate change
- ▶ Water security as a framework of adaptation can be achieved on the basis of « hydrosolidarity » which embraces collective action, interdependence, and shared responsibility
- ▶ The approach to collaborative adaptation is IWRM supported by strong management institutions, a high level of cooperation among all interests and continuous adaptation to new conditions
- ▶ If the focus from competing national interests can be shifted to attaining common benefits, then genuine transboundary water security can be achieved and sustained
- ▶ Poverty reduction through cooperation.
- ▶ Shared programs and projects that lead to shared water benefits, e.g. Food security, hydropower sharing, trade --etc.
- ▶ Socio-economic development by managing the natural resources in the whole NB as one unit.
- ▶ Peace and political stability.
- ▶ A forum for NB countries to dialogue
- ▶ Built capacity of water resources sector
- ▶ Addressed development through its SAP
- ▶ Enhanced the knowledge base & information sharing



The Two TSB Projects and the National Projects of both countries should

1. Strengthening Policy, Legal and Institutional frameworks.
2. Joint management of the shared water system to balance competing uses and enabling sharing benefits from the water resources utilization

Forward

- ▶ Build on the successful cooperative initiative for the TSB River Basins to maximize the gain and to bridge the gap and Move together