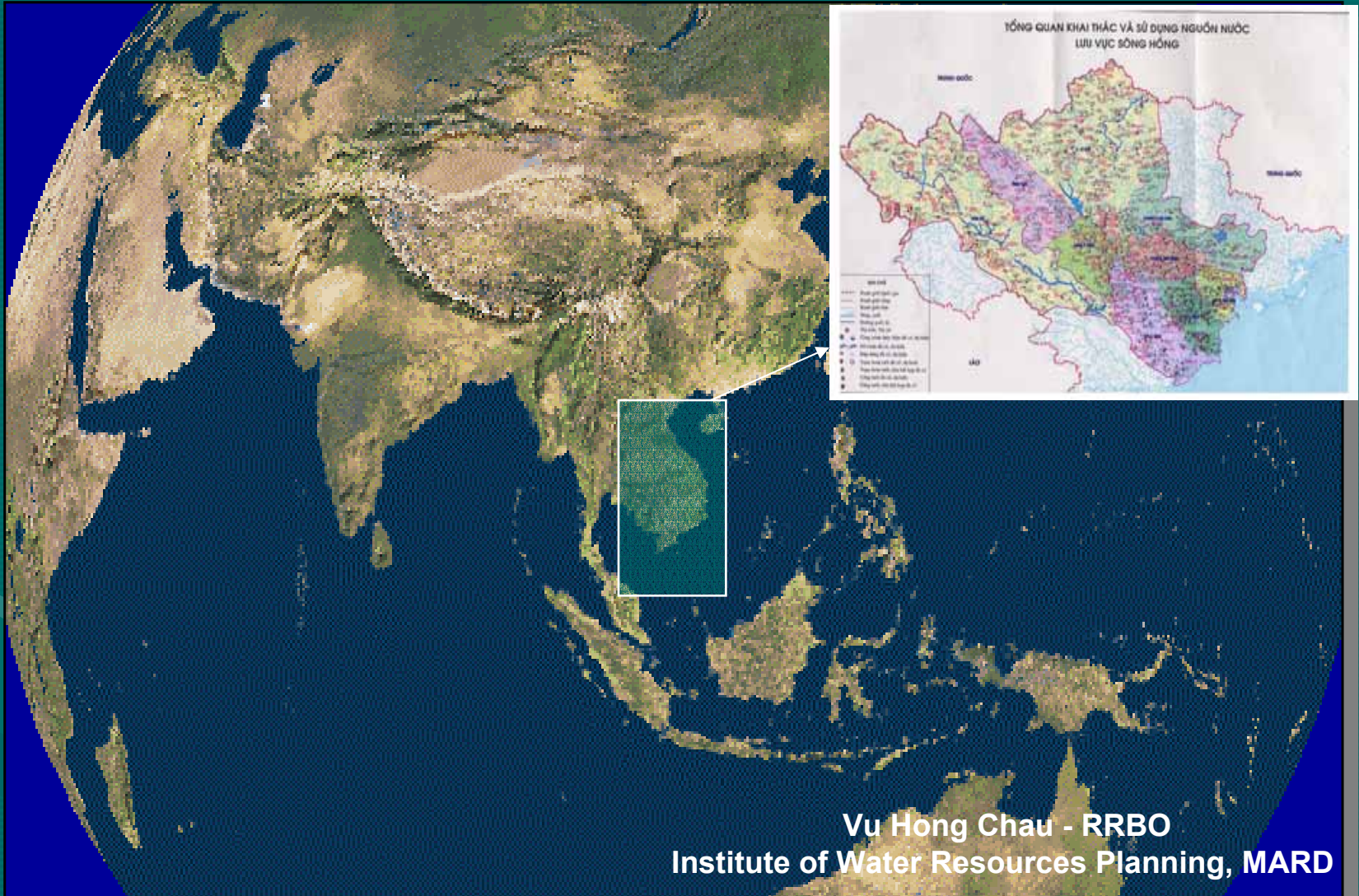


# THE RED RIVER BASIN ORGANIZATION IN INTEGRATED WATER RESOURCES MANAGEMENT OF VIET NAM



- The Red river is the second largest river system in Vietnam.
- This international river originates in China and then flow through Vietnam before reaching the East Sea.
- The entire catchment area of the river is approximately 169,000 km<sup>2</sup> :
  - 81,000 km<sup>2</sup> (48% of the total catchment area) is situated in China.
  - 1,100 km<sup>2</sup> (0.65%) in Lao.
  - 86,600 km<sup>2</sup> (51.35%) in Vietnam.

- The river basin covers 26 provinces in the North of Viet Nam, with a total population of 28 million people (statistics in 2002).
- Land resources of the basin :
  - Agriculture 1.87 million ha, of which 1.46 million ha is cultivated land.
  - Forestry 2.57 million ha
  - The remaining land available for potential future development of additional agriculture and forestry industries is approximately 3.9 million ha.



# Surface water resources

- The average annual surface water volume flowing through the river basin is about 134 billion m<sup>3</sup> of which approximately 52 billion m<sup>3</sup> (or 39%) originates from outside Vietnam.
- The inflow in the basin is not evenly distributed either temporally or spatially :
  - In the flood season : The inflow makes up for 70% of the total annual flow
  - In dry season : Only 30% of the total annual flow
- As a result, there is a shortage of water in the dry season and inundation in the rainy season.
- The current and future water demands of all socio-economic sectors are ever increasing (water for agriculture, industry, concentrated residential areas and rural areas, navigation, aquaculture, tourism, ecosystem and environment).
- As estimated, the total water demands for the current time is 20 billion m<sup>3</sup>, for 2010 is 24 billion m<sup>3</sup>; for 2020 is 29 billion m<sup>3</sup> and for 2040 is 34.5 billion m<sup>3</sup>.

# I.1 Red River Basin Organization

⇒ The Red River Basin Organization (RRBO) was formed in accordance with Decision No. 39 dated 9 April 2001 by the Minister of Agriculture and Rural Development (MARD)



The function of the organization relates to the management of planning of the Red River Basin as per Article 64 in the Law on Water Resource, specifically :

- ✓ To formulate, submit for approval and monitor the implementation of planning for the Red river basin, ensuring the integrated management of river basin planning;
- ✓ To coordinate with related offices in the MARD, sectors and provinces in the basic investigation, cataloging and assessment of water resources in the Red river basin and in the formulation, submission for approval, monitoring of the implementation of plans for the sub river basins belonging to Red river system; and
- ✓ To recommend solutions to disputes relating to water resources in the Red river basin.

## I.2 Organization of RRBO

- ❖ **Chairman : Vice Minister of Agriculture and Rural Development**
- ❖ **Vice-Chairman : Director of Water Resources Department - MARD.**
- ❖ **Members :**
  - **Leaders of Water Resources Department, Flood and Storm Control and Dyke Management Department, Institute of Water Resources Planning...**
  - **Leaders of Department of Agriculture and Rural Development (DARD) of provinces and cities in Red river basin**
  - **Leaders of related departments involved in water resources management in different Ministries : Natural Resources and Environment, Science and Technology, Industry, Fishery, Construction, Transportation and Communication, Health and Defence...**

# Responsibilities of agencies in water resource sector

<b>Responsibilities</b>	<b>Ministry/sector</b>
State management for water resources	Ministry of Natural Resources and Environment
Irrigation	Ministry of Agriculture and Rural Development
Drainage	
Flood and storm control and prevention	
Supply water for rural areas and small towns	
River basin management (forestry)	
Land use management (agricultural land)	
International cooperation on water resources management	Mekong river delta : Ministry of Agriculture and Rural Development as chairman, together with representatives from different Ministries.
Urban water supply and drainage	Ministry of Construction
Collecting data meteorology and hydrology, quantity and quality of surface water and ground water and other water related data.	Ministry of Natural Resources and Environment Ministry of Agriculture and Rural Development Ministry of Science and Technology Ministry of Industry Other Ministries/Sectors
Water quality	Ministry of Natural Resources and Environment Ministry of Agriculture and Rural Development Ministry of health
Hydropower and operation of reservoirs	Ministry of Industry Ministry of Agriculture and Rural Development (operation of large reservoirs during the flood season)
Allocating budgets for planning as well as international investments and assistance.	Ministry of Finance Ministry of Planning and Investment
Water ways and navigation	Ministry of Transportation
Criteria and regulations for clean/drinking water	Ministry of Health

## III.1 Management of Planning Activities

- Carry out investigations and field trips, work closely with provinces and to assess the positive aspects as well as problems found in management, exploitation and use of water resources in the river basin.
- Collect and synthesize the database of water resources in the basin (meteorological and hydrological data, data on livelihood development, hydraulic works data and other information relevant to the study and management of water resources in the river basin).
- Coordinate and provide support to provinces who organized workshops in the framework of ADB project, Component of “Capacity building for RBBO”.
- Participate in the decision making process of the Government regarding the scope of large scale hydropower works of Son La and Tuyen Quang.
- Appraise projects relating to the exploitation of water resources in the Red River basin

- **Coordinate with provinces and other members in RBBO in the organization of all workshops. The organization also summarize a lot of recommendations on how to improve the operation efficiency and capacity of the organization and define the problems in the utilization and protection of water resource in the river basin. The planned activities for years to come are also proposed.**
- **to establish website for the IWRP and RRBO**
- **to launch linkage activities with provinces located in the river basin and to explore the possible formation of sub river basin organizations under the mechanism of the RRBO**
- **to execute inter - sectoral coordination activities by requesting various ministries and sectors to join in the study and field investigation; reporting process and discussion in order to outline the plans for effective organization, exploitation and management of water resources**



## III.2 Problems in management of water resources planning in RRB

- ❖ The planning activities of provinces located in the river basin are not well coordinated and synchronized in the river system.
- ❖ The river basin planning failed to catch up with current socio-economic development speed in the Red river basin.
- ❖ The planning and management of planning activities require better participation of stakeholders.
- ❖ The planning and management of planning activities require more inspection and stricter monitoring activities in a frequent, continuous and legal manner.
- ❖ The planning and management of planning activities require better directions and uniform coordination from the central to local levels. The support of the central level and the mutual assistance among provinces in the same basin are very necessary.

- ❖ The areas which are potential for development yet in lack of economic resources like mountainous or far upstream provinces should be placed high priorities of development.
- ❖ This is also a new organization arrangement in Vietnam so the execution approach is gradually completed.
- ❖ Some functions and mandates of the RRBO are not well defined.
- ❖ The budget for the activities of RRBO is limited. As a result, the organization is facing a lot of challenges when many activities can not be launched.

## IV. Future challenges

- ❖ Water resources are being deteriorated and are under continuous impacts of deforestation, pollution and global climate changes. Natural disasters as floods, storms, saline intrusion, inundation, tide, water resource contamination are ever increasing at extreme rate.
- ❖ Rapid growth of the economy will result in increasing demands of water of many socio-economic sectors. More and more disputes related to water use will be seen among various sectors.
- ❖ The population increase and living quality are pressing in coming decades. The population boom requiring better living standards means more water will be needed for production and daily living activities.
- ❖ The conflicts in water rights among riverine nations are expected to deepen. The increasing conflicts in water rights relate to the water use between provinces or even between different systems, either small or large scale.
- ❖ The required investment in water resources development for period 2010 - 2020 would too large for the government to meet using its national budget.
- ❖ The water resources management mechanism is being executed by more than one Ministry or sector.

## **V. Key issues to be solved in near future**

### **V.1 Organization and management should be strengthened**

- ❖ The strengthening of water resources planning development requires the coordination among different Ministries and sectors so that the water resources plans for various river basins and economic regions can be formulated and completed. This will help meet water demands of all economic sectors for sustainable development.
- ❖ Formation of legal documents : Inter-ministerial Circulars and Decisions by MARD regarding procedures and specifications of hydraulic structures; inter-sectoral inspection on water resources and hydraulic structures; legal documents regulating water price; regulations on licensing the discharge of sewage into hydraulic structures; building a propaganda for laws on water resources and hydraulic structures.

- ❖ **MARD and Ministry of Natural Resources and Environment will carry out in full manner their functions and mandates regarding the management of water resources in river basin, integrated exploitation and use of water resources and construction of hydraulic structures, controlling natural disasters.**
- ❖ **Building capacity for Irrigation Management Companies; improvement of management methodology and operation mechanism; formation of water user groups and establishment of their operation regulations.**
- ❖ **Completion of water policies including investment policy on construction and upgrading of hydraulic structures or mobilization of different sources of fund; financial policies on water; community favored policy; participation irrigation management; incentive policies encouraging the development of technology and science.**
- ❖ **Information sharing among sectors and provinces.**

## V.2 Scientific and technological activities

- ❖ **Water resources and environment protection:** to apply advanced technologies and software for database set up, for water resources investigation and assessment, water demand projection and water balance, flow regulation and hydropower development
- ❖ **Irrigation and land reclamation:** to study into suitable and advanced technical solutions to effectively develop water resources in mountainous and coastal areas; to apply economic irrigation techniques for upland crops in midlands and mountains.
- ❖ **River training, flood control and natural disaster mitigation:** to apply and develop technologies and calculation software for flood regulation, flood identification, multi-purpose reservoir operation, riverbed changes, flash flood forecast and protection measures.

- ❖ **Infrastructure design, construction and rehabilitation :** to introduce calculation software, modern equipment and tools for investigation, design; to finalize and widely apply models of infrastructure which have been successfully tested; to introduce new technologies, structures and materials.
- ❖ **Hydraulic mechanic equipment :** to fabricate and install different types of pumps; to apply advanced equipment to dredge canals and rivers; to install water measurement devices, automatic operation and remote control device; to manufacture types of turbines and equipments for small hydropower plant.
- ❖ **Water resources management :** to study into scientific basis for renovation of management mechanism and forms, to finalize policies on water resources and water resources management.

## V.3 Human resources development and training

- ❖ To develop new disciplines, upgrade training programs and contents
- ❖ To create a balanced and suitable proportion of technical staff, researches, management staff and skilled workers
- ❖ To diversify training forms : refreshment, postgraduate training, post-doc training with emphasis on management staff and planning implementing staff in localities



## V.4 Focused investments and complete Construction of hydraulic systems

- ❖ Investment plan preparation: to approve water resources planning in order to draw out list of approved structures and their investment priority; to prepare a focused investment plan for 5 year-period, for 1 year-period to ensure realization of socio-economic development objectives of the country and each region in each period
- ❖ To focus on upgrade and modernization of existing hydraulic systems for specific items such as headwork, canal systems, regulator and operator installation so that those systems can fully operate at the designed capacity and improve their performance.

- ❖ **To invest in completion of each hydraulic system : for new systems, complete investments in from headwork to distribution network for the purpose of fully operate at the designed capacity and avoid wastes**
- ❖ **To exploit potentials of hydraulic systems to generate incomes for the sector development; to invest in construction of new hydraulic works not only to ensure stability and effectively serve production but also to ensure multipurpose, aesthetic, landscape nature of structures in order to generate incomes for operation and maintenance and water resources development**
- ❖ **To integrate agricultural-forestry-rural development programs into water resources development and natural disaster mitigation programs**

## **V.5 Strengthening international cooperation**

- ❖ To extend international cooperation in the fields of water resources and hydraulic work development and management to learn experiences, knowledge for possible application into water resources development and management
- ❖ To take advantage of cooperation, technical and financial supports provided by international organizations such as WB, ADB, JICA, DANIDA, etc for water resources development and protection

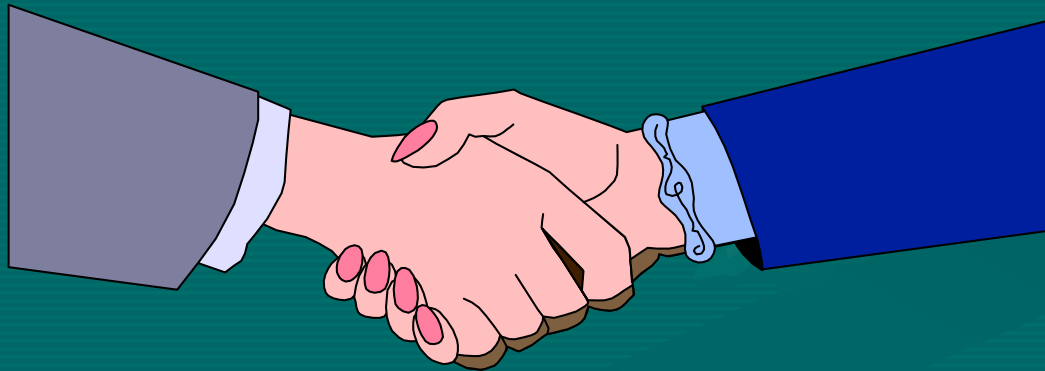
## **V.6 Promoting community participation**

- ❖ **Towards socialization of water resources development and management with the motto “Government and people do together” to bring national and social strengths into play, at the same time to encourage domestic and foreign investors**
- ❖ **To intensify public communication, education and awareness raising to involve community in water resources and hydraulic work management**

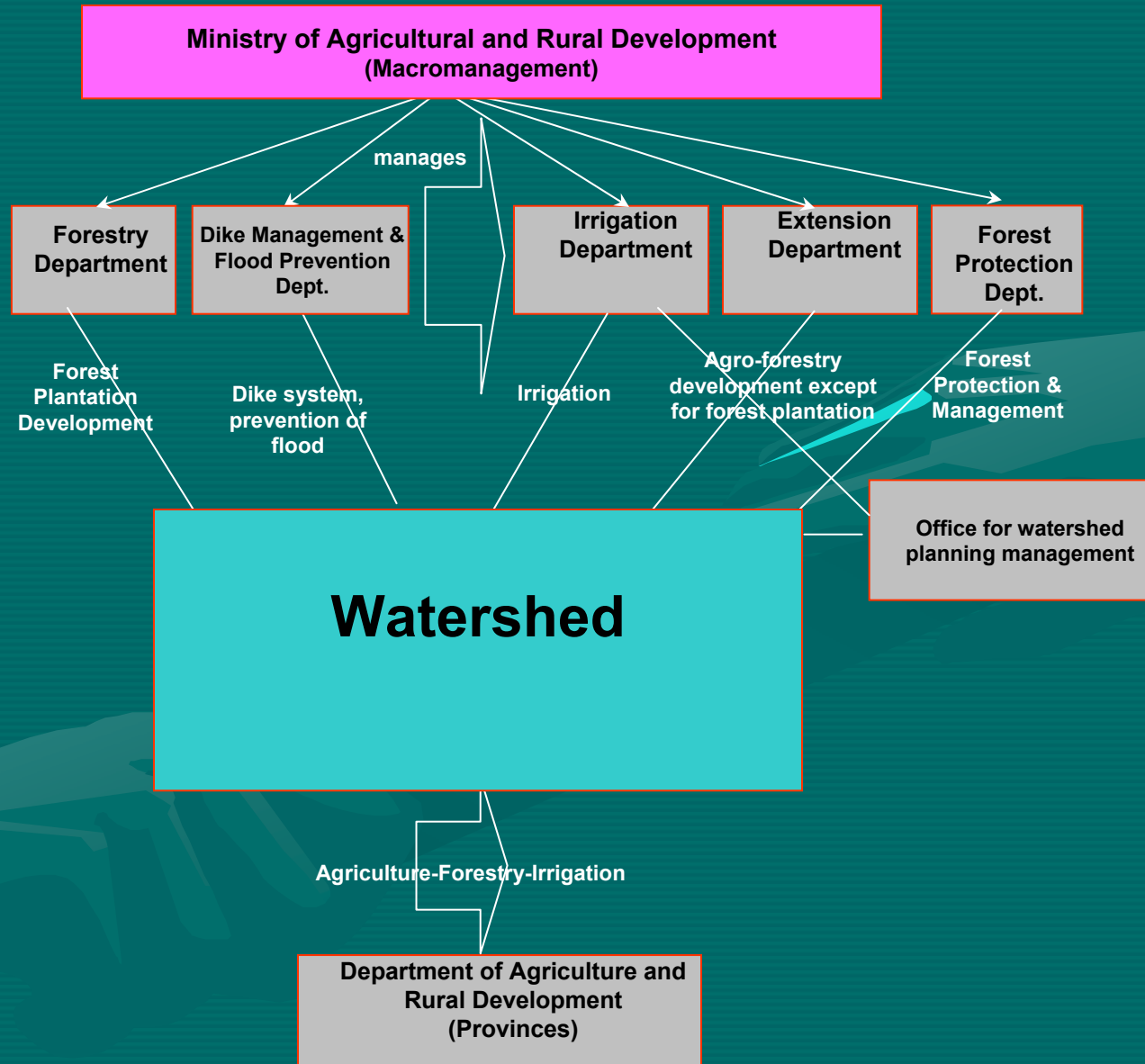
## **V.7 Solutions for capital mobilization**

- ❖ To coordinate with relevant Ministries and sectors to develop a suitable and effective capital mobilization mechanism in conformity with economic development trends in order to mobilize all financial resources
- ❖ To fully use financial resources from the state budget, loans provided by foreigners, nationals and beneficiaries themselves.

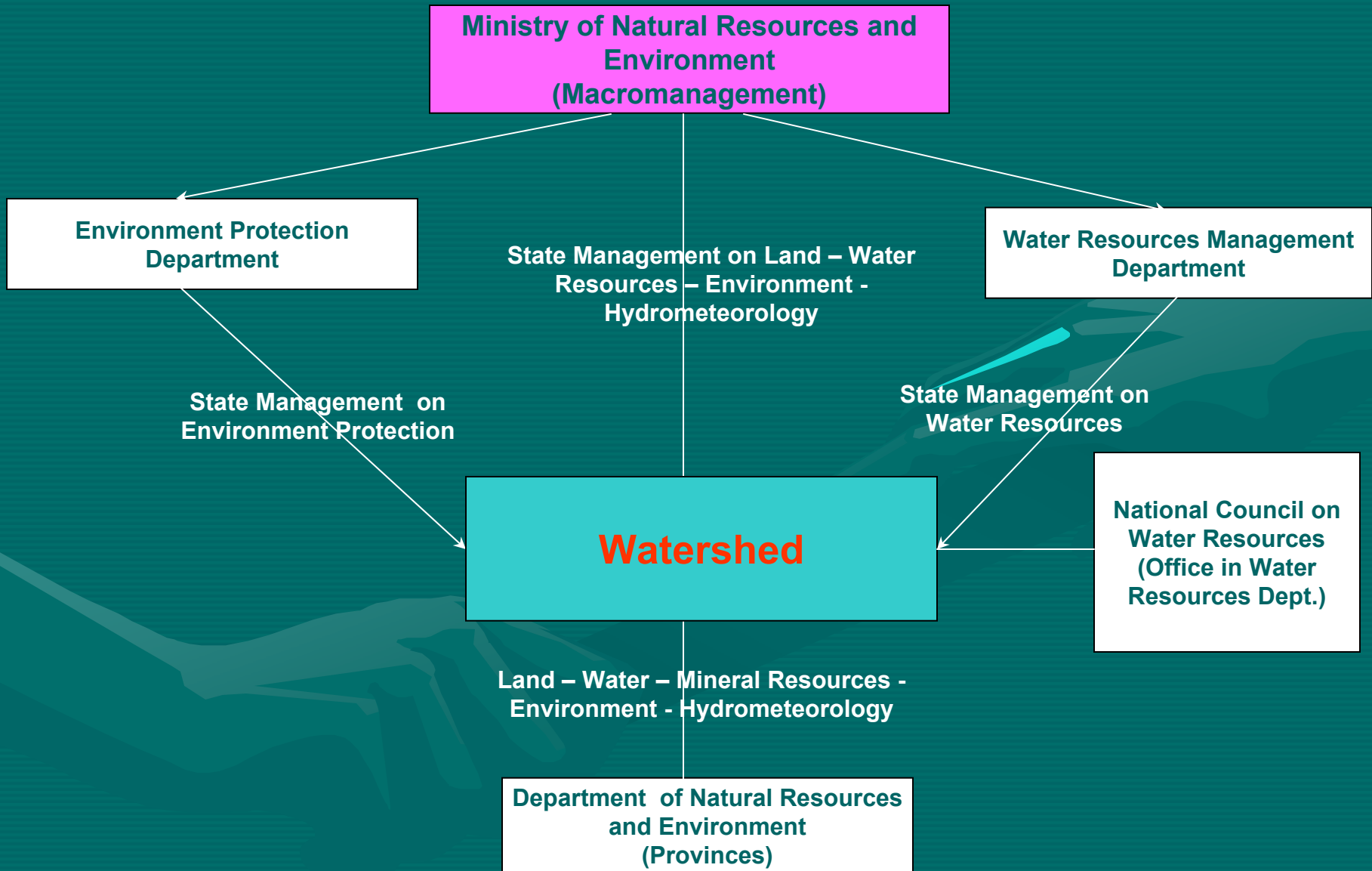
# Thank you for your attention



# MARD management on watershed

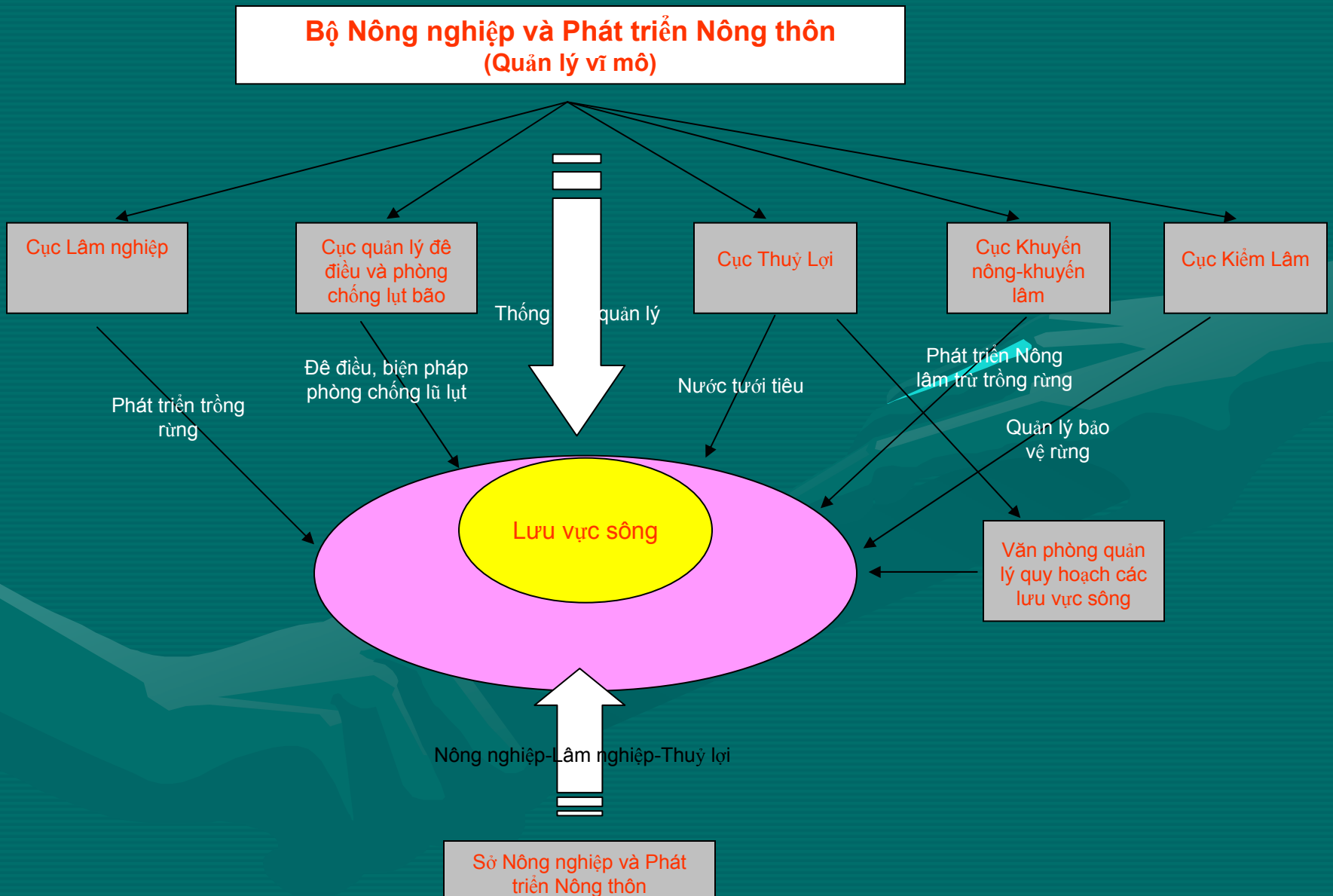


# MONRE management on watershed

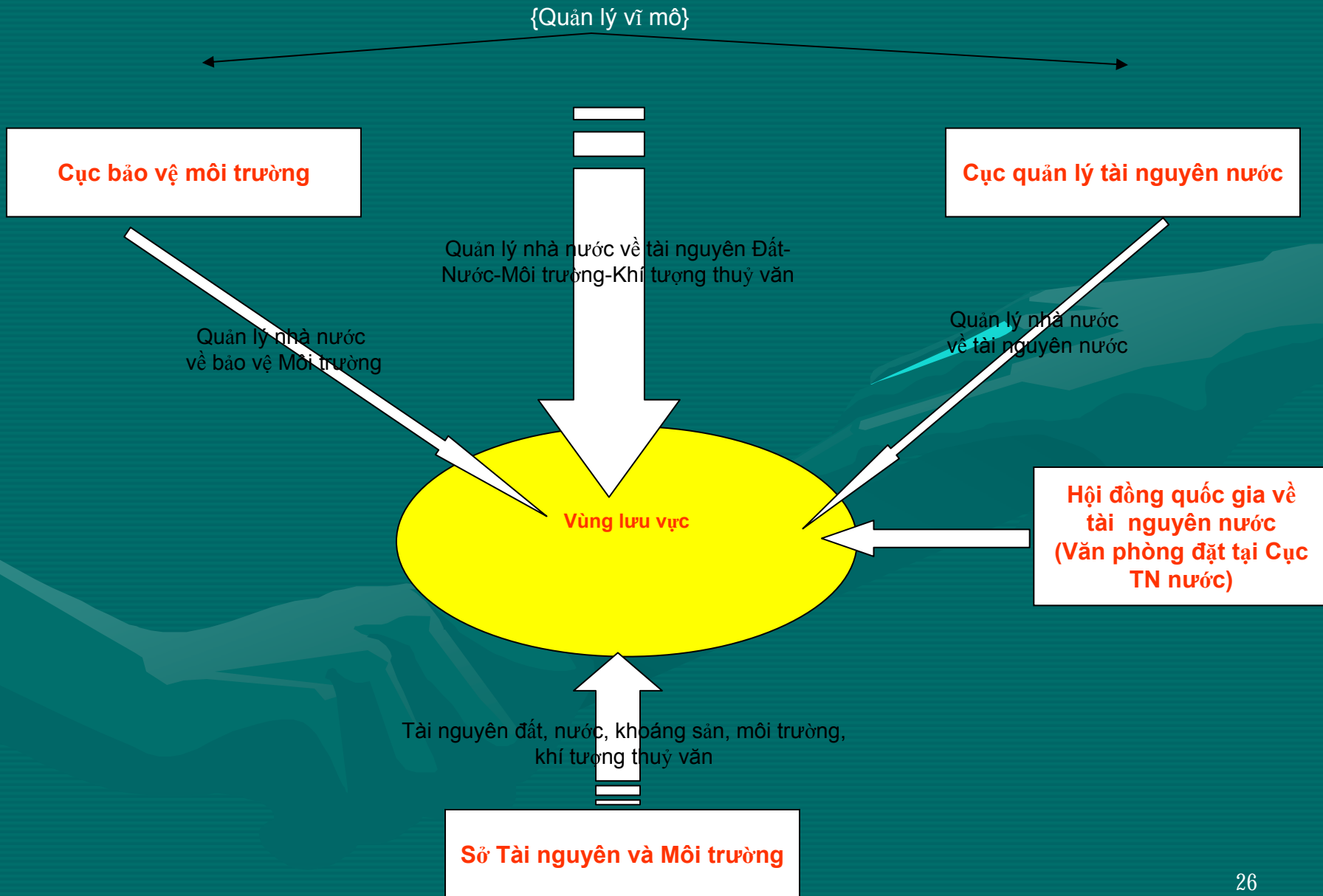




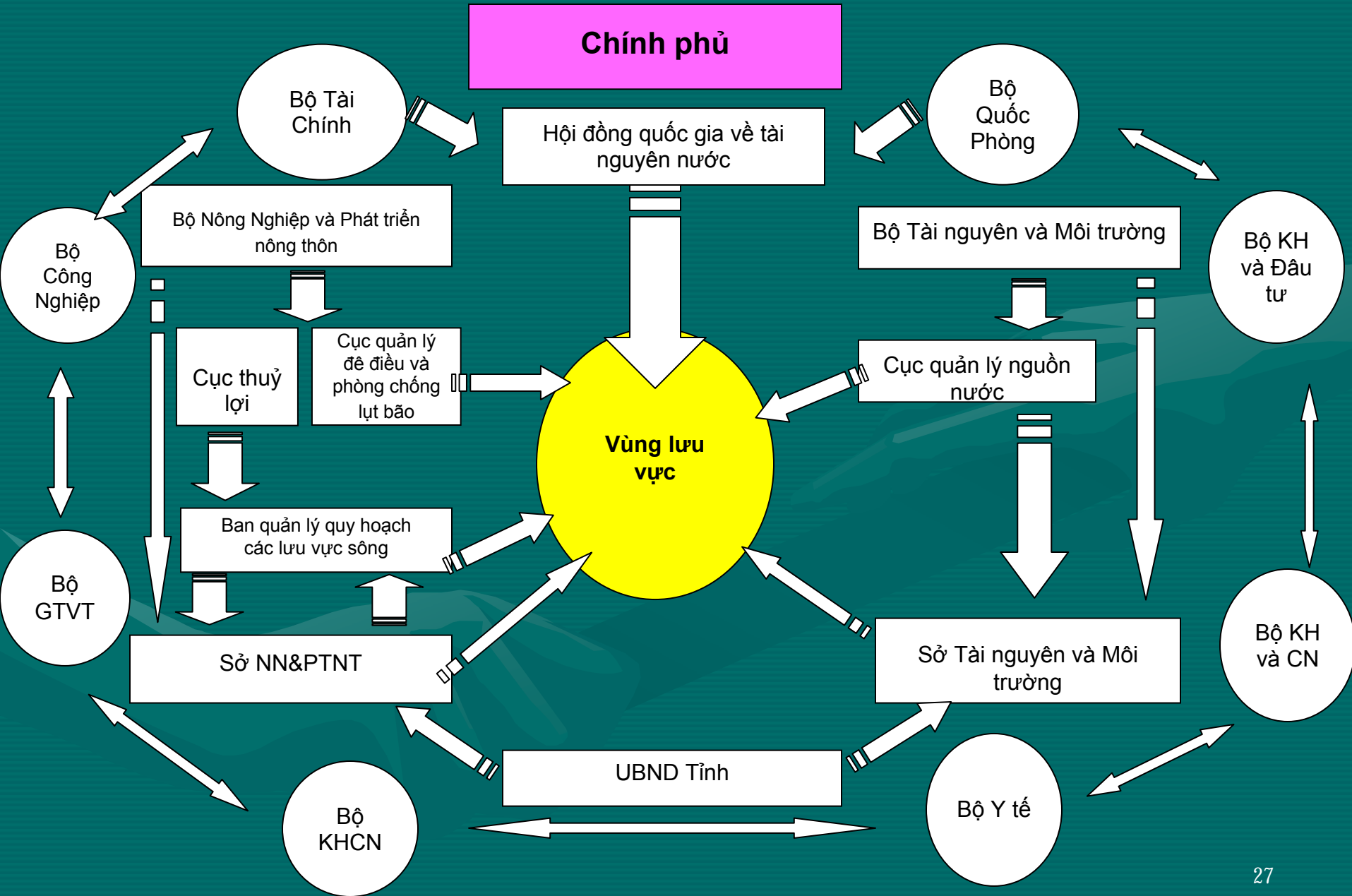
# Quản lý của Bộ NN&PTNT liên quan đến lưu vực



# Quản lý của Bộ TN&MT liên quan đến lưu vực Bộ Tài nguyên và Môi trường



# Quản lý vùng lưu vực của Việt Nam



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