

NATIONAL POLICIES ON SUSTAINABLE MANAGEMENT, PROTECTION, EXPLOITATION AND USE OF WATER RESOURCES

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CONTENT OF PRESENTATION

1. Introduction of some general information on water resources of Viet Nam – the importance of water resources to food security, energy – hidden risks of water resources of Viet Nam .

2. National policies on management, protection and use of water resources.



WATER RESOURCES OF VIET NAM

1. Storm water resource

- The average rainfall is about 1,960 mm / year, of the countries with high rainfall in the world and the region

2. Surface water resource

- 108 river basins (13 large river basins),
- 3,450 rivers and streams of >10km, including:
 - + 392 inter-provincial rivers and streams
 - + 3,045 intra-provincial streams and rivers
 - + Approximately 72% of river basins are outside the country and 63% of surface water flowing in from abroad (Mekong River and Red River)



WATER RESOURCES OF VIET NAM

- Reservoirs:

- + The country has nearly 6,000 large and small reservoirs, in which about 3,000 lakes with capacity from more than 0.2 million m³, the total capacity of over 65 billion m³ (approximately 2,100 lakes are currently operating, W> 34 billion m³ of water; 240 lakes under construction, total W> 28 billion m³).
- + Private hydropower reservoirs have a total capacity of about 56 billion m³ (accounting for 86% of total water storage capacity of the reservoirs).

3. Groundwater resource

The total volume of groundwater, excluding the islands is about 2,000 m³ /s, equivalent to about 63 billion m³ per year

Water Resources to Food and Energy Security


- Water for food security

Viet Nam has:


- 26.7 million hectares of agricultural land, of which:
 - + 3.8 million ha of wet rice cultivation
 - + Nearly 23 million hectares of crop land, fruit trees, crops and aquaculture

- Water for energy security

Vietnam has about 1,000 big and small hydropower projects, with a total installed capacity Nlm of about 24.000MW. Currently hydropower is accounted for nearly 40% of the country's electricity energy.



■ **Water Resources of Viet Nam emerging unsustainable factors**

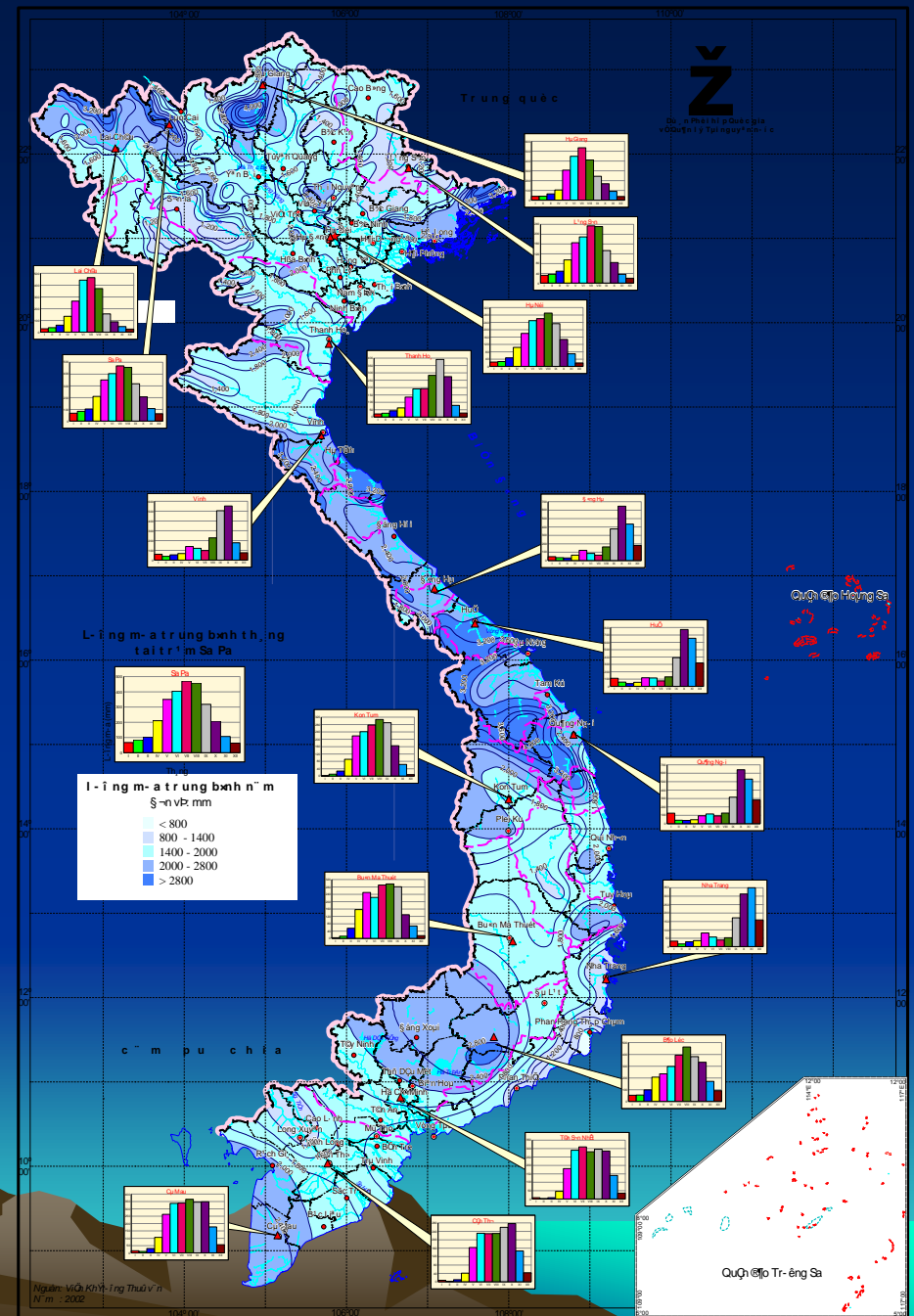
- (1) The amount of surface water depends heavily on foreign countries
- Approximately 63% originates in other countries
 - Over 70% of the catchment area outside the national territory.
- (2) Water resource unevenly distributes among regions: Above 60% is concentrated in the Mekong Delta (Mekong basin), the remaining territory of 40% but only account for approximately 80% of the country population and over 90% of production, business and services. Especially, in South-eastern region and Dong Nai- Saigon river basin, the average amount of water per capita is only about 2,900 m³/person/year, equivalent to 28% compared to the national average.
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Water Resources of Viet Nam emerging unsustainable factors (continued)

(3) Water resource uneven
distributes over time in the
year:

Average water in 3-5 months
of flood season accounts for
70-80%, while in 7-9 months
of dry season only accounts
for 20-30% of water of the
year

bản đồ l-ĩng m-a trung bình n"m



Water Resources of Viet Nam emerging unsustainable factors (continued)

- (4) Pollution, degradation of water resources is increasing severely:
 - High economic growth, urbanization → contaminated water sources, degradation, depletion of water resources are becoming popular ...
 - Deforestation, land use, cultivation → loss of aquatic resources
- (5) Exploitation and use of national water upstream is increasing powerfully (Mekong River, Red River) → strong impact to water resources of Vietnam ...
- (6) Climate change is increasing clearly (floods in the Central region, droughts spreading across the country ..., deep saltwater intrusion in coastal areas)



NATIONAL POLICIES ON SUSTAINABLE MANAGEMENT, PROTECTION, EXPLOITATION AND USE OF WATER RESOURCES

The major policies of the State on water resources (specified in Law of Water Resources 2012)

1. To ensure that water resources are managed, protected, exploited and used in a rational, economical and effective manner, meeting the requirements for sustainable socio-economic development and national defense and security assurance.
2. To invest in and organize basic survey and planning of water resources; to build water resource observation and surveillance systems, water resource information and database systems; to raise the capacity of forecast about water resources, water resource pollution, flood, inundation, drought, seawater intrusion, sea level rise and other harmful effects caused by water; to support the development of water sources and building of water resource infrastructure facilities.

NATIONAL POLICIES ON SUSTAINABLE MANAGEMENT, PROTECTION, EXPLOITATION AND USE OF WATER RESOURCES

3. To prioritize investment in the prospecting, exploration and exploitation of water sources, to adopt incentive policies for water exploitation projects aiming to supply domestic and production water to inhabitants in mountainous, ethnic minority and border areas, islands, areas with socio-economic difficulties or special socio-economic difficulties or areas facing freshwater scarcity.

4. To invest and support the exploitation and use of water resources for agriculture production.



NATIONAL POLICIES ON SUSTAINABLE MANAGEMENT, PROTECTION, EXPLOITATION AND USE OF WATER RESOURCES

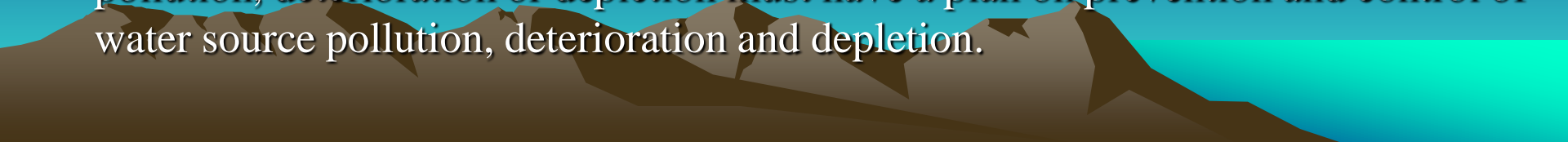
5. To invest in and adopt mechanisms to encourage organizations and individuals to invest in researching and applying advanced sciences and technologies in order to manage, protect and develop water sources, economically and effectively exploit and use water resources, treat wastewater up to standards and technical regulations for re-use, process saline water and brackish water into freshwater, collect and use rainwater, supply artificial groundwater, rehabilitate polluted, deteriorated or depleted water source, and prevent, control and remedy harmful consequences caused by water.

6. To assure state budget funds for activities of basic survey and planning of water resources, protection of water resources, and prevention, control and remedy of harmful effects caused by water



NATIONAL POLICIES ON SUSTAINABLE MANAGEMENT, PROTECTION, EXPLOITATION AND USE OF WATER RESOURCES

Law of Water Resources stipulates:

1. The exploitation and use of water resources must comply with approved water resource master plans;
 2. It is prohibited to build new hospitals and medical establishments treating contagious diseases, cemeteries, waste burials, establishments producing hazardous chemicals and production or processing establishments generating hazardous wastewater within water source protection corridors.
 3. The construction of economic zones, industrial parks, export processing zones, hi-tech parks, industrial complexes, urban centers, concentrated residential quarters, tourist resorts, recreation and entertainment centers, waterway routes, roads, underground works, water supply and drainage works, mineral mining facilities, power plants, wastewater storages, production, business and service establishments and other establishments which are likely to cause water source pollution, deterioration or depletion must have a plan on prevention and control of water source pollution, deterioration and depletion.
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NATIONAL POLICIES ON SUSTAINABLE MANAGEMENT, PROTECTION, EXPLOITATION AND USE OF WATER RESOURCES

4. Organizations and individuals that invest in water recycling or reuse, rainwater collection and use, and use of water desalinized from brackish water or saline water or invest in water conservation equipment and technologies are eligible for soft loans and tax exemption and reduction in accordance with law.

5. The exploitation and use of water sources for hydropower generation must ensure integrated and multiple-purpose use, except for water exploitation and use on a small scale.

6. Organizations and individuals that exploit water resources shall pay money for the grant of the right to exploit water resources if:

- a) They exploit water for power generation for commercial purposes;
 - b) They exploit water for non-agricultural business, service or production activities;
 - c) They exploit groundwater for industrial tree plantation, cattle farming or large-scale aquaculture.
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