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WATER INFORMATION SYSTEMS DONG NAI RIVER BASIN

CONTENT

- 1. Context of water data management in Vietnam**
- 2. Existing status of water data management in DONGNAI river basin**
- 3. Recommendations for the development of national water information systems**
- 4. Water information system in DONGNAI river basin**
- 5. Conclusion**

1. Context of water data management in Vietnam

a. Legislative context of the water data management

- **Decree 162**: Decree of the Government /Promulgating the Regulation on Collection, Management, Exploitation and Utilization of Water Resources Data and Information
- **Decree 120**: Decree on river basin management
- **Decree 25**: Decree on the functions, responsibility, authority and the organizational structure of the MONRE
- **Decisions related** to MONRE department organization (Decision 1035 : DWRM; Decision 62 : CWRIE; Decision 816 NAWAPI, ...)

1. Context of water data management in Vietnam

b. The directions set out in Decree No. 120 on water data management in Vietnam

- Access to information on the status, evolution and uses of the water resource is a major challenge for any water policy
- Water data management is a key issue and highly appreciated in Decree No. 120 issued on 1/12/2008

1. Context of water data management in Vietnam

c. Basic contents of water resources data management in Vietnam (*Decree No. 120*)

- Article 3: Definition and identification of key data needed to be collected
- Article 5: Construction of databases on the environment and water resources of the river basin
- Article 6: List of river basins
- Article 8: The main contents of the basic investigations on environment and water resources of river basin (in this article, listing maps and data needed to be collected)
- Article 9: Organize basic investigation on environment and water resources of river basin

1. Context of water data management in Vietnam

d. Data collection and processing by theme (Article 8, *Decree No. 120*)

- Basin characteristics (location, size, area ..)
- Water resources quantity and quality,
- Existing exploitation and use status of water resources
- Wastewater discharges,
- Economic-social characteristics,
- Specific environmental characteristics

1. Context of water data management in Vietnam

e. Data collection and processing by river basin (Article 6, Decree No. 120)

- Major river basins (10)
- Inter-provincial river basins
- Provincial river basin

1. Context of water data management in Vietnam

f. Data collection and processing by maps and indicators (Article 6, Decree No. 120)

- Map of the river basin characteristics,
- Maps of rivers, lakes and lagoons characteristics.
- Hydrogeological maps of aquifers.
- Inventory of polluted, degraded and exhausted water sources;
- Identification of factors affecting natural water sources.
- Indicators on the state of degradation, salinization, pollution, depletion of surface and groundwater.
- Indicators of capabilities on sewage reception of water sources;

1. Context of water data management in Vietnam

7. Collaborative approach led by MONRE

- MONRE shall preside and coordinate with ministries, branches and People's Committees of provinces and centrally-run cities to organize the basic investigations on environment and water resources of river basins; to guide the development of data directory and to plan the issue of the data directory on environment and water resources of river basin (*Item 2, Article 9, Decree No. 120*).
- The MONRE has the responsibility to the Government to implement the state management function on water resource data and information; regulate and guide the development and management of water resource data and information systems (*Degree 162*)

1. Context of water data management in Vietnam

- **MONRE** will manage the data on meteorology, surface water and groundwater quality and quantity.
- **MARD** will manage data on water use for irrigation of agricultural production; water supply for rural areas, irrigation and flood control.
- **Ministry of Fisheries** will manage data on water use for aquaculture.
- **MoIT** will manage the data on the use of water for industrial and hydropower development.
- **MOC** will manage data on water use for urban water supply.
- **Ministry of Transportation** will manage the data on the use of water for navigation.
- **The other ministries and branches** based on their functions and obligation to manage of data on factors affecting water resources.
- **People's Committees** of provinces and centrally-run cities will manage data and information on water resources at local according to guidance of MONRE (*Degree 162*)

2. Existing status of water data management in DONGNAI river basin

a. Water-related data and information are currently of limited access.

Because:

- The natural tendency of each agency is to develop its information system to meet their own needs, without taking into account the needs of exchange with other agencies;
- The data available are not necessarily comparable among themselves because each one uses its own procedures for collecting, production and management, using their own concepts, definitions, how to identify and describe the elements;
- Potential users of data and information, unknown who are the producers and where to find the information; nor do they know the quality of the data or the available information;

2. Existing status of water data management in DONGNAI river basin

b. Most stakeholders are encountering problems related to:

- the availability, quality, organization, accessibility of the water information necessary for achieving the objectives laid down in their action plans.

c. Lack of organization and coordination in data production and dissemination.

The existing data are often under-exploited as a result of:

- lack of organization and sharing of responsibilities in data production
- lack of definition and common rules allowing the production of comparable data
- lack of rules for sharing between public authorities
- lack of interoperability of the existing systems
- lack of tools and procedures allowing the easy identification of existing information and the assessment of its quality

3. Recommendations for the development of national water information systems

- **MoNRE should lead the a national strategic plan for water data and information management, and secure its funding**
- **The strategic plan should include measures:**
 - To develop a coherent institutional framework for data management looking for coherence with the **basin level and local level**
 - To develop an on-going monitoring and assessment program aiming to insure the production of the basic comparable data necessary for water management
 - To develop a national water information system aiming to facilitate the sharing of information and the production of information necessary to support the national water policy
 - To ensure the sustainability of the collection, conservation and access to basic data operations allowing the production of the expected aggregated data.

3. Recommendations for the development of national water information systems

- **An effective, on-going monitoring and assessment program of the quantity and quality of surface water and groundwater resources, water related environments, water uses and water related services and socio-economic information should be maintained.**
- **MoNRE should lead priority activities to produce and facilitate the access to data and information that are necessary for decision making in water management at national, basin and local level , and for public information and participation.**
 - Strategic analysis of water related data and information needs
 - Design and progressive implementation of a comprehensive monitoring network
 - Design and implementation of a distributed information system allowing the processing and the dissemination of information
 - Creation of an information network, including protocols for sharing data and information so as to maximize its availability.
 - Support for development of tools and online services for data processing and information production
 - A comprehensive capacity building programme at all levels.

3. Recommendations for the development of national water information systems

- **The data and information collected must be tailored to manage priorities**

The key priorities are:

- I. **Developing and implementing integrated river basin plans**, which will provide a focus for (i) sharing and allocating water and operating infrastructure, (ii) protecting high conservation value aquatic ecosystems and the integrity of water sources, (iii) managing floods, and (iv) managing groundwater areas.
- II. Introducing **a system of licensing of water access**, providing clear access „rights for enterprises, cities, towns and villages, and other waterdependent activities.
- III. Establishing a **water sharing system**, including provisions for environmental flows.
- IV. **Dealing with the severe pollution** afflicting many river and groundwater systems. Introducing a system of licensing of wastewater discharge by polluting activities.
- V. Core data sets are required **for basic services** – such as predicting river flows for water supply purposes, and for predicting storms and potential water related natural disaster events.

3. Recommendations for the development of national water information systems

- **The development of national water information systems should be:**

- To synergies with the running activities and respecting the existing rules and legislation
- To allow a share management of water related data and promote the production of new complementary data and information
- To support the provision by the partners of the descriptions of the water data series and of the services available in the form of metadata, with development of national and basin metadata catalogue.
- to plan for implementation of rules based on international standards in order to ensure the comparability of data series and the interoperability of information systems.
- to develop eservices in an ad hoc network.

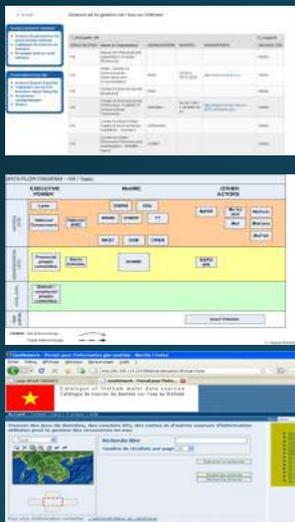
4. WATER INFORMATION SYSTEMS DONG NAI RIVER BASIN

1. The catalogue of data source includes more than 400 data sources, is online at the following address: <http://www.oieaudci.net/catvietnam/srv/en/main.home> .
2. Statistics about the quantity of data sources are available on the web site at: http://109.7.22.85/vietnam/index.php?option=com_content&view=category&id=106&Itemid=94&lang=en
3. User manual is available at : http://109.7.22.85/vietnam/index.php?option=com_docman&Itemid=95&lang=en
4. The application and the database of the catalogue of data source were transferred on 2 November on a DWRM server for testing.
5. Maps produced in the framework of the project are available at the following address: <http://www.oieaudci.net/catvietnam/srv/en/main.search?group=23>
6. A report entitle « Recommendations for the development of a national water information system in Vietnam” produced in April 2012

4. WATER INFORMATION SYSTEMS DONG NAI RIVER BASIN

- Diagnostic data on existing water management for the Dong Nai basin water (with catalog data sources).
- Recommendations structuring and data sharing Basin Dong Nai
- Support preparation of map products necessary to the management plan.
- Transfer web portal and catalog server tools in Vietnam
- Recommendations for the development of a national water information system on the basis of the pilot in the basin of Dong Nai

4. WATER INFORMATION SYSTEMS DONG NAI RIVER BASIN

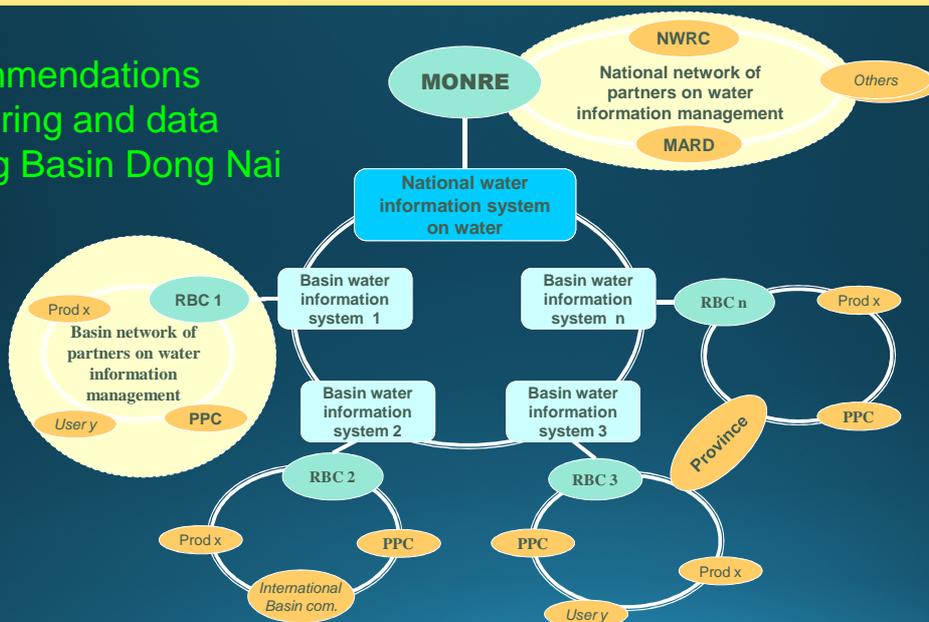


Diagnostic data on existing water management for the Dong Nai basin water (with catalog data sources).

- Existing river basin level analysis
 - Identifying producer, managers and users of information
 - Identification and analysis of key information and data sets available systems
- Analysis of the production process and data flow on the main topics of interest
- Production / metadata collection at the Dong Nai basin
- Launch of the first catalog of the sources of water data

4. WATER INFORMATION SYSTEMS DONG NAI RIVER BASIN

Recommendations structuring and data sharing Basin Dong Nai



4. WATER INFORMATION SYSTEMS DONG NAI RIVER BASIN

Recommendations structuring and data sharing Basin Dong Nai

a) At national level:

- The MoNRE is in charge of the National Water Information Systems;
- The MoNRE collaborate with other agencies of the national level, among others with the ones involved in the NWRC, in order to:
 1. Coordinate the national water information system development
 2. Establishing a common language;
 3. Organize the exchange of existing data;
 4. Promote the production of missing information;

b) At basin level:

- The River Basin Committees are in charge of the basin information systems on water;
- The executive agencies of the River Basin Committees handle the Basin information Systems on Water with Provincial People committees, and others local producers of data.

4. WATER INFORMATION SYSTEMS DONG NAI RIVER BASIN

The web site:

<http://www.aquacoope.org/vietnam/>

The screenshot shows the homepage of the website. At the top, there is a header with the Vietnamese flag, the project title 'Projet d'appui à la mise en oeuvre d'une politique de gestion intégrée des ressources en eau au Vietnam', and a sub-project title 'Projet pilote Dong Nai'. There are language selection options for French (Fr) and English (En). Below the header, there is a main content area with a navigation menu on the left. The navigation menu includes 'Accueil', 'Gestion données Vietnam', and 'Projet pilote Dong Nai'. The 'Gestion données Vietnam' and 'Projet pilote Dong Nai' links are circled in red. The main content area contains a welcome message and a list of features: 'Cet outil de collaboration vise à partager des données et informations disponibles sur: - La gestion intégrée des ressources en eau (GIRE) au Vietnam (libre d'accès) - Le projet pilote (accès réservé aux partenaires) - Les outils prototype de démonstration pour la valorisation des données'. Below this, there are three sections: 'Catalogue des sources de données', 'Proto de démo carto Vietnam', and 'Proto de démo carto Dong Nai'. On the right side, there is a 'Login' section with fields for 'Identifiant' and 'Mot de passe', a 'Se souvenir de moi' checkbox, and a 'Connexion' button. There are also links for 'Mot de passe oublié?', 'Identifiant oublié?', and 'Créer un compte'.

4. WATER INFORMATION SYSTEMS DONG NAI RIVER BASIN

Database of producer

• Accueil

Gestion données Vietnam

- Acteurs et partenaires de projet niveau national
- Catalogue de sources de données
- Prototype outil de carto Vietnam

Projet pilote Dong Nai

- Acteurs Bassin Dong Nai
- Catalogue sources de données région Dong Nai
- Production cartographique
- Photos

Acteurs de la gestion de l'eau au Vietnam

T_ADorgaEN_VN					
ORADCNCODEX	Name of Organisation	ADORACRONYM	ADORTELE	ADORWEBSITE	II_organacti
VN	Bureau for Planning and Exploitation of Water Resources				10000
VN	CEID - Centre for Environmental Information and Documentation	CEID	00 84 4 3872 8295	http://www.ceid.gov.vn	10000
VN	Center for Environmental Monitoring	CEM			10000
VN	Center for Environmental Technology - Institute of Environmental Technology	CEFINEA	00 84 8 865 1132/865 25 97	http://www.hemier.edu.vn/IER-CEFINEA.htm	10000
VN	Center for Rural Water Supply & Environmental Sanitation - Cerwass	CERWASS			10000
VN	Center for Water Resources Planning and Investigation - MONRE - Hanoi	CWRPI			10000

4. WATER INFORMATION SYSTEMS DONG NAI RIVER BASIN

Catalog of data sources

Catalogue of Vietnam water data sources
Catalogue de sources de données sur l'eau au Vietnam

Home | Contact us | Links | Register | About | Help

Username Password Login

Text search

Where? 

Open Map Viewer

Viet Nam

Search

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CATEGORIES

- Dataset
- Documents
- Geo-dataset (vector/raster)
- Info. system international
- Info. system national/local
- Maps
- z-interactive Resources
- z_applications

RECENT CHANGES 

Aggregate Results matching search criteria: **1-10/359** Page 1/36, 0 selected Sort by Title Select: all, none actions on selection

 ADMINISTRATIVE MAP OF PROJECT WATER RESOURCE PLANNING DONG NAI RIVER BASIN
Abstract Administrative Map
Keywords HYE, Dong Nai Basin



Metadata

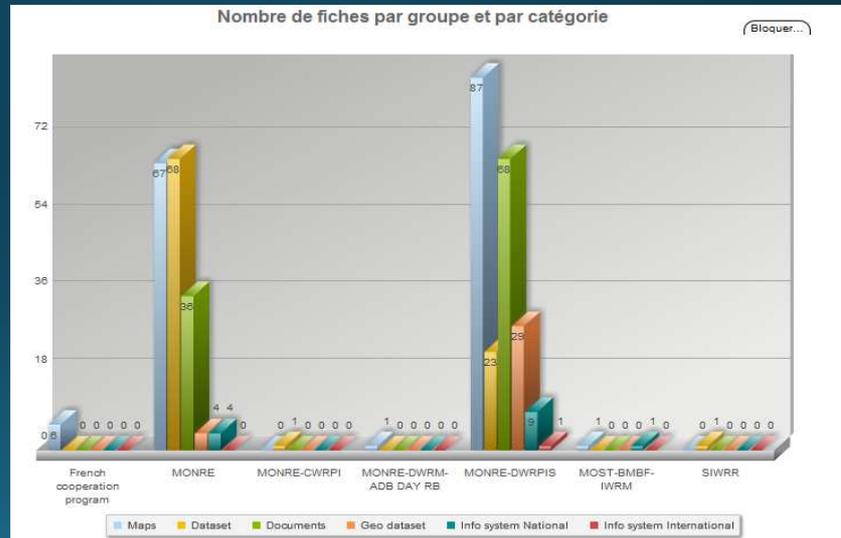
 APPLICATION MODEL EVALUATION METHODOLOGY GROUNDWATER RESERVES IN HO CHI MINH CITY AND SURROUNDING
Abstract Application model for evaluation underground water reserves in every aquifer at downstream Dong Nai river basin - 2008
Keywords HYE, ENV, Dong Nai Basin

Metadata

 AVERAGE MONTHLY TEMPERATURES AT SOME STATIONS IN THE SOUTH EAST
Abstract Information about the average temperature, rainfall, evaporation mean

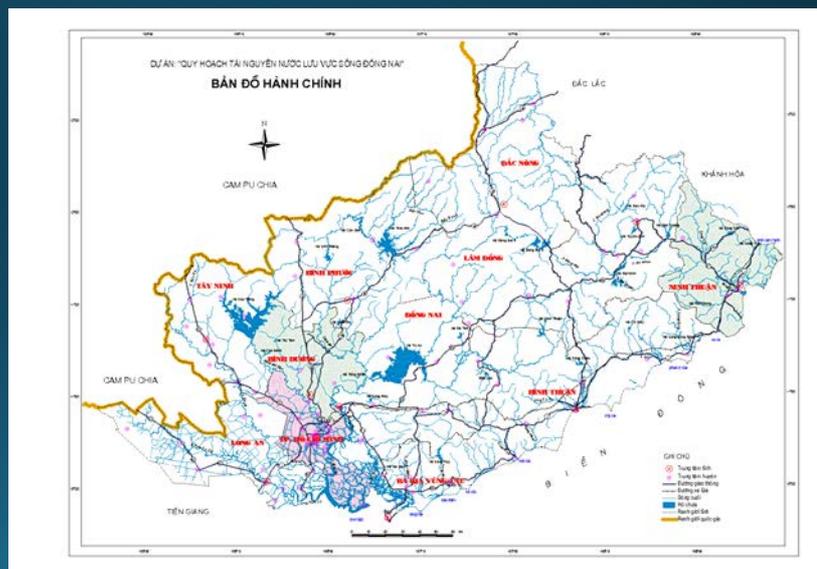
4. WATER INFORMATION SYSTEMS DONG NAI RIVER BASIN

Metadata catalog
 Statistics of
 production of
 metadata



Example of maps produced

Map of
 Administrative boundary



Example of maps produced

Location map of Dong nai river basin



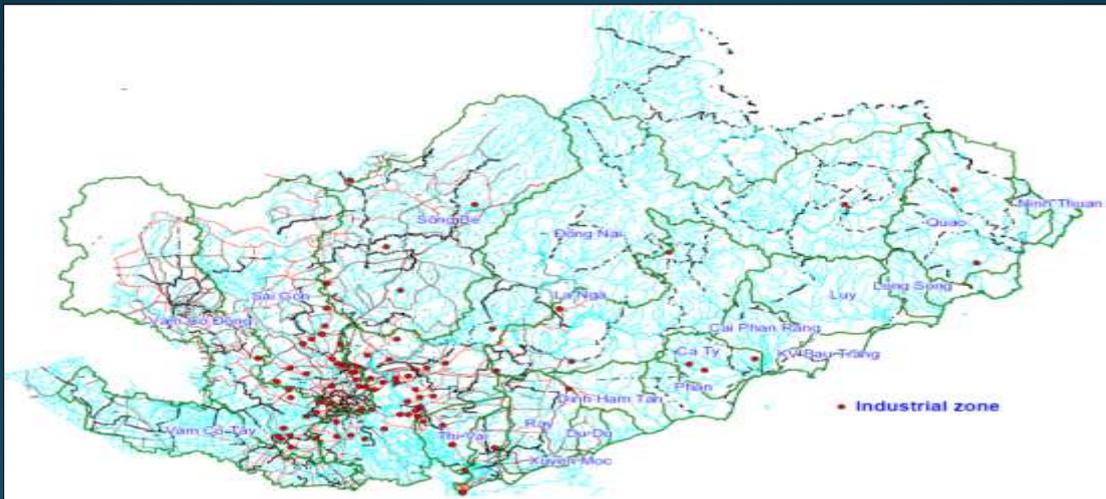
Example of maps produced

Map of Sub-river basins



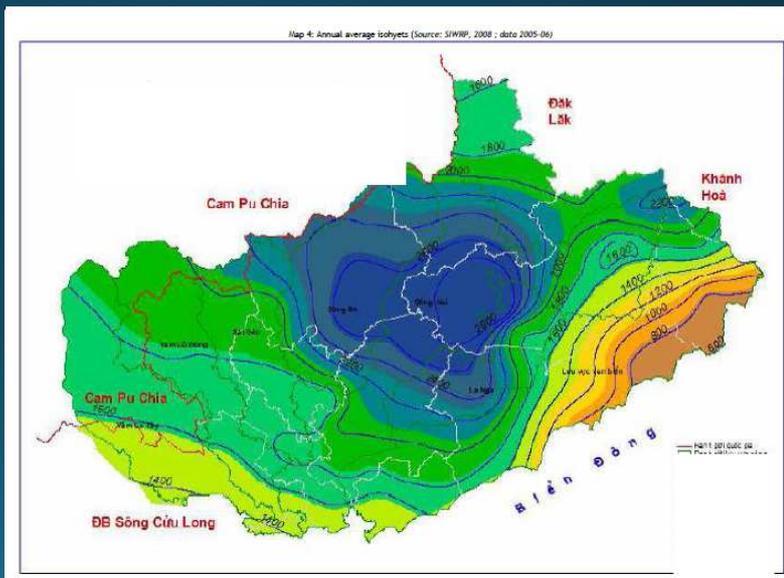
Example of maps produced

Map of Industrial zones



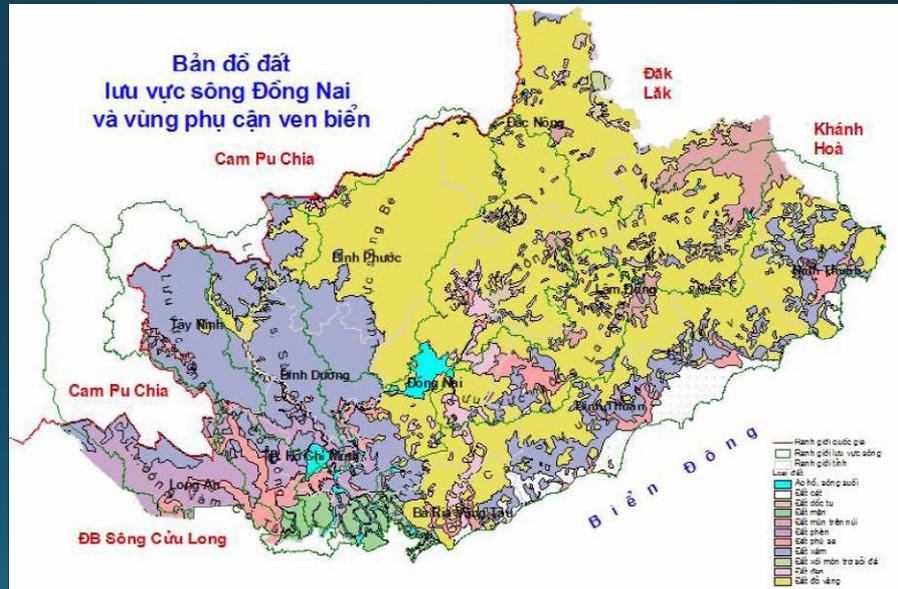
Example of maps produced

Map of average annual rainfall



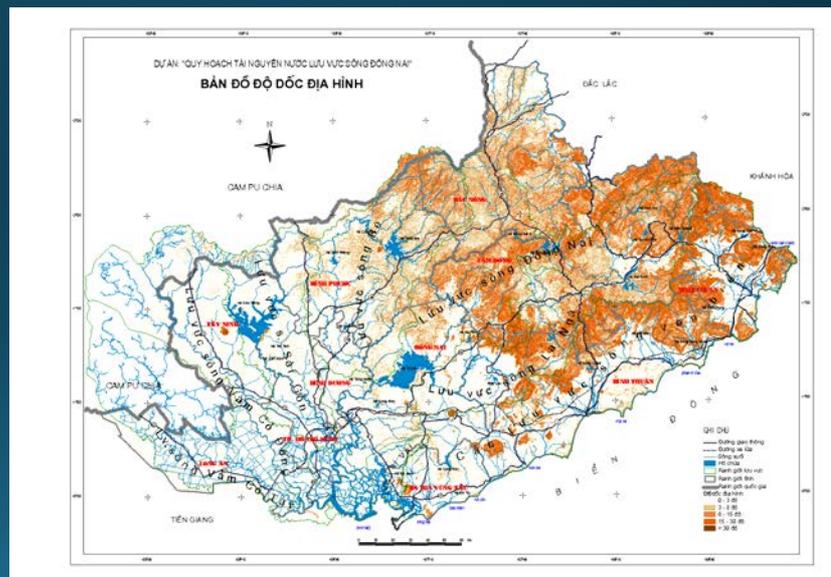
Example of maps produced

Map of Soil Classification



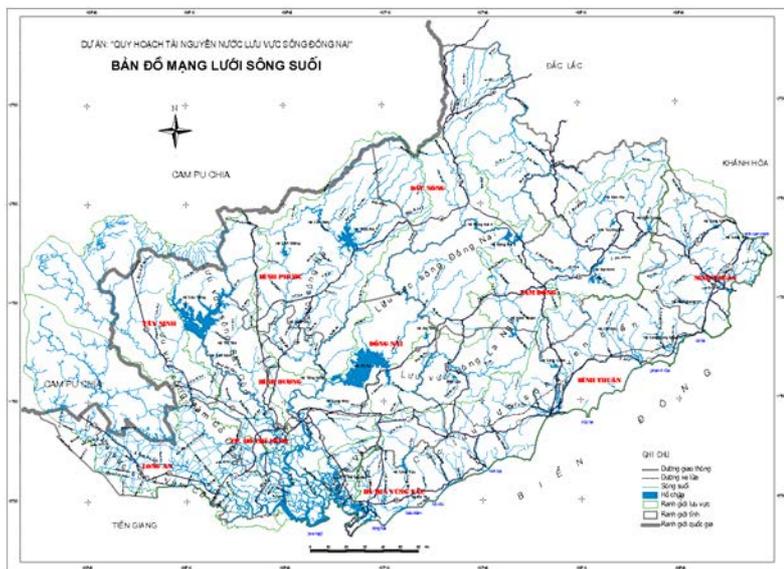
Example of maps produced

Map of Topographical slope



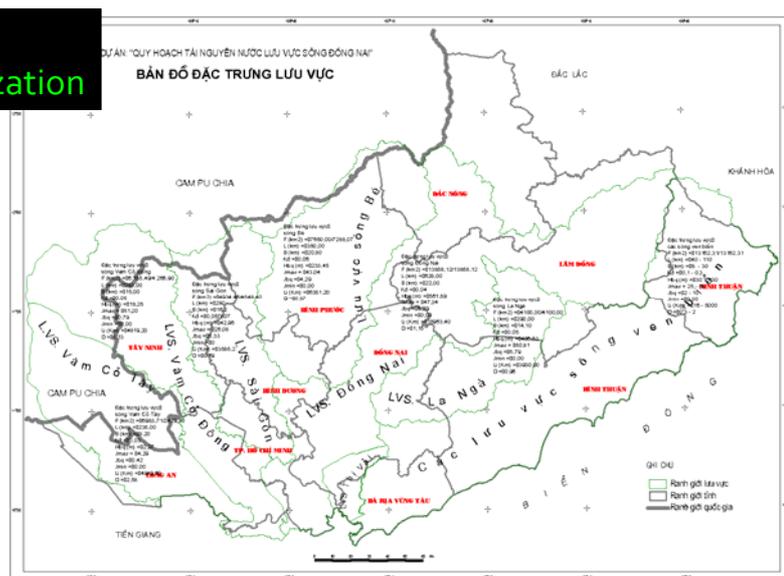
Example of maps produced

Map of River network



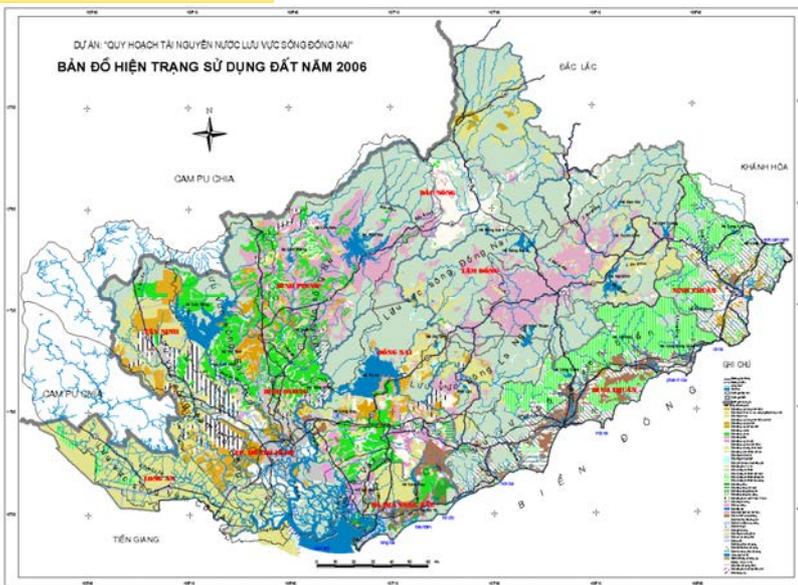
Example of maps produced

Map of Sub-river basin characterization



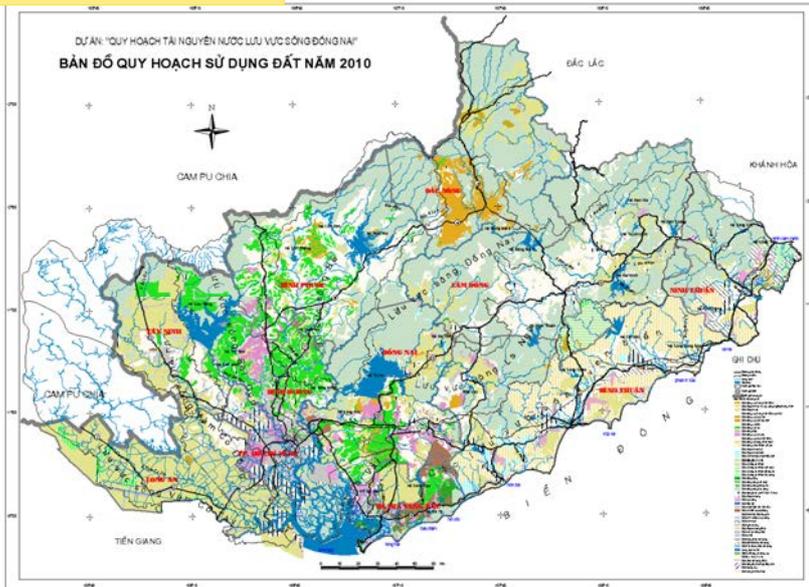
Example of maps produced

Map of Existing land use



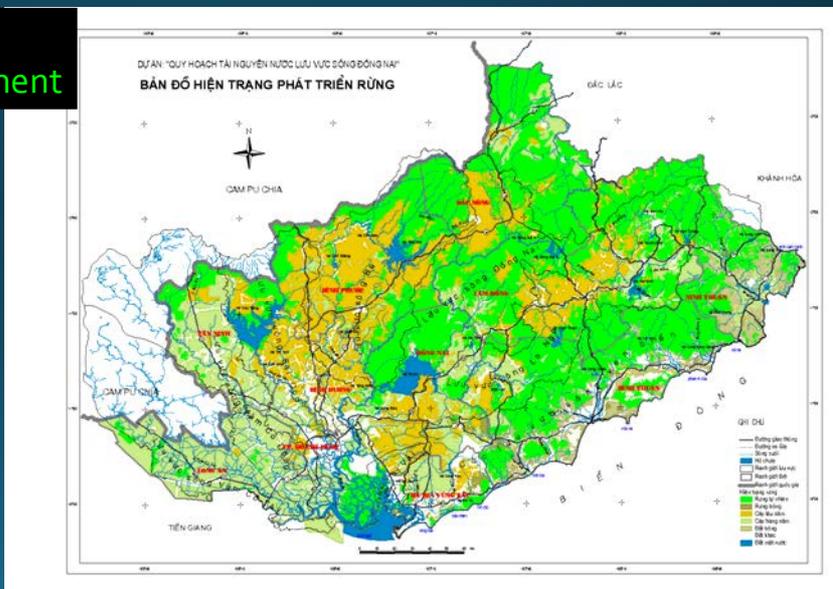
Example of maps produced

Map of land use planning



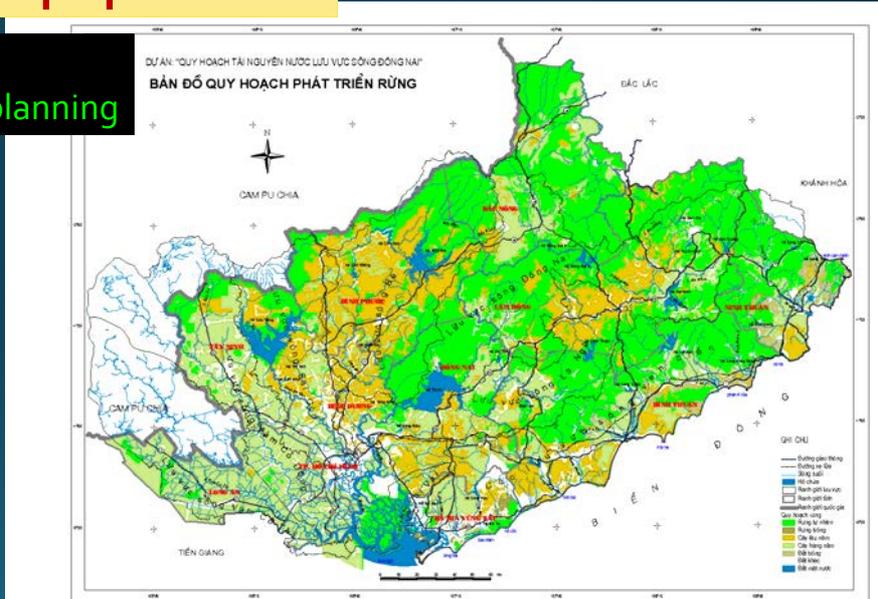
Example of maps produced

Map of Existing forest development



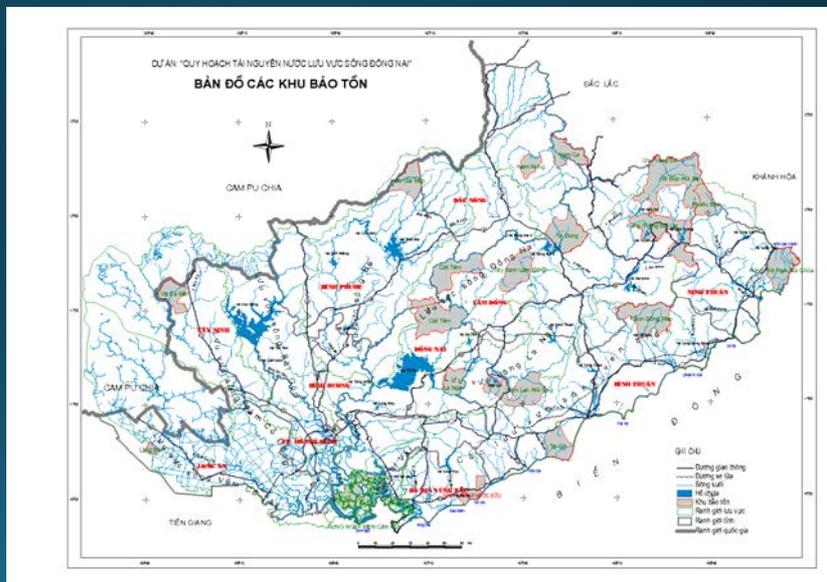
Example of maps produced

Map of forest development planning



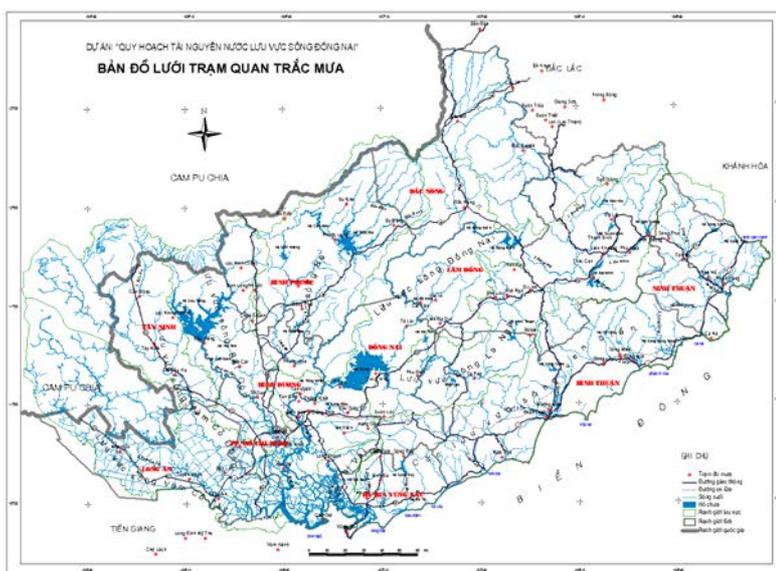
Example of maps produced

Map of
Reservation places



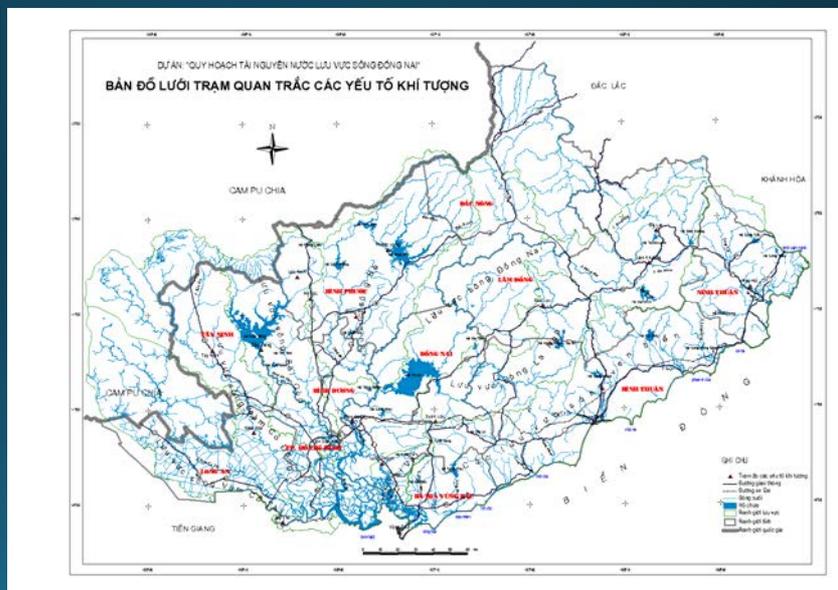
Example of maps produced

Location map of
rainfall gauging



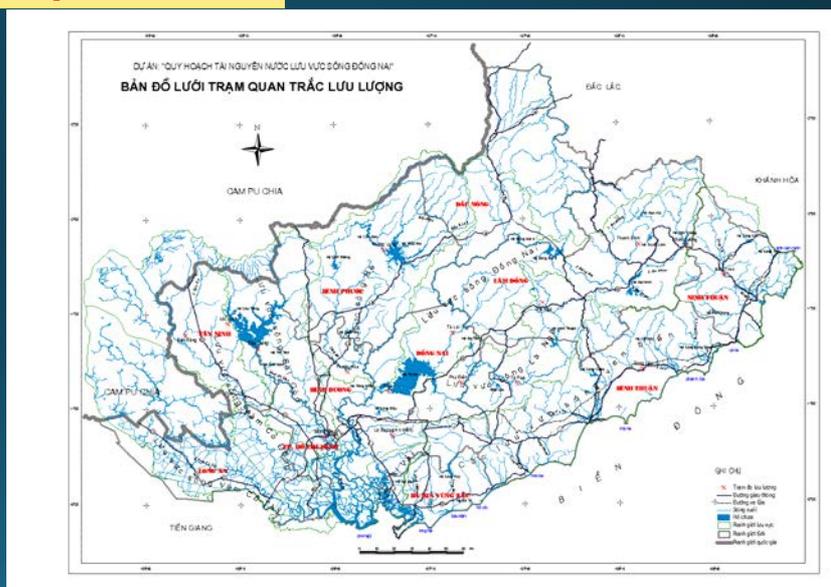
Example of maps produced

Location map of
Metrological gauging



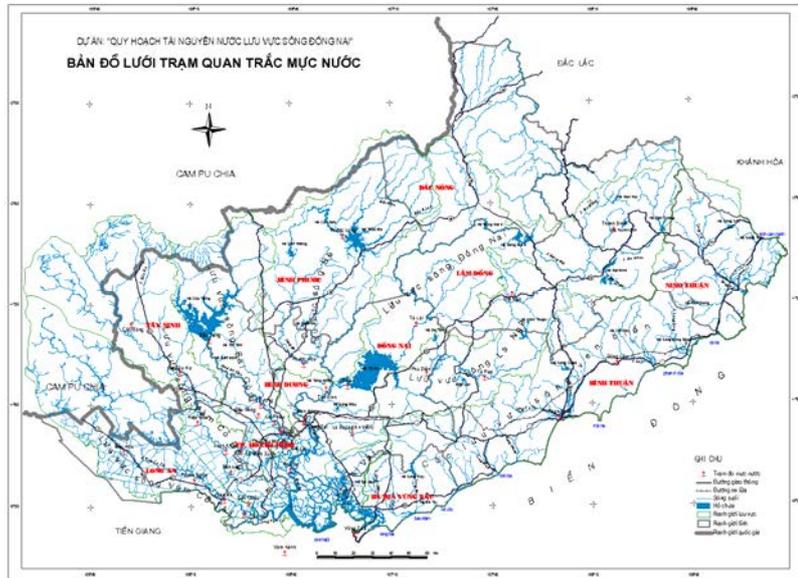
Example of maps produced

Location map of
flow gauging



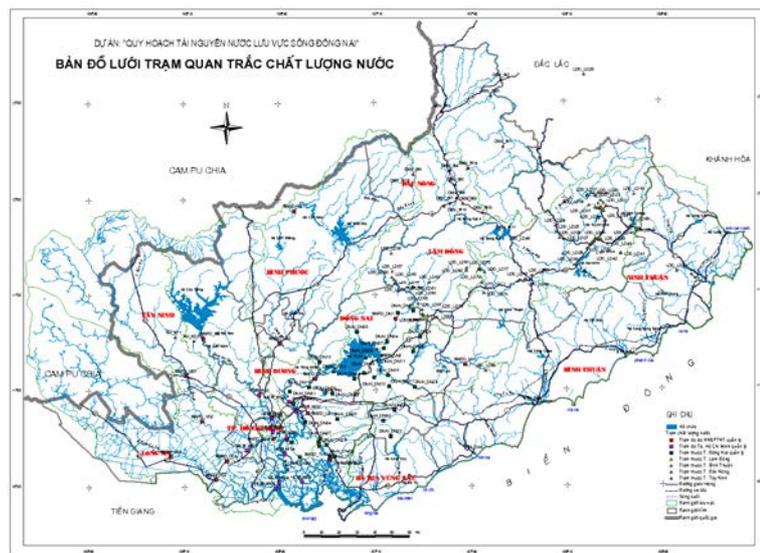
Example of maps produced

Location map of River stage gauging



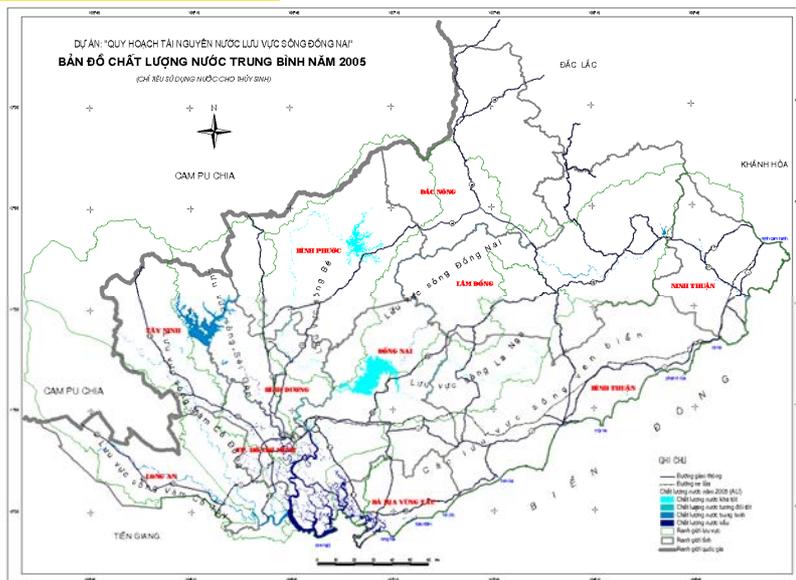
Example of maps produced

Location map of Surface water quality monitoring stations



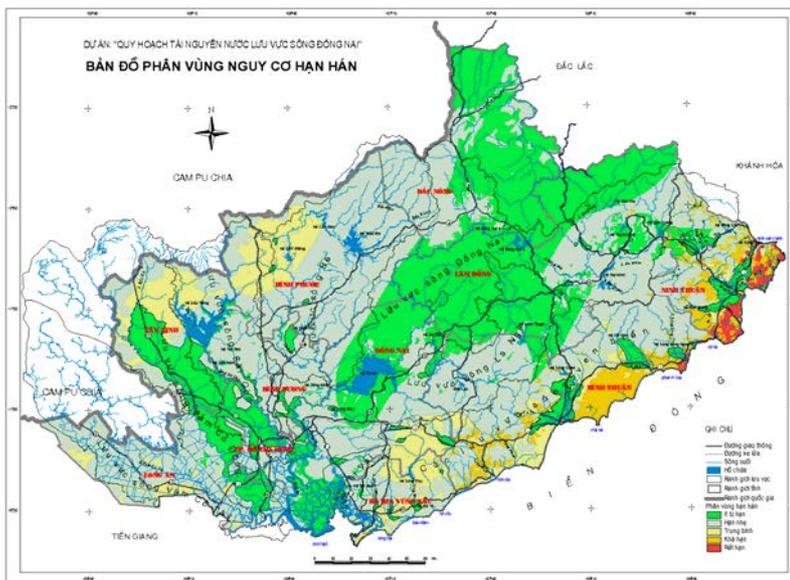
Example of maps produced

Map of river water quality



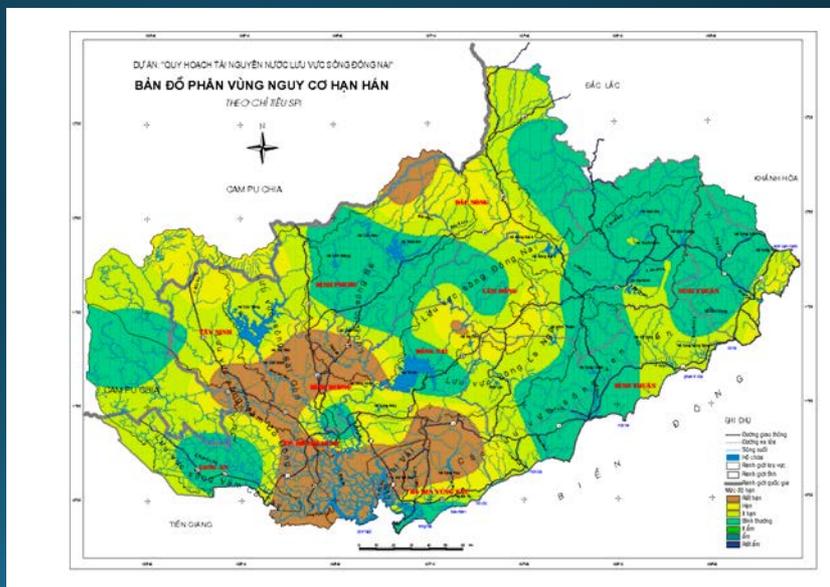
Example of maps produced

Map of Draught risks



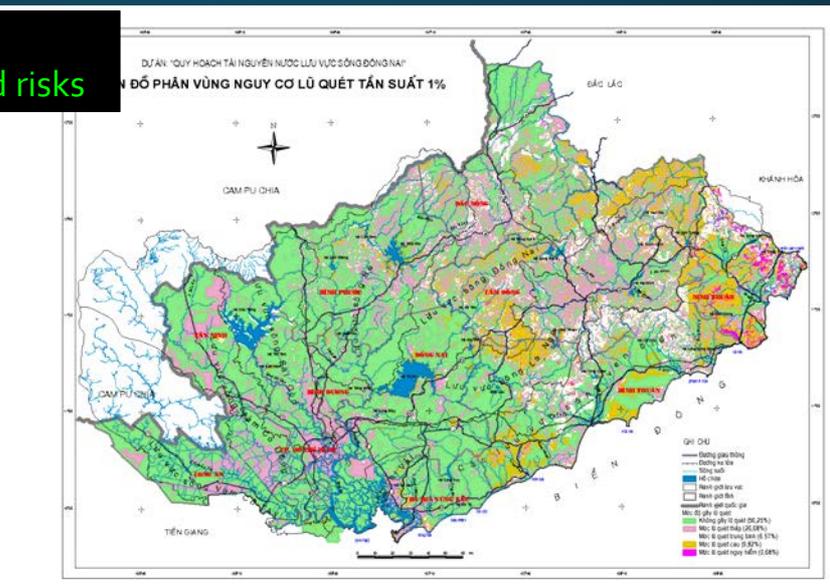
Example of maps produced

Map of
Draught risks zoning



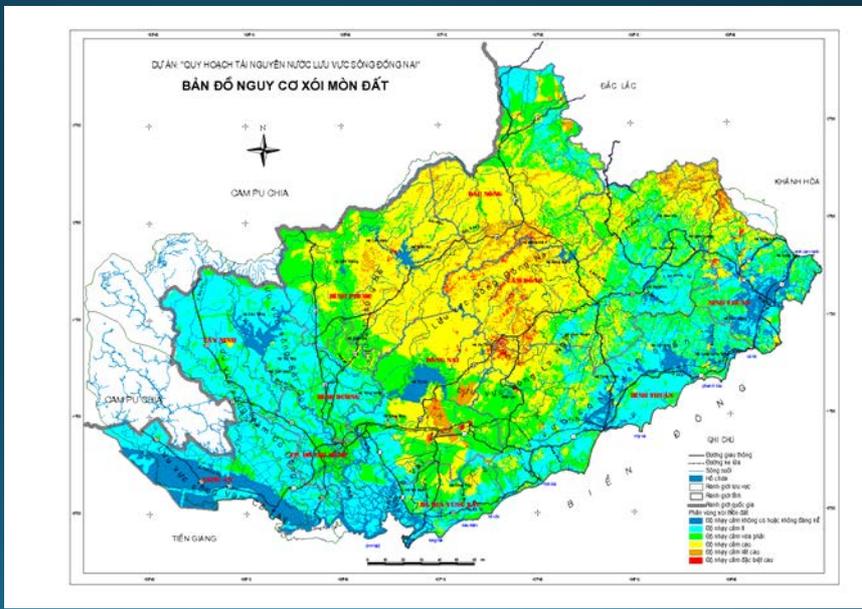
Example of maps produced

Map of
1% frequency flash flood risks



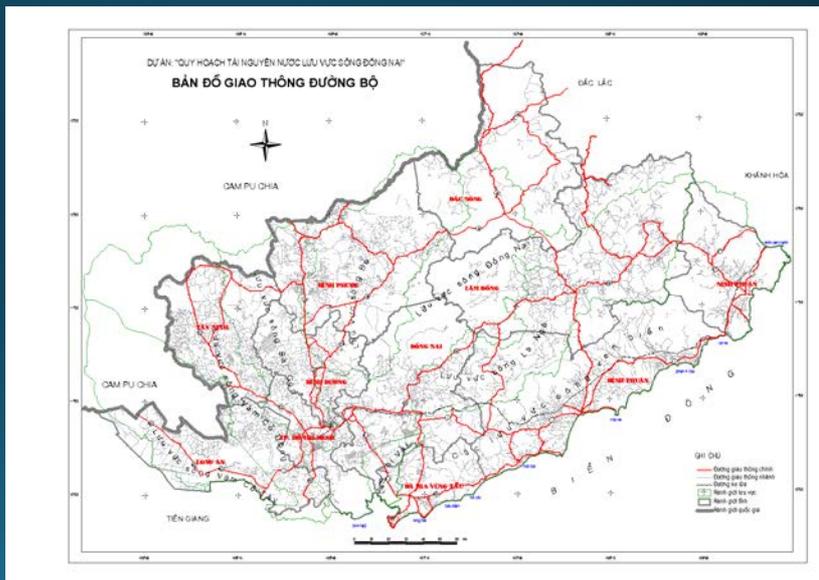
Example of maps produced

Map of Soil erosion risks



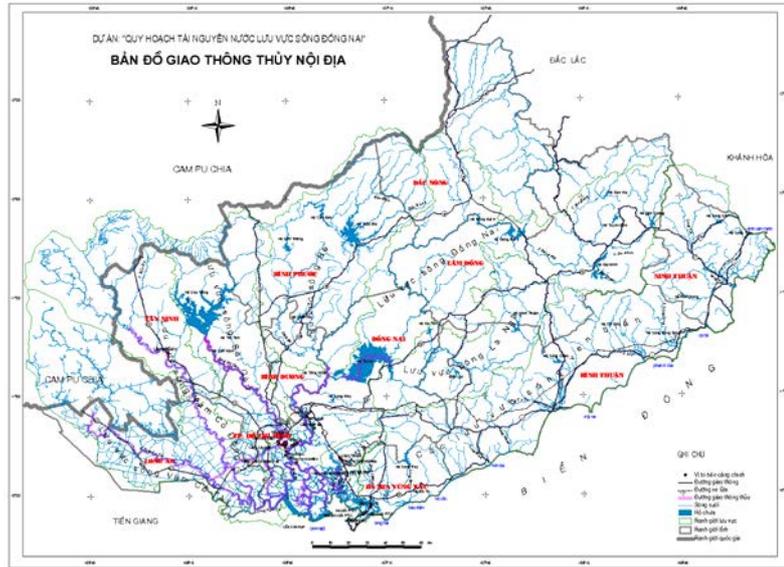
Example of maps produced

Map of roads



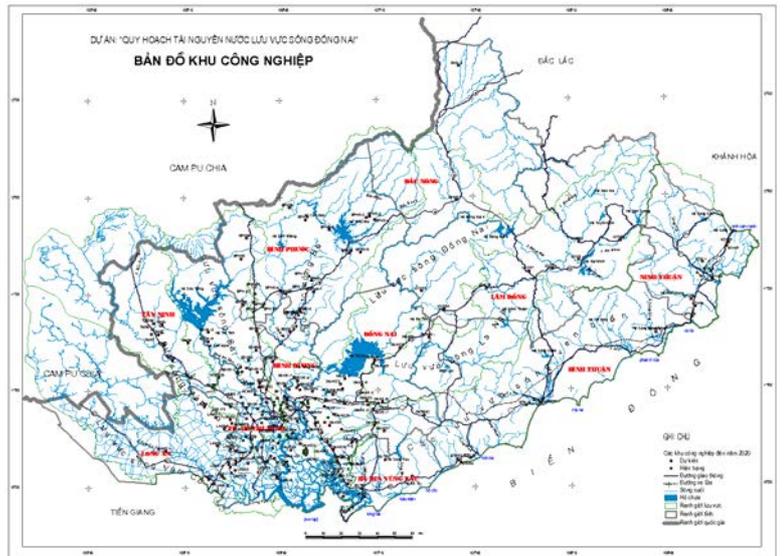
Example of maps produced

Map of
Water way



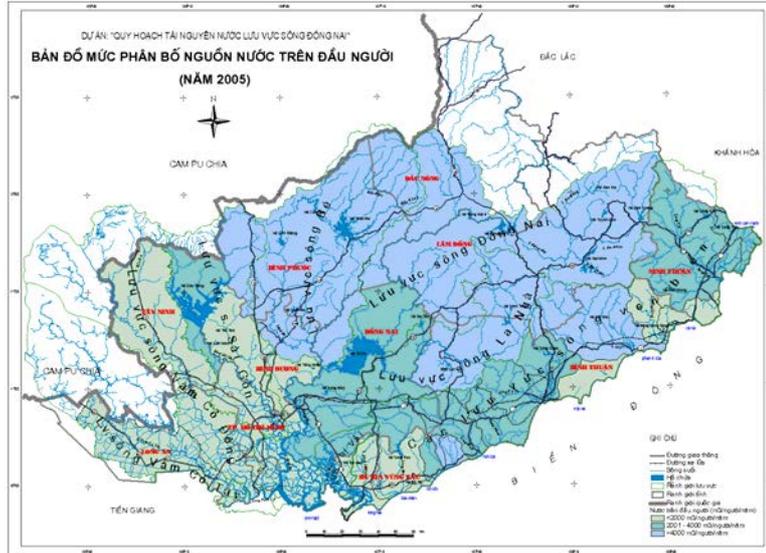
Example of maps produced

Map of
Industrial zones



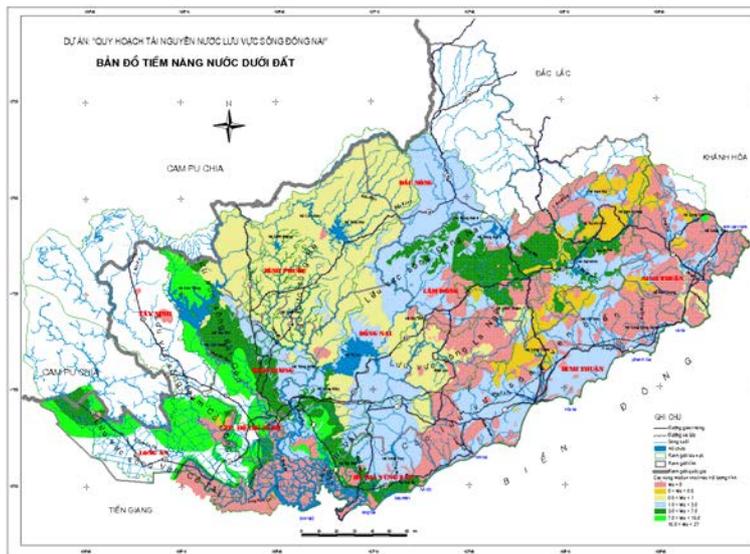
Example of maps produced

Map of Amount of water per capita



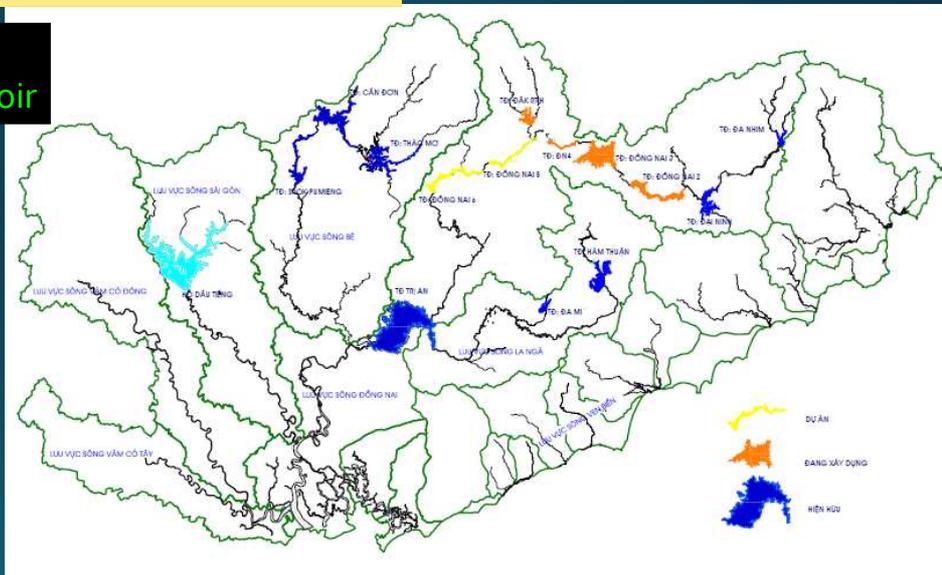
Example of maps produced

Map of Groundwater potential



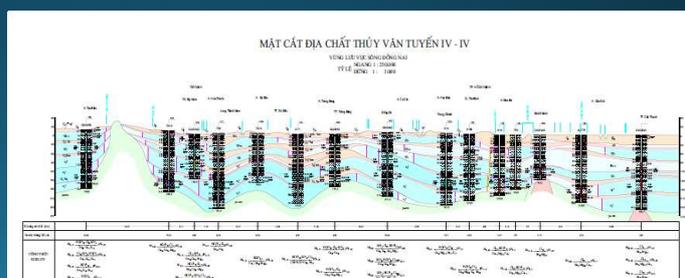
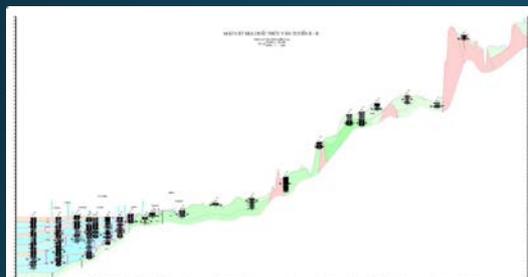
Example of maps produced

Map of Manmade reservoir



Example of maps produced

Hydrogeological cross-sections



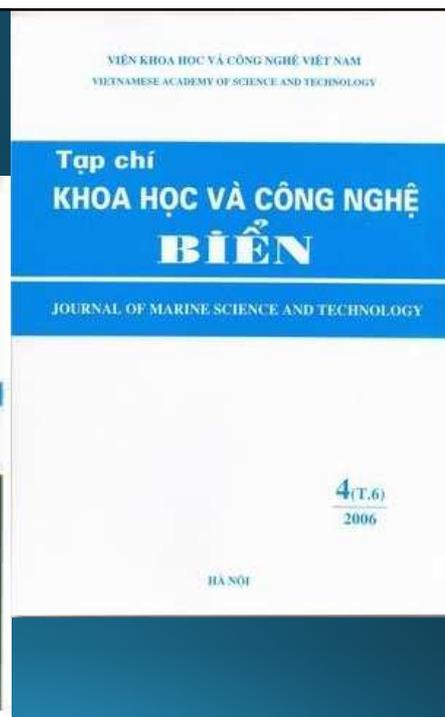
Example of maps produced



Example of maps produced



Example of maps produced



CONCLUSION

To continue to promote the project results phase 1, phase 2 should carry out the following activities:

Training in the main topics:

- planning methodology,
- process for the establishment of a financially balanced program of measures,
- data flow management,
- monitoring,
- stakeholder consultation and public awareness.

THANKYOU FORYOUR ATTENTION