

Mekong Delta Water Database

A tool for promoting institutional cooperation in the Mekong Delta of Viet Nam

1. Context

Nowadays, water is becoming a key resource for any nations and territories. For the Mekong Delta of Viet Nam, this is even more true. That is why water is currently placed at the central of development strategies and agendas of the region.

The Mekong Delta is characterised by a highly complex hydrological condition, with a dense network of rivers and canals, and a large amount of water infrastructures¹ and monitoring stations². Intense impacts of climate change and natural disasters are main challenges for water management in the region. Anthropogenic interventions are also rendering dramatic changes in the flow regime and water availability.

However, under the overarching governance setup of the Viet Nam's water sector, **institutional remains the most challenging issue in the Mekong Delta**. The region consists of 13 sub-territories (provinces and cities) over which the rivers, canals and irrigation systems are shared. Each province has a Provincial People's Committee (PPC) and different provincial line departments (PLDs) who have mandates related to water, including the collection and management of water data (which largely involve Department of Agriculture & Rural Development (DARD), Department of Natural Resources & Environment (DONRE), and Hydromet stations). As a result:

- Data is owned and managed by different agencies
- Flexible protocols for data sharing between provinces and sectors are missing
- Data is stored in and by many forms and formats/structures which are highly inconsistent

With such a fragmented setup, effective water management demands close and strong cooperation and coordination across the provinces as well as across sectors in each province. Such a holistic inter-provincial and cross-sectoral approach is currently very weak. One of the main reasons was identified, that there are no practical tools or mechanisms available to assist concerned provinces and agencies in jointly developing, managing, sharing, and maintaining a comprehensive, coherent, consistent, reliable, and up-to-date water data system.

2. Our approach

The German technical cooperation project *Mekong Delta Climate Resilience Programme (MCRP)* has collaborated with five provinces (An Giang, Kien Giang, Ca Mau, Bac Lieu, Soc Trang) to jointly develop the **Mekong Delta –Water Database System (MD-WADS)**.

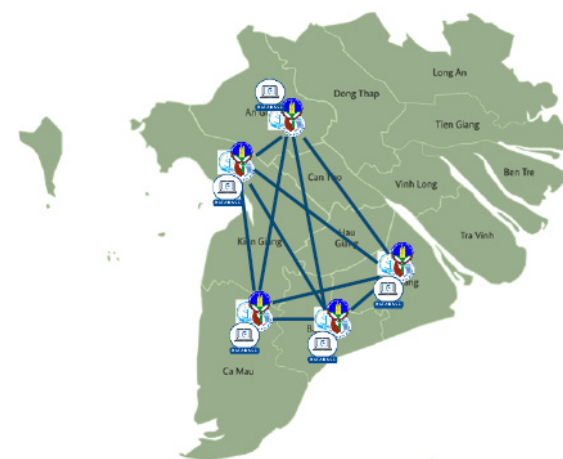
The MD-WADS responses to the urgent need of local authorities, including:

- Water and irrigation management
- Management and operation of water infrastructures
- Water resources monitoring
- Hydrometeorological monitoring
- Climate change and disaster prevention

The system consists of two main components:

1. **Technical:** to set up a shared online water database platform between five provinces
2. **Institutional:** to develop and institutionalise protocols for data sharing and system management

Capacity building for local authorities on system's use and maintenance is integrated throughout the process to ensure partner's uptake and sustainability of the system.



Online and synchronised water database system between 3 concerned agencies (DARD, DONRE, Hydromet) in five beneficiary provinces

[1] Dense network of water infrastructures includes 954 sluice gates, 28,304 culverts, 5,773 anti-flood embankments, 5,000 pump stations, 1,264 km river and sea dikes.

[2] Monitoring network includes 33 meteorological stations, 50 hydrological stations, 138 water level gauging stations and 43 salt concentration gauging stations, which are managed by Hydromet Stations and/or Department of Natural Resources and Environment (National hydro-meteorological master plan for the period 2021-2035, a vision to 2050 (MONRE, 9/2022; under the public consultation period).

Technological solution: this is for the first time in the Mekong Delta, an inter-sectoral and inter-provincial online database is established and made functional. The MD-WADS brings forward innovative transformations in the collection, management and sharing of water data, including:

- **Homogeneous and consistent structure:** the online system is developed for five provinces with the same structure and function. A wide range of multi-owner data and information in five provinces are digitalised, stored, and managed in standardised format.
- **Easily retrieval, update, and share data:** digitalised water data and information can now be easily accessed and updated with just a few clicks using agile tools with standardised format of tables, reports.
- **Innovative data connection:** digitalisation enables three key provincial line departments (DARDs, DONREs, and Hydromet stations) to easily manage and share water data. The system design reduces data fragmentation and redundancy, and thus improves quality of individual or joint decisions.
- **Open access:** the database platform offers a fully open access to the public including farmers, students, researchers. This opportunity did not exist in the delta before.

Institutional measure: MCRP successfully facilitates the dialogue between five beneficiary provinces to integrate a function for data-sharing into the database system. Cross-provincial and cross-sectoral water databases of the Mekong Delta are fully connected in which data from different owners are synchronised in a regular and continuous manner.

3. Result and outlook

The MD-WADS was completed and launched in October 2021. It was successfully integrated in the electronic portal (website) of the DARD in five provinces with open access for provincial authorities and public such as researchers, students, and community.

The database system can be accessed via the following websites:

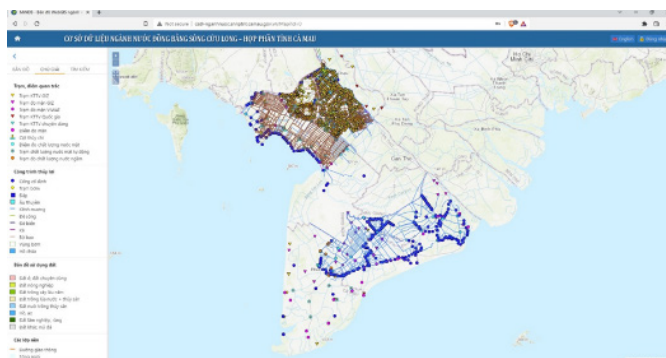
An Giang: <http://csdl-nganhnuoc.sonongnghiep.angiang.gov.vn/>

Kien Giang: <http://csdl-nganhnuoc.snnptnt.kiengiang.gov.vn/>

Ca Mau: <http://csdl-nganhnuoc.snnptnt.camau.gov.vn/>

Bac Lieu: <http://csdl-nganhnuoc.snn.baclieu.gov.vn/>

Soc Trang: <http://csdl-nganhnuoc.soctrang.gov.vn/>



GIS data layers accessed via online interface

Technical officers of provincial authorities and their affiliated offices in five beneficiary provinces were provided with intensive trainings on how to install, manage, operate, and maintain the database system.



ToT training on the MD-WADS (Can Tho, Feb 2022)

To further promote the role of digitalisation in facilitating inter-sectoral and inter-provincial cooperation in water management, with a vision to 2025, MCRP plans to expand the MD-WADS to other provinces and sub-regions in the Mekong Delta.

Mekong Delta Climate Resilience Programme (MCRP, 2019-2025) is a development cooperation programme co-financed by the Governments of Germany, Switzerland, and Viet Nam, implemented by Ministry of Agriculture & Rural Development, Ministry of Construction, and GIZ along with 13 Mekong Delta provinces. The programme's objective is to support the Vietnamese authorities in improving the climate resilient management of natural resources in the coastal areas of the Mekong Delta to ensure sustainable development in the region.

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