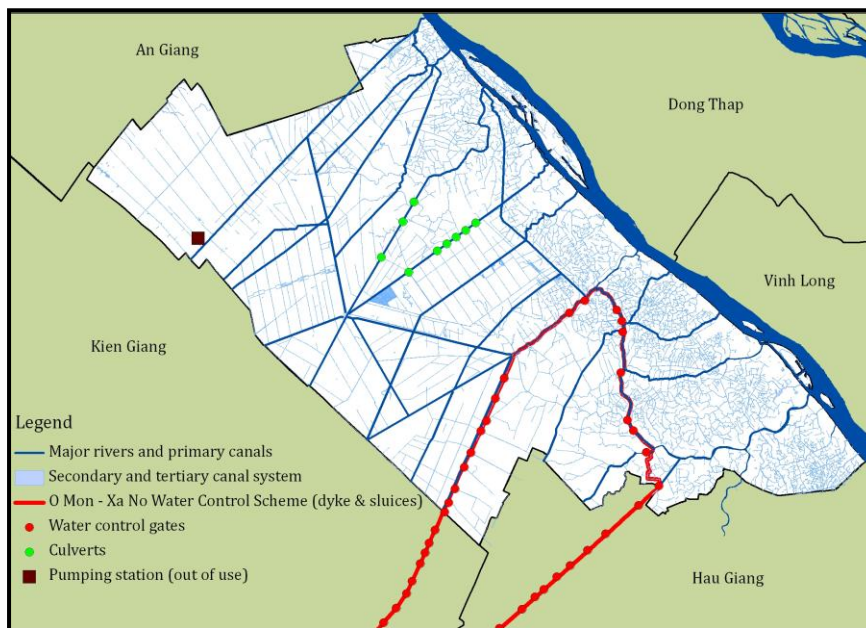


Fact Sheet 3 Water Control and Hydraulic Works: More Consistency Needed

by SIMON BENEDIKTER

Water control has always played a predominant role in Mekong Delta water resources management. Intensive research has been conducted on this aspect, and preliminary findings are as follows: The Mekong Delta is a massive waterscape comprising a dense network of natural rivers/creeks and man-made canals dug over the past three centuries, which mark the recent and most crucial chapter of the delta's environmental history. Over the past three decades (post-reunification) human interference in the delta's complex eco-system has steadily increased, while the construction of dikes,

Hydraulic infrastructure network of Can Tho City



Map: Sven Genschick & Simon Benedikter

levees, pumping stations, culverts and sluices has multiplied significantly. Nowadays, such hydraulic works can be found in most parts of the delta. Further plans to take full control over water inflows and outflows are on the rise, as the recent construction of large-scale water control schemes such as *South Mang Thit*, *O Mon – Xa No*, *North Vam Nao* and *Quan Lo* –

Phung Hiep, funded by international donors and the Vietnamese Government, demonstrates.

Hydraulic infrastructure serves to regulate complex ecological conditions in different parts of the delta in order to boost agricultural productivity and provide flood protection. The recent agro-economic upswing of Vietnam's 'rice bowl' is closely linked to new scientific-technical innovations in hydraulic engineering and water control.

In the flood-prone areas of the upper delta, pumping stations, flood gates and high dikes provide flood management and

increased irrigation and drainage capacities. In coastal areas, where salinity intrusion occurs predominantly during the dry season, agriculture production is constrained due to freshwater scarcity. Here, embankments and sluices are used to keep out brackish water from rice-cultivating areas and to manage the reverse water use strategies of shrimp farmers and rice

farmers.

Hydraulic works and water service delivery in the delta are managed by a complex administrative apparatus that follows strict top-down hierarchies, whereby responsibilities are shared according to the size and scale of water infrastructure. In principle, large hydraulic works such as inter-provincial schemes or major

canals/ivers are under the jurisdiction of the central government, more precisely the Ministry of Agriculture and Rural Development (MARD), whilst the departments of agriculture and rural development (DARD) of provincial governments and respective district authorities are in charge of smaller primary canals and secondary canals, sluices and dikes. Whereas monitoring and planning of constructions are under the supervision of state management, each province has its own irrigation and drainage management company in charge of hydraulic operation and maintenance (O & M) works and water service delivery. Inter-provincial, large-scale water control schemes are managed by irrigation and drainage management companies (IDMCs) under the auspices of MARD. Smaller hydraulic works such as on-field irrigation canals and border dikes are managed by farmers' groups under the guidance of state agencies at district and commune level. They are organised into agricultural cooperatives or more loosely-structured cooperative groups at the hamlet scale and also contribute labour and funds to maintain their activities.

Whereas water flows do not comply with administrative boundaries, hydraulic management in the delta still operates along administrative lines instead of hydraulic boundaries. Since ecological conditions and the physical water infrastructure vary from province to province, each region has developed individual management structures for the planning, design, construction, operation and maintenance of water resources and water service delivery; as a result, the organisational setups of many provinces are not in line with nationally defined standards. While, for instance in Can Tho City, Soc Trang and Vinh Long Province,

water service delivery for rural production and hydraulic O & M works is under the responsibility of state management agencies (DARD), in Bac Lieu and Tien Giang Province IDMCs are charged with water service delivery and O & M functions.

This has caused difficulties in coordination between provinces involved in canal dredging, embankments and dike constructions. Large-scale water control schemes such as *South Mang Thit* (Vinh Long & Tra Vinh Province) or *O Mon – Xa No* (Can Tho City, Hau Giang & Kien Giang Province) are funded and implemented by MARD, with little participation from local authorities, but O & M has been assigned to the provinces. Currently, each section of these schemes is managed by provincial governments within their own administrative boundaries, instead of using an integrative and inter-provincial approach that follows hydrological boundaries or, at least, considers the scheme as a complete system. Generally, more cooperation and harmonisation in provincial water management and also between central and local governments are needed to create integrated and consistent management mechanisms in the delta that will eventually lead to improved water resources and hydraulic infrastructure management.

Further Reading

EVERS, H.-D. & S. BENEDIKTER (2009) Strategic Group Formation in the Mekong Delta – The Development of a Modern Hydraulic Society. ZEF Working Paper Series, Center for Development Research, Bonn University.

EVERS, H.-D. & S. BENEDIKTER (2009) Hydraulic Bureaucracy in a Modern Hydraulic Society – Strategic Group Formation in the Mekong Delta. *Water Alternatives* 2(3): 416-439.

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