

Vietnam Red River Delta Inland Navigation Development Study



Financed by: Japan International Cooperation Agency (JICA)

Client: Government of the Socialist Republic of Vietnam (Tedi North)

Date: 2002 – 2003

Budget: € 90 500

Location: Vietnam, Red River Delta, Hanoi

Partners: JPC - Japan Port Consultants Ltd.

Assignment:

In response to a request from the Government of the Socialist Republic of Vietnam, the Government of Japan conducted the study on the Red River Inland Waterway Transport System. We provided expert consultancy services for Japan Port Consultants, the lead Consultant.

Scope of Services:

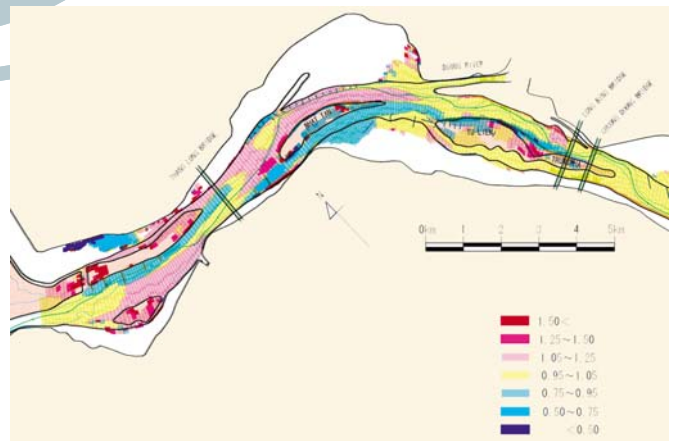
- Inland Waterway Transport System of the Red River
- Waterway maintenance
- Stabilization and maintenance of inland waterways
- River dynamics & morphology
- Master Plan

Technical Description:

The objectives of this study on the Red River Inland Waterway Transport System (IWT) are to formulate a short-term development plan for the IWT system through Hanoi for the year 2010, to conduct a feasibility study on the priority projects and Master Plan of the IWT in the whole Red River Delta up to 2020 and to undertake relevant technology transfer to Vietnamese counterpart personnel. Haecon's expertise focuses on the hydro- and morphodynamic behaviour of the Red River and the design of the associated river training works.



Heavy traffic on the Red River



General view on the proposed river training works (Section Hanoi)

In order to enhance and develop the inland waterway system of the Red River and more in particular the Hanoi Section, consultancy services focused on river regulation and sediment control measures. Based on collected field data, a detailed analysis on the hydro- and morphodynamic behaviour of the studied Red River section is deployed. In addition, advice and guidance is given to conduct the numerical simulations on the Red River water flow and the associated morphological evolution.

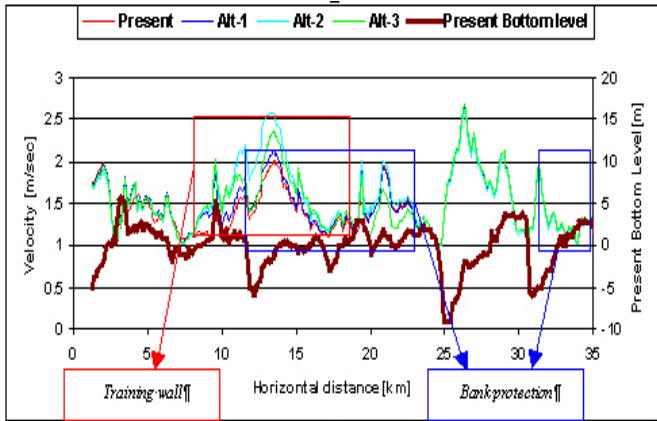


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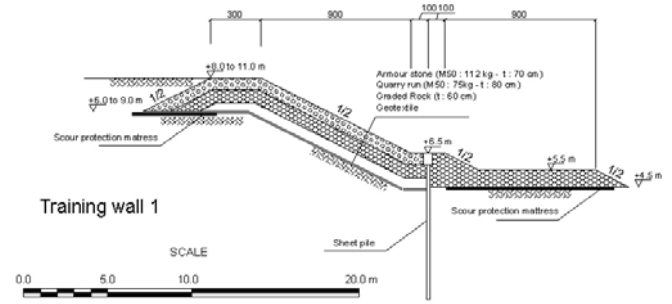
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Flow velocity along the studied Red River reach

Based on previous knowledge, appropriate river training works (in accordance to national standards), such as training walls and groins, are designed to stabilize and maintain the Red River section near Hanoi (40 km river stretch). Finally, some guidance is formulated to explore a proper field survey in order to identify natural flow and sediment conditions in the studied Red River reach.



Typical cross-section of a training wall

Particular challenges are related to the multi-channel morphodynamics of this river section (lateral shifts of main channel of more the 200 m/season) and the strong variations in river regime (water level fluctuation of 12 m and discharge fluctuation of 30,000 m³/sec).

The Master Plan and the Short Term Development Plan were approved in March 2003 by JICA and MOT. Total investment is expected to be in the order of 120 MUS\$ for river training, port development and Inland Waterways Transport (IWT) calibration.