

# Hydrosedimentological and Environmental Impact Study for the Cai Mep Multipurpose and Container Port Terminal and Access Channel



**Financed by:** Belgian Ministry of Foreign Affairs, Foreign Trade and International Co-operation, Belgian Technical Co-operation

**Client:** Ministry of Transport - Vietnam National Maritime Bureau - Maritime Project Management Unit

**Date:** 2001 – 2002

**Budget:** € 715 000

**Location:** Vietnam, Baria, Vung Tau

**Partners:** Vinamarine – Tedi South (Vietnam)

## Assignment:

The water team has been appointed for the consultancy services for a hydrosedimentological survey and study and an environmental impact study for the Cai mep multipurpose terminal in Thi Vai - Vung Tau, southern Vietnam.

## Scope of Services:

- Environmental Impact Assessment (EIA)
- Hydrosedimentological survey
- Morphodynamic modelling
- GIS - mapping
- Port Terminal lay-out
- Nautical Study (access channel)
- Capital and maintenance dredging

## Technical Description:

As a result of the important economic growth of Vietnam, the construction of large multipurpose and container port terminals on the Thi Vai River, Baria, Vung Tau is becoming an extremely necessary and urgent matter. The planned Cai Mep Terminal has a 835 m long quay-wall for berthing of Post-Panamax container vessels (60,000 DWT) and 225 m of quays for river barges. The terminal area is 58 ha.

In order to provide a proper entrance towards the Cai Mep terminal, a new access channel was studied.



*Port development along the Thi Vai river*



*Mangroves along the Thi Vai river*

The designed access channel and associated port terminal layout was presented to the Vietnamese MOT, VINAMARINE and was accepted in May 2002. The capital dredging involves some 3 Mm<sup>3</sup>, whilst the maintenance dredging amounts to some 0.4 Mm<sup>3</sup>/yr. The originality of this design was that the channel was engineered as a function of the heavy morphological dynamics in the Vung Ganh Rai Bay and the Thi Vai River.



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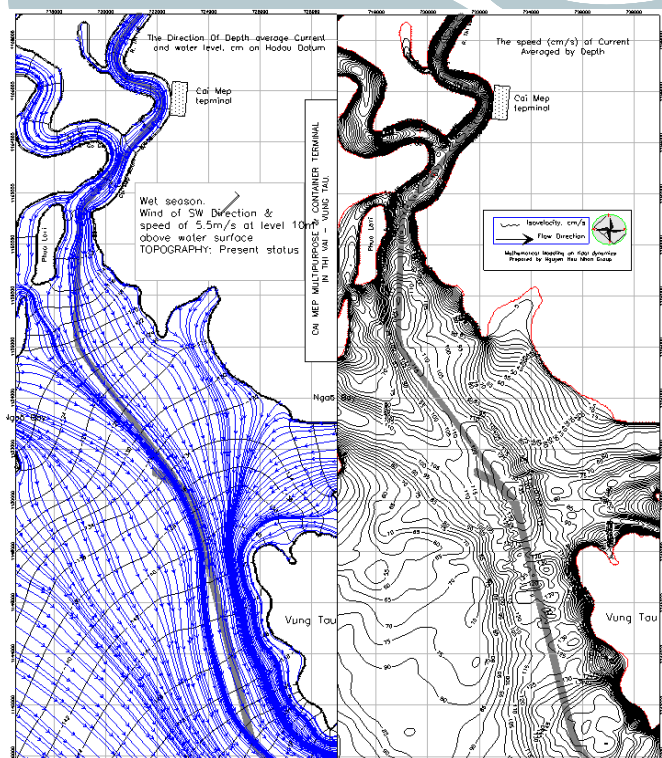
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The hydrosedimentological study was related to the nautical access and dredging engineering (capital and maintenance dredging) for this Cai Mep terminal and its maritime access channel.



Morphodynamic field records in the Thi Vai river

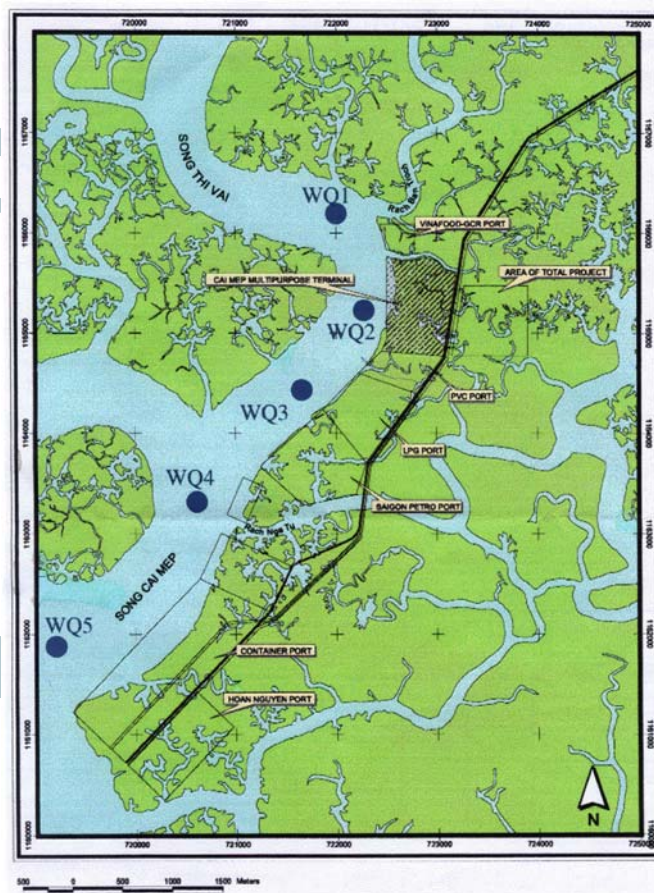
The collected field records are also used to calibrate and validate a hydrodynamic model of the study area.



Numerical wave and tidal flow modelling

Both tidal flow and wave climate are simulated in the local Vietnamese MECCA model. Expert judgements are used to assist a proper design.

The objective of the environmental impact study was to identify the beneficial and adverse effects of the multipurpose terminal and the mitigation measures. Therefore, based on available data and numerical result, several project alternatives were studied in the EIA study. The proposed site of the Cai Mep multipurpose terminal is considered to be well suited for port development considering a good nautical accessibility, excellent hinterland connection, reducing the sedimentation in the eventual new and deepened access channel, small hydraulic sedimentological impacts and acceptable environmental impacts on both natural ecosystems and human environment.



Planned port development along the Thi Vai river