



Hydrology and Geology of Deltas

A.J.F. Hoitink - Hydrology and Quantitative Water Management

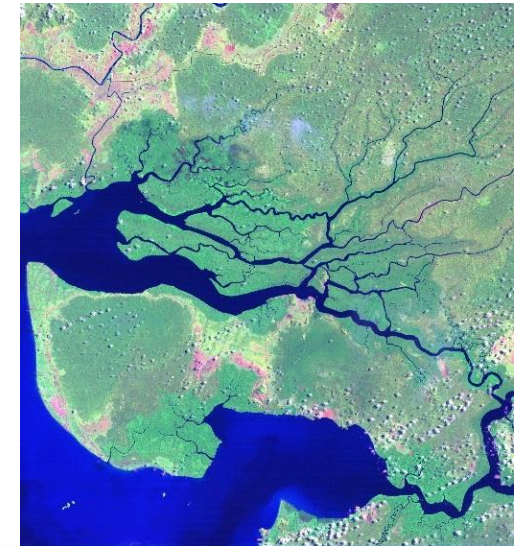
B. Makaske and J. Wallinga - Soil Geography and Landscape





Position in the curriculum

- Part of the Master Earth and Environment
- Optional in the Master Climate Studies
- Preparatory Bachelor courses:
 - BIP-10306 Introductory Physics
 - SGL-22306 Geology, Soils and Landscapes of the Rhine-Meuse Delta
 - HWM-21806 Hydraulics and Hydrometry
 - HWM-23806 Geophysical Fluid Mechanics





Contents

Insight in hydrological and geological processes governing delta evolution, in relation to contemporary threats. Six themes:

1. Delta evolution & Sequence Stratigraphy: delta build up & decay
2. Sediment delivery and distribution (avulsion), delta types
3. Introduction to tidal analysis
4. Tidal propagation and wind-driven flow
5. Estuarine dynamics
6. Delta sustainability: human pressure on the delta surface, on delta channels and on the subsurface, adaptive delta management



Activities

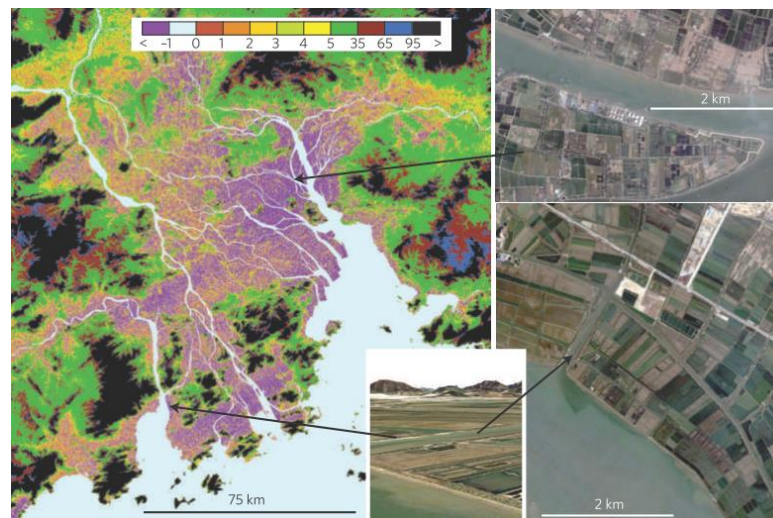
1. attending lectures where course material is being discussed interactively
2. a computer practical focussed on tidal analysis and delta characterization
3. two one-day excursions to
 - Royal NIOZ Yerseke, mud flats & tidal creeks, oyster dam
 - Deltares and the sand engine
4. Groupwork 1: presentations by students based on scientific papers related to the course material
5. Groupwork 2: integral analysis of a delta





Continuation courses

- HWM-30306 River Flow and Morphology
- HWM-32806 Catchment Hydrology
- SGL-52306 The 4th Dimension in Earth Sciences
- SLM-31806 Erosion Processes and Modelling





Link with research: tidal rivers



Reviews of Geophysics

REVIEW ARTICLE

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Tidal river dynamics: Implications for deltas

A. J. F. Hoitink¹ and D. A. Jay²

