CREATING A BLUEPRINT FOR SUSTAINABLE PORTS

URBANISING DELTAS OF THE WORLD
Integrated & Sustainable Port Development in Ghana within an African context.

Developing ports that maximize environmental, economic and social benefits through integrating engineering, ecological, economic and governance aspects.

SUSTAINABLE BUILD
Maintaining the marine ecology in and around a port this contributes to biodiversity, provides ecosystem services, and facilitates port development.

BENEFITTING THE COMMUNITY
Including local knowledge ensures that the port community derives sustainable benefits from port development.

EXPERT INPUT
Appraisal research and knowledge institutes, practitioners and potential users contribute to knowledge development.

THEORY OF CHANGE
From Output and Outcomes to Impact

RESEARCH APPROACH
Project Structure

MULTI-DISCIPLINARY SYSTEMS APPROACH

MULTI-STAKEHOLDER WORKSHOPS
Gain system understanding and gather input for stakeholder-inclusive value-based design by:
- Identifying key stakeholders and developing stories/vision with researchers and stakeholders on past, present, future of Tema, and
- Institutionalization through bottom-up adoption by Pan-African networks leading to sustainable ports in Africa

FACT FINDING MISSION & EXPERT SESSIONS
Learning about the system by identifying system interactions with a multi-disciplinary research team

KNOWLEDGE DEVELOPMENT
RESEARCH OUTCOMES
- Inclusive and participatory framework for design of integrated and sustainable ports in Africa based on balancing people, planet and profit.
- Best practice guidelines for implementing integrated and sustainable port development in Africa
- Quick design tools using remote sensing data and integrating ecological data
- Tried and tested methods for stakeholder-inclusive port design, eg., Ports of the Future serious game

KNOWLEDGE COMMUNITY

KNOWLEDGE SHARING & RESEARCH UPTAKE
ACTIVITIES
- Stakeholder engagement via workshops in Ghana: May 2016, February 2017
- Local embedding of new knowledge and capacity building by engaging researchers from University of Ghana
- Knowledge diffusion via MSc student exchange programs between Ghana and the Netherlands
- Connecting to, and communicating with current and future application areas, users & institutions
- Workshops at international platforms - Ghanaian design and engineering workshop on the Volta Delta, 2018, PIANC 2018

PARTNERS
Technical University Delft (TUDelft), Wageningen University (WUR), IMARES, University of Ghana, UNESCO-IHE, Netherlands-African Business Council (NABC), Boskalis, Deltares, Ghana Netherlands Business and Culture Council (GNBCC), CWT, DAMEN, DeepBV, FMO, MTBS, IHCMerwede, VanOord, STC, Port of Amsterdam, Vrije Universiteit Amsterdam (VU), World Wide Fund for Nature (WWF NL).

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LEARNING FROM A PILOT CASE

PORT OF TEMA, GHANA
Apply principles of sustainable port development for Tema port expansion and develop a conceptual design framework.

STAKEHOLDER-INCLUSIVE DESIGN

Multi-Party Stakeholder Workshops

Four sub-projects directed at Port of Tema, Ghana:
- P1 Sustainable port design and engineering
- P2 Port and coastal ecosystems
- P3 Valuation of ecosystem services
- P4 Governance and socio-economic aspects of green port development