Ocean & Coastal Management

The natural environment in port development: A ‘green handbrake’ or an equal partner?

S. Taljaard [a,b,*,] J.H. Slinger [c,d,] S. Arabi [a,] S.P. Weerts [a,e,] H. Vreugdenhil [c,f]

[a] Council for Scientific and Industrial Research (CSIR), P O Box 320, Stellenbosch, 7599, South Africa
[b] Institute for Coastal and Marine Research, Nelson Mandela University, PO Box 77000, Port Elizabeth, 6031, South Africa
[c] Faculty of Technology, Policy and Management, Faculty of Civil Engineering and Geosciences, Delft University of Technology, Jaffalaan 5, 2628, BX Delft, the Netherlands
[d] Institute for Water Research, Rhodes University, Artillery Road, Grahamstown, 6139, South Africa e CRUZ and Department of Zoology, University of Zululand, Private Bag X1001, KwaDlangezwa, 3886, South Africa f Deltares, Boussinesqweg 1, 2629HZ, Delft, the Netherlands

https://www.sciencedirect.com/science/article/pii/S0964569120302970

Abstract

Rapid urbanization of the coast, growing global trade, stakeholder emancipation and ongoing depletion of natural resources mean that ports can no longer operate and develop without acknowledging and incorporating societal and environmental considerations. Drawing primarily on first-hand experiences in South African ports, supplemented with learning taken from international literature, this paper proposes a conceptual change in the position of the natural environment in port development from that of a ‘green handbrake’ to ‘equal partner’. The argument for this conceptual change is developed in three stages. First, we merge two concepts emerging from the literature, namely natural capital (or natural infrastructure) and infrastructure systems, to embed the natural environment as an integral component or ‘equal partner’ in port development. We then identify practical avenues through which the profile (or value) of the natural environment can be enhanced in port development, drawing on concepts such as Building with Nature (BwN) and multi-use of natural capital. Finally, we build a framework for Integrated Port Management (IPM) by conceptually positioning and aligning environmental processes within the traditional port development cycle, as well as identifying the need for coordination across and continuity between individual environmental assessment processes. In essence, bridging the disconnect between natural environmental issues and port development requires early consideration of the natural environment in port development, and an acknowledgement of multi-use benefits from natural capital. Further, in the operations and maintenance phases, environmental management systems in ports should not only focus on environmental performance, but also embrace multi-use valuation of the natural environment (ecosystem services) to give purpose to the need for environmental protection. However, crucial to effective implementation of an Integrated Port Management (IPM) framework will be its integration in organisational processes, supported by collaborative institutional structures. Only then will the environment take its place as equal partner in port development.