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# **Sediment as a Resource, International Experience of Beneficial and Nature-Based Sediment Use for Engineering and Environmental Applications in the Context of Sustainable Development**

by

**Luca Sittoni**

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**Date:** Wednesday, 23 October, 2019  
**Time:** 4.00 pm to 5.30 pm  
**Venue:** E1 #06-02,  
Faculty of Engineering,  
National University of Singapore



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## **Abstract**

Sediment is a precious world-resource that should be well managed, optimized and beneficially (re-)used. Across the planet, natural ecosystems as well as developed areas suffer of excess sedimentation or vice versa sediment shortages, often in relation to human interventions of development activities. Climate change tends to enhance these trends, mostly impacting densely populated areas or sensitive ecosystems. Further, many regions of the world suffer from lack of conventional building material (sand) opening opportunity for use of traditionally less suitable material (soft sediments).

Recently the Central Dredging Association completed two publications, which give a comprehensive overview of the current practice regarding beneficial sediment use (clean and contaminated), based on more than 35 existing case studies worldwide. This effort is currently followed-up by the PIANC working group 214 on Beneficial Use. Similarly, EcoShape – Building with Nature initiated the Living Lab for Mud, collecting five on-going pilots that demonstrate nature-based beneficial use of fine or soft sediments. Finally, Deltares and NUS are beginning a collaborative research program on improving geotechnical characteristics of soft sediments.

This presentation gives an overview of these initiatives and experiences, in the context of world-wide challenges, which call for sustainable development, nature-based infrastructures and circular economy.

## **Speaker Biography**

Luca Sittoni is Senior Adviser and Program Manager Nature-Based Solutions at Deltares, which he joined in 2009. Since 2016 he is also Program Manager and Management Team member at EcoShape – Building with Nature in The Netherlands. Before joining Deltares, Luca worked as civil and hydraulic engineer at Barr Engineering, Minneapolis, USA, obtained a MSc. in Civil Engineering at the University of Minnesota and a MSc. in Environmental Engineering at the University of Trento. Luca



is an expert in beneficial sediment use and soft sediments processes, with applications to dredging and mining industry, nature-based solutions and contaminated sediments remediation. At Deltares Luca is responsible for the nature-based solutions and soft sediments portfolio with oversight of research and knowledge development activities, projects portfolio and clients and stakeholders management. At EcoShape, Luca is responsible for a portfolio of pilot projects that focus on beneficial use of soft and dredged sediments as a nature-based flood protection or land building material.

Luca is heavily involved in international expert organizations such as the Central Dredging Organization (CEDA), PIANC and SedNet. He chaired the CEDA Beneficial Sediment Use working group, and he is current co-chair Europe of the PIANC 2014 Beneficial Sediment Working Group.

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**\*\*\*Seats are limited. Please register early. All are welcome and admission is free\*\*\***

## Location Map

