MSc graduation theme: Implementation arrangements for Green Infrastructure

INTRODUCTION

There is a growing consensus that Nature-based Solutions hold a great potential for the challenges and increasing risks that a Changing Climate represent to our societies and economies. However, there are great barriers for their effective implementation at the scale required for achieving the envisioned impacts on disaster risk reduction and provision of key water services.
A crucial step to enable a higher uptake of these solutions is to develop guidelines and a decision support framework that guide local stakeholders on how to design an implementation arrangement that is fit for purpose and solve some of the challenges associated to poor implementation; e.g. funding gap, unclear business case and limited private sector interest.

ASSIGNMENT / OBJECTIVE

The objective of the assignment is to support the design of Implementation Arrangements more specifically for Nature-Based Solutions/ Green Infrastructure for water security. The student research will contribute to the drafting of a Handbook for the Implementation of Ecosystem-Based DRR, and in a greater methodological perspective support the development of the Financing Framework for Water Security that Deltares started to develop in 2016. This decision support framework, titled Financing Framework for Water Security aims to support this design process in an effective way by: a) Linking Adaptive Planning to Investment planning, by which the concept of dynamic adaptive policy pathways is operationalized and contextualized within the national public investment systems; b) Speeding up the implementation of nature-based DRR solutions by applying the Business Case methodology for public investment decisions in combination with the IWRM planning methodology.

This research is linked to Deltares work on Financing and Implementation of NBS within the H2020 Nature Insurance value: Assessment and Demonstration (NAIAD) More information on the project: http://naiad2020.eu/ NAIAD aims to operationalize the insurance value of ecosystems for water-related risk mitigation, by developing and testing concepts, tools and applications on 9 demo sites across Europe, under the common concept of Nature Based Solutions (NBS).

- How to enable private sector participation in collective watershed investments and ecosystems?
- Which implementation arrangements – funding, governance mode, financing and procurement- are best fit to handle the specificities of NBS?
- What are key technical and financial characteristics of NBS that need to be considered in designing and implementation arrangements?

Picture

These research questions will be worked out concretely by coaching one or two cases within the NAIAD H2020 project; one of them in Romania concerning the recovery of a wetland in the Low Danube.

Application details:

Deltares the Netherlands institute for applied research in the field of water management and adaptation to Climate Change. Throughout the world, we work on smart solutions, innovations and applications for people, environment and society. Our main focus is on deltas, coastal regions and river basins. Managing these densely populated and

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vulnerable areas is complex, which is why we work closely with governments, businesses, other research institutes and universities at home and abroad. Our motto is Enabling Delta Life.

Supervision team: the student will be working in the Departments of Water Resources and Delta Management, part of the Inland Water Systems Unit of Deltares; with the team working on the financing of water security and climate adaptation. Hereby a short bio of the principal researcher.

Dr. Ir. Mónica A. Altamirano works as Financial and Institutional Expert at the research institute Deltares. She has 15 years of experience in four continents and three sectors: education, transport and water. Since 2005 her research concerns cross- national lesson drawing on the provision of public infrastructure services and the role of the private sector herein. Prior to joining Deltares she worked as Technical Assistant to the Nicaraguan Minister of Education and as scientific researcher for Delft University of Technology (TUDelft). The focus of her current work is on making the achievement of water security in the face of Climate Change financially feasible for developing countries, with a special interest on promoting the mainstreaming of Nature-Based Solutions as complementary measures to traditional infrastructure solutions. To achieve these goals, she has developed a unique action research approach called the Financing Framework for Water Security. She serves as Financial Expert to the Netherlands DRR Team; is member of the World Economic Forum Future of Construction Steering and Advisory Committee, of the UNECE Team of Specialists in PPP and the OECD-WWC-The Netherlands Water Financing Roundtable. Monica holds an MSc and a PhD degree in Systems Engineering and Policy Analysis from TUDelft

Contact:

- Monica A. Altamirano, Specialist in Public-Private Partnerships and Climate Finance.
- TU supervisor: _____

Start date: March/ April
Location: Deltares campus Delft

More information on the research area:

- World Economic Forum, Future of the Construction Sector initiative, Disaster Resilience Workgroup; barriers to the update of NBS, blog tiled: *Nature-Based solutions for Disaster Resilience of the Built Environmen*t. https://futureofconstruction.org/solution/nature-based-solutions-for-disaster-resilience-of-the-built-environment/
- **Natural Assurance Scheme: A level playing field framework for Green-Grey infrastructure development, https://www.sciencedirect.com/science/article/pii/S0013935117312756?via%3Dihub**