

Applying Ecosystem Services for Waterborne Transport Infrastructure Projects: Progress Report

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Introduction: Previous PIANC EnviCom Working Groups have discussed and developed philosophies on Working with Nature, mitigation/adaptation for uncertainties of climate change, and procedures to identify and assess impacts attributed to dredging and dredged material placement related to navigation and port infrastructure. These provide a scientific basis to inform decisions and facilitate tradeoffs amongst multiple and oftentimes competing interests and priorities in an objective, resilient and sustainable manner. Ecosystem-related management provides a mechanism for making decisions about navigation infrastructure and dredging activities in light of the goal of including and maintaining the contiguous ecosystems in a healthy, productive, and resilient state. To provide an understanding of the Ecosystem Service (ES) approach for the navigation sector PIANC held a seminar in 2015. Based on the outcomes of this seminar, an 'Orientation Paper' which provides a first common understanding of the ES concept for the navigation sector was compiled [1]. This paper sets the conceptual starting point for a deepening of guidance on how to use ES in practice for the WTI sector.

EnviCom WG195 has been tasked to provide a definition of Ecosystem Services and a specification on how to successfully apply ES in WTI projects. Methodological and technical information on ES identification, mapping, assessment and management in terms of good governance in the WTI sector will be given. The WG will identify and summarize relevant conclusions for the navigation sector and provides signposting to further guidance on how to successfully and supportively operate with ES in WTI projects.

Methods: Reviewing related guidance, case studies and best practice, WG195 is developing a report that 1) defines the concept of Ecosystem Services (ES) as a common starting point, 2) identifies, characterizes, assesses, and substantiates available methods, approaches and documents, 3) links the ES concept to relevance for the WTI sector and projects. In this phase an explicit link to the Working with Nature concept will be identified, 4) demonstrates existing approaches and best practices worldwide having relevance for the WTI sector that have successfully

applied the concept of ES, 5) explores and describes the added value, benefit and support when successfully applying ES in WTI projects, 6) then deploys options to integrate the ES concept in WTI projects (including mapping, modelling, valuing, and good governance), 7) depicts a framework for guidance on beneficially applying ES in the WTI sector (including recommendations for good practices).

Results and Discussion: The nature of WTI impacts requires that ES classifications consider both biotic and abiotic ES; such a typology has been developed. There is a WTI project lifecycle, from concept to decommissioning. The type of ES assessment required to support project decision making depends on where one is in this project lifecycle [Figure 1]. Case studies from various projects and phases in this lifecycle have been reviewed; these have led to an assessment of best practice. A guiding framework is being developed. This presentation will provide a WG195 progress report, with a focus on sediment-related projects and impacts.

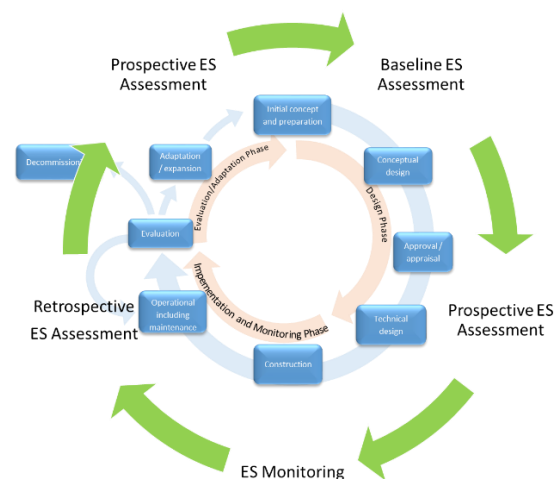


Fig. 1: Waterborne transport infrastructure project lifecycle, and the ecosystem services assessments that support decision making at various phases.

References: [1] EnviCom (2016) *PIANC Orientation Paper. Opportunities to apply the concept of Ecosystems Services (ES) to the Waterborne Transport Infrastructure (WTI) sector*, p. 6.