



The FAST project: Earth Observation and the Coastal Zone

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Flood risk is one of the most pressing challenges facing society today. Climate change and increasing population pressures on coasts continue to raise future flood risk. Conservation, improved management and restoration of vegetated foreshores could form part of the interventions to reduce such risk. Nature-based flood defence (NBS) is a potentially sustainable and cost-effective strategy for flood and erosion risk reduction. However, this concept is still not widely implemented, needing demonstrations of the benefits that engineers can trust, and practical tools that provide them with quantitative information on key parameters.

The aim of the FAST project was to develop Copernicus services to determine the characteristics of vegetated foreshores and to help harness the potential of foreshores to act as part of NBS towards reducing coastal flood and erosion risk. This objective was achieved through the next sub-goals: (1) to execute a set of standardized measurements of different wetland types and their capacity to reduce wave energy; (2) to improve models currently used to predict wave attenuation by coastal vegetation; (3) to find ways of measuring coastal wetland parameters from the air and space (EO data) that could be used at different spatial scales to determine the importance of coastal wetlands to society; and (4) to coalesce all the above data and make it publically available in a free online service. The main result of the FAST project was a web-based platform of services, the MI-SAFE package. This platform provides users with access to data and flood hazard modelling services relating to coastal wetland habitats. The main vehicle for accessing and demonstrating our services is the MI-SAFE viewer (fast.openearth.eu). The MI-SAFE package was developed in close consultation with our key stakeholders (governmental, non-governmental, and private sector organisations). Technical details are available in the public final report of the project (doi.org/10.5281/zenodo.1158437).

After the FAST project finalization, the long-term sustainability of the MI-SAFE package is safeguarded as part of the Deltares software system and the Deltares Open Source Community. Support and Advanced (on-request) services, remain available from the FAST team, which aim to provide on-going support for the environmental assessment of vegetated foreshores in general and for nature-based coastal flood and erosion risk reduction solutions in particular for the foreseeable future.