

Challenge

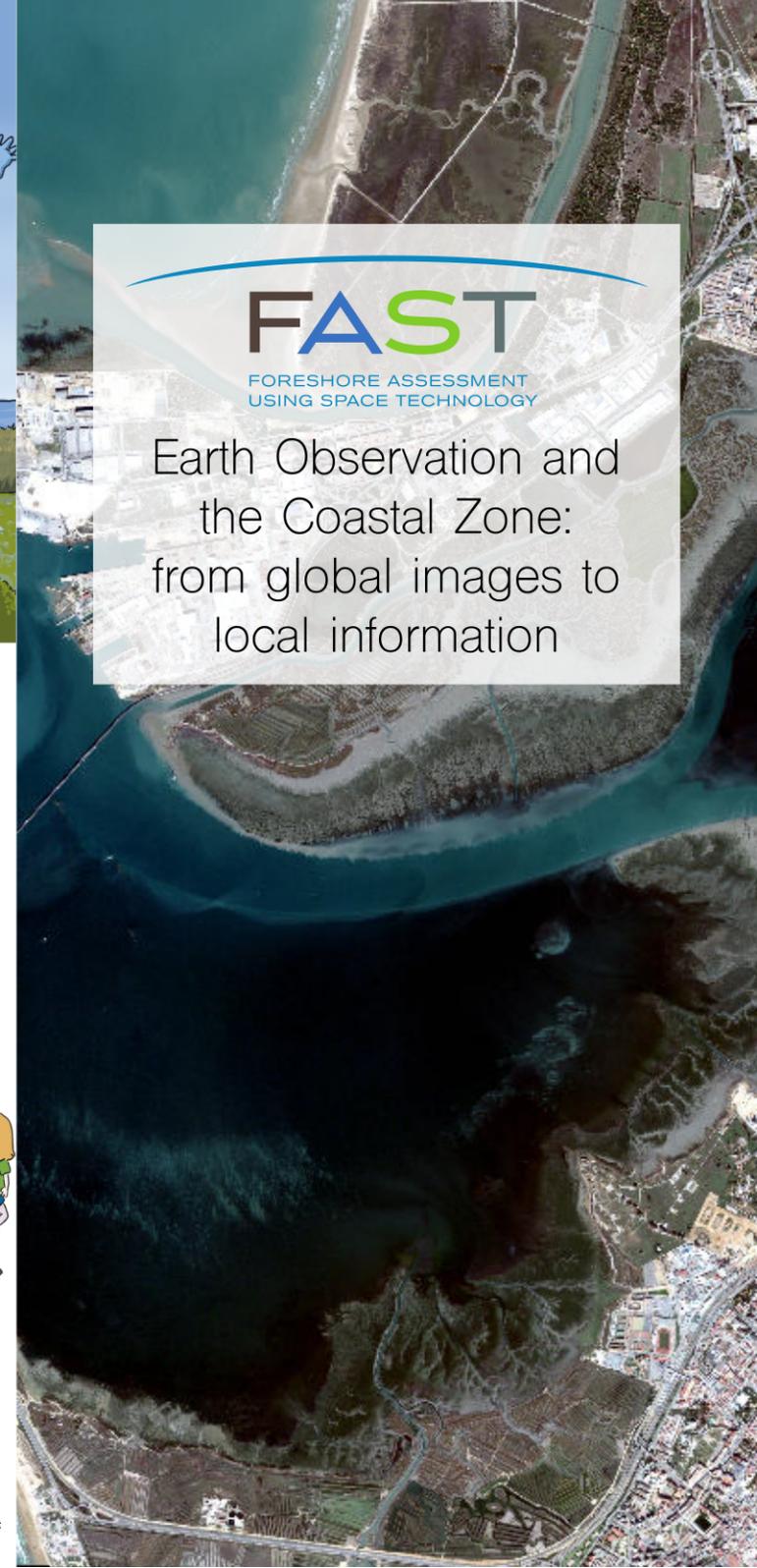
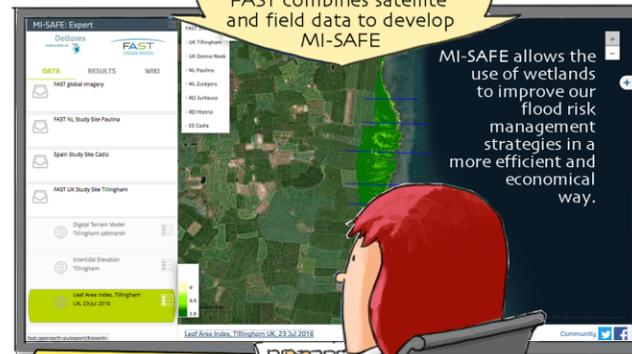
Flood risk is one of the most pressing challenges facing society today. Climate change increases flood risk and more solutions to maintaining safety against flooding are needed. Foreshores are delivering several ecosystem services, that can be utilized as part of solutions. Nature-based flood defence is becoming recognised as a potentially sustainable and cost-effective strategy for risk reduction. However, at the moment this concept is not widely implemented. Verifiable demonstrations of the benefits have been lacking and it is clear that flood protection engineers need trusted and practical tools that provide them with quantitative information on key flood hazard parameters.

Aim

The aim of the FAST project is to develop Copernicus services to assess ecosystem services of foreshores to help with the implementation of Nature-based Solutions in coastal flood and erosion risk management strategies, using space-borne data in conjunction with in-situ coastal wetlands data.

Achievements

The FAST project has developed the MI-SAFE package to provide data and modelling services in open and standard formats for coastal wetland habitats. The main vehicle for accessing and demonstrating these services is the MI-SAFE viewer. These services have been developed in consultation with key stakeholders. The long-term sustainability of the MI-SAFE package is safeguarded through the provision of a platform of services to end users as part of the Deltares Open Source Community.



FAST
FORESHORE ASSESSMENT
USING SPACE TECHNOLOGY

Earth Observation and the Coastal Zone: from global images to local information

MI-SAFE after FAST

We aim to provide sustainable long-term support for Nature-based Solutions.

Even after the FAST project ends, MI-SAFE services will be active, with hosting provided by Deltares, and support and Advanced (on-request) services available from the FAST team.

FAST community

Join the FAST community news service to stay informed about MI-SAFE major upgrades and new functionalities, training opportunities and events related to flood risk reduction (Community form, Fig.1. Box 2).

FAST community members have access to a support service for the MI-SAFE Educational and Expert level services (Issue form).

Contact us

Do you want to know about the latest advances in Nature-based solutions? Interact with us in :

 @MISAFE_services fast.openearth.eu
 @FP7FAST www.fast-space-project.eu
 FastSpaceProject

FAST team leaders

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The MI-SAFE package

Our Services

MI-SAFE offers data and modelling services at different levels of spatial scale and confidence:

- **Open Geospatial data service** (OGC data; Data tab) in standard and open format (with data on Elevation; Vegetation; Wave and water level statistics).
- **Open Source Modelling** (OS modelling; Results tab): Calibrated vegetation module to use on XBeach models based on our global vegetation presence map.

Educational level

- OGC data and OS modelling with global coverage at low resolution.
- Quick scan of potential Nature-based Solutions (NbS) even in data poor areas.
- Access to MI-SAFE Documentation

MI-SAFE
Educational
Global

Expert level

- Services calibrated and validated for FAST study sites with detailed local information on vegetation, bathymetry and waves.
- Pre-design assessment of NbS effect for kilometre scale locations.

MI-SAFE
Expert
Study sites
high-resolution

Advanced level

- Tailor-made solutions build upon Expert level services.
- Detailed NbS design or evaluation and performance over time can be implemented for any location.

MI-SAFE
Advanced
Tailor made
solutions

The MI-SAFE viewer fast.openearth.eu

The MI-SAFE viewer is our main vehicle for accessing and demonstrating our services, giving you free access to on-line resources (Educational and Expert levels) and ways to interact with the FAST community and the FAST team.

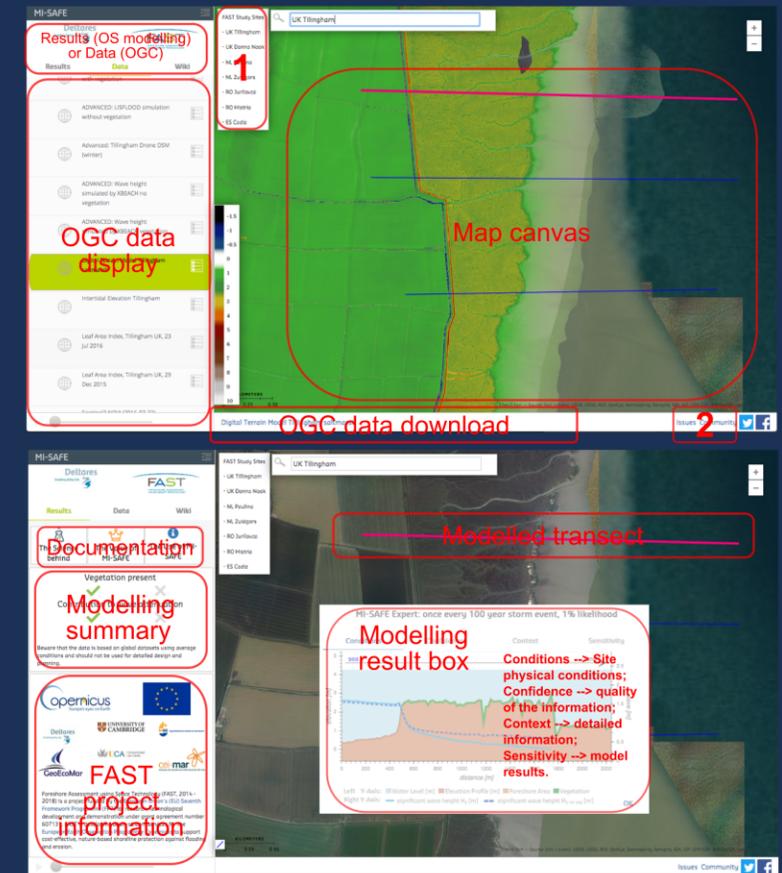


Figure 1 shows two screenshots of the MI-SAFE viewer interface. The top screenshot is the 'Data' screen, featuring a map canvas on the right and a sidebar on the left. The sidebar includes a 'Results (OS modelling) or Data (OGC)' section with 'Results', 'Data', and 'Wiki' tabs. Below this are several simulation options like 'ADVANCED: LIFT/OOD simulation without vegetation' and 'ADVANCED: Wave height simulated by XBeach no vegetation'. A red box highlights the 'OGC data display' button, and another red box highlights the 'OGC data download' button. The bottom screenshot is the 'Results' screen, showing a 'Modelling result box' with a graph of 'Modelling result' over time. A red box highlights the 'Modelling result box'. A 'Modelling summary' section is also visible, containing text about data reliability and a 'FAST project information' section with logos of partner organizations like Deltares, University of Cambridge, GeoEcoMar, and NIOZ.

Figure 1. Screen shots of the MI-SAFE viewer interface. Top 'Data' screen. Bottom, 'Results' screen. (1) Shortcuts to FAST study sites; (2) Community and issue forms.