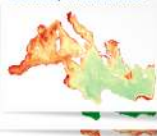


MODEL PREDICTORS

Multiple threats/pressures affecting the Mediterranean Sea

RANDOM FOREST DESIGN/APPLICATION



MODEL RESPONSES

Marine-Coastal Ecosystem condition



Dataset

90%

Train & Validation Data

10%

Test Data

- Split data into 10 blocks based on spatial clustering
- Hyperparameter Tuning
- Define parameters combinations
- For each combination of parameters train on the 9 blocks and test on 1 block
- Features selection on the best model (train on the 9 blocks and test on 1 block)

Retrain the model on the best parameters and selected features

Evaluate model (Accuracy, Precision, Recall, F1-score)

Satisfactory performance metrics value

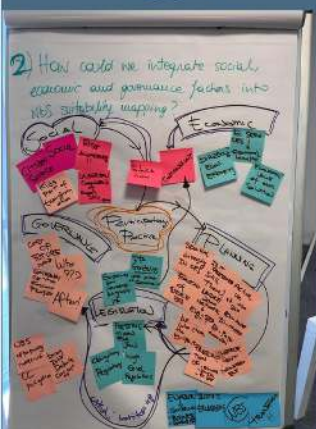
NO

YES

GIS-based multi-risk scenarios

Risk assessment framework

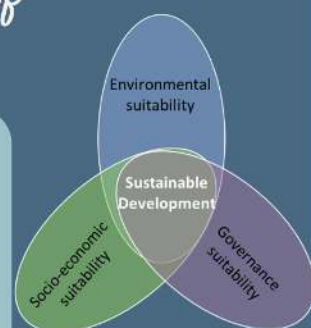
- The risk assessment model developed by CMCC focuses on seagrass across the whole Mediterranean Sea.
- The model is **data-driven** -> it can predict both positive and negative effects and will therefore foresee both areas of growth and contraction/shrinkage
- Additional variables suggested by participants that could be considered, include: a) present-day and future land use, b) anchoring, small-scale fisheries activities, c) spatial regulations, MPAs.
- Availability of data is key** when deciding what can, and should, be modelled.



Identifying opportunities for types of NBS

SUITABILITY MAPPING AND OPTIONS FOR MANAGEMENT

Identifying and reducing direct pressures, setting up compensation actions (biodiversity offsetting), and leveraging financial opportunities are key for advancing NBS implementation

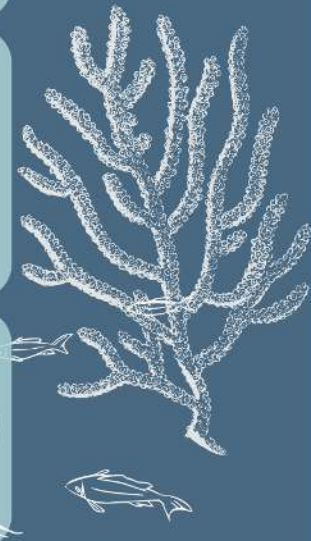


INTEGRATING SOCIAL, ECONOMIC AND GOVERNANCE FACTORS INTO NBS SUITABILITY MAPPING

When considering NBS suitability, it is important to define future use of an area, involve citizens, and set up enabling conditions to foster NBS implementation

SOCIAL, ECONOMIC AND GOVERNANCE FACTORS TO CONSIDER

Activities, uses, spatial restrictions, municipality boundaries, coastguard areas of responsibilities, other jurisdictional boundaries



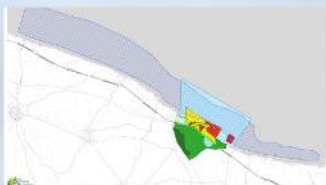
ITALIAN CASE STUDY

MARINE PROTECTED AREA OF TORRE GUACETO

Field Visit

Torre Guaceto protected area

The zones



Torre Guaceto protected area

The area includes:

- Marine Reserve: sustainable fishing;
- Terrestrial Reserve;
- Local products: wines, Oro del Parco extra virgin olive oil, Fiaschetto tomatoes;
- Recreational activities.

Turtle rescue centre

The activities include research, conservation, information and raising public awareness on the protection of marine wildlife and turtles.

Stakeholder engagement

Engagement pathway

Local stakeholder's involvement and participation -> direct dialogue and joined activities

Share knowledge, vision and data

What are the 3 words that come in your mind when you think of climate change adaptation?

consapevolezza
qualità della vita
erosione costiera
eventi estremi
resilienza
tropicalizzazione
catena alimentare
destagionalizzazione
cultura ambientale
ondate di calore
trasformazione

Future collaborations

- Online meetings to discuss available datasets;
- 2 workshops to design and test a model with local stakeholders, considering their perspectives and management needs.

