



# Overview and progress of consortium research related to the biology, ecology and aquaculture of rabbitfish

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## Background

Coastal habitats support the productivity of global fisheries, but are targeted by small-scale fishers using mosquito seine nets. However, this prohibited practice catches large proportions of juveniles mostly composed by rabbitfish (*Siganus sutor*). This context highlights the need of management measures for a sustainable use of marine resources.



## Main issues to be solved

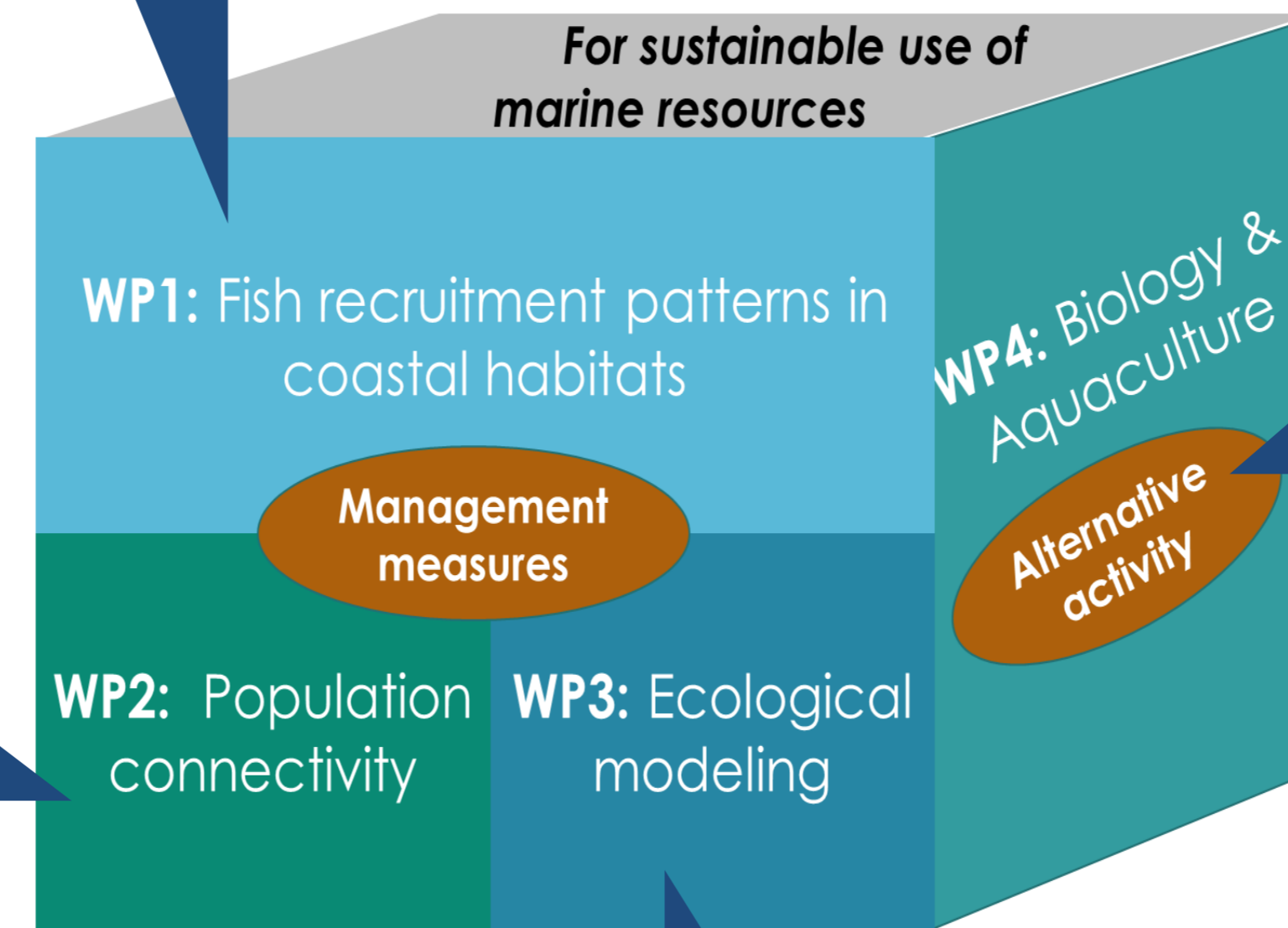
The project intends to explore an evidence-based solution for reducing the use of mosquito seine nets or beach seines and sustaining the use of the marine resource. Thus project was focused on species mostly dominant in fishermen catches from mosquito or beach seine nets.

## Methodology

WP1 was focused on recruitment monitoring for twelve months to identify the nursery areas and recruitment periods of *S. sutor* in coastal habitats. Sampling was carried out at four coastal habitats (from mangroves to the reef systems) in Madagascar and Kenya.

WP2 explore the origin of juveniles fish supplying the coastal habitats. Adult fish samples from four locations both in Madagascar and Kenya were sampled with 45 individuals per location. Genotyping is conducting in KU Leuven.

WP3 develop models predicting the newly settled *S. sutor* arrival using historical data and recruitment data from WP1. Remotely sensed oceanic conditions with some local environmental conditions will be combined to fit the models using machine learning.



WP4 define the natural trophic behavior of the three ontogenetic stages of *S. sutor* and conduct isotopic analysis. Capture-based fish grow-out experiments were performed by testing different treatments (diet types and densities)



## Main findings so far

- ❖ Seagrasses near the coast constitutes the main nursery areas for *S. sutor*
- ❖ Body size increased when approaching the reef systems
- ❖ Two recruitment periods were observed: cool season (August) and warm season (December and January)
- ❖ Locally produced diets appeared significantly performant to *S. sutor* growth : body size reached up to 15±2 cm SL in five months.

## Conclusion

Further findings related to WP1 and WP4 can be found in posters presentation entitled “The potential nursery areas and recruitment season of *S. sutor* in Madagascar”, and “Density and fish diet effect on rabbitfish growth in controlled systems”. The data analysis for WP2 and WP3 is still in progress.