

# Participatory Modelling of Wellbeing Tradeoffs in Coastal Kenya

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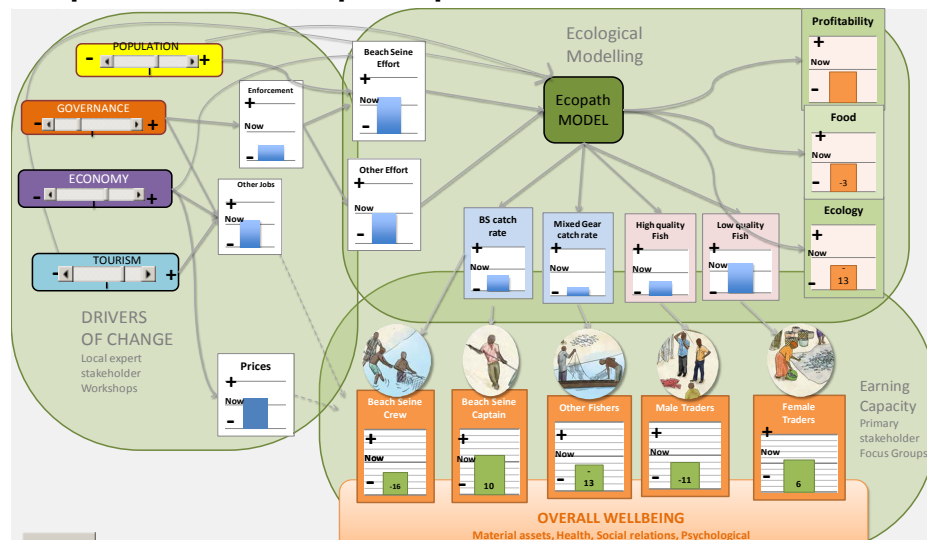
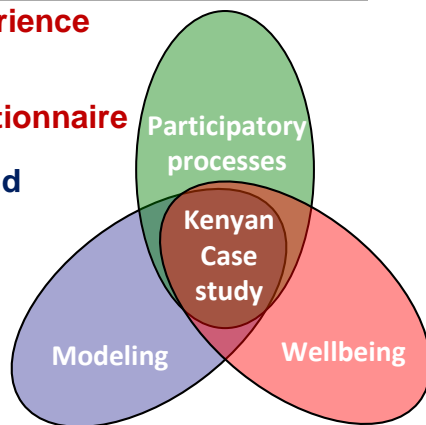
## Introduction

P-Mowtick is an experiment in using novel combinations of tools to integrate knowledge systems and perspectives to understand how ecosystem-service tradeoffs affect wellbeing of the poor.

- **When:** 2011 and 2012
- **Who:** Experienced Kenyan researchers, researchers with expertise in modelling, ecosystem services, wellbeing, and environmental governance.
- **Where:** Multi-use landing site in Mombasa, Coastal Kenya  
 This site includes a number of different stakeholders relying on the resource for their wellbeing. We focussed on captains and crew using illegal beach seine gears, individual fishers using other gears and male and female fish traders.

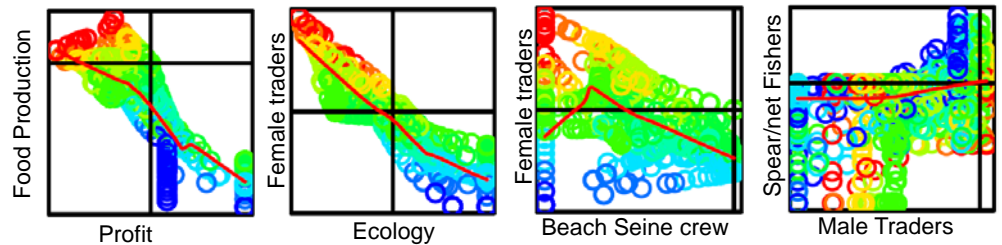
## Methods

- **Focus groups on subjective experience and definition of wellbeing**
- **Resources and basic needs questionnaire**
- **Ecological models of the coral and seagrass ecology and fisheries (Ecopath)**
- **Participatory workshops with secondary stakeholders to map out system linkages and drivers**
- **Integrative methods:**
  - **Interactive Social-Ecological System 'Toy Model' simulating how four drivers interact with intermediate variables, fishing activity and the ecological system leading to trade-offs between the well-being of each of the primary stakeholders and three management objectives (see below)**
  - **Alternative scenarios featuring trade-off dynamics for discussion with primary and secondary stakeholders (see right)**
- **Monitoring impact – Observations, surveys and follow up interviews with participants**



## Results

- Fishing activities alter the ecosystem and the nature of ES produced creating tradeoffs. E.g. Optimising for profitability or food production will lead to reductions in other objectives.



*Modelled tradeoffs and synergies between management objectives and earning opportunities for different stakeholders*

- Changes in ES have direct distributional and well-being impacts e.g. 'trash fish' from beach seines supports the businesses of poor women fishmongers and food security of local consumers.
- Better ecological status and more profitable fishery of lower inputs and larger fish, but these fish would enter different markets and benefit different stakeholders. Trade-offs thus emerge both from ecological and from social dynamics, and present hard choices and challenges both for management based on single objectives, and for commonly held views on sustainable fisheries.
- Participants reported a development of their awareness and ability to consider trade-offs, particularly through playing with the model, while 11/14 respondents felt that their experience of the workshop will affect some of the decisions or activities in their work.



## Key Findings

- Tradeoffs occur between ecosystem services, and between multiple stakeholders, at various scales, within the social-ecological system
- Our approach illuminated 'hidden' conflicts between people's wellbeing, their future aspirations, and ecosystem sustainability
- Engaging different actors in participatory trade-off analysis can stimulate constructive deliberation of possible ways forward