Piloting Local Fishery Models on the South Kenya Coast

Richard Taylor and Neela Matin
Stockholm Environment Institute (SEI)

Theme: participatory ABM done across levels of coastal decision-making, including the poorest people (resource users).
Setting of the research

Study area: Kenya South Coast

Reef, mangrove and beach ecosystems

Beach Management Units (BMU)

Hotels
Review literature

Lot of work on ecology; less on social

Fishing often thought of as low-status livelihood but actually includes diversification (Bene, 2003)

Coastal policies, land use and resulting ecological change on SKC (King 2000)

Very little literature on BMUs yet

First modelling was 'big picture' UML - challenging (see Forrester et al. 2014)
Conceptual modelling

Modelling the link between human action and an ecosystem service

Goal: nest ABM simulations of localised bits of the system within the overall conceptual model
Run workshops on participatory mapping and modelling

Wider area resource management

Fisher networks in coastal Kenya
Go to the field to observe/discuss

Entry points
How research is perceived is important

Resource users need to be included. Models as discussion platforms?
Pilot modelling

Some theoretical input & some local data about what are important actors, resources, etc.

Less emphasis on full development and analysis
Pilot modelling

Appropriate level of abstraction

Configurable model
Lessons/findings using pilot models

Concentrating on generally applicable lessons, and relating lessons to aspects of models

1. Modelling helped generate and feed back viewpoints across different levels of decision and action, and different disciplines

2. Visual presentation is important - use an appropriate level of abstraction for users
Lessons/findings using pilot models

3. Model interactivity helps - users can configure the model
   - is it 'playable'?

4. Incorporating local social & environmental data helps make models suitable for discussion.
Epilogue

These models did not help discuss power!

We collected some data about power and different stakeholder interests.

This knowledge was however helpful to us - we tried to avoid using models to tell a particular story..

Social equity and gender

A modelling idea for SEI's GSE programme?