Deliverable 5.1

Minutes of workshop W3 on integration WP5 and WP6

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SUMMARY

The workshop W3 held in Rome April 1st 2014 was the opportunity to review progress of the work in WP5 and 6 on economy and management. The tasks are well on track and the models developed in WP5 will provide relevant indicators to be integrated in the management strategy evaluation of WP6.
It was noted that the communication between WPs should be improved for a better integration of the work in case studies.

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INTRODUCTION

The integration of management and economics is crucial to the success of BENTHIS in delivering recommendations for managers. In order to promote efficient management measures to decrease the impact of fishing on the benthos, the incentives behind the proposed mitigation measures must be understood. The economic WP (WP5) has an important role in ensuring the delivery of economic and social indicators for the management evaluation developed in the management WP (WP6). This workshop was organised to initiate the discussion on i) what kind of indicators can be produced by the generic methods and ii) what kind of indicators are needed for evaluation of management.

1 PRESENTATION OF ON-GOING WORK

To understand the potential contribution of the economic work to the evaluation of management measures, the work currently undertaken in WP5 and WP6 was briefly presented to the workshop. All the presentations are available on the sharepoint.

1.1 Work package 5: Economy

1.1.1 Task 5.1

The task 5.1 is the development of a framework for the analysis of economic performances of alternative fishing gears. This task is led by IFREMER and was presented by Mathieu Merzéréaud. The model developed in this task allows for simple comparison of the economic performances of different fishing practices. The model can be used to evaluate the profitability of new fishing gears or of effort regulation of different metiers. The analysis can be done at the fleet or vessel level.
The model development is near completion, well on track for the delivery in October 2014. The model uses a simple table format as input where the costs and production data per metier (that can be a combination of gear, area, season and targeted species) are input by the user. The data is then read in R. To facilitate the use of the model and make it user-friendly, a graphic user interface (GUI) was developed to modify data simply. Stochasticity of all parameters can easily be investigated using standard distribution functions.
All case studies intend to apply this analysis in BENTHIS. The model produces the usual economic indicators such as profit, gross revenue, crew wages, etc. In addition sustainability indicators could also be calculated: Litres of fuel per kg fish, litres of fuel per EUR of revenue, etc.

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1.1.2 Task 5.2

The task 5.2 is the development of a short-term fleet dynamic model simulating the adaptations of the fishing fleets to management. This task is led by IMARES and the progress of the work was presented by Jan-Jaap Poos. The model developed in this task allows to investigate the change of short term fishing behaviour of the fishing fleets when conditions change using dynamic state variable programming. Current applications cover the incentives to discard in a multispecies fishery with quota mismatch, implementation of a discard ban and area closures.
The model is available as an R package and will be applied in the North Sea case study, other applications are still unclear but not expected as the data availability is key to parameterise the model and some case studies have their own models. The model produces some short term economic indicators such has revenue and fuel costs and production and effort allocation to different areas.

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1.1.3 Task 5.3

The task 5.3 is the modelling of investment in innovative techniques. This task is led by LEI. The task is divided into several steps. The first step was a literature review of real option theory in investment behaviour completed by CNR and presented by Matteo Ferraris. The presentation included application of real option theory to fisheries examples and highlighted the key advantages and issues related to the use of real option theory namely that it accounts for the irreversibility of choices and the delay in the decision making process but the formalisation of the choices means defining the type of options one want to

enforce. The behavioural drivers identified in the review are the growth rate of the fish stocks, the fish price, the landings, the discount rate, the revenue per fisher/enterprise, the salvage value, operating costs for a fisher/enterprise, licence fee, Profit function for a fisher/enterprise.
The next step will be to formalise the real option theory with a discrete choice model to evaluate the potential investment in new gears.

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1.2 Work package 6: Management

1.2.1 Task 6.1

The task 6.1 is the review of evaluation of possible management measures. This task is led by IMARES and was presented by GerJan Piet. For this task, the idea is to look at past evaluation of management measures published in peer-review articles or in reports and identify the indicators used to evaluate the performances of the measures. The BENTHIS partners should send reports or publications of known cases to the task leader to make an inventory of the indicators used (either in a before/after case or parallel comparison of areas with the measure and areas without). In addition, the modellers of generic WPs and case studies should send the list of the indicators produced by their model.
The second step will be the selection of indicators that can be calculated and that are also consistent with the directives (MSFD, Natura 2000, CFP). The list of indicators defined in SOCIOEC can be used as a base here for the economic and social indicators.

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1.2.2 Task 6.2

The task 6.2 is the development of a decision-support tool. This task is led by LEI was presented by Sander van den Burg. This task aims at developing tools to help the decision making process of two groups, fishers and managers. A possible tool that could be provided to fishers would be (seasonal-) maps with the most vulnerable areas to help them decide where to fish. For policy-makers the tool would provide a framework to rank different management measures based on multiple criteria covering ecological, economic and social aspects of the fishery. A subset of the indicators defined in the task 6.1 will be used in each case study to evaluate the performances of the mitigation options. The regional SMEs could contribute to the selection of the relevant indicators. The weights given to each aspect of the system (ecological, economic and social) will be defined with the stakeholders by the local WP6 partner (LEI/IMARES for the North Sea, DTU-AQUA for the Baltic, IFREMER for the Western Waters and HCMR for the Adriatic).

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1.2.3 Task 6.3

The task 6.3 is the evaluation of management strategies. This task is led by IMARES and the objectives were presented by GerJan Piet. In this task, the mitigation measures will be ranked using the indicators selected in 6.1 and the weights defined in 6.2. The indicators selected should change with the implementation of the mitigation measures and will be produced by models in case studies.

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2 INFORMATION FLOW WP5 – WP6

Information on expected economic performances is very important for the investigation of economic and social impacts of the management strategies to be evaluated in WP6. The link between the economic work and the management strategy evaluation (MSE) must be done on two levels, at the generic WP level where modellers can provide the set of indicators they can produce and in case studies where the relevance of indicators must be discussed with regards to the scenarios to be evaluated.
The contributors of WP5 and WP6 were selected with this link in mind and partners from all case study regions have time allocated to those work packages (although the Black Sea partner has only limited time in WP6).
At this point we identified some information that need to be shared:

- WP5 modellers should provide WP6 with the list of indicators potentially produced by their models
- WP6 will compare those indicators with the policy requirements (MSFD, CFP, DCF, etc) to make sure that all directive boxes can be filled and get back to the modellers t if additional/alternative indicators are needed

3 IDENTIFY THE FLOW OF INFORMATION BETWEEN WP5- WP6 AND OTHER WPS

Beyond those two work packages, at this point of the project the communication between generic work packages and case studies need to increase. The list of mitigation measures to be investigated in each case should be available to generic work packages so that they can think of the approach to MSE.
We expect that the exchanges between WPs will mainly happen within case studies where it will be important to identify the flow of information.

Examples of information sharing:

- Habitat/vulnerability maps should be provided from WP2/WP3 to define areas in fleet dynamic models of WP5
- The simulated effort per area of different gears should then be used to calculated predicted impact from WP4 information and provide ecological indicators for WP6

4 CONCLUSION

The work of WP5 and WP6 is well on track with the planning, the first deliverables will be submitted in the next few months. The indicators that can currently be produced with WP5 models fit well with the needs of WP6. It was noted that the information flow between WPs should be improved to increase the relevance and integration of the work done in generic WPs.

To finish the D6.2, WP6 requests partners to deliver regional examples on management/mitigation measures that have been evaluated. Modellers of generic WPs but also modellers in case studies should communicate the list of the indicators they can produce. This will facilitate the selection of indicators based on potential change with management measures and availability.

APPENDIX 1 AGENDA OF THE WP5-WP6 WORKSHOP

Agenda WP5-WP6 meeting BENTHIS
Rome, 1 April 2014

Venue: CNR headquarter
Sharepoint:
https://teamsites.wur.nl/sites/benthis/WP5%20Economics/Forms/AllItems.aspx?RootFolder=%2Fsites%2Fbenthis%2FWP5%20Economics%2F1%2E%20meetings%2F2014%2D04%2D01%20WP5%20WP6%20workshop

Time	Topic	Who
Tuesday 1st April 2014		
9:00	Welcome and short introduction of the workshop	GerJan/ Katell
9:15	WP5 presentation objectives and tasks	Katell Hamon
9:30	WP6 presentation objectives and tasks	GerJan Piet
9:45	5.1 presentation of the static comparative model	Mathieu Merzéréaud
10:15	5.2 presentation of the fleet dynamic model	Jan-Jaap Poos
11:00	Coffee break	
11:30	5.3 presentation of investment behaviour review	Matteo Ferraris
12:00	6.1 evaluation of possible management measures	GerJan Piet
12:30	Discussion: Selection of indicators (Ecological, Economic and Social) and the possibility to calculate the indicators using the available knowledge from WPs 2,3,4 (Ecological) and WP5 (Economic and Social)	All
13:30	6.2 development of decision support tools (DST)	Sander van der Burg
14:00	Lunch	
15:00	6.3 management strategy evaluation (MSE)	GerJan Piet
15:15	Discussion: Approach for MSE using the DST. Integration of models and stakeholder participation	All
15.30	Discussion: linking WP5/6 to WP2/3/4	All
16:00	Coffee Break	
16:30	Discussion: linking WP5/6 to WP7	

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