



Beaufort Marine Research Awards

Work Programme

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Ref. No.	Topic	Institution
	Economic and Social Research	NUI, Galway

Funded by the Irish Government under the National
Development Plan (2007 – 2013)

INTRODUCTION

The Department of Communications, Marine & Natural Resources has charged the Marine Institute with the overall management of the Beaufort Marine Research Awards as a key research capacity component of *Sea Change*.

In accordance with Clause 9 of the grant agreement between the respective Grantee and the Department of Communications, Marine & Natural Resources (dated June 26th 2007) all Beaufort Grantees are required to develop a work programme.

These **Guidelines** are intended to provide grantees with the key requirements for preparing such work programmes. The aim of the guidelines is to provide a structure for the work programmes, providing consistency across all research areas and grantees and enabling the Marine Institute to consistently manage the implementation of the awards.

The Institute is willing to engage on a bilateral basis on any issues of concern that research groups have in relation to the enclosed information.

PROJECT MANAGEMENT

The following individuals/groups will input into the ongoing management and implementation of the Beaufort Marine Research Awards.

Grantees

Project Co-ordinator

In the case of the research topics with multiple grantees (Ecosystem approach to Fisheries Management, Marine Biodiscovery and Fish Population Genetics), and where a consortium exists, a project co-ordinator should be appointed. This person will be responsible for the overall co-ordination of the work to be carried out by each of the Grantees in the topic area. Specifically, the responsibilities of the project co-ordinator include:

- overseeing, in co-operation with the MI project supervisor (see below) the development of the work programme for each of the Grantees;
- chairing the steering group (see below);
- overseeing the co-ordination of the work programmes of each of the Grantees to ensure that all deliverables are met;
- ensuring that the recommendations of the external review group are addressed by the consortium and each of the Grantees; and
- organising and ensuring attendance of relevant parties at all meetings required during the lifetime of the award; and
- acting as a focus for information exchange between Grantees and the Marine Institute.

Project Lead

Each Grantee is required to appoint a project lead, who may be also be the project co-ordinator. This person will be responsible for overseeing the work to be carried out by the grantee to ensure the research is carried out in accordance with the award and will at all times act as the point of contact between the grantee and the Marine Institute or its agents. The responsibilities of the project lead include:

- overseeing, in co-operation with the MI project supervisor (see below) and, where relevant, the project co-ordinator, the development of the work programme;
- overseeing the work programme of the Beaufort researchers within their institution to ensure that all deliverables are met;

- ensuring compliance with technical and financial reporting requirements and guidelines;
- liaising with the Marine Institute on all matters relating to the award;
- where a review group has been established, ensuring that any recommendation made by it are addressed;
- organising and hosting dissemination seminars throughout the award as appropriate; and
- acting as a focus for information exchange between researchers and the Marine Institute.

Project Steering Group

An project steering group should be established to oversee the scientific and administrative management of the award(s). The steering groups should be constituted as follows:

Socio-Economics and Sensors & Communications

The project lead & Co-ordinator (where applicable) in the Grantee institution (chair)
 Marine Institute project supervisor
 Principal Investigator
 Research collaborators
 Others where applicable

EAFM, Marine Biodiscovery and Fish Population Genetics

The project co-ordinator (chair)
 Project leads from the partner institutions
 Marine Institute project supervisor
 Principal Investigator
 Research collaborators

Marine Institute

Project Supervisor

The MI has appointed project managers for each of the award areas (See Table 1) with overall responsibility for all matters associated with the strategic and technical elements of the awards. Their specific responsibilities include:

- managing the development of work programmes for each grantee within the respective research area;
- ensuring co-ordination between the work programmes of multiple grantees (where relevant) within a research area;
- liaising with grantees to ensure the appropriate personnel, as funded under the award, are recruited;
- assisting, where relevant and appropriate, in the selection of PIs, Researchers and PhD Students;
- ensuring the work programmes are adhered to and that grantees are meeting the stated deliverables;
- ensuring ongoing co-ordination of work programmes between grantees within a research area; and
- ensuring the research being carried out by the grantees remains focused within the relevant strategic context (i.e. *Sea Change*).

Table 1: Marine Institute project supervisors

	Priority Research Area	MI Directors/Managers Responsible
1	Ecosystems Approach to Fisheries Management (EAFM)	Dr. Paul Connolly (Director of Fisheries Science Services)
2	Marine Biodiscovery	Mr. Eoin Sweeney (Programme Manager Discovery Research Measure)
3	Sensors	Mr. Eoin Sweeney (Programme Manager Discovery Research Measure)
4	Fish Population Genetics	Dr. Ken Whelan (Director of Aquaculture & Catchment Management Services)
5	Economic & Social Research related to the Development of the Dynamics of the Marine Sector in Ireland	Ms. Yvonne Shields (Director of Strategic Planning & Development Services)

Sea Change - Funding and Administration Office

The Marine Institute's Sea Change Management Unit (Funding & Administration Office) is responsible for all matters associated with or relating to the administration of the awards, specifically:

- ensuring timely delivery of technical and financial reports/deliverables;
- liaising with the research groups on all project administration issues;
- ensuring that regular, six-monthly, meetings between grantees and project co-ordinators take place;
- ensuring steering group meetings take place;
- organising dissemination events (workshops etc.); and
- monitoring expenditure.

External Review Group

External review groups will be established by the Marine Institute for each of the research areas. This group will consist of a panel of peer reviewers who will meet once a year to review the scientific outputs of the Grantees and provide recommendations for its future direction. The panel will ensure that research outputs and activities of the Grantees are consistent with the objectives of *Sea Change* and will generally support the ongoing development of the project.

WORK PROGRAMME REQUIREMENTS

The Grantee is required, no later than six months after the commencement date of the award (December 2007) to submit to the Minister for Communications, Marine & Natural Resources (or successor), via the Marine Institute, a detailed work programme for the duration of the Term (seven years) which shall be consistent with the original application submitted by the group in April 2007 and the grant agreement.

As stated in the grant agreement "the Grantee shall take account of any comments and suggestions of the Minister in relation to the Programme and shall make any such changes to the Programmes as are reasonably necessary to address such comments and suggestions. Thereafter the Programme shall only be amended with the Minister's prior written consent".

It should be noted that where a Principal Investigator is to be recruited by the research group as part of the Beaufort award they will have an opportunity to refine the programme, with the agreement of the Marine Institute, once recruited.

The project co-ordinator (on behalf of the research group) is responsible for submitting the work programme and ensuring that they are of a satisfactory standard.

Please note that in developing the work programme the grantee should be aware of the contractual requirements (Clause 9.2) to provide an annual progress report. In addition to this annual report, grantees should aim to provide shorter 'interim' reports at six-monthly intervals.

All project reports should be submitted electronically to the Marine Institute, backed up, where necessary, by paper records (e.g. in the case of financial reports).

Grantees should be aware that the Marine Institute is developing a research information management system (RIMS) that will allow for the online submission of reports. Grantees may be obliged to submit project reports online via this system once it is operational.

Please complete the work programme template below.

WORK PROGRAMME

Section A: Award Summary

A.1 Award Details

Research Topic¹:	Economic and Social Research rel to the Development of the Dynamics of the Marine Sector in Ireland			
Name of Research Group:	ICERTS			
Value of Award:	€2.1 million			
Project Co-Ordinator:	Prof. Michael Cuddy			
No of Individuals Supported by the Award:	<i>BMA Principal Investigator</i>	<i>BMA Researchers</i>	<i>BMA Postgraduate Students</i>	<i>BMA Summer Graduates</i>
		2	3	21
Work Programme Completed by:	Prof. Michael Cuddy		Date: 09/2015	

1: State which one of the five Beaufort research topics this award relates to.

A.2 Links to Other Beaufort Awards

Provide details of links to other Beaufort Marine Awards (if applicable)

Beaufort Award Ecosystems Approach to Fisheries Management originally included a proposal to carry out an economic evaluation of EAF in collaboration with NUI, Galway. Although this was not funded in the award the Beaufort EAF project partners are of the strong view that the economic aspects of the EAF must be undertaken in the project. As a result, economic evaluation has been included in their work programme and every effort will be made through the Beaufort EAF to source additional funding. Their work programme describes how the Beaufort EAF project aims to link to the current research programme, with which we are in full agreement.

Under this current award, links with other Beaufort and Parsons marine research awards will also be established to strengthen the socioeconomic aspects where applicable.

A.3 Overview of Work Programme

Provide a brief narrative overview of the work programme (1 page max).

The overall aim is to establish a world class Unit, SEMRU (Socioeconomic Marine Research Unit) for marine socioeconomic research in Ireland around a research cluster in Galway led by ICERTS, NUI, Galway and linking with RERC, Teagasc, the Marine Institute and other research institutions in Ireland. The vision for the centre is that it will underpin the development of the marine sector in Ireland as elaborated in the Sea Change strategy, that it will contribute to the EU marine socioeconomic research agenda and that it will strengthen marine research in general through providing a complementary socioeconomic element into scientific projects; it will train researchers to contribute to continuing research and to the transfer of tacit knowledge to marine industry, thereby enhancing innovation and raising its competitiveness.

The workprogramme will comprise three major blocks:

- (i) Marine socioeconomic research capacity building
- **WP1: Establish a international level capacity in Marine Socioeconomic research at ICERTS, NUI, Galway in collaboration with RERC Teagasc and the Marine Institute**

The research capacity building exercise will consist of building on existing competences to establish an international identity, recruiting internationally recognised researchers (Senior Researcher and Researcher) in the field, who will lead the research activity; recruiting PhD students who will enlarge the research activity and establishing an international level PhD training programme; developing national and international research networks - with marine scientists, the marine industry and the international academic community in the socioeconomic marine area. Performance indicators will inform success in the timeliness of deliverables and the expansion of research activity.

- (ii) Constructing data bases and monitoring the evolution of the marine sector
- **WP2: Create an integrated data base and data collection process in the Marine Socioeconomic field and put in place an instrument for monitoring the evolution of the marine sector**

Data bases are essential to the application of modelling and analytical tools to understand the sectoral activities, monitor the sector's evolution, evaluate its competitiveness, and support the formulation of policy measures to enhance the sectors competitiveness and their impact on the marine sector.

The data collection exercise, although particularly intensive over the first three years will continue over the total planning period. It will provide the data necessary to prepare a bi-annual report, which will monitor the current state of the Marine Related Activities and Resources in the Irish Economy. The data provided here will be mainly secondary data extracted from existing statistical and statutory agencies' records and reports. In particular, the data collected by the Central Statistics Office, will be the focus of engagement to ensure a more refined reporting framework, in respect to Marine Sector activities. The data collection activity will be synchronised with the data collection of the Marine Institute, through its research and various statutory functions. Any gaps remaining will be filled by the collection of primary data.

The database will be managed in a way that will allow it to be publicly accessible to public bodies and researchers, especially in the marine sector. Oversight of the database management will be provided by a Marine Socioeconomic Data Management Committee.

- (iii) Research Programme

A. Research Programme 2008-2010

The research over this period coincides with the research activity of the principal investigators and researchers in collaboration with the PhD students, who have been funded over this period:

- **WP3: The impact of regulation on the development of the marine industry**

Those sectors where particular regulations curtail their development will be identified and further research will be suggested in order to identify policy measures, which can mitigate those negative impacts. The principal focus, however, will be the impact of the Common Fisheries on the the fishing industry in Ireland, in particular its impact on coastal communities and their sustainability. It will look at best practices in the EU, within the constraints of the Common Fisheries Policy and also best practices in other parts of the world where the livelihood of coastal communities is seen as a priority. These investigations will be explored against a background canvas of "spatial planning" of coastal zones, which is receiving increasing attention in the international marine literature.

- **WP4: Competitiveness and Innovation in the Marine Food Sector**
The competitiveness of the Irish marine food industry will be examined and its limited success in innovation as evidenced by various reports pinpointing poor development of value-added product, packaging and marketing will be explored. The success of the industry in other countries and other sectors of the food industry in Ireland will also be studied for lessons that can be learned. Finally, the study will make proposals for action at government and industry level to improve the current position.
- **WP5: The economic and social impact of the marine sector**
This research will provide a social and demographic profile of coastal communities, estimate the down-stream impact of the marine sector on other sector's in the Irish economy and the impact of marine sector on the local economy and employment. This work will engage quantitative and qualitative methodologies; it will use secondary data and primary data including case studies. The RERC Regional Economy Model (RERC-REM), a Computable General Equilibrium (CGE) Model and an I/O SAM model will be used for the quantitative impact analysis at the regional level, while the RERC Simulation Model of the Irish Local Economy (RERC-SMILE), a spatial microsimulation model, will be applied at the household level to quantify policy impacts at the local community level.
- **WP6: Economic evaluation of marine based energy sources**
The Economic, Environmental and Social Impact of marine based renewable energy will be the research focus. Drawing upon work done in the UK Supergen project, the Teagasc's Regional Economic Model (RERC-REM) will be disaggregated to incorporate the marine and non-marine renewable energy sectors. This framework will be utilised to assess the macro-economic and environmental impacts of expenditures associated with the development of these sectors for electricity generation. The RERC-REM model is a CGE model as in the McGregor et al model in Scotland which allows for supply-side influences to be incorporated in the analysis over and above the static economic impact of expenditures on marine renewable energy.
- **WP7: Measuring the non-market benefits of recreational marine resources**
The study will undertake a review of the literature related to economic incentives, regulatory framework and policies concerned with marine coastal recreation and tourism. It will then apply the CVM (Contingent Valuation Method) approach to measure non-market values associated with different coastal landscapes in Ireland. This is a thoroughly tested survey based stated preference technique to estimate public preferences for and willingness to pay for the different marine landscapes types.

B. Research programme 2011 – 2014

The research over this period will be elaborated by the Programme Co-ordinator and the Senior Researcher with the advice of the Project Management Committee and the External Project Steering Committee. The research topics will build on the research of the earlier period and address some or all of the Marine sub-sectors and activities (Table 2). The work will be primarily policy oriented and continue to underpin the Sea Change Strategy.

Table 2: Marine sub-sectors and activities

Marine Sub-sectors	Marine Activities
Marine Services	Shipping and Marine Transport, Water based tourism (domestic and overseas), International Cruise, Marine Commerce and Other Marine Services
Marine Resources	Fish Processing*, Fish Landings*, Aquaculture, Hydrocarbon Exploration, Gas Production, Offshore Renewable Energy* and Seaweed
Marine Manufacturing	Marine Technology, Boat Building, Marine Biotechnology and Other Marine Manufacturing.

The research topics which will be elaborated after the appointment of the Senior Researcher and delivered post 2010 may include the following which will be negotiated and agreed upon by the MI:

- Trends in consumer behaviour, both in Ireland and internationally, regarding the food market generally and the marine food sector in particular.
- Trends in supply chain innovation in the marine food sector.
- Potential advantages of utilizing country of origin effects and 'eco-labeling' in the branding of Irish seafood.
- Examine the potential of marine functional foods in Ireland.
- Assessing past, community led, socio-economic strategies based on pluri-activity with a view to informing future development policies concerned with remote and rural socio-economic development.
- Projecting the impact of contemporary settlement trends, in terms of population distribution, housing development and environmental impacts on coastal communities.
- Developing and refining the SAM to integrate more complex policy and economic development scenarios for policy analysis.
- Development of a spatially-enabled model capable of assessing the costs and benefits of investing at particular sites.
- Further development of the GHG model to assess differential performance in marine energy technologies and thereby guide future R&D investment in this area.

The research capacity created over the earlier period will ensure that additional funding will be attracted to expand the research programme. The funding will come from agencies like the EPA, BIM, Western Development Commission, IRCHSS, SEI, Shannon Development, ESPON, DAFF, EU FP7 and AquaTT and UN FAO. ICERTS has already obtained funding from most of these sources.

- (iv) A governance and reporting structure

- **WP8: Put in place a governance and reporting system**

A governance and reporting system will be put in place to ensure the proper discharge of responsibilities toward the donor and the stakeholders in the project. The governance system will consist of an external advisory board, an internal management board and stakeholder committees relevant to the different research work packages. The reporting function will be consistent with the demands of the donor and requirements of due diligence.

A.4 Objectives

Outline the overall objectives of the work programme

- (i) Build Marine Socio-economic Research Capacity through the development of a world class Marine Socio-Economic Research Cluster in Galway comprising ICERTS, NUI, Galway, RERC- Teagasc and the Marine Institute
- (ii) Carry out research which will underpin the Sea Change Marine Strategy through describing, modelling and analysing the current state of the marine sector, simulating alternative scenarios and proposing or recommending alternative policy measures, thereby enhancing the competitiveness of the marine sector..
- (iii) Support/complement scientific research projects through joining in project proposals from other branches of marine science, thereby providing economic evaluation to marine science findings.
- (iv) Attract further research funding to support the elaboration of the marine socioeconomic research programme in Galway, including future Irish funding and, in particular, European Commission FP7 funding.
- (v) Train PhD students in Marine Socio-economic Research, so that they can continue to sustain the socioeconomic research effort as well as transferring tacit knowledge to the marine industry, thereby creating innovative capacity and enhanced competitiveness to the sector.
- (vi) Provide placement for potential future researchers in the marine area, thereby upgrading their interest and skills.

A.5 Deliverables

Outline all anticipated deliverables, including timelines

Summary

- (i) Marine socioeconomic research unit established within ICERTS linked to RERC, Teagasc and the Marine Institute
- (ii)
 1. Marine database established with ongoing data collection processes in place
 2. Bi-annual report on the evolution of the Marine Sector in Ireland
- (iii)
 - A.
 1. Report on new approaches to coastal fisheries planning
 2. Report outlining the state of competitiveness and innovation in the Irish marine food sector and a suggested a range of proposals to enhance competitiveness and innovation in the sector
 3. Quantification of downstream impact of the marine sector on other sectors and on the local economy and employment

4. A simulation model developed to quantify emissions from alternative energy usage mechanisms and to cost marine renewable electricity generation at different capacity scales.
5. A quantification of the non-market benefits of recreational marine resources in Ireland using "stated preferences" evaluations

- B. Additional deliverables from new projects implemented post 2010 (see Section A3 above)

(iv) Governance and reporting structures in place

Specific deliverables arising from work packages are provided in Table 3.

Table 3: Specific deliverables

No.	Deliverable	Month
D1	Capacity Building	
D1.1	Recruitment of researcher in Marine Socioeconomics – Senior Researcher and Researcher	1-12
D1.2	Engagement of 3 PhD students to carry out research in agreed fields	1-6
D1.3	Completion of PhD training	1-36
D1.4	Establish networks in Ireland and internationally	1-84
D1.5	International conference on tri-annual basis organised	36, 72
D1.6	Research consortia joined to bid for research projects	1-84
D2		
D2.1	Marine data base collection process put in place	1-12
D2.2	Data collected and archived in an accessible form	6-84
D2.3	Sectoral monitoring tool put in place	6-12
D2.4	Report on the development, application and utilisation of a marine sector database housing primary and secondary datasets	1, 7, 14, 21, 28, 35, 42...
D2.5	Bi-annual report on the situation and outlook for the Irish Marine Sector published	24, 48, 72
D3	Development and regulation of Marine sector	
D3.2	Overview of the impact of regulation on the development of the marine sub-sectors and recommendations for further research	10
D3.3	Report on the impact of the CFP on the fishing sector in Ireland and on a number of selected local fishing communities	25
D3.4	Proposal for a fisheries management strategy for coastal communities in Ireland and the EU	36
D4	Competitiveness and innovation in Marine Food	

D 4.1	Report key findings on competitiveness and innovation best practice internationally and its implications for Irish marine food.	12
D 4.2	Workshop 1 : Have informed stakeholders about best practice in competitiveness and innovation from the marine food sector perspective and have obtained stakeholder ideas regarding the scope of the fieldwork study	13
D 4.3	Provide initial benchmark report on competitiveness and innovation in the Irish marine food sector	24
D 4.4	Workshop 2 : Have presented key findings from fieldwork study to stakeholders and have obtained their input regarding its implications	25
D 4.5	Submit proposals to improve competitiveness and innovation in the Irish marine food sector in the context of its current performance and the objectives outlined in the Sea Change Strategy and the National Seafood Development Strategy (Cawley Report).	36
D5	Economic and social impact of the Marine sector	
D5.1a	Report on the identification of and social, economic and demographic profile of coastal communities	8
D5.1b	Report detailing the results of interviews conducted in coastal communities focusing on the understanding the social construction of coastal communities	18
D5.2a	Report on data required to model the marine sector. This report will highlight data infrastructure gaps and propose measures to overcome the gaps	23
D5.2b	Summary report outlining the composition and structure of marine sector in terms of inputs, outputs and employment	26
D5.2c	Report on the downstream impact of the marine sector	28
D5.2d	Report on the development, structure and features of the SAM	31
D5.2e	Report on the output from policy simulations from the SAM	36
D5.3a	Report identifying the distribution and structure, composition and contribution of the marine sector to coastal communities as identified in Report 3.1a	44
D6	Economic evaluation of marine energy sources	
D6.1	Report on data required to model the marine energy sector. This report will highlight data infrastructure gaps and propose measures to overcome the gaps	48
D6.2	Report on the development of a GHG emissions module	60
D6.3	Report on economic issues associated with the development of marine based energy sources	72
D6.4	Evaluation of the potential future impact of marine energy capacity	80
D7	Marine recreational resources non-market value	
D7.1	Literature review and scoping study of non-market benefits	12
D7.1a	Prepare a short report indicating major coastal sites of	12

	national recreation/tourism importance	
D7.1b	Summary report on the literature review	12
D7.1c	Summary of key outcomes of valuation and stakeholder workshop	7
D7.2	Measuring marine public good values: a CVM approach	
D7.1a	Report on the WTP questionnaire and its implementation	18
D7.1b	A report on the CVM data set and its collection	24
D7.1c	A report on the results of the CVM survey	30
D7.1d	A report on dissemination of study findings	36
D7.1e	A report on the policy implications of the CVM study	36
D8	Programme governance	
D8.1	External Project Steering Committee established	6
D8.2	Internal Project Management Committee	6
D8.3	Marine Socioeconomic Data Management Committee	6
D8.4	Administrative Reporting	12,24,48,60...
D8.5	Technical Reporting	12,24,48,60...
D8.6	Research Programme 2011-2014	36
D8.7	Communication and Dissemination	Ongoing

A.6 Impacts

Provide brief details of expected impacts

1. Impact of WP1: **Capacity Building**

- Create a world class Marine Socio-Economic Research Cluster in Galway comprising ICERTS, NUI, Galway, RERC- Teagasc and the Marine Institute, which will carry out research to underpin the Sea Change Marine Strategy and propose and provide support for policy measures across the marine sub-sectors.
- Support/complement scientific research projects and provide economic evaluation to marine science findings.
- Train PhD students in Marine Socio-economic Research to sustain the socioeconomic research effort transfer tacit knowledge to the marine industry.

2. Impact of WP2: **Data base creation and sectoral assessment**

- The creation of an integrated interactive database will facilitate sectoral analysis for policy formulation and encourage research and investigation in this sector
- Assessment of the marine economy will focus attention on the need for sectoral development and its spatial impact

3. Impact of WP3: **Development and regulation of Marine sector**

- Identify conflicts between economic development and regulation in the marine sub-sectors
- Identify best practice in coastal fisheries management
- Propose alternative strategies for coastal fisheries management
- Support the analysis of the Common Fisheries Policy and identify policy scenarios which will underpin value added creation in the Irish fishing industry while remaining consistent with the CFP

4. Impact of WP4: **Competitiveness and innovation in Marine Food**

- The identification of international best practices particularly with regard to innovation across industry which can be applied in the marine context, particularly marine food to improve competitive performance
- Enable policy-makers and other strategic stakeholders to measure the competitiveness of the Irish marine food sector by identifying the performance gaps that exist, the leaders in that area, what the leaders are doing to achieve such performance;
- Provide a proposed set of actions aimed at closing the performance gaps but more importantly outlining a plan of action that will enable Ireland to become a world leader in the marine sector.
- Provide a template for assessing competitiveness and innovation in other areas of the marine sector.
- Enable the marine sector to be market oriented and well-positioned to identify, and begin to address, the current and emerging needs of customers into the future.
- The identification of a suitable branding solution(s) for marine food sector products, particularly niche products that will enable Ireland to gain a substantial competitive advantage.
- Provide a basis upon which future studies assessing competitiveness and innovation in the marine food sector, and the wider marine sector, can build upon.
- Contribute to an increase in the long-term output of the marine food sector in a manner that is aligned with the strategic goals set-out in the Sea Change Strategy and the National Seafood Development Strategy.

5. Impact of WP5: **Economic and social impact of the Marine sector**

- Providing benchmark quantitative data and qualitative assessments to marine sector, policy and research stakeholders of the socio-economic status, development and trends affecting coastal communities;
- Development of an economic model of the marine sector will enable the potential impact of investment in marine energy to be assessed against future benefits.
- Evaluating marine enterprise performance and impact with a view to developing the rationale required to ensure policy support for the marine sector.
- Contribute to an increase in the long-term output of the marine sector in a manner that is aligned with the strategic goals set-out in the Sea Change Strategy.

6. Impact of WP6: **Economic evaluation of marine energy sources**

- Development of a GHG model will enable potential impacts of policy investments in their area to be estimated.
- The GHG model will facilitate policy planning and development through comparative assessment of marine based renewable energy systems with the terrestrial alternatives.
- Identifying critical infrastructure issues and needs to support the development of the marine energy sector.
- Contribute to an increase in the long-term output of the marine sector in a manner that is aligned with the strategic goals set-out in the Sea Change Strategy.

7. Impact of WP7: **Economic evaluation of marine energy sources**

- Creation of an appreciation of the importance of non-market benefits of public goods using the example of coastal sites for recreational purposes
- An evaluation of the non-market benefits of a public good will promote the wider use of this technique in other areas of the marine sector and thereby enhance the contributions of the marine sector to the Irish economy and the Irish society in general.

8. Impact of WP8: **Programme governance**

-
- The bi-annual update on the Marine economy will focus attention on the need for sectoral development and its spatial impact
- The creation of an integrated interactive database will facilitate sectoral analysis for policy formulation and encourage research and investigation in this sector

A.7 Management & Personnel

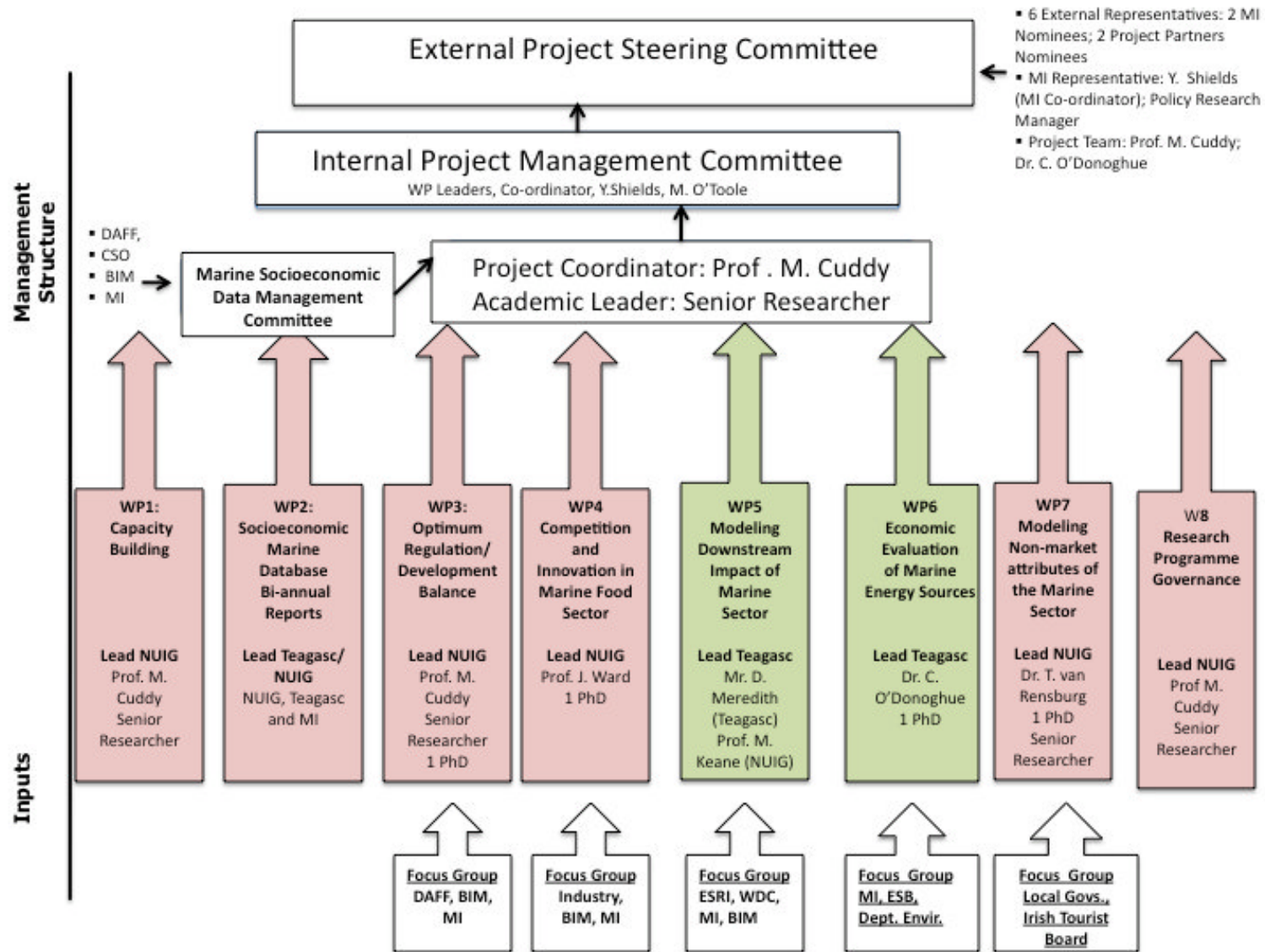
Management

*The Manager of the project is the **Co-ordinator**, who will work under the Direction of the **Internal Project Management Committee**, comprising the MI, the project Co-ordinator and the WP Leaders (Figure 1). The Project will draw on the advice of an **External Project Steering Committee**, which will include nominees of the MI and the project partners. A special **Marine Socioeconomic Data Management Committee** will oversee and advise on the database collection and management. The research programme will be realised under the general direction of the **Senior Researcher** in collaboration with the WP Leaders and **PhD students**. The **Work Package Leaders** will manage each of the work packages and carry out the research in collaboration with the researchers and PhD students. The WP Leaders will set up Focus Groups to advise on the individual work packages. Undergraduate and non-PhD postgraduate students will assist the general research activity during **Summer Placements** .*

Role of Project Coordinator

- Provide overall co-ordination of the Beaufort Research Project in Marine Socioeconomic Research in partnership with RERC Teagasc (a joint beneficiary of the funding with NUI, Galway) and in collaboration with the Marine Institute
- Ensure the efficient allocation of research funds
- Ensure coherence within and between Workpackages
- Represent NUI, Galway as the lead institute in the Beaufort project
- Ensure that Beaufort contractual obligations are met
- Liaise with the Sea Change Management Unit and the Senior Researcher on co-ordination issues
- Work closely with the relevant Government Departments and State Agencies in order to respond to their needs and to provide input into policy where necessary
- Facilitate the smooth implementation of the project and to support the Senior Researcher in influencing the strategic direction of the research
- Ensure the timely and efficient delivery of all technical and financial reports
- To chair meetings as required

Figure 1: Management structure of Beaufort Socioeconomic Research Programme



Role of Senior Researcher

- Provide the intellectual leadership for the overall research activity
- Develop a high profile for the **Marine Socioeconomic Research Cluster** at both the national and international level through its various research, networking and promotional activities
- Work in collaboration with the Work Package Leaders, the Researcher and PhD students to ensure academic integrity and the highest research standards
- Focus on and provide research assistance on particular Work Packages
- Ensure the timely completion and submission of all research Deliverables
- Lead the preparation of a research agenda and programme for 2010-2014
- Lead the submission of research proposals in search of additional research funding for the marine socioeconomic research activity
- Collaborate with the MI and the Martin Ryan Institute (and any other Marine institution in Ireland) in supporting marine scientific projects to ensure the economic and financial merit of their output

Role of WP Leaders

- Co-ordinate the execution and delivery of respective work packages
- Mobilise work package participants to collaborate as required
- Provide advice and direction to PhD students
- Be responsible for the monitoring of research progress and the technical delivery of the work packages
- Provide the necessary inputs to the Senior Researcher and project Co-ordinator for the preparation of the interim and annual reports
- Advise the Internal Project Management Committee on the strategic direction of the WP, in preparation for the annual and any other periodic External Review

Role of Internal Project Management Committee

- Provide the overall strategic orientation of the research activity
- Ensure that the research output meets the needs of the stakeholders and to that end work closely with the stakeholders
- Ensure the coherence within the overall work programme
- Ensure that the overall management of the project is efficient and equitable in the allocation of resources between the different strands of research
- Support and promote the acquisition of additional funds for the successful achievement of the overall research objectives
- Respond to the advice of the External Project Steering Committee by revising or amending the strategic orientation of the research activity as deemed necessary.

Role of External Project Steering Committee

- Carry out an annual External Review of the Beaufort Research Award in Marine Socioeconomic research activity
- Provide direction to the Group on the strategic orientation of the research activity in keeping with best international practice in this research area
- Provide guidance on the research objectives and their realization

Role of Marine Socioeconomic Data Management Committee

- Establish a framework for data collection consistent with the policy and research requirements of the research programme
- Put in place a data collection, archival and access/retrieval management facility
- Review the ongoing data needs and data management system and recommend change as deemed necessary.

Expected Timing of recruitment

Table 3 provides an overview of the two BMA researchers, the four PhD students and the 21 summer students to be recruited and funded under the Beaufort EAF project.

The BMA researchers will be engaged for seven years. The recruitment process will be implemented in 2008, with a view to having the BMA researchers in place within that year.

The PhD students will be engaged for three years each. The recruitment of PhD students will vary. For example, PhD student 1, 2 and 3 will commence in 2008, PhD students 4 will commence in 2011 (Table 3).

Every summer from 2008 to the end of the project in 2015, summer students will be employed by the CMRC, UCC to work in UCC or the NMCI on a variety of projects linked to the work packages. Advertisements for the Summer Placements will be posted every Easter in the academic partner institutes (UCC, QUB and affiliated partner NMCI). Students within the academic partner institutions will be the primary target for such positions; however, advertisements will also be circulated more broadly among relevant networks and institutes both at home and abroad

Table 3. Research personnel, principal thematic area and appointment timeframe

Researcher type	Thematic area	Time-frame
BMA Senior Research Fellow	Overall Research Leadership WP1, WP2, WP5, WP6, WP7	2008-2015
BMA Researcher	WP3,WP4,WP6	2008-2015
PhD Student 1	WP1	2008-2011
PhD Student 2	WP2	2008-2011
PhD Student 3	WP5	2008-2011
PhD Student 4	WP4	2011-2014
Summer Students	WP1 -WP6	2008-2015

Section B: Work Programme Details

Provide a detailed description of the work programme to be undertaken by way of defined **Work Packages** and tasks, with associated deliverables, milestones and time scales.

Work Package Summary Information

Work Package No.: **1**

Work Package Title: **Capacity building**

Duration: Months 1 - 84

Work Package Leader: ICERTS Director: **Professor Michael Cuddy**

Personnel in Work Package: Dr. Cathal O'Donoghue, Senior Researcher, Researcher

Work Package No.: **2**

Work Package Title: **Socioeconomic Marine Database and Biannual reports on the Marine sector**

Duration: Months 1 - 84

Work Package Leader: **Dr. Cathal O'Donoghue/Professor Michael Cuddy**

Personnel in Work Package: Dr. Cathal O'Donoghue, Senior Researcher, Researcher

Links to other Work Packages: 3,4,5,6,7

Work Package No.: **3**

Work Package Title: **The impact of regulation on the development of the marine industry in Ireland**

Duration: Months 1 - 36

Work Package Leader: **Professor Michael Cuddy**

Personnel in Work Package: Dr. Eoghan Garvey, PhD Student 1

Links to **Beaufort Award Ecosystem Approach to Fisheries Management** - Work Packages: 8

Work Package No.: **4**

Work Package Title: **Competitiveness and Innovation in the Marine Food Sector in Ireland**

Duration: Months 1 - 36

Work Package Leader: **Professor Jim Ward**

Personnel in Work Package: PhD Student 2

Work Package No.: **5**

Work Package Title: **The economic and social impact of the marine sector in Ireland**

Duration: Months 1 - 44

Work Package Leader: **Mr. David Meredith**

Personnel in Work Package: BMA Researcher

Work Package No.: **6**

Work Package Title: **Economic evaluation of marine based energy sources**

Duration: Months 36-84

Work Package Leader: **Dr. Cathal O'Donoghue**

Personnel in Work Package: BMA Researcher, PhD Student 3

*Work Package No.:***7**

Work Package Title: **Measuring the non-market benefits of recreational marine resources in Ireland**

Duration: Months 1 - 36

Work Package Leader: **Dr. Thomas van Rensberg**

Personnel in Work Package: BMA Researcher, PhD Student 4

*Work Package No.:***8**

Work Package Title: **Research programme governance**

Duration: Months 1 - 84

Work Package Leader: **ICERTS Director: Professor Michael Cuddy**

Personnel in Work Package: Professor Michael Cuddy, Senior Researcher and Researcher

Timelines on Work Packages and Deliverables

WP and Task No.	Work Packages and Tasks	Principal Investigator	Month		Deliverables	Month
			Start	End		
1	Capacity building in marine socioeconomic research	Prof. M. Cuddy	1	84		
1.1	Recruiting researchers in Marine Socioeconomics – Senior Researcher and Researcher		1	12	D1	12
1.2	Engaging and training 3 PhD students to carry out research in agreed fields		1	12	D2	12
1.3	International Conference on tri-annual basis		36	48	D3	36, 72
1.4	Establishing national and international research networks		1	4	D4	12
1.5	Joining research consortia to bid for research projects		1	84	D5	36
2.	Economic data collection and reporting on the state of the marine sector in Ireland	Dr. O'Donoghue/Prof Cuddy	1	84		36
2.1	Define scope of marine sector and relate to traditional industrial classifications such as NACE used by other data collectors and providers		1	12	D6.1	12
2.2	Identify data requirements of different marine economics users, WPs and data needs of policy makers.		1	12	D2.2	12
2.3	Identify existing data availability and accessibility: CSO, relevant ministries and state agencies, MI, Marine Scientists, Other		1	12	D2.3	12
2.4			6	18	D2.4	18
2.5	Design mechanism for data collection (primary and secondary) Collect and archive secondary data sets to make available for analysis		1	84	D2.5	12-84
3.	The impact of regulation on the development of the marine industry in Ireland	Prof. Michael Cuddy	1	36	No.	Month
3.1	Review the literature on the trade off between regulation and economic Development Theoretical models and perspectives Review of case studies carried out Some conclusions and hypotheses		1	6	D3.1	6

3.2	Analysis of regulatory constraints on the development of the marine economy Identify key regulatory constraints which have a significant impact on the marine sector; Select a small number of constraints, which could be the focus of future research in the interests of mitigating the impact of the statutory regulations.		7	10	D3.2	10
3.3	Quantify the impact of the CFP: On the fishing sector in Ireland over a recent time horizon On a number of selected local fishing communities		11	25	D3.3	25
3.4	Propose a new approach to coastal planning Identify areas of best practice in fisheries management: Within the EU; Outside the EU Articulate a fisheries management strategy for coastal communities in Ireland, which could be generalised within the EU Identify regulatory and legal national and EU obstacles to implementing such policy		26	36	D3.4	36
4	Competitiveness and Innovation in the Marine Food Sector in Ireland	Prof. Jim Ward	1	36		
4.1	Conduct literature review on competitiveness and innovation in the Irish marine food sector Review competitiveness and innovation in Irish Marine Food Sector Review competitiveness and innovation in international marine food sectors Identify key international competitors		1	12	D4.1	12
4.2	Undertake literature review of international best practice regarding competitiveness and innovation generally		1	12	D4.1	12
4.3	Undertake literature review on competitiveness and innovation in the wider food sector Identify best practice in other key Irish food sectors including meat and dairy Identify best practice internationally in the food sector		3	12	D4.1	12
4.4	Visit international centre(s) of excellence Capture best practices from international centres of excellence of most relevance to boosting competitiveness and innovation in Irish marine food Obtain access to key performance indicators for benchmarking purposes		9	12	D4.1	12

4.5	<p>Hold Workshop 1 to outline key findings to date and develop the scope of the fieldwork survey</p> <p>Present findings on international best practice regarding competitiveness and innovation to relevant stakeholders in the public sector and industry</p> <p>Obtain feedback from stakeholders regarding the scope of the fieldwork survey</p>		13	13	D4.2	13
4.6	<p>Conduct fieldwork survey and case studies on the competitiveness and levels of innovation in the Irish marine food sector</p> <p>Identify key –sub-sectors and companies to survey</p> <p>Conduct survey - likely to be in personal interview format, online aspects (measuring competitiveness may also be included)</p> <p>Identify</p> <p>Compile and analyse survey results</p> <p>Write-up initial benchmark report based on survey results</p>		13	24	D4.3	24
4.7	<p>Hold Workshop 2 to present key findings from fieldwork study to relevant stakeholders.</p> <p>Present initial results of fieldwork study</p> <p>Obtain feedback from stakeholders regarding implications for the Irish marine food sector.</p>		25	25	D4.4	25
4.8	<p>Compile report outlining the state of competitiveness and innovation in the Irish marine food sector and suggest a range of proposals to enhance competitiveness and innovation in the sector.</p> <p>Illustrate Irish marine food sector's competitiveness vis-à-vis competitors</p> <p>Outline the level of innovation in Irish marine food versus competitors</p> <p>Provide proposals to improve competitiveness and innovation necessary to achieve the objectives for the sector as laid out in Sea Change</p>		25	36	D4.5	36

5.	The economic and social impact of the marine sector in Ireland	David Meredith	1	44	No.	Month
5.1	<p>Social and demographic profile of coastal communities</p> <p>Define "Coastal Communities" Classify these areas and define which are "coastal" for the purposes of our analysis Prepare a spatial data set of Coastal areas and near coastal areas Contextualise the structure and characteristics of Irish Coastal communities Carry out a set of qualitative interviews to socially profile areas Prepare reports detailing the results of the research</p>		1	18	D5.1a D5.1b	8 18
5.2	<p>Down-stream impact of marine sector on other sector's in the Irish economy</p> <p>Define the marine sector and source appropriate data Develop a Social Accounting Matrix (SAM) with marine sectors identified Evaluate the structure of the marine sector in terms of inputs, outputs and employment Assess the downstream impact of the marine sector Develop and undertake policy simulations of external market changes on the marine sector</p>		12	36	D5.2a D5.2b D5.2c D5.2d D5.2e	16 28 31 33 36
5.3	<p>Impact of marine sector on local economy and employment</p> <p>Identify where the marine sector is located – this will require sourcing appropriate data Locally calibrate the employment module in RERC-SMILE to disaggregate existing NACE employment categorisation in include marine (fishery, service, transport and other business) sectors. Identify the employment profile of the sector locally Identify the contribution of the marine sector to the local economy Identify the impact on local poverty measures of income from the marine sector</p>		36	44	D5.3a	24
6.	Economic evaluation of marine based energy sources	Dr. O'Donoghue	1	48		
6.1	Assess the likely economic inputs required to develop and operate alternative energy sources, particularly marine based renewable energy.		1	48	D6.1	12

6.2	Disaggregate electricity generation within RERC-REM model into non-renewable, non-marine renewable and renewable energy				D6.2	24
6.3	Develop a Greenhouse Gas (GHG) emissions module to measure emissions from alternative energy usage mechanisms				D6.3	36
6.4	Simulate a costed reform to develop marine based renewable electricity generation capacity of different scales.				D6.4	48
7	Measuring the non-market benefits of recreational marine resources in Ireland	Dr. van Rensberg			D7.1	36
7.1	Literature review and scoping study on non-market benefits		1	9	D7.1	12
7.2	Identification major coastal sites of recreation value		1	9	D7.2	12
7.3	Stakeholder workshop		1	3	D7.3	12
7.4	Stated Preference survey		6	15	D7.4	7
7.5	Stated preference data collection		12	28	D7.5	12
7.6	Compile & Analyse Survey Results		18	33	D7.6	18
7.7	Write-up report on results		33	36	D7.7	24
7.8	Report on dissemination of study findings		33	36	D7.8	30
7.9	Report on the policy implications of the Stated Preference survey results		25	36	D7.9	36
8	Research Programme Governance	Prof. Cuddy	1	84		
8.1	Establishing an External Project Steering Committee		6	12	D8.1	
8.2	Establishing Internal Project Management Committee		6	12	D8.2	
8.3	Establishing Marine Socioeconomic Data Management Committee		6	12	D8.3	

8.4	<p>Administrative reporting</p> <ul style="list-style-type: none"> ▪ Establish procedures to ensure compliance with all aspects of the Beaufort programme ranging from contractual issues to project auditing, for example, ensuring that annual financial reports are submitted in full and on time. ▪ Establish links between university research office and the Marine Institute's Sea Change Management Unit (Funding & Administration Office). ▪ Ensure that all project reports are submitted electronically to the Marine Institute, and backed up, where necessary, by paper records (e.g. in the case of financial reports). ▪ Use the research information management system (RIMS) that will allow for the online submission of reports, when it comes online. 		1	84	D8.4	12,2 4,36, 48,7 2,84
8.5	<p>Technical reporting</p> <ul style="list-style-type: none"> ▪ Organise three technical meetings per year with all members of the Programme Team (Project Co-ordinator, WP leaders, BMA researchers and PhD students to review and discuss research progress). These meetings will be chaired by the Project Co-ordinator. ▪ The Internal Project Management Committee will meet once a year with the External Project Steering Committee, which is tasked with reviewing the scientific outputs of the project (see Figure 1 for organizational structure). ▪ Provide an annual technical progress report as per contractual requirements to the SeaChange Management Unit. ▪ Provide shorter 'interim' technical reports at six-monthly intervals to the Project Co-ordinator. ▪ WP leaders should implement intra and inter-institutional schedules for meetings as appropriate, in particular the convening of each Focus Group, to provide advice and guidance to BMA researchers and PhD students. ▪ Undertake a Strategic Review of the project in Year three (led by the Project Co-ordinator) and implement recommendations. 		1	84	D8.5	12,2 4,36, 48,7 2,84

8.6	<p>Programme development and expansion</p> <ul style="list-style-type: none"> ▪ The work programme post 2010 should be fully filled out by the end of 2009 to ensure continuity while applying a strategic approach to addressing gap areas within the overall Beaufort programme and within each work programme (Internal Steering Committee). ▪ Work in partnership with MI to scope new project proposals on specific areas of interest and seek support for this expanding programme (See Section A3). 		24	36	D8.6	36
8.7	<p>Communication & Dissemination</p> <ul style="list-style-type: none"> ▪ Develop the ICERTS website to fully elaborate the Beaufort programme and to be the primary source of information on the progress of each WP and on the overall programme. ▪ Develop a project communication and dissemination plan to promote awareness of the Beaufort project itself, its successful activities and outcomes. ▪ Ensure that all project Communication and Dissemination activities are carried out in accordance with the requirements of the Beaufort programme. ▪ Implement and achieve targets for publications in peer reviewed literature arising from all of the WPs. ▪ Implement and achieve targets for international conference arising from all of the WPs. ▪ Profile the target audience for the project ▪ Develop a contacts database covering contacts that can help with operational aspects of the project, as well as contacts that can be of strategic benefit to the project (e.g. external experts). ▪ Seek advice and information on PR opportunities, for example from the PR office of the Marine Institute and from the Public Relations Office in NUI, Galway. ▪ Develop a project flyer to circulate by post to the contacts list and to disseminate at relevant meetings and conferences. ▪ Seek opportunities for promoting the project in 'grey literature'. ▪ Promote the project through face-to face networking by using overheads to attend meetings and conferences of relevance. 		1	84	D8.7	Ongoing

Deliverables and timelines

No.	Deliverable	Month
D1	Capacity Building	
D1.1	Recruitment of researcher in Marine Socioeconomics – Senior Researcher and Researcher	1-12
D1.2	Engagement of 3 PhD students to carry out research in agreed fields	1-6
D1.3	Completion of PhD training	1-36
D1.4	Establish networks in Ireland and internationally	1-84
D1.5	International conference on tri-annual basis organised	36, 72
D1.6	Research consortia joined to bid for research projects	1-84
D2		
D2.1	Marine data base collection process put in place	1-12
D2.2	Data collected and archived in an accessible form	6-84
D2.3	Sectoral monitoring tool put in place	6-12
D2.4	Report on the development, application and utilisation of a marine sector database housing primary and secondary datasets	1, 7, 14, 21, 28, 35, 42...
D2.5	Bi-annual report on the situation and outlook for the Irish Marine Sector published	24, 48, 72
D3	Development and regulation of Marine sector	
D3.2	Overview of the impact of regulation on the development of the marine sub-sectors and recommendations for further research	10
D3.3	Report on the impact of the CFP on the fishing sector in Ireland and on a number of selected local fishing communities	25
D3.4	Proposal for a fisheries management strategy for coastal communities in Ireland and the EU	36
D4	Competitiveness and innovation in Marine Food	
D 4.1	Report key findings on competitiveness and innovation best practice internationally and its implications for Irish marine food.	12
D 4.2	Workshop 1 : Have informed stakeholders about best practice in competitiveness and innovation from the marine food sector perspective and have obtained stakeholder ideas regarding the scope of the fieldwork study	13
D 4.3	Provide initial benchmark report on competitiveness and innovation in the Irish marine food sector	24

D 4.4	Workshop 2 : Have presented key findings from fieldwork study to stakeholders and have obtained their input regarding its implications	25
D 4.5	Submit proposals to improve competitiveness and innovation in the Irish marine food sector in the context of its current performance and the objectives outlined in the Sea Change Strategy and the National Seafood Development Strategy (Cawley Report).	36
D5	Economic and social impact of the Marine sector	
D5.1a	Report on the identification of and social, economic and demographic profile of coastal communities	8
D5.1b	Report detailing the results of interviews conducted in coastal communities focusing on the understanding the social construction of coastal communities	18
D5.2a	Report on data required to model the marine sector. This report will highlight data infrastructure gaps and propose measures to overcome the gaps	23
D5.2b	Summary report outlining the composition and structure of marine sector in terms of inputs, outputs and employment	26
D5.2c	Report on the downstream impact of the marine sector	28
D5.2d	Report on the development, structure and features of the SAM	31
D5.2e	Report on the output from policy simulations from the SAM	36
D5.3a	Report identifying the distribution and structure, composition and contribution of the marine sector to coastal communities as identified in Report 3.1a	44
D6	Economic evaluation of marine energy sources	
D6.1	Report on data required to model the marine energy sector. This report will highlight data infrastructure gaps and propose measures to overcome the gaps	48
D6.2	Report on the development of a GHG emissions module	60
D6.3	Report on economic issues associated with the development of marine based energy sources	72
D6.4	Evaluation of the potential future impact of marine energy capacity	80
D7	Marine recreational resources non-market value	
D7.1	Literature review and scoping study of non-market benefits	12
D7.1a	Prepare a short report indicating major coastal sites of national recreation/tourism importance	12
D7.1b	Summary report on the literature review	12
D7.1c	Summary of key outcomes of valuation and stakeholder workshop	7
D7.2	Measuring marine public good values: a CVM approach	
D7.1a	Report on the WTP questionnaire and its implementation	18
D7.1b	A report on the CVM data set and its collection	24
D7.1c	A report on the results of the CVM survey	30
D7.1d	A report on dissemination of study findings	36
D7.1e	A report on the policy implications of the CVM study	36

D8	Programme governance	
D8.1	External Project Steering Committee established	6
D8.2	Internal Project Management Committee	6
D8.3	Marine Socioeconomic Data Management Committee	6
D8.4	Administrative Reporting	12,24,48,60...
D8.5	Technical Reporting	12,24,48,60...
D8.6	Research Programme 2011-2014	36
D8.7	Communication and Dissemination	Ongoing

Milestones and timelines

M1	Capacity Building	
M1.1	Recruitment of researchers in Marine Socioeconomics - Senior Researcher and Researcher	12
M1.2	Recruitment of 3 PhD students	12
M1.3	Completion of PhD training	36, 48
M1.4	Holding of International Conference	36, 72
M2	Creation of data base and publication of report on state of the Marine Sector	
M2.1	Data needs assessed and calibrated	12
M2.2	Stakeholders' Workshop 1	
M2.3	Process of data collection, archiving and accessing established	24
M2.4	Data needs, collection, archiving and access reviewed on ongoing basis	24,48,72
M2.5	Stakeholders Workshop	As required
M2.6	Publication of Bi-annual report on state of the marine sector	24,48,72, 84
M3	Impact of regulation on the the development of the Marine sector	
M3.1	Literature review completed	6
M3.2	Regulatory constraints to the development of the marine sector identified and further research proposed	9
M3.3	Impact of the CFP on the fishing sector in Ireland over a recent time horizon quantified	10
M3.4	Focus Group Workshop 1	12
M3.5	Impact of CFP on a number of selected local fishing communities evaluated	18
M3.6	Best practice in spatial planning of coastal zones in relation to fisheries identified	26
M3.7	Focus Group Workshop 2	24
M3.8	A fisheries management strategy for coastal communities in Ireland articulated	28
M3.9	Regulatory and legal national and EU obstacles to strategy implementation identified	34
M4	Competitiveness and innovation in the Marine food sector	
M4.1	Literature review completed	11

M4.2	Hold Workshop 1 - innovation and competitiveness best-practice in a marine food context	12
M4.3	Fieldwork survey completed and initial benchmark report on key findings submitted	24
M4.4	Hold Workshop 2 - initial findings from benchmark study and implications for marine food sector	25
M4.5	Submit proposals to improve competitiveness and innovation in the Irish marine food sector	36
M5	Economic and social impact of the Marine sector	
M5.1	Stakeholders Workshop 1	9
M5.2	Scoping document outlining the definition and extent of the marine sector.	12
M5.3	Data sources and gaps in the data infrastructure. identified	18
M5.4	SAM Model estimated	24
M5.5	Stakeholders Workshop 2	24
M5.6	Impact of policy scenarios quantified	36
M6	Economic evaluation of Marine based energy sources	
M6.1	Data requirements to model marine energy sector identified	48
M6.2	Stakeholders' Workshop 1	48
M6.3	GHS emissions model developed	60
M6.4	Issues associated with marine energy development identified	66
M6.5	Stakeholders' Workshop 2	70
M6.6	Impact of future marine energy evaluated	72
M7	Measuring the non-market impact of recreationalMarine resources	
M7.1	Report indicating major coastal sites of national recreation/tourism importance.	12
M7.2	Completion of literature review.	12
M7.3	Stakeholders' Workshop 1	12
M7.4	Face-to-face CVM pilot and main questionnaire completed	24
M7.5	Stakeholders' Workshop 2	24
M5.6	WTP for marine coastal resources by the Irish public estimated	36
M8	Governance and reporting system	
M8.1	21 Internal progress meetings with the overall Programme Team	Every 6 months
M7.2	Annual administrative reporting periods	12, 24, 36 ...
M8.3	Annual technical reporting periods	12, 24, 36, ...
M8.4	Annual Reviews by External Review Committee	12,24,36 ...
M8.5	Strategic Project Review and Plans 2011-2015 completed	36

Section C: Meetings, Reviews and Reporting

Provide a schedule for all project meetings, reviews and reporting.

C.1 Meetings

Meeting / Review	Date of Meeting/Review
External Project Steering Committee	Annual Meetings
Internal Project Management Committee	Monthly Meetings
Meetings with MI Project Manager	Monthly and as required
Marine Socioeconomic Data Management Committee	Quarterly Meeting
Programme Evaluation	3 Year Review

C.1 Reporting

Reports	Date of report
Annual Reports	
Year 1	January 2009
Year 2	January 2010
Year 3	January 2011
Year 4	January 2012
Year 5	January 2013
Year 6	January 2014
Year 7	January 2015
Other (Please State)	
Programme Review	Year 3, Year 6

ANNEX 1 – WORK PACKAGE DOCUMENT

Fully describe each Work Package. Work activity, milestones and deliverables for all Work Packages are required.

WORK PACKAGE No.:	1
Work Package Title:	Establish an international level capacity in Marine Socioeconomic research at ICERTS, NUI, Galway in collaboration with RERC Teagasc and the Marine Institute
Start Month:	September 2008
End Month:	August 2015
WP Leader:	Professor Michael Cuddy
Other personnel:	Beaufort Award Senior Researcher, Beaufort Award Researcher, 3 PhD students
Description of Work Package (Identify within sub-task titles where appropriate)	
<p>The overall aim is to establish a world class Unit, SEMRU (Socioeconomic Marine Research Unit) for marine socioeconomic research in Ireland around a research cluster in Galway led by ICERTS, NUI, Galway and linking with RERC, Teagasc, the Marine Institute and other research institutions in Ireland. The vision for the centre is that it will underpin the development of the marine sector in Ireland as elaborated in the Sea Change strategy, that it will contribute to the EU marine socioeconomic research agenda and that it will strengthen marine research in general through providing a complementary socioeconomic element into scientific projects; it will train researchers to contribute to continuing research and to the transfer of tacit knowledge to marine industry, thereby enhancing innovation and raising its competitiveness.</p> <p>The research capacity building exercise will consist of building on existing competences to establish an international identity, recruiting internationally recognised researchers (Senior Researcher and Researcher) in the field, who will lead the research activity; recruiting PhD students who will enlarge the research activity and establishing an international level PhD training programme; developing national and international research networks - with marine scientists, the marine industry and the international academic community in the socioeconomic marine area, will broaden the domain of research activity and provide additional funding from alternative sources. Performance indicators will inform success in the timeliness of deliverables and the expansion of research activity.</p>	
Does this work package have any linkages with other Beaufort Marine Grantees? If so, please state.	
No, not directly. However, there will be close co-operation with Beaufort and other Marine researchers within NUI, Galway and in other institutions in Ireland.	
Objectives of the Work Package	
<ul style="list-style-type: none"> (i) Establish a world class Marine socioeconomic research unit, which will provide the economic underpinning for Marine policy in Ireland and feed into the EU policy making apparatus; (ii) Respond to the ongoing socioeconomic needs of stakeholders by addressing problem issues as they arise; (iii) Respond to calls for research proposals under the Irish and EU research programmes; (iv) Provide an international research training programme and foster participation by providing funding for PhD scholars. 	

Milestones		
M1.1	Recruitment of researchers in Marine Socioeconomics – Senior Researcher and Researcher	
M1.2	Recruitment of 3 PhD students	
M1.3	Completion of PhD training	
M1.4	Holding of International Conference	
Deliverables		
D1.1	Recruitment of researcher in Marine Socioeconomics – Senior Researcher and Researcher	1-12
D1.2	Engagement of 3 PhD students to carry out research in agreed fields	1-6
D1.3	Completion of PhD training	1-36
D1.4	Establish networks in Ireland and internationally	1-84
D1.5	International conference on tri-annual basis organised	36, 72
D1.6	Research consortia joined to bid for research projects	1-84
<p>Identify the risks associated with the WP (and actions that may minimise those risks). Recruitment of Senior Researcher of a calibre required of the programme will have an important impact on the progress of the Programme.</p>		
<p>Any other detail of relevance (e.g. infrastructure requirements).</p>		

WORK PACKAGE No.:	2																									
Work Package Title:	Economic data collection and reporting on the state of the marine sector in Ireland																									
Start Month:	September 2008																									
End Month:	August 2015																									
WP Leader:	Cathal O'Donoghue/Michael Cuddy																									
Other personnel:	Beaufort Award Senior Researcher, Beaufort Award Researcher																									
Description of Work Package (Identify within sub-task titles where appropriate)																										
<p>There are two major strands to this activity: (i) Collecting data to meet the requirement of publishing a bi-annual report on the state of the marine sector in Ireland; and (ii) Providing data for the research activity of the various research Work Packages.</p> <p>(i) Provide the data necessary and prepare a bi-annual report on the current state of the Marine Related Activities and Resources in the Irish Economy; this activity will be carried out over the life of the project.</p> <p>The report will comprise the following</p> <p>a. The economic contribution of the main marine sectors (See below) in terms of economic measures such as output, employment and exports;</p> <p>Principal marine sectors</p> <table border="1"> <thead> <tr> <th>Marine Services</th> <th>Marine Resources</th> <th>Marine Manufacturing</th> </tr> </thead> <tbody> <tr> <td>Shipping & Maritime Transport</td> <td>Fish Processing</td> <td>Marine Technology</td> </tr> <tr> <td>Water-based Tourism (Domestic)</td> <td>Fish Landings</td> <td>Boat Building</td> </tr> <tr> <td>Water-based Tourism (Overseas)</td> <td>Aquaculture</td> <td>Other Marine Manufacturing</td> </tr> <tr> <td>International Cruise</td> <td>Oil Exploration</td> <td></td> </tr> <tr> <td>Marine Commerce</td> <td>Gas Production</td> <td></td> </tr> <tr> <td>Other Marine Services</td> <td>Offshore Renewable Energy</td> <td></td> </tr> <tr> <td></td> <td>Seaweed</td> <td></td> </tr> </tbody> </table> <p>b. Estimates of the economic importance of the marine related sectors and activities;</p> <p>c. Estimates of the employment levels in the marine sector</p> <p>d. Estimates of the regional distribution of the sector</p> <p>e. An evaluation of non-marketed activities;</p> <p>f. A comparative performance of the marine sector and marine policy relative to agriculture and forestry in Ireland;</p> <p>g. A benchmarking of the Irish Marine sector against Scotland, Denmark, Norway and Canada;</p> <p>h. Ireland's marine performance in the context of evolving EU policy in this area and discusses the potential impact of policy development; and</p> <p>i. Lessons which can to inform the development of marine research and innovation policy on an ongoing basis.</p> <p>The data provided here will be mainly secondary data extracted from existing statistical and statutory agencies' records and reports. In particular, the industry specific (NACE 3 digit) data collected by the Central Statistics Office, will be the</p>			Marine Services	Marine Resources	Marine Manufacturing	Shipping & Maritime Transport	Fish Processing	Marine Technology	Water-based Tourism (Domestic)	Fish Landings	Boat Building	Water-based Tourism (Overseas)	Aquaculture	Other Marine Manufacturing	International Cruise	Oil Exploration		Marine Commerce	Gas Production		Other Marine Services	Offshore Renewable Energy			Seaweed	
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focus of engagement to make a more refined reporting framework available in respect to Marine Sector activities. Any gaps remaining will be filled by the collection of primary data. This decision will be taken after consultation and negotiation with the CSO and other State Agencies. It is expected that the data collection within this project can be made available to a wider community through the participation of the CSO and its reciprocation on access to collected data, taking into consideration any confidentiality requirements of the CSO.

This WP will also consider the establishment of gaps in useful data which may be beyond the scope of the current project such as the profit margins of marine based businesses and make recommendations for future data collection efforts.

(ii) Provide the data to Support the various research Work Packages

Work Packages have been prepared, mainly within the first three years of the programme. However, other Work Packages will be prepared beyond the first three as the programme begins to develop. Each Work Package will be assessed with respect to its data requirements. Data which has a broad use will be centrally collected through this Work Package. Data narrowly specific to the individual Work Packages will be collected within those activities. However, all data collected within the project will be archived for wider availability.

The research Work Packages agreed for the first three are:

- a. The impact of regulation on the development of the marine industry in Ireland
- b. Competitiveness and Innovation in the Marine Food Sector in Ireland
- c. The economic and social impact of the marine sector in Ireland
- d. Economic evaluation of marine based energy sources
- e. Measuring the non-market benefits of recreational marine resources in Ireland

The data from WP 6.i above will directly support these workpackages. WP1 WP2 will to a large extent depend upon focused qualitative data collection activities by the researcher, drawing also upon sector-wide data from WP6.i. WP3 will utilise the sectoral and regional distribution of production, inputs and employment to identify the downstream and upstream impact of the sector in terms of it use of Irish versus Imported inputs as well as the marine sector's contribution as an input to other sectors such as food processing and tourism etc. Regional and sectoral employment levels will be used to quantify the impact of the marine sector on the local economy. WP4 draws heavily on the regional CGE model developed in WP3 and will use (due to a lack of significant existing businesses) expert based data on the possible structure marine based renewable energy. WP5 will carry out a bespoke survey of consumer preferences towards marine based recreational activities to estimate the non-market benefits of these activities.

Does this work package have any linkages with other Beaufort Marine Grantees? If so, please state.

No, not directly. However, there will be close co-operation with Beaufort and other Marine researchers within NUI, Galway and in other insititutions in Ireland.

Objectives of the Work Package

- (i) Define scope of marine sector and relate to traditional industrial classifications such as NACE used by other data collectors and providers
- (ii) Identify data requirements of different marine economics users, WPs and

	data needs of policy makers.
(iii)	Identify existing data availability and accessibility: CSO, relevant ministries and state agencies, MI, Marine Scientists, Other
(iv)	Design mechanism for data collection (primary and secondary)
(v)	Collect and archive secondary data sets to make available for analysis
(vi)	Identify data gaps
(vii)	Primary data collection
(viii)	Archive and disseminate to users
(ix)	Provide Bi-Annual Report on the State of the Marine Sector in Ireland
Milestones	
<i>M2.1</i>	Data needs assessed and calibrated
<i>M2.2</i>	Stakeholders' Workshop 1
<i>M2.3</i>	Process of data collection, archiving and accessing established
<i>M2.4</i>	Bi-annual report on state of the marine sector published
<i>M2.5</i>	Data needs, collection, archiving and access reviewed on ongoing basis
<i>M2.6</i>	Stakeholders Workshop
Deliverables	
<i>D2.1</i>	Bi-annual report to the MI on the situation and outlook for the Irish Marine Sector
<i>D2.2</i>	Report on the collection, collation and assessment of marine sector related data, its utility and limitations and contemporary data gaps.
<i>D2.3</i>	Report on the development, application and utilisation of a marine sector database housing primary and secondary datasets
Identify the risks associated with the WP (and actions that may minimise those risks).	
The co-operation of the CSO to arrive at an acceptable level of data classification in the Marine sector	
Convince the CSO that this work is valid and essential to policy analysis for the Marine sector	
Any other detail of relevance (e.g. infrastructure requirements).	

WORK PACKAGE No.:	
Work Package Title: 3	The impact of regulation on the development of the marine industry in Ireland
Start Month:	Feb. '08
End Month:	Dec.'11
WP Leader:	Prof. Michael Cuddy
Other personnel:	PhD Student
Description of Work Package (Identify within sub-task titles where appropriate)	
<p>Investigating the impact of regulation on the development of the marine sector and addressing ways of mitigating the negative impacts is the principal thrust of this Work Package. It will carry out an overview of the whole sector and then examine in depth the fishing sector</p> <p>(i) The impact of regulation on the development of the marine sector: an overview</p> <p>The Marine sector is comprised of three sub-sectors, Marine Services¹, Marine Resources² and Marine Manufacturing³. All of these sectors are affected by regulation of some sort or other. These regulations derive primarily from concerns about the environment, in broad terms. For example, there are quotas on fish landings and on salmon netting due to concerns about destroying fish stocks; there is regulation regarding aquaculture due to concerns over pollution; and there is regulation on hydrocarbon exploration and gas production due to environmental concerns.</p> <p>These constrain the development of the Marine sector, by constraining innovation and development in terms of existing and new commercial activities. However, there is a contrary viewpoint, which suggests that, in response to regulation, firms engage in innovative actions to offset the impact of regulation on output and profits and that the end result is significant increase in output and profits and environmental improvements.</p> <p>This sub-section of Work Package 1 will identify those sectors where particular regulations have a significant impact on development and where further research would be justified in order to mitigate those negative impacts.</p> <p>(ii) The impact of regulation on the development of the fishing industry</p> <p>The Common Fisheries Policy (CFP) was finally negotiated in 1983 and underwent a radical reform in 2002. The CFP is the European Union's instrument for the management of fisheries and aquaculture. It aimed at ensuring the sustainable development of fishing activities from an environmental, economic and social point of view. The main focus has been to ensure sustainable exploitation of living aquatic resources.</p> <p>Although fostering the sustainable development of fisheries areas was also an objective of the CFP, this has received less attention. The economic fragility of remote rural settlements and island communities makes it even more important in such areas that marine and coastal interests are well integrated to maximise employment and safeguard natural capital.</p> <p>The lack of clear focus on the impact of the CFP on coastal communities has been certain communities under serious threat as a result of a decline in the fishing sector due to quota restrictions on fish catch and due to environmental regulations on</p>	

¹ Shipping and Marine Transport, Water based tourism (domestic and overseas), International Cruise, Marine Commerce and Other Marine Services.

² Fish Processing, Fish Landings, Aquaculture, Hydrocarbon Exploration, Gas Production, Offshore Renewable Energy and Seaweed.

³ Marine Technology, Boat Building, Marine Biotechnology and Other Marine Manufacturing.

acquaculture. A new approach emerging is to apply the concept of "spatial planning" to coastal zones as part of an Integrated Coastal Zone Management (ICZM) strategy. This, inter alia, would provide special rights to the inhabitants of coastal communities, which would extend beyond the land space and include water space as well. This could come into conflict with the CFP, but herein is the particular interest, to see if and to what extent, coastal communities could be exempted from the general regulation of the CFP, for example in the designation of exclusive zones, in the interests of social sustainability of the local community.

This sub-section of Work Package 1 will investigate the implications of regulation on the fishing industry and in particular on its impact on coastal communities and their sustainability. It will look at best practices in the EU, within the constraints of the Common Fisheries Policy and also best practices in other part so the world where the livelihood of coastal communities is seen as a priority. These investigations will be explored against a background canvas of "spatial planning" of coastal zones, which is receiving increasing attention in the international marine literature.

Does this work package have any linkages with other Beaufort Marine Grantees? If so, please state.

Not directly. Indirectly linked with WP8 of Beaufort Research Award Ecosystem Approach to Fisheries Management

Objectives of the Work Package

- (i) Review the literature on the trade off between regulation and economic Development
 - a. Theoretical models and perspectives
 - b. Review of case studies carried out
 - c. Some conclusions and hypotheses
- (ii) Identify key regulatory constraints which have a significant impact on the marine sector;
- (iii) Select a small number of constraints, which could be the focus of future research in the interests of mitigating the impact of the statutory regulations.
- (iv) Quantify the impact of the CFP on the fishing sector in Ireland over a recent time horizon
- (v) Quantify the impact on a number of selected local fishing communities
- (vi) Identify areas of best practice in fisheries management:
 - a. Within the EU;
 - b. Outside the EU
- (vii) Articulate a fisheries management strategy for coastal communities in Ireland, which could be generalised within the EU
- (viii) Identify regulatory and legal national and EU obstacles to implementing such policy

Milestones

M3.1	Literature review completed
M3.2	Regulatory constraints to the development of the marine sector identified and further research proposed
M3.3	Impact of the CFP on the fishing sector in Ireland over a recent time horizon quantified
M3.4	Focus Group Workshop 1
M3.5	Impact of CFP on a number of selected local fishing communities evaluated
M3.6	Best practice in spatial planning of coastal zones in relation to fisheries identified

M3.7	Focus Group Workshop 2
M3.8	A fisheries management strategy for coastal communities in Ireland articulated
M3.9	Regulatory and legal national and EU obstacles to strategy implementation identified
<i>Deliverables</i>	
D3.1	Report on the theoretical aspects of the trade off between Regulation and economic Development
D3.2	Overview of the impact of regulation on the development of the marine sub-sectors and recommendations for further research
D3.3	Report on the impact of the CFP on the fishing sector in Ireland and on a number of selected local fishing communities
D3.4	Proposal for a fisheries management strategy for coastal communities in Ireland and the EU
<i>Identify the risks associated with the WP (and actions that may minimise those risks).</i>	
<p>1.Ensuring that the issues addressed are sufficiently focussed and relevant to the marine sector. Solution; adequate consultation with key stakeholders.</p> <p>2. Quality and accuracy of data available and collectible from fieldwork. Solution; sufficient cross-checking and consultation with industry experts.</p>	
<i>Any other detail of relevance (e.g. infrastructure requirements).</i>	

WORK PACKAGE No.:	
Work Package Title: 4	Competitiveness and Innovation in the Marine Food Sector in Ireland
Start Month:	Feb. '08
End Month:	Dec.'10
WP Leader:	Prof. J. Ward
Other personnel:	Michael Haverty (PhD Student)
Description of Work Package (Identify within sub-task titles where appropriate)	
<p>The package will examine the competitiveness of the Irish marine food industry and explore why it has had such limited success in innovation as evidenced by various reports pinpointing poor development of value-added product, packaging and marketing, resulting in Ireland being perceived as a commodity exporter.</p> <p>Through a survey of secondary sources, and a field survey of firms in the industry, and organisations and industry experts, it will identify factors which have, or are, impinging on industry progress. This aspect of the work will also study successes in the industry and assess what can be learned from them.</p> <p>It will review practice in leading countries in marine food such as New Zealand, Australia, Canada, Norway, to assess patterns of development there, including industry structure, continuity of supply, institutional arrangements, government support structures, levels of R&D, firm structure, managerial training, clustering and innovation behaviours.</p> <p>The success of other sectors of the food industry in Ireland will also be studied for lessons that can be learned.</p> <p>Finally, the study will make proposals for action at government and industry level to improve the current position.</p>	
Does this work package have any linkages with other Beaufort Marine Grantees? If so, please state.	
Not directly. Indirectly, with other work packages in this programme.	
Objectives of the Work Package	
<ul style="list-style-type: none"> (i) To Review competitiveness and innovation in marine food and identify factors which may hinder its development. (ii) To study models of competitiveness and innovation in other countries and to assess their relevance to Ireland. (iii) To develop proposals for the improvement of competitiveness and innovation in the industry. 	
Milestones	
M4.1	Literature review completed
M4.2	Hold Workshop 1 - innovation and competitiveness best-practice in a marine food context
M4.3	Fieldwork survey completed and initial benchmark report on key findings submitted
M4.4	Hold Workshop 2 - initial findings from benchmark study and implications for marine food sector
M4.5	Submit proposals to improve competitiveness and innovation in the Irish marine food sector

Deliverables	
D 4.1	Report key findings on competitiveness and innovation best practice internationally and its implications for Irish marine food.
D 4.2	Workshop 1 : Have informed stakeholders about best practice in competitiveness and innovation from the marine food sector perspective and have obtained stakeholder ideas regarding the scope of the fieldwork study
D 4.3	Provide initial benchmark report on competitiveness and innovation in the Irish marine food sector
D 4.4	Workshop 2 : Have presented key findings from fieldwork study to stakeholders and have obtained their input regarding its implications
D 4.5	Submit proposals to improve competitiveness and innovation in the Irish marine food sector in the context of its current performance and the objectives outlined in the Sea Change strategy.
Identify the risks associated with the WP (and actions that may minimise those risks).	
(i)	Ensuring scope of study is sufficiently well focussed on key issues, as potential breadth of work is very large. Solution; adequate consultation with key stakeholders.
(ii)	2. Quality and accuracy of data available and collectible from fieldwork. Solution; sufficient cross-checking and consultation with industry experts.
Any other detail of relevance (e.g. infrastructure requirements).	

WORK PACKAGE No.:	5
Work Package Title:	The economic and social impact of the marine sector in Ireland
Start Month:	March 2008
End Month:	December 2011
WP Leader:	David Meredith, Cathal O'Donoghue
Other personnel:	Beaufort Award Researcher
Description of Work Package (Identify within sub-task titles where appropriate)	
<p>(i) Social and demographic profile of coastal communities (Áine Macken Walsh, Kevin Heanue, David Meredith) This study will focus on the social determinants of cultural dynamics in rural areas, looking in more depth at coastal communities. The work package will utilise qualitative case-study based techniques combining secondary data analysis and field work. The work package will also carry out demographic profiling of coastal communities focusing on age, education and skill demographics in these areas.</p> <p>(ii) Down-stream impact of marine sector on other sector's in the Irish economy (David Meredith, RERC Beaufort Award Researcher, Cathal O'Donoghue) This sub-task will utilise the the Rural Economy Research Centre's Regional Economy Model (RERC-REM), a Computable General Equilibrium (CGE) Model jointly developed between RERC and TCD to look at the down-stream impact of marine sector on other sector's in the Irish economy. It can be used to assess the linkages between different economic sectors and can be used to simulate impact of policy and economic changes on regional economies in Ireland. Exploiting this linkage between economic sectors, the model can assess the down-stream impact of changes in a particular sector utilising the IO/SAM table at the heart of the CGE model. At present there is not sufficient disaggregation within the model to separately identify the marine sector. The objective will be to utilise the data collected (to be identified) to disaggregate the marine sector within the model and to study both the impact the marine sector has on the regional and national economy and on the impact of policy changes that affect the marine sector have on the sector and down-stream sectors.</p> <p>(iii) Impact of marine sector on local economy and employment (David Meredith, John Lennon, Cathal O'Donoghue and RERC Beaufort Award Researcher)</p> <p>The aim of this work package will be to identify the impact of the marine sector on the local economy and employment. This work package will utilise the Rural Economy Research Centre's Simulation Model of the Irish Local Economy (RERC-SMILE), a spatial microsimulation model, containing the spatial location of families and employment in Ireland. The model identifies where in the country, people live and work, helping to understand the impact of different industrial sectors on the local economy, for example modelling the impact of policy or industrial restructuring at a local level. However, as the marine sector spans a number of sectors identified within standard occupation, industry and national accounts classifications, further work will be required to identify where employees in the marine sectors live and/or work, utilising data identified above.</p>	

Does this work package have any linkages with other Beaufort Marine Grantees? If so, please state.

No

Objectives of the Work Package

- (i) Social and demographic profile of coastal communities
 - Define areas of the country regarded as "Coastal Communities"
 - Contextualise the structure and characteristics of Irish Coastal Communities
 - Carry out a social profile of these communities using quantitative and qualitative techniques
- (ii) Down-stream impact of marine sector on other sector's in the Irish economy
 - Define the marine sector
 - Understand the structure of the marine sector in terms of inputs, outputs and employment
 - Understand the downstream impact of the marine sector
 - Carry out policy simulations of external market changes on the sector
- (iii) Impact of marine sector on local economy and employment
 - Identify where the marine sector is located
 - Identify the employment profile of the sector locally
 - Identify the contribution of the marine sector to the local economy
 - Identify the impact on local poverty measures of income from the marine sector

Milestones

M5.1	Stakeholders Workshop 1
M5.2	Scoping document outlining the definition and extent of the marine sector.
M5.3	Data sources and gaps in the data infrastructure. identified
M5.4	SAM Model estimated
M5.5	Stakeholders Workshop 2
M5.6	Impact of policy scenarios quantified

Deliverables

D5.1a	Report on the identification of and social, economic and demographic profile of coastal communities
D5.1b	Report detailing the results of interviews conducted in coastal communities focusing on the understanding the social construction of coastal communities
D5.2a	Report on data required to model the marine sector. This report will highlight data infrastructure gaps and propose measures to overcome the gaps
D3.2b	Summary report outlining the composition and structure of marine sector in terms of inputs, outputs and employment
D5.2c	Report on the downstream impact of the marine sector

D5.2d	Report on the development, structure and features of the SAM
D5.2e	Report on the output from policy simulations from the SAM
D5.3	Report identifying the distribution and structure, composition and contribution of the marine sector to coastal communities as identified in Report 3.1a
Identify the risks associated with the WP (and actions that may minimise those risks).	
<ul style="list-style-type: none"> (i) Recruitment of person with requisite skills. <ul style="list-style-type: none"> - Advertise widely and utilise contacts to identify suitable candidates (ii) Unavailability of marine sectoral data. <ul style="list-style-type: none"> - Discuss with CSO about the release of data for marine sectors at 3 digit NACE which identifies fishing; fish farming; transport; boat and ship repair; construction and sales; storage and warehousing; Rental of water transport equipment; recreation etc. - Carry out our own survey if necessary. This has cost implications (iii) Sample size issues in carrying out analyses for sub-components of marine sector. <ul style="list-style-type: none"> - Draw inferences from similar "mainstream" enterprises in non-marine sectors utilising qualitative analysis 	
Any other detail of relevance (e.g. infrastructure requirements).	
Will require the use of the grid of servers recently acquired by RERC for simulation modelling	

WORK PACKAGE No.:	6
Work Package Title:	Economic evaluation of marine based energy sources
Start Month:	October 2008
End Month:	September 2011
WP Leader:	Cathal O'Donoghue, RERC Energy Economist and
Other personnel:	Beaufort Award PhD 1
Description of Work Package (Identify within sub-task titles where appropriate)	
<p>This work package will study the Economic, Environmental and Social Impact of marine based renewable energy. Drawing upon work done in the UK Supergen project, we will disaggregate Teagasc's Regional Economic Model (RERC-REM) to incorporate the marine and non-marine renewable energy. This framework will be utilised to assess the macro-economic and environmental impacts of expenditures associated with the development of these sectors for electricity generation. The RERC-REM model is a CGE model as in the McGregor et al model in Scotland which allows for supply-side influences to be incorporated in the analysis over and above the static economic impact of expenditures on marine renewable energy.</p>	
Does this work package have any linkages with other Beaufort Marine Grantees? If so, please state.	
No	
Objectives of the Work Package	
<ul style="list-style-type: none"> (i) Collaborate with UCD energy engineers to assess the likely economic inputs required for alternative energy sources, particularly marine based renewable energy as well as the costs of development, construction and operation. (ii) Disaggregate electricity generation within RERC-REM model into non-renewable, non-marine renewable and renewable energy (iii) Develop a Greenhouse Gas (GHG) emissions module to measure emissions from alternative energy usage mechanisms (iv) Simulate a costed reform to develop marine based renewable electricity generation capacity of different scales. (v) Assess the macro-economic impact on the country of this policy (vi) Assess the impact of the policy on GHG emissions (vii) Assess the "legacy" in the future impact of the development of this capacity 	
Milestones	
M6.1	Data requirements to model marine energy sector identified
M6.2	Stakeholders' Workshop 1
M6.3	GHS emissions model developed
M6.4	Issues associated with marine energy development identified
M6.5	Stakeholders' Workshop 2
M6.5	Impact of future marine energy evaluated
Deliverables	
D6.1	Report on data required to model the marine energy sector. This report will highlight data infrastructure gaps and propose measures to overcome the gaps
D6.2	Report on the development of a GHG emissions module
D6.3	Report on economic issues associated with the development of marine based energy sources
D6.4	Evaluation of the potential future impact of marine energy capacity

Identify the risks associated with the WP (and actions that may minimise those risks).

- (i) Recruitment of PhD student with requisite skills.
 - Advertise widely and utilise contacts to identify suitable candidates
- (ii) Data (un)availability due to the industry currently in development phase
 - Develop good relationship with experienced engineers in UCD to advise on science and engineering based parameters to use.

Any other detail of relevance (e.g. infrastructure requirements).

Will require the use of the grid of servers recently acquired by RERC for simulation modelling

WORK PACKAGE No.:	7
Work Package Title:	Measuring the non-market benefits of recreational marine resources in Ireland
Start Month:	September 2008
End Month:	September 2011
WP Leader:	Tom van Rensburg
Other personnel:	NUIG, Beaufort Award Senior Researcher and PhD student
Description of Work Package (Identify within sub-task titles where appropriate)	
<p>5.1 Literature review, scoping study of non-market benefits and workshop (Task 1) The study will undertake a review of the literature related to economic incentives, regulatory framework and policies concerned with marine coastal recreation and tourism. The project will draw upon studies of settlement, tourism and rural development that have been prepared over recent years by the universities and such bodies as the Marine Institute, Environmental Protection Agency, Teagasc, Department of Agriculture and Food, the Council for the West, and the Western Development Commission. It will consider what policies are likely to be enacted in response to increasing demand for coastal recreation. Altogether this task will provide various scenarios of rural Ireland in relation to coastal recreation given social, economic and environment trends. This will provide a vision to support forward planning and strategic policy.</p> <p>A workshop (Task 2) will also be organized during November 2008. It will identify key recreational marine issues of concern to policy makers. We will involve practitioners in the field of non-market valuation to advise on design and methodological issues in contingent valuation and travel cost valuation on willingness-to-pay (WTP) elements of the project. In the design phase of the WTP questionnaire a number of the key stakeholders as identified in the workshop will be consulted to ensure that all relevant issues are tested in the WTP questionnaires. These stakeholders will also advise on the public CVM survey and appropriate case study sites for the travel cost study.</p> <p>5.2 Measuring marine public good values: a CVM approach (Tom van Rensburg, NUIG, Beaufort Award Researcher, PhD student) (Task 3) Public good values associated with coastal landscapes will be evaluated drawing on existing modelling experience at measuring public preferences and demand related to recreation and tourism (Keane, 1996; van Rensburg, <i>et al.</i>, 2002; Hynes, 2001). The study will measure non-market values associated with different coastal landscapes in Ireland. To this end the study will conduct a national face-to-face survey of Irish households to estimate demand by different users – local and national to a) determine the main users or beneficiaries of marine coastal resources and b) to quantify preferences and economic values for these landscapes by these two different groups. A sample frame of about 1000 respondents will be drawn to represent the population of Irish households. The study will employ the multiple bound dichotomous choice contingent valuation method – a thoroughly tested stated preference technique to estimate public preferences for and willingness to pay for the different marine landscapes types (Bateman, <i>et al.</i>, 2001; Clinch, and Murphy, 2001; van Rensburg, <i>et al.</i>, 2002). The surveys will also be used to elicit information on preferences by respondents for different types of coastal recreational facilities and different institutions which might be responsible for managing these coastal areas. These estimates will be used to inform future management and policy decisions regarding the development and implementation of the coastal landscapes.</p>	
Does this work package have any linkages with other Beaufort Marine	

Grantees? If so, please state.	
No	
Objectives of the Work Package	
<p>7.1 Literature review and scoping study of non-market benefits</p> <ul style="list-style-type: none"> Identify major coastal sites of national recreation/tourism importance. Conduct a review of the composition of local communities and the role played by eco-tourism, the development of recreational amenities in the main coastal areas and new settlement. Review literature to ensure contingent valuation and travel cost methodology is appropriately applied in the context of the research. Literature review of marine recreation goods and services and their valuation (best practice) in Ireland and other relevant countries. Review literature on payment vehicle effects in contingent valuation. Conduct a workshop involving valuation practitioners and key stakeholders at NUIG. <p>7.2 Measuring marine public good values: a CVM approach</p> <ul style="list-style-type: none"> Identify major users of coastal recreation sites according to recreation use. Measure the <i>direct</i> public demand and preferences by local, national and international users for marine coastal recreation based activities based on a CVM modelling approach. To identify public preferences for different types of payment vehicle and different institutional mechanisms involved in providing marine recreational public goods. 	
Milestones	
M7.1	Report indicating major coastal sites of national recreation/tourism importance.
M7.2	Completion of literature review.
M7.3	Stakeholders' Workshop 1
M7.4	Face-to-face CVM pilot and main questionnaire completed
M7.5	Stakeholders' Workshop 2
M7.6	WTP for marine coastal resources by the Irish public estimated
Deliverables	
D7.1	Literature review and scoping study of non-market benefits
D7.1a	Prepare a short report indicating major coastal sites of national recreation/tourism importance
D7.1b	Summary report on the literature review
D7.1c	Summary of key outcomes of valuation and stakeholder workshop
D7.2	Measuring marine public good values: a CVM approach
D7.1a	Report on the WTP questionnaire and its implementation
D7.1b	A report on the CVM data set and its collection
D7.1c	A report on the results of the CVM survey
D7.1d	A report on dissemination of study findings
D7.1e	A report on the policy implications of the CVM study
Identify the risks associated with the WP (and actions that may minimise those risks).	
<ul style="list-style-type: none"> Recruitment of person with specialist valuation skills. Recruitment of PhD student with specialist valuation skills Advertise widely and utilise contacts/research groups to identify suitable candidates The WP leader believes that the study is realistic and achievable and has confidence in delivering project outcomes, since he has experience of similar 	

projects and has been successful in delivering targets in the past. Nevertheless any project involving substantial fieldwork may involve inevitable difficulties. Contingency plans for this include prior consultation with stakeholders and valuation experts (at the workshop and ongoing). They also include maintaining as much flexibility as possible with respect to interview/survey scheduling.

- Concerning hazards, the team will undertake a risk assessment exercise in advance of major research gathering activities in accordance with EU and national health and safety legislation. The risks associated with field work and optimum safety procedures will be adopted in response to this assessment.

Any other detail of relevance (e.g. infrastructure requirements).

- The requirements stated below are subject to the efficient allocation of resources between the different research modules
- Resources for the workshop and surveys. A substantial amount of travelling will be involved in the collection of survey data. All team members will be involved in travelling to households/the study sites on a regular basis, particularly the PhD student and NUIG researcher. Alternatively the CVM survey can be contracted out to a research company to gather the data. Additionally, it will be necessary to travel to Oranmore to visit MI officials to present results and to consult about future work on a regular basis. There may also be some attendance at scientific meetings and relevant national conferences such Irish Economic Association each year.
- Dissemination of the results are critical. The research group intends to present their work at local and international fora including international scientific meetings such as ICES (International Council for the Exploration of the Sea), the EAFE, (European Association of Fisheries Economists) and the EAERE (European Association of Environmental and Resource Economists) Congress. It is envisaged that the project may benefit from consultation with international peers and experts in this research area.
- Computer equipment for staff/PhD student needed for processing information, modelling and write-up. Laptop needed for field surveys.
- GIS equipment including maps and data sets for the recreational sites
- It is vital that resources are made available to purchase an *An Post* directory of household residents in order to draw the CVM sample frame. Other expected costs include paper and printing costs. An indicative budget of approximately 30,000 euros would be necessary to undertake the research outline in WP 5.

WORK PACKAGE No.:	8
Work Package Title:	Project Management
Start Month:	Septmeber. '08
End Month:	August 2015
WP Leader:	Prof. Michael Cuddy
Other personnel:	
Description of Work Package (Identify within sub-task titles where appropriate)	
<p>Task 8.1 External Programme Steering Committee The Committee will be comprised of:</p> <ul style="list-style-type: none"> 6 External representatives: 2 nominated by MI and 2 each by the two partners 2 MI Representatives: Y. Shields (MI Co-ordinator) and M.O'Toole (Policy Research Manager) 2 From Programme Team: M.Cuddy (NUI, Galway), C. O'Donoghue (RERC, Teagasc) <p>Task 8.2 Internal Programme Management Committee The Committee will be comprised of:</p> <ul style="list-style-type: none"> Team Leaders: Ward, Van Rensburg, Garvey, Meredith, O'Donoghue Co-ordinator: Prof. M. Cuddy MI Co-ordinator: Y, Shields MI Policy ResearchManager:M. O'Toole <p>Task 8.3 Marine Socioeconomic Data Management Committee This Committee will be comprised of:</p> <ul style="list-style-type: none"> Module Team Leaders: Cathal O'Donoghue /Michael Cuddy Representation from: DAFF (Ministry), CSO, BIM, MI <p>Task 8.4 Administrative reporting</p> <ul style="list-style-type: none"> ▪ Establish procedures within the two partner institutions to ensure compliance with all aspects of the Beaufort programme ranging from contractual issues to project auditing, for example, ensuring that annual financial reports are submitted in full and on time. ▪ Establish links between university research offices and the Marine Institute's Sea Change Management Unit (Funding & Administration Office). ▪ Ensure that all project reports are submitted electronically to the Marine Institute, and backed up, where necessary, by paper records (e.g. in the case of financial reports). ▪ Use the research information management system (RIMS) that will allow for the online submission of reports, when it comes online. <p><i>Duration 84 Months</i></p> <p>Task 8.5 Technical reporting</p> <ul style="list-style-type: none"> ▪ Organise three technical meetings per year with all members of the Programme Team (Project Co-ordinator, WP leaders, BMA researchers and PhD students to review and discuss research progress). These meetings will be chaired by the Project Co-ordinator. ▪ The Internal Project Management Committee will meet once a year with the 	

External Project Steering Committee, which is tasked with reviewing the scientific outputs of the project (see Figure 1 for organizational structure).

- Provide an annual technical progress report as per contractual requirements to the SeaChange Management Unit.
- Provide shorter 'interim' technical reports at six-monthly intervals to the Project Co-ordinator.
- WP leaders should implement intra and inter-institutional schedules for meetings as appropriate, in particular the convening of each Focus Group, to provide advice and guidance to BMA researchers and PhD students.
- Undertake a Strategic Review of the project in Year three (led by the Project Co-ordinator) and implement recommendations.

Duration 84 Months

Task 8.6 Programme development and expansion

- The work programme post 2011 should be fully filled out by the end of 2011 to ensure continuity while applying a strategic approach to addressing gap areas within the overall Beaufort programme and within each work programme (Internal Steering Committee).
- Implementation of WP8 of *Beaufort Award Ecosystem Approach to Fisheries Management (EAF)* through collaborative approach with that project on the assumption that the necessary funding can be put in place
- Work in partnership with MI to scope new project proposals on specific areas of interest and seek support for this expanding programme (See Section A3).

Duration 84 Months

Task 8.7 Communication & Dissemination

- Develop the ICERTS website to fully elaborate the Beaufort programme and be the primary source of information on the progress of each WP and on the overall programme.
- Work with BMRA researchers to develop a project communication and dissemination plan to promote awareness of the Beaufort project itself, its successful activities and outcomes.
- Ensure that all project Communication and Dissemination activities are carried out in accordance with the requirements of the Beaufort programme.
- Implement and achieve targets for publications in peer reviewed literature arising from all of the WPs.
- Implement and achieve targets for international conference arising from all of the WPs.
- Profile the target audience for the project
- Develop a contacts database covering contacts that can help with operational aspects of the project, as well as contacts that can be of strategic benefit to the project (e.g. external experts).
- Seek advice and information on PR opportunities, for example from the PR office of the Marine Institute and from the Public Relations Office in NUI, Galway.
- Develop a project flyer to circulate by post to the contacts list and to disseminate at relevant meetings and conferences.
- Seek opportunities for promoting the project in 'grey literature'.
- Promote the project through face-to face networking by using overheads to attend meetings and conferences of relevance.

Does this work package have any linkages with other Beaufort Marine

Grantees? If so, please state.

This programme will link with the *Beaufort Award Ecosystem Approach to Fisheries Management (EAF)* where economic aspect of fisheries activities must be evaluated, in particular with regard to that programmes WP8.

Objectives of the Work Package

- To ensure that the administrative and technical objectives of the project are met in full in a timely and efficient manner.
- To meet the contractual obligations of the Beaufort Award
- To ensure good communication among the Beaufort community, with the Marine Institute and with external groups.
- To oversee the project communication and dissemination strategy
- To provide a focal point for any issues arising on the project

Milestones	
M8.1	21 Internal progress meetings with the overall Programme Team
M8.2	Annual administrative reporting periods
M8.3	Annual technical reporting periods
M8.4	Annual Reviews by External Review Committee
M8.5	Strategic Project Review and Plans 2011-2015 completed
Deliverables	
D8.1	External Project Steering Committee established
D8.2	Internal Project Management Committee
D8.3	Marine Socioeconomic Data Management Committee
D8.4	Administrative Reporting
D8.5	Technical Reporting
D8.6	Research Programme 2011-2014
D8.7	Communication and Dissemination
Identify the risks associated with the WP (and actions that may minimise those risks).	
<p>Risk – Recruitment difficulties impacting on the timeframe for project implementation Action – Initiate recruitment immediately on approval of the work programme</p> <p>Risk – Potential disagreements between researchers Action – Conflict resolution to be implemented through project management structure</p> <p>Risk – Delays in reporting Action – Good communication practices implemented by the project management team</p>	
Any other detail of relevance (e.g. infrastructure requirements).	