

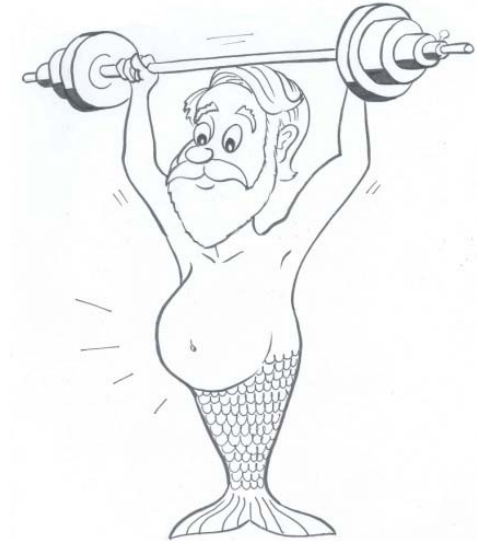


Strengthening Ireland's FP7 involvement



The Marine Sector

FP7 Theme 2: Food, Agriculture, Fisheries and Biotechnology

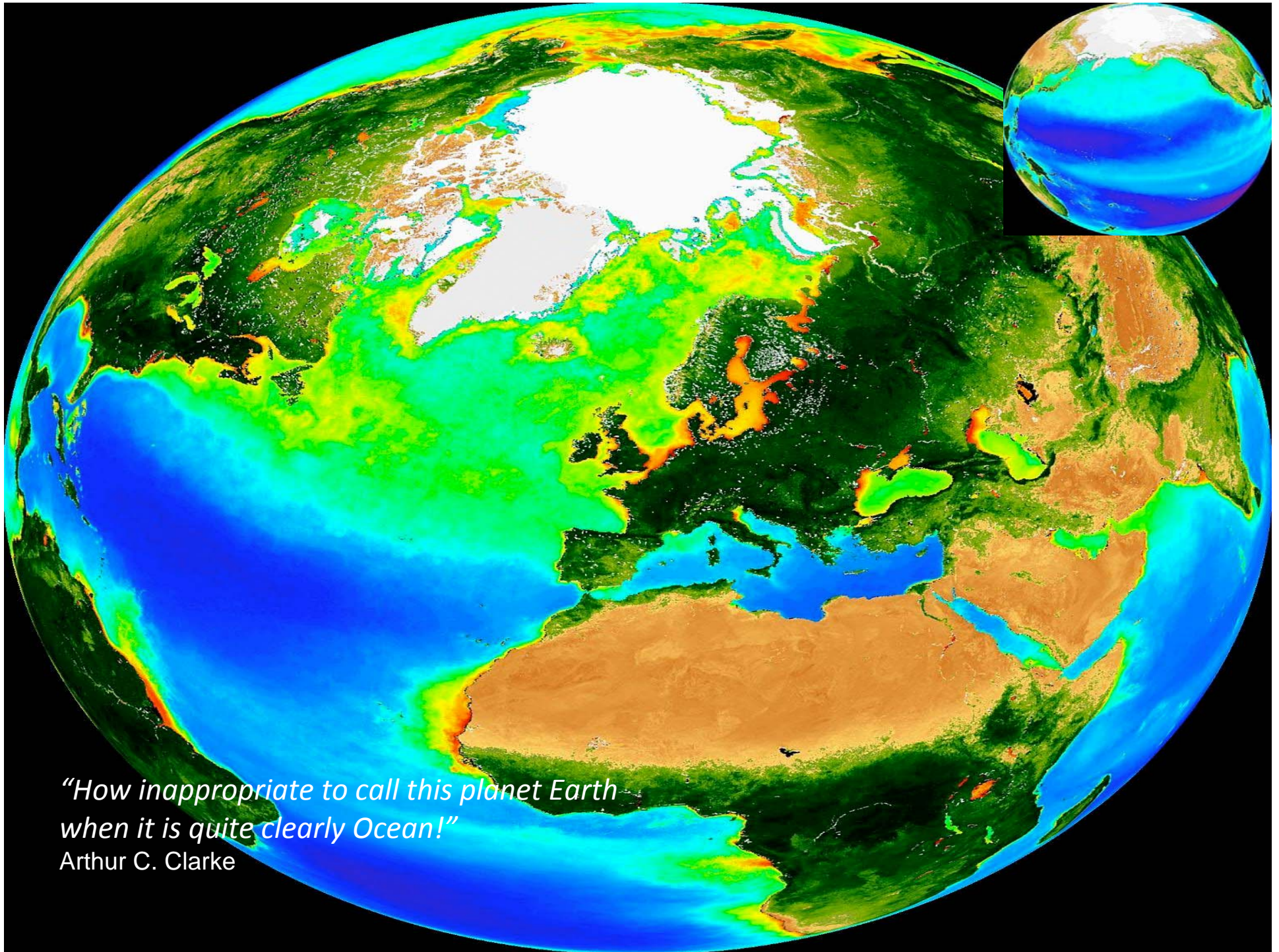


Geoffrey O'Sullivan
Marine Institute



DAFF, Backweston Campus, Celbridge, County Kildare.
Thursday 29th April 2010.



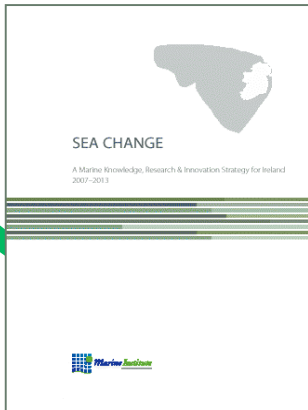


*“How inappropriate to call this planet Earth
when it is quite clearly Ocean!”*

Arthur C. Clarke

A Policy Context.....

EUROPE 2020: *A resource efficient, low carbon economy, stimulating green innovation, growth and jobs*



A dynamic maritime economy, in harmony with the environment, supported by sound marine science and technology, which allows human beings to continue to reap the rich harvest from the oceans in a sustainable manner.

A European Strategy for Marine & Maritime Research (2008)

Marine Strategy Framework Directive 2008

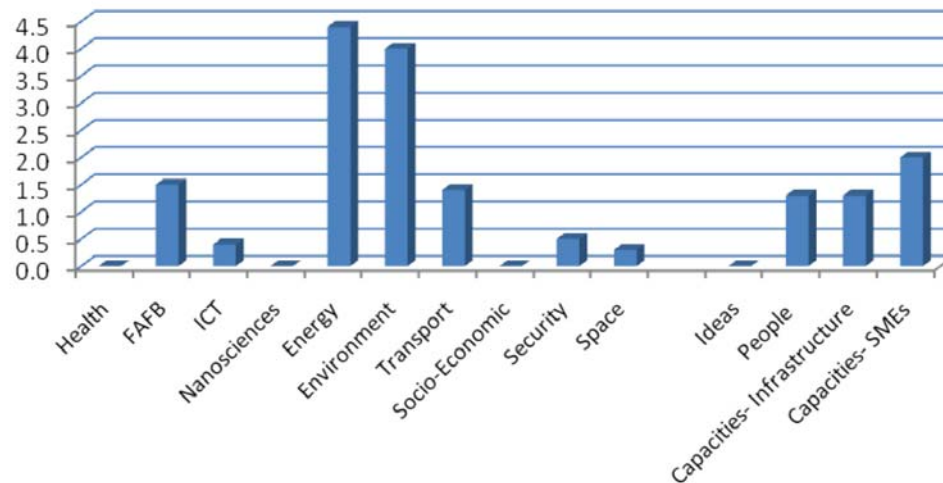
Reform of the Common Fisheries Policy (2009 -)

Strategy for Sustainable Development of European Aquaculture (2009)



Irish participation in FP7 (2007 – 2009)

Marine science and technology is a priority cross-cutting theme in FP7



(a) Value (€m) of Projects per FP7 Theme

Value to Irish marine researchers:

All FP7:	€17.5m
Theme 2:	€1.6m
Other FAFB:	€6.0m

FP7 is:

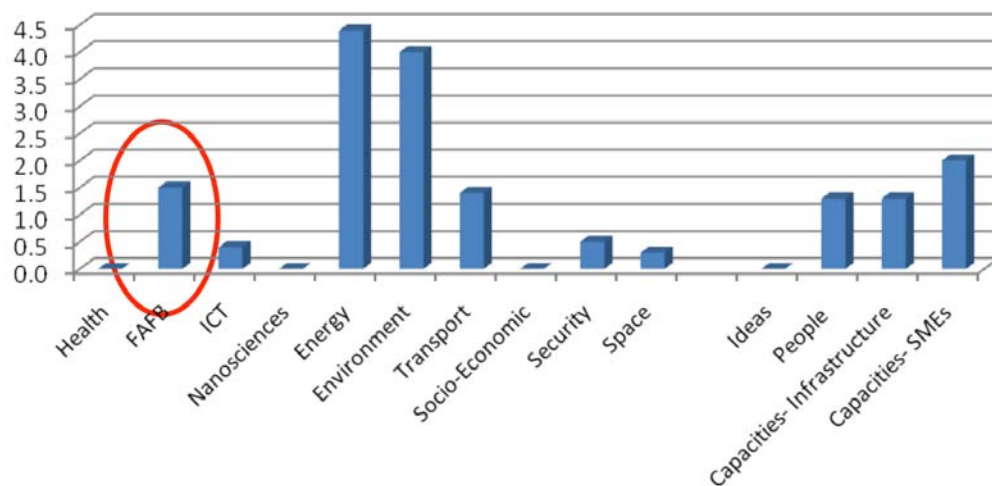
- A critically important source of research grant-aid.
- A means of participating in international co-operation and cutting edge research

FP7 grant-aid (2007-2009) represents circa 20% of total investment in competitive marine research in Ireland

43 collaborative projects :

4 Public Research Centres (14%); 4 Universities (31%); 20 SMEs (44%); 4 Associations (11%).

FP7 Theme 2: Food, Agriculture, Fisheries & Biotechnology (2007 – 2009)



(a) Value (€m) of Projects per FP7 Theme

- 2.1. Sustainable Production
- 2.2. Fork to Farm: Food Health & Well-being
- 2.3. Life Sciences, Biotechnology
-

Value to Irish Researchers : €1.6m.

Participation of Irish Researchers:

Research Centres:	2
SMEs:	0
Others:	1

Sustainable Production

Fisheries:

- MEFEPO,
- DeepFishMan
- EcoKnows

Aquaculture:

- Prevent Escape,
- COEXIST
- AQUAMED,
- Aqualnova

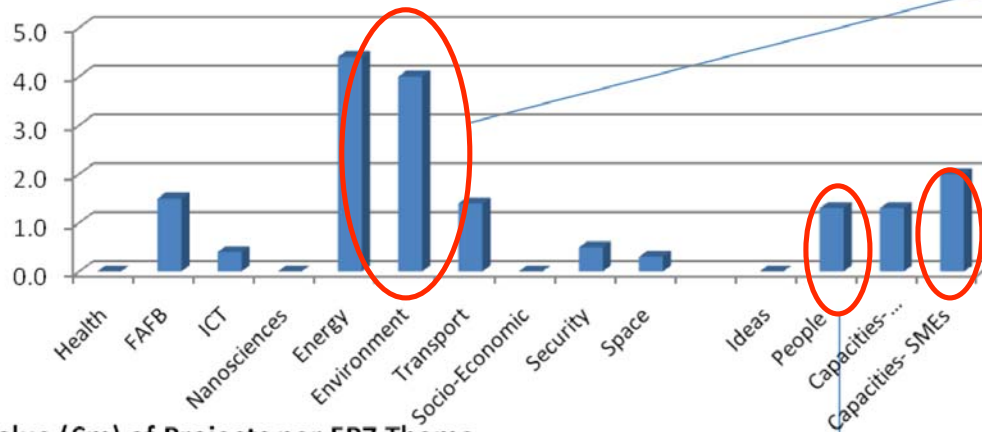
Food Health/Processing

Zero!

Marine Biotechnology

Zero!

Other FP7 FAFB related Research



(a) Value (€m) of Projects per FP7 Theme

CORALFISH
EELIAD
SALSEA
MESMA
KNOWSEAS
ODEMM
MIDTAL

Value to Irish Researchers: €6 million
Irish participants (12 projects):
 Research Centres: 6
 SMEs: 9
 Other: 1

MABFUEL

OYSTERCOVER
MusselsAlive
SETTLE
HYFFI

2.1. Production: Fisheries, Aquaculture, Seaweeds



Challenges/Opportunities:

- Stocks over-fished - European aquaculture is stagnating.
- Europe is one of the largest global aquatic food markets and currently imports over 50% of its requirements.

Fisheries/aquaculture research is a traditional Irish strength - very limited opportunities in FP7 Theme 2.

Emphasis currently almost exclusively on social and economic aspects of Common Fisheries Policy.

Need to broaden this base to include:

- Reconciliation of concepts of MSY and the Ecosystem approach.
- Climate impacts on species biogeography and impacts on local communities.
- Sustainable aquaculture – fish health – disease prevention.
- Offshore aquaculture – diversification of species.
- Seaweed aquaculture.

More bottom-up and innovative opportunities for SMEs.



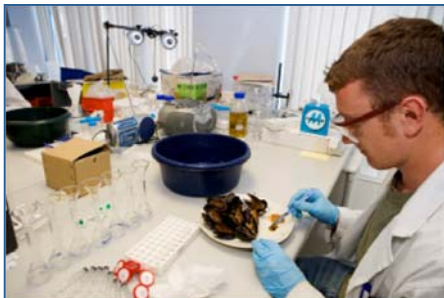
2.2. Food Processing, Health & Well-Being



Challenges/Opportunities:

- Add value / apply existing food technologies to seafood resources.
- Develop new marine functional foods .
- Enhance efficiencies, production technologies, food safety, animal welfare.

Ireland has good international RTD reputation in the food sector (dairy/beef).



Emerging seafood research capability - €5 million investment in new research capacity (NutraMara).

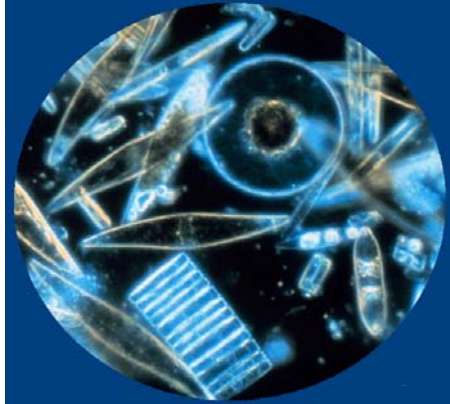
RTD Priorities:

- Marine functional foods.
- Bio-active discovery, screening and profiling.
- Value-added product development.



Enhance technological capabilities of Irish SMEs operating in the seafood sector.

2.3. Marine Biotechnology



Challenges/Opportunities:

- Harness unique marine biodiversity for biodiscovery and added-value bioactive compounds.

Identified as strategic priority. (ref: *Sea Change Strategy*) with €7.2 million investment in new research capacity.

Scope for marine biotechnology in FP7/T2 very limited.

- Techniques for extraction/identification of biochemical components of commercial value.
- New rapid screening and culturing techniques.
- Marine microbial diversity.
- Algal biotechnology.
- High throughput systems – metagenomic approaches – determination of genetic characteristics and production of bioactive compounds.
- Bioinformatics.

Input from **Marine Biotechnology: Future Challenges** Conference (Italy, June 2010).

CONCLUSIONS



The FP7 Programme is:

- a critically important source of competitive research funding;
- a mechanism to facilitate participation in collaborative and cutting edge research.

Marine Seafood Sector is weakly represented in FP7 Theme 2.

Seafood Production: More scope for fisheries and aquaculture (T2.1).

SeaFood Processing: Retain generic nature of this topic (T2.2).

Marine Biotechnology: More scope for marine biotechnology topics (T2.3).

SMEs: Facilitate bottom-up solution oriented research.

INNOVATION : Too much top-down stifles *innovation!*



THANK YOU
FOR
LISTENING

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Additional Information for Handouts.

For further information



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Geoffrey O'Sullivan is a Section Manager in the Irish Marine Institute where he has a broad remit for international co-operation in marine research and the promotion of Irish participation in European research programmes. He is currently a national expert to the FP7 Theme 6 (Environment Programme), he is a vice chair of the Ostend-based Marine Board-ESF (www.esf.org/marineboard), a Board Member of the Lisbon-based Centre for Information on Marine Science and Technology (www.eurocean.org) and a Work Programme leader on the SEAS ERA-NET project. (2010-2014).

FP7 Project Acronyms

AqualInnova:	Governance and Multi-stakeholder participation in aquaculture.
AQUAMED:	Future research on aquaculture in the Mediterranean region.
COEXIST:	Interaction in Coastal Waters – Sustainable integration of aquaculture and fisheries .
CORALFISH:	Assessment of the interaction between corals, fish and fisheries.
DeepFishMan :	Management and monitoring of deep-sea fisheries and stocks.
EcoKnows:	Effective use of ecosystems and biological knowledge of fisheries.
EELIAD:	European eels in the Atlantic: - Assessment of their decline.
HYFFI:	Hydrocolloids as functional food ingredients for gut health.
KNOWSEAS:	Knowledge-based Sustainable Management of Europe’s Seas.
MABFUEL:	Marine Algae as biomass for biofuel.
MEFEPO:	Making the European Fisheries Ecosystem Operational.
MESMA:	Monitoring and evaluation of spatially managed areas.
MIDTAL:	Microarrays for the detection of toxic algae.
MusselsAlive :	Mussel grading, handling, transportation, conditioning and storage.
ODEMM:	Options for Delivering Ecosystem Based Marine Management .
OYSTERCOVER:	Recovery of European flat oyster production.
Prevent Escape:	Assessing the causes/ developing measures to prevent the escape of farmed fish .
SALSEA:	Advancing understanding of Atlantic salmon at sea.
SETTLE:	Bivalve conditioning and settlement.



FP6 (2002 – 2006)

Figure 2. Funding of Fisheries & Aquaculture related Research projects per Scientific field (FP6)

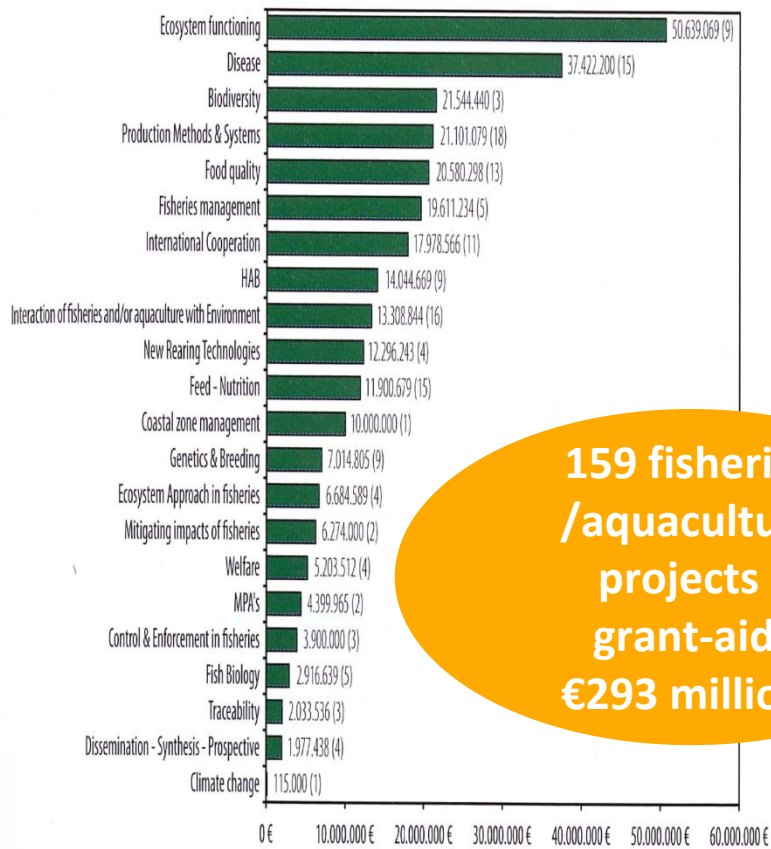
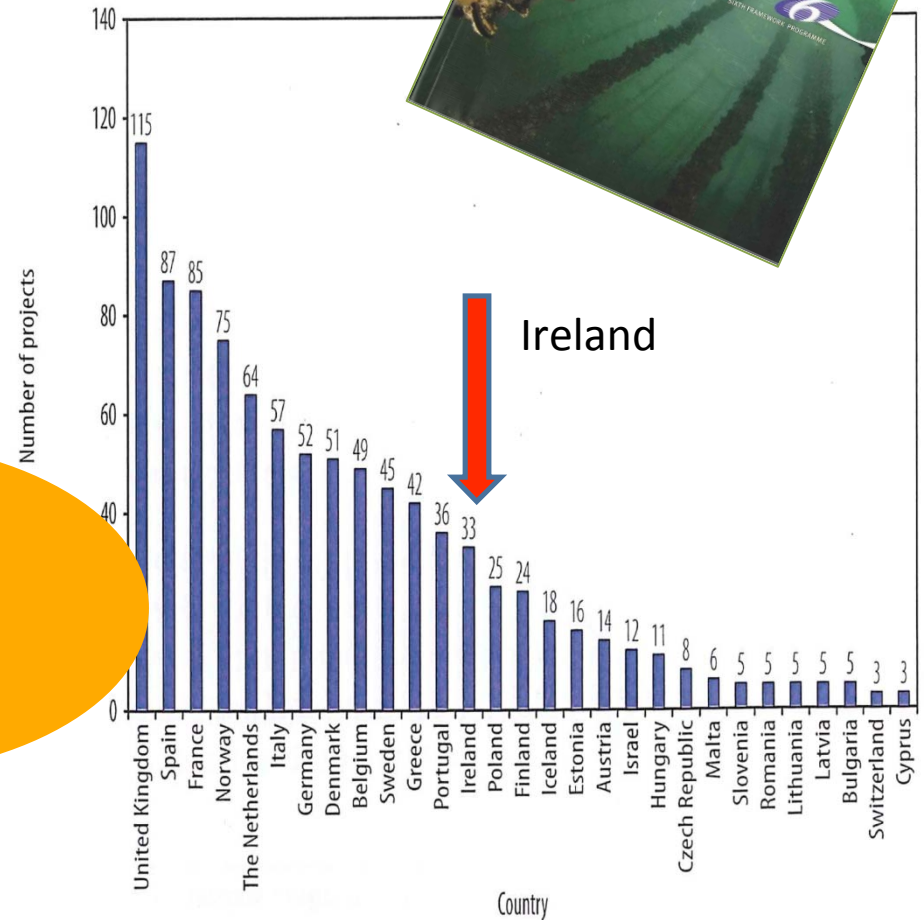


Figure 3. Number of projects per country involved



FP7 Theme 2: Food, Agriculture, Fisheries and Biotechnology

Preliminary identification of Irish Marine Priorities for the FAFB Work Programme 2011-2013.

Topic	Continuing Challenges	Critical Gaps	Emerging Technologies/ Opportunities
2.1. Sustainable Production Fisheries	Impact of global climate change on marine species of commercial importance and socio-economic impacts on dependent coastal communities.	Reconciliation of concepts of MSY and the Ecosystem approach.	
	Evaluation of the REAL impact of discarding.	Elimination of discards	Application of new technologies/strategies to protect sensitive species and habitats
	Evaluation of the impact of fishing on non-fish components of ecosystem esp. benthic communities and seabeds.	Valorisation of underused components of the marine biological resource - lower trophic level resources	
	Establishing “sustainable” fisheries in both ecological AND economic terms	EAFM increasingly asks fishermen to forego fishing opportunities. Most analysis suggests the need for “Incentives” for fishermen to comply with new management measures. What are these workable incentives?	
	Management of fisheries both for production and in relation to impacts in designated and potential NATURA sites		
Aquaculture	Identification of new species for regional aquaculture in a changing global climate and using new genetic selection techniques		Aquaculture technologies (offshore technologies / on-land recirculation technologies)

Topic2.2.	Continuing Challenges	Critical Gaps	Emerging Technologies/ Opportunities
	Species enhancement (selective breeding, GMOs)		
2.2. Fork to Farm: Seafood Nutrition and Processing	Extraction of novel bioactive compounds from marine organisms to improve human health (Functional Foods)		Extraction of novel bioactive compounds from marine organisms to improve shelf life (Functional Foods)
	Use of pelagic fish to supply fish farm food	Social, economic and ecosystem implications of using marine fish for aquaculture. - ecological footprints of aquaculture v. wild capture.	Eco-footprint approaches to allow comparison across habitats, terrestrial and marine.
Health and Well Being	Control of toxic algae by parasites: improving sustainable shellfish aquaculture in Europe		Further improvements on traceability of marine production along the market chain.
	Improved forecasting and modelling of HABs		
2.3. Life Sciences & Biotechnology	Extraction of commercial bioactive compounds from seaweeds		