FORWARD & COEXIST WORKSHOP

FORWARD: Framework for Ria Formosa water quality, aquaculture, and resource development
COEXIST: Roadmap to better integration, sustainability and synergies across activities in the European coastal zone

João Gomes Ferreira

http://ecowin.org/

Universidade Nova de Lisboa

Parque Natural da Ria Formosa, Quinta de Marim, Olhão. 21-22 February 2011

Workshop objectives

Objectivos da reunião

- To present the general scope and activities of the COEXIST (FP7) project to the management community in the Algarve
  Apresentar o projecto COEXIST (FP7) a actores e gestores do Algarve
- To present to the COEXIST team the work being developed in the FORWARD project
  Apresentar o projecto FORWARD à equipa COEXIST
- To give local stakeholders a clear picture of what the two projects are doing, and how they interact
  Explicar aos actores locais as actividades e interacções dos dois projectos
- To discuss and agree on which tools being developed or implemented in either project are of most value in this regional context
  Assentar nas ferramentas mais uteis neste contexto regional

Workshop participants

COEXIST	FORWARD	REGIONAL	EXTERNAL
Øivind Bergh	Joao G. Ferreira*	Valentina Calixto	Bill Dewey
Katrine Soma	Camille Saurel*	Alexandre Furtado	Mª Joao Bebianno
Arie van Duijn	Laudemira Ramos	Joao Alves	
David Verner-Jeffreys	Joao Lencart	Cristina Borges	
Nick Taylor	Carlos Vale*	Augusto da Paz	
Jorge Ramos	Frederico Batista	António Vieira	
	Domitilia Matias	Marta Rocha	
	Florbela Soares		

6 + 8 + 7 + 2 = 23

Workshop agenda 21/2

Agenda da reunião 21/2

Monday / Segunda-feira

- ***Welcome, order of business, and logistics***
  Boas vindas, ordem de trabalhos, logística
- ***Administrative, legal, and project framework***
  Enquadramento administrativo, legal e dos projectos
- ***General overview of the study area***
  Perspectiva geral da área de estudo
- ***Comparisons, tools, and issues***
  Comparações, ferramentas, e questões
- ***Management approaches and tools***
  Abordagens e instrumentos de gestão
- ***Breakouts***
  Discussões sectoriais

Workshop agenda 22/2

Agenda da reunião 22/2

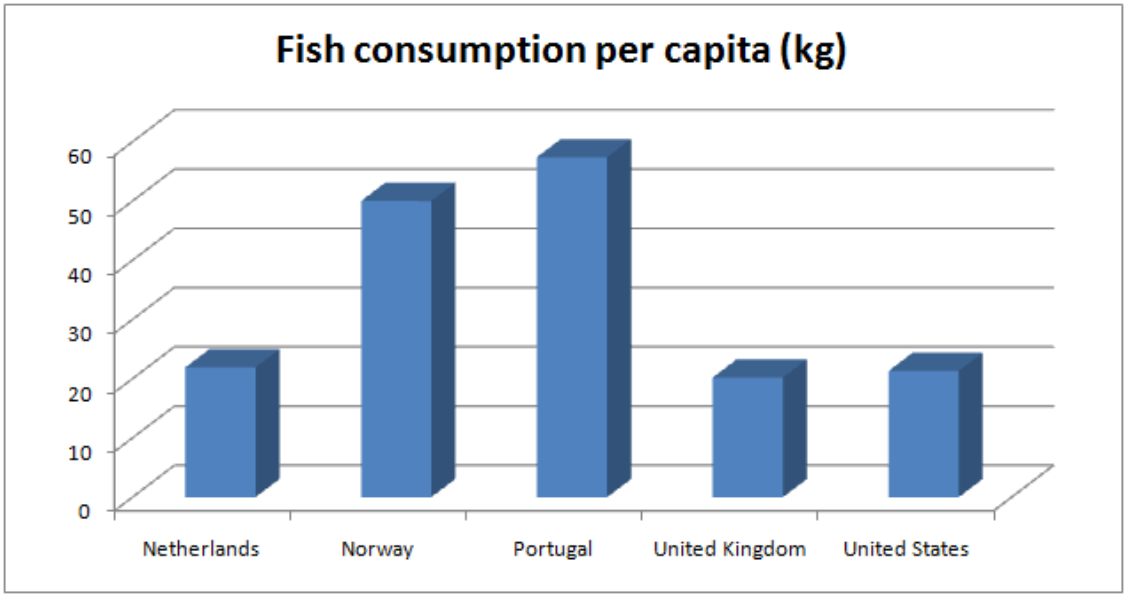
Tuesday/ Terça-feira

- ***Visit to Olhão market***
  Visita ao mercado de Olhão
- ***Site visit to aquaculture leases and offshore aquaculture area***
  Visita de estudo aos viveiros de bivalves e APPAA
- ***Breakout reports***
  Relatórios das discussões sectoriais
- ***Comments from external participants***
  Comentários e análise dos participantes externos
- ***Socio-economic aspects***
  Aspectos sócio-económicos
- ***Thoughts for the future***
  Pensamentos para o futuro
- ***Planning of joint activities – FORWARD/COEXIST***
  Planeamento de acções conjuntas FORWARD/COEXIST

Workshop logistics

Logística da reunião

- Travel: we have all airport transfers, and all other transport for colleagues from abroad arranged. Please send your boarding passes (outbound and inbound) together with bank details to Camille Saurel so we can reimburse your travel
- Food: if you don't like fish and shellfish, you've come to the wrong place. Portugal is the third largest consumer of fish in the world (after Japan and Iceland). But we can still give you nice food, we just need to know (Camille/Sofia)
- Boots/waders: We have boots available for everyone who is going on the boat trip on Tuesday. Hopefully it will be sunny, but dress warm
- Schedules: please see your agenda



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The FORWARD project

Framework for Ria Formosa water quality, aquaculture, and resource development

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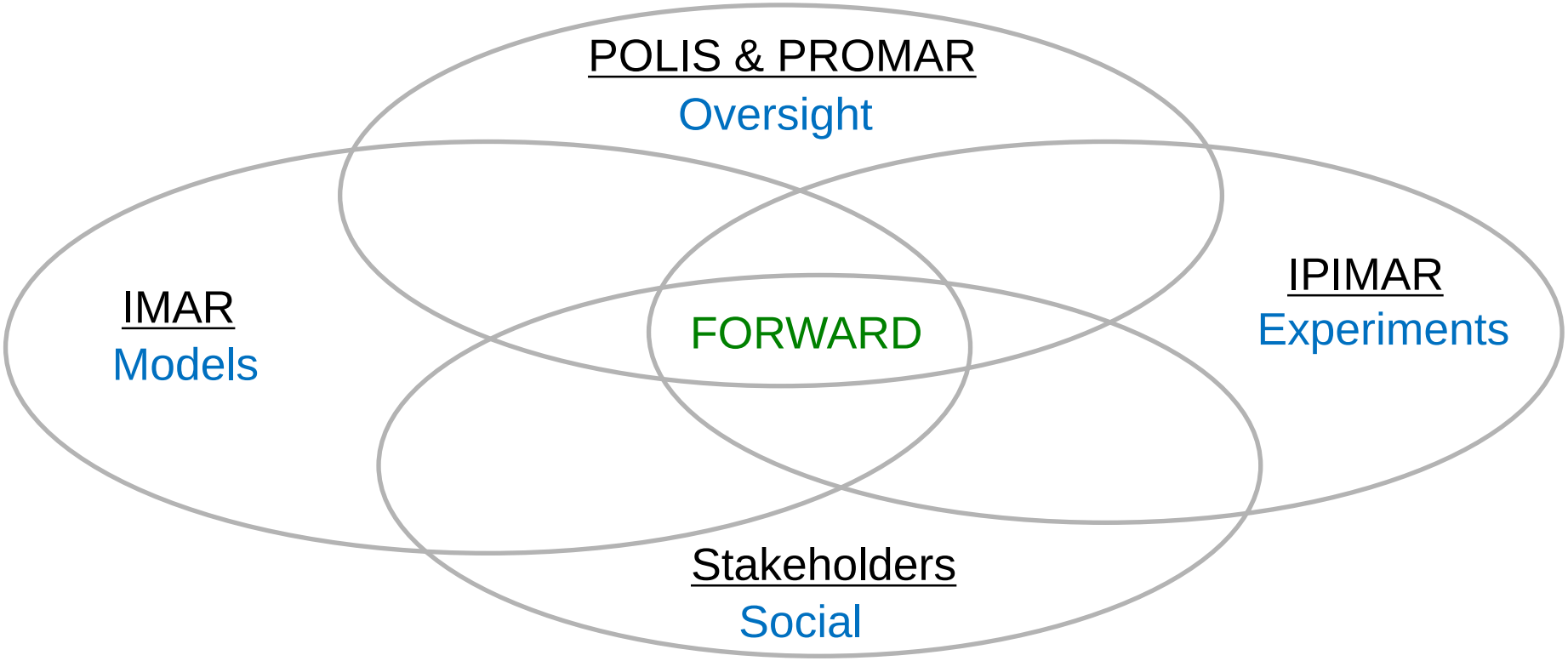
Who

Funding and execution

- Funding: POLIS Ria Formosa, PROMAR
- Execution: IMAR (Universidade Nova de Lisboa), IPIMAR
- Participation: Stakeholders from agencies and producers



What

Project objectives

IMAR and IPIMAR

- To estimate the overall carrying capacity of the Ria Formosa, by means of integrated models at the system scale, and screening models for management
- To determine the sustainable carrying capacity of shellfish lease areas (clams, oysters)
- To look at the interactions between land-based aquaculture and the Ria, with particular reference to water quality on intake and discharge
- To assess the impact of diffuse sources on the Ria ecosystem
- To examine optimization scenarios for renewable resources in the Ria, based on regional development predictions and stakeholder expectations

Why

Managing a fragile ecosystem

The Ria Formosa

- Is a unique region, beautiful and fragile. The barrier island system is the most complex such ecosystem in Europe
- It has usage conflicts which stem from different activities, and the system itself is geologically mobile
- It is the largest bivalve growing area in the country
- There are many other activities offshore of the Ria, including artisanal fisheries and the offshore aquaculture area (APPAA) currently under development
- It is vital to maintain the traditional activities related to the sea, including aquaculture and salt production, that are the roots of the local population
- It is also vital to leverage these from the point of view of ecological (a better Ria) and social (a better human future) sustainability

Placeholder.

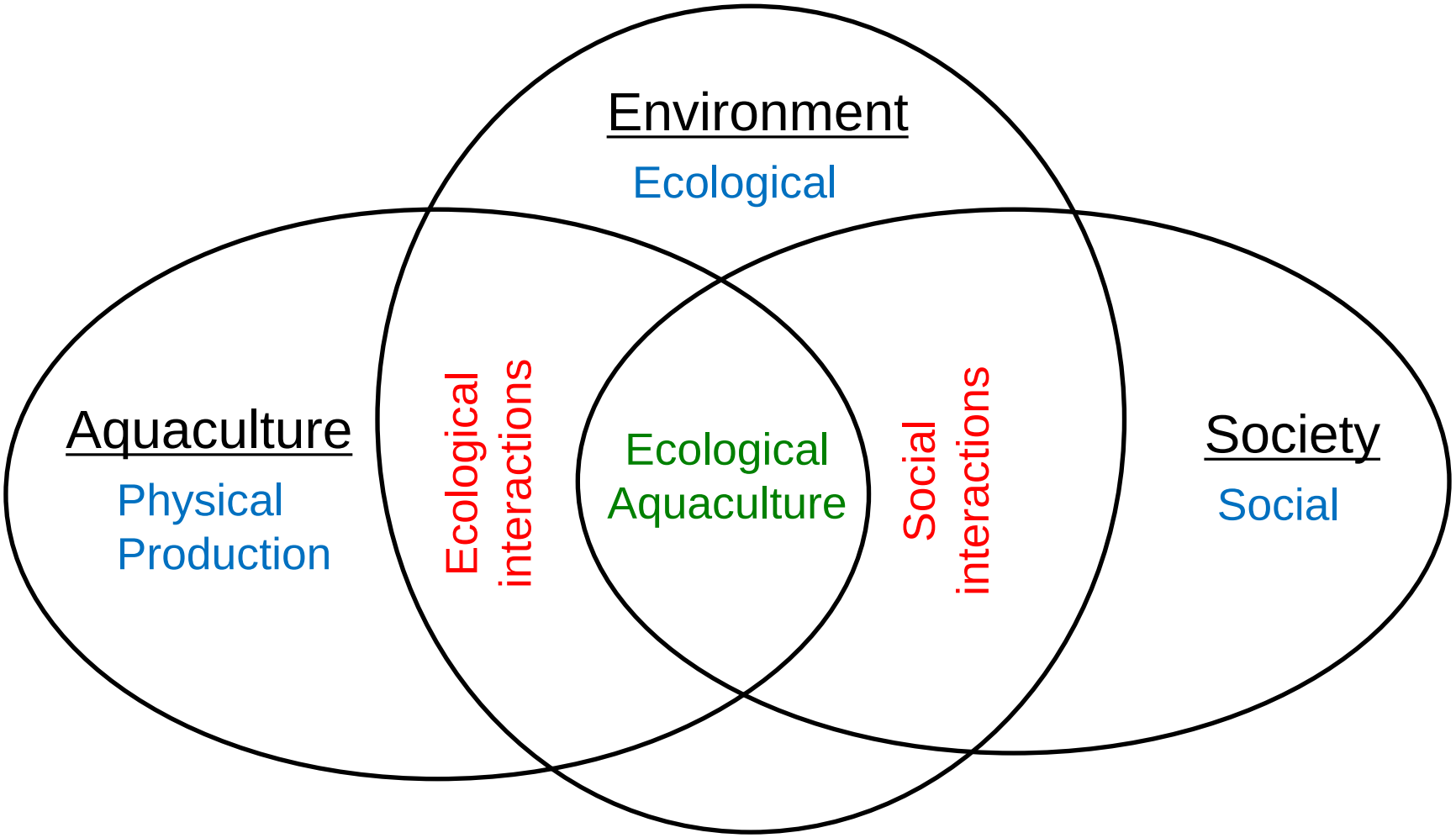
Ecosystem Approach to Aquaculture (the gospel according to FAO)

Three principles

- Aquaculture should be developed in the context of ecosystem functions and services (including biodiversity) with no degradation of these beyond their resilience;
- Aquaculture should improve human well being and equity for all relevant stakeholders;
- Aquaculture should be developed in the context of other sectors, policies and goals.

Soto, 2010

Carrying Capacity Framework for Aquaculture



Costa-Pierce & Ferreira, pers. com.

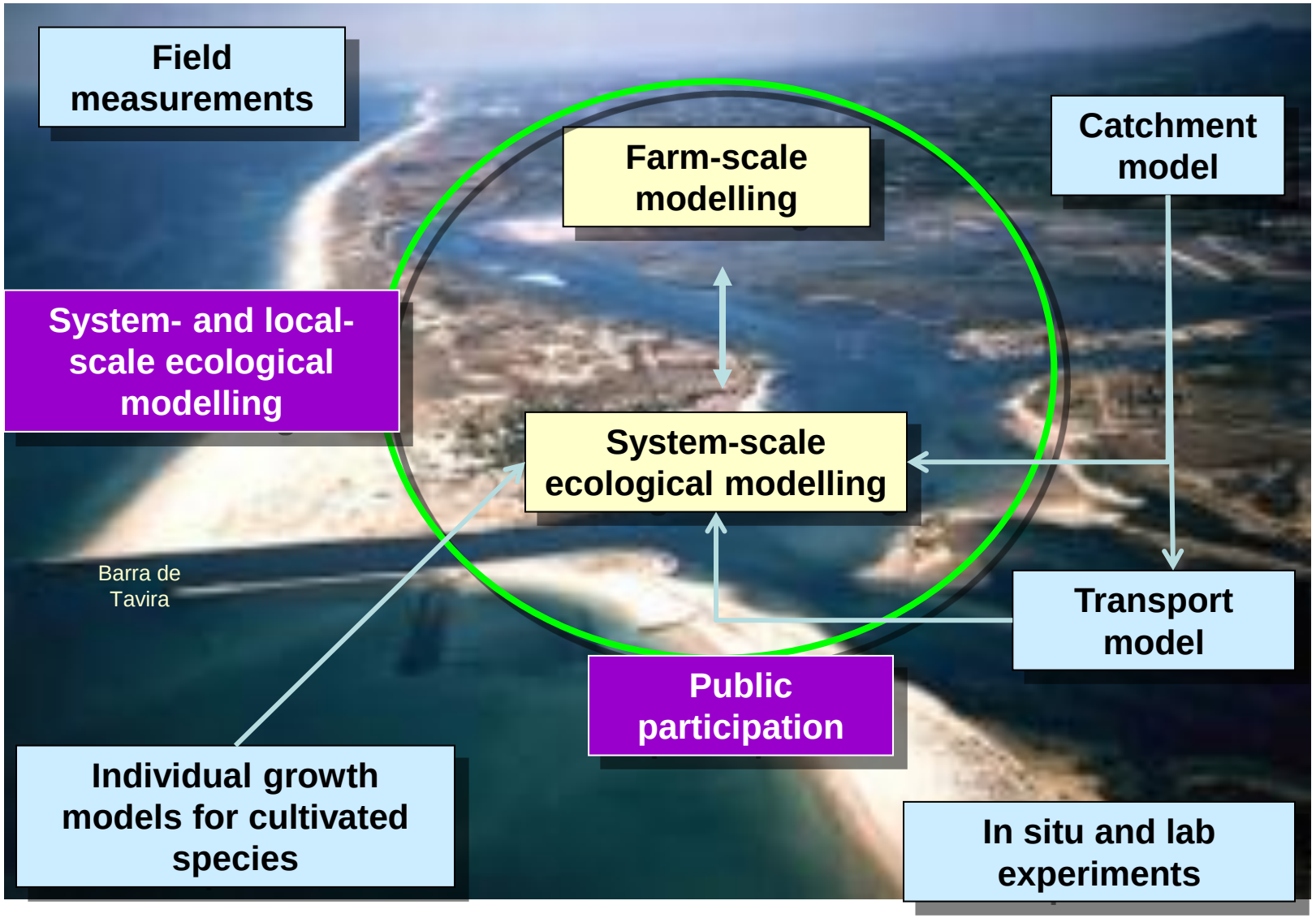
How

Different types of models and other instruments

Workpackages

- Coordination and reporting
- Data and information
- Ecosystem scale pressures and processes
- Local scale and individual processes
- Integrated modelling (ecosystem scale)
- Screening models (system and local scale)
- Management recommendations, dissemination

The FORWARD approach



Application of carrying capacity and site selection models

- Regulatory level
  - Legislation
  - Best practice agreements
  - Public pressure (NGOs, citizens groups…)
- Scientific and technical level
  - Difficulty in model application
  - Data requirements, cost, expertise
- Some areas less amenable to modelling
  - Social component
  - Belief-driven, but equally important

Drivers

Feasibility

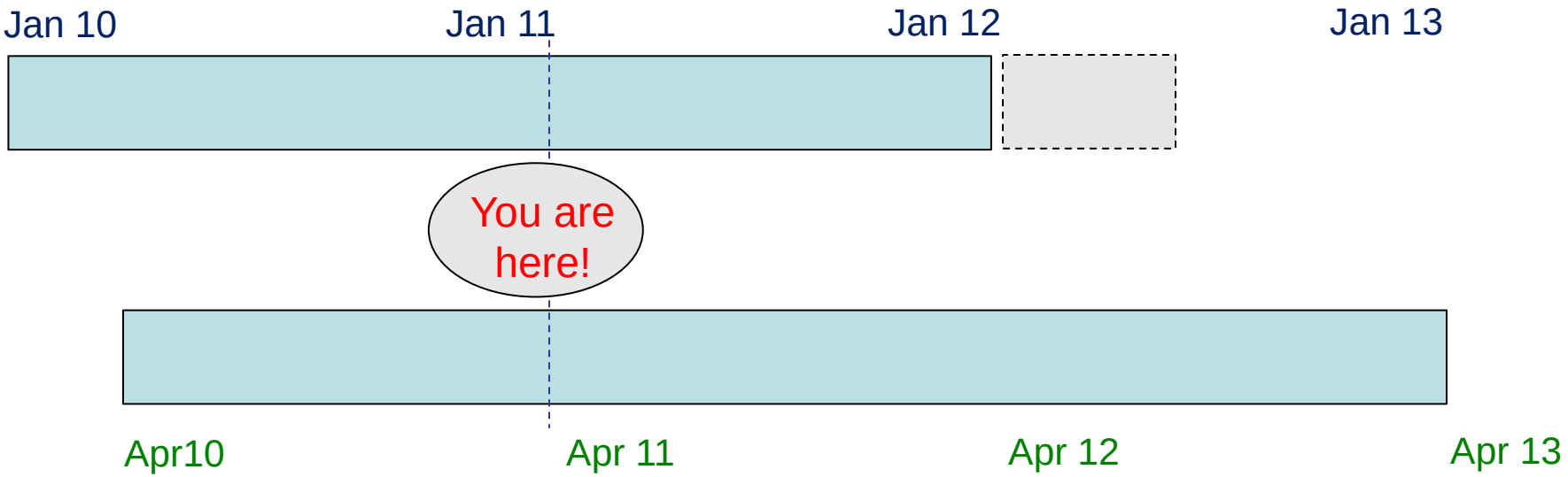
Inclusion

Better integration of models for natural and social systems is an important research area for EAA.

When

Chronogram

FORWARD



COEXIST

Outcomes

Digital and analog products

FORWARD products

- Databases and GIS
- Growth models for key cultivated species
- Carrying capacity (particularly for problem areas)
- System scale and local scale models
- FORWARD book
- Journal and trade paper articles
- Workshops with management and stakeholders
- Extension activities

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Breakout topics and participants

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Breakout topics and participants

45 minutes, 3-4 sub-topics for each group

Marine spatial planning	Animal health	Culture practice
Arie van Duijn (Chair)	David Verner-Jeffreys (C)	Carlos Vale (C)
Laudemira Ramos (Rapp)	Nick Taylor (R)	Joao G. Ferreira (R)
Katrine Soma	Frederico Batista	Bill Dewey
Joao Lencart	Florbela Soares	Cristina Borges
Marta Rocha	António Vieira	Augusto da Paz
Camille Saurel	Øivind Bergh	Alexandre Furtado
Nuno Grade		Domitilia Matias

- Marine spatial planning in the context of highly mobile fisheries
- Animal welfare in the context of the Ria Formosa-Offshore aquaculture system
- Current culture practice and potential improvements

Culture practice

Three discussion topics

- Certification/codes of practice
- Hatchery/nursery
- Culture practice (mechanisation, substrate , transport)

Certification / Codes of practice

Key points

- Producers' association: voluntary compliance by producers with a code of practice, adds value to the product, yearly update (e.g. 8h session)
- Move from producers' association to third party certification
- Farm plan – simple template, one per species (e.g. clam, oyster), 5-6 pages. Bill Dewey will forward an example

Hatchery / nursery

Key points

- Hatchery: important for local autonomy, biosecurity. Would allow selection for desirable traits
- Expensive (100K's €), market risk if natural seed beds have high recruitment
- Local discussion on private/public model. US – Washington State uses a private model
- Nursery: FLUPSY would allow purchase of smaller seed, development to a size suitable for planting. 24 bins, 10K's €. Local Ria interest more on oysters

Culture practice (mechanization etc)

Key points

- Use of mechanical devices, predator nets: plots are very small: 500 ha - 1300 licensees, 0.4 ha per plot. Lease sizes and authorization to use mechanical devices are both issues
- Constant digging because animals of different year classes are mixed together. No “year class rotation”, as is often used elsewhere

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FORWARD and COEXIST

Thoughts for the future

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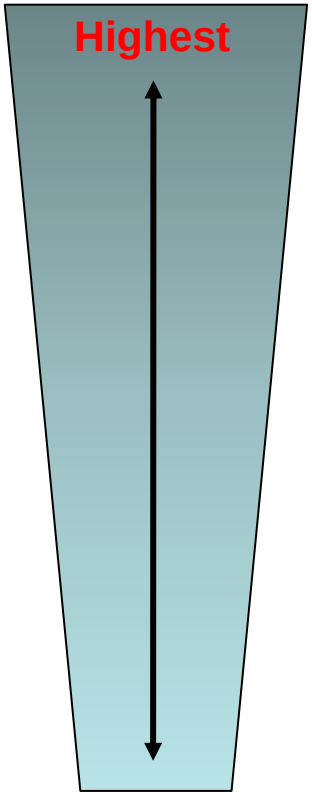
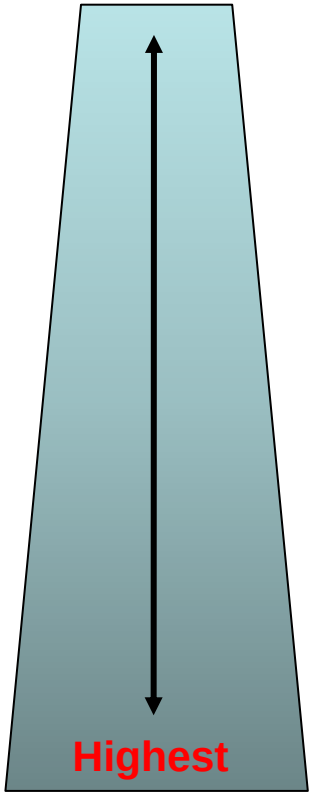
Different types of carrying capacity for aquaculture

US, Europe, Canada



The four pillars of carrying capacity

Southeast Asia, China



What are ecosystem models useful for?

Great expectations (Frederick E. Smith, 1969)

Ecosystems are at least as complex as the systems in economics... Present technology permits models so complete that their performance in the computer simulates precisely the economic systems.

Forty years on: let's stay in touch with reality...

- We are no nearer a paradigm in ecology to allow us to simulate ecosystems accurately. We also can't predict the weather;
- We can simulate production and environmental effects of aquaculture reasonably well;
- The solutions to these issues depend in good part (>50%?) on economic and social components. We can't simulate those at all well;
- Better use of real-time monitoring and simple digital tools (e.g. smart phones) will help us understand the social component better. Will we be able to simulate behaviour patterns?
- Virtual technology tools need to be more production- and management-oriented, and adapt to local realities and conditions.

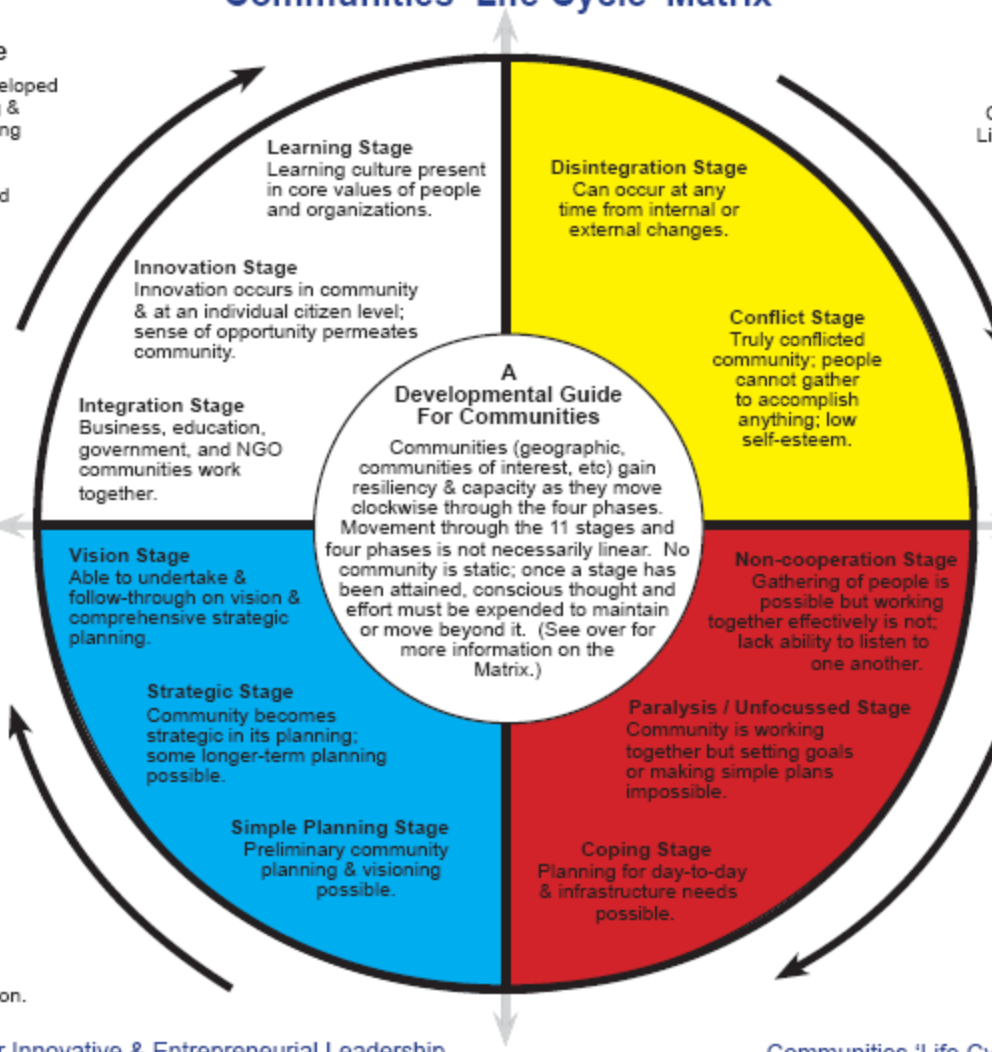
FORWARD thinking

• Em relação à amêijoa e à ostra, qual é a estrutura da parte terrestre da industria? Onde é efectuada a depuração, quais são as quantidades depuradas, existe algum processamento para alem da embalagem (ensacamento)?
• Qual é a estrutura financeira de um viveirista típico, i.e. em termos de custos e receitas.
• Qual é o volume de calhau vendido para a Ria Formosa e aplicado nos viveiros?
• Qual o efeito da APPA de Armona sobre o alimento natural que chega à Ria Formosa?
• Valor acrescentado – estruturas em terra, por exemplo para desenvolver congelamento instantâneo com azoto líquido para o mercado de exportação.
• Valor acrescen tado dos produtos amêijoa boa e ostra portuguesa. É necessário um trabalho substancial de certificação e “branding”.
• A amêijoa boa, *Ruditapes decussatus, é um produto de elevado valor comercial. Estima-se que 80% do mercado é de exportação. Uma parte importante da exportação é efectuada para Espanha, onde os preços são substancialmente mais elevados. Em termos de valorização, seria útil compreender qual o mercado final do produto, ou seja se o consumo é essencialmente em Espanha ou se uma parte importante é revendida a preços mais elevados.*

Resource Extraction & Harvest	Manufacturing & Processing	Retail Service Commerce	Government	Non Government [NGO's]
Harvest it	Make it	Service it	Regulate it	Volunteer for it
				
				
				
				

Resource Extraction & Harvest	Manufacturing & Processing	Retail Service Commerce	Government	Non Government [NGO's]
Harvest it	Make it	Service it	Regulate it	Volunteer for it
Capture Commercial Fisheries $364,000,000 **Farmed Fisheries** $336,000,000 **Forestry & Logging** $107,000,000 ___ **Offshore Oil Scenario** $94,830,000,000 **Offshore Gas Scenario** $42,140,000,000 **Wind Energy Scenario** $12,590,000,000	**BC Ferries Construction** $101,000,000 **Boat Building** $198,000,000 **DND Construction** $55,000,000 **FOC Construction** $27,000,000 **Ocean Tech Manufacturing** $500,000,000 **Ports Construction** $33,000,000 **Seafood Processing** $502,000,000 **Ship Building & Repair** 200,000,000 **Wood Manufacturing** $176,000,000	**Cruise Ship Spending** $270,000,000 **Cruise Ship Supply Chain** $390,000,000 **Ferry Services** $446,000,000 **Ocean Tech Service** $625,000,000 **Other Commercial** $2,433,000,000 **Other Service** $840,000,000 **Saltwater Angling** $642,000,000 **Seafood Retail** $178,000,000 **Shipping and Support** $2,100,000,000	**British Columbia** $153,000,000 **CANADA** $854,000,000 **Universities & Colleges, Research** $60,000,000	**Environmental Non-Government Organizations** $39,000,000
Source: CANADA BC Ocean Coordinating Committee GSGislaisen Report 2007 | 2005 Baseline Data for Comparison				

Communities 'Life Cycle' Matrix



Actualization Phase

Community is highly developed and encourages learning & innovation while respecting its history and culture. Community shares resources with others and regularly monitors itself, continuing to enhance capacity.

Action: Community undertakes regular reviews and reflection activities to maintain or enhance stage / phase.

Pre-Community or Chaos Phase

Community is undeveloped. Limited sharing of resources or recognition of value of a community.

Action: Community can (re)form through the identification of and action of influential and respected leaders (elected or unelected).

Vision Phase

Community recognizes the importance of vision and long-term planning; is able to move in this direction.

Action: Community can engage in planning, meaningful consultation of its members, working towards the development of strategic thinking & planning, and, ultimately, identifying community-wide values, distinct community characteristics and a vision.

Emergence Phase

Community exists but has significant problems, making anything but survival & fulfilling short-term needs impossible.

Action: Community can advance by focusing on small, non-political, trust-building projects to build success, respect, confidence, relationships & skills.

Centre for Innovative & Entrepreneurial Leadership
www.theCIEL.com / 1.250.352.9192 / Nelson, BC CANADA

Communities 'Life Cycle' Matrix Version 2.2
Please tell us how you use the Matrix - e-mail: info@theCIEL.com

Contact us for a free list of 69 tools, techniques & resources appropriate for your community's phase, for CIEL's Community Check-up (see reverse) or to find out about CIEL's training, technical assistance or other strategic tools and action processes.

DURABILITÉ | SUSTAIN

BLUEPLANET

VALUE | MANAGEMENT