COEXIST
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1. COEXIST at a glance

- **Title:** COEXIST - Interaction in European coastal waters: A roadmap to sustainable integration of aquaculture and fisheries
- **Programme:** FP7, Cooperation, Food, Agriculture and Fisheries, and Biotechnology (KBBE)
- **Instruments:** Coordination and Support Action (Coordination action)
- **Total budget:** €3,777,931
- **EC contribution:** €2995,500
- **Duration:** April 2010 – March 2013
- **Consortium:** 13 partners from 10 countries
- **Coordination:** Institute of Marine Research, Norway
- **Web:** [www.coexistproject.eu](http://www.coexistproject.eu)
## Case Studies – (Adriatic sea)

### Case Study 4: ADRIATIC SEA COAST. Interactions

<table>
<thead>
<tr>
<th>Set gears (gillnets, traps, pots)</th>
<th>Hydraulic dredges for baby clam</th>
<th>Trawling</th>
<th>Mussel harvesting on wild banks</th>
<th>Recreational fishery</th>
<th>Tourism</th>
<th>Artificial Reefs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intensive mussel culture</strong></td>
<td>Conflict for space</td>
<td>No conflict</td>
<td>Economic conflicts</td>
<td>No conflict</td>
<td></td>
<td>Positive integration and diversification</td>
</tr>
<tr>
<td>Set gears (gillnets, traps, pots)</td>
<td>Conflict for space and resources</td>
<td>Conflict for space and resources</td>
<td>No conflict</td>
<td>Conflict for space and resources</td>
<td>Positive economic interaction/Development opportunities</td>
<td>Development opportunities</td>
</tr>
<tr>
<td><strong>Hydraulic dredges for baby clam</strong></td>
<td>No conflict</td>
<td>No conflict</td>
<td>Conflict for space</td>
<td>Positive economic interaction</td>
<td></td>
<td>Conflict for space</td>
</tr>
<tr>
<td><strong>Trawling</strong></td>
<td>No conflict</td>
<td>No conflict</td>
<td>No conflict</td>
<td>Positive economic interaction</td>
<td>Protection against illegal trawling</td>
<td>Development opportunities</td>
</tr>
<tr>
<td><strong>Mussel harvesting on wild banks</strong></td>
<td>Conflict for resource</td>
<td>Positive economic interaction</td>
<td>Development opportunities</td>
<td>Development opportunities</td>
<td></td>
<td>Diving opportunities</td>
</tr>
</tbody>
</table>

**Level of interaction/conflict:**
- Low
- Medium
- High
Multi-Criteria Analysis - what is it?

Most MCAs incorporates the following steps:

- Define and structure the problem
- Identify relevant alternatives (possible solutions)
- Identify relevant objectives/ criteria (interests/ values/ aspects)
- Identify scores for each alternative
- Identify weights (preferences)
- Compare results
  - By looking at the MCA matrix, or
  - By aggregating with a suitable MCA techniques
2. Project Objectives and Expected Outcomes

COEXIST is a broad, multidisciplinary project which will evaluate competing activities and interactions in European coastal areas with the ultimate goal to provide a roadmap to better integration, sustainability and synergies across the diverse activities taking place in the European coastal zone.

Characterization of relevant European coastal marine ecosystems, their current utilisation and spatial management

Evaluation of spatial management tools for combining coastal fisheries, aquaculture and other uses, both now and in the future

TOOLS FOR SUPPORTING THE DECISION-MAKERS AND OTHER STAKEHOLDERS
3. Consortium and Case Studies

1. HARDANGERFJORD – LP: IMR
2. ATLANTIC SEA COAST - LP: UCC
3. ALGARVE COAST - LP: IPIMAR
4. ADRIATIC SEA COAST – LP: CNR-ISMAR
5. COASTAL NORTH SEA – LP: vTI-SF
6. BALTIC SEA – LP: FGFRI
4. Results achieved in COEXIST (I)

WP1. Base line: identification of interactions, conflicts and management tools in coastal waters (marine ecosystem approach)

Objective: WP1 sets the baseline for COEXIST providing a reference description of fisheries, aquaculture and other activities in the coastal zone both at the generic level and at an ecosystem specific level.

Outcomes: • Glossary of Spatial Management Tools
• Characterisation of ecosystems
• Matrice of interactions
  ✓ Aquaculture and fisheries vs. other activities in the coastal zone
  ✓ Aquaculture vs. fisheries
• Future scenarios
• Working document WP 1
4. Results achieved in COEXIST (II)

WP1. Base line: identification of interactions, conflicts and management tools in coastal waters (marine ecosystem approach)

- All possibilities for combinations of aquaculture, fisheries and other activities are mapped in all 6 case studies, based on current knowledge.
- The MAJOR needs for management tools are identified.

Posters presented at ICES 2011 and EA2011
4. Results achieved in COEXIST (III)

WP2. Legal, institutional and policy frameworks

Objective: The overall goal of WP2 is to review and document the current governance regimes applicable to the management of fisheries and aquaculture.

Outcomes:
- Stakeholder map and database for each case study area.
- Report on the potential use of GIS and other scenario-based simulation and visualisation tools.
- Report on institutional analysis.
4. Results achieved in COEXIST (IV)

WP2. Legal, institutional and policy frameworks

Example of results of the Stakeholder Consultation

Presentation at ICES Conference 2011:

4. Results achieved in COEXIST (V)

WP3. Integration of models and processes

**Objective:** WP3 aims at the application and integration of different types of dynamic models to examine and assess interactions between fisheries, aquaculture, and other uses of the coastal zone.

**Outcomes:**

- Parameterized and validated population models for appropriate species of wild finfish, bivalves and crustaceans.
4. Results achieved in COEXIST (VI)

WP3. Integration of models and processes

- Introduced pathogens
  - Vector: Migration of wild organisms
  - Vector: Transport of farmed organisms

- Persistance
  - Natural reservoir

- Wild fish
  - Lower host density

- Farmed fish
  - High host density

- Proliferation of pathogen
  - Enhancement of virulence?
4. Results achieved in COEXIST (VII)

WP3. Integration of models and processes

Network models working at different scales in time and space
4. Results achieved in COEXIST (VIII)

WP3. Integration of models and processes

**FISHRENT; bio-economic model**

- Bio-economic model based on earlier models (including EIAA, BEMMFISH, TEMAS and AHF)
- North Sea flatfish fishery – but applicable to other regions and fisheries
- Originally developed to estimate Maximum Economic Yield (MEY)
- Is an integrated simulation (application of different management strategies) and optimization (to determine optimum value of resource rent and other variables) model
- Model available in Excel and GAMS
4. Results achieved in COEXIST (IX)

WP4. Evaluation of spatial management tools

Objective: WP4 will assess the existing spatial management tools for each selected case study and propose improvements to those tools.

Outcomes: • Framework for multi-objective quantitative and qualitative evaluation of marine spatial management in coastal zones.
5. Next Steps

- **Review of the legal, policy and institutional frameworks** that cover the current approaches to interactions between aquaculture, fisheries and other sectors and identifying barriers to and opportunities for more efficient management.

- **Development and implementation of the models** in the different Case Studies.

- A final report for each case study area containing:
  - measured **cumulative impacts** of the aggregate coastal activities;
  - evaluation of the **effectiveness and efficiency** of currently applied spatial management tools; and
  - results of scenario studies, that incorporate **best practices and proposed improvements** to existing spatial management tools, on the effects on aquaculture, fisheries and other activities in coastal zones.

- **Synthesis workshop 2012 (ICES ASM)**

- **Guideline for Best Practice in Spatial Planning** to integrate Fisheries, Aquaculture and further Demands in the Coastal Zone.
Thank you for your attention

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DISCLAIMER

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