Measuring the Maritime Economy: Spain in the European Atlantic Arc

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AZTI-TECNALIA

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Measuring the maritime economy

- *marnet* socio-economic database
- Spanish maritime economy
- Cluster analysis
**marnet**: Marine Atlantic Regions Network

- **EU transnational co-operation project of marine & economic research institutions:**
  - **Ireland:**
    - N&W Regional Assembly
    - SEMRU, National University Ireland Galway
  - **UK:**
    - University of Stirling (Scotland)
  - **France:**
    - IFREMER - Institut français de recherche pour l'exploitation de la mer
  - **Portugal:**
    - CIIMAR - Centro Interdisciplinar de Investigacao Marinha e Ambiental
  - **Spain:**
    - AZTI-Tecnalia
    - IEP, University of the Basque Country (UPV/EHU)

- **Creation:** Interreg Project
  2007-2013 Atlantic Area Programme
**marnet**: Marine Atlantic Regions Network

**Main Objectives:**
- Marine/Maritime Socio Economic Indicators database in the Atlantic Area
- promote database to support marine Socio-economic initiatives and Blue growth

**Main Activities:**
- Framework Development
- Marnet Database:
  - Compilation & Maintenance
  - GIS Atlas of Marine Socioeconomic Indicators
- Practical Initiatives

**More at:**
- marnet: [http://marnetproject.eu/](http://marnetproject.eu/)
- marnet@bilbao: [http://marnetbilbao.eu/](http://marnetbilbao.eu/)
marnet database

- **Maritime activities**
  - NACE codes (four digits)
  - Fully / Partially maritime
  - 53 activities (14 full / 39 partial)

- **Indicators**
  - Business Indicators: employment, VA, turnover, enterprises, exports.
  - Physical Indicators: production tonnage, landings, vessels, rooms, passengers, ...

- **Geographical coverage**
  - European Atlantic Area: NUTS 0, NUTS 2, NUTS 3

- **Temporal span**: 2008-2012
marnet : European Atlantic arc
### Spanish maritime economy (2009-2011)

#### FULLY maritime sectors

<table>
<thead>
<tr>
<th>Sector</th>
<th>Employment</th>
<th>VA (Mi €)</th>
<th>Productivity (000 €)</th>
<th>% SPANISH ECONOMY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marine fishing</td>
<td>39,203</td>
<td>867.2</td>
<td>25.75</td>
<td>0.82%</td>
</tr>
<tr>
<td>Marine aquaculture</td>
<td>27,111</td>
<td>145.8</td>
<td>737.4</td>
<td>0.42%</td>
</tr>
<tr>
<td>Processing and preserving of fish, crustaceans and molluscs</td>
<td>18,767</td>
<td>737.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wholesale of fish, crustaceans and molluscs</td>
<td>48,836</td>
<td>1,908.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail sale of fish, crustaceans and molluscs</td>
<td>21,924</td>
<td>353.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ship Building</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building of ships, floating structures and pleasure and sporting boats</td>
<td>11,582</td>
<td>830.0</td>
<td>49.66</td>
<td>0.13%</td>
</tr>
<tr>
<td>Repair and maintenance of ships and boats</td>
<td>13,594</td>
<td>420.4</td>
<td></td>
<td>0.13%</td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sea and coastal passenger water transport</td>
<td>4,838</td>
<td>153.6</td>
<td>0.15%</td>
<td>0.12%</td>
</tr>
<tr>
<td>Sea and coastal freight water transport</td>
<td>13,114</td>
<td>496.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inland passenger water transport</td>
<td>621</td>
<td>20.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inland freight water transport</td>
<td>468</td>
<td>38.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renting and leasing of water transport equipment</td>
<td>8,910</td>
<td>454.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>208,968</td>
<td>6,425.4</td>
<td>30.75</td>
<td>1.10%</td>
</tr>
</tbody>
</table>

The table presents data on various maritime sectors in Spain for the years 2009-2011, including employment numbers, Value Added (VA) in million euros (Mi €), productivity in thousands of euros (000 €), and the percentage of the VA to the total Spanish economy.
## marnet: Spanish maritime economy (2009-2011)

<table>
<thead>
<tr>
<th>Partially maritime sectors</th>
<th>Employment</th>
<th>VA (Mi €)</th>
<th>Productivity (000 €)</th>
<th>% SPANISH ECONOMY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coastal Tourism</strong></td>
<td>890,911</td>
<td>51,351.6</td>
<td>57.64</td>
<td></td>
</tr>
<tr>
<td>Hotels and similar accomodation</td>
<td>149,603</td>
<td>16,531.1</td>
<td></td>
<td>4.70% 5.34%</td>
</tr>
<tr>
<td>Holiday and other short-stay accomodation</td>
<td>36,120</td>
<td>1,436.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camping grounds, recreational vehicle parks and others</td>
<td>4,308</td>
<td>534.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants and mobile food service activities</td>
<td>361,769</td>
<td>19,031.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beverage service activities</td>
<td>339,111</td>
<td>13,818.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Construction</strong></td>
<td>21,187</td>
<td>992.6</td>
<td>46.85</td>
<td>0.11% 0.10%</td>
</tr>
<tr>
<td>Construction of water projects (harbours, ports, locks, ...)</td>
<td>21,187</td>
<td>992.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>912,098</td>
<td>52,344.1</td>
<td>57.39</td>
<td>4.80% 5.46%</td>
</tr>
</tbody>
</table>

**Full + Partial (**)**

| Total          | 1,121,066  | 58,769.5  | 52.42                | 5.90% 6.13%       |

(*) caveat: perhaps this two quantities should not be added since they do not actually represent the same thing.
Integration of Spanish maritime sector in the European Atlantic Arc

- Spanish Maritime Cluster (SMC)
  - organization of maritime industries, services and other economic activities

- European Network of Maritime Clusters (ENMC)
  - confederation of national clusters to establish a framework for future common targeted actions

Other European Maritime Clusters
Integration of Spanish maritime sector in the European Atlantic Arc

- Business clusters vs. Statistical clusters

Find evidence to support/reject following hypotheses:

- Nation-driven maritime clusters vs. cluster spillover across national boundaries.

- North-South polarization scheme traditionally found in other economic areas vs. other type of geographic polarization.
**marnet**: cluster analysis

- **Method:**
  - agglomerative hierarchical clustering using Ward's method
  - 67 economic and business indicators
  - 87 NUTS3 European Atlantic Arc

- **Result:**
  - Six mostly nation-driven maritime clusters
marinet: clustering process dendrogram
### marnet: cluster analysis

<table>
<thead>
<tr>
<th>Step</th>
<th>Added Cluster</th>
<th>Agglomerative Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IE + UKb</td>
<td>IE.UKb</td>
</tr>
<tr>
<td>2</td>
<td>+ UKa</td>
<td>IE.UKexSHI</td>
</tr>
<tr>
<td>3</td>
<td>+ PT</td>
<td>IE.UKexSHI.PT</td>
</tr>
<tr>
<td>4</td>
<td>+ FR</td>
<td>IE.UKexSHI.PT.FR</td>
</tr>
<tr>
<td>5</td>
<td>+ SHI</td>
<td>IE.UK.PT.FR</td>
</tr>
<tr>
<td>6</td>
<td>+ ES</td>
<td>Atlantic arc</td>
</tr>
</tbody>
</table>

IE (Ireland), SHI (Scottish Highlands and Islands), UKa (Cumbria, Dorset-Somerset, Cornwall, Devon and West Wales), UKb (Rest of UK including Northern Ireland and Scotland except SHI), FR (France), ES (Spain) and PT (Portugal).

Spanish MC corresponds to a statistically significant cluster but least integrated with the rest of the European Atlantic arc.
marnet: maritime clusters

- first two principal components
- Guttman effect
- tourism effect (regions with a greater share of tourism)
- size effect (regions with a greater share of maritime activity)
marnet: clusters vs. indicators

first two principal components

- marine fishing
- seafood processing
- hotel accommodation

- aquaculture, retail seafood
- ship maintenance and dismantling
- marine construction
- food and beverage services

European Union
marnet clusters: conclusions

• Spanish regions in European Atlantic Arc:
  – different from those in the UK and Ireland
  and, for different reasons, from those in France and Portugal
  – the least well integrated in the Atlantic Arc
  – the most in need of measures to strengthen integration

• In general:
  – Maritime clusters more strongly driven
    by policies of Members States
    than by spillover across national boundaries
  – Certain degree of North-South polarisation

• Blue growth policies:
  – Differences observed need to be taken into account
Thank you

• More at:
  – marnet:  http://marnetproject.eu/
  – marnet@bilbao:  http://marnetbilbao.eu/
marnet: Project initiatives & Partners responsible

- **CIIMAR Oporto (Portugal)**
  - Impact of Aquaculture regulation on investment decisions

- **SEMRU, NUI Galway (Ireland) & U. Stirling (UK)**
  - Comparison of Marine Economies – Case Study: Ireland and Scotland

- **IFREMER & Brittany Region (France)**
  - Shipbuilding and marine energy: similarities and differences between subcontractors and marine equipment suppliers

- **IEP, UPV/EHU Bilbao (Spain)**
  - The CISMar Index: A synthetic index of competitiveness, innovation and sustainable development for the marine sector