Maritime Spatial Planning and Allocated Zone for Acquaculture identification: the Sardinian experience

Erika M.D. Porporato

e.porporato@fondazioneimc.it

Fondazione IMC ONLUS Centro Marino Internazionale
Maritime Spatial Planning and Allocated Zone for Aquaculture identification: the Sardinian experience
Maritime Spatial Planning and Allocated Zone for Aquaculture identification: the Sardinian experience
Strategic objectives

1. Security
2. Fishing and aquaculture
3. Maritime transport and ports
4. Energy
5. Coastal defense
6. Tourism and pleasure
7. Protection and protection of species, habitats and ecosystems
8. Landscape and cultural heritage
9. Research and training
The criticalities are:

1. **Administrative.** Complex administrative process for the authorizations.

2. **Environmental.** Conflicts with other users of the coastal area. Difficulty in the participatory process and access to information useful for planning (e.g.: constraints, environmental data, potential impacts).

3. **Technical.** Problems in the use of operational tools for spatial planning by the competent authorities and operators (e.g.: GIS).
Allocated Zone for Aquaculture, AZA

An AZA is “a marine area where the development of aquaculture has priority over other uses, and therefore will be primarily dedicated to aquaculture.

The identification of an AZA will result from zoning processes through participatory spatial planning, whereby administrative bodies legally establish that specific spatial areas within a region have priority for aquaculture development” (Sanchez-Jerez et al., 2016).
AZA project in Sardinia
**Marine Aquaculture Suitability**

**Suitability criteria**
- Growth potential
- Distance to harbour
- Bottom

**Protected habitat**

**Sea uses**

**Potential conflicts**

Erika M.D. Porporato
e.porporato@fondazioneimc.it
Maritime Spatial Planning and Allocated Zone for Acquaculture identification: the Sardinian experience

Legend
- Pink: Ostriches area vocate
- Light pink: Ostriches area idonee
- Green: Clams area vocate
- Light green: Clams area idonee
- Blue: Fish area vocate
- Light blue: Fish area idonee

Focus marine areas

Erika M.D. Porporato
e.porporato@fondazioneimc.it
LAGOONS AQUACULTURE SUITABILITY

Erika M.D. Porporato

Maritime Spatial Planning and Allocated Zone for Acquaculture identification: the Sardinian experience
Maritime Spatial Planning and Allocated Zone for Acquaculture identification: the Sardinian experience

Erika M.D. Porporato
e.porporato@fondazioneimc.it
**Lakes Aquaculture Suitability**

- *Oncorhynchus mykiss* (Salmon)
- *Salmo trutta* (Brown Trout)
- *Micropterus salmoides* (Largemouth Bass)
- *Cyprinus carpio* (Carps)
- *Tinca tinca* (Weather Loach)
- *Percia fluviatilis* (Common Minnow)
- *Marone sp.*

**Biological**

- Population
- Optimum range
- Stressed range
- Lethal range

**Environmental Variable**

**Socio-economic**

**Logistic**

**Water Quality**

**Water Availability**

Erika M.D. Porporato  
e.porporato@fondazioneimc.it
### Allocated Zones for Aquaculture – AZA

#### Principal commercial species raised as % of total

<table>
<thead>
<tr>
<th>Fish</th>
<th>Value</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vongola</td>
<td>224</td>
<td>41%</td>
</tr>
<tr>
<td>Trutta</td>
<td>137</td>
<td>24%</td>
</tr>
<tr>
<td>Spigola</td>
<td>96</td>
<td>19%</td>
</tr>
<tr>
<td>Cozza</td>
<td>56</td>
<td>11%</td>
</tr>
<tr>
<td>Zeotta</td>
<td>56</td>
<td>11%</td>
</tr>
<tr>
<td>Altre</td>
<td>45</td>
<td>9%</td>
</tr>
<tr>
<td>Totals</td>
<td>545</td>
<td></td>
</tr>
</tbody>
</table>

#### Sampling Stations

- **Bau Muggeris**
  - Sampling stations: A, B, C, D, E

- **Nuraghe Arrubiu**
  - Sampling stations: A, B, C, D, E

- **Mulargia**
  - Elevation (m)
    - Land outside study area
    - 0 - 100
    - 100 - 200
    - 200 - 300
    - 300 - 400
    - 400 - 500
    - 500 - 600
    - 600 - 700
    - 700 - 800
    - 800 - 900
    - 900 - 1000
    - 1000 - 1100
    - > 1100

*Source: Wikipedia*
Stakeholders’ involvement

- Local authorities
- Farmers
- Scientific community
- General public
Thank you for your attention!

Erika M.D. Porporato

e.porporato@fondazioneimc.it

Fondazione IMC ONLUS Centro Marino Internazionale