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### How to cite this factsheet:

PEGASO Consortium. 2013. Number of enterprises. Methodological factsheet in support of comparable measurements and integrated assessment in coastal zones. 5 p. *in* Santoro, F., Lescauwaet, A.K., Giraud, J.P., Lafitte, A., Pirlet, H., Verleye, T., and Breton, F. (eds.). PEGASO Core Set of Indicators for Integrated Coastal Zone Management. PEGASO Project FP7. [www.pegasoproject.eu](http://www.pegasoproject.eu)

## INDICATORS FOR INTEGRATED COASTAL ZONE MANAGEMENT (ICZM) : *Methodological Factsheets in support of comparable measurements and an integrated assessment in coastal zones*

The **ICZM Protocol for the Mediterranean Sea** (the 'ICZM Protocol'), signed in Madrid on 21 January 2008 and ratified on 24 March 2011, represents a milestone for the implementation of ICZM in the Region and can serve as a blueprint for the implementation of ICZM in other Regional Seas. The **PEGASO project** builds on existing capacities and develops common approaches to support integrated policies for the Mediterranean and Black Sea Basins in ways that are consistent with the ICZM Protocol.

The PEGASO project has developed **a core set of indicators** that are instrumental in measuring the implementation of ICZM policies and programmes. The core set of ICZM indicators addresses the specific requirement of Article 27 of the Protocol to '*define coastal management indicators*' and '*establish and maintain up-to-date assessments of the use and management of coastal zones*'. In doing so, the PEGASO project has widely built on previous and existing indicator sets developed by different institutions and projects, and which are duly acknowledged (see '[Methodological paper for the selection and application of PEGASO ICZM indicators](#)' for further reading and background material)

The present Methodological Factsheet is part of a set of 15 factsheets that are made available to end-users. This set of factsheets is conceived to support a harmonized approach to calculate ICZM indicators at different spatial scales in the Mediterranean and Black Sea regions.

### Name of the Indicator

Number of enterprises

### Objective of the indicator

Coastal zones are often areas of intense economic activity. In some areas the concentration of numerous enterprises can put the coastal resources under significant pressure. This indicator provides information about the concentration of the economic activity and gives a trend over several years/period in terms of the dynamics of the sectors. It also allows for weighting the importance of other indicators such as 'Turn over' and 'Added value'.

In this regard, it is important that the Protocol states that priority should be given to "public services and activities requiring the proximity to the sea". Thus, it is essential to know which kinds of enterprises are settled within the coastal zone. This indicator gives information on the number and type of economic sectors present in the coastal zone. Times series of the number of enterprises give a trend over a certain period in terms of dynamics of the sectors.

It is important to use this indicator together with the 3 other economic indicators included in the indicator set (pattern of sectoral employment, turnover per sector and added value per sector).

### Policy context

ICZM Policy Objective	To give priority to public services and activities requiring the proximity to the sea, and to take into account the specific characteristics of the coastal zones when deciding about coastal uses
ICZM Protocol Article	Article 9: <i>Economic activities</i>
UNEP-MAP Ecological Objective	No reference to the UNEP-MAP Ecological Objective
INSPIRE ANNEX I-III Data Theme (34)	Annex III 8 Production and Industrial Facilities

### CALCULATION OF THE INDICATOR

#### Spatial consideration

Coverage	Resolution – Reporting unit(s)
Coastal zone of the Mediterranean Sea Coastal zone of the Black Sea	<ul style="list-style-type: none"> <li>Coastal zone of the Mediterranean and Black Seas at NUTS2 level</li> <li>Coastal zone of the Mediterranean and Black Seas at NUTS3 level</li> <li>Coastal zone of the Mediterranean and Black Seas at NUTS5/LAU2 level</li> </ul> <p>Note: the spatial reporting unit, or scale, may be defined by the issue or sector under consideration (see below)</p>

#### Temporal consideration

Period	Resolution (time interval or unit)
Time series should be as long as possible with a baseline, and reference points every 5 years	Annual data. Measurements should be consistent in reflecting the situation for comparable reference points i.e. 1st of January or 31st of December every year.

*Note: the idea is to have time series as long as possible but also reference points every 5 years to depict trends.*

### Parameter(s)

*Note: for each parameter, the economic activities considered are the following:*

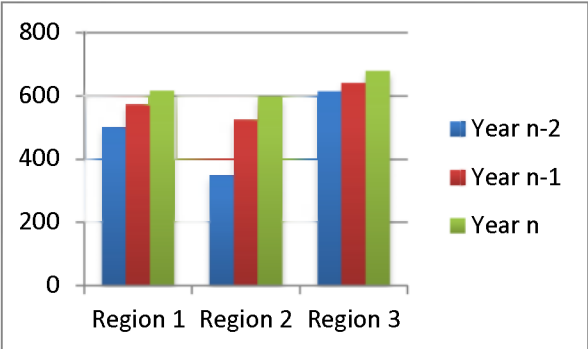
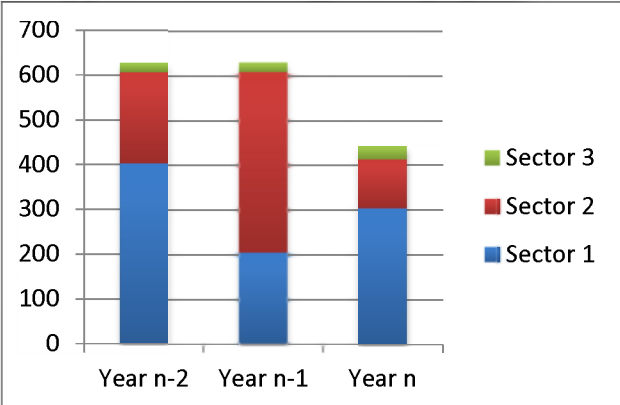
Number of enterprises per sector at national, regional and local level in each of the following sectors (if relevant for the area under consideration!) of activity:

- Submarine cables
- Shipbuilding and repair, scraping...
- Extraction (marine aggregates)
- Recreational Activities (Expenditures instead of turnover)
  - Bathing
  - Yachting and Sport
  - Recreational fisheries (including shellfish)
- Offshore oil and gas-related industry
- Electricity power production interacting with marine environment (Marine renewable energy, Nuclear plants...)
- Living resources based activities
  - Aquaculture
  - Professional Fisheries (including algae)
  - Seafood processing and marketing
- Maritime financial services (insurance, banks, supports...)
- Transport activity
  - Harbours and supports
  - Transport (people and goods)
- Maritime civil engineering (harbours, dams, dikes...)
- Other sectors and activities depending on or impacting coastal and marine environment (Agro industry, Food Processing, Chemistry...)
  - Agriculture
  - Other industries
  - Urban sprawl
  - Coastal tourism (hotels, camping, restaurants, cafes)

- (i) Number of coastal enterprises per sector, for sectors that are relevant in relation to the ICZM issue  
 Note: 'relevant' sectors are to be identified and selected according to a causal chain analysis (impacting sectors and impacted sectors). The number of enterprises is defined at the scale of a reporting unit which is relevant for the issue: e.g. river basin, coastal NUTS5/LAU2 etc.

### Calculation method

		Steps	Products
1	For at least the 3 most recent Census or national survey, obtain the number of enterprises in each of the relevant sectors (see above)	<ul style="list-style-type: none"> <li>- for the country</li> <li>- for each coastal NUTS3</li> <li>- for each coastal NUTS5</li> </ul>	Number of enterprises in each sector at: <ul style="list-style-type: none"> <li>- national scale</li> <li>- regional scale (NUTS3)</li> <li>- local scale (NUTS5)</li> </ul>

2	<p>For each NUTS3, aggregate the number of enterprises of the different sectors. Use bar charts to show the evolution of number of enterprises at each geographical level</p>	<p>Bar Chart of the number of enterprises at regional level (NUTS3) for 3 years.</p>  <p>This bar chart represents the concentration of the economic activity, by region, for the relevant sector(s), and the trends over time.</p>
3	<p>For each region (NUTS3) use sectoral data to make a pie chart for a period of at least 3 years</p>	<p>Pie or bar chart of the trends in the number of enterprises by sector(s) over the time, for a given area/region.</p>  <p>This graph represents the dynamics in the relevant sector(s). This graph can be made for several area/region</p>

Current monitoring	Data sources
National or regional databases	
Assessment context	
Use of the indicator in previous assessments/initiatives	
DPSIR framework	
Link to anthropogenic pressure	
Sustainability target or threshold	
Link with other assessment tools	
Example of integrated assessment	

### Scope for future improvements

In order to build a common, regional view for a particular indicator, it is crucial to harmonize the data in terms of e.g. concepts, definitions, reporting units, colour codes, value class boundaries and scoring methods. For this purpose, the PEGASO consortium has developed 'Guidelines for Data Harmonization' which are available from the 'Products' section on the PEGASO project website [www.pegasoproject.eu](http://www.pegasoproject.eu). Although agreements may exist related to the presentation of certain indicators that are legally embedded, this may be less evident for indicators which are not (yet) used as an instrument within a policy context or within a region where the policy is not applicable. The PEGASO consortium encourages contributing partners, stakeholders and end-users to consult the 'Guidelines for Data Harmonization' document, and to actively engage in this process.

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### Indicator references (i.e. UNEP, EEA, ...)

Note: factsheet content drawn by the PEGASO partner University of Brest.