



WHICH GOODS AND
SERVICES ARE PROVIDED
BY COASTLINE
ECOSYSTEMS ?

Geography | Biology | Geology | Mother Language



MED
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Erasmus+



COASTLINE
ARTIFICIALIZATION

PEDAGOGIC CONTENT:

- Ecosystem services
- Littorization issues
- Human activities impacts
- Protected natural areas

PRE-REQUISITES:

Knowledge about ecosystem services (Definition on the FAO website, available in English, French and Spanish).

NEW COMPETENCIES TARGETED/LEARNING OUTCOMES:

STUDENTS WILL BE ABLE TO:




- Observe and understand the concept of coastal ecosystem services
- Identify four types of services provided by ecosystems: provisioning, regulatory, support and cultural services
- Improve their ability to do map-reading and collect spatialized data
- Understand the importance of marine and coastal resources conservation
- Develop a critical approach








WHICH GOODS AND SERVICES ARE PROVIDED BY COASTLINE ECOSYSTEM ?









DESCRIPTION:

PREPARATION

-  #1: Select one or more coastal geographical area(s) including areas of human activity (cities, ports) AND protected areas (natural reserves, protected lagoons, Natura 2000 areas, Ramsar sites, marine parks etc.).
-  #2: Example of geographical areas: Biguglia lagoon (Corsica, France).
-  #3: Print a detailed map of the selected geographical area(s) from internet or on an online map service.

IMPLEMENTATION

-  #1: The teacher introduces the main concepts on urbanization and the coastal artificialization helped with the O1 draft. Then, he/she presents ecosystem services using the definition on the United Nations Agriculture and Food Organization website [link 1] and provides to the students the list of ecosystem services available on the website [link 2].
-  #2: The teacher split the class in groups of 4 persons and gives a map to each group, asking them to identify and list human activities pressures and protected natural areas on the identified geographical area.
-  #3: The teacher asks to the 4-students groups to search on internet and list the ecosystem services provided by the protected natural area(s).
-  #4: The teacher introduces the debate asking to the students to define which of these services can be useful to fight the human activities pressures identified previously.
-  #5: Each group works on a presentation (paper or ppt) to expose its information research on the ecosystem services provided in the corresponding selected area.

- Type of activity  Information research, Debate
- Target audience  From 12 years old
- Place  Classroom
- Material needed  Detailed maps (on internet), computer or resources
- Duration of activity  Implementation : 2 to 4 hours
- Authorship  CPIE Bastia U Marinu
No authorization required
- Links  [link 1] <http://www.fao.org/ecosystem-services-biodiversity/fr/>
[link 2] <http://www.fao.org/ecosystem-services-biodiversity/background/provisioning-services/fr/>
- Notes by author  This activity can be carried out following the activity “Discovery of a port and its human activities” in the Maritime Economy chapter.



Departament de Sostenibilitat i Medi Ambient
Consell de Mallorca





Worksheet

Which goods and services are provided by coastline ecosystems ?



Supply and sampling services

- Fish resources for professional fishing
- Waterfowl and birds for hunting
- Biomass for grazing
 - Shellfish (professional fishing)*
 - Shellfish farming (clams, oysters)*
 - Fish farming*
- Regulation of water flow
- Other materials for direct use or processing



Regulation and maintenance services

- Self-purification and water filtration
- Nursery and habitat
 - Bank retention against erosion
- Regulation of the microclimate
 - Fixation and decomposition of accumulated organic debris
- Regulation of floods and protection of inland lands against storms, salinity, urbanism



Cultural and social services

- Local identity
- Historical and cultural site
- Landscape value
- Aesthetic value of rare and remarkable species
- Amateur fishing and shellfish collection*
- Non-motorized water sports*
- Observations of birds
- Equestrian ride
- Support for the campsite
 - Bike ride
- Walking, hiking and running
 - Boat trip and excursion*
- Source of artistic inspiration
- Educational value
- Opportunities for scientific research
- Sense of well-being and tranquility

* : Potential services of a lagoon

Categories	Ecosystem services	Definition
Supply and sampling services	Fish resources for professional fishing	Fish supply for human consumption and favourable conditions to grow them.
	Waterfowl and birds for hunting	Game supply for hunting, hunters exercise on the study area.
	Biomass for grazing	Pasture provision for sheep and cattle.
	Shellfish fishing (professional use)*	Shellfish supply for professional use (potential for lagoon)
	Shellfish farming (clams, oysters)*	Rich and arable land provision.
	Fish farming*	(Potential) conditions for clams and oysters growing.
	Water flow regulation	(Potential) conditions for the professional exploitation of farmed fish.
	Other materials for direct use or processing	Regulation of the water flow by draining plain waters and the exchanges with the sea.
Fish resources for professional fishing	Materials supply such as driftwood or salicorne.	
Categories	Ecosystem services	Definition
Services Regulation and maintenance services	Self-purification and water filtration	Natural processes of degradation of water pollutants, especially thanks to the herbarium.
	Nursery and habitat	Maintaining key habitats that act as nurseries, spawning grounds or migratory routes.
	Bank retention against erosion	Plain sediment storage and resistance to soil erosion and uprooting.
	Regulation of the microclimate	Influence of the coastal vegetation and the lagoon on the air humidity (thermoregulation role).
	Fixation and decomposition of accumulated organic debris	Natural cyclical processes of organic matter decomposition.
	Regulation of floods and protection of inland lands against storms, salinity, urbanism	Natural protection of the coastal zone against flooding, buffer effect.
Categories	Ecosystem services	Definition
Cultural et social services	Local identity	The site has its history and is linked to certain traditions such as fishing.
	Historical and cultural site	For centuries the lagoon has been coveted by people.
	Landscape value	Exaltation of senses and emotions by landscapes, habitats and species.
	Aesthetic value of rare and remarkable species	Typical lagoon species, such as the salicornia, and rare species, such as the African tamarisk.
	Amateur fishing and shellfish collection*	Recreational fishing (not allowed in lagoon).
	Non-motorized water sports*	Canoe rides, for example.
	Birds observations	Wetland of major importance for the passage and parking of shorebirds: 250 identified.
	Equestrian ride	2 equestrian centres in the study area.
	Support for the campsite	3 campsites in the study area.
	Bike ride	Peripheral areas used for cycling.
	Walking, hiking and running	Possibilities all around the lagoon, especially in the Fornacina Park.
	Boat trip and excursion*	Forbidden on the reserve waters.