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LitusGo Manual
Module 10
**Land uses/Urban planning/
Coastal over-development**



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LitusGo is funded with the support from the European Commission through the Leonardo da Vinci Programme - *Multilateral Project for the Development of Innovation, 2009.*

This educational manual reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

ISBN set 978-9963-720-00-2

ISBN 978-9963-720-11-8

Preface to the LitusGo Education Manual

The LitusGo Manual is part of the LitusGo educational package which is included in the LitusGo portal: www.litusgo.eu. LitusGo aims at the training and capacity building of Local Authorities and local stakeholders in Integrated Coastal Zone Management issues and the reaction to the impacts of climate change.

This Manual consists of 20 autonomous, self-contained and inter-related modules. The modules are available in four languages, Greek, English, Maltese and Turkish and in three different forms: the dedicated wiki application in the LitusGo portal, the dvd and the hard copy version. This hard copy version of the LitusGo Manual consists of 20 self-contained booklets, one for each module, kept in a hard collective case.

List of modules of the LitusGo Educational Manual

- Module 1: European legal framework
- Module 2: Stakeholder involvement/Public participation
- Module 3: Sustainable tourism-carrying capacity
- Module 4: Water resources management
- Module 5: Fisheries/fish farming
- Module 6: Coastal water quality
- Module 7: Ecosystems management (land and coastal ecosystems)
- Module 8: Waste management/recycling/compost
- Module 9: Air pollution
- Module 10: Land uses/urban planning/coastal over-development
- Module 11: Landscape and marine-scape management
- Module 12: Coastal erosion control
- Module 13: Community annoyance issues 1: noise pollution
- Module 14: Community annoyance issues 2: light and thermal pollution, odours
- Module 15: Archeological areas/historic sites/cultural heritage
- Module 16: Extreme conditions management: flood risks, coastal flooding and storm surge
- Module 17: Droughts
- Module 18: Desertification
- Module 19: Energy use, consumption and management
- Module 20: Green buildings

Credits

The LitusGo Education Manual has been developed by the LitusGo Educational Manual Working group:

Modules 1, 2, 6, 7, 8, 9, 12, 13, 14, 16, 17, 18, 19 have been prepared by the scientific team of the beneficiary/coordinators ISOTECH Ltd. Major authors: Michael I. Loizides, Chemical/Environmental Engineer and Xenia I. Loizidou, Civil/Coastal Engineer. Constantinos Georgiades (MSc in ICZM) is responsible for the overall editing. The hard copy of the educational Manual is designed by Anastasia Georgiou.

Modules 3, 4, 5, 10, 11, 15, 20 have been prepared by the scientific team of the Sustainable Aegean Programme of ELLINIKI ETAIRIA - Society for the Environment and Cultural Heritage. Major authors: Georgia Kikou, Geographer, MSc Environment (Manager of the Sustainable Aegean Programme), Alexandros Moutaftsis, Economist, MSc Environment, Leonidas Economakis, Political Sciences, MA International Development.

Dr Alan Pickaver on behalf of partner The Coastal & Marine Union (EUCC) was responsible for the quality control of the educational material.

LitusGo partnership:

Coordinator/Beneficiary:

ISOTECH Ltd Environmental Research and Consultancy

www.isotech.com.cy

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Municipality of Pafos www.pafos.org.cy

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ONISIS web development www.onisis.gr

Malta:

Municipality of Kirkop www.kirkop.gov.mt

The Netherlands:

EUCC – The Coastal and Marine Union www.eucc.net

Module 10

Land uses/Urban planning/Coastal over-development

1| Theoretical background

Land use: The way land is used is one of the principal drivers of environmental change, and, in turn, environmental change, particularly climate change, will increasingly influence the way we use land as communities strive to adapt to and mitigate the effects of a changing climate (Lobley and Winter, 2009). Therefore, it is easily understood that the way land is used directly affects human health and well-being, through the degradation and pollution of water, soil, and air (SOER, 2010).

Urban planning: integrates land use planning and transportation planning to improve the built, economic and social environments of communities. Regional planning deals with a still larger environment, at a less detailed level. Urban planning can include urban renewal, by adapting urban planning methods to existing cities suffering from decay and lack of investment. Urban planning is also a useful method for improving local climate and human health in cities through purposefully modifying urban land surface characteristics (eg reduce the potential risks of elevated city temperatures due to the urban heat island (Coutts *et al.*, 2008)).



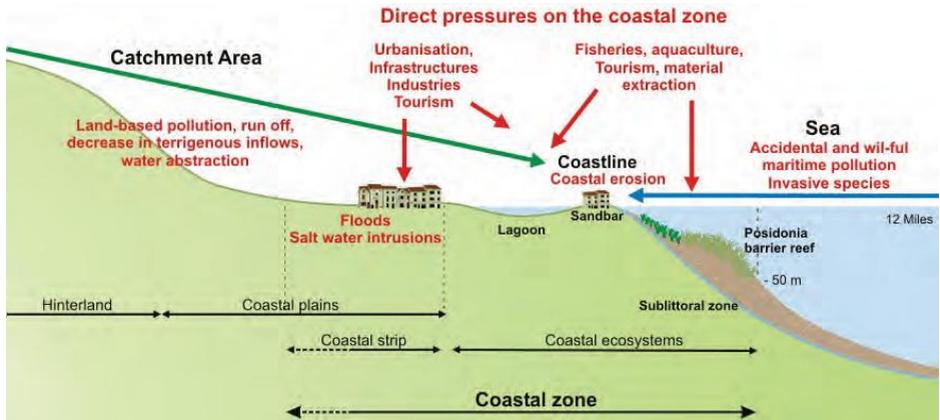
Picture 1. The Mediterranean coastal regions [1].

The coast: can be defined in many ways. One of the most important definitions is given by the new protocol on Integrated Coastal Zone Management in the Mediterranean (2008), according to which coast "means the geomorphologic area either side of the seashore in which the interaction between the marine and land parts occurs in the form of complex ecological and resource system made up of biotic and abiotic components coexisting and interacting with human communities and relevant socio-economic activities" (UNEP/MAP, 2009b).

The coast is an extremely vulnerable area, with a limited ability to support development without serious environmental impacts. Today coasts have become overwhelmed by building too many houses, too much concrete, many docks etc. In this way we lose most of the benefits that the coasts and bays confer to us, such as fish, wildlife, recreation, clean water and of course the basis for much of the shore's economy.

The Mediterranean coastal area has always been an attractive area for development. The urbanization rate in 1995 was 62%, forecasted to grow to 72% in 2025. However, the urbanisation rate in the north will increase only from 67% to 69%, while in the south it is expected to be from 62% to 74%. But the biggest problem in

continued growth in population and infrastructure is the linear nature of coastal urbanization resulting in nearly 40% of the total length of the coastal area already being occupied.



Picture 2. The pressures on the littoral [9].

In the Mediterranean, the process of coastal overdevelopment has been ongoing for several decades. It leads almost inevitably to an artificial land cover of the natural environment, whether by constructions or by restructuring. The population in the Mediterranean coastal regions grew from 95 million in 1970 to 143 million in 2000, that is 48 million additional inhabitants within 30 years, at an average annual growth rate of 1.4%. By 2025, this population would reach 174 million inhabitants, that is 30 million additional inhabitants, at an annual growth rate of 0.8 %. The number of cities of over 10,000 inhabitants located along the coast has practically doubled within half a century, from 318 in 1950 to 584 in 1995. By 2025, the population of coastal cities would reach 90 million, that is 20 million additional city dwellers with respect to 2000, at an increase rate of 1% per year (ibid).

Causes of over-development:

- poor planning
- population expansion
- lack of coordination between the government and local residents
- unlicensed or unregistered construction
- rapid urbanization
- the problem is compounded by a lack of infrastructure and water storage

2| Objective

The evolution of science, automation, the mechanized civilization, the out of control urban and coastal development, zoning and land annexation, and also the rapid enlargement of European cities and towns, have increased concerns related to environmental stress.

LitusGo efforts are focused on providing information, training and capacity building on these issues in the Mediterranean at Local level. Through this approach, LitusGo aims to improve the competences of the Mediterranean Local Authorities and NGOs to take action and decisions that promote sustainable land uses/urban planning and control coastal over-development.

3| Problem

Badly planned land uses/urban planning and coastal overdevelopment are related to a big number of problematic issues that affect our coasts, some of which are included in the lists below:

Land uses/Urban planning:

- Traffic congestion
- Neighborhood overcrowding
- Inadequate fresh water
- Deforestation and loss of ecosystems
- Urban sprawl
- Depletion of natural resources
- Irreversible loss of arable land
- Enhanced desertification
- Impacts on climate change [even small changes of 100 square kilometers in urban development or deforestation can change local rainfall patterns and trigger other climate disruptions] [2]

Coastal overdevelopment:

- Coastal erosion
- Degradation of coastal areas
- Degradation of coastal environment
- Pollution on coastal areas
- Eutrophication
- Ecological loss of coastal areas
- Serious, non-reversible aesthetic impacts

4| How to deal with the problem

According to ICZM, effective ways to deal with the above mentioned problems are:

- identifying where resources can be harnessed without causing degradation or depletion;
- renewing or rehabilitating damaged resources for traditional or new uses;
- guiding the level of uses or intervention so as not to exceed the carrying capacity of the resource base;
- ensuring the integrity of coastal ecosystem biodiversity;
- ensuring that the rate of loss does not exceed the rate of replenishment;
- reducing risks to vulnerable resources;
- respecting natural dynamic coastal processes, encouraging beneficial ones and preventing adverse interferences;
- encouraging complementary rather than competitive activities (agricultural and touristic activities can very well complement each other, for example);
- ensuring that environmental and economic objectives are achieved at tolerable cost to society (social impact assessments);
- developing human resources and strengthening institutional capacities;
- preserving and promoting social equity and introducing participatory approaches;
- protecting traditional uses and rights and equitable access to coastal resources (UNEP/MAP, 2009a).

The 21 countries ringing the Mediterranean share problems like land use/urban planning and coastal over-development. Some further solutions to Land use/Urban planning and coastal over-development are given bellow:

- Sustainable land use/sustainable urban planning
- Oriented planning
- Successful coordination between the government and local residents
- Defined/limited urbanization
- Licensed and registered construction
- Comply with the laws
- Prevent/avoid illegal coastal fences
- Prevent/avoid illegal coastal constructions
- Define laws of limited constructions
- Define fines and introduce demolition of illegal buildings
- Allow building in coastal areas only for particular needed constructions or constructions that cannot be fitted in other areas (such as the historic traditional shipyards of Spetses island for example).

Should the above mentioned steps be followed, the benefits will be many and multidimensional: social, economic, and environmental.

The social benefits include diverse recreational opportunities, leisure and cultural activities, improving the wellbeing and the quality of life of the citizens. In addition, there will be fewer conflicts over land-use, a strengthened institutional framework, and enforced cooperation amongst stakeholders on the basis of shared objectives. In addition, information exchange and public awareness on

sustainable development issues is widely raised, and encourages public participation.

The economic benefits include support for sustainable economic activities thus ensuring income in the long-run, promotion of environmentally friendly technologies and cleaner production for the future markets, while value is also added to products through eco labeling schemes.

Last but not least, environment-wise, the integrity of the coastal environment and biodiversity as a natural system is ensured, and so is the sustainable use of natural resources. Habitat species and biodiversity are also preserved, pollution control is improved, as are beach fronts and soil alteration management.

References/useful information:

1. **Κουτσαβλή, Α. (2010).** Παράνομες ανθρώπινες δραστηριότητες στη ζώνη του Αιγιαλού (Περιπτώσεις των νομών Αττικής, Θεσσαλονίκης και Κυκλάδων). Μεταπτυχιακή εργασία. Μυτιλήνη: Πανεπιστήμιο Αιγαίου, Τμήμα Επιστημών της Θάλασσας, Μεταπτυχιακό Δίπλωμα Ειδίκευσης: Διαχείριση Παράκτιων Περιοχών.
2. **Coutts A. M., Beringer J., and Tapper J. N. 2008.** Investigating the climatic impact of urban planning strategies through the use of regional climate modeling: a case study for Melbourne Australia. School of Geography and Environmental Science, Monash University. International Journal of Climatology. **28**: 1943–1957.

3. **Lobley M., and Winter, M. 2009.** What is land for? Earthscan, 2009.
4. **SOER, 2010.** The European Environment. State and Outlook 2010.
5. **UNEP/MAP. 2009a.** Sustainable Coastal Tourism. UNEP/MAP 2009.
6. **UNEP/MAP, 2009b.** Plan Bleu: State of the Environment and Development in the Mediterranean, UNEP/MAP, Athens, 2009.
7. **PAP/RAC. 2007. ICZM Protocol in the Mediterranean (signed in 2008)**

E-Sources

8. http://www.planbleu.org/publications/4pages_littoral_uk.pdf
9. http://www.ucsusa.org/global_warming/science_and_impacts/impacts/the-impacts-of-land-use-on.html
10. http://www.littoralsociety.org/userfiles/doccenter/CoastalCentersapp03_1005.pdf
11. http://en.wikipedia.org/wiki/Urban_planning
12. http://en.wikipedia.org/wiki/Land_use
13. <http://coastalcare.org/sections/inform/sea-level-rise/>
14. <http://www.treehugger.com/files/2009/06/no-more-concrete-jungles-on-turkey-coast.php>
15. <http://www.greenprophet.com/2010/03/coastal-erosion-gulf/>
16. http://www.planbleu.org/publications/SoED2009_EN.pdf



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2012

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ISBN 978-9963-720-11-8