





The EU-funded MEDCOASTLAND Thematic Network and its findings in Combating Land Degradation in the Mediterranean region

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CIHEAM member countries (www.ciheam.org)



Total population (in millions of inhabitants) in 1965 and 2002

Main activities of CIHEAM

- Training
- Research
- Cooperation
- Knowledge Dissemination

Main scientific areas of MAI-B

- Land and Water Resources Management
- Integrated Pest Management
- Mediterranean Organic Agriculture
- Sustainable Agriculture and Rural Development in the countries with Mediterranean Climate



Land/soil degradation or desertification







Volcanic eruption ashes of Etna in Sicily covering the Maltese islands

Evolving concepts of land degradation





Evolving concepts of land degradation



Evolving concepts of land degradation





MEDCOASTLAND PROJECT









Network structure. PR = Researcher, PDM = Decision Maker, PA = Association of land / soil users



MEDCOASTLAND PROJECT 2002-2006



Participants of the Kick-Off Meeting, Bari, Italy 14-16 October 2002



The MEDCOASTLAND Project

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Main Menu - Home - Partnership - Newsletters - Weyletters - Weyletters - Weyletters - Weyletters - Search Within-Site - Knowledge Database - Deliverables	MEDCOASTLAND Thematic Network Medcoastland is a thematic network project funded by the European Commission (EC), within the 5 th framework program for the international cooperation with Mediterranean countries (INCO-MED), aiming at the Mediterranean coordination and dissemination of land conservation management to combat land degradation for the sustainable use of natural resources in the Mediterranean coastal zones.	
Events • Announsement • Program • Beport Euro-Mediterranean Conference • Announcement • Programme • Report	Objectives Structure Activities Main Targets Partnership Overall objective The overall objective of MEDCOASTLAND is to contribute to sustainable development, planning and management of natural resources in Mediterranean coastal areas, with particular regard to Land and Soil Degradation and Conservation Management. Specific objectives Implementing an effective co-ordination and dissemination of research, studies and projects dealing with land degradation and soil conservation in Mediterranean countries. Providing research reviews, dissemination of research results, communication among key players, public access to relevant information, and indications and quidelines to implement good management practices. Inotifying major gaps in information and knowledge-base to reach a proper regional understanding of sustainable land management. Formulating an eco-system based assistance methodology to land users. Formulating an eco-system based assistance methodology to management. Suggesting more adequate planning policies in coastal areas.	
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The MEDCOASTLAND Project

MAJOR GOAL

Mediterranean coordination and dissemination of land conservation management to combat land degradation for the sustainable use of natural resources in the Mediterranean region with special emphases on coastal areas

Information Retrieval (around 3,000 files downloaded) Functional Internet-based Knowledge Database and Forum on LD Organisation of workshops, publishing proceedings, newsletters Lay the foundation for continued collaboration even after the life time of the project by signing a Memorandum of Understanding





MEDCOASTLAND PUBLICATIONS





Alexandria, Egypt 9-13 October 2004



Bari, Italy 6-11 September 2005







Lessons learned (I): The problems

Mediterranean countries and their different limits



Source : Gaussen & De Philippis - FAO

Lessons learned (I): The problems

- We don't know the exact quantitative extend of land degradation in the Mediterranean region
- The process is present in both rich and poor countries
- There is much confusion between actual degradation and potential degradation
- Methods of assessment vary
- Often national assessments do not include socio-economic indicators
- There is lack of monitoring systems
- Weak communication within the country or the region
- Political stability of the region and its impact on natural resources: land and water are also at the core of the problems

Why bothering with LD in the Mediterranean

Risk of Human Induced Desertification



Why bothering with LD in the Mediterranean

Risk of Human Induced Desertification

- Land is a very scarce resource and options of cropland expansion are extremely limited, despite this, land is often mismanaged or misused
- All the countries of North Africa and much of those in the Middle East are water stressed
- Population pressure: 2020 southern and eastern countries will have 300 M people
- Attractive tourist destination for around 300 million tourists per year
- Urbanisation is "swallowing" extensive prime land especially in the coastal zones
- Costs for ameliorating degraded land are higher than preventing them from degradation

Arable land compared against total land per country



Source: Elaborations of MAI B based on FAO 2001 data

Arable land and population trend in the Mediterranean









Source: Oldeman, et.,al 1991 (GLASOD)



Source: Elaborations of MAI B based on Plan Bleu 2005 data

Main LD factors in the Mediterranean

Risk of Human Induced Desertification



Main LD factors in the Mediterranean

Risk of Human Induced Desertification

- Water and wind erosion
- Soil sealing and urbanisation
- Loss of organic matter and biodiversity decline
- Nutrient mining
- Chemical pollution and contamination
- Floods and landslides
- Salinisation
- Overgrazing and vegetation degradation

Annual cost of soil degradation in European Union

Though difficult to estimate, several studies demonstrate significant *annual* costs of soil degradation to society in the ranges of:

- erosion:
- organic matter decline:
- compaction:
- salinisation:
- landslides:
- contamination:
- sealing:
- biodiversity decline:

€0.7 – 14.0 billion[1],
€3.4 – 5.6 billion,
no estimate possible,
€158 – 321 million[2],
up to €1.2 billion per event,
€0.6 – 17.3 billion[3],
no estimate possible,
no estimate possible.

- [1] This estimate covers only costs of erosion in 13 countries, including the major Member States where erosion occurs. Data is not available for the others.
- [2] This estimate covers only the costs of salinisation in three countries, data is not available for others.
- [3] An independent study estimated that the costs of soil contamination could amount annually to up to €208 billion. Nevertheless this estimate had a high degree of uncertainty, therefore the intermediate value of €17.3 billion per year was retained.

Mediterranean Soil

Forest fires

rock Leptosol Regosol

Bare

Luvisol Vertisol

Land slides

Erosion

Gully erosion

Cambisol Rill and sheet erosion

Fluvisol

Nutrient mining Soil sealing River bank erosion



Soil Organic Matter in Europe: influence of temperature and moisture





adapted from Buckman and Brady, (1960)

Climate change scenarios and their consequences in the

Mediterranean

- The Mediterranean is expected to become drier with prolong droughts in summer and reduced winter rainfall
- Heavy rainfall events will be accompanied by flash flooding, urban drainage, erosion, slope stability and ground water recharge
- Agriculture production is expected to decline due to shorter growing season, extreme events during development stages, heat stress during flowering, and rainy days during sowing
- The temperature in the Mediterranean may rise by 0.3-0.7 degree C per decade and summer rainfall may decrease by 15 % causing more widespread desertification
- Climate change thus is expected to have consequences also for the tourism industry

http://www.cru.uea.ac.uk/projects/mice/

Why bothering with LD Soil sealing and





Soil erosion and sea eutrification





Why bothering with LD

Human interventions on the territory

Rocky soil

Man made soil











Human interventions on the territory

Grape cultivation in man made soils in Apulia, southern Italy



Un sustainable human interventions on the territory

Effects of the devastating storm on October 2005 in the Province of Bari, Apulia Region



Lessons learned (II): Responses

- International community did not ignored the Region. EU alone for the period 1995-2005 has spent 11 billion Euros in the Mediterranean Partner Countries (several projects) following the Barcelona Convention agreement
- The Convention paved the way for the creation of the Mediterranean Commission on Sustainable Development and the endorsement of the Mediterranean Action Plan
- UN Agencies, World Bank, IFAD and Governments of rich countries have also provided considerable support
- National Governments have played their part (many good examples from Morocco, Tunisia, Egypt, Syria, Turkey, etc
- Policy drafting for integrated sustainable rural development and natural resources management
- Capacity and institution building, local staff training and education including gender issues and involvement of local communities

Lessons learned (III): Impacts

- Vary between countries
- Depend on direct involvement of decision makers
- International community should not be considered only as donor but also as local/national stakeholder
- Assure continued collaboration
- Respect for local traditions
- Valorise traditional technical knowledge and indigenous crops
- Careful selection of technology transfer

Lessons learned (IV): Future outlook

- Promote income generating activities and integrated rural development
- Find a good balance between bottom up and top down decision making
- Fight corruption, move away from politics to sustainable policymaking
- Polices and guidelines should be IMPLEMENTED
- Promote the societal approach of stakeholder involvement and responsible participation

The Regional Office for Sustainable Land and Soil Management in the Mediterranean



The Regional Office for Sustainable Land and Soil Management in the Mediterranean



- Complete and update the Euro-Mediterranean Soil Database 1M scale
- Make a quantitative assessment of Land Degradation in the Mediterranean
- Promote combination of remote sensing estimates with ground truthing and field validation
- Organise soil survey summer schools, field assessments of land degradation and practical applications of soil conservation measures

Does everything goes wrong?



MEDCOASTLAND PROJECT



West Noubaria Rural Development Project, Egypt





Adana Mayor in Turkey showing results of reforestation project

Cactus and artiplex cultivation

in Marrakech, Morocco





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Management of sloping lands through terracing









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5th International Conference on Land Degradation

www.iamb.it/5ICLD



Thank you for your kind attention

Conference theme

Moving ahead from assessments to actions: Could we win the struggle with land degradation?

> Valenzano, Bari, Italy 18-22 September 2008

1st Announcement