



DESERTLINKS

COMBATING DESERTIFICATION IN MEDITERRANEAN EUROPE
LINKING SCIENCE WITH STAKEHOLDERS

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THE PROBLEMS AND MAIN ISSUES ASSOCIATED WITH, AND STRATEGIES TO COMBAT, DESERTIFICATION

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The **purpose of this paper** is to summarise the information we have to date on the identification of the problems and main issues associated with desertification as well as strategies proposed to combat it. This information will be used to organise the way information is provided in the desertification indicator system.

The information sources included to date are:

1. Text of the United Nations Convention to Combat Desertification
2. DESERTLINKS "Desertification Enquiry" made of the general public
3. DESERTLINKS Reports from participatory workshops on the perceptions of local stakeholders of the problem of desertification.
4. National Action Plans for Portugal, Spain, Italy and Greece
5. First and Second National Reports on the Implementation of the UNCCD, 2000 and 2002
6. Reports of the National Committees to Combat Desertification to the Second MEDRAP workshop "Identification of Sensitive Areas", Tróia, Portugal, 6 to 8 June 2002

Having completed this review, the **next step** will be to homogenise the various lists of problems, issues and strategies, making clear which are relevant to the whole Mediterranean region and which are relevant to part of it only. We will then be able to start the process of matching indicators from the candidate list to the problems and strategies.

1. The problem of desertification as identified by the UNCCD

(Source: text of the United Nations Convention to Combat Desertification)

The principal, worldwide problems caused by desertification are identified by the UNCCD as

- LOSS OF BIOLOGICAL PRODUCTIVITY
- LOSS OF ECONOMIC PRODUCTIVITY
- LOSS OF COMPLEXITY IN LANDSCAPE

(NB "landscape" is an abbreviation of rainfed cropland, irrigated cropland, range, pasture forest and woodland)

The particular issues in the UNCCD identifies in the Mediterranean region are

- HIGH RAINFALL VARIABILITY
- POOR, HIGHLY ERODIBLE SOILS
- STEEP SLOPES
- FOREST LOSS FROM FIRE
- LAND ABANDONMENT
- DETERIORATION OF SOIL AND WATER CONSERVATION STRUCTURES
- UNSUSTAINABLE EXPLOITATION OF WATER RESOURCES

- CONCENTRATION OF ECONOMIC ACTIVITY IN COAST (INCLUDING IRRIGATED AGRICULTURE)

2. Problem of desertification as perceived by the general public in affected Mediterranean countries

(Source: DESERTLINKS Desertification Enquiry designed by Roxo)

	Beja	Mertola	Agri	Guadalentín ¹	Lesvos
1	depopulation	depopulation	lack of water	deforestation	lack of water
2	lack of employment	advance of deserts	drought	lack of water	drought
3	drought	deforestation	deforestation	drought	increase in temperature
4	deforestation	drought	temperature increase	soil erosion	fire
5	poor infrastructure	lack of water	climate change	aridity	deforestation
6	lack of water	lack of employment	fire	desert advance	destruction of vegetation
7	desert advance	climate change	desert advance	biodiversity loss	soil and water pollution
8	soil erosion	soil erosion	ozone layer destruction	fire	depopulation

Fifteen problems or issues were listed in the questionnaire and the respondents were asked which of them they associated with desertification. The problems have been ranked according to the frequency with which they were mentioned and the top eight have been listed above. These problems are in the top eight in all four affected areas:

- LACK OF WATER
- DROUGHT
- DEFORESTATION

However there is a clear difference between Portugal and the other three

- DEPOPULATION and
- LACK OF EMPLOYMENT

being the two highest rated problems in Portugal and

- DROUGHT,
- LACK OF WATER and
- DEFORESTATION

¹ In the Guadalentín the survey was sent to both secondary schools and universities. The results given here are for the two sets of replies combined. An additional question was included in the survey "How do you think desertification is affecting the area?" to which the combined replies were

- droughts, impoverished lands, desert, emigration
- vegetation degradation
- reduction in the quality of life
- increase of temperatures

being in the two highest-rated problems in Italy, Spain and Greece.

3. Problems or signs of desertification as identified by groups of local stakeholders at participatory workshops

Portugal

Source: "Public participation in the fight against desertification" Report on four participatory workshops carried out between 5 April and 2 May 2002 in four pilot areas (Portuguese National Coordination Committee of the National Action Programme to Combat Desertification in association with Universidade Nova de Lisboa)

At a series of half day workshops held in four areas in Portugal, groups of local stakeholders were asked to identify the principal signs of desertification. In order of decreasing importance these signs were

- INADEQUATE AGRICULTURAL TECHNIQUES
- POOR AND DEGRADED SOILS
- REDUCTION OF BIODIVERSITY
- LAND EROSION
- PLANNING AND MANAGEMENT OF RURAL SPACE
- REDUCED ECONOMIC ATTRACTIVENESS
- DEGRADATION OF VEGETATION
- DEPOPULATION OF THE RURAL SPACE
- AGEING OF THE POPULATION
- ABANDONMENT OF AGRICULTURAL LAND
- INADEQUATE AGRICULTURAL POLICIES
- FIRES
- LOW PRODUCTIVITY LAND
- WATER RESOURCES

A large number of strategies to combat these problems were suggested in the workshops, together with potential partners who could take part in them. These have not been synthesised.

Italy

- IMPOVERISHMENT AND DEGRADATION OF TERRITORIAL RESOURCES
 - Reduction of available water resources (Env and Econ)
 - Bad maintenance of pipelines (Inst)
 - Decrease of land productivity (Econ)
 - Less tourist attraction (opportunity or dangerous) (Econ)
 - Increase of deforestation and fire risk
 - Abandonment of traditional technologies and tacit knowledge (Econ)
- CLIMATE CHANGE
- INCREASE OF TERRITORIAL DISPARITY (COSTAL/INTERNAL (SOCIAL))
- REDUCTION OF RURAL POPULATION
 - Elderly of rural population
 - Abandonment of agricultural land
 - Ecosystem alteration due to the innovative agricultural technologies
 - Demographic pressure

- Increase of social conflict for the use of natural resources, especially water
- ABSENCE OF PERCEPTION OF THE ECONOMIC VALUE OF NATURAL RESOURCES
 - Degradation and low quality of life (Env)
 - Increase of the cost for services (especially transport) due to territorial degradation (Econ)
 - No integration of environmental variables in the territorial and sector policies and/or missing of integrated approach from the policy makers (Inst)
 - Development policies (for the agricultural sector) not responding to the local peculiarities (Inst)
 - Absence of controls on the results of public funds
- ABSENCE OF TERRITORIAL NETWORK ABLE TO MANAGE THE PHENOMENA THAT IS CAUSE/EFFECT OF WEAKNESS OF SOCIAL CAPITAL (INST)

Spain

The local stakeholder workshop in the Guadalentín concluded that soil resources are running out in the area. Even though this is identified as a very severe problem, it is not considered a priority at a political level. Two agricultural systems exist in the Guadalentín basin and they are related to two different kinds of sensitivity to the environment: intensive farming, consuming resources and being very aggressive to the environment; and dry farming which is more and more marginal. The perceptions of the stakeholders to the origin of the problem (not in order of importance) were:

- SOIL RESOURCE IS NOT PROPERLY VALUED
- SLOPING SOILS ARE PLOUGHED
- EXISTENCE OF A VERY INTENSIVE AGRICULTURAL SYSTEM
- THE IDEA OF MULTIFUNCTIONAL AGRICULTURE DOES NOT WORK IN THE GUADALENTÍN
- LACK OF SOIL PROTECTION MEASURES BY THE ADMINISTRATION
- CULTURE OF NEW AGRICULTURE BASED ON IRRIGATION AND EASY MONEY
- TECHNICIANS AND MANAGERS DO NOT HAVE SUFFICIENT KNOWLEDGE ABOUT DESERTIFICATION
- THE TWO SYSTEMS OF DRY AND IRRIGATED FARMING LEADS TO A FRAGMENTATION OF THE TERRITORY
- OVERGRAZING
- NEW CULTIVATION ON SLOPING OR FORESTED SOILS
- INTENSIFICATION OF DRY FARMING
- NOT ENOUGH QUALITY IN DRY FARMING PRODUCTION
- "MENTAL DESERTIFICATION"

The stakeholders' perception of the signs and consequences of desertification (not listed in order of importance) were:

- LOSS IN CROP PRODUCTION
- LOSS OF WATER QUALITY
- NEW IRRIGATION CULTURES ON DRY FARMING AREAS
- DISAPPEARANCE OF SPRINGS
- DEPOPULATION AND POPULATION MOVEMENTS IN RURAL AREAS
- DEGRADATION OF ABANDONED AGRICULTURAL LAND

Greece

Source: Costas Kosmas

The results obtained from: (a) the questionnaire filled in collaboration with the local land users, (b) the workshop organized in the island of Lesbos showed that the main impacts of desertification in the island are related to loss of land productivity and farm income. Specifically the main impacts of desertification in the island of Lesbos, in a decreasing order of importance are the following:

- LOSS IN AGRICULTURAL CROP PRODUCTION
- LOSS IN FARM INCOME
- ABANDONMENT OF AGRICULTURAL AREAS
- LOSS IN WATER RESOURCES
- INCREASE OF IMPORTED ANIMAL FEED
- INCREASE OF PASTURE FIRES
- LOSS OF SOIL RESOURCES
- LOSS IN BIODIVERSITY
- SALINIZATION OF LOWLAND
- FLOODING OF LOWLAND AND SEDIMENTATION

4. National Action Plans for Portugal, Spain, Italy and Greece and associated documents

Sources:

Italy

- *National Action Programme to combat drought and desertification, Rome, December 1999* <http://unccd.int/actionprogrammes/northmed/national/2000/italy-eng.pdf>
- *National Report of Italy on the Implementation of the UNCCD, 2000* <http://www.unccd.int/cop/reports/northmed/national/2000/italy-eng.pdf> <http://www.desertification.it/doc/nationalreport.htm>
- *Committee for the review of the implementation of the convention. Second reporting process on UNCCD implementation. Italy National Report, April 30 2002.* <http://unccd.int/cop/reports/northmed/national/2002/italy-eng.pdf>
- *Report of the National Committee to combat desertification, to the second MEDRAP workshop "Identification of Sensitive Areas", Troia, Portugal, 6-8 June 2002.*

Greece

- *Greek National Committee for combating desertification: First national report on the implementation of the United Nations Convention to combat desertification. Athens March 2000.* <http://unccd.int/cop/reports/northmed/national/2000/greece-eng.pdf>
- *Greek National Action Plan for combating desertification. (Extended Summary), Athens - January 2001.* <http://www.unccd.int/actionprogrammes/northmed/national/2001/greece-eng.pdf>
- *Greek National Committee for combating desertification: Second national report on the implementation of the United Nations Convention to combat desertification. Athens April 2002.* <http://unccd.int/cop/reports/northmed/national/2002/greece-eng.pdf>
- *Report of the National Committee to combat desertification, to the second MEDRAP workshop "Identification of Sensitive Areas", Troia, Portugal, 6-8 June 2002.*

Portugal:

- *National Action Plan to Combat Desertification – 17 June 1999. (ref?)*
- *Portugal – Summary of National Report*
<http://www.unccd.int/cop/reports/northmed/national/2000/portugal-summary-eng.pdf>
- *National Report on the implementation of the convention to combat desertification in Portugal. April 2002.*
<http://www.unccd.int/cop/reports/northmed/national/2002/portugal-eng.pdf>
- *DISMED Technical workshop on thematic and sensitivity mapping on desertification and drought – Portuguese report, March 2002.* <http://p-case.iata.fi.cnr.it/dis-med/Djerba-presentations.htm>
- *Report of the National Committee to combat desertification, to the second MEDRAP workshop “Identification of Sensitive Areas”, Troia, Portugal, 6-8 June 2002.*

Spain:

- *SPAIN SURMODES website: http://www.eeza.csic.es/Spain_SURMODES*
- *DISMED Technical Workshop on NAP information needs. Spanish NCB report, July 2001.* [http://p-case.iata.fi.cnr.it/dis-med/](http://p-case.iata.fi.cnr.it/dis-med/DISMED_Florence_spain_NCB.rtf).
DISMED_Florence_spain_NCB.rtf
- *National Report on the implementation of the convention to combat desertification in Spain. April 2002. Il informe sobre el programa de accion nacional contra la desertification.*
<http://www.unccd.int/cop/reports/northmed/national/2002/spain-spa.pdf>
- *Report of the National Committee to combat desertification, to the second MEDRAP workshop “Identification of Sensitive Areas”, Troia, Portugal, 6-8 June 2002.*

Annex IV

- *Second Annex IV subregional report for the implementation of the UNCCD. Athens, Greece, April 2002.*
http://www.unccd.int/cop/reports/northmed/regional/2002/group_of_annex_iv_countries-eng.pdf

PROBLEM	COUNTRY	Ref
Abandonment of marginal lands and historical settlements, depopulation	<i>I, P</i>	p6 National Report of Italy 2000 p14 NAP Portugal report 1999
Depopulation, migration	<i>P, S</i>	p11 NAP Portugal report 1999 SPAIN SURMODES website, 2002
Information collection, analysis and dissemination needs organisation	<i>S</i>	p7 DISMED-Florence-Spain 2001, SPAIN SURMODES website, 2002
Lack of desertification indicators of a socio-economic nature	<i>S</i>	p7 DISMED-Florence-Spain, 2001
Lack of information on the evolution of desertification	<i>S</i>	p7 DISMED-Florence-Spain, 2001
Initial enthusiasm reduced by inactivity	<i>P</i>	p4 National Report, Portugal, 2002
Lack of specific funding for the implementation of the Convention	<i>G, P</i>	p8 Second National Report of Greece, 2002

		p6 National Report, Portugal, 2002
Over-exploitation of soil and water resources linked to financial investment	<i>S, I, P</i>	p2 DISMED-Florence-Spain, 2001 SPAIN SURMODES website, 2002 p39 Italy National Report 2002 p17 NAP Portugal report 1999
Damage to forests by drought	<i>S</i>	p2 DISMED-Florence-Spain, 2001
Deforestation, causing soil erosion	<i>G</i>	p15 First National Report Greece 2000
Damage to land surface by fire (frequency and extent)	<i>S, I, G</i>	p2 DISMED-Florence-Spain, 2001 p39 Italy National Report 2002 p16 Greek National Action Plan 2001
Discrimination between current and relict desertification (<i>S</i>) or reversible and non-reversible desertification (<i>G</i>)	<i>S, G</i>	SPAIN SURMODES website, 2002 p11 Greek National Action Plan 2001
Forecasting desertification under chosen climatic and socio-economic scenarios	<i>S</i>	SPAIN SURMODES website, 2002
Climatic stress: drought, dryness, decline in water reserves, variability of rainfall	<i>I, G, P</i>	p11 National Report, Portugal, 2002 p16 Second National Report of Greece, 2002 Italy National Report, 2002
Monitoring land degradation status over large areas using objective and low cost methods	<i>S, G</i>	SPAIN SURMODES website, 2002 p1 DISMED-Florence-Spain, 2001 p28 Second National Report of Greece, 2002
Groundwater aquifers may be subject to seawater intrusion due to over-pumping for irrigation, or geology	<i>G, I</i>	p6 Second National Report of Greece, 2002 p6 National Report of Italy 2000
Lack of public awareness of the problem of desertification	<i>G, P</i>	p21 Second National Report of Greece, 2002 p17 NAP Portugal report 1999
Soil loss, compaction or reduction of soil organic matter	<i>I</i>	p39 Italy National Report 2002 p6 National Report of Italy 2000
Soil erosion accelerated by frequent forest fires, extreme precipitation on steep slopes and overgrazing	<i>I, G</i>	p6 National Report of Italy 2000 p16 Greek National Action Plan 2001
Severe erosion on steep south and southeast exposed slopes	<i>G</i>	p4 Greek National Action Plan
Steep slopes increase the threat of soil erosion especially in conjunction with extreme rainfall and unsuitable agricultural techniques	<i>G, I</i>	p15 First National Report Greece 2000 National Report of Italy 2000
Increased surface runoff due to reduction of soil water retention	<i>P</i>	p1 Portugal NAP 1999
Soil erosion by water and wind limits the rootable depth of soil	<i>G</i>	p6 Greek National Action Plan

Existing soil and water conservation structures are not being maintained	<i>G</i>	p15 First National Report Greece 2000
Management of water resources is lacking	<i>G, I, S</i>	p9 Second National Report Greece 2002
Management of aquifer resources and sea water intrusion is lacking	<i>S, G</i>	p18 Second National Report Greece
Tendency towards reduction of annual rainfall	<i>G</i>	p7 Greek National Action Plan
Salinisation	<i>G, I</i>	p7 Greek National Action Plan p39 Italy National Report 2002
Chemical pollution	<i>G, I</i>	p7 Greek National Action Plan p39 Italy National Report 2002
Acidification	<i>G</i>	p7 Greek National Action Plan
Reduction or degradation of plant cover e.g. clearing of forest for agricultural expansion	<i>I, G</i>	p39 Italy National Report 2002 p16 Greek National Action Plan 2001
Urban development	<i>I</i>	p39 Italy National Report 2002
Loss of economic productivity of traditional agriculture	<i>I</i>	p6 National Report of Italy 2000
Lack of new policies to counterbalance effects of market globalisation	<i>I</i>	p6 National Report of Italy 2000
Lack of policies to combat adverse agricultural market effects	<i>I</i>	p8 Italy National Report 2002
Lack of compatible standards and systems between countries	<i>I</i>	p17 Italy National Report 2002
Low cost monitoring methods required	<i>S, G</i>	Spain SURMODES website 2002
Desertification forecasting methods required	<i>S, G, I</i>	Spain SURMODES website 2002
Effective water erosion control	<i>Annex IV</i>	p4 Second Annex IV Report 2002
Control of surface crusting	<i>Annex IV</i>	p4 Second Annex IV Report 2002
Control of soil salinisation	<i>Annex IV</i>	p4 Second Annex IV Report 2002
Control of nitrate pollution of groundwater	<i>Annex IV</i>	p4 Second Annex IV Report 2002
Soil water conservation and increasing freshwater supply	<i>Annex IV</i>	p4 Second Annex IV Report 2002
Ensuring a response to natural and man-made water shortage	<i>Annex IV</i>	p4 Second Annex IV Report 2002
Short-term perspectives and use of technology do not support sustainability	<i>Annex IV</i>	p6 Second Annex IV Report 2002
Accelerated soil erosion, due to wildfires and agricultural and forestry practices that result in removal of vegetation cover	<i>S</i>	
Inter-basin water transfers established in the National Hydrological Plan may foster direction of population and investment to littoral and irrigated areas where consumption of resources may be unsustainable and contribute to abandonment of inland cropping areas	<i>S</i>	MEDRAP Report June 2002

Land suitable for restoration is often not in public hands and co-operation with private landowners may be lacking	<i>S</i>	MEDRAP Report June 2002
Threat and consequences of drought	<i>G</i>	MEDRAP Report June 2002
Scarcity of freshwater supplies	<i>G</i>	MEDRAP Report June 2002
Progressive decline in economic activities	<i>I</i>	MEDRAP Report June 2002
Inadequate development of new economic activities	<i>I</i>	MEDRAP Report June 2002
Progressive specialisation in agriculture	<i>I</i>	MEDRAP Report June 2002
Abandonment of hilly areas	<i>I</i>	MEDRAP Report June 2002
Low levels of competition between extremely specialised companies	<i>I</i>	MEDRAP Report June 2002
Lack of marketing support structures	<i>I</i>	MEDRAP Report June 2002
Low quality water resources	<i>I</i>	

SOLUTION	COUNTRY	Ref
Collaboration with international partners	<i>G, I</i>	p7 Second National Report Greece, 2002 p3, p11 Greek National Action Plan, 2001 p21 Italy National Report 2002
Formulation of national strategies and priorities	<i>G, I, S, P</i>	p3 Greek National Action Plan, 2001 p8, p16 Italy National Report, 2002 p10 National Report Spain 2002 Portugal Summary Report 2000 p7 NAP report 1999
Research programmes on a national scale	<i>S, G, P</i>	p15 National Report Spain 2002 p24 Greek National Action Plan 2001 p17 NAP Portugal report 1999
Ensuring necessary funding for the application of measures	<i>G, S</i>	p15 Greek National Action Plan 2001 p54 National Report Spain 2002
Transfer of jurisdiction and responsibility over environmental policies from national to regional or local scales	<i>I</i>	p7, p8 Italy National Report, 2002
Promotion of public awareness	<i>G, S, P</i>	p25 First National Report Greece p3, p9 Greek National Action Plan, 2001 p39 National Report Spain 2002 p5 NAP Portugal report 1999 Portugal Summary Report 2000
Specialist courses at universities and research centres	<i>G</i>	p15 Italy National Report 2002

Copies of the NAP have been sent to all universities to increase awareness of the problem	<i>G</i>	p6 Second National Report Greece, 2002
Application of the NAP to pilot areas	<i>G, S</i>	p14 First National Report Greece p11, p15 Greek National Action Plan, 2001 p20 National Report Spain 2002
EASW workshops have been held in pilot areas to increase awareness and enthusiasm	<i>P</i>	p4 National Report Portugal, 2002
Preparation of Codes of Good Agricultural Practice with subsidies for those who conform	<i>G</i>	p12, p14 Greek National Action Plan 2001 p7 Second National Report Greece, 2002
Protection of steep slopes from soil erosion, e.g. as subsidised set-aside land	<i>I, G</i>	Italian NAP 1999 p11 Greek National Action Plan 2001 p7 NAP Portugal report 1999
Control of land clearance and deforestation that leave areas prone to erosion	<i>G</i>	p16 Greek National Action Plan 2001
Recovery and reconstruction of terraces on sloping land to reduce soil erosion, enhance water storage, promote traditional farming and reduce depopulation	<i>G, I</i>	p11 Greek National Action Plan 2001 p7 Second National Report Greece, 2002 p38 Italy National Report 2002
Reduction of soil water loss by using best practice cultivation measures, such as mulching, minimum tillage	<i>G</i>	p14 Greek National Action Plan 2001
Small stones and gravel on the soil surface should not be removed as they reduce evaporation losses	<i>G</i>	p14 Greek National Action Plan 2001
Clarification of forest-land ownership to aid preservation of natural vegetation and reduce fire risk	<i>G</i>	p15 First National Report Greece 2000 p17 Greek National Action Plan 2001 p7, p24 Second National Report Greece, 2002
Reforestation of burned forest, and improved forest management to reduce fire risk	<i>G, I, P</i>	p16 Greek National Action Plan 2001 p7, p24 Second National Report Greece, 2002 p38 Italy National Report 2002 Italian NAP 1999 p16 NAP Portugal report 1999
Sustainable management and expansion of forest areas	<i>I</i>	p38 Italy National Report 2002 Italian NAP 1999 p17 NAP Portugal report 1999
Establishment of national and regional plans/policies for sustainable development	<i>P, I</i>	p2 National Report Portugal 2002 p8 Italy National Report, 2002

Creation of a National Coordinating Body to implement and evaluate the NAP	<i>P, I</i>	Portugal Summary Report 2000 p3 National Report Portugal 2002 p29 Italy National Report 2002
Coordination of Ministries responsible for the management of water resources, to accelerate responses	<i>G, I, S</i>	p21 Second National Report Greece, 2002 p22 Italy National Report 2002 p21 National Report Spain 2002
Establishment of regional water management services to protect water resources with legal regulations	<i>G</i>	p21 Greek National Action Plan 2001 p7, p25 Second National Report Greece, 2002
Definition of water availability and requirements, drought watch system	<i>I</i>	p39 Italy National Report 2002 Italian NAP 1999 p12 National Report of Italy 2001
Repair and renovation of irrigation networks. Water recycling and drought prevention methods	<i>G, I</i>	p25 First National Report Greece p11, p21 Greek National Action Plan 2001 p7, p25 Second National Report Greece, 2002 p39 Italy National Report 2002 Italian NAP 1999
Control of the quality of irrigation water	<i>G</i>	p15, p21 Greek National Action Plan 2001
Ensuring the drainage and leaching requirements of irrigated soils	<i>G</i>	p15 Greek National Action Plan 2001
Construction of dams, reservoirs and artificial recharging to control water distribution and combat drought.	<i>G, I</i>	p22 Greek National Action Plan 2001 p8, p12, p25 Second National Report Greece, 2002 p39 Italy National Report 2002 Italian NAP 1999
Improvement to the competitiveness of agriculture	<i>G</i>	p9 Second National Report Greece, 2002
Integrated social and environmental balance in the countryside	<i>G</i>	p9 Second National Report Greece, 2002
Subsidies to young farmers and promotion of early retirement, to decrease the average age of the rural population	<i>G</i>	p9, p12 Second National Report Greece, 2002
Promotion of agro-tourism in mountainous and marginal lands	<i>G</i>	p12 Greek National Action Plan 2001 p12 Second National Report Greece, 2002
Encouragement of sustainable biological farming and traditional knowledge	<i>G, I</i>	p9 Second National Report Greece, 2002 p39 Italy National Report 2002 p8 National Report of Italy 2001

Encouragement of young doctors to spend a year of service in rural communities	<i>G</i>	p9 Second National Report Greece, 2002
Development of local agencies to apply and coordinate policies and measures at local level	<i>G</i>	p10 Second National Report Greece, 2002
Application of the NAP in pilot areas with set targets	<i>G, P</i>	p10 Second National Report Greece, 2002 p3 National Report Portugal, 2002
Evaluation of the 19 ANPA indicators of desertification	<i>P</i>	p4 National Report Portugal, 2002
Reduction of agricultural pollution, especially nitrates, to protect biodiversity	<i>G</i>	p12, p19 Greek National Action Plan 2001 p10, p24 Second National Report Greece, 2002
Mapping of threatened areas and their extent	<i>G, I, S, P</i>	p3, p8 Greek National Action Plan 2001 p8 Italy National Report, 2002 p16 National Report of Italy 2000 p41 National Report Spain 2002 p4 DISMED Spain 2001 p4 DISMED Portugal 2002 p13 NAP Portugal report 1999
Mapping of soils using units indicative of extent of erosion, erosion risk, soil depth and soil drought risk	<i>G, I</i>	p13 Second National Report Greece, 2002 p38 Italy National Report 2002 Italian NAP 1999 p16 National Report of Italy 2000
Further testing and use of the PESERA estimated erosion rate model	<i>G</i>	p17 Second National Report Greece, 2002
Use of the media and workshops to promote public awareness of desertification	<i>G, I</i>	p14 First National Report Greece p21, p24 Second National Report Greece, 2002 p15 National Report of Italy 2000
The Biological Animal Production Plan will protect pastures from overgrazing	<i>G</i>	p12, p16, p20 Greek National Action Plan 2001 p21 Second National Report Greece 2002
Banning of grazing in burned forests	<i>G</i>	p11 Greek National Action Plan 2001
Building data bases of changing land condition	<i>S, I</i>	SPAIN SURMODES website p29 Italy National Report 2002
Rehabilitation or restoration of threatened areas	<i>S, I</i>	SPAIN SURMODES website p39 Italy National Report 2002
Estimation of effectiveness of applied policy	<i>G</i>	p3 Greek National Action Plan 2001

and measures		
Establishment of a network for monitoring, early diagnosis and warning	<i>G, I, P</i>	p3 Greek National Action Plan 2001 p8, p15, p29 Italy National Report 2002 p2 DISMED Portugal 2002 p6 DISMED Spain 2001
Formulation and implementation of land use policy	<i>G</i>	p10 Greek National Action Plan 2001
Control of excessive pumping from coastal aquifers	<i>G</i>	p12 Greek National Action Plan 2001
Restoration of traditional knowledge and technology	<i>I</i>	p15 Italy National Report 2002
Analysis and evaluation of existing legislation for the environment	<i>I</i>	p18 Italy National Report 2002
Proposing criteria for setting priorities for funding actions to combat desertification	<i>I</i>	p 42/43 Italy National Report 2002
Establishment of clearing house mechanisms to share and distribute information	<i>I</i>	p8 National Report of Italy 2000
Use of standard AGROVOC thesaurus keywords and FAO classification methods	<i>I</i>	p9 National Report of Italy 2000
Analysis and evaluation of strategies to prevent and combat desertification	<i>I, G</i>	p15 National Report of Italy 2000 p28 Greek National Action Plan 2001
Use of environmentally friendly technology	<i>G</i>	p24 Greek National Action Plan 2001
Legislation to prevent profiteering from unsustainable short term land use practices	<i>G</i>	p24 Greek National Action Plan 2001
Recovery of degraded areas	<i>P</i>	p17 NAP Portugal report 1999
Creation of centres to demonstrate good practice	<i>P</i>	p17 NAP Portugal report 1999
Establishment of national and regional long-term plans/policies for sustainable development	<i>Annex IV</i>	p5 Second Annex IV Report 2002
Improve water use efficiency and reduce waste, including advisory systems	<i>Annex IV</i>	p6 Second Annex IV Report 2002
Irrigation practices and policies to minimise salinisation and sustain water resources	<i>Annex IV</i>	p5 Second Annex IV Report 2002
Construction of dams, reservoirs and artificial recharging to control water distribution and combat drought.	<i>Annex IV</i>	p5 Second Annex IV Report 2002
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Mapping of threatened areas using desertification indicator models	<i>Annex IV</i>	p4 Second Annex IV Report 2002

Establishment of a Clearing House Mechanism for Annex IV	<i>Annex IV</i>	p4 Second Annex IV Report 2002
Tillage systems to control erosion and surface crust formation, minimise water loss and increase soil water storage	<i>Annex IV</i>	p3 Second Annex IV Report 2002
Urban expansion across potentially productive or environmentally important soils should be controlled by planning measures	<i>Annex IV</i>	p5 Second Annex IV Report 2002
Planning of new settlement should avoid concentrated urban zones and marginalised rural zones	<i>Annex IV</i>	p5 Second Annex IV Report 2002
Land use planning should be in harmony with water use and management planning	<i>Annex IV</i>	p6 Second Annex IV Report 2002
Forest management to preserve and mitigate desertification should be clarified	<i>Annex IV</i>	p5 Second Annex IV Report 2002
Long term continuous and accurate monitoring of water resources	<i>Annex IV</i>	p5 Second Annex IV Report 2002
Mediterranean network database	<i>Annex IV</i>	p6 Second Annex IV Report 2002
Early warning systems for drought	<i>Annex IV</i>	p6 Second Annex IV Report 2002
Promotion of diversity and new opportunities in affected areas	<i>Annex IV</i>	p6 Second Annex IV Report 2002
Promote synergies with other relevant programmes at national and international levels	<i>Annex IV</i>	p6 Second Annex IV Report 2002
Aids to cultures that enrich the soil	<i>P</i>	MEDRAP Report June 2002
Diversification of species used in afforestation	<i>P</i>	MEDRAP Report June 2002
Scrubland management	<i>P</i>	MEDRAP Report June 2002
Creation of water reservoirs	<i>P</i>	MEDRAP Report June 2002
River protection	<i>P</i>	MEDRAP Report June 2002
Reduction of overland flow	<i>P</i>	MEDRAP Report June 2002
Better road network	<i>P</i>	MEDRAP Report June 2002
Ethnic and cultural programmes	<i>P</i>	MEDRAP Report June 2002
Commercialisation of regional produce	<i>P</i>	MEDRAP Report June 2002
Rural and environmental tourism	<i>P</i>	MEDRAP Report June 2002
Fiscal benefits and positive discrimination to enhance quality of rural life	<i>P</i>	MEDRAP Report June 2002
Provision of benefits to attract young people and enterprises to rural life	<i>P</i>	MEDRAP Report June 2002
Forest restoration, including biodiversity, vegetation and soil conservation, with suitable technology and in priority areas	<i>S</i>	MEDRAP Report June 2002
More effective monitoring and assessment of restoration projects to avoid failure or negative impacts	<i>S</i>	MEDRAP Report June 2002
Aid packages for private land owners of land	<i>S</i>	MEDRAP Report June 2002

suitable for restoration		
Afforestation of semi arid marginal lands with fodder resources	<i>S</i>	MEDRAP Report June 2002
Increased research and technology transfer regarding restoration techniques	<i>S</i>	MEDRAP Report June 2002
Increase in water availability to civil and agricultural use by purification and re-use	<i>I</i>	MEDRAP Report June 2002
Increase in the quality of production and competitiveness of agricultural products	<i>I</i>	MEDRAP Report June 2002
Conversion of abandoned agricultural units to agritourism facilities	<i>I</i>	MEDRAP Report June 2002
Medium and long term economic and regional planning	<i>I</i>	MEDRAP Report June 2002

5. Reports of the National Committees to Combat Desertification to the Second MEDRAP workshop "Identification of Sensitive Areas", Tróia, Portugal, 6 to 8 June 2002

Although the information from these reports is also given in the table above, the principal findings are given here, country by country to give a clearer impression of the national pictures. These reports contain more recent developments in work done by the national committees, particularly relating to the consultation of stakeholders about the problem and mitigation of desertification in their own locality, and about potential solutions. They also contain further information about indicators which have been used by the national committees to map environmental sensitivity.

Portugal

The report summarises the results of the series of half day workshops held in four areas of Portugal. Because the workshops were run jointly by the Focal Point and DESERTLINKS the signs of desertification identified by the stakeholders have already been listed in Section 3 above. However, this report also highlights the potential **solutions** that were recognised by the stakeholders.

Relating to soils:

- *MINIMUM TILLAGE AND OTHER GOOD AGRICULTURAL PRACTICE*
- *NATURAL GRAZING*
- *AIDS TO CULTURES THAT ENRICH THE SOIL*
- *SUITABLE LIVESTOCK DENSITY*
- *DIVERSIFICATION OF SPECIES USED IN AFFORESTATION*
- *SCRUBLAND MANAGEMENT*
- *CREATION OF WATER RESERVOIRS*
- *PREVENTION OF FOREST FIRES*
- *USE OF TRADITIONAL PRACTICES*
- *RIVER PROTECTION*
- *REDUCTION OF OVERLAND FLOW*

Relating to the economy

- *BETTER ROAD NETWORK*
- *ETHNOLOGICAL AND CULTURAL ITINERARIES*

- *ORIGIN DENOMINATION PRODUCES*
- *COMMERCIAL CONDITIONS TO REGIONAL PRODUCES*
- *RURAL AND ENVIRONMENTAL TOURISM*
- *FISCAL BENEFITS*
- *PROMOTION OF QUALITY OF LIFE*
- *REQUALIFICATION OF URBAN AND RURAL CENTRES*
- *BENEFITS TO SETTLE YOUNG PEOPLE*
- *BENEFITS TO SETTLE ENTERPRISES*
- *PUT INTO PRACTICE TO ATTEND THE INFORMATION OF PEOPLE LIVING ON VILLAGES*
- *DIGNIFY THE WORK OF THOSE LIVING IN DEPRESSED AREAS*

Spain

The Spanish report describes the results of a two phase consultation exercise with stakeholders held in Madrid in 2001. In the first phase managers and policy makers from national, regional and local administrations were involved and in the second phase members of civil society.

The principal **problems** related to desertification were identified as:

- SOIL EROSION
- WILD FIRES
- AGRICULTURAL AND FORESTRY PRACTICES
- EROSION CLIMATE CONDITIONS
- SOIL ERODIBILITY
- SOIL SALINISATION
- OVER EXPLOITATION OF AQUIFERS
- CONCENTRATION OF AGRICULTURE IN IRRIGATED AREAS
- INVESTMENT IN IRRIGATED AGRICULTURE
- POPULATION INFLOW.
- AGRICULTURE AND STOCKBREEDING SYSTEMS
- RAINFED CROPS ON STEEP AND MODERATE SLOPES
- HETEROGENEOUS DISTRIBUTION OF LIVESTOCK DENSITY
- OVER GRAZING
- ABANDONMENT OF MARGINAL FARMING SYSTEMS
- RAPID EXPANSION/CONTRACTION OF MARGINAL LAND IN RESPONSE TO MARKET CHANGES
- INTENSIVE AGRICULTURE
- LACK OF INVESTMENT ON CONSERVATION SYSTEMS
- LITTORALISATION OF THE ECONOMY

Solutions to combat desertification included:

- *FULL IMPLEMENTATION OF AGRI-ENVIRONMENTAL MEASURES TO AVOID SOIL DEGRADATION AFTER MARGINAL LAND ABANDONMENT*
- *FOREST RESTORATION*
- *INCREASE IN PLANT COVER*
- *INCREASE IN DIVERSITY OF VEGETATION COVER*
- *PREVENTION OF WILD FIRES*
- *MAINTAINING SOIL AND WATER CONSERVATION STRUCTURES*
- *TARGET AREAS DEGRADED CLOSE TO OR BEYOND THEIR REGENERATION CAPACITY*

- *EFFECTIVE MONITORING AND ASSESSMENT OF RESTORATION ACTIVITIES*
- *EVALUATION OF PAST RESTORATION ACTIONS*
- *AID SYSTEMS TO PRIVATE LAND OWNERS TO GAIN COOPERATION IN RESTORATION*
- *AFFORESTATION WITH SUITABLE TECHNOLOGY AND IN PRIORITY AREAS*
- *AFFORESTATION OF SEMIARID MARGINAL LANDS WITH FODDER RESOURCES*
- *INCREASED RESEARCH AND TECHNOLOGY TRANSFER REGARDING RESTORATION TECHNIQUES.*

Greece

No mention is made in the report of a specific consultation exercise with stakeholders. However the public and authorities generally understand desertification to mean.

- THREAT AND CONSEQUENCES OF DROUGHT
- SCARCITY OF FRESH WATER SUPPLY

Italy

In April 2002 the Italian National Committee held a consultation exercise with local stakeholders in Licata, Sicily. **Problems** associated with desertification are perceived by the stakeholders to be:

- SCARCE WATER RESOURCES
- PROGRESSIVE DECLINE IN ECONOMIC ACTIVITY
- INADEQUATE DEVELOPMENT OF NEW ECONOMIC ACTIVITIES
- PROGRESSIVE SPECIALISATION IN AGRICULTURE
- ABANDONMENT OF HILLY AREAS
- LOW LEVELS OF COMPETITION BETWEEN EXTREMELY SPECIALISED COMPANIES
- LACK OF MARKETING SUPPORT STRUCTURES
- LOW QUALITY WATER RESOURCES

Solutions were seen to be:

- *INCREASE WATER AVAILABILITY TO CIVIL AND AGRICULTURAL USES BY PURIFICATION AND RE-USE*
- *RAISE THE QUALITY OF PRODUCTION AND COMPETITIVENESS OF AGRICULTURAL PRODUCTS*
- *CONVERSION OF ABANDONED AGRICULTURAL UNITS TO AGRITOURISM FACILITIES*
- *ECONOMIC AND REGIONAL PLANNING MEDIUM TO LONG TERM*
- *DEVELOPMENT OF CITIZEN AWARENESS AND PARTICIPATION*