Land care in desertification affected areas: from science towards application

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European policy and desertification: evidence from the local scale

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Contents

Introduction: what this booklet attempts to do

Policy surrounds us all and is an important aspect of human decision-making processes in democratic societies. It is, therefore, crucial to understand the importance of policy and the role it plays in desertification processes. The aim of this booklet is to focus specifically on the role of policy at the ***local scale*** of decision-making (see other booklets for a general discussion of the EU policy environment and desertification).

Several local policy themes will be explored in this booklet, all building on each other to build a storyline that informs the reader about problems, issues and opportunities associated with policy-making and desertification. The booklet will first look at the ***policy process*** (i.e. how does policy work?) and will shed some light on the complex issues associated with formulating, enacting and implementing a policy. The booklet will then specifically discuss issues and concerns related to ***policy implementation in the Northern Mediterranean*** by emphasising that European Mediterranean countries often have a policy style of their own which can differ substantially from that of its Northern and Western European counterparts.

The booklet then turns to the important issue of ***policy as both a driver and a solution*** to Mediterranean desertification. In order to substantiate this debate, the booklet will draw on various examples of policy effects (both positive and negative) at the local scale from various Northern Mediterranean locations, in particular by investigating agricultural policy as a key driver for desertification in the Guadalentín valley (Spain), the Alentejo (Portugal), the Agri Basin (Italy) and the island of Lesvos (Greece). The booklet will emphasise that no discussion of policy effects and effectiveness at the local scale can be understood without a grasp of the link between ***policies and politics***. The booklet will conclude with a discussion of ***lessons that have been learnt*** so far with regard to policy implementation and effectiveness at the local scale in the Northern Mediterranean, and what the ***future perspectives*** are for the policy/desertification interface. This will culminate in ***recommendations for a holistic and integrated desertification policy package*** for the Northern Mediterranean that will, hopefully, help to better address current desertification problems.

Policy as a process: how does it work?

- *The policy process includes the stages of formulation, enactment, transposition and implementation*
- *Policy is generally formulated by actors associated with nation state institutions*
- *The local level (or grassroots level) is the most important policy level where policy finds direct expression 'on the ground'*
- *Policy enactment does not guarantee successful implementation on the ground (implementation gap)*
- *Policies can have direct and indirect effects on desertification processes (those with indirect effects often exacerbate desertification, e.g. agricultural policies)*
- *Policy-making is an inherently political process which means that understanding the goals, aspirations and needs of stakeholder groups is crucial*

In democratic societies policies form the basic framework for ***regulating human action***. The policy process includes the ***formulation stage*** (where ideas for policies are formulated on the basis of incremental discussions of various stakeholders involved), the ***enactment stage*** (where a formal policy document is produced and becomes 'law'), the ***transposition stage*** (important in the European Union where EU-based policies are transposed into member state legal frameworks and laws), and the ***implementation stage*** (where policy is transferred to the 'grassroots level' with the aim of changing human action on the ground). Policies are usually formulated by policy-makers associated with ***nation state*** institutions (e.g. environment or agricultural ministries), although increasingly non-state actors are playing an important part in influencing policy processes from formulation to implementation. The ***grassroots level*** (i.e. the level where individuals or communities are most affected by policy decisions) is the most important policy level as it is at the local scale that EU and national policies are implemented.

The enactment of a policy does not guarantee that a policy 'trickles down' to the grassroots level. Often a policy exists but is not implemented for various reasons (see remainder of this booklet). This is referred to as the ***implementation gap***. This gap highlights that researchers have to investigate the impact and effectiveness of policy on the ground in order to gauge the 'success' of a policy. It is, therefore, not sufficient to analyse the macro-structural level of policy formulation and enactment alone, as this booklet will amply illustrate.

It is important to recognise two key issues associated with the impact of policies on desertification processes at the local level. First, policies can have a ***direct or indirect effect*** on the ground. A ***direct*** impact can, for example, be seen when policies are directly addressing human action associated with desertification processes (e.g. environmental policy that attempts to protect an area from intensive human use by encouraging soil and vegetation protection). However, most policies that we will discuss in this booklet have an ***indirect*** impact on desertification processes by inducing changes in land use decisions that indirectly affect desertification processes. Most agricultural policies fall into this category of indirect policies: they are not explicitly targeting desertification-related processes, but, through their encouragement of change in human behaviour (e.g. by providing subsidies encouraging farmers to intensify agricultural production), they also often contribute to a worsening of desertification processes (see case studies below). Second, policy making is an inherently ***political process*** in which the understanding of who holds the power in actor networks is crucial. Dominant actors (e.g. community leaders) may hold the key for successful policy implementation through their specific roles in the community and may influence the policy reactions of other actors.

Policy implementation in the Northern Mediterranean: issues and concerns

Picture

- *The 'Mediterranean Syndrome' often characterises policy-making and implementation in Mediterranean countries (clientelist administrative traditions; structural deficiencies; corruption; poor cooperation between administrative sectors)*
- *The decentralisation of administrative powers in Mediterranean countries has resulted in uncoordinated policy action*
- *Weak civil society structures impede implementation of sustainable environmental management and, as a result, desertification alleviation*
- *The top-down nature and under-representation of regional perspectives characteristic of EU policy-making further hamper effective desertification control*
- *Mediterranean countries often perceive EU policy as 'Northern-centric' and not well adapted to the Mediterranean situation; due to the threat of land abandonment many Mediterranean regions would prefer policies that help them further intensify, rather than extensify, agricultural production*

In the Northern Mediterranean, structural deficiencies at national level and the hierarchical nature of EU policy design and implementation, with associated implementation deficiencies between EU institutions and member state level, are particularly problematic barriers for desertification mitigation. These problems are referred to as the ***Mediterranean Syndrome***. Typical symptoms of this syndrome are clientilistic administrative traditions and typically autonomous conduct. The Mediterranean syndrome is also characterised by structural deficiencies common to most Mediterranean countries such as corruption, the lack of comprehensive plans or programmes to combat environmental problems, and poor cooperation between the various administrative sectors that hold competence in issues such as desertification. ***Decentralisation*** of administrative power and responsibility in the 1970s and 1980s has further led to uncoordinated policy action and deterioration of accountability at national and EU levels. ***Weak civil society*** makes the promotion of other than economic interests rare or at least difficult at local level. This weakens public opinion exercised through NGOs and voting behaviour which can be a decisive force in the adoption of sustainable policies. Although progress in adopting environmental targets is made at national level, problems such as fragmentation of responsibilities, limited power of environmental institutions, and lack of policy infrastructure, facilities and expert knowledge, are frequent. Consequently, Mediterranean EU member states often lack initiative in environmental policy issues, only acting in response to demands from Brussels, if at all.

While some claim that the Mediterranean Syndrome is beginning to give way, and that both environmental NGOs and civil society are beginning to gain power to interfere in policy issues, structural deficiencies still continue to impose environmentally harmful interpretations of policy goals and practices. Yet, the incompatibility of EU policies with the natural environment (making sustainable use of natural resources difficult) also needs to be acknowledged, as does the top-down nature of EU policy making. The under-representation of regional perspectives is implicit to EU decision-making processes, which may lead to an under-representation of Southern European interests. So, not only do the structural and actor-level characteristics associated with the Mediterranean syndrome act as drivers of unsustainable land management and consequent symptoms of desertification, but also conflicting signals from Europe.

Mediterranean countries often perceive policy pressures from Brussels as a framework imposed by Northern Europe. Many Mediterranean stakeholders, therefore, argue that EU policies (and resultant national legislation) often do not 'fit' interests of Northern Mediterranean countries. Mediterranean policy makers would often prefer to implement policies that enable further ***intensification*** of agricultural practices and land use, while EU policies encourage ***extensification***. Yet, the latter is often not associated with environmental conservation (and desertification mitigation) but with ***land abandonment***, further exacerbating desertification at the local level (e.g. through lack of maintenance of terraces; withdrawal of environmentally sustainable agriculture). Any discussion of policy effects at the local scale, thus, needs to take account the specific policy and environmental situation in the Northern Mediterranean region.

Policy as both a driver and solution for Mediterranean desertification

Picture

- *In the Northern Mediterranean, agricultural policies linked to the EU CAP often exacerbate desertification processes, while environmental policies have to some extent helped alleviate desertification*
- *Policies linked to the organisation of the Common Market linked to arable crops, olive oil, fruit and vegetable, sheep and goat meat and beef and veal have the most significant potential to accelerate desertification processes*
- *Subsidies linked to the CAP have encouraged farmers to intensify production and expand their arable area, thereby often enhancing desertification processes in environmentally vulnerable areas*
- *Limits for livestock densities have often proven too high for most environmentally fragile grazing areas, resulting in increases in stocking densities with potentially dramatic impacts on desertification processes*
- *Agri-environmental and agro-forestry schemes of the EU are often criticised for compromising environmental targets and functioning just as an alternative source of income*
- *Research has shown that the success of agri-environmental schemes in mitigating desertification is mixed, with some schemes being relatively successful, while others have generally not led to substantial environmental improvements and alleviation of desertification processes*
- *Environmental policies have been more successful at tackling desertification problems, with the most relevant policies being the Habitats Directive, the Directives on Environmental Impact Assessment and Strategic Environmental Assessment, and the Water Framework Directive*

An important and often neglected aspect of policy effects at the local scale is that policies can act both as ***drivers*** (causes) of desertification and as ***solutions***. For the Northern Mediterranean, agricultural policies linked to the EU Common Agricultural Policy (CAP) often exacerbate desertification processes, while environmental policies have to some extent helped alleviate desertification.

Examples of policies that both exacerbate and alleviate desertification in the Northern Mediterranean

(?) = policy impact uncertain

Policies that have tended to exacerbate desertification processes

Agricultural policy:
136/66/EEC; 1638/98/EEC; 2366/98/EEC: Organisation of olive oil sector
120/67/EEC; 1910/92/EEC; 2309/97/EEC: Organisation of durum wheat cultivation
2727/75/EEC; 1765/92/EEC; 1251/99/EEC; 1253/99/EEC: Organisation of cereal, oilseeds and protein crop sectors
1837/80/EEC; 2467/98/EEC; 2529/01/EEC: Organisation of sheep and goat sector
797/85/EEC; 2329/91/EEC; 950/97/EEC: Improving efficiency of agricultural structures
3013/89/EEC; 2069/92/EEC: Organisation of the sheep and goat sector
2019/93/EEC: Improving economic situation of small islands in Aegean
2201/96/EEC: Organisation of fruit and vegetable sectors (incl. almonds)
951/97/EEC: Investment in agriculture; improving processing and marketing of agricultural products
1254/99/EEC: Organisation of beef and veal sector

Forest policy
4256/88/EEC: Development and exploitation of forests (?)
867/90/EEC: Transformation and commercialisation of forest products (?)

Policies that have tended to alleviate desertification processes

Water policy:
2000/60/EEC: Framework for community action in water policy
80/68/EEC: Protection of groundwater against pollution
1975/82/EEC: Irrigation works in mountainous areas and LFAs

Environmental and nature conservation policies:
409/79/EEC: Conservation of wild birds
337/85/EEC: Environmental Impact Assessment
479/86/EEC: Protection of the environment in the Mediterranean basin
43/92/EEC: Conservation of natural habitats and wild fauna and flora (Habitats Directive)
42/2001/EEC: Environmental Impact Assessment

Forest policy:
3229/86/EEC; 2158/92/EEC; 308/97/EEC: Protection from forest fires
2080/92/EEC: Forestry measures in agriculture (?)

797/85/EEC: Afforestation and set-aside

Agricultural policy:
1094/88/EEC: Set-aside
2378/91/EEC: Extensification of production in sensitive areas
3072/95/EEC: Compensation payments to cereal crop producers
2078/92/EEC: Agri-environmental regulation (?)
1257/99/EEC: Rural development regulation (?)

Agricultural policies as a key driver for desertification processes at the local scale

Agricultural policies under the CAP provide ***subsidies*** for agricultural products. They are implemented and monitored by national agencies, often involving local-level policy officials whose actions the European Commission can not always control. The amount of subsidies a farm receives, and more importantly the area of eligible land or the number of eligible cattle, is ultimately controlled by the ***discretion of administrative officials*** below ministerial level. Policies for ***Common Market Organisations*** (CMOs) linked to arable crops, olive oil, fruit and vegetable, sheep and goat meat and beef and veal have the most significant potential to accelerate desertification processes (see table). Since the 1992 CAP reform, all subsidies paid through the arable regimes have been based on land area, which has implications for encouraging farmers to ***expand*** their arable area, thereby often enhancing desertification processes.

Livestock CMOs contain requirements for stocking density, and the Beef Regime has an extensification premium for which the maximum stocking density has varied from 1 to 1.6 livestock units/ha. These limits have proven too high for most environmentally fragile grazing areas, often resulting in ***increases in stocking densities*** (rather than decreases) with potentially dramatic impacts on desertification processes (see example of Greece below). In the Northern Mediterranean stocking densities have tended to increase, either due to changing farming practices (lack of pasture rotation) or because of subsidies received through the CAP. Livestock quotas have been particularly expanded within so-called 'Less Favoured Areas' of the EU (agriculturally marginal areas often in hilly or mountainous areas).

Agri-environmental, agro-forestry and environmental policies as a possible solution for desertification?

The ***agri-environmental*** and ***agro-forestry*** schemes of the EU, both of which have direct desertification mitigating aims (as discussed above), have shown mixed results for desertification mitigation. These policies are often criticised for compromising environmental targets and functioning just as an alternative source of income. Particularly the EU agri-environmental regulation is notorious for remaining open to interpretation in the implementation phase. Administrative agents responsible for implementing these regulations at regional and local levels are in a critical position to determine the ***interpretation of the goal*** of these policies into practice. Some schemes (e.g. afforestation schemes) have been relatively successful at preventing desertification, while others (especially those relying on farmers' voluntary participation) have generally not led to substantial alleviation of desertification processes. Another cause for concern is the ***lack of financial weight*** attached to these policies, particularly in comparison to CAP production subsidies. Often, possible beneficial effects derived from agri-environmental and agro-forestry schemes in terms of counteracting desertification are offset by other policies *encouraging* intensification and unsuitable management practices.

Picture

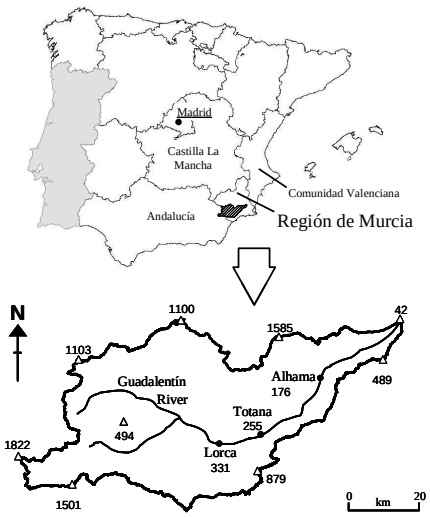
Environmental policies have had a more direct impact on desertification processes at the local level, although the extent to which desertification is tackled by environmental policies in general has been subject to criticism. EU environmental policy has induced a considerable increase in national level legislation in member states, although a completely different matter is how, or rather whether, resulting legislation is implemented into practice. Environmental policies most relevant to desertification in the Northern Mediterranean are the ***Habitats Directive***, which designates areas as protected with limited options for management; the Directives on ***Environmental Impact Assessment*** and ***Strategic Environmental Assessment*** which define procedures for assessing the environmental impact of potential projects, plans and programmes; and the ***Water Framework Directive*** which ensures the protection of water from pollutants and sets requirements for river-basin based management systems.

Policies and desertification: the case of the Guadalentín valley (Spain)

Picture

- *The Guadalentín valley is one of the areas most severely affected by desertification in Europe*
- *The main drivers of desertification are associated with groundwater over-exploitation and salinisation, and with erosive dynamics in hilly dryland areas based on expansion of intensive crops*
- *Both policies and institutional frameworks have led to an unquestioned expansion of environmentally destructive irrigation farming*
- *CAP subsidies have encouraged expansion of intensive crops in the drylands exacerbating erosive processes*
- *Some positive results of CAP policies can be observed through implementation of desertification alleviating agri-environmental schemes and, more importantly, through the maintenance of remnant traditional farming practices predicated on farmers' economic survival based on subsidies*

The ***Guadalentín valley*** in the region of Murcia represents one of the ***most severe cases of desertification*** in Southern Europe. Surface and groundwater over-exploitation, soil salinisation and natural habitat destruction, together with a large increase of ***irrigated agriculture*** in the lowlands, have enhanced desertification problems. Expansion of irrigated agriculture is a main driver for semi-natural habitat destruction and aquifer depletion in a semi-arid climate, leading to desiccation of boreholes and aquifer salinisation. The area also suffers from ***intense erosive dynamics*** in hilly dryland areas, rooted in historical landuses and present management changes acting on a sensitive combination of semi-arid climate and vulnerable soils. As a result, the Guadalentín has been one of the target areas for long-term research on physical and social processes of desertification (e.g. EU Project MEDALUS, MEDACTION).


Madrid
Castilla La Mancha
Comunidad Valenciana
Andalucía
Región de Murcia
N
1100
42
1585
1103
Guadalentín River
Alhama
176
489
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255
494
1822
Lorca
331
879
1501
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In less than two generations, farmers have returned from forced emigration to live in a region with ***one of the highest growth rates of agricultural production*** in Spain. The spread of irrigated land has been part of a regional trend, now covering one third of the agricultural area in the region, more than twofold the national level. The development of horticultural production and related activities has led to ***remarkable economic development*** in the area. The key issue regarding irrigation and desertification issues (i.e. ***salinisation*** and ***water mismanagement***) highlights that the economic significance of irrigation farming has given this type of farming unanimous support from the entire institutional and political spectrum.

The Tajo-Segura water transfer channel was the main development underlying irrigation expansion after 1980, the time period when most permits for running water were allocated. Although the Spanish 1985 Water Act legalised most groundwater pumps and implemented a system of extraction permits, this legislation could not prevent the spread of ***illegal groundwater extraction*** activities. As irrigation grew during the late 1980s, an unregulated water market emerged with permit owners illegally selling water they were allocated but did not use. The irrigation issue was exacerbated in the 1980s by ***structural aid for farm modernisation*** after Spain's entry into the EEC. Although this helped increase farm productivity, it also indirectly promoted irrigation expansion with consequent increased pressure on water resources. The new 1999 Water Act prohibited the building of new wells but could not reverse the trend. Rural policy design and implementation continued to be dominated by an ethos in which agriculture and water policies combined to modernise and improve the competitiveness of irrigation. As a result, ***overexploitation of groundwater resources*** intensified, impacting on soils due to salinisation, and on remnant wildlife habitats linked to the drying up of natural wells and wetlands and through habitat destruction. ***Agri-environmental schemes*** targeting irrigation land have had little impact on desertification beyond compulsory reduction in chemical input under integrated pest control measures.

In ***dryland farming areas*** in the Guadalentín, meanwhile, ***policy instruments*** (mainly CAP-related) have targeted dryland crops, such as cereals, almonds and olives. But the mostly hilly areas of the drylands have also seen the ***indirect influence of policies*** behind irrigation, both in terms of uncontrolled invasion of former dryland areas by irrigated citrus fruit plantations and through the lack of social recognition given to the drylands as government attention is focused more on irrigation farming. The beginning of contemporary changes in the drylands can be dated to the early 1980s when prospects about forthcoming CAP direct payments encouraged ***expansion of cereal crops and almond plantations*** in previously abandoned areas at the expense of recovering scrublands that had helped alleviate desertification processes. Creation of new fields in former scrubland areas, as well as ***abandonment of soil protection techniques*** on traditionally farmed land due to intensification were key drivers for erosion. New almond plantations were particularly harmful, as they were often planted after substantial surface levelling with heavy machinery that destroyed less erosion-prone traditional terracing systems.

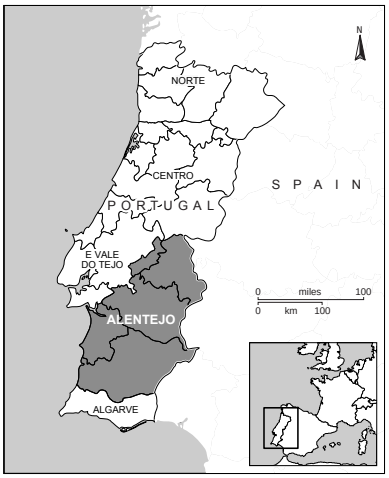
Since EU accession in 1986, changes in crop patterns have been exacerbated in the drylands, with economically marginal cereals further declining at the benefit of ***permanent crops*** including almonds, olives and vineyards. However, some CAP policies after 1988 (e.g. set-aside) were beneficial for desertification mitigation, as ***set-aside allowed the natural recovery of protective vegetation***, thereby reducing erosion. Yet, the 1992 CAP reform measures largely failed to help combating desertification because of the specific design of these measures and due to ***long delays in implementation***. ***Cereal extensification*** has been the most successful, while ***ploughing along contour lines*** has had the most tangible effects for erosion prevention. Nonetheless, the subsidy culture continues to be a threat for desertification. ***Policies have played a contradictory role*** in the drylands, simultaneously promoting agricultural set-aside and landuse intensification, while erosion mitigation has never been an objective of policies associated with agricultural subsidies. Nonetheless, CAP subsidies, including agri-environmental schemes, have contributed to the ***maintenance of marginal farming*** activities in the drylands severely threatened by land abandonment because of traditionally low farm income. In this respect, direct payments for cereals and olives, as well as subsidies for the enhancement of almond plantations, have played a crucial role together with the more recent agri-environmental payments. This has led to the, at least partial, ***maintenance of desertification-mitigating farming practices*** such as terracing or ploughing along contours – crucial management techniques in terms of erosion prevention.

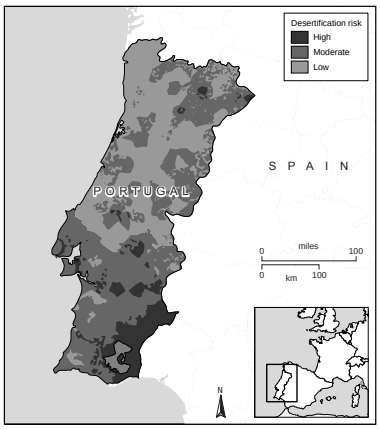
Policies and desertification: the case of the Alentejo (Portugal)

Picture

- *In the Alentejo, human landuse has often resulted in degradation of soil and water resources*
- *Traditionally, sustainable agri-sylvi-pastoral systems such as the montados have played a crucial role in mitigating desertification processes*
- *Policy impacts have been varied, with agricultural policies since Portugal's EEC accession in 1986 generally contributing to landuse change with negative effects for desertification, while some environmental policies (at national and EU levels) have helped mitigate desertification*
- *The effects of agri-environmental policies on desertification mitigation have been disappointing so far, largely due to poor implementation and low farmer uptake*

In the Alentejo, environmental change induced by human action has created a cause-effect relationship that has frequently resulted in ***degradation*** of soil and water resources. This has ultimately led to a reduction of farming and livestock activities with a ***lowering of productivity*** and resilience of local ecosystems. Poorer soils usually support pastures, ***montados*** (sustainable pastoral/arable systems with a protective holm and cork oak tree cover), areas for livestock grazing, forestry, and scrublands, and are, arguably, the most vulnerable with regard to landuse change and desertification processes. As a result, the Alentejo has formed an ideal case study for the analysis of policy effects on desertification processes in Portugal through the EU-funded MEDACTION project.





Policy impacts have been varied and complex, with some policies having had clearly measurable and tangible effects, while other impacts have been more subtle and difficult to specify. While ***entry of Portugal to the EEC in 1986***, and the consequent implementation of CAP policies, initially

encouraged agricultural ***intensification***, the CAP reform in 1992 encouraged ***extensification***. These sudden changes in policy direction caught Alentejo farmers unaware, as they were still in the middle of the process of farm modernisation. After 1995, the failure of the Portuguese administration to provide adequate payments for the Accompanying Measures of the CAP Reform (EU Regulations 2078/92, 2079/92 and 2080/92) led to a reduction in income for Alentejo farmers, with further ***negative effects on traditional farm management practices*** and maintenance of protective vegetation cover. This situation has been exacerbated by present policies under Agenda 2000. Many farms in the Alentejo have disappeared and there has been concentration into fewer farms, resulting in larger average size, as well as abandoned areas – all with important repercussions for desertification.

Portugal's accession to the EEC in 1986 was the main cause for ***recent landuse changes***. The CAP initially created a climate for agricultural investment and stability, and focused on production of cereals in the Alentejo, encouraging increased use of fertilisers, agri-chemicals and irrigation. Old olive groves, orchards and many montados were ***destroyed*** to increase areas for irrigated cereals and other highly subsidised annual crops such as sunflowers. As a result, this period was ***negative from an erosion and desertification point-of-view***. The CAP reforms of 1992 focusing on extensification (implemented in 1994) also led to landuse changes, especially as cereal production lost its political position as a priority crop. Yet, possible new orientations of landuse, such as environmentally-friendly farming through ***agri-environmental measures*** or ***afforestation*** of farmland, have been hampered by both the reluctance of farmers to change traditional management systems and by the complexity of the proposed agri-environmental policy package. The Alentejo has particularly witnessed dramatic changes in crop management away from soft to ***durum wheat*** – a process almost entirely driven by high area subsidy payments. Over the past two decades, the ***influence of subsidies*** has often been a stronger driver for landuse change than the value of the farm produce itself, resulting in an unsustainable farming climate in which farmers have been forced to adopt management decisions that were often not the best for the environment.

Nonetheless, recent changes to the policy-orientation of the CAP have produced ***some positive environmental impacts*** such as increase in biodiversity, reduction of erosion and water and soil pollution, as well as extensification of livestock production. These policies have also reduced incentives for farmers to further destroy oak trees on the montados. However, the socio-economic situation of Alentejo farmers and local communities is negatively affected by the reduction of support subsidies. This means that, in the medium and long term, the economic situation will produce ***negative environmental impacts*** because a certain level of human management is crucial to maintain and restore landscape systems and to prevent further encroachment from desertification. There are currently insufficient management solutions to allow satisfactory implementation of the new decoupled CAP instruments in helping to control desertification.

These trends have been, to some extent at least, counterbalanced by ***set-aside policy***, as well as ***agri-environmental measures*** for minimal tillage, direct drilling and extensive cereal cultivation, that all have positive effects for ***desertification mitigation***. However, agri-environmental measures have only recently been implemented (2004). They are complex with regard to requirements for farmers and implementation and monitoring and, as a result, uptake by farmers has been relatively low. The main two deterrents for successful implementation of agri-environmental policies have been that ***payments have been too low*** and the often ***high cost of investment*** required to achieve the aims of specific agri-environmental measures.

EU initiatives such as the ***Leader*** and ***Life*** programmes, EU directives on ***biodiversity, birds, nitrates and water***, as well as the influence of ***National Protected Areas*** and areas included in the ***NATURA 2000*** network have had more immediate effects. Although implementation of most of these policies is recent, the area protected (18% of the Alentejo) is significant. In particular, NATURA 2000 legislation has helped ***control the destruction*** of a number of important Mediterranean habitats. ***National and regional environmental programmes*** also include measures that may be useful for restoring vegetation around dams and river beds, and for the introduction of management systems for subterranean water systems. Other policies currently being implemented which may also help to control desertification include ***hydrological river basin plans***, and the ***Ecological and Agricultural National Reserve***, a general planning classification of landuse which aims at helping to prevent dramatic changes of management in these areas.

Policies and desertification: the case of the Agri Basin (Italy)

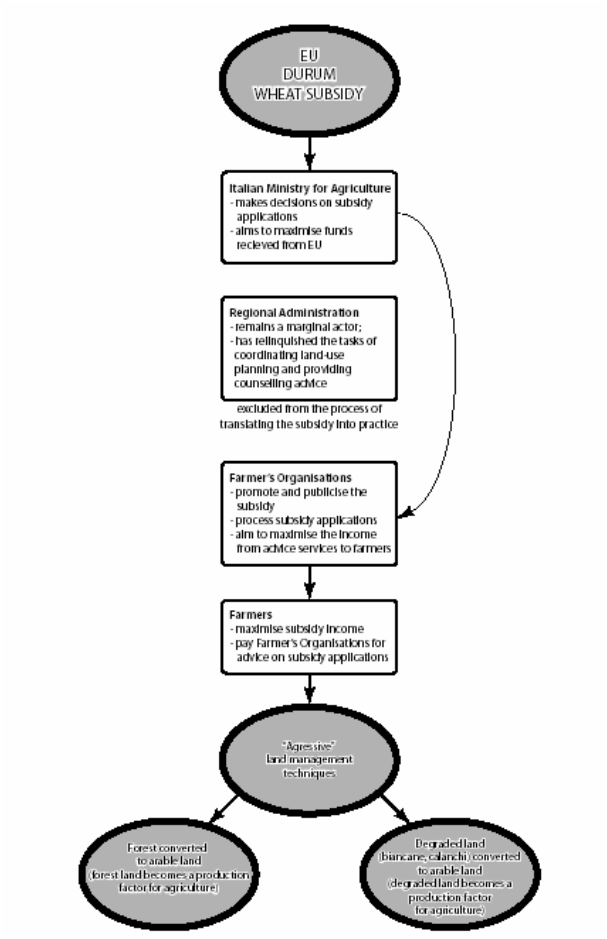
Picture

- *The Agri Basin is one of the areas worst affected by desertification in Italy*
- *The area has long suffered from outmigration which has exacerbated desertification problems due to lack of maintenance of traditional environmentally sustainable farming systems*
- *CAP subsidies linked to durum wheat production, in particular, have led to substantial expansion and intensification of arable farming with concurrent land degradation problems*
- *National and regional policies for natural resources management have not yet substantially alleviated desertification in the Agri as they operate under an unclear framework of decision-making and implementation*

The ***Agri basin*** located in the Basilicata region of southern Italy is one of the ***worst affected*** by desertification in Italy and has, as a result, formed the focus of international desertification research since the early 1990s. Particularly in the middle Agri basin, ***water erosion*** leading to gully formation and the development of 'badlands' is pronounced. Throughout the Agri, ***outmigration*** has been a problem with continuous population loss – a serious issue not only in socio-economic and cultural terms, but also with regard to maintenance of traditional land management practices that have helped mitigate desertification processes. There is a clear link between ***demographic dynamics*** and desertification processes in the Agri. Depopulation is caused by lack of proper social and development policy and is a key additional explanation for desertification processes in Italy, together with the lack of a coherent landuse policy framework.

From the beginning of the 1980s, policy changes at both EU and national levels have enabled the regional government of Basilicata to implement new policies for the agricultural sector. In particular, the regional government has encouraged young farmers to increase cooperation among landholders through the establishment of fruit orchards, promotion of traditional arable crops, expansion of irrigation and mechanisation, and husbandry of sheep and goats aimed at dairy products typical for the region. As a result, ***substantial landuse changes*** have occurred in the Agri basin over the last decade. Although beneficial in terms of short-term socio-economic development, some of the resulting changes have directly and indirectly ***exacerbated land degradation***. In addition, subsidy-based agricultural policies linked to the CAP have discouraged farmers from sustainably managing natural resources. An irreversible process has started that prevents farmers from adopting 'good farming practice' that would be beneficial for sustainable soil management.

One of the key policy drivers for landuse change in southern Italy has been the implementation of policies supporting ***durum wheat***. This has led to an uncontrolled increase in durum wheat cultivation, with concurrent detrimental effects on natural ecosystems. The reason for large-scale ***soil degradation*** and ecological damage created by this 'distorted' implementation of EU regulations is particularly linked to erosion-prone soil types prevalent in many areas of southern Italy that react poorly to more intensive cultivation. The situation was made worse because the submission of applications for durum wheat subsidies was organised almost exclusively by farmers' unions, and as these unions are paid by farmers for their services, this has tended to further increase the number of applicants receiving durum wheat subsidies. Cultivation of durum wheat largely takes place in order to ***'crop the subsidy'***, even in areas where it is virtually impossible to successfully cultivate durum wheat. This has been a particularly unfortunate trend with regard to desertification mitigation, as in recent times many farmers worried about continuing yield decreases had begun using more ***environmentally friendly farming techniques*** such as more shallow ploughing, sod seeding, or minimum tillage practices (often encouraged by agri-environmental schemes).



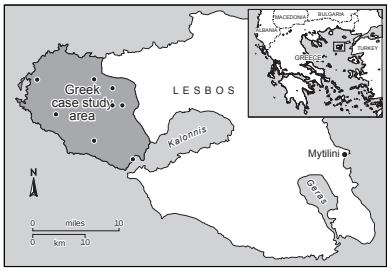
CAP policies have been one of the ***key policy drivers*** behind desertification processes in the Agri basin, especially as the subsidy regime linked to the CAP has often led to ***environmentally unsustainable intensification of agriculture*** in vulnerable farming areas. National and regional policies for natural resources management have not yet substantially alleviated desertification in the Agri, especially as they operate under a relatively unclear framework of both decision-making and implementation powers with a multiplicity of uncoordinated authorities.

Policies and desertification: the case of Lesvos (Greece)

Picture

- *The north-west of Lesvos (Greece) is highly desertified and has provided the case study of a recent investigation into the effects of EU policies at the local level*
- *CAP-related policies emerge as key drivers for unsustainable increases in sheep numbers*
- *CAP subsidies, farm modernisation aid and special policies for the development of remote Greek Island areas have led to an intensification of agriculture in Lesvos, with concurrent exacerbation of desertification processes*
- *The lack of environmental compatibility of the CAP policy regime has only recently been recognised*

The ***island of Lesvos*** is the northernmost of the large islands in the Aegean Sea. In the north-east there are bare uncultivated expanses of land, most of which are used as pastures. In the south-east, extending towards the centre and the north-east, the island is densely planted with olive groves. The north-west, characterised by extensive pastures for sheep farming, was the focus of a recent investigation into interlinkages between policies and desertification at the local level (EU MEDACTION Project). Due to the natural vulnerability of the north-west to erosion, landuse is a critical factor in exacerbating ***desertification processes***, and sheep pastures are currently the most degraded agricultural area of the entire island. The danger of desertification has been exacerbated by the ***increase in sheep numbers***, a development attributed to EU CAP policies which has led to overgrazing, disappearance of vegetation and subsequent erosion.



Four CAP-related policies stand out with regard to their specific influence on landuse change in north-west Lesvos. These include ***sheep and goat meat subsidies***, structural policy measures like ***LFA payments***, special ***policies for aiding small islands in the Aegean***, and policy measures for the ***modernisation of holdings***. From 1980 onwards, ***CAP subsidies*** were introduced for sheep and goat meat. Subsidies have taken the form of an annual premium, with the amount of payments based on the number of sheep and goats owned by an applicant. Initially there were no limitations on the number of animals for which subsidies could be received, but after 1989 the maximum number of animals eligible for subsidy was capped at 1,000 head/farm. In the late 1990s, further reform of the CAP introduced basic measures of environmental protection with requirements for a minimum grazing area of 1 livestock unit/ha in Greek island areas. However, the resultant grazing load, although within the limits prescribed by the Greek 'code of good farming practice', has substantially ***exceeded the carrying capacity*** of the meagre pastures and has led to visible and measurable ***exacerbation of desertification processes***. In addition, the 'forced' specialisation in sheep farming, based on generous CAP subsidies, has led to abandonment of traditional cultivation, particularly resulting in a diminution of protective terraces.

LFA policies are the key component of CAP structural measures implemented in the area. Member states are asked to provide special subsidies to farmers so that ***farming activities in disadvantaged areas are stimulated***, and living standards of rural communities improved All rural communities in north-west Lesvos have been classified as 'less favoured'. ***Compensatory allowances*** are particularly important, aiming at providing financial help to farms losing income because of additional production costs linked to both farm location in disadvantaged areas and reduced production due to severe natural disadvantages. The amount of subsidy is determined in relation to the ***number*** of eligible animals. That livestock numbers define farmer income in LFAs has been an unfortunate policy prescription, as it has often encouraged farmers to ***exceed the carrying capacity*** of their pastures, thereby ***exacerbating desertification processes***.

Recognising the special accessibility problems of remote insular areas of its member states, the Community provides ***special aid to small islands in the Aegean***. Assistance takes the form of a ***subsidy for the transport*** of agricultural products and results in lower purchase prices for animal fodder. This has provided further inducement for farmers to ***increase sheep numbers***, with concurrent negative effects on environmental sustainability. In addition, EU policies for the ***modernisation of farm holdings*** also influence the development of sheep farming in Lesvos, aimed specifically at improving the income of farmers through modernisation of production units – further ***drivers for intensification*** of farming in an environmentally highly vulnerable area.

The prospects with regard to future desertification alleviation through changed land management practices and a changing policy regime look ***relatively bleak*** for the most desertified areas of Lesvos. Even though environmental protection was one of the aims of the EU structural regulations, and although ***environmentally-friendly investments*** were encouraged by many EU policies, it is only recently that specific reference has been made to the ***environmental compatibility of implemented policies.***

Recommendations for a holistic and integrated desertification policy package

Picture

- *Policies have largely failed to address desertification in Southern Europe*
- *Local stakeholders are not sufficiently included in policy formulation and implementation*
- *Agricultural actors have tended to focus on receipt of subsidies and less on sustainable environmental management*
- *Agri-environmental policy has particularly failed to address desertification processes, although there are some promising policy developments at EU level*
- *The policy frameworks needs to be substantially altered; negative outcomes result from the lack of a unified and coherent EU desertification policy (piecemeal policy approaches); there is urgent need for a unified and holistic EU-based desertification policy framework*

This booklet has provided some insight into why ***policies have failed*** to adequately address desertification issues at the local level in desertification-affected areas of the Northern Mediterranean, and, particularly, why in some cases policies have even ***exacerbated*** desertification problems. The rigid ***top-down policy model of the EU*** and the lack of both accountability and consultation at regional and local levels play a key role in creating environmentally unsustainable policy outcomes. The effectiveness of existing policies has been further hampered by different ***policy agendas*** and interpretations of desertification held by various actors in Southern Europe. Any drafting of new policies affecting localities in Southern Europe characterised by desertification-related problems needs to ***include local stakeholders*** in all stages of the policy continuum from policy formulation, design, implementation and monitoring of policy success or failure.

The consequences of desertification are not always easily seen in many agricultural areas of the Northern Mediterranean, and it is often difficult for farmers to associate specific changes in ***landuse*** with the possibility of increasing ***desertification risks***. This situation has been exacerbated by the fact that the notion of 'desertification' is interpreted differently by both the various policy-makers involved in implementing policies aimed at alleviating desertification risk and by the farmers themselves. This has resulted in serious ***difficulties in successful implementation*** of actions and policies to combat and mitigate desertification across the Mediterranean.

There are five reasons why detrimental and ineffective policy outcomes have predominated in the Northern Mediterranean:

- ***Agricultural actors*** tend to dominate decision-making about using (and abusing) policies at farm level (especially subsidies), and both environmental expertise and interests are largely missing from key local actors. As a result, natural resources like soil and water are often perceived as ***production factors*** and sources of farm-level and local economic benefit, rather than as natural resources that should be managed sustainably to alleviate desertification.
- Attempts to maximise income accrued from ***EU subsidies*** in the local area, the use of both EU and national ***investment aids*** to promote intensive and technologically-advanced production, and the dominance of ***agricultural interests*** in policy networks increase the degradation of both soil and water resources.
- Erosion damage could have been prevented, had the already existing ***conservation areas and measures*** been enforced more rigidly. This means that with regard to monitoring conservation efforts, particular attention has to be paid to the goals and interests enforced by actors involved in policy implementation.
- Pockets exist where changes ***towards environmentally sustainable application of subsidies*** and investment aids are emerging, but these changes are a response to an already severely degraded environment rather than engendered by endemic forces from within the localities.
- The way desertification is often understood and addressed is ***politically charged*** and linked to the prevailing consensus over the 'best' and 'most justified' use of local natural resources. These are often manifested in the allocation of funding towards large-scale infrastructural developments, for example transfers of water for ***irrigation*** from adjacent catchments.

Several recommendations emerge from this:

1. This booklet has emphasised the ***complexity*** of the current EU and national policy environment influencing landuse change in Southern Europe, with its many direct and indirect effects on

desertification processes. Policy implementation needs to be more sensitive to the ***cultural*** and ***environmental*** context of land management. In particular, channels for public participation need to be established according to the requirements set in National Action Plans (see Booklet X) and in line with the principles of better policy and issue ownership.

2. ***Land managers*** need to be better informed about the extent and ***symptoms of desertification*** in their local area.
3. There are some promising policy developments. For example, the ***EU Strategy on Soil Protection*** contains comprehensive requirements for addressing the soil-related dimensions of desertification, although implementation of these requirements at the local level needs to be improved and tightened. Further, the ***European Spatial Development Perspective*** could act as an incentive to develop a more transparent and comprehensive local planning process for land management. In addition, the inclusion of compulsory compliance with ***good agricultural and environmental conditions*** (GAEC) under the mid-term review of the CAP opens new opportunities for combating desertification problems.
4. The policy environment – as the key driver for landuse change in Southern Europe – needs to be ***substantially altered***. The negative policy outcomes emanating from disparate policies largely result from the ***lack of a unified and coherent EU desertification policy***, as well as from lack of authority of environmental experts and administrators. This has resulted in ***piecemeal policy approaches*** in which policy attempts to mitigate desertification have been spread over a wide array of often uncoordinated EU and national policy domains. A ***unified and holistic EU-based desertification policy framework*** should be put in place that directly addresses desertification problems and that brings together the various, currently rather disparate and disconnected, policies that affect desertification processes in often negative ways.

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