



Desertification

Desertification is the degradation of land in arid, semi-arid, and dry sub-humid areas. It is caused primarily by human activities and climatic variations. Desertification does not refer to the expansion of existing deserts. It occurs because dryland ecosystems, which cover over one third of the world's land area, are extremely vulnerable to over-exploitation and inappropriate land use. Poverty, political instability, deforestation, overgrazing, and bad irrigation practices can all undermine the land's fertility. Over 250 million people are directly affected by desertification. In addition, some one thousand million (or one billion) people in over one hundred countries are at risk. These people include many of the world's poorest, most marginalized, and politically weak citizens. (Source: The United Nations Convention to Combat Desertification: An Explanatory Leaflet).

The Convention

Combating desertification is essential to ensuring the long-term productivity of inhabited drylands. Unfortunately, past efforts have too often failed, and around the world the problem of land degradation continues to worsen. Recognizing the need for a fresh approach, over 110 governments have signed the United Nations Convention to Combat Desertification. This Convention aims to promote effective action through innovative local programs and supportive international partnerships. The treaty acknowledges that the struggle to protect drylands will be a long one -- there will be no quick fix. This is because the causes of desertification are many and complex, ranging from international trade patterns to the unsustainable land management practices of local communities. Real and difficult changes will have to be made, both at the international and the local levels. (Source: The United Nations Convention to Combat Desertification: An Explanatory Leaflet).

The Italian Clearing House on Desertification (<http://www.fao.org/iccd/>) is a tool, intended to support the Italian Committee to Combat Desertification. It serves and links all national stakeholders and focuses on topics related to desertification in Italy and official information, although including information of international interest. It is an instrument guiding users to relevant information and enhancing the networking among existing national, regional and international centres of expertise, web sites, databases and gathering relevant information about the [United Nations Convention to Combat Desertification](#) (UNCCD).

Read more:

<http://www.fao.org/desertification/default.asp>



The European context

Desertification and land management issues in Europe

In the mediterranean region, erosion phenomena are determined by a series of factors linked to the physiography of the region, its geological and geomorphological features, the rainfall regime, and the most recent land use.

Anthropic activities in this environment cause strong changes both in the short and in the medium-long term which threaten the potentiality of its renewal. Deforestation, wrong agricultural practices (gross use of chemical fertilizers, deep mechanical works), use of not idoneous waters for irrigation, and urbanization processes interfere with the natural structure of soils causing the disappearing of surface horizons, rich in organic substances and mineral elements, as well as their replacement by less evolved pedological horizons.

To have a picture of this, just consider that it has been assessed that desertification issue threatens over 60% of the landscape (UNEP) in southern Europe, moreover, a recent map on world soil degradation (UNEP/ISRIC 1992) shows that a large area of Europe is affected by this phenomenon, including central and southern Italy, southern France, southern Portugal, Sardinia, Crete and extensive areas of Greece.

The anthropic pressure on soil mostly driven by a rural culture based on financial returns of crops, livestock and plantations, without taking into consideration the hydrological, climatic and ecological impacts of them, is, furthermore, worsened by the natural causes of erosion. To this pupose, it should be underlined that, even if, in semi-arid areas, wind is considered the main cause for soil erosion and desertification issues, in northern mediterranean areas, however, water is the most important source of soil degradation. As a matter of fact, rainfalls and surface run-off, highly variable both in intensity and duration, cause the soils, often already impoverished in organic substances, to be removed away and eroded.

To cite some examples, in the badlands of south-estern Spain, soil erosion rates are additionally exacerbated by periodic rainfalls which determine prevailing rill and gully erosion, as well as in other regions of France, Italy and Greece, which are characterized by thin soil covers, where large tracts of land are exposed to rain wash and other mass movement.

Since soil erosion poses a significant threat towards land degradation and desertification in Europe, there is a clear need for the development of conservation measures to be coordinated within a more integrated policy at EEC level. In this connection, one of the most difficult tasks in developing policies and management practices is that of relying on management tools which allow a coherent and homogeneous way of assessing the magnitude and extent of the considered phenomena.

The assessment of the areas which are presently affected by desertification issues, as well as of those potentially affected and the determination of the mechanisms driving this dynamic is the key to reduce and prevent those phenomena. Moreover socio-economic measures can be used to



evaluate policy effectiveness with specific emphasis on the policy instruments (legislation, government agencies) and people's response to their implementation.

An important first step towards this process would be the setting-up of an European programme for monitoring and assessment to help coordinating both field research on physical processes, as well as socio-economic information.

At European level the following remedial measures are suggested as for land degradation monitoring and control:

- Revegetation Strategies
- Mixed strategy farming
- Irrigation Management
- Biodiversity
- Forecasting Methods
- Remote Sensing

The role of land management and decision-making in Europe is becoming strategic in the field of desertification control and monitoring.

Early warning systems and desertification

Background

The United Nations Convention to Combat Desertification (UNCCD) was signed in Paris on 17 June 1994 and came into force on 26 December 1996. It provides the innovative framework for the sustainable development, in arid, semi-arid, dry sub-humid areas, of an appropriate implementation mechanism to combat desertification at the global, regional, sub-regional and national levels.

At its second session, the Conference of the Parties (COP), which is the Convention's supreme body, held in Dakar from 30 November to 11 December 1998 and adopted - inter alia- the following decisions:

- to invite Governments to initiate testing the application and the impact indicators as well as the practice

of using those indicators in national reporting to the third session of the COP for the Affected African country Parties;
- to decide that the priority issue to be addressed in depth by the Committee on Science and Technology



(CST) at its third session shall be early warning systems in the broadest sense. Moreover, in order to support the action of CST in regard to this topic, the Parties are invited to submit contributions reporting on the existing experiences of early warning systems, while the specialised Institutions acting in this field are required to facilitate the preparation of the third session.

At present, many early warning systems are not addressing environmental issues, in particular desertification, both in terms of indicators and of factors affecting food security. At the same time, the systems dealing with the monitoring of natural resources have given priority to the environmental aspects, leaving aside the human factor, as the affected and affecting element of the status of desertification.

This initiative - which is to be considered in the above context - aims at providing a better knowledge of the dynamics existing between food security and desertification, as well as to support the integration of the desertification dimension in the existing early warning systems, so as to:

- support the action of the Committee on Science and Technology by producing an evaluation on the problems arising when integrating the environmental dimension - desertification in particular - in the early warning systems.
- create an "enabling environment" among the systems currently under implementation in the fields of early warning and/or environmental monitoring over Africa, bearing an environmental dimension, in particular as regards desertification.

This report is a main part of the initiative sponsored by the Italian co-operation, which include a four-day workshop to be held in Niamey, Niger, from 25 to 28 October 1999. It provides a framework of comparison among the various existing systems operating in the fields of early warning, monitoring and environmental data dissemination and production, that are accessible through the Internet. The quantity of information available as of today is a unique wealth for the implementation of the UNCCD and it can be promptly employed thanks to a closer collaboration among the projects/institutions called to produce a demand-driven information.

This report was prepared by the CeSIA - Accademia dei Georgofili on the basis of the arrangements between the CCD Secretariat and the Italian Co-operation.

Read more:

http://www.fao.org/iccd/object/doc/cesia_A5.htm
