

# What is Desertification?

## DESERTLINKS - Combating Desertification in Mediterranean Europe: Linking Science with Stakeholders



<http://www.kcl.ac.uk/projects/desertlinks/>

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### What is desertification ?

"...degradation of the soil, landscape and bio-productive terrestrial system, in arid, semi-arid and sub-humid areas, resulting from several factors, including climatic change and human activities..."

### United Nations definition (1994)

The **Desertification** phenomenon has been wrongly confused with **Depopulation**, which affects a large portion of the inner part of the country. However, these two phenomena can in fact be related. The loss of soil fertility ends up leading to a decline in agriculture, to land abandonment and ultimately to emigration.

Therefore it is essential to distinguish between the two phenomena, to allow for correct and appropriate measures that combat Desertification and its advance.

Desertification is a **progressive loss of soil fertility, through the destruction of the structure and composition of the soil, which doesn't permit good agricultural productions, or the existence of a vegetation with varied natural species.**



### Causes

There are several factors that contribute to Desertification. Some are natural causes (intense rainfall events, droughts), others are directly related to human activities (agriculture, industry, among others).

In reality, the conjunction of these factors has had a very big negative impact on the natural resources (soil, water and vegetation).

Agricultural activities, because they are based on the use of soil, contribute decisively to Desertification. Therefore, a series of practices and actions, which are bad and degrade the soils and the environment, can be identified.

### Pastures

Overgrazing – Excessive use of the same pastures;  
Excessive density of animals per area;  
Use of pastures not adapted to the soils and climate conditions;  
Compaction of the soil surface by cattle;  
Appearance of a trail net, which favours the action of runoff water.



### Arable Lands

Removal of the vegetation cover (cut, stubble burn);  
Incorrect agricultural practices, like ploughing too deeply, successively and along the slopes, among others;  
Loss of organic matter in the soil, through soil wash by rainfall water;  
Destruction of the soil structure, with incorrect works (ploughing and other);  
Compaction – use of heavy machinery;  
Stored nutrient removal (fallow) – monocultures (e.g. wheat, vineyards, among others), species inadequate to the soil and climate conditions (e.g. sunflower);  
Pollution contamination by toxic residues and chemical products (fertilisers, herbicides, pesticides).



### Irrigated Areas

Incorrect agricultural practices, like excessive use of water and consequent erosion;  
Salinization – formation of salt layers on the surface of the soil, due to the use for irrigation of groundwater with high contents of salt;  
Worrying decrease on the quantity of available underground water;  
Loss of soil fertility by continuous use – depletion.

### Consequences

The main consequence is land abandonment, following the loss of soil fertility. There is loss on the quality of life of the populations, which makes them emigrate.

As a consequence of these migratory movements, a chaotic growth of town receiving these migrants can occur, which means increasing unemployment and marginal behaviours, as well as pollution and other environmental problems.

Several aspects result from the loss of soil fertility :

Breakdown of agricultural production and productivity;  
Decrease of yield and purchase power of the populations;  
Oscillation of product prices, at regional and national markets;  
Social, economical and political instability;  
Increase in wealth disparity between regions;;  
Increase of environmental problems due to the bad use of natural resources;  
Poverty and unemployment.



As it can be concluded, we stand before a very SEVERE phenomenon, to which governments and populations haven't paid the necessary attention.

For this reason it is fundamental to realise that **Desertification exists and is in** course, which makes it extremely urgent to take measures preventing its further advance.

Despite there being a National Action Plan to Combat Desertification, elaborated because Portugal signed the United Nations Convention to Combat Desertification and Drought, it is in the hands of EVERYONE to contribute for the conservation of vital resources for the human being, like SOIL and WATER, as the FUTURE of all of us depends upon the actions and attitudes of the Present.

Being informed is a decisive step to participate combating Desertification.