

# Healthy soil is set to become the next «hot commodity»

It's a simple case of supply and demand.

The global population is projected to reach 9 billion by 2050 – that's a lot of mouths to feed.

To meet that demand, global food production will need to increase by 70% and water management will need significant innovations. Otherwise, millions of us will face a future of hunger, poverty and conflict.

With 44% of global food production taking place in the world's drylands, we all need to consider how susceptible these lands are to desertification, land degradation and drought.

Thankfully, there is a solution. Sustainable land management techniques will help us to protect drylands and global food security, while prospering from the longer term benefits of a green economy.

Drylands soil truly has become the key to sustaining life on earth.

## Top Ten

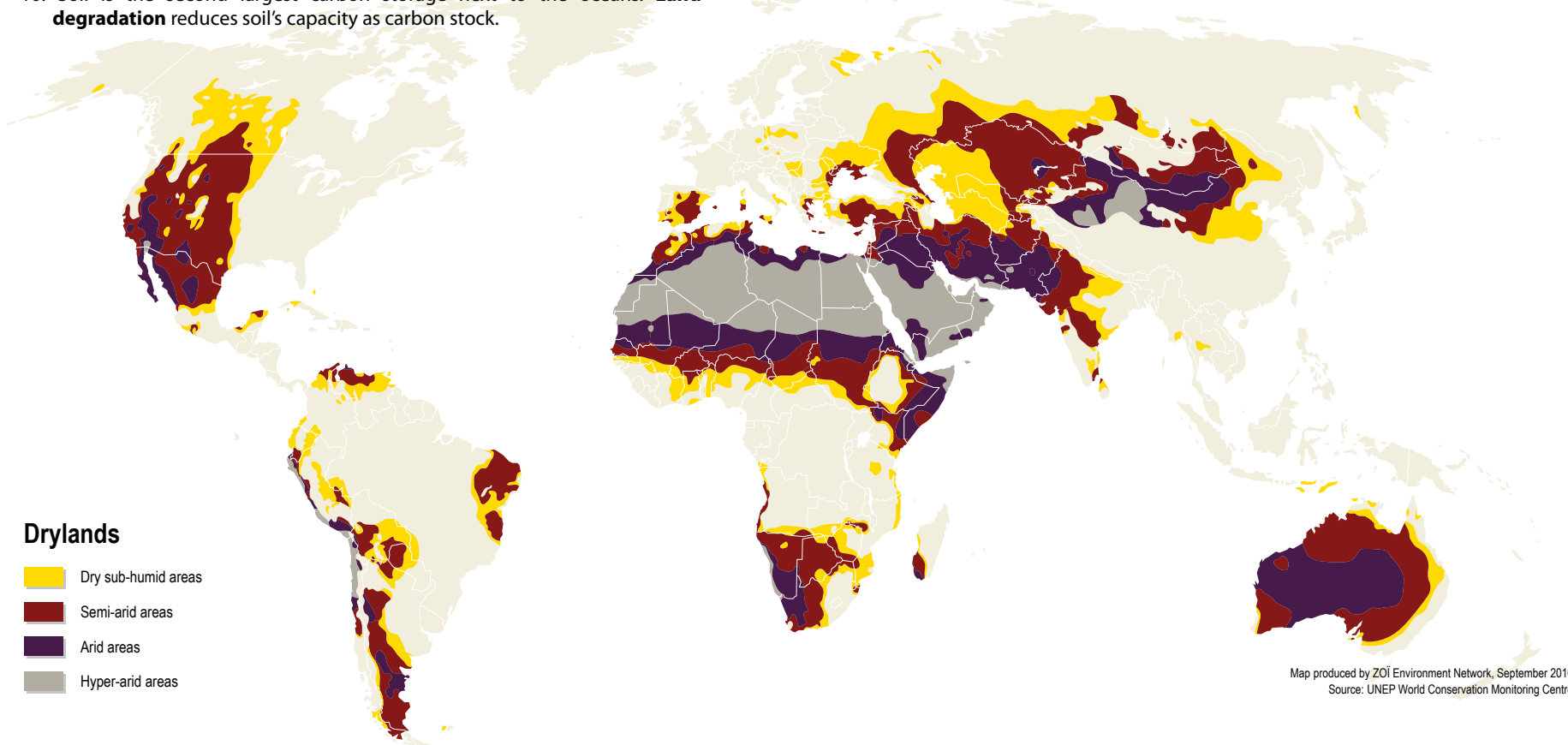
key facts putting the challenge of land degradation into perspective

- 75 billion tons of fertile soil disappear yearly, the most significant, non-renewable geo-resource we have.
- 12 million hectares are lost each year specifically to **desertification and drought**, where 20 million tons of grain could have been grown.
- Greater aridity and persistent severe droughts are expected in the next 20-50 years over most of Africa, southern Europe and the Middle East, Australia, Southeast Asia and most of North and South America.

- Over the next 25 years **land degradation** could reduce global food productivity by as much as 12%, leading to a 30% increase in world food prices.
- 2.6 billion people worldwide depend directly on agriculture, and 70% of the world fresh water resource is used on current agricultural practices to feed the entire world's population.
- 52% of the land used for agriculture is moderately or severely affected by **land degradation**. Meaning 1.5 billion people globally are now feeling the effects.
- 700 million people could be displaced by 2030 from water scarcity, with as many as 50 million displaced in the next 10 years from **desertification** alone.
- 13 million hectares of the world's forests continue to be lost each year.
- 27,000 species are lost each year due to a global loss of biodiversity; **Desertification** is a key factor influencing this loss.
- Soil is the second largest carbon storage next to the oceans. **Land degradation** reduces soil's capacity as carbon stock.

**Drylands**

- Dry sub-humid areas
- Semi-arid areas
- Arid areas
- Hyper-arid areas



## Understanding Desertification, Land Degradation and Drought

Often, when people think of drylands, they think of deserts and hostile living conditions, economic hardship and water scarcity. But that is not what drylands are all about. If managed well, drylands are often fertile and capable of supporting the habitats, crops and livestock that sustain the entire global population.

Poverty, induced by food and water insecurity, will continue to haunt this world for the decades to come. Addressing **desertification, land degradation and drought** through the **sustainable use of land and water resources** should constitute one of the cornerstones of the green economy.

### Land Degradation:

**Land degradation** can happen anywhere in the world and is best explained as a disturbance of the biological cycle upon which life depends. The soil of degraded land has less capacity to support plant growth, resulting in a loss of vegetation and economic productivity. **Land degradation** is often caused by human activities such as over-cultivation, deforestation and poorly planned irrigation systems. Extreme climate events, such as droughts or floods, can also accelerate the process. The different forms of **land degradation** can include:

- Loss of nutritive matter due to agricultural over-exploitation
- Loss of topsoil surface due to wind and water erosion, particularly due to the loss of vegetation
- Landslides caused by the action of water and the effects of vegetation loss
- Increased salinity and soil acidification due to irrigation malpractice
- Soil and water pollution due to excessive use of chemical fertilisers.

### Desertification:

Contrary to popular perception, desertification is not the loss of land to desert or through sand dune movement. Desertification means land degradation (as outlined above), in arid, semi-arid and dry sub-humid areas. These are referred to as drylands and when **land degradation** happens, it can often create desert like conditions.

### Drought:

**Drought** is the naturally occurring phenomenon that exists when precipitation has been significantly below normal recorded levels, causing serious hydrological imbalances that adversely affect land resource production systems. This lack of rainfall coupled with high, sustained temperatures lasting for months, adversely affects the lands ability to support its land based resource production i.e. plants, trees, crops.

## Desertification, Land Degradation and Drought in Context

### Water Stress

Land degradation in the drylands can negatively affect the water cycle, as practically all water reserves are utilized and are often threatened with pollution. While irrigation could improve food production, its inefficient application can also pose a significant risk. Effective drought management and disaster risk reduction plans are required to improve resilience, with specific investment in drought resistant crop and livestock varieties.

### Poverty

Poverty leads to the unsustainable use of the natural environment, particularly the land and water resources, with unsustainable land use such as over-cultivation. These accelerate the movement of drylands towards desertification. However, drylands can be productive and prosperous areas. Land is the main asset of the poor, a green economy is about helping them to make the most out of their asset with pro-poor policies and effective support.

### Food Security and Hunger

Rehabilitating degraded lands and improving the resilience of populations and their agricultural production systems in the face of drought and other extreme climate events, will help us meet the challenge of feeding 9 billion people by 2050. Land and water availability and soil fertility improvement must be the core of all long-term strategies.

### Gender

In dryland agricultural communities, men generally own the land and can produce cash crops to obtain credit and other facilities. Women, on the other hand, rarely own land. As a result, female-headed households are more vulnerable to the environmental and economic crisis caused by land degradation. Empowering women not only help them but also help increasing global food productions.

### Environmental Migration

Drought and land degradation drive people off their land, creating economic migrants and environmental refugees. As they migrate towards cities or regions where survival conditions are initially more promising, these urban areas increase the pressure on productive land resources and water. Our goal is to change the 'degrade – abandon – migrate' template with dryland investment that contributes to human security and political stability.

**DLDD\***

We cannot protect our forests without addressing land degradation as the top driver of deforestation. In total, 2/5th of deforested land (600 million ha) offers restoration opportunities, including dryland forests and areas with low forest cover. Agroforestry, agro-ecology and smart agriculture, among others, can provide a promising avenue for restoration of degraded forests, while feeding the poor.

### Deforestation

\*Desertification, Land Degradation & Drought

As a consequence of land degradation, animal species that are dependent on vegetation have to migrate to other areas to find sufficient resources. This loss of animal and plant species makes the drylands even more vulnerable to change, reducing their resilience to temporary reductions in productivity. It is impossible to protect the planet against the loss of terrestrial biodiversity without addressing land degradation.

### Biodiversity

Desertification is exacerbated by climate change and vice versa. Together they form a 'feedback loop' with the loss of vegetation caused by desertification reducing carbon sinks and increasing emissions from rotting plants. Dryland soil can provide a significant climate benefit as carbon storage – soil carbon accounts for one third of global stock.

### Climate Change

## Global Action

At the UNCCD we believe global issues such as **desertification, land degradation and drought** can only be tackled when countries work in partnership towards protecting soil as a shared global commodity.

Although our primary focus is to improve the livelihoods of affected population by transforming drylands into areas of sustainable development, our ultimate goal is to secure the health and productivity of all land for the well-being of present and future generations.

We believe the best way of achieving this is to forge a global partnership that mainstreams **sustainable land management** into policy and practice. We are dedicated to promoting this as the cornerstone of a green economy that is committed to poverty eradication and sustainable development.

Despite the challenges, drylands are areas of great potential for development. The fact that more than half the world's productive land is dryland emphasizes the critical importance of wise management at global, national and local levels. As with many other environmental challenges, the **fight against desertification, land degradation and the mitigation of the effects of drought** require strategies for effective implementation.



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## The Solution

Together, we can take simple steps to help us all tackle **desertification, land degradation and drought**. We call them our 3Cs:

### Commit / Contribute / Cultivate

- **Commit:** we need to move towards '**Zero net land degradation**'. In essence, if we combine a reduction in current levels of land degradation with an increased effort to restore existing areas of degraded land, we can make the planet '**Land Degradation Neutral**'.
- **Contribute:** everyone can make a contribution to achieving this target; we all have a role to play in mainstreaming **sustainable land management** techniques into policy and practice. In dryland areas, these techniques will increase resilience, diversify production and control erosion. With a combined effort, we can extend the reach of **sustainable land management** techniques even further, making them the cornerstone of a global green economy.
- **Cultivate:** continuous improvement is essential if we are to succeed. We need to cultivate a culture of knowledge sharing, innovation and learning. To encourage this, a mechanism to enable, promote and facilitate the provision of expert scientific advice on land degradation issues to the international community is being considered.

This three stage approach is about taking positive steps now, to protect global food security and reduce the chance of drought becoming famine in the future.

Soil is the thin layer of fertile land that separates us all from extinction – let's make sure we protect it for the well-being of present and future generations.

## The United Nations Convention to Combat Desertification (UNCCD)

*Transforming Drylands*

### Our Origins:

Emerging from the 1992 Earth Summit in Rio, the UNCCD now has 194 member Parties from both developed and developing countries. The Convention is a universal international agreement aimed at promoting a specific global response to **desertification, land degradation and drought**. To make sure the Convention delivers concrete action, each member Party is expected to agree and deliver against specific national commitments.

### The Future:

The world has changed a great deal since 1992. Our **fight against desertification** remains of paramount importance. We have identified the need for a more holistic response to the global threat of **land degradation**, requiring everyone's engagement and support.

Drylands offer great opportunities for local populations. They provide tangible and global benefits. However, there is a genuine risk and growing concern that **desertification, land degradation and drought** will undermine emerging opportunities. If we fail to act, the world will lose out on the inherent potential of these lands.

To find out more about how you can help, contact the UNCCD at:

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# Drylands

# Soil

## sustaining life on earth

United Nations Convention to Combat Desertification  
- Transforming Drylands