



RETAINING WATER, CONSERVING SOIL AND RESTORING DEGRADED LAND

Desertification, or the degradation of drylands, is caused by overcultivation, overgrazing and deforestation, and results in soil exhaustion and soil erosion. It diminishes soil productivity, reduces food production and deprives land of its vegetative cover. It also has negative affects on areas not directly involved, because desertification can also lead to floods, soil salinization, deterioration of water quality, and silting of rivers, streams and reservoirs.

increases thanks to a high level of organic matter and permanent soil cover, allowing a substantial reduction in the amount of water needed for irrigation.

Although there has been little specific research on organic agriculture's potential for combating desertification, several practical trials of organic agriculture systems in arid areas have found that organic agriculture helps bring degraded lands back to fertility and create suitable microclimates in dry areas. For example, 70 ha of desert land near Cairo were converted into fertile soil, able to support livestock and



Organically managed soils are more resilient both to water stress and nutrient loss. Because of this, they have the potential to counter soil degradation. Organic farmers feed their fields with organic matter that enhances degraded soils. Micro-organisms have a good feeding base and create a stable soil structure. Water and nutrient retention capacity



Acacia albida trees and compost raise soil fertility, Senegal



Burning of cow manure to fertilize potato field, Guinea

bees, through organic and biodynamic agricultural methods including composting, mulching and cover cropping. In Kenya and Ghana, organic agroforestry projects were found to fight drought, control erosion and retain moisture.

Other trials studied organic agriculture's ability to counter erosion. In the tropics, even flat lands erode with the use of

herbicides and the lack of soil cover. **In organic agriculture, permanent soil cover is an intrinsic part the system.**

Locally adapted leguminous crops have been found to restore degraded soils very quickly, suppress weeds, fix nitrogen and prevent erosion. When

properly set up and adapted to soil and climatic conditions, they do not compete with the main crops for nutrients or water.



Even though the adoption of organic agriculture seems a viable alternative in arid areas, there is a range of constraints to adopting organic agriculture systems or even individual techniques. These

include a lack of knowledge, scarce availability of organic materials, insecure land tenure, the perception of organic agriculture as being old fashioned, and the fact that extension services promote a way of farming dependent on chemical inputs.

In countries suffering desertification, the promotion of organic agriculture through education and training could be key to bringing degraded land back into production.

More importantly, sound soil management practices can prevent land degradation and further agricultural encroachment in fragile areas.

