

# 2022 Désertif'actions

## Agroecology, a smart strategy for adaptation to drought risks

### Drought, a global concern

Drought is characterized by a period marked by a significant lack of water in a given area. This phenomenon has an impact on vegetation, which then shows notable signs of water stress. As a consequence, drought impacts all plant, animal and human life. It is defined by the UNCCD as “a 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”.

Drought is considered one of the most serious natural disasters, causing short and long-term economic and social losses for millions of people around the world.

- **More than two billion people** live in countries with high water stress (UN-Water, 2019 - UN, 2018). Other estimates are even more pessimistic, with **up to four billion people** - more than half the world's population - already facing severe water stress for at least one month of the year (Global Land Outlook, 2017).
- In 2017, drought led to the worst humanitarian crisis since World War II, when **20 million people** across Africa and the Middle East were on the brink of starvation, (UN-OCHA).
- **700 million people are at risk of being displaced by drought by 2030.** (UN/World Bank High Level Panel on Water 2018)

The risks and frequency of droughts are increased by climate change and weigh heavily on agricultural and food production systems. Unlike preconceived ideas, the industrialization of agriculture promoted for decades does not allow us to cope with this situation and seems, on the contrary, to increase vulnerability.

### Investment is needed to anticipate and adapt to drought risks

Most countries and regions are organizing themselves to deal with the risk of drought with approaches ranging from drought **crisis response, early warning and monitoring** to drought **risk mitigation**. However, anticipation and mitigation measures remain insufficiently implemented, as well as surface and groundwater management policies that are not sufficiently effective to mitigate the consequences of droughts (management of water uses etc.).

- ⇒ As unexpected weather events increase due to climate change and in contexts where pressure on natural resources is already high, it is imperative to strengthen holistic approaches to reducing disaster risk (DRR) and increasing the resilience of communities, economies and ecosystems.

The UNCCD recognizes that **healthy land is a key element in regulating the water cycle**, acting as a natural reservoir of fresh water. Degraded land can no longer fulfil this function.

- ⇒ **To increase drought resilience, it is essential to improve land management, avoid land degradation and intensify land rehabilitation.**



## Agroecology, a smart strategy for adaptation to drought risks

The transformation of agricultural and food systems in drylands through the mobilization of agroecological principles<sup>1</sup> is a relevant way to adapt to drought.

Drought episodes have direct impacts on the food security of populations in the short and long term:

- In drylands, food is heavily dependent on rain-fed agriculture, and droughts and water shortages lead to an immediate reduction in agricultural yields.
- Repeated dry spells lead to increased evaporation, which increases soil salinization and thus long-term degradation, leading to a decrease in the productive potential of the soil.

In drylands, most of the population's food is provided by family farms. The agro-ecological intensification of these production systems, whether rain-fed or irrigated, enables them to produce healthy food in quantity.

## Agroecological technical solutions to drought

An inventory of actions and initiatives carried out by development actors (NGOs, researchers, institutions) in more than 30 countries<sup>2</sup> has made it possible to highlight the technical approaches and solutions of agroecology. The diversification of production, the mobilization of ancestral knowledge or the maintenance of life in the soil, are all ways of ensuring resilient agricultural and food production in the face of drought.

### Ensure conditions for agricultural and food production in areas with limited water availability and high drought risks

#### Agroecology promotes the use of locally developed plant varieties that are adapted to production contexts

- ✓ The production and exchange of farmer seeds allows the selection of seeds that are resistant to water stress and better adapted to rainfall variability.
- ✓ In areas where there is a high risk of drought, plant varieties that were grown in the past and that consume less water are preferred.

#### Agroecology promotes the diversification of production

- ✓ Crop diversification and the promotion of agroforestry make it possible to fragment the risks on various productions and to ensure more continuous harvests throughout the year, thus better coping with a drought episode.

#### Agroecology promotes multiple techniques to maintain soils and favour their water retention capacities

- ✓ Runoff and erosion control measures (bunds, zai) improve water infiltration and storage in the soil.
- ✓ Organic fertilizers help to structure the soil by increasing its biological life, thus improving the water retention capacity of the soil.

<sup>1</sup> See FAO's 10 principles of agroecology <https://www.fao.org/publications/card/fr/c/I9037FR/>

<sup>2</sup> See the Désertif'actions 2022 dynamic: [www.desertif-actions.org](http://www.desertif-actions.org)



## Reduce the negative impact of agricultural and food production on natural resources, in particular water resources

**Agroecology promotes a responsible and adapted management of water resources that allows to reduce the withdrawal of available water resources**

- ✓ Rainwater storage techniques, some of which have been developed locally, can increase the availability of water for irrigation
- ✓ Micro-irrigation or drip irrigation practices avoid wasting water for irrigation
- ✓ Soil cover (mulch, crop layers) limits evaporation and keeps the soil moist.

## Ensuring greater resilience of small-scale farmers and communities to shocks

**Agroecology promotes crop associations and the complementarity between agriculture and livestock, making it possible to depend less on agricultural inputs and to better cope with unexpected events.**

- ✓ The combination of agriculture and livestock farming allows for the production of biomass and straw for livestock feed, as well as the production of manure to fertilise the fields.

**Agroecology promotes collective organization between the different actors of agricultural and food systems, strengthening solidarity in case of crisis**

- ✓ The organization of food system actors in a territory to develop short marketing circuits avoids long distance transport of agricultural products and reduces losses linked to all operations between production and consumption, including prolonged storage.

The non-exhaustive list of these direct effects of agroecological practices shows the relevance of agroecology for improving the resilience of agricultural and food production systems subject to drought risks.

**Why then not consider the principles of agroecology and the support of agroecological transitions in the drought adaptation plans drawn up by the States?**

**The 15<sup>th</sup> Conference of the Parties of the United Nations Convention to Combat Desertification**, from 9 to 20 May 2021 in Abidjan, Ivory Coast, will be an opportunity to review the measures to deal with drought taken under the implementation of the Convention. Countries will set guidelines for further efforts to better address drought risks.

**Agroecology must be placed at the heart of their strategy!**

To this end, we identify several measures that the parties at COP15 should take into account in their negotiations and decisions:

- **Calls on states to integrate the agro-ecological transition of production systems into action plans and projects to combat drought.**

The UNCCD Global Mechanism, which is already assisting countries in the development of action plans to combat drought, should engage in the development of transformative projects integrating the agro-ecological transition to operationalise these action plans.



