



World Food Programme

SAVING
LIVES
CHANGING
LIVES

Tackling hunger at its root

Combating desertification through integrated resilience programmes

CHALLENGES BENEATH OUR FEET

Hunger has a geographic and physical dimension that is often overlooked. Rural population's livelihoods and wellbeing depend on the land they live and work on, and on the important services ecosystems provide. Local social safety nets are largely built upon what the land offers.

Land degradation is one of the most insidious and unnoticed threats to food security, nutrition, and sustainable food systems. Once a tipping point is reached, resilience of ecosystems and populations can collapse: when soils are poor and water scarce, crops and pastures fail more frequently, landscapes rapidly shift into a state of environmental and social bankruptcy, and the world's poorest and most vulnerable are plunged into destitution. Many are trapped in a downward spiral of land degradation and poverty, as natural resources dwindle, agricultural productivity decreases, economic inequalities deepen, hunger rises, vulnerability to disasters and conflict risks increase.

This is felt strongly in the Sahel and overall West Africa, where many of the most vulnerable populations depend on agriculture and pastoralism.

While healthy lands and ecosystems are the very foundation for people's livelihoods and wellbeing, we are off target to reach the goal of the United Nations Convention to Combat Desertification of avoiding, reducing, and reversing land degradation: across the Sahel, about 12 million hectares have been degraded in the past decade alone.

Land degradation coincides and interacts with multiple, interlinked crises affecting the Sahel, including protracted conflict and displacement, limited access to basic services, worsening climate change impacts, lingering economic repercussions of the COVID-19 pandemic, and steeply rising food, fuel, and fertilizer costs aggravated by the conflict in Ukraine.

As a result, hunger and malnutrition are on the rise. This year, **the region is experiencing an unprecedented food and nutrition crisis, with over 43 million people projected to be food insecure during the lean season across Western Africa** - a figure that quadrupled since 2019 - including over 13.5 million people in the G5 Sahel countries. In 2021, close to 10 million children under the age of 5 suffered from acute malnutrition.

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OUR VISION

Despite these challenges, the Sahel is far from being defeated: the region holds enormous potential for ecosystem restoration, including a wealth of untapped groundwater and renewable energy sources. People have shown a great level of solidarity in the face of hardships, and the demographic dividends could be enormous if the young population is provided with the necessary resources and opportunities to thrive. Tapping into this potential demands **unprecedented investments in land rehabilitation**, but also in **education, health and nutrition, green jobs for all**, enabling **social cohesion** and **better governance**.

It is with this vision that WFP, in collaboration with governments and partners, has scaled up an integrated resilience programme in the Sahel: the approach is based on participatory watershed planning, triggering a variety of land rehabilitation activities and linking them to school meals, nutrition programmes and support to smallholder farmers to access markets. In practice, this means bringing degraded land back to life, enabling access to food and healthy diets, getting children back to school, and developing value chains to boost incomes and green jobs.

Sustainable land management is at the center of the WFP integrated resilience approach. Through Food Assistance for Assets (FFA) activities, the most vulnerable and food insecure households in fragile and shock-prone environments are able to meet their immediate food needs through food or cash transfers, while simultaneously rehabilitating land and improving their long-term food security through soil and water conservation measures.

What are land degradation & desertification?

Land degradation is the reduction or loss of biological and economic productivity of land and its constituents: soil, water, and biodiversity. Desertification is defined as land degradation in arid or semi-arid areas, which constitute over 40% of the world's land surface. Most land degradation occurs due to human activities, including through deforestation, pollution, unsustainable cultivation practices, and over-exploitation of soil and water resources. Land degradation and desertification accelerates global warming and biodiversity loss, threaten food security and nutrition, and undermine the resilience and livelihoods of populations across the globe. Source: UNCCD, Global land outlook 2

A variety of measures such as stone and soil bunds, half-moons and zai, sand dune fixation, forestry and agroforestry improve soil fertility, control water runoff, enhance the natural resource base, and restore degraded ecosystems.

Photo below: a woman is growing Sorghum in Goureijma, Assaba region, Mauritania, where WFP supported the community in rehabilitating 13 hectares of agricultural and pastoral land through half moons. By expanding the production and grazing areas, the technology contributes to increased yields and income in the community. WFP/En Haut!





Rehabilitating lands also contributes to the mitigation of and adaptation to climate change, as well as the prevention and reversal of biodiversity loss. FFA programmes enhance on-farm biodiversity through crop diversification and agroforestry, often using local crop varieties, as well as organic fertilisers (composting) and natural pest control methods. They also offer major contributions to climate action by sequestering carbon in soils and vegetation, enhancing community resilience to cascading climate change effects, and reducing risk and exposure to climate hazards such as droughts, floods and wildfires.

Photo above: In Illimazak, Tahoua region, Niger, the community is systematically rehabilitating the degraded watershed. Stone lines and zai pits shown in the photo trap water and reduce erosion, thus helping to restore the productive potential of the land. Between 2019 and 2021, more than 115 ha of land were rehabilitated. Land rehabilitation activities are linked to school meals, adolescent girls support and community-based nutrition programmes as part of an integrated effort to strengthen resilience. WFP/Evelyn Fey

What are the Rio conventions?

The three Rio Conventions – on Desertification (UNCCD), Biological Diversity (CBD), and Climate Change (UNFCCC), emerged from the 1992 Earth Summit. Their mandates address intrinsically linked, interdependent issues that are crucial to sustain life on earth. Breaking the siloes between the three conventions and aligning targets, commitments, and action plans has the potential to yield significant synergies and efficiency gains.

Source: UNCCD, Global Land Outlook 2

What are ecosystems services?

Ecosystems services sustain life on earth: **supporting services** (such as soil formation and biodiversity) enable **provisioning services** (incl. food and water), **regulating services** (incl. macro- and micro-climates) and **cultural services** (incl. education and recreation). Soil biodiversity is literally the foundation of ecosystem functions, determining among other things carbon, nitrogen, and water cycles.



COMMUNITIES KNOW BEST WHAT COMMUNITIES NEED!

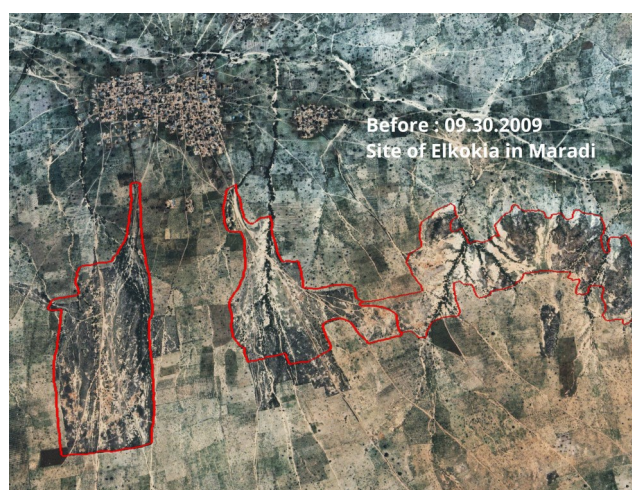
The most vulnerable are disproportionately affected by land degradation, with their voices and experiences often remaining unheard. At the same time, efforts to reverse current trends and restore degraded lands cannot be successful if not aligned with local priorities and embedded within social, institutional and cultural contexts.

That is why communities work with WFP in the Sahel – from programme planning, implementation, and follow-up – to take ownership of their own transformative journeys and claim their parts in solving our biggest global challenges.

Community-based Participatory Planning (CBPP) is at the center of this effort and **creates a platform for inclusive community engagement, where the most vulnerable have the main voice to present their needs and define their solutions.** Participatory planning also facilitates agreements for access to land and water resources for women’s groups, youth, refugees, IDPs, returnees, and the most marginalized people.

Communities in the Sahel have **abundant knowledge of their environment and the natural resources** they rely on – tapping into this knowledge and re-popularizing traditional land management techniques while introducing selected innovations is a **powerful tool to counteract land degradation and protect ecosystems services.**

For instance, WFP is supporting communities in constructing **zai pits and half-moons** at large scale, techniques that farmers in arid regions of the Sahel have used for decades. These structures are dug into the ground capture rainfall, limiting surface water runoff, reducing erosion and contributing to groundwater recharge. They allow to improve soil moisture and fertility, allowing for crops and trees to grow even with little or erratic rainfall.



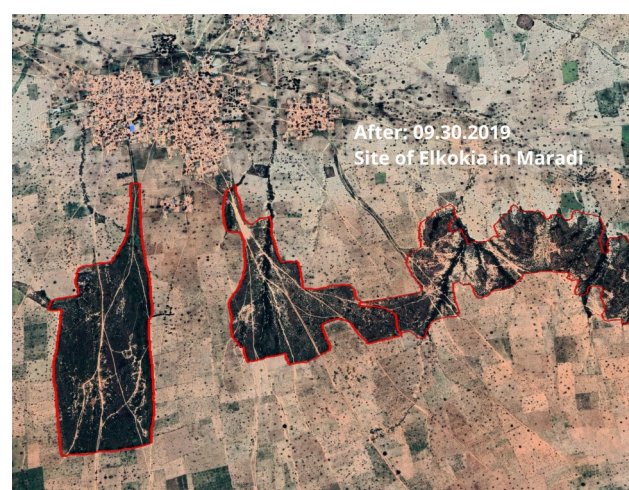
JOINT CHALLENGES, JOINT ACTION

The challenges in the Sahel are enormous. To tackle them, we need to work collectively and ensure all actors are on board. We moved away from small-scale, scattered and short-term approaches. **We encourage and ensure convergence of partners, concentration and integration of different interventions, maximize the scale of investments, and provide capacity support at all levels** to build a new generation of talents and practitioners able to learn and operationalize a variety of land rehabilitation and complementary activities.

The integrated resilience programme is spearheaded by national governments at the centre of planning and implementation, building upon local solutions and good practices. Seeking **operational complementarities and leveraging synergies**, the programme is working in partnership with regional institutions such as the G5 Sahel Executive Secretariat and CILSS, as well as UN agencies, including the Rome Based Agencies and UNICEF, with NGOs, technical and financial partners. Further, has been instrumental in setting up the Sahel University Network for Resilience (REUNIR), including universities from five countries, to facilitate knowledge sharing and advance the institutionalization of resilience tools.

Photo on the left: in Sirighin, Centre-Nord region, Burkina Faso, IDPs and members of the host community work side by side to rehabilitate land and increase yields for household consumption and sales. WFP/Evelyn Fey

Photos below: satellite imagery from before and after interventions at Elkokia site, Maradi region, Niger, where over 93 hectares of degraded rangeland were rehabilitated via FFA activities in 2014-2015. A USAID-commissioned study by NASA show that vegetation cover increased by 63% in the site - clearly visible also in the “after” photo.



KNOWING WHAT WORKS, DOING WHAT WORKS

Since the start of the scale-up in 2018, **WFP and communities have together rehabilitated nearly 109,000 hectares of degraded land and reached more than 2.5 million people** across the G5 Sahel countries. Only three years into implementation, **the programme is already demonstrating significant outcomes** in terms of food security, economic empowerment, natural regeneration, nutrition, access to social services and education, reduction of negative coping mechanisms, and daily hardships, as well as social cohesion – all of which crucial to break the cycle of hunger and pave the way for concrete transformational changes.

EVIDENCE FROM THE GROUND

Survey data from beneficiary households after two years of implementation shows improvements on several aspects: **diets** are overall becoming more regular, more frequent and more diversified, despite the various shocks and stressors affecting the region. The use of **negative coping strategies** such as selling productive assets, livestock or land due to a lack of food or resources to buy food, have decreased.



70% of households indicated improvements in their natural environment thanks to the improvement of soil fertility

Diets are overall becoming more regular, more frequent and more diversified, despite shocks



Between 75-80% of household found that the assets created or rehabilitated contribute to the protection of their household, their belongings, and their production capacities against the impacts of floods and/or droughts.

More than 75% of households state that **assets created have reduced day-to-day hardships**, saved time for their family members, helped them to increase or diversify their production and the agricultural potential through improved water management capacities and soil fertility. 70% of households indicated **improvements in their natural environment** thanks to the improvement of soil fertility and its effects and 77% of households indicated that they had an were better able to **access markets and basic services** (water, sanitation, health, education, etc).

The rehabilitated lands also serve as carbon sinks, thus contributing to climate change mitigation: Together with

the Aghrymet Regional Center, a specialized institute of CILSS, WFP in Niger has measured the carbon sequestration potential of land rehabilitation activities implemented as part of the integrated resilience approach. The study assessed 48 sites, comprising over 39,609 hectares. It showed that a combination of soil and water conservation techniques, afforestation and reforestation, and sustainable land management practices have a carbon sequestration potential of 4.8 million tons by 2030.

Integrated resilience interventions also serve as a buffer to instability: initial research and data collected in Niger suggest that most beneficiaries perceive that WFP's assistance has a positive effect on social cohesion within and between communities, as well as with neighboring villages. Specifically, respondents reported that integrated resilience interventions defused tensions within households by reducing economic stress, reduced conflict over natural resources within the community, and contributed to strengthening exchanges with neighbouring communities through joint activities as well as shared access to school canteens and health centers.

EVIDENCE FROM THE SPACE

In Niger, **WFP partnered with the U.S. Agency for International Development (USAID) and the NASA Marshall Space Flight Center** to assess vegetation changes induced through WFP's asset creation interventions with the help of high-resolution **satellite imagery** and remote sensing techniques.

The findings demonstrate very positive outcomes, with significant positive effects on vegetation that can be attributed to WFP's programmes: on 18 sites in southern Niger that were treated with half-moons or zai, satellite-derived **vegetation indices post-intervention were nearly 50% higher** as compared to previous years and 25% higher than in nearby non-intervened areas, which means improved grazing land for pastoralists and cropland for farmers.

Together, these analyses strongly suggest that the land rehabilitation techniques used are an effective approach to improving growing conditions in the Sahel.

More to ask:
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More to read:
wfp.org/publications/integrated-resilience-sahel

