



World Food Programme

SAVING
LIVES
CHANGING
LIVES

Water and food security

WFP's contribution to the water sector

Water and food security are inextricably linked. Water quantity, quality, and availability have direct impacts on various dimensions of food security:

- Limited water availability affects food production and access.
- Extreme events such as floods can affect access to food by cutting off access to markets, while droughts affect food production impacting the stability of food supplies.
- Unsafe water and inadequate sanitation affects food utilization by increasing the incidence of waterborne diseases, a major cause of malnutrition.

Lack of nearby water sources reduces the time available for work or education, impacting livelihoods. In many contexts, even if water is accessible, it might not be affordable and expenditure on water might crowd out spending on food.

Water access disproportionately affects women and girls, who spend 200 million hours daily collecting water globally, hindering education and productivity. Inadequate water and sanitation facilities in schools contribute to absenteeism and dropout rates, particularly among girls, perpetuating negative consequences like child marriage. Nearly half

of the world's schools lack proper handwashing facilities, hampering hygiene and learning.

Water is a crucial element in both humanitarian and development agendas. Addressing water access and quality issues lies at the core of responding to emergencies and tackling some of the root causes of current food security challenges. Water-related disasters such as droughts or floods, constituting three-quarters of all recent disasters, often trigger a humanitarian response. About 70 percent of the world's food-insecure live in arid or water-stressed regions. Most of the rest live in areas with an abundance of water but where its quality and access are often compromised.

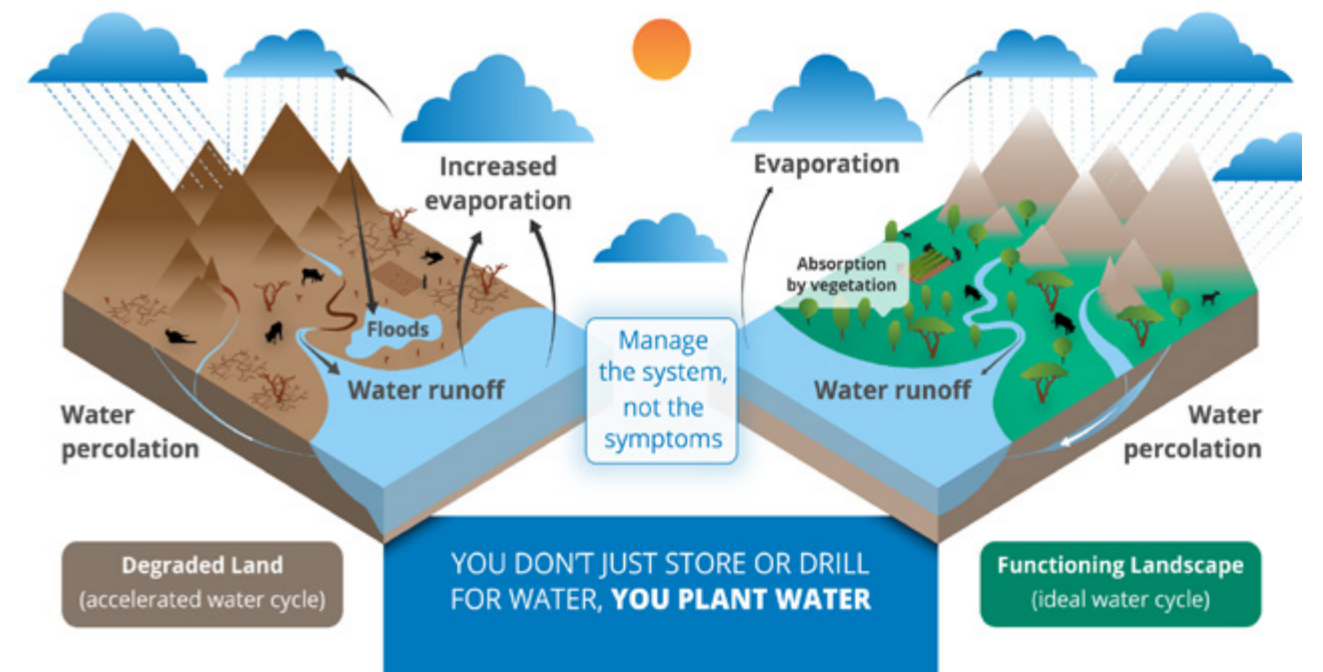
In most food insecure contexts, a high percentage of the population work in agriculture, where food production is typically rainfed. Tackling the underlying causes of food insecurity and building resilience means addressing livelihood vulnerabilities, including access to water for domestic and productive uses. Mismanaged water resources can exacerbate tensions and conflicts between state actors, farmers and pastoralists, refugees and host communities, different communities and upstream and downstream sections of a watershed.



- Annually, 829,000 people die from diseases linked to unsafe water, sanitation and poor hygiene (United Nations, 2022).
- Between 20-40% of global land is degraded or degrading, affecting water availability, livelihoods and food security (UNCCD 2022).
- Approximately 2 billion people live on drylands vulnerable to desertification, which could displace an estimated 50 million people by 2030 (UNCCD 2022).
- Water-related disasters account for 75% of recent disasters, causing nearly US\$700 billion in economic damage over the past 20 years (UN-Water 2020).
- In Africa, droughts and floods comprised 55% of natural hazards over the last two decades (2002-2021).
- Since 2000, droughts increased by 29%, while flood-related disasters rose by 134% (WMO 2021), necessitating urgent adaptation investments.

The environmental crisis, driven by land degradation and deforestation, is disrupting local water cycles, leading to increased droughts and floods. Climate change exacerbates these challenges, altering global and local hydrological cycles and increasing the frequency of water-related hazards. The frequency of water-related hazards has increased dramatically in the past 20 years. Climate and ecosystem crises are intertwined, with climate change

accelerating land degradation. At the same time, land degradation accelerates the release of carbon from the soils to the atmosphere, thus accelerating climate change. Land and ecosystem restoration are crucial for addressing adaptation, water, and food insecurity, while also mitigating climate change by increasing carbon storage in soils and vegetation.



WFP AND WATER

WFP's Strategic Plan (2022-2025) recognises the importance of tackling water and sanitation issues to achieve Zero Hunger. The Strategic Plan stresses how soil and water conservation, combined with water harvesting in asset creation programmes constitute one of WFP's core means of contributing to food security while respecting environmental sustainability. The importance of partnerships when working on cross-cutting issues related to water and sanitation in asset creation activities, nutrition and school-based programmes is also highlighted. Water is also referenced in several WFP Policies including Disaster Risk Reduction and Management, Resilience, Climate Change, Nutrition, Environment and School Feeding.

Water and food security are interconnected amidst growing challenges from environmental degradation, climate change, rapid population growth, resource encroachment, pollution and conflicts. WFP operates in areas with severely impaired access to sanitation and water. WFP serves households and communities in arid

and semi-arid regions, facing water scarcity and water-related shocks, which exacerbate food insecurity. Improving water availability and access is crucial for achieving Zero Hunger, especially amid increasing pressure on water resources due to population growth and climate change-induced extreme events.

WFP's involvement in water-related activities has been significant for the past 20 years:

- Between 2002 and 2009, 38% of WFP projects, across 69 countries, involved water-related activities.
- In 2010 and 2011, 33% of WFP's projects globally included water activities across 63 countries.
- In 2022, 50 countries have implemented water-related activities.

WFP's interventions are multidisciplinary, context-specific, and implemented through strong participatory approach and in collaboration with governments, UN agencies and NGO partners.

Asset creation and livelihoods activities through Food Assistance for Assets (FAA) have historically represented the backbone of water-related programme activities carried out by WFP. These activities, facilitated through food, cash, or voucher transfers, often involve collaboration with engineering staff, governments, and specialized partners.

These initiatives aim to bolster natural resources, particularly soil and water management, crucial for enhancing food security and resilience among vulnerable communities. In arid, semi-arid, or tropical environments, where water scarcity or excess runoff pose challenges, WFP implements water-centric interventions, partnering with various stakeholders to achieve integrated outcomes.

In fragile contexts, effective land and water resource management is pivotal for enhancing livelihoods, food security, and mitigating hardships. WFP contributes to ecosystem restoration and protection, replenishing water sources through land rehabilitation interventions, thereby augmenting moisture retention and irrigation potential. In 2022, WFP's asset creation activities, mainly focusing on soil and water conservation, benefitted 9.4 million people. These initiatives encompass a wide array of

projects, from agroforestry and irrigation scheme restoration to latrine construction and flood protection.

Research on WFP's water management interventions across Bangladesh, Ethiopia, and Kenya highlighted increased water availability, reduced runoff and soil erosion, and improved management outcomes. These interventions have led to expanded agricultural areas, enhanced crop yields, improved livestock health and productivity, and various livelihood enhancements, including reduced water collection burden, enhanced hygiene, increased income, narrowed food gaps, and improved nutrition ([ODI research, 2017](#)).

School-based programmes often promote water management activities to enhance food security and alleviate challenges in accessing water and sanitation facilities for children. These initiatives are typically conducted in collaboration with governments, UN agencies (particularly UNICEF), NGOs, and other partners. WFP integrates nutrition interventions with training on safe water access and sanitation, actively advocating for improved water access through infrastructure development or service delivery in partnership with local or international entities.



Water and food security

In response to rising water-related disasters, WFP provides emergency food and nutrition aid, increasingly employing anticipatory action systems to mitigate slow and rapid onset disasters. Climate risk insurance offers timely assistance post-catastrophic events, with micro-level insurance schemes, particularly focusing on drought, offering additional support to farmers and pastoralists. In 2022, WFP extended financial protection against climate events to 3.8 million people.

PRINCIPLES OF WFP'S WATER MANAGEMENT ACTIVITIES

Water flows across landscapes, connecting the highest mountains with plains, deltas, seas and oceans. Water creates bonds across communities and must be respected, shared and managed efficiently. WFP's focus on food and nutrition security is heavily intertwined with water security, necessitating a systemic, multi-sectoral approach. Several principles guide WFP's water management initiatives:

- **Working at the nexus:** While WFP responds to emergencies, the organisation aims to address their root causes, together with many

operational partners. Restoring damaged infrastructure, land rehabilitation and natural resource management activities are usually the first step in addressing such issues across the fragile contexts where WFP operates, as part of a multi-year approach.

- **Importance of partnerships:** Given the multi-sectoral nature of water and the complex technical assessments and requirements needed to make it available, manage and protect it, multiple actors and specialised partnerships are required. WFP can be a catalyst for water action through its food assistance and outreach, while different actors can deliver complementary technical packages and equipment, provide in-depth assessments on water availability and governance, provide domestic or public water supplies including in schools that WFP supports through its school-based programmes.
- **Contextual understanding:** Water management starts at the local level and is influenced by various factors such as topography, climate and livelihood activities. In-depth contextual assessments are crucial before initiating water-related interventions.



- **People-centered approach:** Successful water management, maintenance and resource sustainability rely on robust regulations (local customs, land rights, water rights etc.) and institutions. Participatory and inclusive processes are essential to assess water needs and requirements, find appropriate management solutions and minimise conflict.
- **Choosing appropriate intervention units:** Tailoring intervention areas based on contextual analysis, including sub-watershed units and community-based approaches, is essen-

tial for holistic water resource management.

- **Layering and sequencing interventions:** Water management strategies require clustering multiple activities to ensure sustainable outcomes. Technological solutions, such as borehole drilling and water pumps, must be integrated with broader landscape rehabilitation efforts. At the same time, once water access and supply have improved, opportunities arise for integrated interventions to support production, dietary diversification and access to markets.



WFP'S COMMITMENT TO WATER SECURITY

WFP, in partnership with others, aims to address water-related challenges by restoring degraded environments and enhancing ecosystems' functions to support food insecure and vulnerable populations. Through integrated resilience building and ecosystems-based climate adaptation programmes, WFP can replenish local productive potentials, benefiting soils, water resources and food systems.

- WFP adopts a comprehensive approach to water management, rejecting simplistic solutions. Recognising water's limited supply, sustainable development requires mechanisms for recharge and optimised usage. In arid regions, water sources rely on ecosystem restoration and sustainable water harvesting methods. This involves implementing strategies to capture, retain, and channel rainfall effectively, fostering a "sponging effect" through land restoration.

Consequently, water can infiltrate underground aquifers, facilitating sustainable extraction and efficient utilization. Conversely, in flood-prone areas WFP prioritizes flood protection, runoff control, and safe water disposal and utilization measures.

- WFP focuses on people and community-driven approaches to water, recognizing the disproportionate impact of water challenges on women and girls. Access to adequate water quantities is crucial for achieving Zero Hunger, particularly for vulnerable communities in fragile contexts.
- WFP works on medium to long term integrated water solutions right after emergencies, working with communities, governments and other partners across the humanitarian/de-

velopment nexus. This includes rehabilitating land, increasing water availability through harvesting techniques and small-scale storage, facilitating climate adaptation efforts, providing training and access to water for various purposes, and promoting integrated agricultural value chains, particularly benefiting women and marginalized groups. WFP also promotes climate analyses, forecasting, early response, anticipatory actions and risk management systems at national and local levels.

- WFP and its Regional Bureaux and Country Offices support governments and partners in implementing water-related actions, tailoring approaches to specific contexts and government plans.

WFP WATER-RELATED ACTIVITIES IN 2022

Activity	Amount
Agricultural land benefiting from new or rehabilitated irrigation schemes	39,765 hectares
Drinking water supply lines rehabilitated or constructed	542 kilometres
Irrigation canals rehabilitated or constructed	7,615 kilometres
Flood protection dikes rehabilitated	241,622 metres
Boreholes created for agriculture or livestock	27
Bridges rehabilitated or constructed	112
Latrines rehabilitated or constructed	23,239
School and community gardens established	16,390

CLIMATE AND RESILIENCE SERVICE

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