

Briefing Note

GWP acting for food security and sustainable agriculture

The interlinkages between water resources and agricultural production and food security are critical to achieving the Sustainable Development Goals and climate resilience. These interlinkages are however still poorly managed and increased action is urgently needed.

Context

Agriculture and water resources are deeply interconnected. Without water, there can be no agricultural production, but there is insufficient water available and in many cases of insufficient quality, to ensure the required agriculture production for food security and development.

On the other hand, agriculture is the major sector using water resources - irrigated agriculture accounts for 70% of the world's water withdrawals - and is, increasingly, the source of important pollution and of degradation of water-related ecosystems.

Climate change and socio-demographic changes are further accentuating these pressures. Further, the world is not on track to achieve food security targets and to ensure that agriculture is produced in a sustainable manner.

Yet, the institutions, laws, policies, investments, and incentives for water use and agricultural production are still poorly coordinated, calling for amplified action.

GWP's mission is to advance governance and management of water resources for sustainable and equitable development. It anchors its work around Integrated Water Resources Management, which is defined as a process promoting the coordinated development and management of water, land and related resources (GWP, 2004). As such, land management and agriculture are fully embedded in GWP's approach.



Within this context, food security and sustainable agriculture are placed at the forefront of a number of GWP interventions. This briefing note highlights a range of such interventions, spanning a broad spectrum of work: multi-stakeholder consultations and advocacy, capacity development and knowledge sharing, partnership building, support to regional, national and basin policy-making and planning, and community-level interventions.

Stories from the GWP Network

In the following pages of this Briefing Note we offer stories from around the GWP network about our involvement in food security and sustainable agriculture.

Contributing to global initiatives and dialogues on water and agriculture

GWP has contributed over the years to key platforms promoting the coordination of water and agriculture at the global level. GWP is an active partner in the [Global Framework on Water scarcity in Agriculture](#) (WASAG). WASAG is a partnership initiative that seeks to catalyse international cooperation on water scarcity in agriculture in the context of climate change and growing competition for water resources. GWP is a Steering Committee member of WASAG, co-leads the working group on water and migration, and collaborates to the working group on Drought preparedness. GWP has also actively engaged in the Committee on World Food Security, the [World Irrigation Forums](#), and the [Rural Development priority of the 9th World Water Forum](#).

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Well managed and inclusive irrigation is key to the sustainable development of our food systems. GWP has contributed to several global knowledge initiatives on the topic. This included for example the co-organisation of a webinar series in 2020 on [farmer-led irrigation](#) with the World Bank, the International Water anagement Institute, and the Daugherty Water for Food Global Institute, and the contribution to global discussions on [water productivity improvements and how to achieve water savings in agriculture](#).

Another are of focus is that of water and migration. Since 2018, GWP has supported an enhanced understanding of the interlinkages between water insecurity and migration from rural areas, including through the co-authoring of a literature review on [Water stress and human migration](#) (2018), the organisation of several knowledge sharing [events](#), and support to the Action group on water and migration of the 9th World Water Forum.

Advancing Nature-Based Solutions and Drought management in Central and Eastern Europe

Since the early 2010s, GWP Central and Eastern Europe has been working to advance nature-based solutions, with a focus in particular on natural (small) water retention measures (NSWRM), and through a broad range of measures, including demonstration projects, knowledge products, stakeholder engagement, policy level work, and partnership development. In the framework of the Framwat project (2017 – 2020, INTERREG's Central Europe Programme), for example, which aimed at strengthening the regional common framework for floods, droughts, and pollution mitigation by increasing the buffer capacity of the landscape through NSWRM, GWP supported stakeholder engagement, policy dialogues, development of the [synthesis guidelines of the project](#) as well as the preparation of [6 action plans for NSWRM](#) in each of the project pilot catchments. GWP is currently contributing to the implementation of the project Optimal strategies to retain water and nutrients (OPTAIN) funded by Horizon 2020 over 2020 – 2025 and which proposes a social and scientific journey towards the increasing and better understanding of the multiple benefits of NSWRM. In this project GWP co-leads the work package on Communication and Dissemination, aiming to be a bridge between researchers and end users/farmers.

Another long-term area of focus for GWP in Central and Eastern Europe has been drought management through the [CEE Integrated Drought Management Programme \(IDMP\)](#). Drought forecasting and preparedness is crucial for the agricultural sector. In Hungary for example, GWP collaborated with experts and key stakeholders to develop [Guidelines for preparations of Drought Management Plans](#) over 2013 – 2016 and to identify pro-active management tools to mitigate drought losses in the country. This work let to the creation of the [Hungarian Operational Drought and Water Scarcity Monitoring System](#), under the guidance of the General Directorate of Water Management. The system aims to assist communities and farmers in making timely interventions by providing them with early information.



In 2018 – 2019, through the Drought Risk in the Danube Region or 'DriDanube' project, GWP supported the development and launch of an innovative and interactive tool known as 'Drought Watch'. This tool integrates all available data sets (including Earth observation data and ground measurements from meteorological stations), allowing more accurate and efficient monitoring, forecasting, and evaluation of drought for the Danube region, allowing for the adoption of appropriate preventive measures. The project also lead to the establishment of National Reporting Networks for the agricultural sector, and the development of drought risks maps.

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Supporting climate resilient catchment management and drought resilience for smallholders and pastoralists in East Africa

In Uganda, GWP has been supporting catchment-based management since the mid-2010s, combining the sustainable management of natural ecosystems with responding to communities needs. Under the Water, Climate and Development Programme (WACDEP), GWP identified priority climate and water issues in major catchments in Uganda. In support to the Ministry of Water and Environment and with the Sahara and Sahel Observatory, GWP contributed to the development of an integrated catchment management approach to solve the issues identified, which led to the project “[Enhancing resilience of communities to climate change through catchment based integrated management of water and related resources in Uganda](#)” (EURECCA), supported by the Adaptation Fund (2017 – 2021) – the first project supported by the Adaptation Fund for the country. The project is leading to better control of floods and landslides across agricultural landscapes, to diversification of livelihood strategies and to strengthened management and institutions from local to national scales, with GWP intervention focusing particularly on capacity building and knowledge management, especially targeting rural extension services.

In 2021, the Adaptation Fund approved a new project in Uganda “[Enhancing Resilience of Communities and Fragile Ecosystems to Climate Change in Katonga Catchment \(RECOFE\)](#)”. The project objective is to strengthen the resilience of communities and fragile ecosystems to climate change impacts through the promotion of appropriate water infrastructure investments and nature-based solutions, with a strong focus on water and food security. The project is implemented by the Ministry of Water and Environment and executed by GWP Eastern Africa.

As the Region is very vulnerable to droughts, GWP is also pro-actively supporting drought management. GWP partnered with the Sahara and Sahel Observatory and four riparian countries (Djibouti, Kenya, Sudan and Uganda) to develop the project [Strengthening Drought Resilience for Smallholder Farmers and Pastoralists in the IGAD Region \(Djibouti, Kenya, Sudan, Uganda\)](#), funded by the Adaptation Fund and implemented from 2020 to 2024. Its focus is to enhance the resilience of smallholder farmers and pastoralists to

drought-related risks through strengthening drought management actions that enhance their adaptive capacities. This will be achieved through facilitating investments in early warning systems, building the capacity of targeted stakeholders, supporting innovative adaptation actions and enhancing knowledge management and skills amongst stakeholders in the region.



Enhancing irrigation management in Central Asia and Caucasus

In Armenia, the Country Water Partnership (CWP) contributed to the implementation of the project [Participatory Utilization and Resource Efficiency of Water \(PURE Water\)](#) over 2017 – 2020, with the support of USAID. The goal of the project was to reduce groundwater abstraction in the Ararat Valley and to increase water productivity, quality and efficiency of water use both for water supply and irrigation through civic engagement, good governance, and increased transparency of government water management policies and systems. The project supported improvements in the policy and regulatory framework to foster responsible use of water resources, encouraged individuals and civil society to participate in and oversee water resource management, and helped design small-scale infrastructure projects.

Other CWPs in the Region are pro-actively contributing to improved irrigation management, at policy level and through knowledge exchanges. CWP-Mongolia spearheaded the development of national standard for treated wastewater reuse in agriculture and for other uses which was adopted in 2016. In Uzbekistan, CWP experts supported the drafting of the National Strategy on Water Management and Development of Irrigation 2021-2023, which was adopted in 2021. In 2021, CWP-Tajikistan co-organized two seminars on irrigation water productivity. The first was a field seminar

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with the Institute of Agriculture of the Tajik Academy of Agricultural Sciences on the rational use of water and land resources to achieve the SDGs in the Sughd region. The second was a science to practice seminar on Melioration and irrigation with the Yavan Department of Land Reclamation and Irrigation of the Agency for Land Reclamation and Irrigation.

Integrating climate resilience into agriculture in Vietnam and Sri Lanka

In Sri Lanka, GWP has supported since 2015 [climate change adaptation in the agricultural sector](#). Activities have included the building of collaborations from national to field-level, development of Community Based Knowledge Products (on rainwater harvesting for example), and large-scale training on climate adaptation in collaboration with Cap-Net. The trainings targeted staff from the Departments of agriculture and irrigation, from senior level to field staff, and with more than 2 500 officials trained, farmers organisations, and journalists. These activities stimulated several ministries and universities to work together to host their own training courses, and the Department of Agriculture established a unit in its Extension Division dedicated to climate change adaptation.



In the 2010s, GWP also worked towards the integration of climate resilience and water security into irrigation management in Vietnam. The work encompasses analyzing irrigation management in the context of climate change and water security, development of a roadmap to integrate climate change and water security in operation management of irrigation systems, and pilot application in Nam Thai Binh irrigation scheme.

Developing capacities on agricultural water use efficiency and on aquaculture in the Caribbean

In 2020, the GWP Caribbean, Caribbean WaterNet, and the Faculty of Food and Agriculture of the University of the West Indies St. Augustine collaborated on the development of two [training manuals](#) on Water use efficiency in agriculture and on Aquaculture for Caribbean Small Island Developing States. The manual on water use efficiency introduces the benefits of improved efficiency, presents demand calculation models and methods for assessing economic benefits, and explores management instruments that may support adoption of efficiency measures, in the context of climate change.

The manual on aquaculture seeks to provide the initial stages of information for Caribbean aquaculturists to start and operate a successful facility, and more broadly build an aquaculture sector within the Caribbean.

Empowering youth for climate action in West Africa

GWP West Africa partners with the International Secretariat for Water and NGOs in West Africa for the implementation of the Tonfuturtonclimat project ([phase 1](#) 2017 – 2020 and [phase 2](#) 2021 – 2024), with the support of the Government of Quebec. The project promotes youth empowerment and supports innovative youth-led micro-projects in West Africa (Burkina Faso, Togo, and Benin) that strengthen climate resilience, with a strong emphasis on agroecology, agroforestry, and forestation.

Advancing the Water – Energy – Food – Ecosystems nexus and Non Conventional Water Resources in the Mediterranean

GWP Mediterranean has identified the Water – Energy – Food – Ecosystems (WEFE) nexus as a key framework for achieving water, food, and energy security whilst optimizing the use of natural resources, addressing environmental needs and climate change impacts. The region has been supporting political processes, institutional capacity-building, and WEFE nexus implementation since the early 2010s.

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At regional level, GWP facilitates the technical task force of the Union for Mediterranean on the Nexus and carries out nexus-related activities across the Mediterranean, such as with the organization in 2018 of the [1st Nexus Roundtable in the MENA and wider Mediterranean region](#). In South East Europe, GWP advocated for the inclusion of Nexus related objectives in the South East Europe 2020 Strategy and is responsible for the implementation of the IWRM and nexus-related objectives of the strategy. With the support of the Austrian Development Agency and the German Environment Protection Agency, GWP Mediterranean supports policy dialogues, nexus assessments, stakeholders engagement, and nexus planning in the sub-region.

In the recent years, GWP Mediterranean has further placed increased focus on WEFE nexus technical solutions. In the context of [GEMWET project](#) for example, implemented with WWF North Africa and funded by the MAVA Foundation to protect the lagoon of Ghar El Melh in the North of Tunisia, a smart Irrigation activity was deployed to provide tools and technical support to local farmers in order to optimize the use of water for irrigation.

Another important area of work for GWP Mediterranean are [Non-Conventional Water Resources](#). GWP has supported the development and management of these resources since 2008, including for water use in agriculture. The scope of work has included piloting technical interventions at local level through a wide range of innovative and mainstreamed technical application of small-scale and demonstration character in Mediterranean islands (Cyprus, Greece, Malta, Italy), also as contribution to local climate change adaptation and youth employability objectives.

Supporting rainwater harvesting in Central America

GWP has supported the [deployment of rainwater harvesting systems](#) in the region, through the mobilisation of allies and partner institutions, the development of capacities, and support to community-level projects. This work was carried out in the 2010s under the framework of the Water, Climate and Development Programme (WACDEP).



Fostering the Water-Energy-Food nexus in Southern Africa

GWP Southern Africa fosters the uptake of Water – Energy – Food nexus approaches in the region towards improved water, energy and food security. It does so in particular through the implementation of the [Nexus regional dialogue programme](#) in Southern Africa in collaboration with the Southern African Development Community (SADC), under the framework of a global initiative co-funded by EU DEVCO and BMZ and coordinated by GIZ (phase 1 2017 – 2020 and phase 2 2020 – 2023). The programme aims at creating an enabling environment that will drive cross-sectoral engagement and implementation of nexus investment projects that contribute to enhancing water, food and energy security in the SADC region. Some of the results to date have included the adoption of a WEF nexus governance framework by Ministers at the regional level, the adoption of regional guidelines for nexus project preparation, and the identification of priority nexus investments.

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