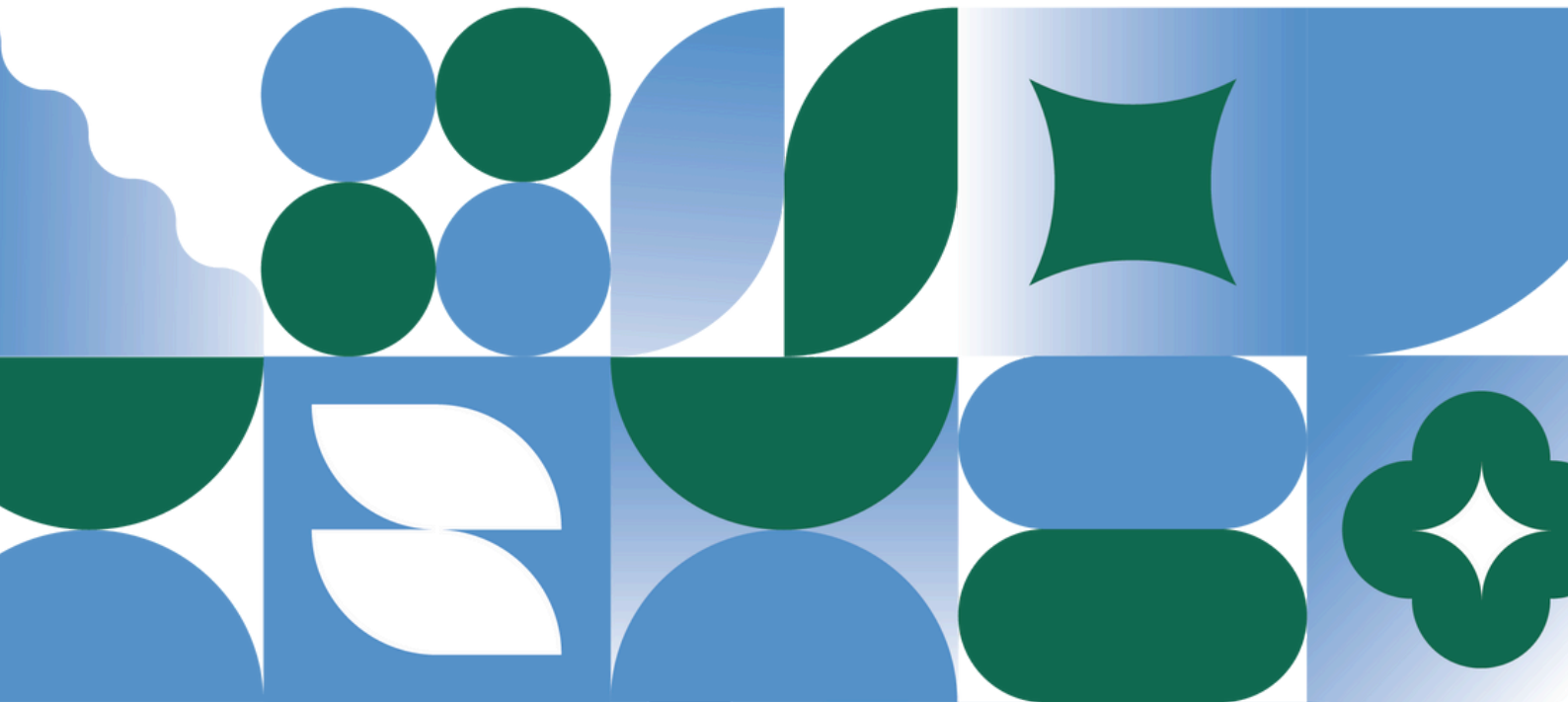
WORLD FOOD FORUM | GLOBAL YOUTH ACTION

Youth ASSEMBLY

YOUTH VISION

Advancing Innovation in Water Management in Agriculture



INTRODUCTION

Youth perspectives are increasingly recognized as critical in shaping the future of agrifood systems. Agriculture accounts for over 70 percent of global freshwater withdrawals, making it the single largest user of water resources. In this context, young people bring unique value through fresh ideas, digital innovation and locally rooted approaches that strengthen the inclusivity and long-term viability of solutions improving water management in agriculture. Many youth-led initiatives are already piloting technologies and community-based practices that advance water sustainability. However, youth often face barriers to accessing decision-making spaces, limiting their ability to influence policy frameworks and scale innovations.

By integrating youth voices, water management strategies become not only technically sound but also socially inclusive and future-oriented. Elevating these perspectives strengthens intergenerational dialogue, aligns local innovations with national and global agendas and empowers a generation that will bear the long-term impacts of climate change and water insecurity.

The Thematic Youth Assembly on Water Management provides a platform for young people to share ideas, shape solutions and develop policy priorities that support the sustainable transformation of agrifood systems through effective and equitable water management.

Building on the 2024 Youth Declaration on Water Scarcity in Agriculture, presented at the Rome Water Dialogue, a new consultation was convened in 2025 to deepen youth engagement in global water governance. Anchored in the Global Framework on Water Scarcity in Agriculture (WASAG), hosted by the Food and Agriculture Organization of the United Nations (FAO), this consultation directly links to upcoming global water agendas. Through this consultative process, a collective youth vision has been developed to highlight the critical role of youth-led innovation in water management.

This vision will guide youth engagement at the 2025 Rome Water Dialogue and inform youth-led contributions to other intergovernmental processes. The document outlines the key priorities and issues a call to action for meaningful youth participation and leadership.

THE CONSULTATIVE PROCESS

The consultative dialogue was designed to provide a space for youth from diverse regions to exchange perspectives and co-develop solutions on water management in agriculture. The objectives centered on two key focus areas:

(i) showcasing youth-led innovations that address local water challenges; and
(ii) exploring strategies to integrate youth more meaningfully into water policy processes at multiple levels.

In total, the consultation engaged over 100 participants, alongside speakers from six organizations representing governments, intergovernmental bodies and youth-led enterprises.

The session opened with contributions from WASAG member countries, Indonesia and Jordan, followed by the Organization for Security and Co-operation in Europe (OSCE).

Regionally focused breakout groups then featured youth-led innovations from the WFF Youth Food Lab, detailed in the annex. Participants explored how these innovations could be adapted or scaled across different contexts, while also identifying barriers such as limited access to financing, mentorship, technical expertise and policy dialogues.

Discussions emphasized that youth engagement must begin early, be sustained over time and include opportunities to develop skills in policy co-creation. Participants also stressed that funding, capacity development and supportive ecosystems are essential to unlock the full potential of youth innovation in water management for agriculture. The priorities identified are outlined in the following section.

KEY THEMES IDENTIFIED BY YOUTH

Youth-led innovation in agricultural water management

Across regions, young people emphasized their role as innovators driving context-specific solutions in agricultural water management. Examples ranged from solar-powered irrigation in South Sudan and Zimbabwe, to hydroponics and aquaponics in Nigeria and Kenya. In Latin America, Costa Rican youth are building centralized digital monitoring systems, while Jordanian youth recycle water through adapted underground drainage networks. These initiatives reflect youth creativity, technical expertise and commitment to sustainability.

Challenges identified

- Limited financing and weak investment in scaling innovations;
- Lack of mentorship and business development skills;
- Restricted access to technical tools, credible data and research support; and
- Institutional skepticism towards youth-led solutions.

Opportunities for action

- Establish dedicated youth innovation funds for agricultural water solutions;
- Create regional platforms for cross-country knowledge exchange;
- Expand mentorship networks linking youth with experts, policymakers, and the private sector;

Meaningful youth engagement in policy processes

Youth highlighted that they are often excluded from high-level policy processes despite advanced qualifications or practical expertise. They emphasized the need to be viewed as co-creators of solutions rather than passive beneficiaries, with engagement across ideation, implementation and monitoring.

Challenges identified

- Structural exclusion from decision-making and policy dialogues;
- Weak institutional trust in youth capacities; and
- Absence of formal entry points for youth into governance systems.

Opportunities for action

- Embed youth representation in multi-stakeholder committees and policy fora;
- Introduce participatory municipal budgeting processes that prioritize youth needs;
- Establish career and entrepreneurship pathways in water governance; and
- Provide training in policy co-creation and advocacy from early education levels.

Education, capacity development and knowledge access

Youth stressed that education and access to knowledge are key to promoting sustainable water management. Participants from North America stressed that water-related topics should be embedded into formal education, while participants from Asia and the Pacific shared that it is important to leverage digital platforms to tackle water challenges.

Challenges identified

- Unequal access to technical education and data across regions;
- Lack of infrastructure and seed funding for youth-led organizations (e.g. Nepal); and
- Exclusion of marginalized voices from training opportunities.

Opportunities for action

- Mainstream agricultural water management into curricula at schools and universities;
- Expand access to open-source data and create regional knowledge hubs;
- Develop capacity-building programmes for marginalized and rural youth; and
- Strengthen partnerships with United Nations agencies, International Non-Governmental Organizations and private sector to provide mentorship and seed funding.

Financing, mentorship and ecosystem support

Participants emphasized that financing and supportive ecosystems are essential to move youth-led projects from ideas to impactful enterprises. Without resources, many innovative projects remain small-scale.

Challenges identified

- Lack of dedicated financing and access to credit;
- Weak mentorship and business training systems; and
- Absence of enabling environments to sustain startups.

Opportunities for action

- Launch preferential financing schemes and innovation grants for youth-led projects;
- Provide structured mentorship and business development training; and
- Strengthen cross-sector partnerships to integrate youth enterprises into wider agricultural water strategies.

CALL TO ACTION

As a result of the Thematic Youth Assembly on Water Management, we, the youth, call for the establishment of integrated mechanisms that meaningfully include and empower young people in agricultural water governance and policy processes. Youth must be recognized as active co-creators of solutions—not passive beneficiaries—in addressing one of the world's most urgent challenges: ensuring sustainable, inclusive and resilient water management in agriculture.

Water connects us all, yet it reflects existing inequalities. With agriculture consuming over 70 percent of global freshwater resources and climate change intensifying pressures on these resources, coming generations must be equipped and supported to participate meaningfully in the decisions that will shape their future. Every voice excluded from decision-making represents lost innovation, leadership and progress.

Youth-led solutions are creative, innovative and responding to real time challenges, but they cannot reach their full potential without structural support. Across regions, young innovators face systemic barriers to financing, mentorship and enabling ecosystems. We call upon governments, intergovernmental organizations and partners to establish dedicated innovation funds and preferential financing schemes for youth-led water initiatives, expand access to seed capital, microcredit and blended finance instruments, and build robust mentorship and business development programmes linking youth with policymakers, researchers and private sector actors.

Sustained youth engagement also requires investment in education and long-term capacity development. Agricultural water management must be integrated into curricula and training systems to cultivate a pipeline of skilled young leaders.

Stakeholders should expand access to open-source data, digital tools and research platforms and create regional and global knowledge hubs that foster collaboration and share best practices across contexts.

Effective water governance depends on community participation, where local action aligns with national and global policy frameworks. We must ensure to allocate dedicated budgets for youth-led community water initiatives, integrate local knowledge systems into policy to ensure culturally relevant solutions and leverage digital platforms to connect grassroots action with multilateral agendas.

This call to action is not directed only at youth – but to governments, UN agencies, civil society and the private sector. Those at decision-making tables must use their positions to accelerate youth participation and integration – recognizing youth as equal partners while fostering mutual learning across generations.

ANNEX

Youth-led innovations and best practices

Young people have demonstrated their capacity to innovate, mobilize communities and influence global dialogues. What is now required is a structural shift: to institutionalize youth perspectives, provide sustained resources and mentorship and embed youth voices in policy frameworks, financing systems and governance structures.

The continuity from the 2024 Youth Statement on Water Scarcity, through this 2025 consultation in the context of the 2025 Rome Water Dialogue, demonstrates the momentum that youth are building. This call to action crystallizes this momentum into a shared agenda: to co-create a water-secure future for agrifood systems, with efforts that are innovative, inclusive and intergenerational.

1. **Bacua by LixiLab – Portable biodesign for water filtration**

- Lead Youth Group/Individual: LixiLab, represented by María Valentian Forero
- Location: Colombia

LixiLab harnesses the power of biodesign to address one of Colombia's pressing environmental and agricultural challenges: heavy-metal contamination of irrigation water. Working closely with farming communities in polluted regions, the team developed Bacua, a portable water filter that uses dead bacteria to effectively remove heavy metals. The innovation is not only affordable and transportable but also tailored to the needs of rural farmers, offering a practical solution where conventional treatment infrastructure is unavailable.

Beyond the technical breakthrough, LixiLab integrates education into its work. Through hands-on workshops, the team raises awareness among farmers about the risks of contaminated water and introduces biotechnology as a tool for resilience. This dual approach—technology plus capacity building—empowers communities to safeguard their water sources and builds local ownership of solutions.

The scalability of Bacua lies in its portability and adaptability. As heavy-metal contamination affects agricultural systems worldwide, the model could be replicated in other regions facing similar challenges. By linking biodesign with community engagement, LixiLab contributes directly to Sustainable Development Goal (SDGs) 6 (Clean water and sanitation), while also strengthening agricultural sustainability and public health.

2. Madzi Tech – Drone technology for safe water sampling

- Lead Youth Group/Individual: Madzi Tech, represented by Teresa Thornton
- Location: Malawi and the United States

Madzi Tech focuses on transforming water quality monitoring through low-cost, contactless drones designed to safely collect water samples. In many regions, especially in low-resource settings, water sampling remains hazardous—exposing individuals to contaminated water sources. Madzi Tech's drones eliminate this risk, enabling accurate sampling while protecting the health of researchers and communities.

The drones are engineered to be cost-efficient and adaptable across different contexts. They can be deployed in rural agricultural areas, wetlands or polluted rivers, providing reliable data to inform interventions. This innovation bridges a critical gap between scientific monitoring and accessibility, ensuring that even resource-constrained communities can benefit from modern environmental technologies.

Madzi Tech's potential for scalability is significant. Its modular design allows replication in multiple countries, while its affordability makes it attractive for governments, NGOs and universities seeking to improve water monitoring systems. The solution also has cross-sector applications, from agriculture to disaster risk reduction, underscoring its versatility. By democratizing access to safe and effective water monitoring tools, Madzi Tech enhances environmental safety, public health and long-term water governance.

3. Aqua Shield by HydroRescuers – Nature-based water crisis management

- Lead Youth Group/Individual: HydroRescuers, represented by Md. Abdul Helal Kafy and team (SAU-Dhaka)
- Location: Bangladesh

HydroRescuers developed Aqua Shield, a nature-based solution using Canna indica to address water crisis management. Leveraging the natural filtering properties of the plant, the initiative focuses on removing pollutants from water, supporting wetland restoration and protecting vulnerable ecosystems.

The project is rooted in the recognition that communities in Bangladesh are among the most vulnerable to water insecurity due to climate change, pollution and ecosystem degradation. By restoring wetlands and improving water quality, HydroRescuers not only safeguard biodiversity but also strengthen access to clean water for marginalized populations.

The scalability of Aqua Shield lies in its low-cost, replicable methodology. Since Canna indica is widely available in tropical and subtropical climates, the model could be adopted across regions facing similar challenges. Its integration of environmental conservation with community water access also makes it a strong candidate for inclusion in larger ecosystem restoration programmes.