



# Roundtable on Financing Water

Thematic meeting – [Sustainable use of water for agriculture](#)  
Co-convened with The Organisation for Economic Co-operation and Development (OECD)  
27-28 January 2021, Virtual Meeting

## Summary & Discussion Highlights

The Food and Agriculture Organization of the United Nations (FAO) and the OECD co-hosted the seventh meeting of the Roundtable on Financing Water on promoting investments in agricultural water that contribute to sustainable water management, food security, and sustainable development. The meeting aimed to make the case for action on financing agricultural water as well as to initiate discussions on investment needs and opportunities to contribute to a green and resilient recovery and mobilise commercial finance to scale up investment. The meeting was also an opportunity to gauge interest in a further dedicated Roundtable meeting and analytical work on these issues, in particular focused on directing development finance.

The meeting gathered around 375 participants from diverse backgrounds, including private investors and financiers, multilateral and bilateral donors, government officials, philanthropies, NGOs and research institutions. They shared experiences related to financing agricultural water, ranging from country perspectives from both the OECD and non-OECD countries and regions, such as the Sahel, Africa, Near East, Central Asia, the Netherlands, Peru, the United States, and Yemen, to recent developments in and perspectives from development banks, NGOs, commercial banks, asset managers and experts.

A brief summary of the discussions is provided below. The agenda and video recordings of the sessions, as well as background papers and speakers' slides are available on the meeting webpage.

### Key messages

#### **1. *Setting the scene: The case for action on financing agricultural water***

The understanding of current levels of investment in agricultural water is fragmented and incomplete. Data on investment needs as well as current levels of public and private expenditure is limited.

Globally (in 54 OECD and developing countries), water-related agricultural support has grown by 60% between 2000 and 2019, reaching USD 41 billion in 2019, focused mainly on irrigation. Considering developed countries only, support has declined by 48% in the same period and has focused mostly on hydrological infrastructure.<sup>1</sup>

Funding should aim to contribute to addressing and to avoid exacerbating a variety of challenges, such as water security, food security, climate change, biodiversity conservation and social inclusion. The concept of food systems could serve as framework to identify the key entry points where water-related investments contribute to food and water security along with broader policy objectives.

Strengthening the enabling environment is a prerequisite for further investment in agricultural water. This includes reforming potentially water-harmful support, encouraging irrigation cost-recovery and bolstering innovation. In basins where agriculture expansion affects water security, the failure to redirect financing flows to other regions and types of investments can only affect the sustainability of current practices, and ultimately food and water security and the livelihood of communities. Robust water monitoring (based on consumption) and water allocation systems should precede any irrigation investment.

<sup>1</sup> [OECD \(2021\), Background Paper for the 7<sup>th</sup> Roundtable on Financing Agricultural Water: The case for action on financing agricultural water.](#)

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## **2. Financing agricultural water sustainably: Practical examples and case studies**

- *Valuing water, trust and risk mitigation* are crucial to financing agricultural water. Innovative policies and financing mechanisms can help establish these elements.
- Specific examples of financing approaches for agricultural water shared included: public-private partnerships in the Arab region, earmarked charges from water utilities in Peru as well as a dedicated Sustainable Water Impact Fund established by The Nature Conservancy's NatureVest to attract capital from institutional investors.

## **3. Investment needs and opportunities to contribute to a green and resilient recovery**

- The COVID-19 crisis has particularly impacted rural areas and SME's, including small-scale farmers, disrupting agricultural production and supply chains. Immediate relief measures have the potential to strengthen farmers' resilience and to scale up self-financing, if well-targeted. For example in Latin America, direct economic support to farmers for small irrigation investments on a farm level.
- The COVID crisis has underscored the need for investments that contribute to resilience and adaptation to climate change – and the agri-water sector is both highly vulnerable to the changing climate and has the potential to contribute to improve resilience. Instead of traditional financing structures, such as subsidies, which often fail to increase production efficiency and water management sustainability, more resilient, efficient and sustainable approaches to redirect current financing flows are needed.

## **4. Supporting the mobilisation of commercial finance to scale up investment**

- A strong enabling environment can help reduce investment risk and thus drive commercial investments. Coherent water policies, robust water allocation, water tenure and transparency on roles, water availability and risks are important factors. Performance indicators and data can establish accountability and allow efficient investment planning and risk assessment, creating predictability for markets. Emerging technologies and digitisation could be a game changer in the near future to inform risk, sharing and reduce transaction costs.
- Innovative financing mechanisms are needed to de-risk investments in agricultural water, especially, in rural development to combine, for example, water supply with irrigation water infrastructure. Examples shared included risk-sharing arrangements between farmers, technology providers (in Senegal) and between farmers and the public sector (in Uganda). Insurance products with premiums adjusted to climate risks can provide a means to manage financial risk of farmers and provide an incentive to improve resilience. Well-structured blended finance instruments with strategic partnerships can further support the mobilisation of commercial finance for the sector.

## **Session 1. Setting the scene: The case for action on financing agricultural water**

Sustainable water use in agriculture has a key role to play in achieving the Sustainable Development Goals, and yet, current investment levels are insufficient and there is broad scope for better targeting of existing financing flows. While the dialogue on financing water has traditionally focused on infrastructure, irrigation and WASH, (as distinct issues), new imperatives have emerged – addressing climate change, biodiversity loss, food system changes, inclusion and gender equality, and water for rural development. It is vital to address these policy goals concertedly to manage the synergies and trade-offs among them. The concept of *food systems*, encompassing the resources and inputs for agricultural production, as well as transportation, processing and consumption of food, along with the impacts on the environment and health, can serve as a framework to align the diverse policy priorities. Dr Mark Smith, Director General of IWMI, presented three layers to describe the role of water for food systems: (1) *Water supply to the food system*, including different sources of water, water storage and quality. Tensions emerge due to unsustainable use with the depletion of groundwater resources, declining freshwater storage, loss of wetlands and biodiversity. (2) *Water use in production systems*, concerning irrigation and water management for rainfed agriculture. Already now, 3.2 billion people

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are affected worldwide by water stress and about 1.2 billion people live in areas where severe water shortages and scarcity are driving risks in agriculture<sup>2</sup>. Climate change will exacerbate these pressures as, for example, the frequency of droughts is projected to rise by more than 20 to 60 percent by 2100<sup>3</sup>. (3) *Water for food consumption* connects the notion of water for agriculture and WASH, which are usually approached separately. Poor WASH systems have impacts on water quality and on health and nutrition - and are linked to an estimated 4 billion cases of water-related diseases annually. A systemic approach to understanding the complex interactions between food systems and water systems can avoid siloed efforts and support tackling food and water security together.

Broadening the lens for water and agriculture to consider the whole food system offers opportunities to align a number of policy objectives and meet various SDGs simultaneously. Finance can be used as a lever to accelerate the progress towards these targets. Current financing flows for water in agriculture are monitored in only a fragmented way, making it difficult to derive estimates on current financing levels. [Dr Guillaume Gruère](#), Senior Policy Analyst, Trade and Agriculture Directorate, OECD, presented recent data on agricultural support for water in 54 OECD members and emerging countries<sup>4</sup>. Analysis indicates that water-related agricultural support grew by 60% between 2000 and 2019, reaching USD 41 billion in 2019 in the countries analysed. Support was mainly dedicated to irrigation, with India being a largest support provider. Considering only OECD countries, the trend in support is declining overall, including shrinking support for agricultural water, which is targeted mainly at hydrological infrastructure. Development assistance for agricultural water resources has remained stable over recent years (2014-18) but limited with about USD 1.4 billion annually and mostly spent in Asia (60%). More detailed figures are discussed in [Background Paper for Day 1](#) of the Roundtable meeting.

Although accurate numbers on current investment levels are scarce, estimates reveal a clear need to both redirect existing financial flows to the sector as well as scale up investments to meet the challenges of a growing population, changing diets and climate change. About 275 million hectares of irrigated cropland, for example, require improved water management, with differing needs across regions<sup>2</sup>. Across developing countries in the sub-regions of East Asia and Pacific, and South Asia, for instance, an estimated total of USD 3.1 billion per year are required to meet the projected irrigation expansions between 2015 and 2030<sup>5</sup>. However, robust water monitoring and water allocation systems should precede any irrigation investment, to ensure expansion of irrigated land will not ultimately shatter water resources, putting food production and security and other water uses at risk. Agricultural policy coherence and the promotion of irrigation of cost-recovery are essential elements to address the financing gap. Current developments in agricultural innovation are promising, with new technologies such as modelling and monitoring tools emerging, helping to acquire and assess data and serving to improve irrigation management and irrigation investment planning.

## Session 2. Financing agricultural water sustainably: Practical examples and case studies

Addressing water challenges for agriculture requires not only significant additional investment but also better investments. Existing financing flows need to address multiple objectives simultaneously to embrace synergies and avoid providing incentives for unsustainable water management. A new generation of more sophisticated investments needs to be accompanied with good policies, in order to ensure the transition towards sustainable water management.

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<sup>2</sup> [FAO \(2020\). The State of Food and Agriculture 2020. Overcoming water challenges in agriculture.](#)

<sup>3</sup> [FAO IWMI \(2019\). Towards a new generation of policies and investments in agricultural water in the Arab region. Fertile Ground for innovation.](#)

<sup>4</sup> The 54 countries examined include the EU member states (aggregated), other OECD member countries, as well as emerging economies (Argentina, Brazil, China, Colombia, Costa Rica, India, Indonesia, Kazakhstan, the Philippines, Russia, Ukraine, South Africa, and Viet Nam)

<sup>5</sup> [Rosengrant et al. \(2017\). Quantitative Foresight Modelling to Inform the CGIAR Research Portfolio, Project Report for USAID.](#)

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[Daniel Zimmer](#), Director of Sustainable Land Use at Climate-KIC, presented the Water Scarcity in Agriculture (WASAG)<sup>6</sup> framework, which identifies three parameters essential to attract finance for water: *Value, trust* and *risk*. It is vital to transmit the value of water, including the scarcity value, to all users across the value chain. Here, water pricing and water allocation reforms are valuable tools. The value of agricultural water is not only created through production but also through ecosystem services and broader benefits to society. Integrated landscape management are emerging as an approach to balance different environmental challenges and to create synergies among various benefits (e.g. for water management, biodiversity, agriculture) and provide opportunities for financing. Combined with multi-stakeholder approaches, integrated landscape approaches can foster both vertical (across landscape units) and horizontal (across different sectors) integration and help generate different sources of revenue streams and benefits. In the UK, for example, private firms have grouped together to invest in improved water resource management through local actors within a landscape to ensure sustainability in their supply chains.

Perceived high risks and uncertainty are major deterrents for investments in agricultural water. It is important to assess how water risks can translate into financial risks. Better measurement and modelling tools and water accounting are needed to reduce uncertainty about resource availability and to improve risk assessment. Further, financial mechanisms including grants, guarantees and insurance can be used to de-risk investments. Institutional or contractual arrangements can also promote risk mitigation strategies. Information sharing, standards and taxonomies can improve market infrastructure and provide transparency for investors, thus helping to attract private investment. New investment funds are emerging in landscape approaches taking into consideration agriculture and land-use change influenced by the Paris Agreement.

The European Investment Bank (EIB), for example, has set out a list of lending criteria for water investment for agriculture, including sustainable water supply, user engagement and environmental and social criteria. In his presentation, [Felipe Ortega](#), Head of Division of Division Agribusiness and Rural Development at EIB stressed the bank's focus on intermediate financing schemes, such as micro finance and community-focused finance, for their lending to the agri-bioeconomy of EUR 6 - 9 billion annually between 2015-19 (which includes agriculture, forestry and relevant downstream value chains). This encompasses projects for blue (e.g. irrigation and drainage systems), green (e.g. agroforestry and soil fertility management) and grey (e.g. urban wastewater reuse) management projects.

Innovative financing mechanisms can help overcome the barrier of weak project pipelines, such as blending public and private finance at early project stages. [Jean Marc Faurès](#), Regional Programme Leader (Near East), U.N. FAO highlighted that in the Arab region agricultural water lacks sufficient investment and a number of pilot projects for improved agricultural water management with public private partnerships have been launched with more attention to community water management, e.g. in Morocco, Mauritania, Jordan, Saudi Arabia and Egypt. He emphasised that three strategic directions are needed to make agriculture water work for sustainable development and food security: (1) value water (including wastewater), (2) accelerate agriculture sector modernization, and (3) target efficient social protection. In moving towards sustainability, greater water accounting through remote sensing to better manage water is crucial.

Another example was given by Eric Hallstein, Deputy Managing Director, NatureVest, The Nature Conservancy, presenting the Sustainable Water Impact Fund, co-developed by The Nature Conservancy and the investment firm Renewable Resource Group. The fund attracts capital from institutional investors with a traditional 10-year fund structure for landscape-based approaches to protect water resources. With innovative elements, the fund balances the needs of a variety of water users, the environment and the fiduciary obligations for institutional investors. So far, the fund has raised USD 1 billion and has already deployed several USD 100 million since last year.

Gena Gammie, Deputy Chief of Party of the Natural Infrastructure for Water Security Peru Project at Forest Trends, presented a successful approach in Peru, in which water utilities can use a percentage of their revenues to pay for activities to restore ecosystem services. This allows for a dedicated stream of funding to protect water resources and creates a demand for projects, which project developers, local communities and civil society are responding to. This mechanism allowed to collect over USD 45 million, invested in ecosystem services in upstream communities. Despite

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<sup>6</sup> FAO (2020), WASAG – The Global Framework on Water Scarcity in Agriculture in a Changing Climate, Overview. <http://www.fao.org/land-water/overview/wasag/overview/en/>

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the positive track record to date, the impacts of the COVID crisis has provoked some utilities with declining cash flows to redirect these funds earmarked for ecosystem service restoration to cover operational expenditures.

All speakers stressed the importance of a paradigm shift towards more integrated investment and planning approaches and the empowerment of water users in order to achieve financial and environmental sustainability of investments. Low community engagement, especially limited involvement of women, poor community organisation, low water use efficiency and conflict were factors that undermined the success of water investment projects in Sana'a Basin in Yemen. [Walid Saleh](#), Chief Technical Advisor and Head of office - Aden, at FAO Republic of Yemen, reported on the groundwater of the Sanaa Basin as an example that attracted several investments but these did not bring lasting improvements for the water scarce region after project finalisation. A strong enabling environment is thus crucial to ensure responsible, sustainable and 'better' investments.

### Session 3. Investment needs and opportunities to contribute to a green and resilient recovery

The COVID-19 pandemic has created considerable pressures on the agricultural system. Declining income and job losses have particularly hit rural areas and SMEs, including small-scale farmers. In developing countries, income shocks have severely affected farmers and informal workers in rural areas, with 65% of poor working adults making a living through agriculture<sup>7</sup>. [Clément Ouedraogo](#), Co-ordinator of the Regional Water Control Programme, Permanent Interstate Committee for drought control in the Sahel (CILSS), stated that in the Sahel region, declining prices of agricultural products and job losses in rural areas have aggravated the already existing structural problems in the sector. Disruptions in supply chains and input shortages have increased market uncertainty and have put private sector investments to a hold.

Many countries have introduced a set of fiscal support measures to mitigate the immediate economic impacts of the crisis, mainly focusing on saving lives and livelihoods, protecting jobs and reversing economic recession. Water-related investments can be drivers for economic growth and a major contributor for a green recovery. [Ismail Oudra](#), Senior Irrigation and Infrastructure Engineer, U.N. FAO Investment Centre, stressed, that water related investments are vital for economic growth, and that water scarcity and droughts can decrease GDP growth rates by 6% in certain countries by 2050<sup>8</sup>. Further, the COVID-19 crisis, including the disruptions of entire supply chains, has triggered a growing recognition of the importance of resilience and integrated approaches.

On the one hand, recovery funds are, in some instances, geared towards improving resilience and a paradigm shift is occurring in countries' investment planning. For example, in Burkina Faso, the orientation of investments in the sector has currently turned to risk management, including climate risks, market risks and health risks, to strengthen the country's capacity to adapt to climate change. Agri-water is key to climate adaptation and mitigation and can be a driver for these solutions. Investments in agricultural water can thus bolster resilience of ecosystems, local communities, and entire value chains and there is hence an opportunity to use the momentum of the crisis to scale up finance for agricultural water. On the other hand, Henk Ovink, Special Envoy for International Water Affairs for the Kingdom of the Netherlands, warned that this opportunity is continuously being missed, and existing structures are inadequate to tackle the problem. Current agricultural subsidies do not necessarily lead to the most sustainable and efficient outcomes and more resilient, efficient and sustainable support mechanisms are needed which are apt to achieve higher-level objectives. The crisis could have a compounding effect, triggering short-sighted investments, which only aim to respond to the crisis but fail to build long-term resilience. On the other hand, the crisis could serve as a wake-up call to finance differently and could accelerate the needed changes across technical, social, policy, governance and other aspects which are crucial to achieve sustainable water management and resilience for agriculture. [Marwan Ladki](#), PhD, Principal Irrigation Engineer, Agriculture & Agro-Industry Department, African Development Bank stressed, that AfDB, for example is

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<sup>7</sup> [Castañeda, A. et al. \(2016\), Who Are the Poor in the Developing World?, World Bank Group, Policy Research Working Paper 7844.](#)

<sup>8</sup> [World Bank Group \(2016\), High and Dry: Climate Change, Water, and the Economy. World Bank, Washington, DC.](#)

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planning to put an emphasis on integration of irrigation and drainage investments into value chains, food security and climate change adaptation and mitigation projects for their 2021-23 lending programme.

Looking at immediate relief measures, COVID recovery funds can offer an opportunity to build resilience and scale up self-financing for farmers. Immediate recovery funds are often directly addressed to SME's, including small-scale farmers. [Marion Le Pommellec](#), Lead Specialist for Agriculture, Natural Resources and Rural Development, Inter-American Development Bank, reported that in Latin America, for instance, financial aid was channelled as direct economic support in the form of vouchers and bonuses to farmers, which can promote investments in small technical improvements in irrigation on a farm level. In Asia and Africa, self-financing will play a crucial role for irrigation and agricultural water management and COVID relief measures have the potential to help unlock this source of finance. Current levels of finance from farmers is unclear, but [Peter Waalewijn](#), Global Lead Water in Agriculture, The World Bank, presented evidence from India showing that 80% from all types of financing sources across modernising irrigation schemes stem from farmers' own savings and that farmer-led irrigation, business-to-business and business-to-consumer alliances are promising business models to finance agricultural water.

## Session 4. Supporting the mobilisation of commercial finance to scale up investment

Commercial finance can play a central role to scale up investment to tackle the water challenges in agriculture now and in the future. Together with finance from institutional investors, agribusiness, financial institutions and technology providers, farmers play a key role in financing the transition towards sustainable agricultural water management. One main challenge is limited access to finance for farmers: Large-scale farmers require finance with long maturities. While the return on investment is estimated to be 10 years, commercial lenders prefer shorter timelines. Medium and small-scale farmers face hurdles accessing finance because their risk profile is difficult or costly to model, thus increasing transaction costs and risks for investors. This requires specific attention to addressing financing barriers for small holders. High risks and risk perception are major deterrents for commercial investments in the sector, as commercial banks have different risk appetites and are subject to regulation on investment risk profiles. Additionally, systemic risks, such as extreme weather events related to climate change pose a particular challenge for sector financing.

Innovative technological and financing approaches are emerging to overcome these challenges. Chris Hartley, Senior Environmental Markets Analyst, United States Department of Agriculture gave the example of adjusted crop insurance premiums to reflect water holding capacity, and thus resilience to drought. Payments based on performance to provide incentives for sustainable water management is another financing scheme gaining wider attention.

Hans Loth, Group Executive VP, Global Head of UN Environment Partnership at Rabobank, presented an approach recently launched: the AGRIFund3, which is a blended financing structure with a dedicated side entity for de-risking. The bank can give a loan to farmers, while the part of the loan that exceeds the risk appetite of the bank is covered by this additional entity. The fund finances projects, which protect forests, promote sustainable agriculture and improve rural livelihoods, targeting initiatives with long-term viability.

[Richard Colback](#), Industry Specialist on Agricultural Water at the International Finance Corporation (IFC), presented a range of risk-sharing arrangements in country examples: While in Uganda, risks for irrigation investments are balanced between farmers, private and public entities, in Senegal, technology providers take the investment risks.

Public funds play a major role for de-risking in the form of guarantees, grants and other blended finance structures and thus help to usher in private sector finance. A challenge in combining these sources of finance is the lack of mutual understanding of the business models between public and commercial actors. While private investors are mainly concerned by risks and returns, public funds look primarily at the impacts of an investment. Further, blended finance structures need to be tailored to the local context and farmers and water users need to be actively engaged. Bankers can play a mediating role, as they are locally integrated with knowledge on local currencies, markets and culture. A clear structure with defined roles and good coordination of the different actors is crucial for the success of blended finance mechanisms. The Dutch Fund for Climate and Development, presented by [Aart Mulder](#), Fund Manager at the Dutch Fund for Climate and Development, FMO, for example, combines short-term blended finance with long-term finance with

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grant elements, organised through strategic partnerships to place investments aimed at mitigation and adaptation. Other blended finance structures for agricultural water are discussed in Background paper for Day 2 of the Roundtable Meeting.

A strong enabling environment can help reducing investment risk and thus drive commercial investments. Coherent water policies, water allocation, water tenure and transparency on roles, water availability and risks are important factors. Performance indicators and data can establish accountability and allow efficient investment planning and risk assessment, creating predictability of markets. While a lack of data inhibits investment, emerging technologies and digitisation could be a game changer in the near future. For example, new tools, such as GIS and real-time remote sensing can facilitate monitoring results, provide early warning and risk management, and thus improve sustainability and scalability. Technological innovation and information sharing could also help lowering transaction costs of financing approaches. The technological transition in agriculture needs to be accompanied with a focus on education and engagement of the youth to develop new farming and financing practices, which are adequate to face the challenges of the coming decades.

## Concluding remarks

The Roundtable on Financing Water provides a unique opportunity to share experiences and learning, identify innovative approaches to scale up financing for water-related investment and exchange good practice on experience to strengthen the enabling environment for investment. Several key messages emerged from the sessions, stressing the importance of not only more but also 'better' investments:

- More inclusive concepts are needed which combine water and food security with other environmental, social and economic policy objectives
- Sustainable water management in agriculture can be a key driver for resilience, adaptation and mitigation and needs to be a central element of the COVID-recovery
- Innovative financing arrangements can overcome investment barriers, such as risk-sharing arrangements and blended finance models
- Technical innovation could be a game changer, allowing for more efficient investments and reducing risks and transaction costs.

A forthcoming OECD report will compile outcomes and shared experiences from this and previous Roundtables on Financing Water and related analyses and will discuss opportunities and challenges to financing water-related investments in the next decade.

For more information, please visit:

[www.fao.org/land-water/events/fao-oecd-roundtable-on-financing-agricultural-water](http://www.fao.org/land-water/events/fao-oecd-roundtable-on-financing-agricultural-water)