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WHY INVEST IN AGRICULTURAL WATER? CASE FOR ACTION AND INVESTMENT

Agricultural water is key to achieving several of the United Nations Sustainable Development Goals (SDGs): poverty reduction (SDG 1), food security (SDG 2), and water and sanitation for all (SDG 6). Unless agricultural water is managed sustainably, efficiently and equitably, the Arab region will struggle to make progress towards these SDGs. Given the sector's importance in supporting agricultural employment and gross domestic product (GDP), addressing the sector's urgent challenges is a priority.

THE COST OF NOT INVESTING

- ▶ Expected economic losses from climate change-induced water scarcity are significant and could cost between 6 and 14 percent of regional GDP by 2050.
- ▶ Failure to address water scarcity and other water-related risks can have consequences on social and environmental systems, compounding existing fragilities and exacerbating tensions between water users at all levels.

THE BENEFIT OF INVESTING

- ▶ Improving the way in which water is stored, allocated, distributed and used could lead to an estimated **USD 7–10 billion** in welfare gains per year, amounting to about **0.5 percent** of regional GDP.
- ▶ Ten million new jobs could be added to the existing **33 million** strong agricultural workforce, if more sustainable agricultural practices were pursued.

WHAT TYPE OF INVESTMENTS IN AGRICULTURAL WATER IS THE REGION MAKING?

- ▶ Investment priorities have shifted: in the 1970s and 1980s, expansion of irrigation and drainage infrastructure was the main theme. From the 1990s onwards, there was a move towards investments focused on community managed systems, modernization and resource management.
- ▶ Given the lack of opportunities to mobilise new agricultural water sources, **modernization** has become a key focus of investments and this trend is expected to continue in the coming years.
- ▶ Agricultural water investments are also expected to increasingly focus on **climate change mitigation and adaptation**. Examples include water conservation and the use of renewable energy to mobilise additional water supplies.



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WHO IS INVESTING IN THE SECTOR AND IS IT ENOUGH?

- Agriculture receives proportionally less from public spending than its own contribution to GDP, and most Arab countries are not spending enough in agriculture.
- Public spending is still the key source of funding (both for new and recurrent investments), but it is often insufficient to even meet recurrent costs related to management, operation and maintenance needs.
- Agricultural water receives a very minor share of development assistance: aid flows to the sector show high year-to-year variation, accounting for about 1 percent of the total aid to the region and this has not increased over the past decade.
- Some bilateral donors, notably China, are becoming important sources of investment and new forms of funding are gaining in importance, such as the Green Climate Fund, Clean Development Mechanism, green bonds and blended finance.
- Private investors, including farmers, play a significant, yet often unaccounted for, role in agricultural water investments, both in irrigation expansion through groundwater wells and in the operation and maintenance of surface irrigation schemes.
- There is a growing awareness of the need for national governments to become better enablers of private investment, including through exploring options for private sector involvement in the construction, operation and maintenance of irrigation and drainage infrastructure.

PRIORITIES FOR POLICY AND INVESTMENT TO ACHIEVE THE SDGs

- Despite the progress made on many fronts, the current policy mix in the region is not ready to deliver on the challenges ahead and, in particular, the SDG agenda. Inefficient incentives and distortions at the core of food security, agriculture and water policies persist. Agricultural policy has not sufficiently addressed the potential negative impacts of agriculture on natural resources, undermining the sector's sustainability and the region's water resources.
- The use of domestic policies to affect agricultural trade and food prices has incentivised suboptimal use of limited resources and led to unhealthy diets in some countries. Food subsidies and market protection result in price reductions and thus consumption of high-calorie, nutrient-poor food items (bread, sugar and oil) compared to healthier items (fruits, vegetables). These dietary practices have led to complex nutrition challenges, with a high degree of prevalence of obesity (especially female obesity), micronutrient deficiency and diabetes in comparison to world averages.

WHICH INNOVATIONS CREATE OPPORTUNITIES FOR INVESTMENT IN AGRICULTURAL WATER MANAGEMENT?

- Advances in nanomaterials and biotechnologies, among others, open up opportunities to mobilise new sources of water supply, including wastewater reuse, desalination and managed aquifer recharge.
- The use of solar energy for groundwater pumping, if paired with appropriate governance mechanisms, can make irrigation more productive and reduce greenhouse gas emissions.
- Innovations in water data acquisition and analytics, including water accounting and water productivity monitoring, enable real-time water infrastructure operation and management, provide insights to farmers on when to conserve or use water, and help to improve water governance.
- Integrating emerging digital technologies with agricultural water management practices contributes to increasing water productivity, with the public sector playing a key role as an enabler and regulator of digital agricultural technologies.
- Controlled-environment agriculture reduces land and water requirements, and has the potential to improve food security and livelihoods. It has expanded significantly in other parts of the world with its inclusion as part of urban food systems, and adoption in the Arab region can be promoted.
- Communities affected by violence and conflict in the region demand innovative and tailored interventions. Some technologies such as controlled-environment agriculture seem to hold promise. In post-conflict areas, there is scope for policies and new institutions to incorporate innovations and focus on sustainable water use from the start.

- Water and agriculture can contribute to promoting recovery and stabilisation in conflict and post-conflict situations. In these situations, innovative financing mechanisms and partnerships are often key to delivering the necessary investments. These should focus on maintaining key services and facilitating emergency relief efforts, while building capacity and promoting sustainable water use. To sustain basic services, one-off subsidies to maintain or quickly restore key infrastructure assets and services, and to retain skilled staff in irrigation authorities are recommended.
- A new generation of agricultural water policies and investments, built on the principles of coherence, sustainability, innovation, inclusiveness and private sector engagement, is required for the Arab region to achieve the SDGs. Three strategic directions are recommended: value water, accelerate agriculture sector transition and target efficient social protection.

