Challenges ahead in Agricultural Water Management: Partnering for effective response

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Global challenges in Agricultural Water Management
FAO response to coping with challenges
Strengthening technical network for a common goal
Guiding principles to synergize effort

GLOBAL CHALLENGES IN AGRICULTURAL WATER MANAGEMENT

Change
Changes in food markets
Changes in water use
Climate change
Change in production technology

Trend
World population due to increase to 9.1 billion by 2050
Agriculture accounts for 70% of global water withdrawal
Climate change could increase undernourished by 10-150 million
Estimated yield gap of major crops exceeds 50% in low-income countries

Prospects
Demand-induced food production to increase by 100% in developing countries
Water demand to increase by 50% by 2050
Net crop irrigation requirements could increase between 5-20% globally by 2080
Global distribution of physical water scarcity by major river basin

GLOBAL CHALLENGES IN AGRICULTURAL WATER MANAGEMENT

The world's average water stress stands at almost 13%, with significant differences amongst countries.

- Globally, 32 countries experience water stress between 25 and 70 percent
- 22 countries experience water stress above 70 percent
- 15 countries experience water stress above 100 percent
- 4 countries experience water stress above 1000 percent

Countries in Arabian Peninsula hit by severe water stress, e.g., Kuwait at 2603 percent, Saudi Arabia at 1243 percent, UAE at 2346 percent.
GLOBAL CHALLENGES IN AGRICULTURAL WATER MANAGEMENT

Scarcity is a relative concept, i.e., an imbalance between “supply” and “demand” that varies according to local conditions.

Water scarcity is fundamentally dynamic, intensifying with increasing demand and with the decreasing quantity and quality of the resource.

Water scarcity has varying dimensions thus requiring integrated approaches.

Water scarcity is a relative concept, i.e., an imbalance between “supply” and “demand” that varies according to local conditions.

FAO RESPONSE TO COPING WITH CHALLENGES

1. End hunger
2. End all forms of malnutrition
3. Double the agricultural productivity and incomes of small-scale food producers
4. Ensure sustainable food production systems and implement resilient agricultural practices
5. Increase investment in rural infrastructure
6. Sustainably increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
7. Build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters
8. Enhanced international cooperation to ensure that sufficient means of implementation exist to provide countries the opportunity to achieve the Sustainable Development Goals.

FAO MANDATE ON WATER AND WATER MANAGEMENT

1. Contribute to the international water agenda, global knowledge and development as lead organization in the UN system on water in the context of food and agriculture
2. Share information and knowledge on water in the context of food and agriculture to improve decision-making and timely availability of information for member countries and partners
3. Provide legal, policy and technical advice and support to develop capacities of public institutions in water management, use and conservation

FAO RESPONSE TO COPING WITH CHALLENGES

1. Governance and management of food production systems
2. Provision of essential ecosystem services
3. Food security
4. Human health
5. Biodiversity conservation
6. Mitigation of, and adaptation to climate change
7. Dimensions of Sustainable Land and Water Management in FAO’s Work
LEADING THE UN SYSTEM ON WATER IN THE CONTEXT OF FOOD AND AGRICULTURE

A dedicated Water Platform promotes cooperation across FAO and collaboration with other international bodies on strategic studies, including the UN World Water Development Reports, and at forums such as the World Water Forum.

STRENGTHENING TECHNICAL NETWORK FOR A COMMON GOAL

WHERE WE ARE

DECENTRALIZED OFFICES

Solid ground for collaboration with extensive network over the globe

TECHNICAL NETWORKS

- CBL hosts 2 Technical Networks:
  - Land and Tenure (including DPSL)
  - Water
- Community of technical professionals sharing the same discipline in HQ and decentralized offices
- Enhancing disciplinary competence
- Exchanging information and knowledge (incl. periodic newsletters)
- Discussing innovative concepts, technologies and practices
- Organizing workshops, events, seminars, webinars, 5-group discussions

GLOBAL FRAMEWORK ON WATER SCARCITY IN AGRICULTURE (WASAG)

Established in 2016 to assist Member States to find solutions to water scarcity
Working Groups:
- Water and Migration
- Drought Preparedness
- Financing Mechanisms
- Water and Nutrition
- Sustainable Agriculture Water Use
The work of WASAG is now guided by the 17 Paris commitments adopted in March 2019
STRENGTHENING TECHNICAL NETWORK FOR A COMMON GOAL

SMART IRRIGATION – SMART WASH INITIATIVE

Effective response to mitigate the impact of COVID-19 through multiple water use development:
- Intersectoral approach assessing the status of irrigated agriculture and WASH
- Evaluation of countries’ resources to develop irrigation and WASH sector for balanced water availability
- Context-tailored investment packages to implement targeted response
- Technical solutions based on country context

Irrigation management
Improving the productivity, performance, and sustainability of irrigated agriculture

Water quality and wastewater
Working to provide guidelines, tools and state of art and fit for safe use of wastewater in agriculture and reduce the amount of pollutants released from agriculture to the environment – securing food safety and human/ environment health

Water governance
Elements of water governance work structured around:
- Water Governance in river basins and watersheds
- Water tenure
- Irrigation water governance
- Groundwater governance

Irrigation management

Water data and information

- AQUASTAT:
  - Implementing country correspondents network
  - Streamline Information System to FAO – Standards
  - Include Geo-Spatial Information
- Water Accounting and Auditing
  - Water accounting partnership
  - Country support (Pakistan)
  - Additional/improved components (Gender)
- WaPOR
  - Version 1.0 on-line

STRENGTHENING TECHNICAL NETWORK TO FIND STRATEGIES

Water and rural poor
Improving the livelihoods of the rural poor, including smallholders and family farmers, through the design of pro-poor strategies and investment plans that promote inclusive and sustainable access and management of water resources

Water and climate change
Assessing the impact of climate change on water in agriculture, and the design of water management solutions for climate change adaptation and mitigation

Drought risk management
Shifting paradigms in drought management, from emergency response models towards proactive preparedness plans that reduce vulnerability and impacts:
- Integrating and aligning water and soil management strategies to maximize response to drought
- Connecting farmers to technologies – changing threats to opportunities

Food and Agriculture Organization of the United Nations
STRENGTHENING TECHNICAL NETWORK FOR A COMMON GOAL

SYNERGIES WITH ICID TASK FORCE ON THE ROLE OF IRRIGATION ON POVERTY ALLEVIATION AND LIVELIHOODS

Sound technical, professional and infrastructural ground to "synthesize specific knowledge and experience from the irrigation sector, to design pro-poor actions in a wider understanding of irrigation."

Expertise and experience from field to policy level to "facilitate technical solutions within clearly defined socio-economic context, so that it can be mobilized on a case specific approach."

Integrated approach to break out of silos, thus, to "emphasize multiple use irrigation systems (MUS) as a specific approach to alleviate poverty in this context."

GUIDING PRINCIPLES TO SYNERGIZE EFFORT

Increasingly integrated approaches required in sustainable land, water and soil management to improve the conditions of rural livelihoods and ensure access to healthy environments.

Combined implementation of most advanced theory and practices to overcome traditional silos-approaches.

Increased investment and tailored policies needed to foster the development and implementation of innovative solutions in line with mitigation strategies to combat climate change.

Strengthened management capacities, communication of water scarce conditions, and encouraging wise use of resources to create responsible consumer patterns.

ICID Vision 2030, calling for water security and sustainable rural development.

FAO’s approach, calling for a holistic and broad framework to eliminate hunger and malnutrition, to make agriculture more productive and sustainable, and to reduce rural poverty by establishing sustainable pathways.

GUIDING PRINCIPLES TO SYNERGIZE EFFORT

HAPPY BIRTHDAY, ICID!

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