

AKST achievements, limits, and challenges in the CWANA region¹

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Abstract

In the CWANA region (Central and West Asia, North Africa), agricultural production takes place in a limited and difficult context. The level of agricultural production is insufficient to fulfil the needs of its large population; imports are high, and despite important economic and social progress, poverty, hunger and malnutrition still prevalent in part of the region, especially in rural areas.

Natural resources are limited and the situation has grown worse over the last 50 years due to poor management. CWANA is the poorest region in the world in terms of water resources, globally and per inhabitant. Most countries are water scarce and this trend is expected to intensify due to climate change. The arable land resources are limited and have been pressured by urbanisation, expansion of the cropped area, and poor soil management. A considerable portion of the agricultural production in CWANA is irrigated, and this irrigation often depends upon non-renewable water resources. CWANA is rich in unique agrobiodiversity but this agrobiodiversity is in danger and local genetic resources are now fast disappearing. Policies are undergoing major changes as they are reoriented to reduce public investments and support mechanisms. Input and output markets (privatisation, trade liberalisation) have also been subject to recent and rapid changes. In some countries conflicts, political instability and poor governance have hampered agricultural development.

Development of AKST is uneven and varies greatly from one country to another. AKST has supported an increase in the knowledge of natural resources in most of the region and has also promoted the initiation of a green revolution in a few countries. Agricultural production and yields increased mainly in the irrigated systems with environmental problems. Insufficient consideration has been given to the rainfed systems where major environmental and natural resource degradation has taken place; yields remained below the world average with high inter-annual climate variability due to climatic hazards. AKST contribution to policies and agricultural development strategies in CWANA is limited. NARs and international institutions are the main contributors to agriculture research and development while the private sector contribution is very limited. In most countries of the region, investment in AKST in CWANA region is under 0.5% of the GDP.

During the next years, AKST should contribute to the major challenges that agriculture faces. Research priorities should be oriented towards improving income generation and food security, reducing malnutrition. Agricultural research policies for sustainable development should aim at bringing programs closer to the field, empowering farmers via participatory action research and farmer to farmer exchange, developing technology options drawing on local knowledge, giving greater attention to the gender dimension of farm livelihoods.

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Drought tolerance is a complex issue and increasing land and water use efficiency, productivity of livestock while preserving the environment are among the main research priorities of the region. Advances in genomics and sequencing and better phenotyping tools/strategies could allow selecting desirable genotypes. Working on more species and diversifying farming systems could also contribute to increase water use efficiency and reduce risk .

Agricultural research should also concentrate on policies as international trade issues affect severely farmers in CWANA who have limited access to global markets. Policies should also consider protecting human health and natural resources.

The CWANA region is facing problems that make it necessary to increase the effort toward agricultural research. AKST should now address a more comprehensive picture of the situation in terms of the environment, sustainability, male and female farmers of all economic levels and the challenges posed by the changing climate. All avenues of innovation and information are needed to create new approaches, methods, and techniques in the agricultural sphere.

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