



Rural Development

Water and agriculture

The challenge

An average 70 per cent of water withdrawn from surface or groundwater sources worldwide is used by the agricultural sector: in some developing countries the proportion exceeds 90 per cent. More than 30 countries are already subject to increasing water shortages, predominantly nations whose national income largely derives from agriculture. In these regions rainfall is frequently sparse, and climate change is making it increasingly unpredictable.

As the world's population continues to grow, so too does the need for food. The rising demand for water, coupled with dwindling supplies, makes it imperative that resources are managed sustainably. This often results in conflicting goals. Agricultural demand for water must be balanced against the minimum requirements for local ecosystems, industrial uses and drinking water.

Our approach

The current challenges will only be overcome if water for agricultural use is placed on an entirely new footing. GIZ pursues an integrated approach to water resources and land management to ensure that these scarce resources are handled efficiently and sustainably, and so contribute to poverty reduction. Fresh impetus is called for, along with innovative approaches which reduce demand but retain or even increase productivity, while also complying with ecological requirements.

We work closely with national and local agricultural, water and environmental authorities. Measures aimed at effective and efficient water management are assessed for their economic, social and environmental compatibility. We also advise our partner organisations and the private sector on becoming competent and reliable service providers for water users. We place special emphasis on the situation and needs of women and disadvantaged population groups, such as nomadic herders.

Our services

GIZ works with its partners to jointly formulate approaches geared towards the appropriate, economically sustainable development of water use, particularly among small-scale farmers. Our priorities are as follows:

Sector reforms: We advise national authorities on the introduction of sustainable land and water resources management systems. This advice is provided in the context of comprehensive strategies to manage water catchment areas. We adapt proven approaches to regional and local conditions and also train executives and employees of the relevant organisations. We render assistance to state bodies with land and water law reforms.

Governance: We assist with the development of institutions and provide advice to organisations such as water user organisations and marketing associations. We focus our assistance specifically on women. We take existing access and utilisation rights into account and strive to achieve distributional equity.

Adaptation to climate change: We raise awareness among our partner organisations of the expected impacts of climate change in terms of agricultural water use, and advise them on suitable adaptation measures. We work towards planning such measures at an early stage and making them an integral part of water and land management systems. Our aim is to make agricultural production systems more robust.

Water management in agriculture: We transmit proven cropping and irrigation techniques and water-conserving measures which are adapted to local knowledge and rules. At the same time we provide advice on the suitable use of farm inputs and marketing. We foster contacts with the private sector to harness its contribution to the efficient and user-friendly management of water resources. We also sup-



port ecologically sound and healthy uses of water of marginal quality, such as brackish water and treated wastewater.

The benefits

Integrated water and land management helps to ensure that water in agriculture is used effectively, fairly, efficiently and sustainably. Small-scale farmers are the chief beneficiaries. This has a positive effect on food security, creates jobs and reduces poverty in rural areas.

Our approach is highly cost-effective and sustainable. It harnesses GIZ's extensive interdisciplinary experience and the knowledge of our international network of advisers, and passes this on to our partners.

An example from the field

In Jordan, GIZ is supporting the Ministry of Water and Irrigation and its subordinate authorities on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). The objective is to introduce a sustainable strategy for the utilisation of Jordan's extremely scarce water resources. The Ministry has brought its budget and investment planning for the sector into line with modern standards. The water supply to the four million people who live in six administrative districts, including Amman

and Aqaba, has improved in terms of both quality and quantity.

In the Jordan Valley we are working with local partner organisations to promote the use of treated wastewater in agriculture, in compliance with applicable environmental and health standards. Guidelines have been drawn up and some 30 per cent of farmers are being trained in the appropriate use of water. The farmers spend up to 60 per cent less on fertilisers because the treated wastewater contains nutrients which their crops can utilise. Scarce fresh water resources can be used for higher-value purposes.

The project has also helped to establish and provide advice to water user groups in the Jordan Valley; about 40 per cent of farmers in the area are now members. With the help of these groups the allocation of irrigation water has become more transparent and reliable. The farmers are thus more willing to pay water tariffs which cover the cost of the service.

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