



**Figure 1:** Boy collecting drinking water in Badakhshan province  
**Photo:** Wasim Iqbal

## Impact Assessment and Management of Droughts in Afghanistan

Strategies to mitigate or reduce the damage caused by successive droughts in Afghanistan have unfortunately been ineffective so far.

Lack of information related to drought is an important reason for the severe impact

of drought in the country. In order to reduce this impact, policy makers should be informed about causes and impacts of drought as well as of coping and mitigation strategies.

### Key Messages

- Government services will be strengthened to provide technical and financial support to poor farmers to buy modern agricultural machinery and also to cope with the impacts of drought.
- Local water supply shall be improved by promoting micro-catchment water harvesting techniques and groundwater extraction wells.
- It is important to promote drought awareness, including understanding of the causes and impacts of drought, of mitigation methods, and of water conservation.

### **Supporting farmers financially in times of drought**

Drought causes a multitude of serious economic impacts in Afghanistan. The economy of rural areas is strongly dependent upon agriculture and livestock. Droughts cause failure of agriculture and lead to a decline of farm livelihoods so that farmers are persuaded to leave agricultural activities for alternative, off-farm income sources. The first ones to leave would be the young and enterprising farmers which would eventually lead to greater vulnerability in the agriculture sector and severe impacts from drought. Therefore, government support should be provided to farmers facing the impact of drought in order to increase the resilience of young people and to provide them with the choice to continue farming.

### **Developing practical strategies to increase water supply**

Unfortunately, there are few effective strategies to cope with drought in Afghanistan. Government institutions responsible for mitigating and reducing the damages caused by successive droughts are very weak and are unable to work effectively. Natural river discharges in Afghanistan are unreliable, so that adaptation measures focusing only on managing river discharge may prove inadequate. Robust strategies should instead integrate the management of river flows with water harvesting techniques to more effectively mitigate drought impacts.

Existing drought coping strategies in Afghanistan are wholly based on crisis management and as such, they can only bring about a short-term solution. Risk management approaches, which are aimed at reducing drought impacts over the long-term, are not practiced in any part of the country. Plans should be developed to provide tools for evaluating various water management options, such as increasing storage capacity and enhancing efficient water supply and conveyance systems. Construction of multipurpose dams for irrigation and water supply, digging groundwater extraction wells, recharging groundwater, and promotion of various water harvesting techniques, such as conservation agriculture, should be implemented to improve farmers' resilience to drought, and to enable farmers and the government to better combat future droughts.

### **Increasing social awareness can alleviate impacts of drought**

Afghanistan is classified as one of the most drought-sensitive countries in the world. Lack of information about drought among stakeholders is an important factor contributing to the severity of drought impacts in Afghanistan. More and better knowledge of drought and of its characteristics could lead to the development of more effective strategies to reduce and mitigate the enormous damages related to drought. Therefore, special attention should be paid to informing all stakeholders about the causes of drought, and to generate efficient strategies to mitigate and alleviate drought damages. In addition, government and policy makers should take into account farmers' perception and understanding about the prevalence and characteristics of drought, such as frequency, environmental hazards, socio-economic impacts, along with the coping and mitigation strategies adopted by local communities under drought condition and their conflict resolution mechanisms.

### **Emergency preparedness planning for reducing the risks of drought impacts**

Many economic activities in Afghanistan, and in particular agriculture, depend heavily on rainfall. When drought occurs, the agricultural sector is usually the first sector affected because of its dependence on rainfall and soil moisture. To mitigate drought impacts, water resources decision makers should develop drought preparedness plans with the help of early warning systems and long-term forecasting of drought to mitigate social, environmental and economic costs. A reliable forecast would allow government officials and local communities to undertake more efficient drought-relief interventions.

## **Water demand management is more effective than developing new resources**

Managing water demand and saving water resources rather than building and developing new sources has been considered the best option from both an economic and environmental perspective.

Because it is the highest user of water resources, the agricultural sector is a prime candidate for water demand management policies. When more efficient methods of water use are developed for agriculture, a greater quantity of water is available

to the community for other uses.

To enable the government and communities to better manage water demand, the following measures are recommended:

- Promotion of land use planning as a function of watershed management to decrease excess runoff and increase groundwater infiltration;
- Improvement of irrigation and water supply systems to decrease water losses;
- Modernization of farming techniques to decrease water use.

## **Case Study from Badakhshan**

CAARF fellow Wasim Iqbal undertook research in Badakhshan province in Afghanistan to assess farmers' perception of drought impacts, local adaptation and administrative mitigation measures. He conducted a structured questionnaire and survey in the local language and compiled information on prevalence and characteristics of drought, based on farmers' perceptions, and documented coping and mitigation strategies adopted by farmers during drought conditions. In addition to the survey, consultations were conducted with water resources agencies at the national level, water specialists, climate change experts, and agricultural engineers.

Iqbal found that drought has brought about serious diverse economic impacts, including loss of employment, reduction in crop yield and livestock production, all of which have worsened farmers' livelihood situations and subsequently weakened their

financial situation. Social impacts reported included migration, hopelessness and sense of loss, conflicts because of water scarcity, health impacts, and effects on schooling of children, malnutrition, and limited food availability. Environmental impacts, including increasing temperatures, pasture and forest degradation, deteriorated water quality, damage to fish habitat, and groundwater depletion, were also described by farmers. Farmers use their local techniques and practices to lessen the impacts of drought and thus have various adaptation options. However, the research showed that farmers' preparedness and adaptation measures proved inadequate because of low education, low income, and a tendency to rely on off-farm income sources.



**Figure 2:** Irrigated (A) versus rain-fed (B) agriculture in Badakhshan province.  
**Photo:** Wasim Iqbal



## Further Reading

1. Iqbal, W. (2010). An investigation of drought and wheat production in Hari Rud river basin, Afghanistan. Asian Institute of Technology Library. <http://203.159.0.12/search/X?SEARCH=%28wasim%20Iqbal%29&SORT=D&b=mnaithhttp://203.159.0.12/search/X?SEARCH=%28wasim%20Iqbal%29&SORT=D&b=mnaith>
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## Mountain Societies Research Institute

The University of Central Asia Graduate School of Development's Mountain Societies Research Institute (MSRI) is an interdisciplinary research institute dedicated to addressing the challenges and opportunities within Central Asian mountain communities and environments. MSRI's goal is to support and enhance the resilience and quality of life of mountain societies through the generation and application of sound research.

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