IWRM Action Hub

CASE STUDY

Cameroon: Lessons from domestic rain water harvesting

Summary

Water resources, in particular conventional rural water supply systems/sources are among the first to be impacted by climate variability. Accessibility to portable water in the sudano-sahelian part of Cameroon is a course for concern given that the population relies mainly on springs, wells and boreholes for the supply of potable water in rural areas. Rain water harvesting and banking interventions have been implemented to provide temporal relief to the communities.

Background

Accessibility to portable water in the sudano-sahelian part of Cameroon is a course for concern given that the population relies mainly on springs, wells and boreholes for the supply of potable water in rural areas. Springs and wells are the most common because these are relatively inexpensive compared to boreholes which are more resilient to climate change but present the challenge of frequent breakdown due to lack of preventive maintenance of the pumps. The main climate risks to the water supply systems in rural areas are floods and droughts. Floods with increasing frequency are damaging or polluting water supply systems. The use of springs and wells present two major challenges: high fluoride concentrations in some localities and vulnerability to climate change (early and prolonged dry up during the dry season). The later imposes severe constraints especially on women and girls who are the fore of household water chore. Women and girls noted that they usually cover 5-6 km to fetch water of doubtful quality. To reduce the vulnerability of the population in the short to medium term, domestic rain water harvesting is one option which has been explored where rainwater is collected, treated and stored for use in the dry season when other water sources dry out.

Actions taken

Rain water harvesting and banking interventions have been implemented to provide temporal relief to the communities especially during the last three months of the dry season when all other water sources in the area have dried up. Rationing of the available water is integrated to ensure equity to the different households. In 1995, a Rock Surface Rain Water Harvesting system was constructed by CARE Cameroon in Gougouling in North Cameroon. The reservoir was designed to supply water to the population for 3 months (for details on operation see detailed case). The African Indigenous Women's Organization - Central African Network (AIWO-CAN) has also implemented a six domestic roof top water harvesting system in the localities of Douroum and Mbozo. Three sites in Mbozo were completed in 2012 before the end of the rainy season and have been harvesting water, while that of Douroum has been operational since completion after the 2013 rainy season. The systems comprise a collector with dimensions of 3.54 x 8.5 m made with aluminium sheets, raw water storage tanks (5 m^3 pvc tanks), a filter and 6 m^3 filtered/treated water storage tank. The filter is a 20 l plastic bucket filled with charcoal, gravel and sand. Ground grains of moringa previewed for disinfection were yet to be included in the filter. In Mbozo the storage tanks are constructed with steel while in Douroum, the

storage tanks are made with concrete. The filtered water is rationed to members of the community during the rainy season. Distribution stops before the end of the rainy season in order to the water store for rationing again very late in the dry season in March and April when other water sources in the locality have dried up and when women usually have to travel long distances to fetch water of doubtful quality.

Outcomes

With the completion of the project, communities have observed the availability of water for multiple uses: for prayers during Ramadan; for socio-cultural events in the communities as well as satisfying the drinking water needs of passer-by. Communities have reported an increase in the rate of school attendance by children as an outcome of less time spent fetching water. Water quality testing results suggest that the harvest water is potable. This project has contributed to cross cutting objectives: build community-level adaptive capacity, reduce the risks faced by communities from climate change,

and in turn influence the policy and institutional arenas to promote sustainable management of water resources to counter likely climate change impacts. Provision of domestic water supply alone will not result in significant and sustained reduction in the vulnerability of the community to climate change. Multiple use services approach that guarantees water security has to be promoted for improved access to water to be affective as an adaptation measure to climate change. In rural parts of northern Cameroon, water is needed for uses like irrigation, animal production, and fisheries. To ensure water security, springs and wells need to be permanent in the long term. This will require enhancing ground water recharge which in turn reduces runoff and hence reduces soil erosion. While this intervention provides lessons for temporal relief, the scope of the project, the limited per capita water provided and the cost of the intervention suggest that this is not a scalable initiative from an economic stand point as well as operation and maintenance. This case demonstrates the need for active monitoring and evaluation (M&E) in IWRM interventions aimed at reducing vulnerability to climate change. It further makes a case for an 'IWRM discovery and innovative funds' that could allow 'testing new initiatives' for climate change and water adaptation. Finally, lessons learned through M&E can play a key role in informing and influencing 'adaptive interventions' as seen in the on-going solar pump boreholes intervention in northern Cameroon.

Lessons Learned

A holistic development approach rooted in IWRM is needed to address the sudano-sahelien communities' vulnerability to climate change.

The provision of basic amenities and facilities such as road infrastructure, schools, health facilities, electricity and a grinding mill are important development drivers with potential to reduce deforestation and promote catchment protection and management.

Considering the role of local municipalities in the provision of water to communities, their active involvement to provide technical backstopping is essential for the purpose of sustainability.

A constituted water management committee with mechanisms for improved revenue management is essential. The absence (temporal or permanent) of a committee's member should not be an obstacle to access to finances for operation and maintenance.

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Related IWRM Tools
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