SNAPSHOT
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COMMUNITY-BASED LAND AND WATER MANAGEMENT FOR ADAPTATION AT SCALE IN SUDAN

Changes in the reliability and intensity of rainfall add stress to farming systems already under pressure from population increase and lifestyle changes imposed by our increasingly interconnected world. In semi-arid environments such as Darfur, Sudan, effective adaptation to climate change is essential to cope with competing demands on land and water. The only enduring solution is inclusive and community-based planning and management of land and water.

KEY FACTS

- The UNHDI 2020 ranks Sudan amongst the world's least developed countries. 69% of North Darfur State (1.4 million people) live below the poverty line and in need of humanitarian aid.
- Communal and tribal conflicts due to competition over natural resources have led to half a million people in North Darfur becoming internally displaced people (IDPs).
- Overgrazing degrades and deforests land, reducing biodiversity and increasing the risk of desertification.
- Unreliable rainfall due to climate change has caused agriculture yields to diminish and settlements to be abandoned, increasing pressure on other areas.
- Low agricultural yields force farmers to expand into rangeland areas. The resulting deforestation increases desertification, increasing the pressure on rangeland.

In Sudan, the impacts of climate change appear as more frequent and severe droughts, heavy rain, and higher temperatures. Rainwater harvesting, cultivation, or water pumping technologies can help rural communities adapt to these impacts.

However, the real challenge is working with local communities to implement technologies to manage land and water, without which successful adaptation cannot be achieved.

Collaborating with local institutions is another challenge in managing land and water to create access to water points for livestock and open corridors for pastoralists and their herds.

Integrated Water Resources Management (IWRM) projects are an effective way of achieving adaptation goals. While the name suggests these projects are about water only, they do much more than that.

The IWRM approach emerges from the recognition that communities traditionally managed land and water well: they understood the climate and seasons, they had techniques for monitoring the weather and rainfall, they had agronomic ways of controlling pests, including local pesticides, they used crop rotations, and they understood fire risk. Their indigenous knowledge of traditional farming equipped them with the know-how to manage land and pastures in a way that was not too damaging. The different groups sharing the land—pastoralists, agro-pastoralists, and farmers—had good relations and agreements on the use of land and crop residues. Animals were only allowed onto fields when the harvest was ready. They ate crop residues and fertilised the land with their manure and urine: a win-win.

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Climate change, however, disrupted this harmonious cycle of traditional land and water management. Productivity of both grazing land and cropland fell. Pastoralists had to leave rangelands early due to a lack of food and water. Animals ate crops before they were harvested. The traditional migratory routes were still needed, but land use had drastically changed.

Practical Action's IWRM projects coordinate land and water use to provide communities with the structure and capacity needed to adapt to climate change. Water management is achieved through improving the location, design, and management of water points, demarcating livestock corridors and building rainwater harvesting structures with improved design. Land management involves better management of forests, rangeland, and the watershed. This is achieved through planting trees and rehabilitating the pasture by reintroducing indigenous grasses with high nutritional quality.

In IWRM projects, local communities, including pastoralists and farmers, are front and centre. Local communities set up their own natural resource management committees that include various livelihood and tribal groups, women, and youth.

These committees plan and manage rangeland, farmland, and water resources together with the community to ensure equal and fair access to resources, improving rural food security and reducing conflicts.

As Practical Action, our experiences of using IWRM have shown that donors and governments at both local and national levels should increase efforts to support and invest in community-based adaptation through IWRM in Sudan.

CASE STUDY: THE STORY OF HAFIZ

Hafiz was one of the many people the civil war in Darfur turned into a refugee for many years. When he finally returned to his village, Hafiz did not have the knowledge or tools to grow enough crops. People were now chopping down trees to rebuild their homes, reducing tree cover and causing desert sands to cover fields. To make matters worse, the usually predictable rainfall had become erratic due to climate change.

Practical Action is working with many people like Hafiz in Darfur with 15,000 households. Around 700,000 people indirectly benefit from our projects to recharge underground water, supporting 110 water points and increasing the survival rates of trees and shrubs. Those trees and shrubs, in turn, help to stabilise banks, combat land degradation and desertification and recharge underground water, creating a virtuous circle.

The farming community in Darfur is now collaboratively managing their land and water with crop rotation, water collection, and solar irrigation. Farmers manage their water supply together by rebuilding dams. Water no longer runs off, but turns the desert into lush green fields. The soil is now more fertile with reliable yields that improve food security and bring in better income. Reduced land and water conflicts means that people in IDP camps can return to their villages.

Hafiz has since invested in a threshing machine to help him process his crops and sell them for greater profit. With improved land and water management, farmers like Hafiz can find hope for the future and adapt to the changing climate.

About Practical Action

Practical Action is an international development organisation that puts ingenious ideas to work so people in poverty can change their world.

Big change starts small.

References and Further Reading

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