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New Techniques Help Locate Groundwater

In Somalia, much-needed sources of underground water were identified by using advanced geophysical surveys in those same areas where previous trial-and-error drilling had delivered no results.

One of the most tumultuous civil wars is taking place in Somalia, leaving a legacy of famine and disease and the country in ruins. In partnership with the Belgian Survival Fund (BSF), IFAD has responded to the crisis by establishing the Northwestern Integrated Community Development Programme, an initiative aimed at improving people's access to food, water and health services in Somaliland. A particularly successful result of the programme emerged from its rural water facilities component. Despite failed attempts at drilling for water by the British during the colonial period and by the Chinese during the 1980s, a geophysicist recruited by the programme detected likely underground water sources in several areas by means of electrical resistivity techniques. Thanks to a complementary IFAD grant, a borehole was dug in the area of Dilla and groundwater actually found and tapped.

Country:
Somalia

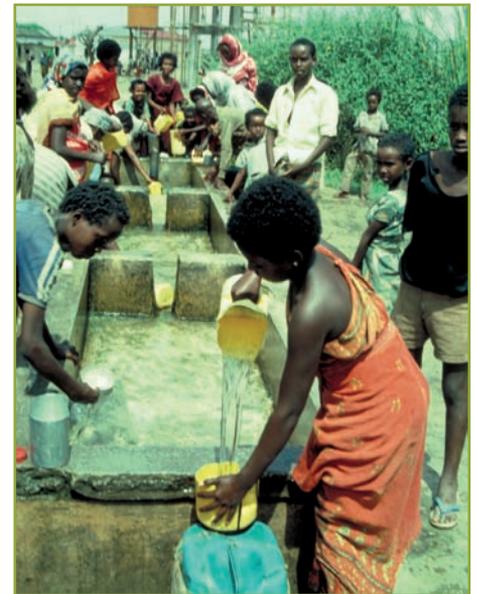
Direct Beneficiaries:
Livestock herders, women

Results:

- The Dilla borehole is now a permanent source of clean water that supplies the village and surrounding area.
- Seven additional boreholes have been successfully dug by various agencies in other sites that the programme surveyed.
- Underground water availability in Somaliland has been reassessed.

Main Lessons:

- New techniques applied within a calculated risk-taking approach can bring enormous benefits to poverty-ridden regions.
- Investment activities will be more effective if they are anchored to a process of participatory community development.



BASIC INFO

Sources:

Northwestern Integrated Community Development Programme – Project Completion Report (IFAD, 2009)

Project Name:

Northwestern Integrated Community Development Programme

Project Starting Date:

2001

Contact:

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WEB PAGES

**IFAD operations
in NENA and CEN:**

<http://www.ifad.org/operations/projects/regions/pn/index.htm>

IFAD learning notes:

<http://www.ifad.org/rural/learningnotes/index.htm>

IFAD case studies:

<http://rpr.ifad.org/node/483>
(username and password: "guest")

Background

With a population of around 9 million and a per capita income estimated at less than US\$300, Somalia is one of the poorest countries in the world. The civil war that broke out in the late 1980s, and the ongoing insecurity in many parts of the country, have worsened access to essential services and infrastructure.

In 1993, IFAD launched the Beyond Relief Programme, which was designed to help restore agricultural and livestock productivity in selected areas of Southern Somalia. The programme, however, was brought to an abrupt halt in September 1995 by the civil war.

In 1997, the programme was reformulated and relocated to the Awdal and Wooqoyi-Galbeed regions in northwestern Somalia (self-proclaimed Somaliland, not recognized by the international community), where a greater degree of security could be guaranteed.

In 2001, in light of the success of the revised programme, IFAD and BSF launched the Northwestern Integrated Community Development Programme, whose objective was to improve household incomes and satisfy basic minimum needs (food, health and water) of people living in the Awdal and Wooqoyi-Galbeed regions of Somaliland.

Programme Overview

The majority of people in these regions fled to refugee camps in Ethiopia during the most intense period of civil war in Somalia from 1992 to 1999. When they returned, they found their farmland in a very poor state. As a result, men migrated in search of work during the dry season, and women returnees found themselves economically and socially disadvantaged.

For this reason, although the IFAD/BSF joint programme sought to reach the entire rural population living in the area – an estimated 127,000 households, or 700,000 people – it devoted special attention to single women, who head about 30 per cent of local households.

The programme consisted of six components: Agriculture and Livestock

Support; Rural Water Facilities; Rural Health Services; Rural Financial Services; Local Capacity Building; and Programme Management. It was characterized by a high level of community participation and ownership: communities were encouraged to work together after years of mistrust and animosity.

The programme – whose second phase has recently been launched – successfully raised agricultural production to surplus levels, achieved a sustainable level of food security and tackled deficiencies in nutrition and health conditions. One of its most significant results, obtained in the strategic area of water conservation and management, is presented below.

The Water Issue

Water is very scarce in the region. Water sources are often highly contaminated because they are overused, both by people and by animals. During the rainy season many farmers in the area cultivate crops on the banks of the dry riverbed, using hand-dug shallow wells as their water source. During the dry season no water is available for drinking or cultivation. Local people are forced to travel long distances to fetch water, or they have to migrate from the area in search of water for themselves and their animals.

Investigations carried out in the past had convinced people that there was only impenetrable rock and no underground water sources underlying the area west of Hargeisa and extending all the way to Borama town, a distance of about 120 km. The British had attempted to drill for water during the colonial period, and the Chinese tried again in the 1980s, but both without success.

After civil war broke out, various agencies attempted to address the problem of water scarcity in these areas by randomly drilling boreholes to tap underground sources. Most attempts were unsuccessful and wasteful of resources.

Electrical Resistivity

The programme's managing unit carried out scientific investigations in an attempt to

locate areas that might contain underground water sources before any drilling operations were undertaken. In addition to using historical data, the unit recruited a geophysicist who undertook surveys using electrical resistivity – a technique for locating ground water fracture zones underneath a rocky area – in areas experiencing acute water shortages. The surveys pinpointed areas in the Borama, Botor, Dilla, Gabiley, Gogolwanag and Kalabeit districts that were likely to have underground water sources.

A small IFAD grant made it possible to drill at one of the sites in Dilla and successfully tap an underground water aquifer. The Dilla borehole is now a permanent source of clean water for the village and surrounding area. The day the water was first pumped out, two men, aged 103 and 105, left their homes to witness the great event. At the time of British rule, they had asked that a borehole be drilled, but they had been told there was no underground water in their area. To see water flowing freely in their village was the fulfilment of a dream they had nurtured all their lives.

Replication and Scaling Up

The success of this approach has led to a reassessment of underground water availability in Somaliland. Since then, various agencies have successfully drilled seven boreholes at other sites that the programme surveyed.

Additional broad-scale surveys are being planned. Africa 70, an Italian non-governmental organization, with funding from the European Union, and the United Nations Development Programme, with funding from Sheikh Zayed, are currently carrying out geophysical surveys before drilling boreholes.

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