

»» Project Information

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Small irrigation systems – Mali

Creating prospects through irrigation

In recent years Mali has hit the headlines due to conflict in the north of the country and its suffering population. Yet the West African state has plenty of fertile land and potential to become the region's granary – and improved living conditions will also go a long way to securing social peace.

Context

Mali is still one of the world's poorest countries. In 2013, the nation ranked sixth to last in the United Nations Human Development Index. Almost half of the 16.5 million Malians live from less than one Euro per day; a third of the population is chronically malnourished. The violent conflict which has gripped primarily the north of Mali since March 2012 has led to an overall deterioration of the situation. Half a million people fled their homes, while the country's low economic growth caused by high population growth ground to a halt.

And there is still friction today, for ethnic and religious reasons, as well as the precarious economic situation. The lack of prospects which this entails is a particular challenge for this very young country – two-thirds of all Malians are under the age of 25.

Improving living conditions throughout all strata of society is therefore the most important basis for lasting peace. The largest sector of the economy is agriculture, which employs three out of four Malians. Almost a quarter of the country's surface area (primarily in the south) offers favourable climatic conditions. In the dry northern region, irrigation can increase yields significantly: 380,000 hectares of land are currently farmed in this way. This could be multiplied almost five-fold if the right conditions were created.

Project approach

Not far from the desert town of Timbuktu, in the inland delta of the River Niger, which flows 1,700 kilometres through Mali, the water level of the river has determined daily life since times began. KfW Development Bank, in cooperation with the German organisation Gesellschaft für Internationale Zusammenarbeit (GIZ), is promoting the expansion of the region's irrigation systems. Rice fields are irrigated in a controlled way using the pumps provided and channels built by local residents. Additionally, storage facilities are being constructed at the transition area between the main course of the river and the flood plains, so that water can collect there when

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Planting rice on the production areas specifically prepared for women.
Source: KfW / Mali-Nord-IPRODI.

the river recedes. If floods occur, it is virtually impossible to reach the delta by road and so the harvest is shipped via KfW-financed ferries to the new storage facilities which were also recently built. The rice can then be transported to the market from there if the delta is dry and prices rise in the towns.

On the barren rocky plateau of the Dogon region, close to the town of Mopti, where the last forests disappeared long ago, other solutions are needed. KfW, on behalf of the German Government and in cooperation with national partners, is implementing these solutions within the framework of the National Programme for Small Irrigation Systems (PNIP). Accordingly, micro-dams are being built which collect rainwater run-off. At the same time, trees are being planted around the dams in order to protect the soil which is in danger of erosion. As many villages are not yet connected to markets, roads are being constructed to transport onions and potatoes from the fields to customers.

In the fertile south of Mali, in the Koulikoro and Sikasso regions, which enjoy higher rainfall, smallholders farm the land for the market in the rest of the country. KfW's goal here is to boost production, both quantitatively and qualitatively, for example through diversifying crops and setting up fish farming. The micro-dams being built here are larger than in Dogonland; river weirs are also being set up which widen the riverbed and enrich the soil with water.

Impact

In the region surrounding Timbuktu alone, 70,000 smallholders and their families farm 18,600 hectares of

irrigated village perimeters annually. In good years, such as 2010, they harvest more than 100,000 tonnes of rice, at hectare yields of five to six tonnes. By 2018, a further 15,000 hectares of farmland are to be converted throughout the country, on which rice and vegetables can be harvested for 600,000 people.

Harvests are carried out three times a year in Dogonland thanks to the 80 micro-dams which have been built to date: this is an average of 60 tonnes of onions and two tonnes of millet per hectare. Each micro-dam is managed by an average 100 men and women and can benefit a whole village. After deducting all costs, family income is around a third higher than previously. At the inland delta near Timbuktu, the results are just as pleasing: if income is converted, then earnings from intensive rice production are three times higher than the income of a day labourer. But most importantly, the food supply is secured. By cultivating one parcel of land amounting to just one quarter of a hectare, a family of eight can expect a secure supply of rice for half a year.

Transport costs are lower in places where roads are being built: food often only costs half as much at markets which are easier to reach. Villages which were frequently not able to access social or healthcare infrastructure for months at a time can now reach schools and hospitals all year round. This is simply a small example of how the whole population – regardless of ethnic background or religion – can benefit from agricultural infrastructure.



Contact

KfW Group
KfW Development Bank
Palmengartenstrasse 5-9
60325 Frankfurt am Main, Germany
Phone +49 69 7431 4689
felix.povel@kfw.de

KfW Office Bamako
SBadalabougou
Bamako
Republic of Mali
kfw.bamako@kfw.de