

# Growing for the future: How new initiatives are feeding Niger



Islamic Development Bank Group

**How do you feed one of the world's poorest populations in one of its harshest environments? That is the challenge facing Niger, where the main problem is simple – there is very little rain.**

Niger suffered badly during the severe droughts that hit the Sahel region in the 1970s and 1980s, when fodder and cereal shortages threatened millions with starvation. And the country has experienced food crises at least four times in the past decade. It is not just the climate that is a threat; crops are vulnerable to insects and birds,

and livestock suffer from disease. Providing enough food is a persistent challenge.

The growing population increases the pressure. This rose at nearly 4 per cent a year during 2009–2012 – the fifth-highest rate in the world – driven by an annual birth rate that reached 49.8 per 1000 people in 2012.<sup>1</sup> Early marriage is one factor behind this. Women marry as young as 15 and start having children soon after. Poverty is another: having more children increases the odds of some reaching working age and supporting the family.



**When something is successful,  
farmers are keen to replicate it**

## It is possible to train people to maximize a resource

But food insecurity is not simply a case of insufficient food; a lack of access to food is sometimes the real problem. This can be a result of cultural issues, meaning certain groups are food insecure – male children being prioritized over females, for example. However, it is often the result of poverty; even when food is available, poor people cannot afford to buy it.

Another issue is the quality of food. People need a balanced and nutritious diet, especially children. But when certain food types are lacking, they may not get all the nutrients they need. This can cause malnutrition, leading to health problems such as stunted growth. Together, these factors mean Niger faces a constant battle to feed its people: at present, 2.5 million Nigeriens are considered to be at risk of food insecurity from a population of around 17 million.<sup>2</sup>

### The Special Program for Food Security

The Government of Niger instigated the Special Program for Food Security (SPFS) to tackle these causes of food insecurity. The first step was a trial period, 1995–2000, to test different approaches to increase agricultural production. Although this phase was conducted to help design the main programme, it had some significant impacts, such as increases of up to 50 per cent in groundnut and cowpea yields.

Following this, the Islamic Development Bank (IsDB) and other donors including the governments of Monaco and Switzerland and the Food and Agriculture Organization of the United Nations were asked to support Phase 1 of the SPFS. The Government of Niger and project beneficiaries also contributed to the cost. During Phase 1, which ran from 2001 to 2005, successful approaches and techniques from the test phase were rolled out in 167 villages across the Dosso, Maradi, Tillabery and Zinder regions in southern Niger.

The aims of this phase were to diversify and increase agricultural production, and increase the nutritional value of the food produced. Another important aim was to enable beneficiaries to earn an income: agriculture employs 80 per cent of the population in Niger, and little other work is available.

### A programme of seven components

The actual cost of Phase 1 was US\$4.06m, lower than originally expected (US\$5.2m). IsDB was the main donor, providing US\$2.47m (61 per cent of the total cost). The funding was split into seven components.

Part of the cost (45.6 per cent) was used to support the experts and technicians who ran the programme, including 32 field staff who worked directly with farmers. Another 13.3 per cent was spent on their operating costs and training. A smaller amount (1.5 per cent) was spent on training project staff on analysing constraints and on monitoring and evaluation techniques.

The largest set of activities funded was the 'Land development and irrigation programme', which received US\$1.04m (25.6 per cent). This component introduced irrigated agriculture to farmers, which is a more reliable system than rainfed agriculture. This included installing 547 small agricultural schemes, covering 474 hectares. These included 387 boreholes and 54 wells for irrigation, as well as 485 pumps and 587 micro-irrigation networks. Three larger irrigation dams were also set up under this component.

The 'Diversification programme' (5.7 per cent) helped farmers to move into new activities to increase their incomes. Techniques introduced included sheep fattening and ways to preserve and add value to products, with 120 units for extracting peanut oil being set up. This component also increased cattle herds, with an average of 2 cows provided per beneficiary, and set up 26 poultry farms and 30 fishponds.

The 'Intensification programme' (3.4 per cent) helped farmers learn how to increase production in their irrigated and rainfed cropping systems. This component introduced new techniques for

growing rice, such as rice nurseries and water control in plots. The money also funded the supply of 290 tonnes of seed (millet, sorghum, cowpea, maize); 4,400 bags of vegetable seed; 242 ox and donkey carts; 29 grain drills; 23 ploughs; and 1,900 bags of pesticide.

The final component was support to farmers' organizations (4.9 per cent). Under this component, the project staff provided capacity-building training for 328 farmers' organizations, comprising 4,471 men and 4,932 women. Beneficiaries were taught how to develop their ability to implement new technologies, access credit and control market conditions.

The funds allocated to each component changed from the initial project plans. Sometimes this was due to changes in project design. For example, farmers rejected pedal-powered irrigation pumps, as they were tiring to use. The money was used to build mini-dams instead. The scope of the project also increased for some aspects, including the number of farmers' organizations and the development of small-scale irrigation. Other aspects decreased: for example, the number of poultry-rearing initiatives was reduced as farmers expressed a preference for larger livestock.

Phase 2 of the SPFS began in 2010 and is expected to finish in 2015. This builds on the activities that proved successful in Phase 1. It is also providing microfinance to farmers so they can invest in their farms. It will work across all eight regions of Niger, rather than just four. The same project management staff are overseeing Phase 2, providing important continuity. They have worked with these farmers since they began and there is friendship, trust and respect on both sides.

In total, 167 villages were involved in Phase 1, although not all activities were introduced in every village. The remainder of this brief describes how some of the people in these villages benefitted.

Mr Falke in his irrigated plot.  
"My irrigation plots saved me during the 2010 drought," he says.

## Defeating drought

Rainfed agriculture is precarious in Niger. Late rains can disrupt cropping and leave farmers with low yields and heavy losses. While some farmers had a system of irrigation trenches before the project, they had to carry water to these by hand, which was hard, time-consuming work.

To tackle this, Phase 1 introduced pump-based irrigation under the 'Land development and irrigation programme'. This would not only help farmers cope during droughts or late rains, but also enable them to plan their crops so they could be harvested at times of demand elsewhere in the country – meaning higher prices at market.

One beneficiary was Abdou Falke, a farmer living just outside Baleyara, a town 100 kilometres north-east of Niamey. Mr Falke, who started farming in 1988, had heard about the project and was keen to take part. "I used to be a soldier, and was in Liberia during the war," he says. "If it wasn't for this project, I would be doing that now."



Before joining the project in 2004, he eked out a living on just under a tenth of a hectare, which he watered with a can – tiring work in the heat of the Sahel. But through the project, he learnt how to construct a borehole and install an irrigation network.

He now has two plots covering about one hectare each. He uses drip irrigation for tomatoes, but most of his land uses a 'Californian irrigation' system. A pump releases water through a system of underground pipes, which feed into trenches to water his plots of aubergines, cabbages and *moringa* – a highly nutritious local crop.

As well as using less water, the irrigated plots earned him the equivalent of US\$850 last year. This income is vital: since his father died, he

has had to feed and clothe his family, as well as paying for school fees. It has also increased his food security. Even during the 2010 drought, he was able to eat well.

Mr Falke has been able to invest in his business. He employs two people, has bought a cart, and was able to replace his first irrigation pump when it broke. He now plans to diversify into potatoes and salad vegetables. Because of the results he has achieved, he is a representative on the local agricultural council – just one of many farmers now enjoying the benefits of irrigation.

## Mending the dams

Three mini-dams were built during Phase 1. These raised the water table in the nearby land, enabling farmers to grow a range of cash crops

## A varied diet

Farmers who learnt how to build irrigation systems are not only increasing their incomes, they are also improving their diets. In Alkama Soulay village, Souley Hamsi and his wife Sopamou Doulla grow potatoes, cassava, peppers and aubergines in their irrigated plot. The family now eat more of these vegetables each day, providing a higher daily intake of nutrients and also a more interesting diet.

The income earned from selling the surplus – more than US\$2,000 a year – enables them to diversify their diet further. As well as buying new clothes and improving their house, they buy rice, maize, millet, beans and grilled meat from nearby Balegara.



## Adding value to onions

One way to increase incomes is to teach farmers how to add value to their crops. As part of the 'Diversification programme', farmers in Tera underwent training in how to preserve onions grown in their irrigation plots. The harvested onions are initially dried under a tree, then stored in stacks to allow them to aerate. Once preserved in this way, they travel better and can be trucked to Burkina Faso, where demand is high.

The difference in price is huge: farmers used to earn about US\$0.21 a kilogramme, but the dried onions sell for US\$0.83 per kilogramme. Moussa Boureima, one of the farmers who took part in the training, has seen his annual income from onions alone increase from US\$625 to about US\$3,120.



including rice, tomatoes, maize, and particularly watermelons, which are sold to Nigeria. But the dams fell into disrepair because there was no management committee, a problem noted in the project evaluation in 2012.

They have since been restored with funding from the government. The cost was high (US\$127,000) but the community was earning an estimated US\$636,000 a year from activities enabled by the dams, so repairing them was an urgent matter. And while the management committee for the mini-dams has not been set up yet, this should take place in 2014. There is a budget in place for this and training is planned.

### Spreading the word: farmer-to-farmer training

Each initiative under Phase 1 was designed to have impacts beyond the immediate

beneficiaries. Farmers who were involved in the 'Support to farmers' organizations' component received a range of training at demonstration sites. They were then expected to share this knowledge with other farmers, those in their own villages and living nearby.

One participant was Mariama Mamman, the president of 'Alheri', a local women's group in Ingowa Dantchandu village near Baleyara. During the training, she learnt how to trade crops and make her vegetable garden more productive. "I showed others the techniques for aubergines, tomatoes and potatoes," she explains. "For example, one important skill is how to preserve seedlings and protect them from the sun." After training, Mrs Mamman created a demonstration site in the village for group members, and then followed up with individual meetings to ensure the work is being carried out properly.



Mrs Mamman.

This shared knowledge has helped the group to expand from vegetable gardening and buy sheep and other animals. They now hope to receive training in livestock management and healthcare during Phase 2 of the SPFS. Mrs Mamman has even earned enough to buy a cow, although a man in the village looks after the animal – traditional roles are hard to break down and men still tend to look after larger animals.

### **Adding fish to the mix**

Expanding fishing was an important part of the ‘Diversification programme’ of Phase 1. Thirty fishponds were developed across southern Niger, an improvement on the initial target of 20. The project stocked ponds with species such as Nile perch, tilapia and catfish. These are bigger than the fish found naturally: a Nile perch can reach 120 kilogrammes.

According to Colonel Ali Harouna, from Niger’s Ministry of Water and the Environment, this

addresses a major challenge: communities failing to see the potential in fishing. “Niger is not a coastal country with a tradition of fishing,” he says, “and people were not aware of the benefits outside the major fisheries like the Niger River.”

One reason for this is that fishing is an insecure livelihood. Lakes can dry up even when there isn’t a drought. According to Nafatou Oumarou, the fisheries and natural resources coordinator with the SPFS, this is a challenge across Niger: “The ponds need water all year round ... you cannot move fish to water like you can livestock.”

But while there is little that can be done about the lack of rain, it is possible to train people to maximize a resource. Bira, a remote village near Niger’s border with Burkina Faso, has a large natural pond. Since the community did not have the skills or equipment to fish, they reared cattle instead.

Fisheries experts employed by the SPFS taught the farmers how to catch and process fish, and the programme provided nets and boats. They also introduced seven new species to the pond: African arowana, African sharptooth catfish,



Fishermen from Bira were provided with equipment including boats and nets.

bayad catfish, giraffe catfish, *Gymnarchus*, Nile tilapia and vundu catfish.

Fishing is still only a supplementary source of income in Bira: the threat of drought makes it too vulnerable to switch to this full time, and the lake's water level has been low for the past two years. But even as a secondary income, the impact has been remarkable. The community caught just over three tonnes in 2013 and each fisherman earned about US\$210 from fish alone – a significant amount, given the average annual income in Niger is US\$390.<sup>3</sup> The beneficiaries were also taught how to add value to the fish by salting and drying the catch.

Fish has great potential to improve people's diets, providing nourishment and health benefits not found in red meat, which is a bigger part of typical diets in Niger. The villagers in Bira have already started to benefit from this.

## People who 'share a goal'

Livestock farming is a feature of life in Niger. At Baleyara, about 2,000 cattle are traded at market each Sunday, not to mention the thousands of sheep, goats, chickens and guinea fowl. But while the market attracts traders from across Niger, few local farmers could afford to breed their own animals.

As part of the 'Diversification programme' in Phase 1, several farmers near the town were given help to start their own livestock herds. The programme used a highly innovative approach. Rather than providing animals, farmers were given money to buy them at market. Each farmer could choose his or her own animals, but project experts advised on which ones to buy, for example identifying breeds able to thrive on the locally available fodder. They also helped to negotiate a good price.

A livestock market in southern Niger.



## There is no **cost recovery** in the livestock project, but beneficiaries are expected to give some of the offspring of their animals to others for free

The system is sustained on a reciprocal basis. Farmers receiving animals (primary beneficiaries) give some of the offspring to other farmers (secondary beneficiaries), so that they can start their own herd. This brings new beneficiaries into the programme without any extra cost for the programme. Farmers are selected partly on their interest in the programme, but also on their reliability – only those that can be trusted to hand over animals for free are included.

One beneficiary is Hama Amadou, a 37-year-old farmer who is a member of the Union Wafakay farmers' organization in Itigan. The name means 'those who share a goal' in the local Djerma language and the 260 members live up to this.

Mr Amadou was a secondary beneficiary, receiving two ewes and a ram in 2008 from one of the initial beneficiaries. These have since bred

successfully. Three lambs went to another farmer to 'pay back' the project; four were sold, earning him US\$382; and he has kept four to expand his herd to seven.

This is his secondary source of income – he is also a vegetable gardener – but he finds the sheep more rewarding. "I have learnt about breeding and I am improving my herd all the time," he says. The sheep also allow him to feed his family, as he sells an animal when he needs money. "Before the project, I just had one chicken, so this was not possible."

### Replicating the SPFS

When selecting the animals to be bought, farmers were advised to buy breeds that reproduce quickly. This means households can earn an income quickly, often after a couple of years for smaller animals such as goats. It also

Mr Amadou with some of his ewes.



## A French treat: imported guinea fowl

While the sheep-breeding programme focused on local breeds, an initiative to enable women in Itigan to rear guinea fowl took a different approach. Birds were introduced from France, as these are fatter than the local breed, fetching twice the price at market. And the meat is so superior that people travel from Niamey 100 km away to buy it.

Awol Hassan was the first person to join the scheme, receiving 10 birds and training on how to care for them, in 2001. Before the project, she shared a vegetable garden with other women, but the guinea fowl increased her income. She is unsure of the exact amounts, but in 2013 it was enough to buy her first sheep.

“Guinea fowl are perfect for women in this part of Niger,” she says. “The birds need a lot of care, and you have to be around the house constantly. The men are away in the fields and so cannot successfully rear them.”



Breeding the French birds is not simple. They are prone to disease and their feed and medicine is expensive. This is a common problem with poultry, says Moutari Souley, the coordinator of the SPFS, and a reason why only 26 poultry farms were set up (out of a target of 180). “The chickens and guinea fowl were susceptible to problems such as Newcastle disease,” he says. But the rewards are there for farmers like Mrs Hassan who can master the skills needed.

means populations can recover more quickly after a disaster. During the 2010 drought, a quarter of Niger’s animals were lost, but the shorter breeding cycles of livestock and other initiatives meant that numbers had recovered by 2011 in the project areas.

Details such as this were important to the success of Phase 1, and they have been noted elsewhere. After seeing the results, Niger’s Ministry of Livestock set up a similar project for fast-breeding livestock. According to Diamoitou Guessibo Boukari, Niger’s Minister for Livestock, the government provided US\$12.69m for the ‘Programme de Reconstitution Sociale de betail (Habbanage) en milieu rural (2014–17)’<sup>4</sup> which provided farmers with money to buy cattle and camels.

One of the target groups was people displaced from the wars in Mali and Libya, who had settled in northern Niger. As with any livestock programme in an arid environment, it was important to ensure that enough food is available locally. To address this, the government is constructing boreholes and wells in the region to provide water. They are also using the residues from crops to create animal fodder, with new processing plants in Zinder and Niamey.

Learning from Phase 1 of the IsDB-financed project to support the SPFS, there is no cost recovery but beneficiaries are expected to share the offspring of their animals with other families. And similar to the SPFS, the approach is proving effective in enabling poor people to earn a living through livestock.

**People have spent the money on school fees  
or invested in land and equipment**



The main reason for the **SUCCESS** of Phase 1 was that it responded to the farmers' demands ;

Phase 1 by numbers...

**US\$4 million** Total cost

**US\$2.5 million** Amount provided by IsDB

**10.7 million** Population of Niger in 2000

**17.2 million** Population of Niger in 2013

**224** Beneficiary associations trained in management

**9,403** Total number of producers benefiting

**52%** Proportion of beneficiaries who are women

**167** Number of villages involved

*(Sources: Project management unit; World Bank. Some figures are rounded slightly)*

## The impacts of Phase 1

Phase 1 of the IsDB-financed project to support the SPFS was very successful. The activities undertaken are contributing to the government's efforts to improve food security in Niger. Many beneficiaries now enjoy a better diet in terms of quantity and nutritional quality. The impacts are even being felt beyond Niger: Burkina Faso and Nigeria both import crops grown by project beneficiaries.

Many beneficiary households have seen financial benefits, with a net income above what they invested in the project. People have spent the money on essentials such as school fees, or invested them in more land or equipment.

Women have been empowered by activities in Phase 1, with some setting up their own associations. Others are benefitting from the new technology, such as wells and boreholes that reduce the time spent fetching water.

With increased food security and higher incomes, people no longer need to move to Niamey or neighbouring countries, as more of life's essentials can be met in their villages. Many farmers have shifted from subsistence to selling surplus produce, and even to cash crops in some places. Part of this is due to the increased availability of manure from the introduced livestock, which can be used to fertilize crops. And the technology introduced during Phase 1 is being replicated in several neighbouring countries, demonstrating it can be easily replicated.

### Success factors

#### Flexibility

The activities in Phase 1 not only met farmers' demands, but were designed to be adapted when these changed, for example when farmers asked to rear sheep rather than poultry.

#### Sustainability and sharing resources

The programme was designed with sustainability in mind. For example, the innovative livestock project expanded continually through farmers giving animals to new beneficiaries without the need for repeated cash inputs. Likewise, good training meant farmers could repair their own irrigation systems if they broke rather than needing the project to replace them.

#### Sharing knowledge

Farmers who received training were encouraged to share their knowledge with others, in their own villages and beyond. The main network for this was farmers' organizations and women's groups. This helped the impacts of the project to spread throughout the regions in which they operated. The knowledge and lessons of the project have also been spread to government schemes and even other countries.

#### Good monitoring and evaluation

Progress was continually analysed and the lessons learnt were fed back into the project, allowing for changes to project activities even within Phase 1.

#### Simple technology and training

Rather than trying to introduce radical new techniques, the project introduced simple technologies that farmers could share easily. This meant a greater number of farmers could get involved. Also, the project used effective approaches to training, such as exchange visits and field demonstration sites. When something is successful, farmers are keen to replicate it. "People learn from each other and the technology spreads," says Mr Souley.

#### Management

The project management unit was highly effective, involving the relevant government ministries during project implementation, and transferring the management of the infrastructure built to these ministries at the end.



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<sup>1</sup> [www.unicef.org/infobycountry/niger\\_statistics.html](http://www.unicef.org/infobycountry/niger_statistics.html)

<sup>2</sup> [www.wfp.org/countries/niger/overview](http://www.wfp.org/countries/niger/overview)

<sup>3</sup> <http://data.worldbank.org/indicator/NY.GNP.PCAP.CD/countries/NE-ZF?display=graph>

<sup>4</sup> The Programme for the Social Reconstruction of Cattle (Habbanage) in Rural Areas

### Contact:

Manager, Operations Policy and Compliance Division  
Operations Policy and Services Department  
Islamic Development Bank Group  
PO Box 5925, Jeddah 21432, SAUDI ARABIA

Email: [idbarchives@isdb.org](mailto:idbarchives@isdb.org) | Tel: +966 12 6361400 | [www.isdb.org](http://www.isdb.org)

