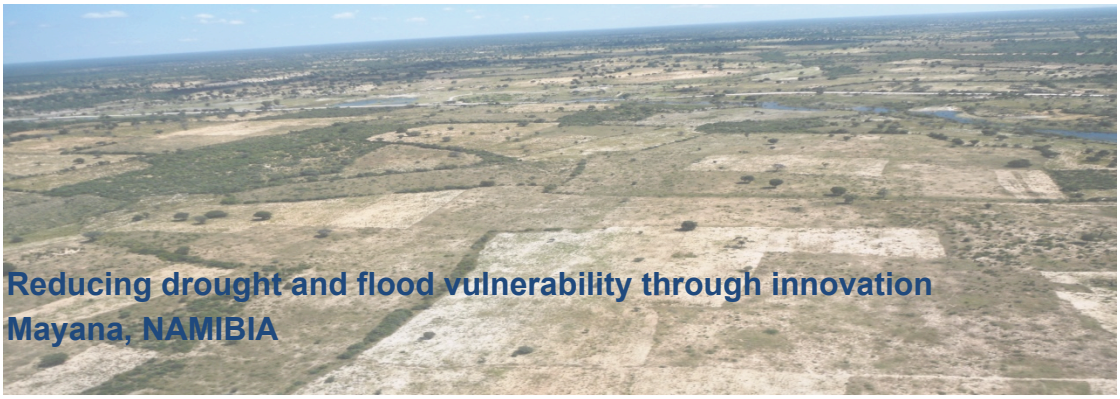

Reducing drought and flood vulnerability through innovation
Mayana, NAMIBIA

Innovative technology could reduce farmers' vulnerability to seasonal flooding, ensuring access to a reliable water supply, whilst maximising generation income from crop growth.

Background

Mayana is a settlement on the banks of the Okavango River tucked away in northern Namibia. Made up of former Angolan refugees and native Namibians, the community faces challenges of poverty, HIV and unemployment. A lack of formal water supply leaves the community dependent on river water or from pans on the floodplain during wet season.

Most households are between two and five kilometres from the river and the proximity to the river leaves some members of the community (settled on the flood-plain) exposed to regular floods destroying houses and farmland. In the past, floods in these areas prompted the Namibian government to provide emergency aid. (See inset.)

Mayana Farmers

The Mayana Community Water Project is a local initiative to encourage agricultural production out of the flood vulnerable areas. The community has taken the initiative to 'self-start' the project, showing a great deal of positivity and proactivity.

USAID-financed SAREP works with NamWater to improve the drinking supply for the community. SAREP approached CRIDF for their technical expertise to devise innovative infrastructure schemes for irrigation.

The project is somewhat unique in that it deals with flood risk and vulnerability to drought through the clever application of infrastructure. The Facility envisages that it will support irrigation

FLOOD BURDEN

Namibia has had several years of above-average rainfall and floods in the north, starting in 2009. Flood relief has become expensive and the authorities are naturally weighing up costs and options.

In 2010, an estimated 14,000 people were affected by flooding and required urgent humanitarian assistance, according to the International Red Cross. The government reactivated relocation camps set up during the previous floods in Caprivi, Kavango and Oshana regions and received approximately 41,085 people, says the aid agency. Around 195 households (893 people) were impacted in Mayana. Residents farm in the flood plain as the waters recede, relying on the residual moisture in the soil so their plants survive.

While emergency and disaster responses from international aid agencies exist, there are few examples of sustainable, climate resilient infrastructure that could not only afford communities sustainable access to water, but also reduce the burden of disaster relief to areas vulnerable to flooding.

water supply and develop small-scale irrigation systems in areas outside the floodplain, allowing households to grow crops for consumption and increasing the economic value of crops with the eventual aim of selling them to big suppliers of major supermarket chains.

Constructing water systems will increase the efficiency of water consumption and safe-guard people's lives. Improving irrigation efficiency and reducing pollution in Namibia will improve water quality and supply to other lower basin countries– this will give Namibia some negotiating capital in transboundary discussions with their neighbours.

The Facility will also be involved in devising a social contract for communities that protect the flood plains, preventing more inhabitants from settling there. Once the project is established, the long-term impacts and opportunity for replication along the flood plains in the Okavango basin, which extends across portions of Angola, Botswana and Namibia is an exciting prospect for CRIDF.

Challenges lie ahead with land tenure – a problem that burdens progress and development in Africa generally, and could delay the project's progress. Establishing the irrigation scheme means some existing (dry land) fields will be used, and negotiations with existing farmers is part of the task – a bureaucratic process requiring traditional leadership participation and government permission.

Russian-Doll Effect

CRIDF's involvement has courted interest from Scandinavian company, Grundfos, a global leader in advanced pump solutions and a pioneer in water technology with a strong presence on the African continent.

Renewable energy manufacturers are investigating developing 'hybrid' technology using solar energy and conventional electricity for irrigation systems but have not tested these at field-scale in this part of Africa. The Mayana project could potentially become a test-bed and blueprint for other communities in the Okavango basin who are reliant on, and vulnerable to, the vast flood plains.

CRIDF is also investigating partnerships with supermarket contractors who source and pack shelf-ready products throughout the region. They could supply the community with technology and high-value inputs such as seeds and equipment to produce quality, ethically sourced crops for supermarket supply. The community stands to benefit from commercialising their farms and skills acquisition – crucially lifting communities out of poverty permanently.