

## Adapting to Water Shortages in Arid Namibia

By Servaas van den Bosch

“Normally it rains this time of year, but not a drop has fallen,” complains farmer Paulus Amutenya. “My crops are burning on the field.”

It’s mid-November in Outapi, a small farming town in Northern Namibia, not far from the Angolan border. Outapi is always hot, but this year the rains that cool the soil and allow crops to germinate are exceptionally late. For weeks now farmers have been praying for clouds to appear in the clear blue sky.

‘Tate’ Paulus wipes the sweat of his face and overlooks his few hectares of wilting crops. Groups of women dot the field, weeding between the tomatoes or watermelons. Unlike most subsistence farmers in the area Amutenya employs around a hundred casual workers who depend on him, and he is worried if he will be able to continue to employ them.

“Without rain, plants are more susceptible to pests and eventually they succumb to heat stress.” He points to a watermelon with scorched yellow patches. “These melons are naturally covered by their leaves so they ripen nice and evenly, but now the leaves are burnt and the melons are ripe on the top, but not at the bottom.”

He blames the changes in climate.

“Temperatures are rising and rains are becoming more and more unpredictable over the years, but what can I do,” he shrugs.

Farming in Namibia, where the Namib and Kalahari deserts meet, has never been easy. The driest country in sub-Saharan Africa receives a pitiful 270 millimetres of downpour per year on average. Of this 83 percent evaporates as soon as it hits the ground.

Climatologists predict temperatures in the country will rise with 1 to 6 degree in the next several decades, while rainfall could drop another 200 millimetres. Already, in the past few years, rains have been erratic leading to alternating heavy floods and dry spells.

The consequences are devastating for a country where 70 percent of the people to some extent depend on agriculture.

To help farmers adapt to climate change, the Country Pilot Partnership (CPP), an alliance of seven Ministries<sup>1</sup> in Namibia supported by the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF), has started a three year adaptation pilot project in the area.

“We have introduced simple and cheap methods such as drip irrigation lines, water pumps, drought resistant livestock and plant breeds, or basic water harvesting technology,” says project manager Andreas Shilomboleni. “In many cases the community is expected to co-finance the adaptation measures, so these are not free hand-outs.”

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<sup>1</sup> Ministries of Agriculture, Water and Forestry; Environment and Tourism; Mines and Energy; Lands and Resettlement; Regional, Local Government, Housing and Rural Development; Finance; and the National Planning Commission

For tate Paulus the project has been a life-saver. “Without rainfall we have to irrigate more. With the drip lines that the project gave us we can efficiently distribute the scarce water when and where we need it. The project also organized learning exchange trips to other countries to learn how to use water sustainably.”

A few kilometers down the road, deep in the Mopane woodlands of the border area, Andreas lifts a water pump from the back of his Landcruiser. Immanuel Hambiya’s face breaks into a smile.

“We need the pump to bring water from the nearby lake,” says the subsistence farmer who grows green peppers, cabbage, sweet corn and many other fruits and vegetables on his 2.5 hectare plot.

“These years the rains come late and are not enough,” explains Hambiya. “So the water level in the lake drops and we have to migrate to where the water is, or simply plant fewer crops.”

Before he had a pump and drip lines Hambiya relied on traditional flood furrow irrigation. “It’s a method that is hard to control. If there is a lot of water at once, the crops will drown and become vulnerable to pests and fungi. It was also a very wasteful and labourious way of irrigating the plants. With the drip lines we are much more efficient.”



For these three men, drip irrigation brought to them triple benefits: immediate food on the table, temporary employment during the harvesting season and addressing long-term climate change in Omusati region. Credit: Martha Mwandangi

According to Hambiya after introducing the water-saving drip irrigation method he saw his yield increase by 10 percent, while using much less valuable water.

For meme Ndaafetwa Hifikepunye from Onaindjimba water scarcity meant she had to walk several kilometers carrying heavy jerry cans to get water for her household of fourteen. “From when I was a little girl my siblings and I would make that trip every day, carrying heavy buckets filled with water. The hot soil would burn the underside of our feet and we would need to stop many times.”

She tells the story sitting in front of a large water tank that seems out of place in the kraal which mostly consists of clay huts, mixed with a few brick buildings with iron corrugated roofs.

But, odd as it looks, the tank has dramatically changed lives in the rural community.

“Harvesting the water right here in the village has made my life as a woman much easier,” she says. “I don’t have to travel long distances anymore.”

As an experiment to help families adapt to ever drier conditions, the CPP distributed 70 water tanks ranging from 2500 to 5000 liters to households, schools and hospitals.

Hifikepunye’s kraal received the water tank for free, but had to finance a cement base and gutters to link it with the roofs, out of their own pocket.

Meme Hifikepunye thinks it’s a fair trade –off. “The advantage is significant.

During the rainy season the authorities close the tap at the water supply point two kilometers away from here as a cost-saving measure.

They just assume people can find water elsewhere during that time. This means we have to travel to a stream far way. But now because of this tank we have clean drinking water right here.”

Although the tank gets full and even overflows during the rainy season, the community uses the water sparingly and only for drinking and cooking. For washing and laundry she now sends her granddaughter to collect water a few times a week at the stream.

“I get upset when the small children open the tap and spray the water around. If it wasn’t for that the water from the tank would last longer.” Then she laughs: “But what can you do, all children like to play with water.”



For 'meme' Ndaafetwa Hifekepunye from Onaindjimba the water tank she received through the CCA project means she doesn't have to walk kilometres for clean, fresh drinking water. Credit: Servaas van den Bosch



**For more information contact:**

Mr. Andreas Shilomboleni

Project Coordinator: CPP NAM: Climate Change Adaptation (CCA) Sub-project

Ministry of Agriculture, Water and Forestry (MAWF)

Directorate of Extension and Engineering Services (DEES)

Omusati Regional Office; Outapi Region, Namibia

Tel: + 264 65 251 291; Fax: + 264 65 251 291

Mobile: + 264 812 406 779; Email: [andreasnd@yahoo.com](mailto:andreasnd@yahoo.com)