

Script for Water Documentary DW/NBC, Production: February/March 2001, Windhoek

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F: Welcome to the programme THE LIVING WORLD. Today we talk about water in Namibia. This programme is a co-production between DW and the NBC. The Narrator is Fanie Lategan.

FX: Ocean

F: 97% of the world's water is in the oceans. Only 2% is fresh water, found in rivers, lakes or underground. The other 1% is in the atmosphere. Think of it this way: if the world's water represented a full bathtub, only three drops of the water in that tub would be fit for human consumption. If our planet has so little usable water, what does the situation look like when it comes to an arid country like Namibia? (Ocean – out).

Nama Music (under narration)

F: We all know that rainfall in Namibia is highly unpredictable and it varies from region to region, even sometimes from farm to farm. While in certain areas in the North it may be as high as 600 to 800 mm annually, the Namib in the West may only get 1 mm. In fact, Namibia is the driest country in Sub-Saharan Africa. The rivers in the interior of the country are all ephemeral which means that water runs down them only for a few days of the year, sometimes it rains so little that there is hardly an inflow into the dams. For some rural communities life can be really difficult.

Insert Alwina Bamm in Africaans:

En nou van hier af.....

(voice over:

From here to Swartbank, especially Swartbank, the people have big problems with water.

They've got a well, from which they get water. But especially for the women it's very difficult, it's hard work to get water from the, or otherwise the men have to come with the donkey carts to get the water. That's of course, drinking water and also water for the animals. And further on it's the same situation.)

F: Alwina Bamm lives with her family in one of the small Topnaar communities in the Namib Desert, along the ephemeral Kuiseb river which divides the sandy desert from the rocky desert. The Topnaars keep a few animals, goats, chickens, some donkeys and sometimes cattle, and make a living from harvesting the !nara fruit. By being able to adapt themselves to the harsh desert conditions, the Topnaars have learned to live with the minimum of water. Traditionally they depended on hand-dug wells and still do in some places. Some of the communities are supplied with borehole water points by Namwater, that is the bulk supplier of water in Namibia. These work by diesel or wind energy, but in case of a breakdown, they don't have the means to repair the equipment. However, what really concerns them of late is the fact that over the last years, the water level in the boreholes has dropped considerably. This is due to the fact that Namwater extracts water from the Kuiseb aquifer for the nearby towns of Swakopmund and

Walvis Bay. The amount of water tapped exceeds the recharge of the sub surface water through the annual rainfall. Because of this, the Topnaars fear that there's going to be a change in the way they live. We hear from Gabriel Dausab of the Utuseb settlement:

Insert Dausab (in Africaans):

(voice over:

Namwater's electrical pumps work day and night, 24 hours per day, and they extract a vast amount of water from the underground, especially from Swartbank down the Kuiseb. I noticed, in former times, when the pumps weren't there, and you stood on the riverbank, you didn't see dunes. But now, the dunes are slowly but surely crossing the dry Kuiseb river. Earlier there were many plants preventing the sand from moving across the river. But now there are only dunes in the river which tells me that the plants are dying and that the water has been depleted.)

F: Not only the Topnaar on the Kuiseb suffer from Namibia's water scarcity. The country as a whole faces a lot of problems. Harald Koch, Deputy Director of Rural Water Development in Namibia explains:

Insert Koch (engl)

"The Eastern part in Omaheke is a very waterless and it is very difficult for the people to find water there, and then the Northern areas of Namibia have got saline ground water and water must be imported to those areas to supply them with potable water.

Q: How many people in rural areas have access to rural water?

When we started off at independence the coverage of potable water to rural people was 50%. 10 years after independence in the year 2000, we have increased that to 75%.

F: Just a reminder that water for the Northern Regions comes from the Calueque Dam in Angola which is part of the SADC, the Southern African Development Corporation's agreement to share water of the border rivers. Only the rivers along the national borders like the Kunene, the Okavango and the Zambezi in the North, and the Orange in the South guarantee enough water throughout the year but as a result of this agreement cannot be taken out of the rivers in an unlimited way. So, Namibians mostly rely on boreholes of which about 130.000 are estimated to have been drilled in Namibia. But only 20% of all boreholes, that is only about 32.000, have water. We asked Jack, living on a farm between Helmeringhausen and Maltahöhe, whether farmers are really aware of this situation.

Insert Jack the farmer:

"Ja, that is unfortunately part of our lifestyle, especially in that part of the country. We are certain that now and then we get rain, but we are more certain that we are not getting rain. And we had about 20 years with only 3 years of good rain. The others were very dry, and unfortunately two of the 12 boreholes are dry at the moment.

Q: There are areas with sanddam and farmdams, you have also a dam on the farm?

Ja, my father built quite a big dam near the house. We have another one in the veld on the farm, and I plan to build a few more in the next few years. Because we have to feed the underground water. Especially in good rainy periods, we must store more water underground for the low rainfall periods.

Q: How do you consider the future of your farm when you think of rain? Do you fear that there will be bad situations again, because I guess you can not just drill more boreholes because then the underground water will drop one day?

It is very important that in the area where I live, one understands nature and farm as nature predict not to pump more water than one know there is, we say in that area if you pump water by Diesel you will pump it for a while but you won't pump it always. By wind mill, by solar we don't pump so much, so we are very conscious in saving our under ground water."

FX: Thunder

F: Thunder and the prospect of rain and I'm sure we're all overjoyed when it eventually comes. But did you know that when we receive rainfall in Namibia only 1% is available for recharging groundwater aquifers and boreholes, and only 2% for recharging rivers. A small percentage of the rain is used by plants. But the shocking fact is that over 80% of our rain just evaporates and cannot be used. Taking this into account it's hard to understand that so much of the available water still gets lost, especially in rural areas, before it can reach the consumer. Why is that the case? Dr Koch again.

Insert Koch

The reasons are that the infrastructure in some areas are quite old, a lot of leakage do occur, secondly there is a lack of proper maintenance, and taps and water points are leaking regularly, and then there is also the fact of illegal connections or the damage to the network to get access to the water in a shorter distance to where the communities are living.

Q: How can this be rectified? What can be done to prevent this?

What has to be done to rectify this, this is an awareness campaign. Expressing the scarcity of the water, how valuable it is, and making the people also responsible for the own water points. They should take over ownership, they should be trained to do the basic operations and maintenance.

Q: How does that work in a specific region?

We've got regional officers in most of the regions, and our staff there is geared towards the technical repairs and operations sand maintenance of the infrastructure, and we have got also an extension service. And through the extension service we are training the community members to be caretakers of their water points. So they are technically skilled as well as socially and a basic part of environmental health and hygiene."

F: Training the community members to be caretakers of their water points – this is the new approach of the Namibian water policy authorities. The most important aspect is: using water wisely. Everywhere in the country, water point committees are being elected by rural communities which should take over ownership of and responsibility for the water point. The programme started in 1997 and will be implemented gradually throughout the country over a period of 10 years. Lazarus Jacobs of Namibia Water Corporation, Namwater, puts it this way:

Insert Lazarus in English

"Let's say we live in a village, and we call it Okahao for example, then they say the 10.000 residents who live in Okahao they form a committee and this committee is responsible for the management of the water in this village, and they are responsible for collecting the bills, and they are responsible for seeing that there is no damage done to the infrastructure. So, the government slowly but surely tries to install the responsibility of water into the community. So if people are responsible for something then they tend to take care for it more. And water supply in this country is a very expensive business, and those people who can afford for it should pay for it.

Q: Lazi, is there anybody in Namibia who can't afford water?

I think everybody can afford to pay for water because if you keep more than one cow you should be able to pay for your water because people keep hundreds and hundreds of cows or cattle, and they say we cannot afford to pay for their water. But if you keep 50 heads of cattle instead of 100, and sell the others, to pay for your water bill, obviously you can afford it. Obviously there are some people who are unemployed who don't have access to water who we might say they cannot afford it, but our water is affordable basically."

F: Not everybody seems to be of that opinion. Let's listen to what Gabriel Dausab of the Topnaars says:

Insert Dausab in Africaans:

Ek wiid nie....

(voice over:

I don't know if my people would be willing to pay for water. Because the people argue, and so do I, that the water belongs to us, so why do we have to pay for water? The people were told in a hurry to form these water point committees without informing them properly. If it's about maintenance, then may be they'll pay, but I don't know whether they will be able to afford it, but to pay for water they won't because all these years the water has been tapped from the Kuiseb for the Arandis mine, and for the industries in Walvis Bay and in Swakopmund, and our people didn't get a cent of the money paid for that water. So, that's why we don't want to pay for that water.)

F: Gabriel Dausab lifted out an important point when he said that the people think water belongs to them. So, who does it belong to? According to the National Water Policy White Paper "Ownership of the entire natural resource base will be clearly and irrevocably vested in the State in accordance with article 100 of the Namibian Constitution."

But not everybody knows or understands about this law, and therefore it's disputed and people are still reluctant to pay water fees.

Insert Alwina Bamm in Africaans:

(voice over:

The problem is that our people don't have money for service and for water. I don't see a bright future for them. All the people here are people who don't work. There are few who get pensions, and others go for the harvesting of !naras, if there are. And that's how they get something. If we don't get donations from somewhere, it's going to be difficult.)

Insert Lazarus

"The rural poor people obviously they have also a lot of adjustment to do, because they have been heavily subsidised because water has been heavily subsidised in the past. People were very reluctant to pay for it, they said why should I pay for water because water comes from God. And I always say: you don't pay for water, you pay for the service. when we get the water we store the water in the dams, we pump the water from the dam to the purification plant, the pump uses electricity, the electricity has to be paid for. We pump it through a pipeline, the pipeline sometimes gets old, it depreciate, so it needs to be maintained, the person who is doing this, need to be paid. So, I say you can go and get a bucket like people do sometimes in the rural areas, just go and get a bucket then you face disease, water borne diseases, you face trouble with a constant water supply because you don't have the infrastructure. But we are saying, paying 2, two Namibian Dollars for a 1000 liters of water you can compare it with your soft drink or with your beer, I

think a beer is something like 7 \$, and that's about 250 ml. But for a 1000 liters of water you're paying 2\$, come on, everybody can afford it."

F: Lazarus Jacobs, Namwater.

F: So far in the programme we've seen that the paucity of water in Namibia makes it exceedingly precious, something we have to treasure and save for ever. But the population of Namibia is doubling every 23 years and people expect to have water continuously available for their needs, for their livestock and gardens. What can be done?

There are, indeed, ways and means of getting water from other sources. Sea water for example can be desalinated, water can be recycled and reused, special dam constructions can help save water and there is even the idea of fog harvesting. But the problem is that some of these methods are very expensive and others haven't been thoroughly researched.

FX: Ocean

F: One of the most ambitious projects in getting water from hitherto unexploited sources in Namibia is certainly the setting up of a desalination plant to supply the towns of Swakopmund, Walvis Bay and their surrounding areas, including Roessing mine and even the Topnaar community with fresh water. Namibia Water Corporation, Namwater, as bulk supplier will be responsible for this project. Lazarus Jacobs:

Insert Lazarus in English:

"So what we do, we are going to take water from the sea, and desalinate, remove the salt and make that water potable....."

The project is on track, we just received a delegation from the European investment bank which is going to finance it. As you know this project needs more than a 100 million Nam\$. The initial construction phase will take about 18 months, and after that we are hoping to commission the plant."

F: A desalination plant, a viable solution to the coast's water problems. Plants like these are working very well in other countries. However, as we've heard, desalinating sea water is a very expensive and high-tech venture. Scientists are therefore looking into other methods of tapping water which could become for some areas a valuable and less-expensive alternative. One of these is being investigated in the Namib by the Desert Research Foundation of Namibia, DRF. When we approached its headquarters at Gobabeb on the Kuiseb River, we saw several black screens surmounted on poles and we realized that they were the fog harvesting contraptions we've been told about. Fog harvesting – what is it all about?

Insert Snake, English

"We've learnt this from people from Chile, but the history of it is believed to be derived from a beetle which you only find in the Namib. So we believe the original idea came from Namibia, and they put it in, they modified it on fog harvesting, and then it reflected back to us, and now we practise it in the same way."

What does the darkling beetle do?

In the early mornings, 3,4,6, in the morning they go up the dune and face the fog, and the fog will condense, the droplets on the body, it lifts it hind legs. And the body downwards and the drops will run down to the head, and that's how it's drinking the water."

F: That's how fog harvesting is done in nature, and talking about it is Vilho Snake Mtuleni who's been doing research into fog harvesting at Gobabeb for the past seven years. The beetle's ingenuity is utilised for needs on a bigger scale in the following way: Fog condenses on a huge double screen made from a fine mesh. The condensed water runs down the mesh's screen into a gutter at the bottom of the screen and then into a pipe connected to a container on the ground. The water in the container can now be used as potable water the quality of which is mostly quite good. This has been done in the Atacama Desert in Chile, South America for a long time. In the Western Namib, near the Coast, fog occurs five times more often than rain and is much more predictable. In good years there can be as many as 200 days with fog. So, does that mean that this method of getting water will be a solution for people in that area? We asked Joh Henschel, a scientist with the Desert Research Foundation, DRF:

Insert Henschel:

“When you construct these large screens they have an area of some 50 m² each. We have very strong winds from the East, and very strong sand winds, and these screens are not strong enough to withstand the winds, so at the moment, it works, there is water, we get it. We won't be able to make large screen, that last longer than a year, But on the larger scale.... I wouldn't say, it's THE solution, but it would certainly help. After all it's water that is there. All what we have to know is how to use it, and how to do it on an economic level.”

F: Yes, indeed there is water to be harvested from fog but how much? On the average, Namibian scientists got 1 liter of water per square meter of screen under good conditions even up to 3, 4 litres. To increase the amount of water, the mesh screens will have to be enlarged a great deal and that may not be possible as a result of the damaging effect the high winds have on such huge structures..

However, scientists, not only in Namibia, but also in a number of other countries continue to research this technology. It will take more time, patience and money in order to establish its viability.

FX: City sounds into Laura Brannigan – “City Lights”

F: From the desert to the city. Windhoek. People in this city spend more water in one month than some people in rural areas in an entire year!

Insert Pierre Smit

“The interesting thing is that you often have the idea that the less a person is educated the more he will consume water unwisely. This is normally not true because education is a westernized idea many of these people in Namibia that are used to be not educated are nomads i.e. they're using the water for ages very, very wisely. It's indigenous people that never knew water in abundance and therefore use it very sparsely. It is us the so called westerners that are spoiling water, wasting water with all sorts of ways. If your car is a little bit dirty, you wash it, why?”

F: Pierre Smit from the University of Namibia hits the nail on the head: in big cities most people take water for granted and don't always use it sparingly – for example, they don't cover their swimming pools to prevent evaporation and they plan huge water-thirsty gardens instead of opting for a more drought resistant rock garden with succulents. Windhoek which gets its water

from dams and sub-surface sources, is no exception to the rule. But it seems that there has been a growing awareness over the past years as this woman in a shopping mall says:

Vox Pop:

First of all I can water my garden in the evening rather than during the day, I also may re-use that water which maybe I use for washing. I don't just flush it, I can also water my garden with it, really meet the unnecessary usage of it like washing cars and whatever and in any way, just to cut down.

F: Ferdi Brinkman, Chief Engineer of Windhoek's Bulk Water and Waste Water confirms this growing awareness among Windhoek's population:

Insert Brinkman

"If one looks at the consumption patterns over the last 5 years, I think they are much more aware than they were at that time. About the last three years the annual water consumption was almost the same. The growth was very minimum. Education and communication is very important in this respect, there are some policy issues as well where we limit or we specify types of equipment that can be put into buildings to reduce the water consumption. We raise off awareness of the importance of water, we are trying to make people appreciate the value of water, and also when we look at the development of the city in the future, if you want to sustain this kind of economics, industrial and business factor in the city, and if you want to maintain that, we have to make people aware to use water efficiently and to conserve as much as they can.

F: Despite people's awareness of the scarcity of water, Windhoek still has to cope with a growing demand for water as a result of a growing population and an expanding business sector.

To date, the city gets water from three different sources: A little less than 80% comes from three surface dams and is delivered by Namwater. In addition, up to 12% of Windhoek's water is reclaimed from waste water by the municipality, and 10% is supplied by underground water through boreholes.

At the moment, the engineers think of two ways to increase the water supply: 1. By improving and increasing the reclamation of waste water, and 2. By the recharge of the Windhoek aquifer. Immo Peters, also an engineer with Bulk Water and Waste Water of the City of Windhoek points out that evaporation from the Windhoek dams is almost 10 times higher than the annual rainfall; so the recharge of surface water to the underground aquifer would eliminate evaporation altogether.

Insert Peters:

"We use the underground water to cut the peaks, we have peaks consumption periods during the day..... . But we try to keep this to a minimum to allow the aquifer to ... to recharge naturally and which is then from rainy season. But then during period of drought when the dam, the water in the dams or in surface reservoirs is at critical level, more groundwater is going to be used.

F: Rainwater is often not sufficient to recharge the underground water naturally, this is why in future a mixture of recycled water and dam water will be pumped artificially into the aquifer and stored there. Immo Peters continues:

Insert Peters:

We have concluded our experiments which looked very promising. We have drilled a number of monitoring boreholes to exactly establish the groundwater contours because we would not like to artificially recharge and then lose the water again below the surface. When we go to full artificial recharge, we are aiming to between 6 and 9 million cubic meter per annum. (where) the present water consumption of Windhoek is (in the region) of 18 million cubic meter per annum. So it's about 50%..”

F: With all these measurements in place, the recharging of the aquifer and the reclaiming of waste water, the Municipality is optimistic about the future of Windhoek's water. Without any additional rainfall there will be enough water up to the year 2003, according to Ferdi Brinkman. And he adds that when the city has completed the projected construction of a new reclamation plant at Goreangab Dam still in 2001, there will be water for another 10 years. This, however, will only be possible if the present consumption levels could be maintained, and that means that the people of Windhoek will have to co-operate.

Vox Pop:
Oshiwambo und Nama
(voice over)

FX: Music (fade under)

F: This programme on water in Namibia has been a co-production of NBC National Radio and Deutsche Welle Radio. The producers were Fanie Lategan and Petra Reategui