

„Überall fehlt Personal, Geld, Motivation“

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"Personnel, Money, Motivation are missing everywhere"

*It's the developing countries who will be hit hardest by climate change. They rarely have the means to respond flexibly to changes.*

BY JULIA GROSS

The fields are burning again. Flying from Choma in the South to Lusaka, the capital of the African country Zambia, small and large clouds of smoke rising into the sky can be seen every few hundred meters. Each year, farmers set their fields on fire to eliminate weeds and remnants of the last harvest. Once the rainy season begins, they plow the fields covered with black ashes, and they sow corn.

For centuries, this has been the course of the seasons here in southern Africa. However, in recent years seasons were no longer something to rely on. Sometimes the start of the rainy season, which usually lasts from approximately November to April, is delayed. Sometimes the wet season is much shorter than usual, sometimes there's no rain at all, sometimes so much that there is flooding. There are suddenly dry periods that interrupt normal rainfall. Perhaps this is just capricious weather which occurred more often in the past decade. Some say it is climate change.

Developing countries such as Zambia will feel the effects of climate change far more strongly than the industrialized nations, according to IPCC forecast reports. The quality of infrastructure and standard of living is often lower than most Germans could ever imagine. Neither the government nor the people themselves have the necessary means to adapt to changes. Though Zambia is not at all a dirt-poor country, where people suffer constantly. Many neighboring countries are doing much worse.

Zambia's about twelve million people have plenty of fertile soil and many rivers. But GDP is only \$ 918 per capita per year, Germany's GDP is 50-times that amount. The average life expectancy of a baby born today is only about 44 years. Two-thirds of the population are subsistence farmers. It's the only way for them to make a living. This is especially true for women, a current study by the UN Population Fund revealed. They bear the greatest burden of climate change because they do most of the field work and are less likely to complete vocational training than men.

Already today, the changes in precipitation patterns are ruinous for many. "Therefore, there should be an agreement between countries that have intensified climate change over many years, and the countries that actually contributed nothing, but suffer damages now," says Peter Hoeppe, a meteorologist and head of division in reinsurer Munich Re's Geo Risks Research. Together with the World Bank and the Potsdam Institute for Climate Impact Research, he developed an insurance solution for climate-related natural disasters. This is going to be part of the negotiations at the climate conference in Copenhagen. Third-world

countries would receive money to rebuild infrastructure or compensate for crop failures - provided they previously took steps to minimize the risk of damage. There should also be funding for these adaptation measures within this insurance construction.

The industrialized countries would have to spend around ten billion euros per year. Not necessarily a lot, compared to bank bailouts and stimulus packages. But it doesn't really look like the world community could agree on this solution: The European Union, for example, calculated poor countries might need 100 billion U.S. dollars a year to adapt to climate change while developing their economies environmentally friendly fashion. But Eastern European countries like Poland do not want to participate. It would be like an admission of guilt by developed nations, saying they bear responsibility for the changes.

"In Zambia, during the last ten years it has become much less predictable whether the rainy starts or how long it's going to last", says Senja Vaaitainen, representing the environmental protection organisation IUCN in the capital Lusaka. Most of the farmers she and her colleagues talk never heard about climate change, although some knew the word from the radio. "We usually tell them that what happens with the industry in the north might be cause for the changes they feel. We often use the image of a globe that's been wrapped in a blanket and therefore warming."

That doesn't help the farmers, whose harvests rely almost exclusively on the annual rainfall. "But they are grateful that someone at least offers an explanation for what happens to them," says Vaaitainen. Similar reports are heard from all over Africa. However, unlike many neighboring countries that even lack temperature and precipitation records, there is evidence for the changes in Zambia. Scientists led by Francis Yamba, Director of the Institute for Energy and Environment at the University of Zambia, demonstrated a steady rise in average temperatures by 0.8 to 1.5 degrees Celsius at three places in different regions of Zambia over the past 30 years,. In two of three sites, the researchers observed a shortening of the rainy season during the same period. The results of three stations cannot explain the trend for whole regions, especially as the measurements exceed the rise in global mean temperature by 0.8 degrees since the beginning of industrialization by far. Nevertheless, they reflect the local reality.

And if we believe in the projections of three common climate models, Zambia is going to experience a further rise in temperature by up to three degrees until 2070. For the next 60 years Yamba also calculated even greater fluctuations in rainfall patterns than before.

Farmers need more precise information than that. But Zambia did not even manage to establish a weather forecast service, which could announce the start of the rain and the best time for sowing. "The Meteorological Service says it can provide this information. We have been trying for some time to establish a system where people at the district level obtain this information by SMS and redistribute it," said Senja Vaaitainen. "But personnel is missing everywhere, there is a lack of money, a lack of motivation. It is sometimes very frustrating."

Most farmers don't own an ox or donkey for field work, let alone machines. For example Dismus Mwalukwanda, who lives about 50 kilometers from Lusaka. The 40-year-old, his

wife and their eight children own three small mud huts in the bush. His most valuable possession are a bicycle and a cell phone, which he charges at a rural health post twelve kilometers away when batteries are empty. The family cultivates just five hectares of land - with pick and shovel. A larger area would be impossible to manage. The last harvest was good, says Mwalukwanda, but before there was a terrible drought.

"The soil is exhausted, so the yield is not very high. Fertilizer is very, very expensive, I cannot afford it," said the farmer. Rain needs to start soon so he can get enough out of the fields. "We try to teach farmers alternatives to growing maize: Bee-keeping, the cultivation of cassava, which is more resistant to drought, and generally the use of conservation farming methods," says Senja Vaaitainen. The United Nations Development Program (UNDP) in Zambia plans to introduce early ripening seeds and the establishment of fish farms on rivers. They also want farmers to stop burning their fields because of air pollution and erosion. Manual soil preparation would be better, before the rain begins in order to not lose valuable time for germination and growth. This is a fundamental principle of conservation farming, which can nearly double the yields of maize. But without massive support measures like this will not reach people like Dismus Mwalukwanda.

The reason can be looked up in the manual for conservation farming: According to that the environmentally friendly preparation of only one hectare of land takes three adults working for four weeks. A fire just needs to be ignited, and then to be extinguished.