

How must Africa adapt to Climate Change ?



The Farmers Clubs of Humana People to People reach tens of thousands of farmers who learn about sustainable and profitable farming practices and how to adapt to a changing climate.

The challenge of climate change

A major challenge of our time is global warming and climate change and especially Africa will be hard hit.

These recent examples of extreme weather events warns us of what the continent can expect in the future.

During 2008, Sub-Saharan Africa, including West and East Africa, were affected by heavy rains, which caused the worst-ever recorded flooding in Zimbabwe and affected more than 300,000 people in West Africa.

Extreme rainfall intensities were recorded in northern provinces of Morocco with up to 200 mm of rainfall in less than six hours.

In March 2009, the northern provinces in Namibia were flooded, causing death of nearly 100 people, displacing 13,000 people and destroying homes, schools and clinics.

In 2000, Mozambique had big floods where 1 million people became homeless



During 2008, Sub-Saharan Africa, west and east Africa were affected by heavy rains. In Zimbabwe they caused the worst floods ever.

and 700 lost their lives. Ethiopia experienced both droughts and floods during the year of 2006 leading to hundreds of deaths.

There is no longer doubt about the huge changes our planet will experience as a result of global warming and climate change.

As is so often the case, the poorest will be hit the worst - in this case both the poorest nations and the poorest people. The whole of Africa will be affected by more irregular rainfalls, more floods, desertification, diseases that affect plants, animals and humans spreading into new regions, rising sea-levels, refugees and social conflicts as result of the environmental changes.

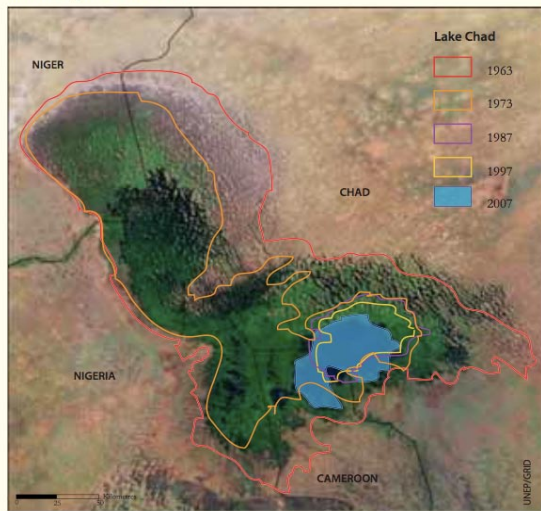
By now, this is common knowledge and very few question the facts. The discussions concentrate on the degree of the changes. The changes can already be measured. The rainfalls are coming much more unevenly. The number of flood events and warm days have risen, the ice cap on Kilimanjaro will soon be gone - you have heard it all.

It is therefore much more interesting to develop what must be done to make people adapt to the changed conditions. Because if the current policies continue, then Africa will see catastrophic numbers of environmental refugees as farmers are forced to abandon their lands. It will not be cheap to make the needed adaptations. The UN body dealing with climate change has calculated a price of US\$ 50 billion per year for the adapta-



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Shrinking of Lake Chad



Lake Chad has shrunk to 5% of the size it had 30 years ago, due to climate change and excessive use of water for irrigation.

tions needed in Africa until 2030. This is based on the investments needed in agriculture, forestry and fisheries, water supply, human health, coastal zones, and infrastructure. To understand how large a sum this is, then the whole economy of Mozambique is just US\$ 8 billion, and Angola's is US\$ 95 billion.

What needs to be done

Floods and sea-level rises

The numbers of flood events in Africa is rising. During the last year areas like Morocco, Somalia and much of Southern Africa have experienced heavy flooding. Especially Eastern and Central Africa is expected to be much affected by floods in the future.

The impact of the sea-level rises will only be seen in the longer term. But climate

scientists have recently adjusted their predictions and expect that this century will end with between 1 and 2 meter higher sea levels than now. A few even expect 4-5 meters.

So definitely, Africa should start to adapt to these changes.

Many European countries have during centuries established dikes and drainage systems that minimize the risks and damages of floods. The Netherlands spends US\$ 500 million annually to maintain its dykes and pump out water. 70% of all the Dutch economy is produced at or below sea level, so the problem can be solved. The technologies needed for Africa to adapt to floods and higher sea levels are available and for the main part simple.

It is a question of funds for starting the work in numerous areas. Such funds could provide work for the millions of young unemployed, which, as their numbers grow, could otherwise lead to explosive situations that would be much more costly.



Building dykes, such as this Dutch one, to protect against the rising sea-levels and stronger storms could provide work for millions of unemployed African youths.





Small-scale irrigation systems will be crucial for African farmers to survive drought spells as the rains start to fall even more irregularly.

Droughts and irregular rainfalls

Changes have clearly been registered all over the continent. Farmers can no longer predict the rains and when to plant their crops. More and more produce is being lost because of dry spells in the middle of the traditional growing seasons. Some areas will even receive more rainfall, but because of the hotter climate, more water will evaporate. The end result is that there is less water for the crops. Again, the solutions are there. At the smaller-scale, technologies like rope pumps, treadle pumps, drip irrigation and water-efficient farming practices should be spread out widely and microfinance systems should be made available so that

small farmers can acquire these.

On a larger scale, it is necessary to make storage systems for the rainwater. Only 4% of the farming area in Southern Africa is currently irrigated (in Asia this figure is more than one third). Apart from Zimbabwe and South Africa, very few irrigation dams have been constructed. Angola and DRC, as some of the wettest countries in Africa, have a large potential for this kind of irrigation.

FAO estimates that it would cost at US\$ 85 billion to build the water infrastructure that is needed to support rural poverty reduction in Sub-Saharan Africa. Again an obvious project for the many young unemployed.

Just a fraction of Africa's farmland - for example the Angolan Highlands - could produce all the food the continent needs, also when its population reaches close to 2 billion by 2050. It all depends whether the necessary investments are made.

Adapting to new crops and varieties

There is an urgent need to invest heavily in research to develop new crops and varieties that are better suited for the warmer and drier conditions. The drier and hotter climate could mean that crop yields in the most vulnerable parts of Africa is halved already by 2020. Some of these areas will not in the long run support farming, because there will be no water for irrigation. But in many areas it is a question of finding crop varieties that



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Make rope pumps! Countries like Zambia, Mozambique, Angola, Malawi and Guinea Bissau have much water for garden irrigation.

can grow under drier, wetter, warmer or in general under more varied conditions. It takes time - first to develop them, then to develop how they are best grown under the various local conditions, and then finally to get farmers to use them. This is also why training of farmers is so important. Especially training that combine modern farming techniques with sustainable use of the natural resources - all the systems that reduce the damages from natural disasters such as using mulch to avoid evaporation, using compost to increase soil fertility, growing more crops together, growing crops with deeper roots, harvesting water in the fields and in other ways recharging groundwater, etc. But also training in how to use the new crops and change food traditions. Another important training is to enable farmers to produce their planting material locally, so they do not depend on the large seed companies.

Now is the time for starting growing your own food and securing water resources while bonding with people in the area to also adapt to and fight the climate changes.

Farmers influence Climate Change

It is not only climate change that influences farmers. Farming systems greatly contribute to global warming. Not only the industrial farming of the rich world with its heavy use of oil products. But also the cutting down of forests, erosion, bushfires and desertification result in more greenhouse gases.

It will have a huge impact on climate change if farmers who now use slash and burn farming, stop clearing forests and instead establish permanent fields with small-scale irrigation. Again this needs investment, but the rich world should fund this as a part of the programs of buying so-called carbon credits, where funds are given to projects that reduce the emissions of greenhouse gases.

The changes can be measured from satellites, and farmers who make these changes should be rewarded for contributing to a reduction in global warming.

Read in the next GAIA Info Series how farmers in Niger have managed to drastically improve treecover in their country.