



DRIED UP, DROWNED OUT

Voices from poor communities on a changing climate

2012 report

Peter Caton/Tearfund

Around the world, the poorest people are experiencing the toughest effects of climate change. Christian relief and development agency Tearfund asked them how global warming had changed their lives, what problems they now face and, crucially, what action they hope to see from world leaders to help them adapt. These are their stories.

'We have seen climate change throughout our country... shorter cultivation cycles in dry regions, loss of harvest due to flooding, loss of animal biodiversity, and fires in forests that then become even drier.'

Marcelino Lima, Diaconia, Brazil

In 2005, we asked our partner organisations working with poor communities around the world about their experiences of climate change, whether it was changing and, if so, how it was affecting people's lives.

The result was the first *Dried Up, Drowned Out* report. It showed that the world's poorest communities were already suffering the effects of climate change. And it argued that serious international action on climate change was needed to help them.

That was seven years ago. So we asked again how things are and what's changed.

The news isn't good. Communities in Africa, Asia and Latin America are experiencing worse and more dramatic climate change than they were in 2005. Changes that had begun then are more intense now.

A vicious cycle of floods and droughts has now become normal, reducing people's ability to make a living and forcing many into poverty. Children miss out on schooling; people go hungry; families have to separate to find work; crops are often ruined.

An estimated 325 million people are seriously affected by climate change every year, and more than 300,000 die.¹

The number affected by climate change is set to double within 20 years.¹

In the last seven years, the world's leaders have continued to meet to discuss climate change. But this report shows that meetings are not enough. Again and again, the message from poor communities to whom we spoke is the same: 'We need action now.'

But there is hope. There is still time to act. Local communities in the developing world want to adapt to climate change: circumstances are forcing them to do this. They want to stay on the land that they have inhabited for generations, and know intimately. But they need their own governments and the international community to help them achieve this, or their future is at best uncertain.

tearfund

¹ Global Humanitarian Forum (2009) *Human impact report: climate change. The anatomy of a silent crisis.*

Foreword by Sir John Houghton

In 1988, the Intergovernmental Panel on Climate Change (IPCC) was formed as a UN body and I was privileged to be the chairman or co-chairman of its scientific assessments until 2002.



Our job was to assess human-induced climate change and write detailed reports about what we knew and what we didn't

know. In this task, we involved hundreds of the best climate scientists in the world from many countries.

We started with no preconceived agenda and formed writing groups in which we argued loud and long about all the data and what it meant. Our work was refereed by other scientists, by governments, and our final summaries were agreed sentence by sentence at very tough intergovernmental meetings.

The scientific evidence as presented by the IPCC is therefore very reliable. The impacts of climate change over future decades are likely to be extremely serious for the world and we should be doing very much more to reduce these impacts than we are currently doing.

Geoff Crawford/Tearfund

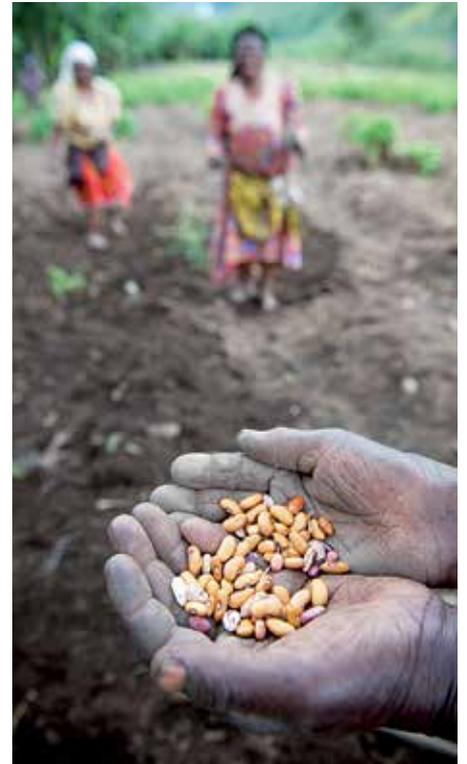


We know what to do, but we seem to lack the will to do it. The world's richest nations have benefited enormously from many decades of cheap energy from coal, oil and gas, without realising the damage that would ensue or recognising that the damage would have a disproportionate effect on the world's poorest people.

This new Tearfund report enables those most impacted by climate change to speak up for themselves. Their words show that the poorest and most vulnerable communities are already experiencing the impacts of climate change on their lives and livelihoods, and that additional, potentially devastating impacts are already inevitable.

A small window of opportunity exists for action to be taken to secure a future that averts very serious future climate changes that are most likely to be irreversible.

I urge you to use this important new report to press for the strong action by governments, business and individuals that is so urgently required.



Richard Hanson/Tearfund

Voices from Latin America

Latin American perspectives from Brazil, Honduras, Mexico and Peru



Paul Brigham/Tearfund

'We have seen climate change throughout our country. Both anecdotal and scientific signs show climate change that is characterised by, among other things, shorter cultivation cycles in dry regions, loss of harvest due to flooding, loss of animal biodiversity, and fires in forests that then become even drier.'

Marcelino Lima, Diaconia, Brazil

Changing weather patterns

Across the continent, Tearfund partners report significant changes in weather patterns. Traditional, familiar seasons have been replaced by new, unfamiliar and unexpected weather patterns.

The former wet seasons are now dry and the dry seasons have become wet, with serious adverse effects on agriculture and food security. Floods often follow droughts.

► What's happening today in Mexico:

'In the last few years, the communities are experiencing an intense rise in temperatures and are suffering from droughts. Some regions haven't seen any rainfall for two years.'

Eugenio Araiza, Amextra

◀ And in 2005:

'Over the last few years, we have recorded extraordinary results regarding the coldest and hottest days. For example, in the Valley

of Mexico, we have had temperatures ranging from -6°C up to 34°C. The annual average would be 22°C.'

Eugenio Araiza, Amextra

► What's happening today in Honduras:

'The seasons have changed more than we would have expected. Farmers are waiting for the dry season to plant certain kinds of food and there is no dry season: it is quite wet. And then when they expect the rainy season, it doesn't come: it remains dry.'

Osvaldo Munguía, Mopawi

◀ And in 2005:

'Over the past five years, the rainfall has been variable. Previously, the rains fell during six months of the year (June–December). Nowadays, the rains come together at one time, causing floods and droughts.'

Carlos Augusto, Organismo Cristiano de Desarrollo Integral de Honduras

'Some regions of Latin America will experience increased rainfall; there will be increased risk of floods and droughts associated with El Niño events in many different regions. (El Niño is responsible for a large part of the climate variability on inter-annual scales in Latin America.)' IPCC²

The impact of changing weather

The rise in temperature and resultant drop in rainfall have hit agriculture hard. According to Eugenio Araiza from Amextra, a former Tearfund partner in Mexico, some 3.4 million tonnes of maize are estimated to have been lost due to drought and one region lost 70 per cent of its crops. Also, some 40 million cows have died due to lack of water, causing serious food insecurity.

Because of lack of rain, crops that do grow are often stunted and poor.

The rivers are also drying up, so fish are dying. And people, their land and their animals are badly affected. In Mexico, people are spending up to 30 per cent of their monthly income (up to \$70) on buying fresh water, Araiza says. *'All the funds they have are focused on survival,'* he adds.

'In some Latin American regions, global warming will substantially change the availability of fresh water; estimates of availability in Mexico and Central America indicate that about 70 per cent of their populations will live in areas with low water supply as soon as the first quarter of the 21st century.' IPCC³

► What's happening today in Peru:

'The soil is heating up, which is ruining the crops. The crops grow up quickly in the sun but, without water, they wither and die. People are eating less and they can't store food.'

Victoria Diaz, Shalom

◀ And in 2005:

'Crop growth is affected by the irregularity of rains and often the hailstorm which damages them and they don't obtain the ideal level of growth that is expected.'

Victoria Diaz, Shalom

► What's happening today in Honduras:

'Rivers are becoming dryer, streams are going dry and people are using more and more chemical fertilisers: this pollutes rivers and water resources. So water is a big problem.'

Osvaldo Munguía, Mopawi

◀ And in 2005:

'A number of communities installed a drinking water system. Right now, they have stopped using it because water has become so scarce. There is a higher mortality rate in these communities, as well as the fact that families are moving away from the area.'

Carlos Augusto, Organismo Cristiano de Desarrollo Integral de Honduras

² IPCC (1997) *The regional impacts of climate change: an assessment of vulnerability. Summary for policymakers*, IPCC Special Report, online at www.ipcc.ch/

³ Ibid



Layton Thompson/Tearfund

Living with changing weather

'Stagnant water is becoming contaminated,' says Shalom's Victoria Diaz, 'and becoming dangerous for animals and children. More children die every year from pulmonary diseases caused by the huge changes in temperature. And without clean water they also suffer from parasites.'

Displacement is becoming a problem in Peru, as men in particular go to the cities to find work. Many don't return, causing a breakdown in family life.

'They have always lived by relying on natural assets, but now the men go looking for work in the cities leaving women and children behind.'

Victoria Diaz, Shalom, Peru

This is having a knock-on effect, with families sending girls as young as eight into domestic service.

Meanwhile, in Honduras, there are reports that crime – notably theft – is rising.

'Security is a big problem across our country. It is common to hear people commenting on how in the past people would go quite confidently into the streets, even at night. And now, not even in the day are people confident to go into the streets.'

Osvaldo Munguía, Mopawi, Honduras

Across the region, there is a will to adapt, particularly among indigenous people. But deforestation is making adaptation much harder.

Farmers are altering their growing patterns, using different crops, digging wells for their cattle and, in some areas, planting trees. But these schemes are limited.

Marcelino Lima of Diaconia in Brazil says, *'The increased severity of the droughts in the Brazilian semi-arid areas has led to greater vulnerability of food production for rural families.'*

And, in Peru, Neri Gómez from Tearfund partner Paz y Esperanza reports that food insecurity *'is a worsening problem. Communities rely on three staple crops for food: potatoes, wheat and barley. These crops are badly affected by climate change. This means that families are surviving largely on potatoes and tend to go for the easiest and cheapest option for feeding their families, not the most nutritious.'*

In both Peru and Brazil, communities say that it's simply a lack of knowledge that's holding them back from adapting to climate change. But, in Brazil, Tearfund partner Diaconia reports, *'Adaptation to climate change, in our understanding, depends not only on people's resources, but also and*

especially on resources from governments or government programmes, as well as on international co-operation.'

Facing the future

So what's needed to help local communities face these bleak prospects? According to Tearfund partner Amextra in Mexico, the answer is education and support from NGOs and government.

'A common characteristic of people around the world who live on the poverty line is resistance,' says Eugenio Araiza from Amextra. 'They have faced great traumas, injustices and abuse in the past, and this has bred a resilience into them and they believe they will survive anything.'

'The communities are strong and they are fighting, but the situation is increasingly complicated and they don't necessarily understand everything about the situation. They need organisations and their government to come alongside them and help to find solutions.'

'The dry season is expected to become longer and more intense in many parts of Latin America. Predicted increases in temperature will reduce crop yields in the region by shortening the crop cycle.' IPCC⁴

⁴ IPCC (1997) *The regional impacts of climate change: an assessment of vulnerability. Summary for policymakers*, IPCC Special Report, online at www.ipcc.ch

Voices from Africa

African perspectives from Burkina Faso, Ethiopia, Kenya, Malawi, Mali, Mozambique, Niger, Rwanda and Zimbabwe

'The impacts of climate change are leading to more poverty. Because of the drastic reduction in crop use, it means that communities don't have enough food. They end up selling their assets cheaply. When you can't grow vegetables like you used to, that impacts your nutrition levels.'

Victor Mughogho, Eagles, Malawi

Changing weather patterns

Across Africa, weather patterns are changing dramatically. Temperatures are rising. Both floods and droughts are common, often an annual event. Traditional seasons are disappearing and with them go former certainties about when to plant and indeed what to plant.

Fifty years ago, droughts mainly affected the Sahel, the Horn of Africa and southern Africa. Now, they are widespread across the continent. By the end of this decade, it's expected that between 75 and 220 million people in Africa will be facing severe water shortages as a result.⁵

► What's happening today in Ethiopia:

'For centuries, Ethiopia used to be said to be the water tower to neighbouring countries because of the water potential it was endowed with. But the volume of many rivers has been decreasing. Now, the recurrence of drought has increased. It has now become almost a yearly phenomenon.'

Tesfaye Legesse, Ethiopian Mulu Wengel Amagnoch Church Developmental Organisation

◀ And in 2005:

'Due to drought in many parts of the country, the crop production is reducing yearly, especially in southern Ethiopia. This is mainly observed in the Boricha area of southern Ethiopia where 20,000, 30,000, 38,000 and 60,000 people were affected by food shortage in 2001, 2002, 2003 and 2004 respectively.'

Meserete Kristos Church



Layton Thompson/Tearfund

'The main challenges likely to face African populations will emanate from an increase in frequency and intensity of extreme events, such as floods and droughts, as well as events occurring in new areas.' UNFCCC⁶

The impact of changing weather

Africa relies on its agriculture. But it is under threat from the unreliability and intensity of the weather, which are reaching new levels. Deforestation and resultant soil erosion only add to the problem for small-scale farmers.

Rivers are drying up. The water table is lowering, resulting in empty boreholes, which means that people have to travel further to find water. Deeper wells have to be dug. It's becoming harder to find enough water.

The absence of water means that people aren't able to grow the crops they need to survive. They're selling cattle to try to make ends meet and so are losing their security.

► What's happening today in Malawi:

'People have been impacted by water supply. Because there are few boreholes, people scramble to get the first place to get the water. People are struggling for water and others are dying because they are going to the river and being caught by crocodiles.'

Rev Mvula Mvula, River of Life

◀ And in 2005:

'Rainfall is becoming more erratic and there is less each year. The streams and rivers are drying up – which are the source of drinking water. Many rural areas don't have adequate water.'

Rev Mvula Mvula, River of Life

⁵ Climate change 2007: impacts, adaptation and vulnerability. Working Group II contribution to the Fourth Assessment Report of the IPCC. Summary for policymakers and technical summary

⁶ UNFCCC (2007) Climate change: impacts, vulnerabilities and adaptation in developing countries. <http://unfccc.int/resource/docs/publications/impacts.pdf>



Layton Thompson/Tearfund

Living with changing weather

'Those who have lived here for a long time say they are living in a different world,' says Victor Mughogho from Tearfund partner Eagles in Malawi.

This sentiment is repeated across Africa. Communities are worried about the changes they're facing and, in some cases, they're at a loss to know how to adapt. Often, the first response is to leave the village.

Children increasingly suffer from malnutrition and as a consequence are not attending school. This puts the future of a generation under threat.

Anecdotally, there are reports of rising crime, as people struggle over scarce resources.

But some positive changes are also being made. Growing drought-resistant maize, quick-maturing crops, potatoes and cassava is helping communities to adapt. Others are rearing camels, hens and goats, rather than cows. All of these can live on less water. And, in some places, rainwater is being harvested.



Marcus Perkins/Tearfund

So what is holding communities back from adapting fully? The problem is clearly not the lack of will to change, but the cost of change. Plus, there's a need for education to help local communities deal with their new realities. In addition, many other communities have yet to be given the extra resources and capacity they need to have a chance of adapting to current and future challenges.

Facing the future

The situation in Africa is expected to continue to get worse, with warmer temperatures, less rainfall and more floods and droughts. In addition, sea levels are expected to continue to rise, threatening low-lying areas.

Communities report feeling frustration and uncertainty about the changes in climate that they're experiencing. There is a profound lack of confidence about the future. The message they are giving is clear: we can adapt, but we need support. As Richard Sulu from The Church of Central Africa, Presbyterian in Malawi explains, *'If they can have something to back them up, then they will have the ability to adapt to future challenges.'*



Eleanor Bental/Tearfund

Voices from Asia

Asian perspectives from Bangladesh, India and Nepal

'There is a strong linkage between food security and weather patterns in Nepal. Agriculture makes up 30 per cent of the national economy and 60 per cent of the population make their living from it. Small alterations in weather patterns, especially rainfall, threaten the livelihood of almost half the population.'

Suresh Battarai, United Mission to Nepal

Changing weather patterns

About 75 per cent of the world's major natural disasters between 1970 and 1997 happened in Asia and the Pacific. Though clearly not all are climate-related (such as Haiti and Fukushima), many are. Storms and cyclones continue to increase both in number and intensity in the region.

Across Asia, Tearfund partners report dramatic changes in weather patterns. Seasons are changing. The winter is becoming shorter. *'Bangladesh is the country of six seasons, but it has reduced to three,'* explains George Mithu Gomes from Bangladesh Nazarene Mission.

► What's happening today in Bangladesh:

'We do not get enough rain in time. It is coming late and the last three years there was almost no rain, then last year rain came later and caused an unbearable flood.'

Sunil Raphael Boiragi, Salvation Army

◀ And in 2005:

'Frequency of flooding is increasing, due to water coming from surrounding countries. This brings heavy siltation to the country's rivers and river bank erosion not experienced ten years ago.'

Salvation Army

The impact of changing weather

Tearfund partners report widespread problems as a result of changing weather. Deforestation is also leading to soil erosion, less fruit, food and wood production, and fewer medicines.

Cattle are dying from lack of food and water, as the area that people can farm diminishes dramatically.

Rivers are drying up, so it is harder for families to get enough water for themselves or for their land. Fish stocks are dying, as well as farmers' herds.

For families, all this means selling livestock to try to stay afloat. But they're selling at low prices and so are slowly losing their livelihoods. Sometimes, this can lead to people leaving their land for the city in the search for work and food.

► What's happening today in India:

'Life becomes miserable. Cattle die without water. The situation has worsened since 2000 and no improvement is seen in the near future. I've also seen people fighting over water a number of times.'

TK Joy, Eficor

◀ And in 2005:

'During floods, all the boreholes get damaged by mud. People have to go far away to a river for water – even to drink. People get sick with diarrhoea.'

TK Joy, Eficor

Living with changing weather

Communities across the region are raising their concerns about climate change. *'The water for irrigation is getting less each year. What will life be like in five years' time?'* was one typical response.

However, communities are already starting to adapt to the change in weather that they're facing. In Bangladesh, this includes establishing floating gardens, raising the sides of ponds, putting houses on raised plinths to avoid flooding, and establishing kitchen gardens. Tree-planting schemes are also taking root.



Prabodh Malla/Tearfund

In Nepal, farmers are growing their vegetables under polytunnels to protect them from extreme temperature swings and maintain a relatively constant environment. Solar water-heaters and solar electricity generally are becoming popular in Kathmandu.

Facing the future

Scientific predictions suggest that Asia will continue to face increasing environmental changes in the years ahead. Tens of millions of people in coastal areas continue to be at risk of flooding as sea levels rise and the intensity of cyclones increases. Droughts are expected to increase in the summer months.⁷

All this means that crop yields could drop by as much as 30 per cent in Central and South Asia by the mid-21st century, putting millions at risk from hunger.⁸

Many communities say that they feel confident about facing a changing future and believe that they can overcome these challenges. Yet, they also say that they need more support, particularly from local and national government.

'Since the problems of climate change, people cannot live peacefully,' says TK Joy of Tearfund partner Eficor in India. *'They sit together in the depth of the night and think about what course of action to take in the future.'*

'They are not getting proper training from any organisation or from the government. If they were trained for two or three years, it would be different.'

⁷ Climate change 2007: impacts, adaptation and vulnerability. Working Group II contribution to the Fourth Assessment Report of the IPCC. Summary for policymakers and technical summary

⁸ Ibid

Conclusion

In 2005, we reported that climate change was happening and having an impact on poor communities. This report reveals that climate change is continuing to have an increasingly dramatic and harmful effect on communities in developing countries. We need to act now.

What, then, is to be done?

Cut emissions quickly

Tearfund believes that rapid, deep cuts in carbon emissions from rich countries are vital in preventing catastrophic climate change. Developed countries can and must take a lead.

And they need to provide finance and technology to help developing countries find ways to develop sustainably.

Tearfund believes that the best way to do this is through a legally binding international climate change agreement under the United Nations Framework Convention on Climate Change (UNFCCC). But these talks are moving too slowly to deliver the scale of change needed to help the most vulnerable. Leadership is required at the highest level to cut through the self-interest in global politics and to forge a future which is better for all.

Governments will need to have the imagination to take the lead in building the new, green, sustainable economy that is needed by all the world's people – especially its poorest members. And they will need to be innovative in finding new streams of finance to give developing countries the additional support they need. This support should not come at the expense of existing aid pledges – already vitally important even before climate change is considered.

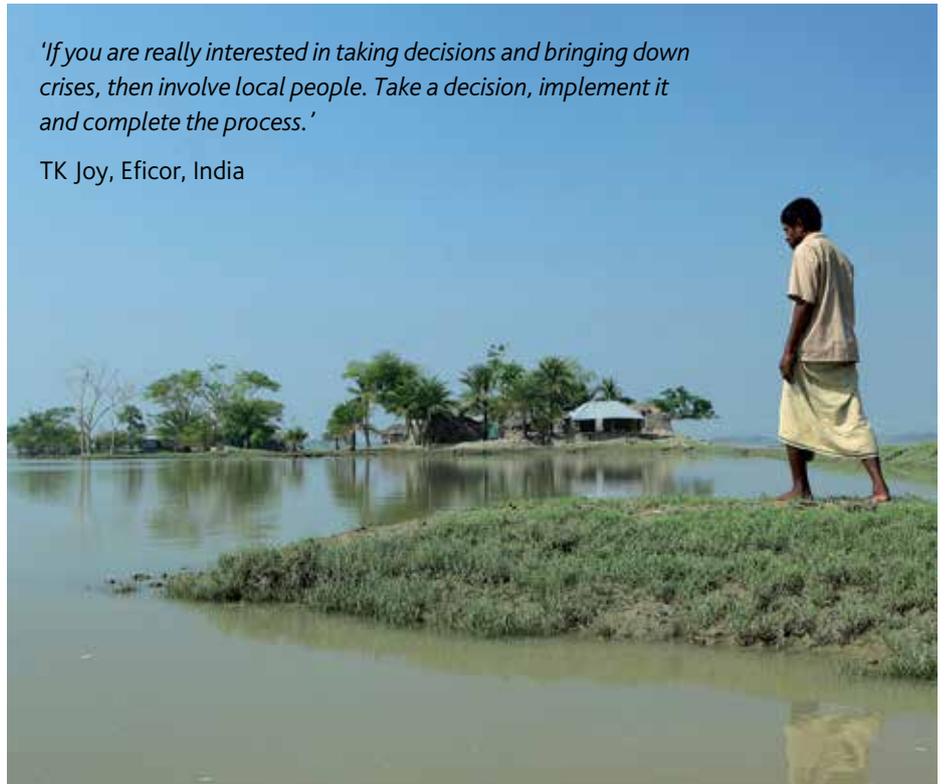
Tearfund partners agree that local communities in developing countries need the resources and funds to make often significant, costly changes. Local people must be involved in developing workable policies to help them adapt and to plan for a more uncertain future. And local communities must be provided with accurate information on climate change to help them make informed decisions on how to adapt to these changes.

Finally, we will need to see a paradigm shift. We must all:

- Consider how lifestyles, industry and livelihoods in the developed world are impacting the rest of the planet
- Combat the values of consumerism that destroy the environment
- Consider that power is not for self-enrichment, but for serving others
- Face the truth: climate change is happening now. This is urgent.

'If you are really interested in taking decisions and bringing down crises, then involve local people. Take a decision, implement it and complete the process.'

TK Joy, Eficor, India



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