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[ Climate change ]

## An equitable solution

The long-term trends in global damage statistics leave no doubt that weather disasters have increased dramatically – and affect developing countries the most. What we need is a new Global Deal covering climate protection and the battle against poverty at once.

[ By Ottmar Edenhofer, Thomas R. Loster and Johannes Wallacher ]

Floods, storms and droughts have become more frequent and more intense over the past few decades. Some of the forecasts of leading climate researchers have already become reality. In terms of the number of victims, nine of the ten worst natural disasters in the past years were caused by extreme weather, and most of the deaths occurred in developing countries and emerging economies (see box).

Published in 2007, the fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) found that the links between global warming and extreme weather were much clearer than suggested in the previous report of 2001. The future of entire regions is at stake; therefore, efficient early warning systems must be set up alongside other disaster prevention measures (see essay by Stephan Beschle on p. 373ff). We cannot win the battle against poverty in developing nations as long as people continually lose their homes, schools, hospitals and other infrastructures due to disasters.

Disasters, moreover, are not the only danger. Creeping change also poses considerable risks. According to the World Bank, some 100 million people suffered from drought in the 1980s and 1990s in Africa. In just a few years, that number is expected to have doubled. The scientific evidence of the increase in floods and droughts is significant. Millions of people will have to leave their homes (see Leighton, Loster and Warner on Climigration in D+C/E+Z 9/2009, p. 323ff).

## A bad starting point

The data from the IPCC and the World Bank show that developing countries and the poorer sections of populations around the world are suffering the most from the effects of climate change. Their chance of getting access to food, clean water and other resources is worsening, so their health will be detrimentally affected. These people hardly have a good starting position to adapt to changing conditions.

At the same time, the damage caused by weather disasters will continue to increase as population growth increases the density of settlements in vulnerable regions. Vulnerability will increase in rich countries, as ever more sophisticated infrastructures and hightech facilities are at risk. In poor countries, however, damages will increase as people and infrastructures there are only resilient to a limited extent.

The international community is realising that unfettered climate change will compound poverty problems. The global climate summit COP 15 that will take place in Copenhagen this December will have to provide a framework to prevent global warming from crossing the critical threshold of an average increase of two degrees Celsius. At the same time, people in poor countries still have to retain their development opportunities.

In many ways, climate protection and the battle against poverty are complementary goals. Nonetheless, they are not easy to reconcile. Focal points and time frames vary too greatly. For instance, conflicts can occur when emissionreduction targets limit the scope for economic growth. At the same time, everyone should benefit equally from economic growth. This is an issue of fundamental principles of justice.

## Human dignity

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The best place to start is human rights. They stipulate that no one's dignity should be violated. This right can be further subdivided into three interdependent and complementary dimensions of justice that are central to climate protection and the battle against poverty. They concern

- the covering of basic needs,
- equal opportunities, and
- fair and equitable procedures.

In terms of developmental justice, the call for equal opportunities is the focal point. Unless their basic needs are met, people cannot fully exploit abilities and chances. Often, the poor are only able to meet their own basic needs to a limited extent; they therefore require support from institutions. In addition, justice demands that basic regulations, both nationally and internationally, be defined in fair and transparent negotiations and decisionmaking. The people affected by decisions must be involved in the process.

Human rights are universal. Accordingly, the basic rights of current and future generations have to be ensured. Unfettered climate change would obviously be detrimental to the opportunities of future generations. The international community must therefore strive to drastically reduce global greenhouse gas emissions now.

At the same time, people who are already vulnerable today, must be assisted in adapting to the changes. If that is not done, the status quo of extreme poverty and structural global injustice will be perpetuated. Climate protection must not come at the cost of development, which could be the case if funds for combating poverty were simply reallocated to other purposes. For the same reason, poor countries cannot be expected to reduce their emissions radically and immediately. After all, they too have a right to development.

## Five pillars for a Global Deal

Climate change has to be kept at a level that allows people to adapt. The critical threshold of a two-centigrades increase in global temperatures is an ambitious target, but a necessary one. It will not be met through isolated measures; rather, we need a clever combination of different interlinking strategies.

A realistic Global Deal would be based on five pillars:

- Trading of carbon emission rights. Countries with high avoidance costs would purchase emission rights from countries where emissions could be reduced at lower cost. Industrial countries could then gradually make the transition to a lowcarbon economy, while poor countries would have considerable financial means at their disposal far beyond current development aid (see review essay by Imme Scholz p. 380f). This system will only be effective if we can set up global institutions worldwide with transparent, democratic decisionmaking structures in which poor countries are adequately involved. Fair and equitable procedures are essential.
- Public investments in research for the development and transfer of low-emission energy technologies to poor countries. Unless this happens, many countries will be unable to reduce their energy and carbon intensity fast and cover their rapidly growing energy demand in compliance with climate protection targets.
- Sustainable forest management. The clearing of tropical forests accounts for around a fifth of global greenhouse gas emissions and is depleting biodiversity. To make things worse, the homes and livelihoods of numerous people are being devastated in the process. The protection of all of the Earth's forests is a basic requirement for the stabilisation of global emissions and sustainable development in the interest of the poor.
- Adaptation to the effects of climate change that can no longer be prevented. These efforts have to be made locally and regionally, but as poor countries need help, global cooperation is nonetheless required. Wealthy nations must contribute some of their considerable financial resources. One option would be to boost the (yet to be created) global adaptation fund significantly, with a view to allocating additional money to developing countries, making sure that the poor truly benefit.
- Development policy. Overcoming poverty and underdevelopment is mainly the responsibility of individual states and their governments. National leaders must create appropriate political, economic and social conditions. On the other hand, national development efforts are increasingly being restrained by ever-greater global interdependence in many fields. International development policy has to ensure that poor countries can develop independently, banking on their own political reforms and well-balanced social and economic processes. In addition, industrial countries have to use their political and economic power to promote global institutions that promote development. Policy-making on climate and development must be better coordinated with that in other fields, especially trade and agriculture.

## Moderate cost

This five-pillar model will only make sense if the concentration of green-house gases in the atmosphere is stabilised through prudent energy policy. The chances of staying within the critical threshold of no more than, on average, two centigrades of warming depend on how quickly emissions are reduced. The Potsdam Institute for Climate Impact Research (PIK) has calculated that there is approximately a 15 % likelihood of staying within that threshold if the concentration of greenhouse gases can be kept below 550 ppm (parts per million, with all greenhouse gases converted into the equivalent for carbon dioxide). At 450 ppm, the likelihood is around 50 %, and at 400 ppm, 75 %.

Various models show that economic costs rise the more ambitious a goal is set. Staying within the 450 ppm threshold (which would provide a 75 % likelihood of not passing the two-degrees limit) would cost up to 2.5 % of global economic output. But of course, such costs have to be weighed against avoided damages. For ethical reasons, however, it is next to impossible to put a price tag on biodiversity and human life.

If we are to limit climate change, our energy supply system has to be restructured quickly and radically. Civilisation must ramp up renewables, including biomass and bring to market carbon capture and storage (CCS) technology.

The option of combining biomass with CCS is crucial for achieving ambitious reduction goals. If we assume that the production of biomass is carbon-neutral, this combination would even allow us to remove carbon from the atmosphere. Such "negative emissions" could then counterbalance emissions from coal consumption.

In addition, energy efficiency should be promoted to further reduce emissions. Fortunately, efficiency measures generally pays for themselves.

These calculations are based on two assumptions.

- First, it is assumed that all states will quickly agree to a global limit on emissions.
- Second, it is assumed that certain technologies, which are currently still in the development phase (such as CCS), will be available on the utility scale at some point, and that sufficient biomass is available for energy production.

Overall, research proves that climate change can be slowed down at a moderate cost if all available technologies are used and global decision-makers act as fast as possible on the matter. Some of the technologies discussed (such as CCS) are not without risk. Because the models commonly used do not take these risks into account properly, if at all, an assessment of risks and unknowns should also be integrated.

## Conclusion

If climate change is to be stopped, the world urgently needs ambitious carbon targets that do restrict the development opportunities of people in poor countries. We must act quickly. The right of countless people to a life in dignity is at stake – both today and in future.

Back in the 1930s, the United States adopted a package of economic and social reforms called the New Deal to bring the country out of the Great Depression. Today, a Global Deal based on cooperation and sustainability could help the global community get out of the climate trap. We know one thing for sure: the -battle against climate change and the battle against global poverty will be won or lost together.

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## Dramatic trends

Some breathtaking world records show that the effects of climate change can no longer be ignored. In February 2007, tropical storm Gamède brought with it some 3,929 mm of precipitation in only three days – five times more than the city of Munich normally gets in a year. In 2005, Caribbean hurricane Wilma created the lowest pressure area ever measured. At the same time, the tropical Atlantic was warmer than ever previously recorded.

Regions that are just getting started with development bear the brunt of climate change. Based on gross domestic product, the World Bank divides countries into four categories – from G1 (“rich”) to G4 (“poor”). Data from the years 1980 to 2008 show that weather disasters affect different countries to different degrees:

- As could be expected, 74 % of the monetary damage occurred in the richest two groups, G1 and G2, with the poorer countries (G3 and G4) only bearing 26 % of that burden.
- Two thirds of the approximately 15,000 weather disasters recorded worldwide took place in developed nations (G1/G2), with only a third affecting the categories G3 and G4. Nonetheless, only 17 % of approximately one billion dead were recorded in the two richer categories, whereas 83 % of the deaths occurred in countries with low incomes.
- In poor countries, people generally have to cope with their damages on their own. The G3 and G4 countries only made up some two per cent of insured cases.

More gradual changes in the weather, such as heat waves and droughts, can also be devastating. Such damage is, however, hard to put into numbers as these events have no clearly defined beginning or end. Nonetheless, a large number of people lose their livelihoods when large tracts of land dry out, destroying harvests and livestock.

Exacerbating inequality, international media do not report all damages equally. We read about extreme droughts, floods and heat waves in the world press when rich countries are affected. Similarly, giant forest or bushfires in Australia, California and Southern Europe attract global media attention. That was also true of the heat wave of a kind that only occurs once in every 500 years that hit Europe in 2003. But how many of us heard about millions of people waiting for the monsoon in India this summer? Their suffering was hardly registered outside Asia, even though it is becoming increasingly evident that Monsoon patterns are changing because of global warming.  
(oe/tl/jw)

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## Link

In cooperation with the Aachen-based Catholic development agency Misereor, Ottmar Edenhofer, Thomas Loster and Johannes Wallacher are involved in a joint research project on climate and justice:

»» [www.klima-und-gerechtigkeit.de/index.php?id=82&L=1](http://www.klima-und-gerechtigkeit.de/index.php?id=82&L=1)

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