Focus: Climate change in ADC

Climate change gains momentum

Global climate change has long been evident. Since the late 19th century, the mean annual temperature on the earth's surface has risen by about 0.7°C. The condition of the oceans (temperature, salt content, etc) has also changed considerably in the last 40 years along with large parts of the cryosphere, i.e. the part of the earth that is covered in ice and snow. There is no longer doubt that the recorded temperature rise is attributable to human activities. The main cause of global warming is the increased emission of greenhouse gases, such as carbon dioxide (CO_2) released through the combustion of fossil fuels methane, which occurs in waste management and agriculture, nitrous oxide (N_2O) and gases emitted in industrial processes.

The industrialised countries remain responsible for a major part of greenhouse gas emissions today. In spite of their small contribution to the world population, they emit nearly half of global greenhouse gases.[1] In addition, the growing economies in many countries, above all in Asia and Latin America, will cause another rise in worldwide emissions in the coming decades, if no preventive measures are taken.

Compared to this, developing countries emit fewer greenhouse gases per capita. The predominant sources of gases also differ: in wealthy countries greenhouse gases are primarily generated by industry, transport and power production (altogether 74 per cent of emissions), whereas in poor countries 70 per cent come from agroforestry, and/or from soil degradation and land use changes, such as forest clearance.[2] Economic growth, above all in agricultural production, also usually leads to higher emissions.

If this trend continues, the temperature could continue to increase by more than 5°C by the year 2100.[3] The sea level could rise by around one metre, which would result in flooding of low-lying coastal regions and the salt water intrusion in river deltas.[4] The highly populated coastal regions of developing countries and small island states would be particularly affected by this. The increase in extreme events like droughts, floods and storms can already be seen today. In addition to higher temperatures, we can expect dramatic and partially already irreversible changes in global and regional rainfall, which will have a serious impact on biodiversity, agriculture and forestry. The oceans will also be affected by other changes (acidification, changes in currents), with major consequences for fishing.

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[1] Twenty per cent of the world population accounts for 46 per cent of global greenhouse gas emissions (IPCC, 2007).
[2] World Development Report 2010

[3] IPCC, 2007; World Bank: Turn Down the Heat, 2012
[4] The expansion due to ocean warming could cause a rise of up to 0.59 cm (IPCC, 2007). Another 0.37 cm would be added by melting glaciers and ice caps (Bahr D.B. Dyurgerov M. and Meier M.F., 2009)

Austrian Development Cooperation

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Every year, around 5 per cent of global GNP is lost as a consequence of climate change.[5] Based on detailed studies, the USA estimates the social costs of greenhouse gas emissions at US$ 12 for each tonne of CO_2.[6] In 2011, natural disasters, which are partly attributable to climate change, have incurred global economic losses of over EUR 300 billion.[7] These impacts affect the developing countries most. Their social systems and economies are extremely vulnerable and a large proportion of their natural resources are already fragile and degraded, which will be further enhanced by climate changes. A decrease in agricultural productivity and in usable land is predicted for most developing countries.

Serious consequences of climate change as illustrated by Africa[8]

- The number of people whose existence is threatened by coastal flooding will increase from
  1 million in 1990 to 70 million in 2080.
- In North Africa precipitation will decrease by 10 to 60 per cent.
- An improvement in conditions is anticipated for 80,000 km² of land in Africa that is currently in use but whose utilisation is severely restricted. By contrast, 600,000 km² of land that is exploitable to some extent at present will become unusable.
- Cereal production in Africa could drop by up to 5 per cent. Many subsistence products such as sorghum, maize, millet and peanuts could also see dwindling yields.

Even if measures are taken immediately to substantially reduce greenhouse gas emissions and to mitigate climate change, the temperature rise can no longer be halted completely. Besides reduction efforts, it is therefore necessary to develop and implement measures for adapting to the changed environmental conditions. This can, for example, mean agricultural change to other plants or cropping methods, or enhanced disaster prevention.

International cooperation

The global challenge of climate change calls for a global solution. In 1994 the UN Framework Convention on Climate Change came into force and has been signed by over 190 states to date. Its aim is to reduce the worldwide emission of greenhouse gases and to stabilise it at a safe level. It also calls on Member States to develop strategies for adaptation to climate changes and to cooperate in the research and development of technologies. As the main producers of greenhouse gases, industrial countries should play a leading role and support developing countries.

The Kyoto Protocol with the Clean Development Mechanism (CDM) and other instruments have been created to define binding reduction targets. Under the CDM industrial countries finance projects in developing countries and emerging markets to reduce greenhouse gas emissions. In return the reductions achieved can be offset against national targets. The

[5] Stern, N. (2006)
[6] Greenstone et al, 2011
[7] OECD environmental outlook to 2050; in: EU Environmental Action Plan 2020 Proposal
[8] IPPC, 2007

mechanism thus kills two birds with one stone: cost-effective reduction of greenhouse gas emissions and sustainable development of poor countries.

The first commitment period of the Kyoto Protocol expired in 2012. The conference of parties to the UN Framework Convention on Climate Change in Doha adopted a second commitment period until 2020. Apart from the EU, however, few industrialised nations (such as Switzerland, Norway, Australia) are prepared to participate in this extension period. A new, global climate protection treaty shall be adopted by 2015, which will demand commitments by all states (to differing extents) and raise the effectiveness of greenhouse gas reductions from 2020 on.

Another financing mechanism of the UN Framework Convention on Climate Change is "Reducing Emissions from Deforestation and Forest Degradation" (REDD+), which provides for compensation payments to developing countries that protect their forests in favour of the global climate and forego potential revenue from forest clearance or land use for agriculture.[9]

The EU plays a pioneering role not only within its own borders but also as a partner to developing countries. One aspect of its commitment is the Union's Development Cooperation Instrument (DCI), where environment/energy is specified as a separate pillar. In the relevant strategy for 2011-2013, climate change mitigation (particularly through initiatives such as REDD+) and climate change adaptation are cited as key issues.[10].

Donor countries within the OECD and the international financial institutions (such as the World Bank and regional development banks) have also been cooperating in climate change issues for many years. In recognition of the fact that developing countries are hardest hit by the effects of climate changes and that the situation of the poorest population will continue to deteriorate, the OECD countries have step up their commitment in favour of partner countries, particularly with regard to adaptation measures.

Focuses within ADC

Conservation of the environment is one of three prime aims set forth in the Austrian Development Cooperation Act (DCA). Climate protection is explicitly stipulated as one of four fields of action in the Austrian development-policy strategic guideline, Environment and development. .Sustainable energy and climate protection are also a programmatic priority in the cooperation between the Federal Ministry of Finance and international financial institutions. As far as possible, ADC will consequently pay due attention to climate change issues.

The primary need for action in **emission reduction** lies with the industrialised nations. As emissions are increasing rapidly in developing countries, as many measures as possible need to be taken there as well to reduce or to avoid emissions in order to stabilise global greenhouse gas concentration.

In view of the enormous challenge faced by developing countries as a result of climate change, efforts to adapt to this change will become increasingly important. Climate change

[9] On REDD+ see also the ADC Focus paper: „Green Economy, 2012
[10] EU ENRTP strategy paper 2011-2013

threatens to destroy the progress made in development. Among others ADC supports measures to reduce the vulnerability of the economy and society in partner countries to extreme weather events, variable precipitation and changed seasonal climate regimes.

Many developing countries lack capacities, like the legal and institutional framework or the required expertise, to develop and implement their national climate change mitigation or adaptation strategies.
Climate protection is closely associated with other areas of development cooperation, not only with the conservation of biodiversity and combating desertification, which are subject of two other major UN environmental conventions. In the long term, an isolated approach will not be productive. ADCs approach is therefore not limited to specific projects, but seeks to integrate climate changes issues in ongoing programmes and projects. In the energy sector, great attention is paid to energy efficiency and renewable energy solutions. Programmes and projects in the sectors water and sanitation, or rural development often have to deal with an existing, deteriorating or threatened water shortage. Issues such as supply security, drought-resistant plant cultivation and efficient irrigation have to be addressed. Afforestation and organic farming, which promote the conservation and sustainable use of vegetation and soil, also contribute to climate protection. Intact ecosystems, such as soils, forests or oceans, bind greenhouse gases from the atmosphere and therefore reduce their climatic impact. For this reason, they are known by experts as ’sinks’ or ’stores’.

ADC pursues the following climate protection principles:

- Generating and using synergies between climate protection, biodiversity conservation, desertification prevention and other environmentally relevant issues
- Wherever appropriate, introducing climate protection measures as a tool for poverty reduction and sustainable development and paying particular attention to increase the climate change resilience of poor populations in partner countries. Promoting regional and situational analyses with focus on the interactions between the impacts of climate change and social and economic aspects.
- Providing institutional support for partners, building capacity and raising awareness, promoting science and research: The lack of institutional frameworks, expertise and technologies often hinder the integration of climate change concerns into development policy and planning.
- Avoiding additional greenhouse gas emissions in all programmes and projects supported by ADC. Assessing whether climate change could jeopardise the benefit and sustainability of specific projects, and, if so, integrating specific adaptation measures.
- Strengthening bottom-up initiatives, taking account of local needs, traditional techniques and socio-economic practices: In large parts of developing countries, people have had to cope for centuries with droughts or floods and adapt to these. Climate change confronts them with additional challenges, but traditional knowledge is a repository of considerable potentials that need to be promoted.[11]

[11] On this, see also: Parotta et al, 2012

Project examples

Research and capacity development through global exchange

The programme “Capacity Development for Adaptation to Climate Change”, C3D+, managed by the United Nations Institute for Training and Research (UNITAR), supports specific research, workshops, training and pilot projects for local adaptation to climate change. Six regional centres worldwide and about 3,000 people in 30 developing countries are involved in this programme. Financial support comes from the European Commission, the Swiss Environment Ministry and ADC.

C3D+ focuses on two tasks that are crucial for mainstreaming climate change issues in development strategies: assessing planning instruments in regard of their practicability and international experience exchange.

Specific solutions for Africa

Nowhere are people more exposed to the impacts of climate change than in Sub-Saharan Africa. Community-based adaptation (CBA) is widely seen as an efficient and sustainable response to climate change. Its implementation is, however, hampered by the few methods available and ignorance about best practices.

The CARE Adaptation Learning Programme for Africa (ALP) aims at strengthening climate change adaptation capacities of particularly vulnerable households. As part of the programme, innovative approaches to CBA are developed as pilot schemes for future interventions, and local organisations are better involved in decision-making processes concerning climate change adaptation.

In collaboration with local organisations and government agencies, the programme is carried out in 40 municipalities in Ghana, Niger, Mozambique and Kenya, with a total outreach of 59,000 people.

Local solutions for climate change adaptation in Burkina Faso

Rural development in Burkina Faso is hampered by erosion, soil degradation and frequent droughts as well as floods. Climate change increasingly exacerbates the situation. The project COGEL, funded by Austrian Development Cooperation and UNDP, supports municipalities and regions to take changing environmental conditions into account in their local development plans. Public, private and civic actors are informed about how to achieve sustainable development and poverty reduction despite increasingly adverse environmental conditions. This could mean to diversify agricultural crops to reduce dependencies on individual products or to improve storage conditions to increase the emergency provisions. There is also a financing facility for measures that are selected on the basis of local experience and the application of appropriate technology.

Environmental protection is a central concern of the national development strategy in Burkina Faso. The project is implemented in collaboration with the Ministry of Environment and Sustainable Development of Burkina Faso. Total costs of the project, which will continue to the end of 2015, amount to about EUR 6.6 million, to which Austria contributes EUR 1.6 million.

Planning for climate change impacts

Since 1980, the global donor community has only spent 3.5 per cent of total foreign disaster aid for preventive measures. This, however, is where all kinds of measures have the best chance of preparing for the impacts of climate change. The Global Facility for Disaster Reduction and Recovery (GFSSR), which is supported by Austria and about 40 other countries as part of cooperation with international financial institutions, promotes, together with the United Nations Office for Disaster Risk Reduction (UNISDR), better built schools, greater disaster awareness in the population, national plans for disaster management and the development of an operational rescue system.

Reducing the risk of glacier lake outbursts in Bhutan

One of the dangerous repercussions of global warming in Bhutan is the threat of rising glacial lakes. If they burst and their water floods through the valleys in tidal waves, key economic sectors such as agriculture, forestry and energy are seriously threatened, and the lives of many people are in danger. Bhutan identifies glacier lake outburst floods (GLOFs) as a priority challenge in its national report to the Climate Convention and in its National Adaptation Programme of Action (NAPA). Therefore Bhutan receives support from the Least Developed Country Fund (LDCF) specifically set up under the UN Framework Convention for Climate Change for implementing NAPAs. The project, to which Austrian Development Cooperation contributed financially and technically, was the first ever to be co-financed from this fund. It is therefore of great regional significance and is attracting keen interest from the international community.

Further reading/Information sources

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Homepage of the United Nations Framework Convention on Climate Change (UNFCCC): http://www.unfccc.int

DFID booklets on various topics to do with climate change and poverty in development cooperation: http://www.dfid.gov.uk/What-we-do/Key-Issues/Climate-and-environment/

EU Environmental Action Plan 2020:
http://ec.europa.eu/environment/newprg/pdf/7EAP_Proposal/de.pdf

EU development cooperation strategy in environment, natural resources and energy: http://ec.europa.eu/europeaid/how/finance/dci/documents/enrtp_strategy_paper_2011-2013.pdf

GIZ background information and approach: http://www.giz.de/Themen/de/3958.htm

Global Facility for Disaster Reduction and Recovery (GFDRR): https://www.gfdrr.org/

World Bank GFDRR Sendai Dialogue: http://www.gfdrr.org/gfdrr/node/1301

OECD publications on climate change, adaptation and finance and specific measures in various sectors: http://www.oecd.org/env/workingpapersonclimatechange.htm

United Nations International Strategy for Disaster Reduction (UNISDR): http://www.unisdr.org/

World Bank climate portal: http://climatechange.worldbank.org/
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World Research Institute: http://www.wri.org/climate; Facts and figures on global climate and atmosphere: