THE MILLENNIUM DEVELOPMENT GOALS AND CLIMATE CHANGE:

TAKING STOCK AND LOOKING AHEAD

GERMANWATCH

Contents

Authors: Sönke Kreft, Sven Harmeling, Christoph Bals, Winfried Zacher, Klemens van de Sand

Editing: Katrin Schilling, Linze Struiksma

Design: Dietmar Putscher, Cologne
www.dietmar-putscher.de
Cover Photo: Atmosfair (people), digitalstock (drought)
Printed on 100% recycled paper

September 2010
Purchase Order Number: 10-2-09e

This publication can be downloaded at:
www.germanwatch.org/klima/klimdg10e.htm

Germanwatch - Bonn Office
Kaiserstrasse 201
D-53113 Bonn, Germany
Ph.: +49 (0) 228 - 60492-0
Fax: +49 (0) 228 - 60492-19

Germanwatch - Berlin Office
Schiffbauerdamm 15
D-10117 Berlin, Germany
Ph.: +49 (0) 30 - 28 88 356-0
Fax: +49 (0) 30 - 28 88 356-1

E-Mail: info@germanwatch.org
www.germanwatch.org

With financial support from

gtz

On behalf of Federal Ministry for Economic Cooperation and Development

The sole responsibility for the content of this publication lies with the authors.

The authors want to express their gratitude to the participants of the Workshop „MDG & Klima – Zu einem gemeinsamen Politikverständnis" for their valuable inputs, with special thanks to Imme Scholz, Michael Scholze and Klaus Wardenbach.

Executive Summary

1. The last decade was marked by booming globalization galvanizing many development advances. However, structural economic, human and climate crises also showed the downside of the existing path of development especially in the least developed countries and in Africa.

2. The Millennium Development Goals (MDGs) succeeded in mobilizing support for the development agenda and led to some success in the fight against hunger, diseases and illiteracy. Yet, the finance and food crisis brought a backlash and enlarged the implementation and finance gap to achieve the targets by 2015. To reach the targets requires political leadership to speed up progress. The climate agenda went through a paradigm change at the climate conference in Copenhagen in the end of 2009. Now, leadership of countries and country coalition are equal in importance like international negotiations for progress on the ground to curb emissions and to adapt to current and future climate impacts.

3. Climate impacts impede the sustainability of MDG progress. Patterns of persisting poverty coincide with areas of high climatic vulnerability. On the other hand, progress in achieving the MDGs contributes to adaptation by reducing vulnerabilities and increasing the capacities to be able to adapt.

4. Since the MDGs treat environmental sustainability as a sub-goal rather than a precondition for development, and since most development advances have relied on a fossil based growth model, there is an inherent conflict between the development agenda and required mitigation actions. To resolve the dichotomy between development and the climate agenda, it is important to build on activities that decouple emission growth from development advances.

5. Energy access and consumption is a necessary prerequisite for the attainment of MDGs. Employing low-carbon energy structures should therefore be a major point of intervention to decouple emission growth from development.

6. Many specific synergies exist between the different MDGs and mitigation as well as adaptation. Projects and activities with a double benefit, such as climate resilient agriculture that promotes food security, should be prioritised.

Climate resilient smallscale agriculture is important for food security and rural development. Photo: Gertrud Falk

7. The right conceptual and political framework needs to be shaped in order to mutually enforce the MDGs and climate agenda. The policy recommendations include:

Apply partnership approach: Development assistance aims to be a partnership with mutual accountability, country ownership and recipient countries defining their own development processes. In the climate agenda such a partnership approach is even more important, since neither developed nor developing countries have yet fully established concepts to achieve mitigation and adaptation to climate change.

Learn from innovative institutions in the MDG and climate debate: Both agendas offer institutional innovation that incentivises such partnership approach. The Global Fund to Fight HIV/Aids, Tuberculosis and Malaria includes affected groups and stakeholders in its governance structure and disbursement decisions. The Adaptation Fund under the Kyoto Protocol enables developing countries to directly access financial resources, while auditing and fiduciary standards are met. On the country level, Bangladesh developed a national climate trust fund, which galvanizes mainstreaming of mitigation and adaptation at the country level.

Target the most vulnerable: Funding arrangements should deliver to those that are the poorest and the most vulnerable, as for example the Adaptation Fund has as a strategic priority. Yet governance weaknesses in some developing countries means that many citizens cannot adequately benefit from international MDG and climate finance. Bilateral development assistance has fine-tuned approaches to deal with fragile statehood and has an important role to play to deliver adaptation outcomes to the most vulnerable. To further engage into adaptation activities, a climate proofing of the development portfolio is a necessary prerequisite.

Achieve integration of development and climate delivery: The status quo in many countries is to treat development, mitigation and adaptation in isolation. For achievement on the ground it is crucial that the bulk of adaptation measures is implemented by the same ministries that are responsible for achieving development outcomes. Adaptation and mitigation need to be integrated into development and poverty reduction strategies.

Apply nationally defined strategies to achieve mainstreaming of adaptation and mitigation: Different options exist to enhance integration of climate issues into development. Depending on national circumstances, ministries of the environment (usually charged with climate policy) could be strengthened, or ministries responsible for development could be moved by availability of external funding. Specific adaptation or climate change strategies also have the potential to drive integration into other policies.

Create high-level commitment: Commitment by Heads of States to the issues of development, mitigation and adaptation can be tremendously helpful in galvanizing joint planning and collected actions within a country. Some countries already have installed institutional options to address climate change under the coordination of prime minister level.

Achieve a transformational discourse: Facing unique challenges, both agendas – MDGs as well as climate change – result in the need for a transformation of economies beyond a business as usual development pathway. This understanding must infiltrate into national development discourses.

Consider actions towards MDG success, mitigation and adaptation as investments for the future: The required actions can be regarded as two large investment packages, comprising political, financial and capacity investments: a low-carbon development investment package into energy- and climate security (renewables, energy efficiency and energy grids), and a climate resilient development investment package into MDG related actions of socio-economic development, poverty reduction, access to food and water, health interventions, as well as more specific interventions into climate expertise or risk reduction.

Do not throttle investments for the future: Due to the finance crisis some developed countries, such as Germany, plan to reduce or limit the increase of their future investments into national and international climate action and poverty alleviation. Holding firm to international promises and shoulder the countries' share to invest in global security is a matter of political will and leadership.

Avoid trade offs between MDGs and climate agenda: Transformation in poverty alleviation, in adaptation and mitigation requires public and private investments in the order of hundreds of billion USD. A political framework needs to be developed to incentivise private investment necessary for mitigation actions. This includes high mitigation targets in developed countries to foster carbon markets. This would allow development assistance to focus on development objectives and co-benefits in delivering mitigation actions. In adaptation a concept of additionality should be applied on the side of resource generation, to ensure new resources and to avoid a shift of money.

Introduce new financial sources for development and climate: Financing the needed transformation in the MDG agenda, as well as in mitigation and adaptation, is difficult in times of decreased fiscal space. Therefore, political leadership is needed to tap new, innovative sources of finance beyond the country's budgets. Promising approaches on the international level are the auctioning of emission allowances for maritime transport and aviation and a levy on financial transactions. On the national level a passenger levy for flights as well as the use of additional revenues from emission trading or carbon taxes should be established.

In the short-term facilitate MDG progress and building elements in climate policy: Short-term focus should not emphasize political processes post 2015, but aim to achieve quick gains for MDG success and concrete outputs in the climate agenda. Concrete steps to ramp up development assistance, championing innovative financial sources and increasing the coherence of developed country policies by reorienting agricultural, fishery and trade policy should be high on the action agenda of political leaders. Likewise, the focus in the next round of climate negotiations should centre on concrete outputs to facilitate adaptation, technology transfer and avoiding deforestation.

Start framing a joint policy agenda for climate and development: People already grapple with defining a new agenda post 2015, which should integrate development and climate change. In doing so balance needs to be found between the broader analysis of how humanity develops and concrete steps to achieve transformation and human well-being. The Rio+20 summit in 2012 offers the chance to retrieve the Rio concept of sustainable development with practicable concepts of green growth.

"Think together!"

Activities should be performed to provide double benefits for MDG progress, mitigation and adaptation.

Diverse basket of crops helps to mitigate the risk of crop failure due to weather catastrophes and other calamities., Photo: RajeshKC

1. Introduction: Where do we stand in the political landscape?

2010 – time for reflection on MDGs and climate change

The year 2010 marks the entry into the second decade of the millennium. It affords an opportunity to reflect on the successes and challenges of humanity towards a joint, dignifying and sustainable future. This reflection should be used to identify the course for a common agenda for countries and peoples.

The beginning of the first decade of the millennium presented an unparalleled ascent of globalization, lifting many more people out of poverty than before, but at the same time eye-lining the contrast between the haves and have-nots and driving unsustainable consumption even further off the planet's environmental boundaries.

The end of the last decade was characterized by a state of ongoing crisis: A humanitarian crisis in the year 2007 and 2008, following surging food and energy prices, an unprecedented economic crisis after 2008 – hitting hard developed as well as developing countries – and on top a climate and environmental crisis, creeping in its nature , becoming more and more evident.

The MDG Agenda

The Millennium Development Goals, derived from the Millennium Declaration agreed by political leaders from around the world in the year 2000, mark the year 2015 as the rallying-point to achieve concrete goals in poverty reduction, food access, education, gender equality, health and environmental sustainability. They, furthermore, promise a change in the way development is facilitated by developed countries.

Whilst there has been quite substantive progress on some of the goals, others are lagging behind. Moreover, progress has been geographically patchy, with the furthest advances in Asia and South America, while Sub-Saharan Africa continues to underperform.[1] The MDG and the underlying discourse of the development agenda helped to raise the profile of development assistance within developed countries and led to moderate increases of development assistance. However, there is still a profound lack of overall coherence of developed country policies and a salient gap between the promised and the delivered increases in development assistance (see exhibit 2). Five years before the deadline, the MDG summit from 20 to 22 September 2010 in New York offers the chance to ramp up political and public support to accelerate the MDG progress, a debate that will continue in the following years.

The Climate Agenda

The culminating event of the climate agenda (coinciding with the end of the decade) was the climate summit in Copenhagen. Prior, however, the climate policy agenda went through major paradigm shifts. Initially, climate policy narrowly focused on mitigation, – the reduction of global greenhouse gas emissions to curb global temperature increase. It was not until 2007 in Bali, that, following the realization that some adverse impacts of climate change already had become unavoidable, discussions about the need to adapt to those impacts featured on equal footing. Moreover, it has become

Exhibit 1:
The Millennium Development Goals

Goal 1: Eradicate extreme poverty and hunger
Goal 2: Achieve universal primary education
Goal 3: Promote gender equality and empower women
Goal 4: Reduce child mortality
Goal 5: Improve maternal health
Goal 6: Combat HIV/AIDS, malaria and other diseases
Goal 7: Ensure environmental sustainability
Goal 8: Develop a Global Partnership for Development

[1] The MDGs were initially formulated as global goals, mostly reflecting an optimistic extrapolization of past trends (Vandermorteele, 2009). The fact that the measurements of MDGs are biased towards Africa's higher absolute level of poverty has been described by various authors, for instance Deaton (2003), Clemens et al. (2006) or Easterly, (2009).

Exhibit 2: MDG Progress: Steps no Leaps

Progress was achieved on some goals, while others were lagging behind. The 2010 UN Millennium Development Report states that despite the economic crisis, Asian economic spurs especially are hauling the world in halving population living under the poverty line. However, there are also set-backs. Progress in the fight against world-hunger stymied during the food and economic crisis in 2008/2009.

In other areas there are promising advances, yet they are not enough to meet the 2015 deadline. For instance, many countries have increased enrolment-rates of children in schools. Even so, universal education in 2015 seems out of reach.

The health situation for many has improved. However, rates in children and maternal deaths are not dropping fast enough to meet the goals. Access to important drugs against HIV, tuberculosis, malaria and measles has largely improved, but are again falling short of the goals.

The environmental sustainability goals especially lack positive results. The rate for deforestation shows signs of decrease, but is still alarmingly high. Greenhouse-gas emissions are on a run-away track and global biodiversity continues its decline.

Aid funding continues to rise, however a ditch is expected for 2010. With estimated 108 bn USD in 2010, developed countries will miss their G8 2005 target of Gleneagles. Moreover, for many countries advances are too low to achieve the UN promise of 0.7% of donor's GNI to development. 2010 marks an important mid-point, since many countries pledged to achieve 0.51% by that date.

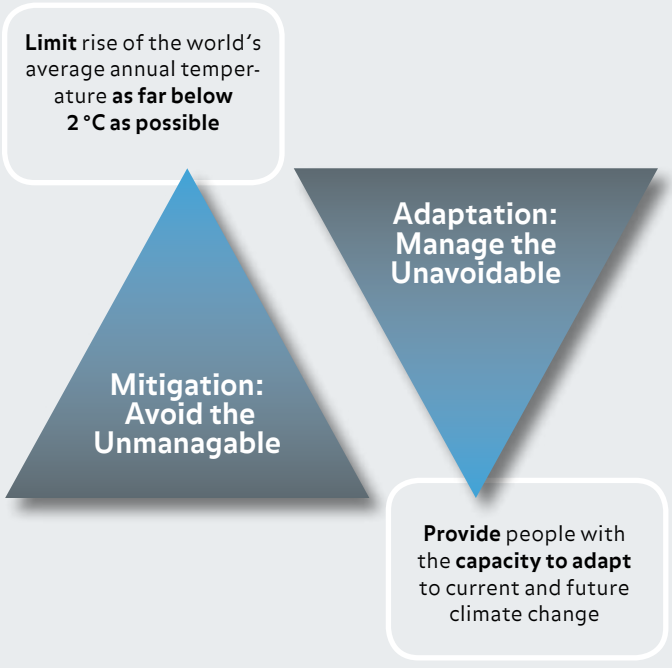
increasingly clear, that unlike some other environmental issues, the existing path of development is adverse to climate stability, leading to the conclusion that the development paradigm as a whole will have to be changed if mankind wishes to address the climate challenge within a time frame that ensures humanity to stay below a "dangerous" threshold (i.e. 2°C limit in global temperature increase, see exhibit 3). Copenhagen was not the bold, paradigm shifting event that produced a fully-fledged legally-binding treaty to counter climate change and more important that resulted in behavioural changes of governments and the financial markets.

Exhibit 3: The Climate Challenge[2]

Industrialized countries' fossil fuel and industrial greenhouse gas emissions would have to drop rapidly and almost be fully phased out by 2050.

Deforestation emissions would need to be reduced globally by at least 75 % or more by 2020.

Developing country fossil fuel and industrial green-house gas emissions would need to peak before 2020 and then decline, which needs high levels of binding support by industrialized countries.



Climate change Impacts already incinerate many stressors that impede poor people's livelihoods.
The adaptation challenge is to provide people, especially the most vulnerable, with the capacity to adapt to current and projected future climate change through access to appropriate financial, technical and capacity building support, through appropriate institutional means and knowledge and information exchange that enables them to secure lives, sustainable livelihoods and healthy ecosystems.

Own compilation informed by Meinshausen, 2009

[2] Meinshausen et al. calculated that for 80% chance to stay below 2° global temperature increase, the world's total CO_2e budget would need to be 1300 Gt until 2050 out of which a third has already been emitted in the first decade of the millennium. The policy recommendations of exhibit 3 are based on this budget, with the assumption that decarbonisation-rates need to be technically feasible.

Rather it marked the beginning of a process, consisting of a dual-track continued climate negotiation and the stepping-up of countries' and regions' initiatives and actions. The next climate summit in Cancun is the chance to deliver and enshrine the first milestones in this process.

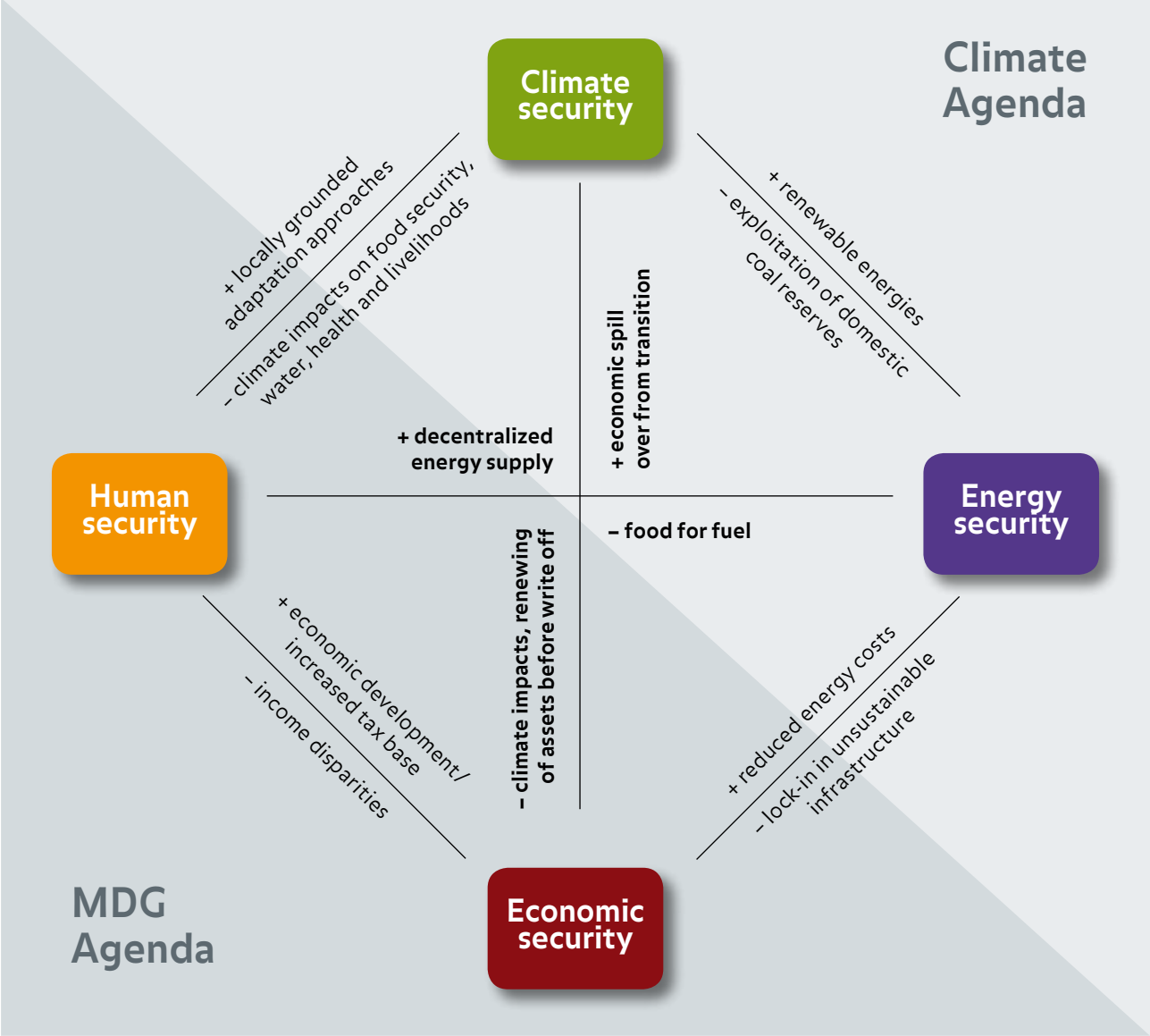
The world is heading towards a state of global insecurity. Economic fragility couples with human vulnerability. Climate policy intertwines with energy instability. But there are possible solutions. Exhibit 4 shows the four dimension of security, with the MDG agenda traditionally focussing on human security and economic development and the climate agenda focussing on climate security and the means of energy supply. There are synergies in tackling the agendas and there are trade-offs.

Therefore, it is important to align the actions, – fight poverty while promoting renewable energies and climate mitigation, – foster climate resilient development and strengthen food security. Part two of this paper aims to explore some of these synergies.

Not all of these synergies or trade-offs can be addressed by new integrated approaches on the implementation level. Part 3, therefore, aims to develop an adequate political and conceptual framework, which allows to strive for synergies and counteracts potential antagonistic effects between the agendas.

With the MDG deadline – as close as five years from now – and with a climate summit mostly perceived as a failure, decision-makers as well as practitioners could

Exhibit 4: Four dimensions of security in the context of MDG and climate change



(own illustration)

be tempted to use the year 2010 to start 'expectation management' towards lower and more 'realistic' ambitions, instead of substantially scaling-up efforts to close the existing implementation gaps. In face of the challenge ahead, lowering the ambition must not be an option. The crises of the last decade – each of them worldwide in scope – show that the future may actually be as close as tomorrow. Climate stability describes the state of a common good. Achieving this obviously requires a concerted common response. However, the interdependent relation of world societies means that success in one of the other dimensions cannot be acquired by a single country.

2. Think together: MDGs and Climate

This section aims to illuminate the relationship between the Millennium Development Goals and the climate agenda. It starts by using a cross cutting perspective on common relationships between mitigation, adaptation and the MDGs. Subsequently, it is explored how specific MDG activities provide double benefit for mitigation and adaptation as well. Projects from NGOs, bilateral agencies and international organisations serve to exemplify such synergies.

Climate Change Impacts on the MDGs

Most impacts of climate change are less substantial in the short-term, that is before 2015. The medium-term is a different matter. However, it is important to consider climate change impacts not just for looking beyond 2015, but also for sustaining poverty reductions and other MDG achievements attained before the year 2015. Moreover, the IPCC (Intergovernmental Panel on Climate Change) states that existing pattern of failure in achieving the MDGs correlates with areas where high climate vulnerabilities are expected (Yohe et al., 2007). Exhibit 5 provides some illustrative examples of how these impacts might affect the MDG Goals.

These impacts are based on the premise of continuous changes in climatic conditions and accompanied climate-related extreme events. Much higher risks, however, lie in abrupt changes of earth sub-systems in response to climate changes. Many of these 'tipping elements' have a direct impact on lives and livelihoods, and are therefore 'MDG' relevant. These tipping elements include e.g. a possible dieback of the Amazon Rainforest, the irreversible melt of inland glaciers and arctic ice-shields or increased uncertainty about Asian and African Monsoon seasons (compare Lenton et al., 2008).

Mitigation, Adaptation and the MDGs

The ultimate objective of the UN Framework Convention on Climate Change (UNFCCC) is to assure that no 'dangerous' interference with the climate system occurs. The two vehicles to achieve this are mitigation (in order to decrease the level of interference) and adaptation (in order to make the level of occurring interference 'non-dangerous').[3]

Activities in mitigation are easy to assess:[4] The metric to judge success is the emission reduced/avoided in CO_2-equivalents. This implies that there is no direct link between success in MDG activities and success in mitigation. However, activities can aim to achieve both and provide a double dividend.

Activities in adaptation on the other hand are less easy to categorize. McGray et al. (2007) analysed more than 100 adaptation projects worldwide and figured out that most of them fall within the ambit of traditional, good practice, development projects, many of them equally relevant to achieve the MDGs. Exhibit 7 shows the continuum of adaptation activities ranging from a focus on human vulnerability to concrete climate impacts. Since climate impacts are 'heavy tailed' and a great uncertainty exists how, where, and what kind of climate impact might strike, most decision makers will opt for a 'no regret' adaptation strategy that is reducing vulnerability.

While MDG progress and reduction in vulnerability to climate change are closely related, they are not synonymous. Poverty reduction does not automatically reduce the vulnerability of the poor to climate stressors. Similarly, some climate-related adaptation policies do not reduce the vulnerability of the poor; in some cases they could even render some groups more

[3] Article 2 of the UNFCCC.
[4] One reviewer rightly commented that the actual measurement is by no means easy to measure and encompass great uncertainty (especially regarding emissions from land use and forestry).

Exhibit 5: Illustrative list of climate change adversely impacting MDG attainment

Millennium Development Goal	Examples of climate change impacts
Eradicate extreme poverty and hunger (Goal 1)	■ Climate change is projected to reduce the assets and livelihoods of many poor people, for example health, access to water, homes, and infrastructure. ■ Climate change is expected to alter the path and rate of economic growth because of changes in natural systems and resources, infrastructure, and labour productivity. A reduction in economic growth directly affects poverty through reduced income opportunities. ■ Climate change is projected to alter regional food security. Particulary in Africa, food security is expected to worsen. Adverse impacts on food security could be seen in Latin America, as well as in South and South-East-Asia.
Promote gender equality and empower women (Goal 3)	■ In the developing world in particular, women are disproportionately involved in natural resource-dependent activities, such as agriculture, which are commonly vulnerable to climate change. ■ Women's traditional roles as primary users and managers of natural resources, primary caregivers and labourers engaged in unpaid labour (i.e. subsistence farming) mean they are involved in and dependent on livelihood and resources that are put most at risk by climate change.
Health related goals: Combat major diseases (Goal 6) **Reduce child mortality (Goal 4)** **Improve maternal health (Goal 5)**	■ Direct effects of climate change include increases in heat-related mortality and illnesses associated with heat waves (although fewer winter cold-related deaths may occur in some regions). ■ Climate change may increase the prevalence of some vector-borne diseases (for example, malaria and dengue fever), and vulnerability to waterborne (for example, cholera and dysentery), food-related, or other contagious diseases. ■ Children and pregnant women are particularly susceptible to vector and water-related diseases. Anaemia – resulting from malaria – is responsible for a quarter of childhood mortality in Africa. ■ Climate change will likely proceed to a declining quantity and quality of drinking water in many locations, resulting in a steep increase in diarrhoeal disease and associated deaths. Decline in food production will exacerbate malnutrition – an important source of ill health among children – by reducing natural resource productivity and threatening food security, particularly in sub-Saharan Africa, but also in many other low latitude areas.
Ensure environmental sustainability (Goal 7)	■ Climate change is likely to alter the quality and productivity of natural resources and ecosystems, some of which may be irreversibly damaged, and these changes may also decrease biological diversity and compound existing environmental degradation.
Global partnership (Goal 8)	■ Climate change is a global issue and response requires global co-operation, especially regarding a common response to mitigation and other global common goods, and in helping developing countries adapt to the adverse impacts of climate change.

(adapted from OECD, 2009)

Exhibit 6: Adaptation Jargon Buster

Adaptation: Initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects.

Adaptive capacity: The capabilities, resources and institutions of a country or region to implement effective adaptation measures.

(Climate change) Impacts & Exposure: The effects of climate change on natural and human systems. Depending on the consideration of adaptation, one can distinguish between potential impacts and residual impacts.

Resilience: The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.

Sensitivity: Sensitivity is the degree to which a system is affected, either adversely or beneficially, by climate variability or climate change.

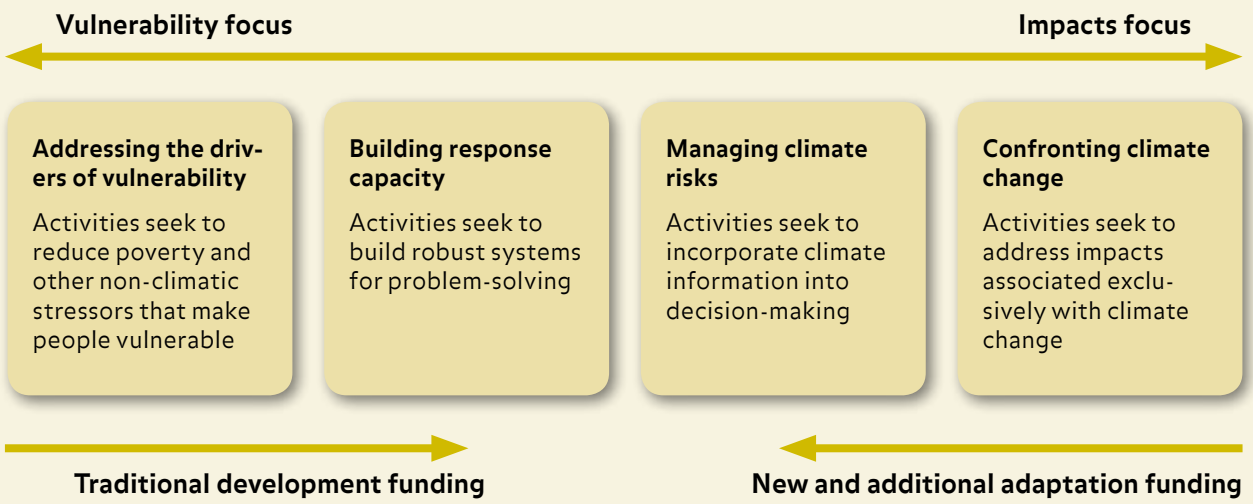
Vulnerability: Vulnerability is the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity.

(adapted from IPCC glossary)

susceptive. An example for the former, is the promotion of shrimp- farms in coastal areas with the aim to create income for people in rural areas. Concomitantly, the accompanying destruction of mangroves resulted in higher vulnerability, especially of the poor strata of society, against climate-related risks such as storms, flooding and sea-level rise. An example for the latter, could be big adaptation projects in the water sector, interventions which, in the past, have proven problematic for project affected groups[5].

Therefore, it is required to consider the factors that affect vulnerability and identify measures targeted specifically at vulnerability of the poor in both the MDG and the climate debate. Applying a pro-poor focus in all three areas – the MDGs, the mitigation and the adaptation processes – can generate substantial synergies. All agendas could benefit from a right-based approach to target and prioritize poor people, based on their civil, economic and social human rights (Exhibit 8).

Exhibit 7: Continuum of adaptation activities
MDG progress is an important contribution to addressing the drivers of vulnerability



(Mc Gray et al. adapted by Klein, 2008)

[5] One example is the Lesotho Highland Water Project, a multi billion project to transfer water from the Drakan mountain range in Lesotho to the increasingly water scarce areas of Pretoria and Johannesburg, which provides cash flows to the Lesotho government, but proved to adversely affect rural dwellers (comp. Hildyard, 2005).

Exhibit 8: A rights based approach to target the most vulnerable

Most developed and developing countries have committed themselves in an international, legally-binding manner to respect, protect and fulfill the basic economic, cultural and social rights, such as the right to adequate food and water, to their citizens.

A rights-based approach to MDG fulfilment, adaptation and mitigation is not only relevant for a debate about principles, but might have concrete procedural implications.

One example is the "voluntary guideline on the implementation of the right to adequate food in the context of national food security", which requests governments to ensure the following elements:

- Governments must assess and identify the most food insecure/vulnerable groups
- They must tune existing legislation to the concerns of these groups
- Governments need to prove that their policy response and choice of instruments is reasonably focused on the most vulnerable
- They are obliged to monitor the outcomes of their policies and must allow for accountability

One of the strengths of the approach is that it also helps to set up procedural guarantees for vulnerable groups to access information and fill complains according to participatory and political rights (Harmeling & Bals, 2008). Consequently, where climate change threatens the fulfilment of basic human rights, adaptation must follow relevant principles.

A further intrinsic link of adaptation is to promote climate resilient development. This implies that investments in mitigation and activities promoting development need to be cognisant of the scale and speed of climate impacts over time. This requires abilities to predict and work with higher degrees of uncertainty and better access to information and scenario planning for various options. To strengthen the resilience of systems, one needs to strengthen dynamic and continual learning and adjustment to address an increasingly changing climate and emphasize precautionary and low regret options. A first step into this direction is a portfolio screening, – climate proofing – of development projects regarding their climate risk exposure.

No Growth or Green Growth?

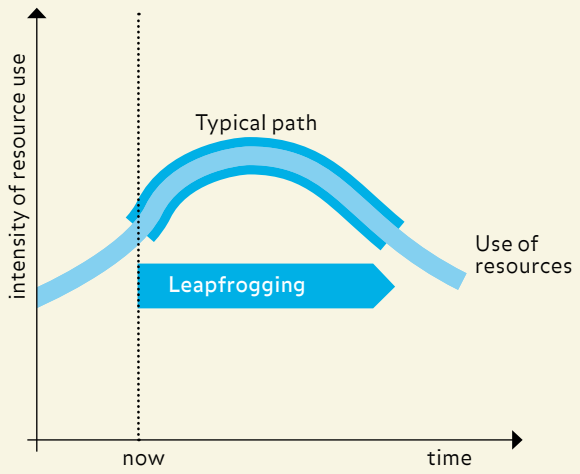
Economic growth has always been treated as an essential driver for the attainment of the MDGs in general and for MDG 1 – halving world poverty – in particular (compare United Nations, 2010b). This contrasts the Millennium Declaration, which was written in the spirit of the earth-summit in Rio: The growth model of the industrialized countries already strains the environmental boundaries of the earth and is not scaleable to the yet economically less-developed countries.

However, a reductionist's view on the Millennium Development Goals, without the context of the Declaration, means to shift the environmental dimension into the periphery of the objectives, rather than treating it as a cross-sectoral precondition for sustained success (for further critique see WBGU, 2005 or Unmüßig, 2006). This deficit surfaces when people perceive a trade-off between development and mitigation of climate change.

To pursue a growth centred strategy, without taking into account environmental boundaries, results in a two-fold dilemma: First and foremost, a future model ignoring physical limits is unsustainable and doomed to fail. High structural adjustment costs follow when countries are locked in the wrong development mode and are forced to change course. Second, the current development modus, consisting of a linear production chain from uncontrolled extraction of raw material to uncontrolled disposal in the environment, endangers many ecosystem services, which play a pivotal role in the livelihood of the poorest. The millennium ecosystem assessment calculated that currently 60% of ecosystem services are depleted beyond sustainable rates (Reid et al. 2005). Climate change impacts might add to these stresses.

In sum, continuing on an environmentally unsustainable path will disproportionately affect the poorest, not only because development gains for them might become void in face of approaching earth limits, but also their dependence on increasingly overstrained and scarce natural capital renders them particularly vulnerable (Hamilton, 2006).

Exhibit 9: Comparing traditional and leapfrogging pathways



(switchasia, undated)

Satisfying the needs of those in poverty requires to expand production and consumption. This will only work if economies 'de-couple' growth in economic activities from growth in resource use and emissions. A way to achieve this is to sequence investments in developing countries in the right order by 'leapfrogging': Developed countries have made substantial investments in wasteful and inefficient technologies. By 'leapfrogging', investments in developing countries do not lock in the same path, but are directed in sustainable solutions immediately (see exhibit 9).

Examples for such 'leapfrogs' include the establishment of flexible mobile phone networks instead of investing in a heavy landline infrastructure, a phenomenon observed in many developing countries such as India. A climate relevant example is to leapfrog energy infrastructure, e.g. investing directly in low emission technologies instead of following the fossil development mode (Switchasia, undated).

However, no developed country has yet shown substantive changes in their consumption and lifestyle pattern. Increases in consumption often rebound existing gains in energy and resource efficiency. While this does not prove that low-carbon development is impossible, it signals that more comprehensive, consequent and intelligent strategies have to be applied to showcase how low-carbon and less resource-intense development can be achieved. Without such empirical evidence, bridging the perceived trade-off between economic development and prosperity and environmental sustainability will remain difficult.

Energy poverty and Mitigation

Improved energy services, such as access to electricity, heat and motive power, are a prequisite for progress of all MDG goals. Electricity is critical for providing basic social services, including health and education, and it is important for many adaptation activities too. Moreover, a minimum of reliable energy is often needed to engage in productive activities laying the foundation for development. That is why the UN Millennium Project

Exhibit 10: Evolution of energy consumption

Level 1

Basic human needs

Electricity for lighting, health, education, communication services *(50-100 kWh per person per year)*

Modern fuels and technologies for cooking and heating (50-100 kgoe of modern fuel or improved biomass cook stove)

Level 2

Productive uses

Electricity, modern fuels and other energy services to improve productivity e.g.
- Agriculture: water pumping for irrigation, fertilizer, mechanized tilling
- Commercial: agricultural processing, cottage industry
- Transport: fuel

Level 3

Modern society needs

Modern energy services for many more domestic appliances, increased requirements for cooling and heating (space and water), private transportation *(electricity usages is around 2000 kWh per person per year)*

(AGECC, 2010)

Adapted cropping techniques increase agricultural yields, while offering substantial sequestration and clean energy potential.
Photo: RajeshKC

in the run-up to the MDG summit 2005 proposed that countries adopt also an energy access goal (see. United Nations, 2005). For the MDG summit in 2010, energy is expected to even have a greater profile.[6]

While universal access to energy for basic needs would imply only minor increases in ghg-emissions (see Exhibit 10)[7], extended energy supply for productive uses could substantially boost this. The climate challenge dictates, however, that world emissions need to go down – not up – by 80% in 2050. This highlights the importance of accelerated deployment of low emissions technologies (AGECC, 2010).

This is equally important for the supply side (renewable energy technology) and the demand side (negawatts, the cheapest of the clean energy sources). Often there are even direct atmospheric benefits to provide energy access for example the replacement of old technology through low-carbon-emitting technologies, such as solar lanterns instead of paraffin ones, reducing deforestation through the replacement of charcoal with other sources heating and cooking, or utilising otherwise untrapped highly potential greenhouse gases such as methane from cow-dung by producing biogas.

Finding synergies between MDGs & adaptation and mitigation

Exhibit 11 highlights synergies between the attainment of specific MDG goals and sub-goals and the adaptation and mitigation agenda. Case studies from Africa and Asia help one understand how such double benefits can be reaped by concrete projects. Nonetheless, there are also potential trade-offs. The section ends with looking at the issue of agrofuels, which is often characterised as a mitigation measure, but which has shown to be harmful for MDG progress under certain circumstances.

[6] Ban Ki-moon's Advisory Group on Energy and Climate Change (AGECC) published a report, which advices 1. to aspire for a global goal of universal access to modern energy services by the year 2030, 2. to opt for a reduction in global energy intensity of 40 percent by 2030, which would mean a doubling of historic annual energy intensity improvements.

[7] Basic energy requirements depicted in Exhibit 10, would result in CO_2 emissions from electricity generation of 30-60kg of CO_2 per person, if cooking and heating requirements are furnished by LPG (natural gas), that would increase annual emission per capita about 80-160kg CO_2. With the deployment of solar and other renewable

[8] Negawatt describe the energy that is not produced, because of improvements in energy efficiency.

Exhibit 11: Synergies between MDGs and Mitigation/Adaptation activities

Millennium Development Goal	Synergies
Eradicate extreme poverty and hunger (Goal 1) *Halve the proportion of people living on less than $1 a day* *Achieve Decent Employment for Women, Men, and Young People* *Halve the proportion of people who suffer from hunger*	■ Common approach to target poor and vulnerable in poverty alleviation, adaptation and mitigation. Application of a rights-based approach (see Exhibit 8). ■ Job creation by promoting renewable energy systems. ■ New climate resilient agricultural model that leads to better food security: Increased productivity of smallholder farmers, improved water retention techniques and diversified production. However, risk of false adaptation policies (production gains by more fertilizer input, externally developed seed varieties, etc.) that undermine social aspects of climate resilient agriculture (i.e. the ability of self-organisation and endogenous capacities for learning). Moreover, such activities often have strong net-negative effect on the atmosphere (e.g. fossil fuel for industrial fertilizer).
Achieve universal primary education (Goal 2)	■ Sufficient level of education is a main determinant for adaptive capacity, especially self-learning abilities. ■ Education institutions such as schools and universities are important driving forces for change. Curricula should sensitise about climate impacts, mitigation and adaptation needs. In the disaster risk reduction agenda schools are already used to campaign for awareness raising and prompting prevention (e.g. the UNESCO campaign "Disaster Risk Reduction Begins at School"). Similarly mitigation campaigns, such as the greatpowerrace.org (which aims to galvanize climate action in the US, China and India) already target schools and universities.
Promote gender equality and empower women (Goal 3)	■ Women are more vulnerable against climate impacts. Overcoming gender disparities is an important factor to reduce vulnerability of societies against these impacts. ■ Women are often agents of change. Their empowerment features great synergies with achieving behavioural changes, especially, in mitigation and adaptation. ■ Lessons learned to design mainstreaming climate risks into public and private services can be drawn from the mainstreaming experience of gender issues in project and political cycles.
Health related goals **Reduce child mortality (Goal 4)** **Improve maternal health (Goal 5)** **Combat major diseases (Goal 6)**	■ MDG 4: Children up to the age of 5 in developing countries, overwhelmingly bear the disease burden from climate change. Diarrhoea prevention, particulary, becomes an important intervention in adapting to extreme events and reducing child mortality. Respiratory infection, killing many children, can be avoided by reducing indoor pollution from traditional stoves – a measure with high mitigation potential. This could also reduce low birth weight and early infant deaths. ■ MDG 5: Likewise maternal health is improved, as women suffer the most from indoor pollution. "Child spacing" is a very effective method to reduce children and maternal mortality (2 mio. children + many maternal deaths could be avoided, if the time between 2 births is spread to 2 years). Such measures could also help to curb population and emission growth. ■ MDG 6: Major diseases already impact self-help capacities of many countries. Success in the fight against HIV, Malaria and TBC are an important prequisite for sufficient adaptive capacity and the necessary productivity to realize mitigation targets. Climate impacts, increasing for example the Malaria burden, require specific action in yet unaffected regions.
Ensure environmental sustainability (Goal 7) *Inter alia* *Integrate the principle of sustainable development in country policies* *Reverse loss of biodiversity* *Halve proportion of people without access to safe drinking water*	■ Many overlaps exist between mitigation and adaptation activities and the protection of biodiversity. Logging of (tropical) forests contributes to global warming and biodiversity loss. Avoiding deforestation helps to protect biodiversity. However, activities only designed through the "carbon lenses" may result in the large-scale replacement of old-growth forests with rapid-growing plantation, – with drastic consequences for biodiversity. ■ Climate change impacts will largely manifest by changes in water availability. Investments in today's deficits, – water infrastructure and governance – provide great synergies for future adaptation measures. To tap these, stringent climate proofing/consideration of climate risks of today's activities is required.

(own compilation based on BMZ, 2006; Ifejika Speranza, 2010; UNISDR, 2007; Watts, 2009; Patz et al., 2007; Wilkinson, 2009; Smith, 2009; WHO, 2009)

Case study 1: Offsets to address Mitigation & Energy poverty

Who: Atmosfair; Lernen, Helfen, Leben; DARE (Developmental Association for Renewable Energies)[9]
Where: Middle belt provinces, Nigeria

In Northern Nigeria, firewood consumption has led to severe deforestation and desertification. Because regional sources have become scarce, today wood is mainly imported from Southern States and has become more and more expensive in the last years. The share of energy to food costs is about 10 to 1 (in Europe only 1 to 1). The highly efficient wood stoves alleviate this problem by saving about 80% of the firewood. The stoves can work day and night and do not require a shift of cooking habits. Households save money every time they use the stove – a great incentive for daily use.

The project also has a technology transfer component: Technology and materials are sourced from Germany, and the assembling takes place in Nigeria. Once the market in Nigeria has been created, the entire production of the stoves will be shifted there. The stove set, sold in Nigeria, includes heat retaining boxes, pans and pots, and costs about 100 EUR. Atmosfair funding is sufficient to entirely finance the stove. However, stove sets are sold for 60 EUR, a price, which even low-income households can afford. Due to the saved firewood, the payback period for the users is very short. The revenues from the sales are used to expand the distribution. The project is implemented by two atmosfair partner organisations: The German organisation Lernen, Helfen, Leben is organizing the procurement and shipment of the stoves, while the Nigerian organisation DARE is responsible for the assembly and sales.

2.7t of CO_2 are saved per stove annually. This is the equivalent of a plane-trip Frankfurt-Dakar (return). The project creates 30 000t of offset credits annually. It is CDM Gold Standard registered.

There are several co-benefits regarding the MDGs: Poverty reduction – MDG 1 (less time spent on wood collection, more time for other productive uses) as well as co-benefits for health – MDG 4, 5 and 6 (less black soot, less indoor pollution and less respiratory diseases).

Case study 2: Risk prevention and education

Who: Bread for the World, Diakonie Katastrophenhilfe[10]
Where: Bagerhat, Bangladesh

The district of Bagerhat is one of the most vulnerable regions of Bangladesh with a high share of poor and extreme poor households. Bagerhat is neighbouring the Sunderbans (the biggest mangrove forest in the world) and is massively affected by saltwater intrusion as a result of sea level rise and tropical cyclones – the intensity and number of which have significantly increased over time. Diakonie Katastrophenhilfe and Bred for the World support the construction of storm- and flood-shelter to offer protection for the local community. By equipping the buildings with desalinisation devices, more than 8000 l of drinking water is produced, supplying up to 800 families. This improves the health-situation and prevents diarrheic diseases.

As a direct co-benefit for MDG 2 – education –, the next step is to use the shelter-infrastructure for new schools, and hereby directly improve the education of rural dwellers.

[9] http://www.atmosfair.de/unsere-projekte/projekte00/nigeria-effiziente-brennholzkocher/
[10] http://www.brot-fuer-die-welt.de/weltweit-aktiv/

Case study 3: Adaptation, Mitigation & Food Security

Who: Practical Action[11]
Where: Chitwan District, Nepal

Practical Action's three year project (Increasing resilience of poor communities to cope with climate change in South Asia) worked with households in Nepal's Chitwan district in the Himalayan foothills. Almost all families were engaged in subsistence farming, yet 40% produced only enough food for three months of the year. The families had to rely on other income generating activities for the rest of their livelihood. Over the last thirty years, the problems faced by villagers have worsened as land slides, flash floods, erratic rainfall, and droughts become more frequent and intense. These hazards are concurrent with an average temperature rise of 1.3 °C and a 614 mm increase in average rainfall during the past three decades. These changes in the climate have combined with human interactions with the natural environment – whilst landslides are triggered by greater volumes of rainfall, their likelihood and impact were increased by deforestation in the area.

The project primarily addressed the interlinked problems of climate change and food security. By promoting natural resource management as part of the solution, it also reduced carbon dioxide emissions released through soil erosion and deforestation, practices that were compounding poverty and vulnerability. Working with farmers to identify new vegetable varieties and fruit trees that grow in the winter months – when land was typically left fallow – improved food production and income. At the same time, the roots of the winter crops strengthened the resilience of the land to landslides and locked in carbon below ground. Setting up Community Forest User Groups stopped over-exploitation and illegal logging, and over time forest management will restore the health of the villages' most important resource. With the forest now protected, natural carbon sinks are maintained and communities have less need to clear other areas of forest. The project's successes prove that development can be achieved in a way that benefits both by acknowledging the linkages between people's livelihoods and their natural environment.

Case study 4: Climate Proofing for Development

Who: German Technical Cooperation (GTZ) with local partners[12]
Where: Tra Vinh District, Viet Nam

Climate change impacts are evident in the Mekong Delta region of Viet Nam. Lately, the area achieved visible economic development exemplified by a reduction of the share of poor households from 40% in 2006 to 29% in 2009. In cooperation with local authorities of the Tra Vinh District, GTZ in a pilot project for the German Ministry for Economic Cooperation and Development helped to identify climate risks, which impeded recent economic advances, and identifed points of interventions into development planning. Climate impacts on poverty relevant value chains, such as rice cultivation and livestock, are classified and prioritized accordingly. To implement a participatory approach, moderators for development planning as well as a local roster of experts were established and trained. Together with Viet Nam's people committee, selected authorities and national universities, the project created maps and diagrams and documented on-farm surveys. Pilot communities were supported in implementing the climate proofed development plans.

As a direct success of the project, the district authority developed ownership into this process and plans to use it as their own standard. Local adaptive capacities of the regions increase and investments into maladapted development projects can be avoided. Therefore, the project directly helps to sustain successes in poverty alleviation (MDG 1) and at the same time it helps to raise awareness about climate change and its impacts (environmental sustainability – MDG 7).

[11] http://practicalaction.org/disaster-reduction/climatechange _ resilience
[12] http://www.gtz.de/en/weltweit/asien-pazifik/620.htm

Exhibit 12: Energy vs. food

Roaring oil prices and the strive for energy security (more so than climate action) increased the will to substitute fossil fuels through agrofuels. By subsidies, tax benefits and regulatory actions, the EU, the US, but also large emerging economies, increased considerably the demand as well as the investment in the production of agrofuels. The consequences for the attainment of the MDGs are complex and quantitatively inconclusive. Despite positive results on the income situation, energy access and health at the local and regional level, the overall consequences of expanding plant cropping for energetic use on poverty and hunger (MDG 1), nutrition and health (MDG 1, 4 and 5) and climate and environment (MDG 7) seem to be negative:

Social factors: The economics of energy crop cultivation usually favours large scale agriculture. In Latin-America, Indonesia, and Uganda, the violent expulsion of small-scale farmers by monopolistic, industrial enterprises and international investors leads to increases in unemployment. Working conditions on these farms are often inhuman.

Nutrition and health factors: Because prices of food commodities react highly volatile to fluctuations of supply, the expansion of agrofuels has contributed to the food crisis since 2007. An example is the shortage of maize for food consumption on the American market, leading to a price hike, and subsequently the "Tortilla-crisis" in Mexico which affected both urban dwellers and rural consumers.

Ecological factors: The triplication of palm-oil plantations in Indonesia, Malaysia and Colombia occurred partly at the expense of primary forest. Increased demand for ethanol led to an expansion of sugar cane cropping at the expense of grassland and other cultivates – indirectly replacing primeval forests. Under certain circumstances, the use of one ton of palm-oil may result in manifold higher CO_2e emissions than a ton of petroleum, if life-cycle analyses taking into account the release of CO_2e emissions from the conversion of rainforests or peatland are applied (Fangione et al., 2008). These are one of several adverse effects from agrofuel on bio-diversity, soil fertility and water supply that have been documented.

3. Make it happen: Towards a common political framework

This section aims to develop a political framework, which energizes, unites and mutually reinforces the climate and the MDG agenda.

New mode of collaboration

To facilitate both the MDG, or traditional development agenda, and the climate agenda, it is the author's strong belief that the way assistance is provided needs to change. The mode how good practice of development cooperation is understood has made promising advances since the 1990s, manifesting in the Paris Declaration of 2005. What is sought for is a new partnership between donor and recipient governments, characterized by mutual accountability for aid effectiveness and developing country ownership, led by responsible national governments, of their own development processes. This trend is consistent with and can help define what is meant by "country driven" adaptation and mitigation policies. In particular, identifying adaptation needs and prioritizing accordingly is an important process that should be done with a high degree of country ownership (OECD, 2009).

Moreover, this push towards higher aid efficiencies has also galvanized institutional innovations, from which all – the MDG, as well as the adaptation and mitigation agenda – can draw lessons from: This include the Global Fund to Fight AIDS, TB and Malaria (or Global Fund), which reflects the dominant aid effectiveness themes of country ownership, mutual accountability, and multi-stakeholder partnership. Launched in 2001, by design the Global Fund is a partnership – vertical as well as horizontal – between governments, civil society, the private sector, and affected communities. On the country level, a Country-Coordination Mechanism, drawn from the whole range of stakeholders, is charged to approve and submit project proposals to the Global Fund. Striking is the high commitment to provide communities and civil society, working directly on their behalf, playing a strong role in the overall governance, and including the disbursement of funds (Care et al., 2009).

"Empower the poor and vulnerable"

The institutional set-up to catalyse development, mitigation and adaptation should give power to the most affected.

Identifying climate impacts on development pathways in rural Viet Nam.
Photo Nana Künkel (GTZ)

Another new innovative institution is the Adaptation Fund of the Kyoto Protocol, which combines innovative finance sources[13] with a new institutional set-up that enables countries to directly access the fund instead of having to use intermediaries such as the World Bank or UNDP. In order to do so, countries can assign national implementing entities that ensure auditing and fiduciary standards of projects.

Also, on the country-level new developments occurred: Bangladesh for instance launched a Multi Donor Trust Fund with their own resources to implement its Climate Change Strategy. Through this funding arrangement, which awaits more pledges from international donors, Bangladesh effectively fosters participating ministries and stakeholder to implement the strategy.

With climate negotiation going into a phase where progressive country coalitions and concrete actions become equally important to international negotiation, it is crucial to identify and promote innovative actions in mitigation and adaptation. Especially in adaptation, but also for REDD+, mitigation and technology transfer, forerunner attributes include the way financial streams are governed, most vulnerable people are identified and prioritized, results are monitored and ensured and how climate risks as well as low-carbon opportunities are integrated into other planning processes.

However, there are plenty of countries, which have high vulnerabilities and climate impact exposures, but cannot be reached by such innovative and incentivizing governance structures. Development cooperation has fine-tuned its approaches to deal with fragile statehood and to deliver good development outcomes (also, regarding the MDGs) in adverse political conditions (and to address these condition in the first place). Thus, even with new incentivizing international structures, bilateral assistance has an important role to play in addressing adaptation and mitigation outcomes. Following this, applying a climate lens on its own portfolio is an essential next step.

Nonetheless, there is still a long way to go: Following the Paris Declaration, donors aim to reduce fragmentation and redundancies. In this process, Germany for instance focuses on less partner-countries than before, and there is a higher degree of harmonization between the different development cooperation institutions in Europe. However, there is the risk that some countries fall through the grid and receive less or no assistance, despite great needs. In particular, within climate fast-track activities, there seems to be little coordination between the different donor countries and a 'race for the easy result' (comp. ECF, 2010).

The development agenda went through major paradigm shifts, which helped to develop a notion of equal partners between donor and recipient. One can hope that this partnership approach receives some additional impetus from the climate agenda, where the sheer complexity of the task and the fact that neither developed nor developing countries have yet achieved sufficient answers to the climate challenge, requires collective learning and acting together.

Climate change makes traditional erosion management such as terrace farming more important. Photo: RajeshKC (Practical Action)

MDGs, Mitigation and Adaptation: Joint planning and political processes

Integration of climate risks and opportunities, as well as low carbon foot-prints into development and poverty reduction strategies, is an important prerequisite for a successful amalgamation of the MDGs with the climate agenda. For achievement on the ground, it is crucial for adaptation measures to be implemented by the same ministries that are also responsible for the achievement of development outcomes – the departments of health, education, agriculture and so on.

However, observing the status quo, national adaptation (and low carbon planning) strategies are often treated in isolation. Adaptation planning is often situated in environmental ministries (often associated with the UNFCCC focal point), whereas development planning takes place within the ministries of the economy. Reasons for this are institutional interests on one side, but also

[13] The Adaptation Fund (AF) is financed by a two percent of the share of proceeds from CDM (Clean Development Mechanism) activities supplemented by donor contributions. This makes the AF to the first internationally (off budget) raised levy to finance environmental/development objectives.

[14] Low carbon planning is an emerging topic also within poor vulnerable countries, however the debate is not as progressed as in adaptation. Reasons are that vulnerable developing countries have identified adaptation as their national priority. In addition, adaptation planning got facilitated by (externally funded) NAPA, whereas no such thing happened in mitigation.NAPA project development, whereas there is no formal counterpart in mitigation to date.

the desire of developing countries to call for additional finance in adaptation by keeping adaptation separate from development. Therefore, one can hope that with the establishment of additional sources the political rationale to do so becomes obsolete.

A treatment of adaptation (and low carbon planning) in isolation will have large counterproductive effects. For instance, the ministry of finance and economy will have to be included in adaptation (and low carbon) planning, since resulting funding streams need to be incorporated into a single macro-economic framework together with other external funding streams to prevent adverse effects such as rising inflation.

Also, for bilateral development assistance, a separation is unfortunate and hinders actions in the spirit of the Paris Declaration. The content and focus of the partnership is agreed upon in bilateral discussions, usually taking place between the recipient and donor government. Unaware of climate risks and adaptation needs, the developing country ministries do not ask for special focus on adaptation or low-carbon development. This is a twofold dilemma: First, it may result in a developing country perception of an additional "adaptation" conditionality imposed by donors. Second, it reduces the feedback towards developed countries about the consequences of their emission. For donor institutions to raise their standing during budget allocation and political debates within their countries, it would also be important to have a strong ask by developing countries.

The goal – integrated low carbon and climate resilient planning and policies delivered by all stakeholders in a common strategy – is undisputed. However, one needs to have a closer look on how to achieve that goal.

It would be naive to believe that all developing country's ministries are equally susceptive to the issue of adaptation and low carbon development. There are differences in perceptions and understandings between the different stakeholders. There are different capacity building needs. The question is about the sequence, and where to start. It could make sense to equip ministries of the environment with more resources, so that their profile within the "ministry order" increases and they are enabled to effectively coordinate and champion the issue. It could also make sense, to force "outside" ministries by increased external resources to deal with the issue. The way to go depends on the national situation.

Different stakeholders need to be aware of observed and projected climate impacts to achieve climate-resilient development.
Photo Nana Künkel (GTZ)

As depicted in the previous sub-chapter, innovative solutions to achieve truly integrated actions should be part of the understanding and priority criteria for innovative fast-track climate activities.

High-level commitment is also tremendously helpful to achieve greater coherence of developing country communications. One positive spill-over from the Copenhagen Climate Conference was that the Head of State level got aware of the climate problem. Prior to the conference, all countries had to come out with a position on climate change. This was often accompanied by country´s own vulnerability and impact assessment raising awareness beyond the usual suspects. In some countries, the overall guidance for national climate change policies is already based at the prime minister level, such as in India or Bangladesh.

Two investment packages for the future

MDG progress is lagging behind its expectation and aspiration. The finance and food crisis created a backlash in many regions. Thus, a concerted effort is needed to safeguard existing progress and accelerate activities towards the rallying point 2015 and beyond. Transformational changes are also needed to counter the climate challenge. The required responses and concerted efforts can be framed as two big investment packages, where investment should not be understood narrowly as measures that ensure a short-term micro-economic financial return, but rather macro-economic, social and societal benefits. Increased investments,

[15] It is interesting to note, that adaptation strategies within developed countries are often led by the ministries of the environment or comparable institutions (e.g. in France, Germany).
[16] This is more or less the approach of the Pilot Programme on Climate Resilience, the Worldbank fund to achieve climate mainstreaming in developing countries. Based on a top-down assessment of climate vulnerability and political context, potentially large scale funding is made available to a small group of countries. Obviously there is an inherent trade-off between country-ownership and the used top-down methodology of identifying needy countries.

money, but also political capacity, into developing countries´ capacities to respond to the challenges related to MDGs and climate change, are required. Eventually these investments will 'pay-off' in the future through better and more resilient livelihoods and conditions for the world´s poorest, through more sustainable economies and through avoiding a level of climate change which would have large-scale dangerous impacts.

First, it is required to tie a low-carbon development investment package. Smart and widespread investments into renewables, energy efficiencies, and energy grids, as well as other infrastructure such as information and communication technology create a multiple dividend. The achievement of the necessary emission reduction targets need to be the ultimate benchmark for the investment, but they also spur future-proof jobs and energy security. They offer a welcomed way out of the economic crisis by providing new market opportunities. Moreover, they future-proof growth needed for the MDG attainment.

At the same time, the world also needs to embark on a climate resilient development pathway. Therefore, the second investment package to be shaped in the following years is to be about fostering a socio-economic development, access to food and water, health interventions and access to clean energy for the energy-deprived to increase the resilience to current and future climate change (as well as natural weather disasters). In some instances, new interventions such as investment in climate expertise and capacities, climate monitoring and forecast systems, specific risk reduction activities and risk transfer (such as insurance schemes) for emerging risks, might be necessary.

It is widespread consensus that financial austerity, as currently experienced in many developed countries, should not strangle the necessary investment for the future, such as education or child-care. The same logic needs to be applied regarding the great global development challenges. While reframing the debate towards these investments packages, it is important to see that existing activities in development cooperation helped to achieve incremental improvements in the MDG agenda and beyond that. Holding firm to past promises to increase and improve existing assistance is a necessary prerequisite to mount the investment package (compare Exhibit 13).

Facing a trade-off? Diversion of ODA

MDG 8 emphasizes a global partnership for development. Part of this partnership has been renewed promises to scale up official development assistance (ODA) by developed countries to 0.7% of their Gross National Product (GNP) by 2015[17]. Some donors, among them the EU, have internalized this commitment through

Exhibit 13: PRSP and NAPAs

Poverty Reduction Strategy Paper (PRSP) contour a country's way to achieve poverty reduction. Based on own personal insights, stakeholder participation and a continuous consultation circle to update the plans, PRSPs are key reference documents for the aid alignment and harmonisation agenda at country level.

The MDGs, though formulated as top-down goals, and therefore somehow exclusive to the nationally owned PRSP, should be reflected in PRSPs. Analysis shows that some goals (e.g. poverty reduction, education) are covered by most PRSPs, while others are not (e.g. gender, biodiversity). Adaptation to climate change got almost no reference in PRSPs, and only some feature prevention of shocks from climatic extreme events.

The planning instrument for adaptation in least developed countries are the National Adaptation Programmes of Action (NAPA), in which countries screen their climate risks and prioritize projects in affected sectors accordingly. First projects start to be implemented. Although PRSPs existed in many countries at the time of the creation of NAPAs, the reference in NAPAs to poverty reduction in general and PRSPs in particular is only scarce.

In theory, the commonalities between the NAPA and PRSP approaches should have resulted in similar conclusions about key areas of interventions. Unfortunately, reality shows a great mismatch. So far, few links exist between PRSPs and NAPAs. This is partly due to timing reasons (many countries finished their first round of PRSPs in 2005 and subsequently started the NAPA process), but also due to different involved stakeholders (Ministry of Finance, Ministry of the Environment).

[17] First pledged in the General Assembly in 1970, the target has been renewed in many occasions. Relevant for this context is the International Conference for Financing in Monterrey, 2002 and the World Summit on Sustainable Development in the same year. At the 2005 MDG summit world leaders pledged to ramp up ODA from 80bn USD in 2004 to 130bn USD in 2010. G8 countries in 2005 also decided to increase assistance to Africa to 22.6bn USD.

Exhibit 14: Germany - Broken promise, broken trust - ?!

1. In numerous occasions (e.g. Monterrey 2002, Gleneagles 2005) Germany, as other industrialized countries, promised, stated, and reiterated its commitment to increase development assistance to 0.7% GNI by 2015 to fight poverty, hunger, illiteracy, diseases and environmental degradation. Germany pledged 420 mio. Euro new and additional money at the climate conference in Copenhagen, to jumpstart mitigation and adaptation and to avoid a derail of the political process of the climate negotiations.

2. In oral and written statement (e.g. the inaugural speech of the new German government, or the coalition agreement) chancellor Merkel personally stated the importance of holding firm to its 0.7% international obligation.

3. Actions, however, do not measure up with rhetoric so far. A 0.51% ODA rate in 2010 would be the intermediary step to achieve 0.7 in 2015. Yet, despite incremental increases of 256 mio. Euro in 2010, ODA rates will merely be lifted up from their 2009 0.35%. Budget allocation in 2010 showed that only 70mio of the dedicated climate money is new and not relabelled previously budgeted activities. For 2011, this budget item was completely erased. The tentative 2011 budget shows a stagnation of money for development assistance, medium-term financial planning for 2012 and -13suggest even retrenchments in the order of hundred of millions. Other industrialized countries, such as Italy, follow the path.

4. Besides failing to deliver on the promise to the most vulnerable, such gaps between words and actions constitute a great reputation risk for Germany in the world. Germany's apparent disregard of self-set and international goals drastically reduces policy leverage to ask other countries to fulfil their obligations. UK with ODA increases in 2010 to 0.56% proves, that even in times of economic crisis it is a matter of political will and leadership to shoulder the countries' share to invest in global security. Particularly, in the international climate policy, lack of trust and forfeited promises are a dominant cause for a stalemate of talks.

specific, binding ODA increase plans. However, the economic and financial crisis resulted in shrunk fiscal space, putting this promise under pressure.

At the same time, the need for external assistance did not dwindle. The UN Millennium Projects (2005) estimates, that 0.54% of GNI are sufficient to meet the MDGs. However, there are other non-MDG objectives of ODA, such as humanitarian assistance, which need to be catered for. The context in which these estimates where made, have changed considerably since 2005. The global financial crisis means that loan alternatives to ODA for some developing countries have been reduced. Also, the climate challenge was not high on the radar during the time the cost-estimates for MDG attainment were made. As a point in case, Fankhauser & Schmidt-Traub (2010) estimate the costs to deliver climate-proofed MDGs to be 40% higher than the old assessments would suggest.

General cost estimates for adaptation imply that additional money in the order of total current ODA-levels would be required to accommodate for adaptation in developing countries[18]. This is dwarfed by further monetary requirements to finance mitigation particularly in emerging economies[19]. The 100bn USD statement agreed by political leaders in the Copenhagen Accord (to be mobilised by 2020) has thus to be seen as a helpful commitment which marks the entry into a new order of magnitude, but will hardly keep up with the size of the challenge.

In this situation (budget constrains, as well as high (self)-interest in climate finance[20]) donors could be tempted to redirect ODA and future ODA increases towards mitigation and adaptation instead of pursuing the attainment of MDGs or other traditional development objectives. What are the consequences if donors fall into the trap of redirecting financial flows for development objectives towards climate finance?

[18] The recent study Economics of Adaptation to Climate Change, by the Worldbank (2009) estimates adaptation costs in developing countries to be in the order of 75-100bn USD. The study Assessing the costs of adaptation to climate change conducted by Parry et al. (2009) concludes, however, that while in general the assessment of adaptation costs is very uncertain, previous estimates of adaptation costs have drastically under-estimated the scope of the burden in developing countries. Cost estimates are relevant to a given stabilization scenario (i.e. 2° in the Worldbank study).

[19] Finance for adaptation comes on top of 280bn USD (private and public money), needed for mitigation actions in developing countries to achieve a 450 ppm stabilization scenario (McKinsey & Company, 2009): "Pathways to a low carbon economy", p. 43. 2020 value is identified by a linear increase from 2013 to 2027), plus money to halt deforestation and money to enable technology transfer. Transformation towards low carbon and climate resilient economies requires further means for capacity building.

[20] Michaelowa et al. (2010) examined the political motivation to rephrase development project as climate relevant. They found a high reporting overstatement of climate objectives.

Shelter and safe drinking water is often the most pressing need, when a cyclone hits the community. Photo: Brot für die Welt

From a recipient point of view, adaptation activities bear many sectoral and geographical overlaps with activities in development. However, Brown et al. (2010) point to the fact that in terms of actions, activities in the water sector could be emphasized over say education and aid for trade. An allocation formula based on natural vulnerability could also lead to some geographical shifts of financial flows towards island states and water-scarce areas.

In mitigation, however, financial flows and activities differ substantially from those in traditional development assistance. Michaelowa & Michaelowa (2007) argue that the geographical focal point, in terms of emission reduction potential and cost effectiveness, is within the middle classes of emerging countries; whereas MDG development assistance should have its natural centre of gravity in countries where poverty is the direst.[21] Also, the type of action is quite different. An example is the Clean Development Mechanism, which shows that it is difficult to do a market-based mechanism for emission reduction and at the same time tap sustainable development benefits – the second explicit goal of the CDM.[22] Thus, if decision-makers opt for paying mitigation (which potentially requires most of the investments in overall climate finance) out of aid budgets, this would be accompanied by large sectoral and geographical shifts of assistance moneys.

The immanent question is how each type of flow (development assistance and climate finance) can meet their stated purposes without compromising each other? For mitigation, the overriding principle should be that activities funded through development assistance first and foremost deliver development progress to lift the poor out of poverty.[23] Urban (2010) showed that the discourse of low carbon development so far is skewed towards big advanced developing countries. This is understandable from a perspective of quick emission reductions. Yet, as shown in chapter 2, low-carbon development is highly beneficial, and in fact, a necessity for the achievement of the MDGs, and can be equipped with a pro-poor focus. Maximizing development objectives over emission reduction also allows one to select and implement those actions with the greatest health benefits (Haines et al., 2009).

However, tackling the large emission reduction potential in developed and emerging economies is also a must for safeguarding development objectives in the

[21] In practice development cooperation is influenced by other considerations than poverty reduction alone. Iraq and Afghanistan attracted most of the bilateral cooperation in the recent years.
[22] Most of the CDM projects are taking place within China and India, whereas Africa and least developed countries are largely neglected. Furthermore, most issued certificates stem from large scale projects, e.g. the flaring of industrial gases, with little benefits for sustainable development.
[23] The OECD Development Assistance Committee's criteria for eligibility of ODA clearly exclude activities that lead to the issuance of Certified Emission Reductions under the Clean Development Mechanism generally reflecting the above mentioned approach.

Exhibit 15: Different concepts, understandings and motifs to calculate additionality

Options	Advantages	Disadvantages
1. Above 0.7% of ODA	■ Objective criterion ■ Based on past ODA pledges	■ No pressure on countries above the threshold ■ Countries very far from the threshold (e.g. the US) likely to ignore the criterion Too directive?
2. No agreed baseline	■ Acceptable for most contributors	■ No comparability of commitments and disbursements ■ Even low pledges can be labelled as major ■ Front-runners do not get recognition Vacuous
3. New UN channels only	■ Objective criterion ■ Proportion of contributors vs. recipients on UN boards is about equal	■ Existing mechanisms may be more suited for certain purposes ■ Diversion of ODA still possible ■ Contributors provide only token contributions Too directive
4. No ODA counts	■ Objective criterion ■ Relabelling of aid as "climate finance" is avoided	■ Likely unacceptable for most contributors ■ Old ODA funding sources may still be used Too directive
5. Above current climate finance	■ Acceptable for contributors	■ Diversion of ODA still possible • Requires controversial decisions on whether projects are climate related Vacuous?
6. Above updated projection of development aid	■ Technically correct definition	■ Hypothetical, very difficult to assess, very contested ■ Diversion of ODA still possible Vacuous
7. Above predefined projection of development aid	■ Objective criterion after being defined ■ Predictability of funds	■ Definition of baseline will be contested ■ Diversion of ODA still possible but not likely Workable short-term option?
8. New sources only	■ Newness appears guaranteed ■ Additionality likely	■ Contributors are restricted in their choice of instruments and may reduce funding ■ Not clearly objective in some cases Workable long-term option?

(adapted from Stadelmann et al., 2010)

"For tomorrow belongs to the people who prepare for it today"

Political leadership is necessary to mount the investment packages for the future into energy and climate security and into climate resilient development and poverty reduction.

Nepalese smallholder-farmer reaps his harvest.
Photo: RajeshKC (Practical Action)

poorest countries. Hence, a political framework to comprehend MDGs and climate must also suffice the financial requirement for the transformation in developed and emerging developing countries: Alternative streams of finance, such as a mix of public and private funds (in the form of long-term loans, guarantees and equity participations) need to be mobilized. In order to accelerate the transformational effects this has to be accompanied by appropriate incentive structures, risk sharing measures and measures to tackle financial and non-financial barriers for investments. Crucially, developed country emission reduction targets need to be considerably higher (30% plus) to be an engine for global and (future) bilateral carbon markets, so that they could effectively contribute in financing CO_2 abatement in developing countries.

In adaptation it is a different picture. Whereas the UNFCCC stipulates to provide new and additional finance from developed countries to developing countries in order to meet their full incremental costs[24], it is difficult to construct an "additionality concept" on the action-level. Quite the opposite, aiming to do so leads to a counterproductive treatment of adaptation in isolation of other development activities.

As exemplified earlier, there is a widespread consensus (indicated by cost-studies, as well as on-ground observations) that vulnerable countries need more assistance to meet their adaptation needs. The Copenhagen Accord set forth 30 bn USD of fast-start finance, balanced between adaptation and mitigation. Exhibit 15 shows different concepts of how additionality of fast-track money is verified.

Experience has shown, that there is no agreement of baselines against which one could measure the additionality of funds. Rather, at the moment there is a political choice by countries, which definitions suit them best to circumvent accountability of additional resources. So far, the only effective solution to avoid such double counting and promises is to create additional ways to generate the money.

Investment for the future: Additional sources

How can industrialized countries shoulder the two investment packages for the future? The policy environment for global philanthropy is not as benign as it used to be. Yet the challenges are piling up and cascading towards the west, converting acts of philanthropy into acts of necessity.

Ostrich-tactics and business as usual are no options. One has to acknowledge that fiscal space of developed countries is tight, and that it is unlikely that public funds in the amount of several hundreds of billions of dollars will be transferred in addition to current ODA levels to developing countries. However, one should neither deny that within developed countries´ budgets there is room to shift priorities (for example, through reducing ecologically counterproductive subsidies.[25]) Future challenges, such as demographic change, add to financial constraints. The economic and political gravity centre of the world order is beginning to move.

The amount of public finance for mitigation and adaptation are massive. At the same time, existing financing instruments have clear limits, inefficiencies and moral trade-offs related to climate finance (e.g. diversion of aid). Contributions from developed country governments are affected by fragmentation and the vagaries of political and fiscal cycles. This underlines the need for a financial mechanism out of reach of shortsighted budgetary appetite.[26] Ideally, such new financial sources set the right incentive structure by charging polluting activities, and therefore, contributing to establish socially efficient market outcomes (see Harmeling et al. 2009). Furthermore, they should be designed to also reflect uprising capacities and responsibilities of newly industrialized countries.

To analyse and recommend approaches to mobilize additional sources of finance, and to provide input to the climate negotiation by autumn 2010, Ban Ki Moon established an Advisory Group on Finance (AGF). The body consists of high-level politicians and eminent persons from academia and the private sector. The goal is to provide factual input about how mechanisms to raise new public money could be designed, and how these can activate private money.

The most promising options are revenues from auctioning emission allowances for marine and aviation transport – two sectors which emissions are internationally unregulated and that had the highest growth rate in emissions of all sectors in the last years – and a financial transaction tax in one form or the other. The former would directly tap and limit polluting action, whereas the latter rather reflects economic capabilities. All

[24] Art. 4.2, UNFCCC.
[25] For example, in Germany alone the environmentally harmful subsidies amount to almost EUR 50 bn (Umweltbundesamt, 2010).
[26] The "Domestic Revenue Problem" arises when money, that is intended for international purposes, enters national budgets. Due largely to the competing concerns of other national interests, domestic revenue is less likely to be transferred to international causes as it is seen to be nationally owned. This reduces the predictability of funds, since national interest and circumstances are subjects to change (comp. ODI, 2009)

Wood for selling is piled along a main artery in northern Nigeria. Wasteful wood consumption for fuel and cooking is a main reason for deforestation and desertification. Photo Atmosfair

three could be designed to mobilize public money in the order of 50bn USD (ODI, 2009). A practical approach is to observe the dynamics of the AGF and support those options that receive high appraisal and political traction.

However, 'wait and' see is usually not a leadership attribute. Rather, there are plenty options for new-sources to also be championed on the national level. Past examples include, a ticket levy on national-bound air-tickets[27], or auctioning additional emission permits under the Emission Trading Schemes, such as the one of the EU[28] .

In the short-term to 2015, with no binding climate (finance) treaty in sight before 2012 and ODA increases behind schedule and aspiration, it is difficult to call for more development and climate money, while keeping climate finance separate from development assistance. In considering a campaigning effort, which is needed to trigger the two big investment packages, it is important to have a simple, united cause. Transforming emerging economies to low-carbon is of different nature, and has needs that can only be partly fulfilled by existing ODA structures. Keeping these streams separate is also desirable, since joining them together would likely result in a geographical and sectoral shift of development focus at the expense of the most vulnerable. In adaptation, where the story is about much more commitment in poverty alleviation, food and water security, health, and access to clean energy, one could accept a less strict distinction between adaptation and development at the source, in an attempt to create public and political will for a renewed burst towards delivering on the promised 0.7% obligation.

However, it must be clear that in the future of the adaptation challenge, in particular in face of the weak mitigation actions so far, is piling up the need for external assistance and compensation probably much further than a mere 0.7% of countries GNI. Therefore, the reporting procedures to measure adaptation financial flows needs to be built and implemented now. This is in order to distinguish the streams after 2015 and to adjust either the target of ODA accordingly or to include newly established sources for adaptation finance.

Policy Process: Starting to frame a post 2015 agenda?

Starting discussions on a post 2015 framework at this year's MDG summit would give the wrong signals. The core of efforts should be on exchanging lessons

[27] The "International air-ticket solidarity contribution", a levy imposed on flights in and out of France, Chile, Madagascar, Niger, Mauritius and the Republic of Korea, contributes 70% of total funds to UNITAID, an international facility for purchase of drugs against HIV, Malaria and Tuberculosis.
[28] Germany uses 230 mio. Euro of its emission auctioning revenue to fund international projects in mitigation and adaptation.
[29] Despite room for improvement, such reporting could be done through recently launched adaptation marker of the OECD.

learned, identifying gaps and action points to make the MDGs happen in 2015. Political leadership can be demonstrated by concrete steps to ramp up development assistance, by nationally and internationally championing of new innovative financial sources for climate mitigation, adaptation and development. Furthermore, it is necessary to increase the coherence of developed country policies. This includes changing and reorienting agricultural, fishery and trade-policy to stop adverse impacts on developing countries. In particular, where reform processes are happening, there are windows of opportunities for quick gains, such as currently in the revision of the EU Common Agricultural Policy, where the EU needs to respond to the criticism of an eurocentric agriculture that harms farmers in developing countries.

Likewise, the next round of climate negotiations should centre on concrete outcomes of action packages in adaptation, technology transfer and in fighting deforestation, coupled with a clear mandate to seal a binding agreement in 2012. This has to be supplemented by a coalition building of progressive countries, to start implementing real advances on the ground. Moreover, developed countries need to tap cheap and easy gains for the climate by abolishing subsidies in fossil fuels and infrastructure.

However, people are already starting to grapple with defining a development agenda post 2015. The European Commission (2010), for instance, writes in its communiqué on the MDGs: "There is a need to ensure the predictability and continuity of development policy and to launch a reflection on the possible international development agenda beyond 2015…" and "the reflection should thus cover the so-called "missing dimensions" of the MDG framework, its impact and added value as well as ways of (better) integrating the new global challenges/global public goods such as climate change, access to energy and peace/security within the development agenda."

Limiting the development agenda to a set of goals, easy to understand and easy to campaign for, is a major strength of the MDGs and a reason for its partial successes. At the same time, it is its major weakness, resulting in an inadequate reflection of the importance of global goods such as a stable climate and functioning ecosystems and other determinants for development (gender participation, reasonable equity in societies, etc.).

Improved cooking stoves reduce fuel consumption and GHG-emission. At the same time they bring health benefits for their users and are therefore a good exampe for sustainable development.
Photo: Atmosfair

Thus, however the post 2015 agenda is framed, balance needs to be struck between encompassing the broader, holistic meta-analysis of how humanity develops and concrete steps to achieve transformation and human-well being.

A step towards this direction is to go back to the roots. Shortly, world leaders will again be summoned on the occasion of the 20th anniversary of the Rio Earth Summit in Rio de Janeiro. Here, countries can retrieve the Rio-concept of sustainable development. The balance, however, that needs to be found, is about the operationalizability of the outcomes. Concrete actions would be to sketch the concept of green growth/economy on the global scale and agree on the institutional frame to operationalise this. It is reported that a group of eminent persons, such as Merkel and Lula, will facilitate the run-up to this conference and give new concepts for the climate and MDG agenda. To this end, and the end of the paper, the authors want to echo Ban Ki Moon:

"You have the power to chart a safer, more sustainable and prosperous course for this and future generations. The power to reduce the emissions that are causing climate change, to help the most vulnerable adapt to changes that are already under way and to catalyze a new era of global green growth. Now is your moment to act."

Secretary-General Ban Ki-moon, 22 September 2009,
General Assembly, Opening remarks to the United
Nations Climate Change Summit Plenary

[30] Vandermoortele & Delamonica (2010) give concrete action points how to develop this agenda. However, the authors caution to hasten too fast in agreeing on new goals. They furthermore warn to have a race of early proposals rather then a comprehensive process that aims to bring people on the same page.
[31] See, The Star, 24th June 2010, Talks could end deadlock on emission deal.

References

AGECC (2010): Energy for a Sustainable Future – Report and Recommendations. The Secretary's General Advisory Group on Energy and Climate Change, New York.

BMZ (2006): "Pro Poor Growth" - Das entwicklungspolitsche Thema Breitenwirksames Wachstum. BMZ Spezial 142. Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung. Bonn.

Brown, J., Cantore N. & D. Willem te Velde (2010): Climate Financing and Development – friends or foes? Overseas Development Institute (ODI). http://www.odi.org.uk/resources/details.asp?id=4724&title=climate-financing-oda.

Care, Germanwatch & Bread for the World (2009): Pro Poor Governance of Global Adaptation Funds, Briefing Paper, http://www.germanwatch.org/klima/ad-dis09.pdf.

Clemens, M., Kenny, C. & T. J. Moss (2006): The Trouble with the MDGs: Confronting Expectations of Aid and Development Success. World Development 35, Nr. 5 (Mai): 735-751. doi:10.1016/j.worlddev.2006.08.003.

Deaton, A. (2003): How to Monitor Poverty for the Millennium Development Goals. Journal of Human Development 4, Nr. 3: 353. doi:10.1080/1464988032000125746.

Easterly, W. (2009): How the Millennium Development Goals are Unfair to Africa. World Development 37, Nr. 1: 26-35. doi:10.1016/j.worlddev.2008.02.009.

ECF (2010): Making Fast Start Finance Work. Briefing Paper. European Climate Foundation. London

European Commission. (2010): Progress made on the Millennium Development Goals and key challenges for the road ahead - COMMISSION STAFF WORKING DOCUMENT. {COM(2010) 159}.

Fargione, J., J. Hill, D. Tilman, S. Polasky, P. Hawthorne, 2008. Land clearing and the biofuel carbon debt. Science 319: 1235–1238. doi: 10.1126/science.1152747

Fankhauser, S. & G. Schmidt-Traub (2010): From adaptation to climate-resilient development: the costs of climate-proofing the Millennium Development Goals in Africa. Grantham Institute, London

Gill, M. & R. Stott. (2009): Health professionals must act to tackle climate change. The Lancet 374, Nr. 9706 (12): 1953-1955. doi:10.1016/S0140-6736(09)61830-4.

Haines, A., Wilkinson, P., Tonne, C. & I. Roberts (2009). Aligning climate change and public health policies. The Lancet 374, Nr. 9707 (1): 2035-2038. doi:10.1016/S0140-6736(09)61667-6.

Hamilton, Kirk. (2006). Where is the wealth of nations? World Bank Publications.

Harmeling, S. & C. Bals. (2008): Making the Adaptation Fund work for the most vulnerable people. Briefing Paper. Germanwatch. Bonn.

Harmeling, S., Bals, C., Sterk, W. & R. Watanabe (2009): Funding sources for international climate policy. Briefing Paper. Germanwatch & Wuppertal Institute. Bonn.

Hildyard, N. (2005): The Lesotho Highland Water development project, what went wrong. In Global Policy Forum www. global policy. org/nations/corrupt/Lesotho.htm.

Ifejika Speranza, C. (2010): Resilient adaptation to climate change in African agriculture. DIE studies. Bonn.

IUCN (undated) : Disaster and Gender Statistics, IUCN Fact Sheet, http://cmsdata.iucn.org/downloads/disaster _ and _ gender _ statistics.pdf

Klein, R. J. T. (2008): Mainstreaming Climate Adaptation into Development. Stockholm Environment Institute briefing note for the European Parliament Temporary Committee on Climate Change, Stockholm.

Lenton, T. M., Held, H., Kriegler, E., Rahmstorf, S. & H. J. Schellnhuber (2008): Tipping elements in the Earth's climate system. Proceedings of the National Academy of Sciences 105, Nr. 6 (Februar 12): 1786-1793. doi:10.1073/pnas.0705414105.

McGray, H., Hammill, L., Bradley, R., Schipper, E.L. & J. E Parry. (2007). Weathering the storm: options for framing adaptation and development. World Resources Institute. Washington.

McKinsey & Company (2009): "Pathways to a low carbon economy", www.mckinsey.com/clientservice/ccsi/pathways _ low _ carbon _ economy.asp

Meinshausen, M., Meinshausen, N., Hare, W., Knutti, R., & M. R. Allen (2009): Greenhouse-gas emission targets for limiting global warming to 2 C. Nature 458, Nr. 7242 (April 30): 1158-1162. doi:10.1038/nature08017.

Michaelowa, A.& K.. Michaelowa (2007): Climate or development: is ODA diverted from its original purpose? Climatic Change 84, Nr. 1: 5-21. doi:10.1007/s10584-007-9270-3.

Michaelowa, A., Michaelowa, K. & H. Strasse. (2010): Coding Error or Statistical Embellishment? The Political Economy of Reporting Climate Aid. SSRN eLibrary (Mai). http://papers.ssrn.com/sol3/papers.cfm?abstract _ id=1607623.

ODI (2009): The little climate finance book. http://www.odi.org.uk/resources/download/4619.pdf

OECD (2009). Integrating Climate Change Adaptation into Development Co-operation. Organisation for Economic Co-operation and Development, Paris.

Parry, M., Arnell, N., Berry, P., Dodman, D., Fankhauser, F., Hope, S. & S. Kovats (2009): Assessing the Costs of Adaptation to Climate Change: A Review of the UNFCCC and other recent estimates. IIED. London.

Patz, J., Gibbs, H., Foley, J., Rogers, J. & K. Smith. (2007): Climate Change and Global Health: Quantifying a Growing Ethical Crisis. EcoHealth 4, Nr. 4 (Dezember 1): 397-405. doi:10.1007/s10393-007-0141-1.

Reid, W. V., H. A. Mooney, A. Cropper, D. Capistrano, S. R. Carpenter, K. Chopra, P. Dasgupta, (2005): Millennium ecosystem assessment synthesis report.

Smith, K. (2009). Household Fuels and Ill-health in Developing Countries. http://ehs.sph.berkeley.edu/krsmith/publications/WLPGA%20Shanghai%2009-05z.pdf

Stadelmann, M.,; Timmons R. & S. Huq (2010): Baseline for trust: defining 'new and additional' climate funding. IIED Briefing Papers. London.

Switchasia (undated): Satisfying basic needs respecting the Earth's limits. http://www.switch-asia.eu/switch-info/publications/contribution-of-scp-to-poverty-alleviation.html.

Umweltbundesamt (2010): Umweltschädliche Subventionen in Deutschland. Hintergrundpapier. Umweltbundesamt. Dessau.

UNISDR (2007): Towards a Culture of Prevention: Disaster Risk Reduction Begins at School - Good Practices and Lessons Learned -. United Nations International Strategy for Disaster Reduction. Geneva.

United Nations (2005): We the people - Millennium Report. Report of the Secretary-General. New York.

United Nations (2010): The Millenium Development Goals Report 2010. New York

United Nations (2010b). Keeping the Promise: a forward-looking review to promote an agreed action agenda to achieve the Millennium Development Goals by 2015. Report of the Secretary-General. New York.

Unmüßig, B. (2006): Millenium-Entwicklungsziele–(k) ein Beitrag zur nachhaltigen Entwicklung. http://www.boell.de/downloads/weltweit/unmuessig _ nachhaltige _ entwicklung.pdf

Urban, F. (2010): The MDGs and Beyond: Can Low Carbon Development be Pro-poor? IDS Bulletin 41, Nr. 1: 92-99. doi:10.1111/j.1759-5436.2010.00109.x.

Vandemoortele, J. (2009): The MDG Conundrum: Meeting the Targets Without Missing the Point. Development Policy Review 27, Nr. 4: 355–371.

Vandemoortele, J. & E. Delamonica (2010):. Taking the MDGs Beyond 2015: Hasten Slowly. IDS Bulletin 41, Nr. 1: 60-69. doi:10.1111/j.1759-5436.2010.00105.x.

Watts, G. (2009): The health benefits of tackling climate change. An Executive Summary for The Lancet Series. The Lancet. http://www.thelancet. com/series/health-and-climate-change.

WBGU (2005): Keine Entwicklung ohne Umweltschutz: Empfehlungen zum Millennium+5-Gipfel. Politikpapier 4. Berlin

WHO (2009): Protecting health from climate change: connecting science, policy and people. World Health Organization, Geneva.

Wilkinson, P., K. R Smith, M. Davies, H. Adair, B. G. Armstrong, M. Barrett, N. Bruce, A. Haines, I. Hamilton & T. Oreszczyn (2009): Public health benefits of strategies to reduce greenhouse-gas emissions: household energy. The Lancet 374, Nr. 9705 (12): 1917-1929. doi:10.1016/S0140-6736(09)61713-X.

Worldbank (2009): The Costs to Developing Countries of Adapting to Climate Change. The Global Report of the Economics of Adaptation to Climate Change Study. The World Bank Group. Washington.

Yohe, G.W., R.D. Lasco, Q.K. Ahmad, N.W. Arnell, S.J. Cohen, C. Hope, A.C. Janetos & R.T. Perez, (2007): Perspectives on climate change and sustainability. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 811-841.

Germanwatch

Following the motto "Observing, Analysing, Acting", Germanwatch has been actively promoting North-South equity and the preservation of livelihoods since 1991. In doing so, we focus on the politics and economics of the North with their worldwide consequences. The situation of marginalised people in the South is the starting point of our work. Together with our members and supporters as well as with other actors in civil society we intend to represent a strong lobby for sustainable development. We endeavour to approach our aims by advocating fair trade relations, responsible financial markets, compliance with human rights, and the prevention of dangerous climate change.

Germanwatch is funded by membership fees, donations, grants from the "Stiftung Zukunftsfähigkeit" (Foundation for Sustainability), and by grants from a number of other public and private donors.

You can also help to achieve the goals of Germanwatch and become a member or support our work with your donation:

Bank fuer Sozialwirtschaft AG
BIC/Swift: BFSWDE33BER
IBAN: DE33 1002 0500 0003 212300

For further information,
please contact one of our offices

Germanwatch - Berlin Office
Schiffbauerdamm 15
D-10117 Berlin, Germany
Ph.: +49 (0) 30 - 28 88 356-0
Fax: +49 (0) 30 - 28 88 356-1

Germanwatch - Bonn Office
Dr. Werner-Schuster-Haus
Kaiserstraße 201
D-53113 Bonn, Germany
Ph.: +49 (0) 228 - 60492-0
Fax: +49 (0) 228 - 60492-19
E-mail: info@germanwatch.org

or visit our website:
www.germanwatch.org

GERMANWATCH