Beyond Kyoto -
Local Governments and the Road to Copenhagen

Background Information for local governments engaging in the UN Climate Negotiations for a post-2012 climate agreement

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The document will be continuously further developed and used as a lead document for more specific issue papers later.

The e-version of this document can be found under: www.iclei.org/climate-roadmap. Go to “useful documents”.

Within the following text, reference is made to the original documents being mentioned as well as to further useful reading. All these documents can be found under “useful documents” at www.iclei.org/climate-roadmap. We recommend you to also read the collection of UNFCCC Fact Sheets available on this website.

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1. Introduction

Based on general agreement that current and imminent climate change is due to the anthropogenic - man-made - emission of greenhouse gases, and that the current framework for addressing climate change, the Kyoto Protocol and its related mechanisms, should continue in an updated form beyond 2012, when it is scheduled to end, governments and major groups are in ongoing discussions on what a new multilateral accord addressing climate change could look like.

Global agreements

The international community adopted the United Nations Framework Convention on Climate Change (UNFCCC) at the historical Earth Summit in 1992 in Rio de Janeiro as the main vehicle through which climate change should be addressed at the multilateral level. In December 1997 agreement was reached to add the Kyoto Protocol to the Convention. The Kyoto Protocol includes binding emission reduction targets for developed countries for the period 2008-2012. In 2007 the Intergovernmental Panel of Climate Change (IPCC), the leading body to review climate change science, published its Fourth Assessment Report, which indicated that climate change is both happening and accelerating.

Global conferences

A series of UN Climate Change Conferences are held annually to address these issues. These conferences are each known as the Conference of Parties (to the Convention) or COP. The supreme body of the Kyoto Protocol also meets at the Climate Change Conference every year. This body is referred to as the CMP (Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol) and is the association of those Parties to the Convention that have also signed and ratified the Kyoto Protocol.

To prepare for the major decisions made at the UN Climate Change Conferences, smaller UNFCCC meetings called “UN Climate Change Talks” are held between the annual COPs.

The Bali Roadmap as result of the COP 13 (2007)

In December 2007, a COP (the 13th) was held in Bali, where a new urgency in addressing climate change led to the adoption of the Bali Roadmap. The Bali Roadmap is a loose set of agreements to address, or at least seriously think about, a number of issues such as financing mitigation and technology transfer, with the intent to lead up to concrete decisions at the next two congresses or COPs, to be held in Poznan, Poland in December 2008 and Copenhagen in 2009, and culminating in a final decision on a new deal on climate change in Copenhagen.

The Bali meeting was notable in so far as an agreement was reached to formally start the negotiation process for a post-Kyoto/post-2012 climate agreement.

Subsidiary bodies and other negotiation mechanisms

Under the Convention two permanent subsidiary bodies exist: the “Subsidiary Body for Scientific and Technological Advice” (SBSTA) and the “Subsidiary Body for Implementation” (SBI).

The Convention also created ad-hoc working groups to address special areas of concern, such as long-term co-operation and the further commitments of signatories to the Kyoto Protocol.

At the Climate Change Talks (see above) in Vienna in August 2007, the latter concluded that climate discussions should be guided by a range of a total cut of CO₂ emissions by developed countries from between 25% and 40% in 2020. This range is based on the most ambitious scenario presented by the IPCC so far to keep the global temperature rise in between 2.0 - 2.4 degree Celsius (C). The current focus of the SBIs work is an analysis of the possible tools and the rules available to developed countries to reach reduction commitments.

The SBSTA was established in Bali exclusively to conduct negotiations on a Copenhagen deal. Topics addressed include

- the use of sectoral approaches (= for specific industries),
- approaches to enhance the cost-effectiveness of mitigation actions, including market mechanisms,
- the issue of reducing emission from deforestation and forest degradation in developing countries.
2. The Role of Cities, Towns and Communities

While local governments do not directly participate in the UN Convention on Climate Change nor the Kyoto Protocol, the role of local authorities is acknowledged in other important UN negotiations. For example, at the 9th Conference of the Parties (COP) to the UN Convention on Biodiversity gathering in Bonn in 2008, the COP Biodiversity adopted a decision in which it was stated that “Cities and local authorities play a critical role in designing and implementing land-use and zoning planning tools, urban development and infrastructure guidelines, investment promotion, and consumer awareness campaign”. In addition, the COP to the UN Convention on Biodiversity stated that these functions of local authorities had direct effects on climate change.

Working Group III of the IPCC in its 2007 report identified mitigation efforts that can be taken in areas to achieve reductions in greenhouse gas usage, including “Transport and Its Infrastructure” and “Residential and Commercial Buildings”. These sectors are particularly impacted by the land use, tax, and infrastructure decisions made by local authorities.

Moving forward from Bali

In Bali, when the UN launched its UN Climate Roadmap, Parties were committed to address “Ways to strengthen the catalytic role of the Convention in encouraging multilateral bodies, the public and private sectors and civil society, building on synergies among activities and processes, as a means to support mitigation in a coherent and integrated manner.”

It is the position of local government organisations, such as ICLEI-Local Governments for Sustainability (ICLEI), the United Cities and Local Governments (UCLG), Metropolis, the C40 Climate Leadership Group, and the World Mayors Council on Climate Change (WMCCC), that, consistent with this commitment, the next COP related to the UN Framework Convention on Climate Change in Poznan must consider ways to strengthen the initiatives taken on climate change by local governments.

An understanding of the process - such as this document seeks to provide - and the definition of local government positions on issues currently under discussion at UN level is key to participating in and influencing the outcomes of this process.

Making national support universal

A indicated above, there exists broad agreement among organisations representing LGMAs at an international, regional and national level that LGMAs should play a far clearer and significantly more active role in influencing discussions on a new international climate Convention - by using (and supporting) their representational bodies as major groups, and exercising their influence on national governments in a constructive and proactive manner.
3. The Kyoto Protocol - A brief history

The Kyoto Protocol was adopted at the third Conference of the Parties to the UNFCCC (COP 3) in Kyoto, Japan, on 11 December 1997. The Protocol shares the objective and institutions of the UN Framework Convention on Climate Change. The major distinction between the two, however, is that while the Convention encouraged industrialised countries to stabilise greenhouse gas emissions, the Protocol commits them to do so. The detailed rules for its implementation were adopted at COP 7 in Marrakesh in 2001, and are called the “Marrakesh Accords.”

The Protocol places a heavier burden on developed nations under the principle of “common but differentiated responsibilities.”

**Commitments of the Kyoto protocol**

The Kyoto Protocol entered into force on 16 February 2005. 182 Parties have ratified the treaty to date. Under the Protocol, 37 industrialised countries and the European Community have committed to reducing their emissions by an average of 5 percent against 1990 levels over the five-year period 2008-2012.

These countries are called the Annex I countries, whereas the big group of developing countries is called the Annex II countries.

For the group of Annex I countries, reductions of 11% are projected for the first Kyoto commitment period from 2008 to 2012, provided policies and measures planned by these countries are put in place. These countries will also have to make use of the Protocol’s “flexible mechanisms” in order to reach their collective emission reduction goal - Emissions Trading, the Clean Development Mechanism (CDM) and Joint Implementation (JI) – see more on these below.

Under the Protocol, countries’ actual emissions have to be monitored and precise records have to be kept of the trades carried out. Parties must keep a national registry to track and record transactions under the mechanisms. The UNFCCC Secretariat keeps an independent transaction log to verify that transactions are consistent with the rules of the Protocol, and expert review teams have been set up to ensure compliance.

**Adaptation as issue of the Kyoto protocol**

The Kyoto Protocol, like the Convention, is also designed to assist countries in adapting to the inevitable effects of climate change and facilitates the development of techniques that can help increase resilience to climate change impacts. An Adaptation Fund was established to finance concrete adaptation projects and programmes in developing countries that are Parties to the Kyoto Protocol. The Fund is financed with a 2% share of proceeds from CDM project activities and may also receive funds from other sources.

**Post-Kyoto**

The year 2012 is the expiry date of the Kyoto protocol, and this is the reason why the current negotiations are now on a “post-2012” or “post-Kyoto” climate agreement.
4. The Bali Action Plan

At the COP in Bali in 2007, the participating nations adopted the Bali Roadmap as a two-year process to finalizing a binding agreement for the post-2012 period at COP 15 in 2009 in Denmark. At the Bali UN Climate Conference, it was acknowledged that evidence for global warming is unequivocal, and that humans must reduce emissions to reduce the risks of “severe climate change impacts”.

The Bali roadmap addresses specific issues such as forests, adaptation, technology transfer and timescales. These issues are addressed in some detail later in this document.

For the moment, it is enough to state

- that Parties pledged “policy approaches and positive incentives” to protect forests, and
- to examine more closely the issues surrounding deforestation/reforestation and climate change;
- that Parties opted for enhanced co-operation on adaptation to “support urgent implementation” of measures to protect poorer countries against climate change impacts;
- that Parties will consider how to facilitate the transfer of clean technologies from industrialised nations to the developing countries; and
- that work on the Bali roadmap will begin as soon as possible - four major UNFCCC meetings to implement the Bali Roadmap were scheduled for 2008, culminating in Poznan.

5. The Road to Copenhagen

After Bali, the first round of United Nations Climate Change Talks in 2008 got under way in Bangkok at the end of March 2008. It was followed by the Bonn Climate Change Talks in June, and the Accra Climate Change Talks in August.

The various Talks resulted in a clearer understanding amongst governments on how they wish to tackle the issues of finance, technology and adaptation, according to Yvo de Boer, Executive Secretary of the UNFCCC. At the meetings, Parties called for concrete proposals to help them deliver on the four key elements of an agreement in Copenhagen - Mitigation, Adaptation, Technology and Finance.

Expectations for COP 14 in Poznan

The next step on the Road to Copenhagen is Poznan, Poland. There, Parties are expected to:

- Agree on a plan of action and programmes of work for the final year of negotiations after a year of comprehensive and extensive discussions on crucial issues relating to future commitments, actions and co-operation,
- Make significant progress on a number of on-going issues required to enhance further the implementation of the Convention and the Kyoto Protocol,
- Advance understanding and commonality of views on “shared vision” for a new climate change regime,
- Strengthen momentum and commitment to the process and the agreed timeline.

Important continuing issues will be

- capacity-building for developing countries,
- reducing emissions from deforestation,
- technology transfer and
- adaptation

In 2009, a further round of United Nations Climate Change Talks will be held, hopefully in full negotiation mode, with a final deal planned to be reached in Copenhagen.
Local government expectations

Any such post-2012 agreement should contain language urging national and regional governments to better integrate, adequately equip and strategically support local governments in efforts to ameliorate climate change and its effects. Effective amelioration will include significant changes to the way of life in urban and peri-urban centres. This must be acknowledged, and the leading role of local government in ensuring such changes are controlled, smooth and without needless suffering should be underlined.

6. A Catalogue of Issues

A number of issues have arisen from the process leading up to Copenhagen, some directly, some indirectly. Most, if not all, have an impact on local governments and the cities, towns and communities they govern.

In this non-exhaustive catalogue,

- the key points of each issue will be briefly addressed, including its place within the UNFCCC process,
- possible impacts on local governments will be examined, and
- considerations are shared which outcomes would benefit local governments.

The goal of the following document is to ensure that the reader acquires a sound overview of current issues under discussion, and is able to express the position of his or her local government on the topic to representative stakeholders in the process.
Big issues of the climate negotiations

The issues are divided into the “big picture” issues that will form the cornerstones of any agreement in Copenhagen - mitigation, adaptation, technology and finance. As a key topic, the issue of targets is also included here.

Further issues of the Bali roadmap

They are followed by the issues highlighted in the Bali Roadmap - forests, adaptation in developing countries, and technology transfer to developing countries.

They in turn are followed by contextual issues highlighted during the various discussions that are of particular relevance to local governments - energy use in transport and buildings, and the mechanisms for carbon mitigation.

6.1 “Big Picture” Issues

6.1.1 Mitigation

Mitigation of global warming involves taking actions to reduce greenhouse gas emissions and to enhance sinks aimed at reducing the extent of global warming. A “sink” refers to forests, vegetation or soils that can reabsorb CO2 (carbon dioxide). This is in distinction to adaptation to global warming, which involves taking action to minimise the effects of global warming.

Scientific consensus on global warming, together with the precautionary principle and the fear of non-linear climate transitions is leading nations to increased effort to develop new technologies and sciences and carefully manage others in an attempt to mitigate global warming.

In the 200 years since 1800, levels of greenhouse gases in the atmosphere have risen by over 30%. Since levels of greenhouse gases are currently rising even more steeply, leading to the most dramatic change in the atmosphere’s composition in at least 650,000 years, international action on mitigation is urgently required. The ultimate objective of the UNFCCC is to stabilise atmospheric concentrations of greenhouse gases at a level that will hopefully prevent dangerous interference with the climate system.

The six greenhouse gases covered by the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6).

Voluntary and mandatory action

The UNFCCC requires that Parties voluntarily take measures to mitigate global warming and climate change. The Kyoto Protocol to the UNFCCC goes a step further, obliging signatories to specific binding emission targets to be achieved in the 2008 – 2012 commitment period, which will reduce emissions from these Parties by about 5% from 1990 levels. These targets can be achieved by domestic action and by the use of international market mechanisms.

For the group of 36 countries that have ratified the Kyoto Protocol (see above), reductions of 11% are projected for the first Kyoto commitment period from 2008 to 2012, provided policies and measures planned by these countries are put in place.

However, according to the most stringent scenario of the International Panel on Climate Change (IPCC), a long term goal in line with the latest science would include a peak in emissions in the next 10 - 15 years, and a decline of 50% over 2000 levels by 2050. This would stabilise emissions at around 450 parts per million CO2 equivalent in the atmosphere and correspond to a 2 - 2.4°C rise in temperatures.

At a national level, deep emission cuts by industrialised countries are needed to achieve this goal, and these countries must continue to take the lead in mitigation, given their historic responsibility and economic capabilities.
Including developing countries

A future climate change regime will require further engagement of developing countries, in particular those whose emissions already, or will in the near future, significantly contribute to atmospheric concentrations. This will be important given projected economic growth and energy demand in developing countries. Developing countries may need incentives to limit their emissions while safeguarding economic growth and poverty eradication.

Forests

The UNFCCC now acknowledges the need to protect forests as part of efforts to combat climate change. Tropical deforestation was excluded from the Kyoto Protocol due to controversies surrounding sovereignty, uncertainty and implications for efforts to reduce fossil fuel emissions. Discussions on reducing emissions from deforestation in developing countries are now well underway within the UNFCCC process, at the initiative of developing countries (see section on Forests).

Mitigation potentials

According to the IPCC, there is significant mitigation potential, including the increased use of clean technologies and improved end-use efficiency, for all sectors. Mitigation costs in 2030 would not exceed 3% of global Gross Domestic Product (GDP). Available mitigation options can yield multiple societal and environmental benefits (see section on Technology).

The carbon market has great potential for cost-effective mitigation, but needs long-term policy certainty in demand beyond 2012 to continue to deliver (see section on Cap & Trade).

Local perspective: Mitigation must be a significant urban activity

At a local government level, it is important to note that a number of human activity sectors typically facilitated directly within the urban context are major contributors to greenhouse gas emissions, and hence to climate change. These include power generation (21%), industry (19%), transport (13%), and buildings (8%). But also activities that indirectly are attributable to urban use - consumption of foodstuffs produced by agriculture, which contributes 14% of emissions, and the use of forestry products (17% contribution) in the urban context, whether for building materials, as paper and pulp, or furniture and the like.

This means that mitigation must massively influence patterns of use in the urban context, and hence makes, at a very practical level, mitigation a significantly urban activity. The urban aspect of mitigation must be made clear to all parties, and the need for the close involvement of local governments and municipal authorities stressed during the ongoing negotiations.

6.1.2 Adaptation

The term adaptation refers to adjustments in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderate harm or exploits beneficial opportunities. It includes increasing the resilience of such systems to the effects of climate change, and determining, managing and reducing the vulnerability of such systems to the effects of climate change.

Resilience in the context of climate change refers to 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-organisation, and the capacity to adapt to stress and change.

Vulnerability in the context of climate change 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.

Adaptation reacting to existing global warming

The call for adaptation results from the clear understanding that a degree of global warming is unavoidable. The successful closure of a deal on climate change in Copenhagen, and the effectiveness of that deal over time in mitigating global warming, will determine the degree of climate change humanity will have to adapt to. According to the former Chief Scientific Adviser to the UK Government David King, it is very likely that adaptation to global warming is inevitable as "it is unlikely that levels of greenhouse gases can be kept low enough to avoid a projected temperature rise of 2 °C".
What adaptation is needed

What are the effects of global warming that we may need to adapt to? The predicted effects for the environment and for human life are numerous and varied. The main effect is an increasing global average temperature.

From higher global average temperature flow a variety of resulting claims, including:

- rising sea levels,
- altered patterns of agriculture,
- increased extreme weather and extreme weather events,
- the expansion of the range of tropical diseases,
- and the opening of new trade routes.

Specific anticipated effects include sea level rise of 110 to 770 mm (0.36 to 2.5 feet) between 1990 and 2100, repercussions to agriculture, possible slowing of the thermohaline circulation, reductions in the ozone layer, increased intensity and frequency of extreme weather events, lowering of ocean pH, and the spread of diseases such as malaria and dengue fever.

A summary of probable effects and recent understanding can be found in the report made for the IPCC Fourth Assessment Report by Working Group II. It includes an excellent summary for policy makers.

Planned adaptation can supplement autonomous adaptation

Human and natural systems will to some degree adapt autonomously to climate change. Planned adaptation can supplement autonomous adaptation, though there are more options and greater possibility for offering incentives in the case of adaptation of human systems than in the case of adaptation to protect natural systems.

Adaptation options are many, including:

- **Managerial options** such as changing crop patterns and species,
- **Technological** options such as increased sea defences or flood-proof houses,
- **Behaviour change** at the individual level, such as the sparing use of water in times of drought,
- **Early warning systems** for extreme events,
- **Improved risk management**,
- **Insurance** options,
- **Biodiversity conservation** to reduce the impacts of climate change on people, e.g. by conserving and restoring mangroves to protect people from storms.

Adaptation costs and is an investment

Adaptation needs sufficient and sustained funding. Without such funding, humanity will face increased costs and greater risks in the future, including possible large-scale population movements, with the number of environmentally displaced persons outgrowing the numbers of “traditional refugees”, and conflict due to competition over scarcer resources such as water, food and energy.

Local perspective: adaptation to protect human settlements

From a local government perspective, adaptation needs are highest where potential threats exist to existing infrastructure in human settlements. Hence, wherever climate change might in some way impact on human settlement, adaptation is required. And the work of the IPCC shows almost no region will be spared a degree of impact.

As such, adaptation will be an activity nearly universally relevant to all local governments, and especially so in, for example, coastal regions, regions threatened by desertification, disease or drought, and the like.

Current sources of Official Development Assistance (ODA) are insufficient to cover the adaptation needs of developing countries as estimated by the UNFCCC, the IPCC, World Bank and the Stern Review (see section on adaptation in developing countries).
6.1.3 Technology

Clean technologies are central to mitigating climate change. Cleaner technologies can provide win-win solutions, allowing global economic growth and climate change mitigation to proceed hand in hand. On the other hand, adaptation technologies are essential to increase resilience to climate change impacts.

Technology for mitigation

For mitigation, climate-friendly technologies need to enable a transition to a carbon-constrained economy and de-couple economic growth from emissions growth. Climate-friendly technologies and sustainable development approaches need to enable developing countries to avoid the development paths taken by industrial countries in the past, before the risks were known.

Technology for adaptation

For adaptation, most methods of adaptation involve some form of technology: Soft forms, including insurance schemes, crop rotation patterns or traditional knowledge; Hard forms, including irrigation systems, drought-resistant seeds, or sea-defences; and a combination of soft and hard forms such as early-warning systems. Technologies for adaptation need to reach those most in need.

Promoting technologies

To successfully develop and disseminate these technologies, a number of requirements exist.

- Firstly, to support the development of clean technologies, significant investment in primary and applied research is required.

- Secondly, the technologies have to gain transference into industry, for which good co-operative programmes are needed between research & development (R&D) and industry.

- Thirdly, barriers to the growth of the technology in the marketplace must be removed, and where required, incentives must exist to create local markets and stimulate growth, while bringing down costs.

Thereafter, support in the creation of new global markets, technology transfer programmes and the like are required to disseminate the technologies globally.

Technology transfer to developing countries

Technology transfer to developing nations is a key area, and a great deal of work is being done to find new and better ways of achieving this within the context of the Road to Copenhagen. The issues are complex, dealing not only with funding, but also participation of private equity and the protection of intellectual property. However, it is clear that without the significant transfer of technology to developing nations, they will not be in a position to either mitigate or adapt.

Local perspective: adaptation to protect human settlements

From an urban perspective, the development of clean technology centres, technology transfer programmes with, for example, sister cities, and the creation of a receptive environment for attracting companies in the clean technology sector are all examples of win-win scenarios with additional local and regional benefits.

While the role of central government and businesses in stimulating the development and transfer of technologies is becoming increasingly clear - Government needs to provide business with frameworks and partnerships at the national and international level. Business needs to know and understand the direction and the ultimate goal of national and international climate policies in order to invest with confidence - the resultant business activities almost inevitably take place in a local context.

Local governments are uniquely able to ensure that local conditions are suitably attractive for the establishment of R&D centres, businesses and the like, while the opportunity exists to suggest that such opportunities should also be created in infrastructurally poorer regions and settlements, to maximise peripheral benefits.
6.1.5 Finance

In support of clearer understanding of financing mechanisms and investment flows needed to mitigate and adapt to climate change, the secretariat of the UNFCCC created a report entitled "Report on the analysis of existing and potential investment and financial flows relevant to the development of an effective and appropriate international response to climate change".

Investments and financial flows

The report found that the additional investment and financial flows in 2030 to address climate change amounts to 0.3 to 0.5% of global domestic product in 2030 and 1.1 - 1.7% of global investment in 2030.

Mitigation measures needed to return global greenhouse gas emissions to current levels by 2030 require a small increase in global investments and financial flows: between USD 200-210 billion per annum in 2030.

For adaptation, additional investment and financial flows needed in 2030 amount to several billions of USD.

Particularly in the energy sector huge investment flows are needed. For energy supply, USD 432 billion is projected to be invested annually into the power sector. Of this amount, USD 148 billion needs to be shifted to renewable energy technologies. Investment into fossil fuel supply is expected to continue to grow, but at a reduced rate.

Investment flows to developing countries are estimated at about 46% of the total needed in 2030. The resulting emission reductions achieved by these countries in 2030 would amount to 68% of global emission reductions.

The costs of inaction

While these costs appear high, they are set against the background of the cost of not mitigating global warming. The Stern Review suggests that an investment of one percent of global GDP is required to mitigate the effects of climate change, with failure to do so risking a recession worth up to twenty percent of global GDP.

A variety of financial mechanisms

With appropriate policies and/or incentives, a substantial part of the additional investment and financial flows needed could be covered by the currently available sources. However, improvement in and an optimal combination of mechanisms will be needed to mobilise the necessary investment and financial flows to address climate change.

Examples are,

- the carbon markets,
- the financial mechanism of the Convention (e.g. CDM),
- Official Development Assistance
- national policies and, in some cases,
- new and additional resources,

A future climate change regime with increased effectiveness will require shifts in investment and financial flows to more climate-friendly and climate-proof investments, a scaling up of international and public capital dedicated to climate-friendly and climate-proof investments, and an optimisation of the allocation of funds available by spreading the risks across private and public investors, for example by providing incentives for private investment in the early deployment of new technologies.

Local perspective: be prepared to be a recipient of funding

From a local government perspective, it is clear that communities and the industries and projects they host are likely to be significant recipients of such funding, both for mitigation and adaptation.

As such, it makes sense for local governments to

a) ensure that they have a clear understanding of the financing mechanisms as they develop, and can make timely use of them, and
b) to lobby for increased involvement of local governments in the allocation and management of any such funds.

### 6.1.6 Reduction targets

While national targets have traditionally been a source of much contention within the Convention - leading to some countries not ratifying the Kyoto Protocol, for example - it is becoming increasingly clear that reduction targets, voluntary or otherwise, sectoral or national, will play a key role in any future climate agreement.

#### Current reduction targets for limiting global warming

There is general agreement that CO2 emissions should be sufficiently reduced to stabilised atmospheric CO2 at 450 parts per million. At that level, a global temperature increase of 2 degrees is expected.

As emission levels per capita differ from country to country, the amount of reduction needed is different for everybody. However, the key focus must be to stop the increase in emissions year-on-year.

In September 2008, the Carbon Disclosure Project reported that atmospheric CO2 concentration had reached 383 ppm in 2007 and grew by 2.2 ppm that year, which is above the 2.0 ppm average for the period 2000-2007.

The authors also noted that the growth rate of emissions from the burning of fossil fuels and cement was 3.5% per year for the period of 2000-2007, "an almost four fold increase from 0.9% per year in 1990-1999." This, the authors wrote, "exceeded the highest forecast growth rates for the decade 2000-2010 in the emissions scenarios of the Intergovernmental Panel on Climate Change, Special Report on Emissions Scenarios (IPCC-SRES). This makes current trends in emissions higher than the worst case IPCC-SRES scenario."

#### Local perspective: Cities and Targets

Targets for individual cities are not under discussion, nor is it deemed necessary that such targets be set at a multilateral level. However, there are issues relating to targets that do impact local governments directly, and are worth mentioning here:

- **Firstly, national governments will not reach their GHG emission targets if local governments are not strongly involved in the implementation measures.** The lion's share of energy use and emissions take place in cities and towns. Hence, reaching national targets will be dependant on reducing emissions in those communities. However, rural communities have their role to play also, whether in terms of the agricultural infrastructure needed to supply biofuels, or through their impact on land use and forestation. All communities should be tightly integrated in national plans aimed at achieving national targets.

- **Secondly, cities should acknowledge their potential contribution, and set their local targets in such a way as to support the achievement on national goals.** If no own strategies are in place yet, and no emissions data available, it is suggested that cities use the national targets put in place as a first estimate and broad guideline, and thereafter make use of the tools and techniques available to refine and guide the further setting of local targets.

- **Thirdly, local governments need enabling framework conditions in order to unfold their full potential for action.** These enabling framework conditions refer to policies, competencies, capacities, financial resources and recognition. Given these, they can make a substantial contribution to realising national targets, and help to facilitate both emissions reductions and reduction of and adaptation to the effects of climate change.

Local governments and municipal authorities are the natural allies of national governments in this regard.
6.2 Bali Roadmap Issues

6.2.1 Forests

Forests hold a significant standing stock of global carbon, with 283 giga tonnes (Gt) of carbon stored in forest vegetation, 38 Gt in dead wood and 317 Gt in soils and litter. The total carbon content of forests has been estimated at 638 Gt for 2005, which is more than the amount of carbon in the entire atmosphere.

Deforestation, mainly conversion of forests for agriculture activities, was estimated at an alarming rate of 13 million hectares per year (in the period 1990-2005). Deforestation results in immediate release of the carbon stored in trees as CO2 emissions. It is estimated that deforestation contributed globally to approximately 20 per cent of annual greenhouse gas emissions in the 1990s.

So far limited incentives for developing countries

The potential role within the UN climate mechanisms of forests in the mitigation of climate change in developing countries is at the moment quite limited. Gaining economic/financial benefits, developing countries can currently only implement afforestation (planting on land that has been without forests for more than 50 years) and reforestation (planting on land recently cleared) project activities under the rules of the Clean Development Mechanism.

A discussion was started at the COP 11 in Montreal (2005) on facilitating additional possibilities for developing countries. The focus has been on identifying the drivers of deforestation, as well as scientific methods for measuring it and estimating CO2 emissions from it.

REDD

In Bali, the term REDD was coined: “Reducing emissions from deforestation in developing countries” (REDD) is now a central issue in climate change abatement, given that deforestation contributes up to 20% of global CO2 emissions. Parties affirmed the urgent need to take further meaningful action to reduce emissions from deforestation and forest degradation. They adopted a work programme for further methodological work. That programme focuses, for example, on assessments of changes in forest cover and associated green house gas emissions, methods to demonstrate reductions of emissions from deforestation and the estimation of the amount of emission reductions from deforestation.

Local perspective: also forests are interesting for the cities

Local communities are often directly affected by legislative changes and incentives on forestry issues. The issues are complex, and the carbon balance of a managed, peri-urban forest with ongoing reforestation, can vary widely depending on whether wood waste is used to produce heat and electricity in a co-generation facility, for example.

The rapid growth of biomass and biofuels as efficient energy sources increase the relative value of surrounding forests for human settlements especially, and input is required from cities to underline these issues in the ongoing discussions.

At a local level, balance is needed between the short-term use value of peri-urban forests and the land it occupies and the long-term carbon sink value of leaving forests in place and not changing land-use patterns in forested areas.

6.2.2 Adaptation in developing countries

While we have broadly addressed adaptation above, one of the key points of the Bali Roadmap is the need to deal with adaptation issues in developing countries, normally having much less financial resources and capacity for putting necessary adaptation measures in place.

Climate change has the potential to push developing countries back into the poverty trap and to undo many achievements that have been made to date with regard to the Millennium Development Goals (MDGs). Climate change impacts on all aspects of sustainable development. Future vulnerability depends not only on climate change but also on development pathways. Sustainable development can reduce vulnerability.
National and sectoral planning

The implementation of adaptation in developing countries needs to be integrated in the context of national and international sustainable development priorities in national and sectoral development plans. Using climate change, including adaptation, as a driver to undertake activities with multiple benefits can catalyse progress in achieving a country’s sustainable development goals. Many countries are starting to take concrete action towards adaptation to climate change. Such action needs to be expanded and integrated into national and sectoral planning to ensure that sustainable development and adaptation are mutually enhanced.

Adaptation fund

At the Bali Conference, the Parties decided that developing country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change are eligible for funding from the Adaptation Fund to assist them in meeting the costs of adaptation.

The Adaptation Fund shall finance concrete adaptation projects and programmes that are country driven and are based on the needs, views and priorities of eligible Parties. A special Adaptation Fund Board representing developing and developed countries would supervise and manage the Adaptation Fund. The Adaptation Fund Board had its inaugural meeting in Bonn last February.

Nairobi Work Programme

Significantly, progress was made at the meeting in Bonn on adaptation, with agreement to activities for the second phase of the Nairobi Work Programme on impacts, vulnerability and adaptation to climate change, up to the end of 2010. The Nairobi Work Programme is a 5 year programme (2005-2010). Its objective is to assist all Parties, in particular developing countries, including the least developed countries and small island developing States, to improve their understanding and assessment of impacts, vulnerability and adaptation to climate change and make informed decisions on practical adaptation actions and measures to respond to climate change on a sound scientific, technical and socio-economic basis, taking into account current and future climate change and variability.

Financial sources for the adaptation fund

The Fund is financed with a 2% share of proceeds from CDM project activities and may also receive funds from other sources. A call was made to developed countries to make voluntary contributions to the Adaptation Fund to facilitate this, and for the next rounds of talks to deliver concrete negotiating texts.

Local perspective: Be prepared in developed and developing countries

In embodying a sense of Climate Justice, cities in developed countries can support, through capacity building, sharing experiences and reaching out to partner cities in the developing world, the ability of those cities to adapt to the inevitable impacts of climate change.

Cities in developing countries should be aware that such funding will become available through their national governments, and should ensure that they are aware of the mechanisms and requirements involved, and that they lobby for a significant role for local communities in the distribution and management of such funds.

6.2.3 Technology transfer to developing countries

While we have addressed technology transfer under technology above, the Bali Roadmap sees the Parties stating that they will consider how to facilitate the transfer of clean technologies from industrialised nations to the developing countries.

A strategic programme

At Bali, Governments agreed to kick-start a strategic programme to scale up the level of investment for the transfer of both the mitigation and adaptation technologies that developing countries need. The aim of that programme is
• To give an extra push to concrete demonstration projects,
• to create more attractive environments for investment, as well as
• to provide incentives to the private sector for technology transfer.

The Global Environment Facility (GEF) - the financial mechanism of the UN Framework Convention on Climate Change - will start setting up this programme together with international financial institutions and representatives of the private financial sector.

**Expert group on Technology Transfer**

Parties also agreed to extend the mandate of the Expert Group on Technology Transfer (EGTT) for a further five years. The Expert Group has been asked to pay particular attention to the assessment of gaps and barriers to the use of, and the access to, financing resources. The Expert Group will now start working on performance indicators that can be used to regularly monitor and evaluate progress on the development, deployment and transfer of environmentally sound technologies.

**Local perspective: Channel technology transfer**

Cities may benefit from these financial resources if they are able to position themselves as useful conduits through which technology transfers - either to sister cities or city networks - might take place. This position should be clearly communicated to national governments and other stakeholders.

**6.2.4 Energy use in transport and buildings**

*Energy use in transport and buildings*

Working Group III of the IPCC in its 2007 report has identified mitigation efforts that can be taken in areas to achieve reductions in greenhouse gas usage, including “Transport and Its Infrastructure” and “Residential and Commercial Buildings”. These sectors are particularly impacted by the land use, taxes, and infrastructure decisions made by city governments.

In relation to the transport sector, Working Group III reported that 23% of world energy-related greenhouse gas emissions comes from this transport sector, and three quarters of these emissions are from road vehicles. The share of world energy use by light duty vehicles (passenger cars and light vans) is 44.5%. Over the past decade, transport’s greenhouse gas emissions have grown at a faster rate than any other energy-consuming sector despite increases in fuel efficiency. In the EU, for example, while greenhouse gas emissions decreased in most other sectors in the period from 1990 to 2004, emissions from road transport increased by 26%.

*Energy use trend increases*

If current trends continue, Working Group III predicts energy use in 2030 will be approximately 80% higher than in 2002, with almost all of this added petroleum consumption. It identified key mitigation measures as being “land-use regulations and infrastructure planning; investment in attractive public transport facilities and non-motorised forms of transport”. The range of mitigation approaches - incentives, public information campaigns, regulation – needs to be applied to achieve low carbon transport objectives. For example, the BedZED development in the UK incorporated a legally binding Green Transport Plan as a condition of planning permission. Bogota’s Transmilenio BRT system, developed under the Clean Development Mechanism, has significantly reduced greenhouse gas emissions from the city’s transport use.

The projected increases in greenhouse gas energy use by the transport sector are in direct conflict with the Bali Action Plan. COP13 recognised that “deep cuts in global emissions will be required to achieve the ultimate objective of the Convention” and emphasised “the urgency to address climate change as indicated in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.” The pivotal role cities have to play in addressing the transport sector’s impact on climate change therefore needs to be reflected in the COP15 agreement.
Urban design key in reducing buildings-related emissions

The goal of reducing the carbon footprints of buildings is also contingent on key decisions made at the local level. Working Group III reported that “Urban design, including the clustering of buildings and mixing of different building types within a given area greatly affect the opportunities for and cost of district heating and cooling systems.”

Local perspective: Cities should engage national governments

It is therefore key that cities should engage national governments and stakeholders to communicate the need that the COP in Copenhagen should consider efforts to foster low carbon urban land use planning as a complement to its land use initiatives related to deforestation.

Local governments and municipal authorities are directly and indirectly involved in the realisation of a significant proportion of mass transport systems and commercial and residential buildings. They have both a key stake and a strategic role to tackling emissions produced in this area, and should be closely integrated in national and regional initiatives to address these issues.

6.2.5 Carbon Mitigation Mechanisms

An important outcome of the process so far is the general agreement that the mechanisms introduced for emissions mitigation in the Kyoto Protocol should be updated, expanded and made available in any post 2012 dispensation.

The mechanisms, CDM, JI and Emissions Trading, hold a great deal of promise for emissions mitigation during the next agreement period. In spite of concerns regarding complexity and cost, CDM stands out. It has over 2100 projects in the pipeline, and has an overall emission reduction potential of about 2.2 billion tonnes by 2012 (of which 1 billion are already in the form of registered projects). It is gaining speed very rapidly. While generally considered a national concern - CDM structures for Parties are maintained on a national basis - it is clear that in developing countries, local governments and the communities they manage stand a good chance of gaining significantly from CDM projects. Elsewhere in this document, the use of the CDM mechanism to realise environmentally friendly and sustainable transport systems for cities was mentioned.

Generally, the potential for cities under this mechanism has not been made use of. CDM offers a unique opportunity to local governments, both for project implementation in the case of cities in developing countries, and matchmaking and capacity building in sister cities and city networks in the case of cities in developed nations.

Carbon trading

A lot of discussion is also ongoing about a global version of the regional carbon trading systems that came into being during the Kyoto period. The mechanism is complex and the issues varied, but there is some agreement amongst local governments that a number of key principles should be adhered to in any new Cap & Trade system (Cap & Trade is a trading system in which the maximum emission of the traded substance is limited, or capped):

- Effective: A cap and trade system would need to be effective to conform with the COP’s recognition of the urgency of addressing climate change. To that end, initial caps would have to be set on absolute emissions, caps that were low enough to achieve by 2020 the 25 to 40 percent reduction over 1990 levels referenced in the Bali Action Plan. Safeguards would need to be in place to ensure reductions were not double counted, and that the purchase of credits from foreign countries did not substitute for domestic action.

- Transparent and fair: Projects that are of insignificant value in terms of climate change mitigation should not be able to trade carbon offsets at the same price as projects that produce real emission cuts. Institutional capacity needs to be in place for strong independent verification and monitoring. California’s initiatives in this regard could be used as a model. According to a UNDP study, under California’s climate change legislation “compliance and monitoring are overseen through strong institutional mechanisms that provide a basis for transparency and accountability.”
• Revenue-generating for climate change mitigation: Some portion of available carbon credits should be auctioned from the outset, and this portion should increase over time until 100% of permit allocation is done through auction. The resulting funds should be dedicated to climate change mitigation and sustainable, carbon-neutral development.

In addition to ensuring that they espouse these key principles to national governments and other stakeholders going into the negotiation process, it is clear that cities require at least a clear understanding of how such a mechanism an impact on their communities and industries, and what benefits may be gained by encouraging the early adoption of low-carbon technologies and methodologies within their own sphere of influence.