

Church of Sweden's Position on Climate Change and Development

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Summary

This position paper lays the foundation for the work of Church of Sweden to promote recognition and understanding of the developmental aspects of climate change, with a particular view toward the negotiations on a new international agreement on climate policy to be held in Copenhagen in December 2009.

Global warming is a question of global justice. Poor people in the less developed countries of the world emit the least amounts of greenhouse gases, but they are most affected by the negative impacts of climate change. In order to halt climate change we need to develop a more mindful, more sustainable lifestyle.

The undertakings set out in the coming international agreement on climate policy must be apportioned on the basis of countries' share of responsibility for the problem and their ability, bearing in mind poor people's right to development. The Greenhouse Development Rights framework shows how this principle may be operationalized in the negotiations on the new climate agreement.

Sweden can fulfill its responsibilities by

- reforming all sectors of Swedish society to substantially reduce domestic emissions
- supporting mitigation in developing countries through technology transfer
- supporting developing countries' reduction of greenhouse gas emissions by the protection of forests
- supporting developing countries' adaptation to climate change.

All facets are equally important; one cannot be substituted for another. Financial transfers from Sweden should be taken from sources other than the development cooperation budget so as not to divert resources from other urgent development objectives. New and innovative sources of financing must be developed.

Church of Sweden is working to foster a deep understanding of the challenges we face, to help poor people who suffer the consequences of climate change, to persuade people to adopt sustainable habits and lifestyles, and to mobilize support for strong and equitable climate policies, in Sweden and among the community of nations.

1. Introduction

1.1 Starting points

Church of Sweden's position on the issue of climate and development is an outgrowth of a long-term involvement in climate-related issues under the auspices of the World Council of Churches. The World Council of Churches has consultative status within the United Nations Organization and participates as an NGO representative in programs and fora under the UN Framework Convention on Climate Change, (UNFCCC). Church of Sweden has taken active part in these activities on several occasions. The position is also based on the Church's Guidelines for international cooperation as well as on responses to government reports that Church of Sweden Central Board has directed to the Government.¹

Among other things, the principles set out in these documents mean that Church of Sweden shall work to ensure consideration of global justice in decisions and policies relating to climate change. Important objectives for the Church are to focus attention on the impacts of climate change on vulnerable people in poor countries and – through direct dialogue with policy-makers, public education and other opinion-forming work – to bring about change. The issue of global warming involves science, technology and political leadership, but also fundamental values. Church of Sweden wishes to prepare and motivate people to take steps toward a sustainable development, while instilling hope and confidence in our ability to change our lifestyle in ways that lead to a more just distribution of resources and a more sustainable world.

¹ Solicited comment on reports relating to the checkpoint for climate policy, Dnr Ks 2004:0684; Solicited comment on the Swedish Environmental Objectives Council report, "We all share responsibility for Sweden's National Environmental Objectives", Dnr Ks 2004:359; and Solicited comment on 'Checkpoint 2008: The evolution of Sweden's climate strategy', Dnr Ks 2007:647.

1.2 Background: Climate and development

Among the consequences of global warming are extreme weather – more drought, more violent storms, more intensive precipitation – and a rise in sea level. These phenomena affect people in developing countries more than others, and they have a crucial impact on the outlook for development and eradicating poverty. Climate change endangers fulfillment of the UN's Millennium Development Goals, but it is also becoming increasingly clear that climate change will affect the prospects of human development for generations to come – far beyond 2015, the target date for the Millennium goals. Climate change will intensify competition for access to water and other natural resources, which in turn increases the risk of conflicts.

Global warming is a question of global justice. The industrial countries, which represent 20 per cent of the world population, are responsible for the greater part of annual emissions of greenhouse gases. Poor people in developing countries emit the least amount of greenhouse gases, but are most vulnerable to the negative impacts of climate change. They are also least equipped to cope with the impacts.

The impact of climate change on human development

The most recent annual report from the United Nations Development Program, UNDP, shows that the effects of climate change have already made themselves known, but that they differ widely from place to place. Over the past few years, some 262 million people have suffered the impact of climate disasters each year; 98 per cent of these people live in developing countries. In developing countries one person in nineteen has been affected; in industrialized countries the corresponding ratio is one in 1500.

The UNDP has identified five sectors in which extreme weather may thwart human development:

- **Agriculture and food.** Climate change will affect precipitation, temperatures and access to water for crops in affected areas. In southern Africa harvests may decrease by as much as 30 per cent in the next 25 years.
- **Water stress and water insecurity.** Changed run-off patterns and glacial melt, and changing patterns of precipitation will alter and impair access to drinking water and water for irrigation.
- **Rising sea levels and exposure to climate disasters**
- **Ecosystems and biodiversity.** Dramatic changes in ecosystems are to be expected, both on land and in marine environments. Assuming a rise in average temperature of three degrees C, an estimated 20-30 per cent of all land-based species of plants and animals may become extinct.
- **Human health.** Diseases like malaria and dengue fever may become more widespread; more frequent heat waves and limited supplies of good drinking water may further impair human health.

Source: Human Development Report 2007/2008

1.3 Background: The need for reforms to combat climate change

Global emissions of greenhouse gases are still increasing. If we are to have a reasonable chance of achieving our goal of a rise in temperature of no more than two degrees C, then emissions need to level off within seven years and then decline, says R K Pachauri, chairman of the UN Intergovernmental Panel on Climate Change (IPCC).² Global emissions need to decline by 50 to 80 per cent by the year 2050. The Swedish Government's Scientific Council on Climate Issues estimates that emissions will have to be reduced by 90 per cent by 2050, and in Church of Sweden's assessment Sweden must achieve an intermediate target of 40 per cent less emissions by 2020 if the process is to proceed at an even pace.

The task is challenging, but not impossible. The transition to a fossil-free society will require sizeable investments in infrastructure for low carbon transportation, energy efficiency, and the development of renewable energy sources. Technological advances and consumers' choice of energy-efficient and environmentally friendly products can achieve a great deal – but not enough.

There is a great risk that the gains made through technological innovation will be eaten up by expanding consumption. Automotive engines may become more energy-efficient, but more people may want to use cars, and may choose to drive longer distances if and when fuel consumption and driving costs decrease. Also, when people's disposable income rises, consumption rises, too. For many years now material consumption has risen fastest. Since material consumption and travel have a many times stronger impact on climate change than immaterial consumption of services, this trend has to be broken. Immaterial consumption – education, culture, health, domestic services, etc. – accounts for only 20 per cent of private consumption today.

We need to change our ways and live our lives more mindfully and sustainably, that is, in concrete terms, consume more services and fewer material goods, eat more seasonal vegetables and less meat, travel more by train and less by air, and stay away longer when we travel long distances. A change of lifestyle is necessary, not only among people in the richest countries, but in equal measure among the growing middle class in countries like India, China and Brazil. Public policy and consumers' choices are key factors for change. Ordinances and

² When, for example, he accepted the Nobel Peace Prize on behalf of the IPCC in Oslo, 10 December 2007, he said that emissions need to peak during the interval 2000-2015. R K Pachauri, Acceptance Speech for the Nobel Peace Prize, awarded to the Intergovernmental Panel on Climate Change.

taxes must make it easier and more economical for companies and individuals to do the right thing, and make it more costly and less easy to do wrong.

1.4 Purpose and scope

This paper lays the foundation for Church of Sweden's advocacy work on development aspects of climate change, particularly in relation to Swedish and European (EU) standpoints and strategies in the UN negotiations leading up to a new global climate agreement in Copenhagen in December 2009. It also establishes a framework for our advocacy work on climate change and development in other policy contexts, such as Swedish development cooperation and the Commission for Climate Change and Development, recently appointed by the Swedish Government. Our advocacy work will for the most part be coordinated with that of the World Council of Churches, European Church and Society Commission (CEC-KEK), the European Christian Environmental Network (ECEN), Aprodev and the Nordic Aprodev-members.

The position paper focuses on several current topics of discussion relating to climate and development:

1. A number of issues are directly linked to the ongoing negotiations on a new climate agreement within the United Nations: What further undertakings should the industrialized countries pledge to fulfill? What undertakings to stabilize or reduce emissions should the developing countries agree to? How should assistance to poor countries' efforts to adapt to climate change be financed? What incentives can be implemented to encourage preservation of forests, sustainable land use, and the transfer of sustainable technologies to developing countries?
2. More general issues relate to the design and implementation of measures to adapt to climate change and the ways in which climate issues should be integrated into development cooperation and strategies to reduce poverty.
3. Finally, the paper discusses the roles and aims of the Church of Sweden. The Church of Sweden will make its contribution through cooperation and partnerships, through working for political change and changes in lifestyle in our part of the world, and through taking part in discussions of the existential dimensions of climate change.

Issues specifically relating to increasing demand for bio fuels and its implications for the environment, combating poverty and human rights will be discussed in a separate position paper. A paper presenting the views of the Church of Sweden on Swedish climate policy was

published in October 2007.³ The views of Church of Sweden on climate reforms in Sweden will be elaborated on further during 2008.

Climate negotiations under the auspices of the UN

The Kyoto Protocol under the United Nations Framework Convention on Climate Change was agreed in 1997 and came into force in 2005. The term of the Kyoto Protocol will lapse in 2012, and if there is not to be a gap, agreement on its successor must be reached in 2009. Participants in the negotiations held in Bali in December 2007 agreed to start a new round of negotiations with a view to producing a treaty that would cover the period 2012-2020. The Bali Action Plan specifies that recommendations from the Intergovernmental Panel on Climate Change, IPCC, shall be the starting point for the overall reduction in global emissions, which imply a 25-40 per cent reduction in emissions from industrialized countries by 2020. The decision reached in Bali also calls for developing countries to undertake mitigation actions in the context of sustainable development. The negotiations on a new agreement are to be finalized in Copenhagen in December 2009. In addition to apportioning national responsibility for reducing emissions, the conference will address the issues of financial assistance to help developing countries adapt to climate change, technology transfer, and so forth.

The Swedish Government appointed a Commission on Climate Change and Development in late 2007. Its task is dual: to propose ways to climate-proof development by, for example, incorporating risk-reduction and adaptation to climate change in poor countries' planning; and to suggest how to design development cooperation programs that take account of the effects of climate change and the risk of natural disasters. The Commission is composed of a broad range of international experts with backgrounds in research and international and civil society organizations. It is chaired by Sweden's Minister for International Development Cooperation, Gunilla Carlsson. The Commission is expected to submit its final report in early 2009.

2. Development issues in the global cooperation on climate change

2.1 Sharing responsibility fairly

The UN Climate Convention states that climate change is the common responsibility of the global community of nations, but that the countries' shares in the responsibility must be differentiated according to their "respective capabilities and their social and economic conditions". This principle is reflected in the Kyoto Protocol in that only industrialized countries have agreed to binding commitments regarding greenhouse gas reductions. Within

³ Reduce emissions in Sweden with 40 per cent by 2020 – and finance the same amount of reductions in developing countries. Position paper by Church of Sweden, 2007-10-08.

the group of industrialized countries, reduction targets were apportioned after negotiations, without reference to objective criteria.

As the deadline for a new climate agreement approaches, it is clear that the targets for reductions in greenhouse gas emissions must be much more ambitious, and more countries must agree to take measures, if the goal of reducing emissions by more than half by 2050 is to be reached. A crucial question is whether developing countries – particularly the largest and most developed of these countries – are prepared to commit themselves to mitigation actions. The USA argues that China and India emit so much greenhouse gases that they must be brought to agree to binding reduction targets. Both countries protest, claiming that their per capita emissions are still very small and that they therefore should be allowed to continue to increase them. Furthermore, they argue, the industrialized countries must take responsible for their historical emissions, the cause of the present crisis — and which, for that matter, will face us all for decades to come.

More than half of all current emissions of greenhouse gases originate in developing countries, which amount to nearly three-quarters of the increase in total emissions. If global emissions are to start declining within the next seven years, which the IPCC deems necessary, even radical decreases in industrialized countries will not be enough. Developing countries, too, must quickly stabilize their emissions and start reducing them shortly thereafter. This effort can be compatible with continued development and poverty eradication in these countries, but only given massive investments in energy efficiency, the preservation of forests, and the development of renewable energy sources. The costs of these investments must be borne equitably.

Christian Aid, together with an international team of researchers (including some from the Stockholm Environment Institute), has developed a framework for operationalizing the UNFCCC principle of a common, but differentiated responsibility. The framework is called Greenhouse Development Rights.⁴ A *responsibility index* is calculated on the basis of each country's total emissions between 1990 and 2005.⁵ A *capability index* is calculated on the basis of each country's per capita income. The calculations take account of both average per capita income and the skew of income distribution (inequalities). People having annual

⁴ Baer, Athanasiou and Kartha (2007) *The Right to Development in a Climate Constrained World: The Greenhouse Development Rights Framework*. Heinrich Böll Stiftung and Christian Aid. Updated figures from Kartha, Kjellén, Baer, and Athanasiou (2008). *Linking measurable, reportable and verifiable mitigation actions by developing countries to measurable, reportable and verifiable financial and technical support by developed countries*. Background Paper # 1 for the ECP seminar on Positive Incentives.

⁵ 1990 is used as the base year for all calculations within the scope of the UNFCCC. Another base year might well have been chosen. The reason for choosing 1990 is that it permits inclusion of historical emissions that have occurred since work on the Convention got under way.

incomes of 7 500 USD or less are excluded from the calculation.⁶ The rationale for this is that people with such low incomes – that is, a majority of the people on the planet – have a right to develop and should not have to contribute economically to the global reform effort.⁷ It is proposed that people with incomes greater than 7 500 USD should contribute, irrespective of whether they live in an industrialized or a developing country.

The two indices are combined to compose a *Responsibility and Capability Index* (RCI), which gives an indication of the fair share of liability each country may be expected to assume. As Table 1 indicates, the wealthy countries of the world should contribute about 75 per cent of the costs; medium-income countries like China and Brazil, roughly 25 per cent; and low-income countries less than one per cent. For Sweden’s part, RCI implies that we should pay for twice the volume of greenhouse emissions we produce: RCI for Sweden is about 0.5, whereas Sweden’s share of emissions is about 0.24. This result corresponds well with the position of Church of Sweden, that Sweden should reduce its emissions by 40 per cent by 2020 and contribute to a corresponding reduction, measured in tonnes, in developing countries.

Table 1. Shares of world population, greenhouse emissions, income and responsibility for climate reform, according to “Greenhouse Development Rights”

Country/Region	Share of emissions 1990-2010	Share of world pop 2005 (%)	Share of total global income 2005 (%)	Share of responsibility and capability, RCI (%)
Sweden ⁸	0.24	0.14	0.48	0.5
EU (27)	15.9	7.7	21.5	24.8.
USA	23.3	4.6	20.7	31.8
<i>All high income countries</i>	50.9	15.1	55.2	74.3
China	15.7	19.7	12.5	6.6
India	4.2	17.2	5.2	0.8
<i>All middle-income countries</i>	42.2	46.7	36.4	24.8
<i>All low-income countries</i>	6.9	38.2	8.5	0.9
<i>All countries</i>	100	100	100	100

⁶ The country’s per capita income is adjusted for purchasing power parity and income distribution (a Gini Coefficient, so-called).

⁷ The authors reason: The global poverty line runs at about 14 dollars a day, i.e., 5 000 dollars a year. The limit for the ‘right to development’ should run about 50 per cent above the poverty line, i.e., at 7 500 dollars. The figures are adjusted for purchasing power. In developing countries 7 500 USD therefore represents a lower sum than the value calculated on the basis of market rates of exchange.

⁸ Estimation based on 2007 GDR data.

Views of Church of Sweden

- Countries with high per capita emissions must be required to do the most to reduce their emissions. Even countries with low per capita emissions need to stabilize the volume of gases they emit and gradually reduce it. The overall goal should be for per capita emissions to be the same, regardless of nationality or geographical location; at the same time, total emissions must diminish radically (by 80 per cent by the year 2050). Per capita emissions in 2050 should not exceed one tonne per annum.
- Developing countries' costs for climate reform cannot be borne by the countries alone. Greenhouse Development Rights is a good example of how the ethical principle of common but differentiated responsibility may be operationalized to achieve a fair sharing of burdens in the negotiations leading to a new climate agreement.
- It is Sweden's fundamental responsibility to reduce domestic emissions markedly, by 40 per cent by 2020. Achieving this goal will also demonstrate that it is possible to combine climate reform and economic prosperity. Sweden should also help finance the greenhouse gas reductions that are necessary in developing countries. The volume of these reductions should be about the same as Sweden's annual emission reductions, i.e., approximately 20 million tonnes – which is in line with the share of responsibility calculated according to the Greenhouse Development Rights index, RCI.

2.2 Financing developing countries' climate adaptation

The climate change we are experiencing today has its roots in decades of greenhouse gas emissions, and measures taken today will not have any effect until several decades have passed. Consequently, climate change will require comprehensive adaptation of all societies the world over, even if we succeed in cutting our emissions dramatically and limiting global warming to +2 degrees C. Exactly what measures will be required, and to what extent, is not yet clear. It may be a question of strengthening infrastructure, changing crops and farming practices, and mass evacuations. Not least important, measures to reduce people's economic and social vulnerability are needed.

The UNDP estimates the total cost of developing countries' adaptation to be about 86 billion USD per year, starting in 2015. Oxfam sets the figure at 50 billion dollars per year, provided that the +2-degree limit can be held. The estimates may be compared with the total sum of development assistance in the world today, some 100 billion dollars.

Several funds to support developing countries' efforts to adapt to climate change have been set up within the framework of the UNFCCC.⁹ The Adaptation Fund, established in the negotiations in Bali in 2007, is expected to be the largest and most stable of these. In contrast to funds administered by the World Bank, developing countries exert some democratic control over the Adaptation Fund.

The funds are financed through voluntary contributions and a charge of two per cent of the volume of CDM (Clean Development Mechanism) projects (cf. 'Flexible mechanisms', below). It is quite clear that the financing is far too weak. Contributors had pledged less than 300 million dollars in 2007. Sweden has contributed 4.2 million, only a fraction of what the major contributors, Denmark, Germany, The Netherlands and Great Britain, have contributed.¹⁰ CDM-tariffs are expected to bring in 80-300 million USD annually through 2012; thereafter, between 100 million and 5 billion dollars may be generated each year, depending on how the market for CDM develops.

The mandate that came out of the negotiations in Bali at the end of 2007 calls for "new and additional" resources to support developing countries' adaptation to climate change. They should be "adequate, predictable and sustainable". "Innovative means of funding" to assist particularly vulnerable countries shall also be considered. Taxes on air transport and fees on trade in emissions rights are among the new sources that have been suggested.

The European Commission has proposed to earmark a small share of the income from future auctions of emissions rights within the European Union Emission Trading Scheme (ETS) for climate adaptation measures.¹¹ Germany plans to reserve a share of the country's emission rights for auction. About 30 per cent of the proceeds from these auctions are to be used for international measures, including climate adaptation. This is a first, important step in the right direction.¹²

⁹ Special Climate Change Fund (also used for technology transfer and other climate-related funds), Least Developed Countries Fund, and Adaptation Fund.

¹⁰ Financing Adaptation: Why the UN's Bali Climate Conference must mandate the search for new funds. Oxfam, Briefing Note, 4 December 2007.

¹¹ The Commission's energy and climate 'package', "Energy for a changing world", was presented in January 2008.

¹² Harmeling & Bals: Adaptation to Climate Change – Where do we go from Bali? German Watch, March 2008.

Views of Church of Sweden

- There is already an acute need for measures to cope with the effects impacts of climate change, especially in many developing countries. The issue of adaptation needs to be given higher priority, on a par with mitigation.
- In many cases, adaptation requires the same kinds of measures as non-climate related development assistance entails. But the needs arising from climate change are the direct consequences of historical emissions, most of which originated in industrialized countries. Therefore, new financing is required in addition to present development assistance commitments. Development assistance resources must not be diverted from other urgent development objectives.
- In its most recent strategic analysis of threats to peace, the Swedish Defence Commission identifies environmental challenges and climate change as “the most serious threats to people’s security and basal living conditions”. This, if anything, demonstrates that climate adaptation measures extend far beyond the scope of the development cooperation budget.¹³ Inasmuch as conflict prevention has become an increasingly important component in Sweden’s national security policy, we should consider the possibility of devoting some portion of the defence budget to prevent climate-related threats to our security.
- There is an urgent need to develop new, innovative and secure sources of finance to support developing countries’ adaptation to climate change. These sources must be found outside the national budgets of industrialized countries so as not to compete with, and possibly diminish, development assistance commitments. The proposal of the European Commission to use a small share of the revenue from the auction of ETS emissions rights for climate adaptation is a welcome, important step. Sweden should work to see that the proposal becomes reality and that the largest possible share of the revenue is earmarked for climate adaptation measures in developing countries.
- The Adaptation Fund created in Bali must be given a chance to work as the principal channel of resources to finance developing countries’ measures to cope with the effects of climate change. It is vital that the Fund not be undermined by initiatives from other quarters, such as the World Bank, where developing countries have less influence.

¹³ Säkerhet i samverkan: Försvarsberedningens omvärldsanalys [Safety in cooperation: A strategic analysis from the Defence Commission]. Ds 2007:46, page 16.

2.3 Flexible mechanisms

CDM projects (Clean Development Mechanism) are one of the so-called flexible mechanisms included in the Kyoto Protocol that OECD countries may use as a means to fulfill their emissions reduction goals. By financing emissions-reducing measures in developing countries, industrialized countries that have pledged to reduce their emissions can obtain ‘emissions credits’, which they may count toward their own reduction targets. The idea is that global emissions of greenhouse gases will be reduced in cost-effective ways, while encouraging technology transfer, investments in energy efficiency, and energy production from renewable sources.

Even at the outset, several potential problems with CDM were pointed out. Climate reform in high-income countries might be delayed if the countries can use inexpensive investments in CDM abroad to fulfill their national commitments. There is also a risk that CDM projects will focus too narrowly on emission reductions and lose sight of other priorities and needs of the recipient countries. That CDM projects help to identify cost-effective measures is one thing, but there is the risk that investors will ‘pluck the raisins out of the cake’, leaving more difficult and expensive reform projects to the developing countries themselves.

In practice, CDMs have become a market where countries purchase investment credits as cheaply as possible. A good share of the projects focus on reducing industrial emissions of freons and laughing-gas, N₂O (mainly in China). Extremely few projects are carried out in the poorest countries. Although many of the projects do good, they seldom involve any effective technology transfer or investments in renewable energy sources. Nor are they instrumental in building up the economies of the poorest countries in an environmentally sustainable manner. Thus, it is increasingly clear that CDM cannot be the principal strategy for technology transfer.

Views of Church of Sweden

- Church of Sweden has long contended that CDM investments shall not be counted toward Sweden’s national climate objectives – nor has that been done to date. But CDMs may be useful as one of several means to fulfill a separate target of contributing to greenhouse gas reductions abroad.¹⁴

¹⁴ Reduce emissions in Sweden with 40 per cent by 2020 – and finance the same amount of reductions in developing countries. Position paper by Church of Sweden, 2007-10-08.

- The CDM projects that Sweden invests in should be of the best quality, so-called ‘Gold Standard’, and fulfill the criteria of sustainable development. The emphasis should rest on renewable energy sources and energy efficiency; the projects should, furthermore, yield local environmental benefits and serve as channels for technology transfer.

2.4 Technology transfer

If global greenhouse gas reduction goals are to be reached together with continued economic growth in developing countries, it will be necessary for developing countries to leap-frog over dirty technologies as much as possible and to build their growth on modern, energy-efficient technology and renewable energy sources. Even if countries like China and Brazil are already well-established as developers of renewable energy technology, there is still a great need for technology transfer from industrialized countries. Technology transfer tends to be considered in the context of reducing developing countries’ emissions, but it is also an important factor in developing their ability to cope with the impacts of climate change.

Discussions within the UN community tend to focus on how industrialized countries can finance technology transfer with the help of various funds. In practice, however, the lion’s share of technology transfer takes place on commercial terms; development assistance generates no more than one per cent of global capital flows in the world today.

Views of Church of Sweden

- CDMs can never be a principal strategy for technology transfer inasmuch as their main purpose is to find cheap, cost-effective ways to reduce emissions, not to transfer technology efficiently. Sweden’s contribution to technology transfer should be made through multilateral channels like the UN’s Global Environment Facility, GEF, or the special climate funds discussed within the United Nations community and other contexts. Even technology procurement whereby technological development is stimulated by the specifications of prospective clients or customers may prove a viable strategy.
- The price of new technology and innovative climate-smart products tends to fall as volume increases. Sweden and the European Union can help reduce the cost of new technology by maintaining a high rate of climate reform and a strong domestic demand for climate-smart technologies and products.
- Since only a small portion of all technology transfer can be financed by governments, an important task for policy-makers must be to facilitate private technology transfer, and to ensure that the technology transferred is of high quality. What is needed is purposive

purposeful, policies in the areas of trade, intellectual property rights, national technical standards, measures to encourage corporate social responsibility, etc.

- It is important that technology transfer is designed to serve local needs and capabilities among recipient countries and consumers. Otherwise, technology transfer runs the risk of being supply-driven, that is, that our primary objective might be to export technologies and products of our own making.

2.5 Forests and ‘carbon sinks’

All carbon that is absorbed in plants and organic material in the soil constitutes so-called ‘carbon sinks’. When plant material molds or is burned, the carbon is released to the atmosphere; it is part of its natural cycle. When the soil loses its mull and plant life is chronically reduced, the amount of carbon dioxide in the atmosphere increases. Deforestation of (chiefly tropical) forests accounts for about 20 per cent of current global emissions of green house gases. Thus, it is impossible to solve the problem of global warming without stopping large-scale clear cutting of forests. Furthermore, land-use must be much more sustainable in general, so that the mull content in the soil increases. This has implications for both agricultural practices and animal husbandry.

It is much cheaper to reduce CO₂-emissions by preserving carbon sinks than by developing renewable energy sources or energy-efficient technology. Since all these measures are needed, the cost difference offers both benefits and risks.

The prime benefit is that the climate issue has underlined the economic value of forest conservation and sustainable land use. The risk is that if climate policy focuses too much on the cheapest measures, the turn away from fossil fuels in developing countries may be delayed. If cost-effectiveness is the guiding principle, climate measures in developing countries may focus exclusively on forests, on carbon sinks, at the expense of necessary investments in sustainable technologies.

Views of Church of Sweden

- As under the Kyoto Protocol carbon sinks ought not to be possible to include in national inventories of greenhouse gas emissions under the new agreement. The reason is that estimates of the effects of carbon sinks are so uncertain. Another reason not to include carbon sinks in the balance is that measures in the forestry sector must not be allowed to delay climate reforms in the industrialized countries, nor should they be permitted to divert resources from the transfer of sustainable technology to developing countries. However, if estimates of the contribution of forests become more reliable in the future, it should be possible to allow

developing countries to include their carbon sinks in their national inventories of greenhouse gas emissions.

- At the same time it is urgently important to develop strong incentives to preserve forests and increase the mull content of agricultural lands — not least in developing countries. One strategy might be to include specific targets to this effect in coming climate agreements, and to provide for economic compensation from industrialized countries. Industrialized countries should not, however, be allowed to count the resulting emissions reductions toward their own emission targets. Sweden should earmark resources outside the development cooperation budget for forest conservation within the framework of the Climate Convention.
- The proposal of the European Commission that a portion of the revenue from future auctions of emissions rights within the EU be used for forest conservation is a first and important step in the right direction.¹⁵ Sweden should support the proposal and work to ensure that as great a share as possible is used for forest conservation in developing countries.
- The local communities and indigenous peoples must receive a share of the economic compensation for forest conservation, and forests must be protected in ways that do not exclude local people. Only forest conservation practices that are implemented in collaboration with the local population are socially acceptable and sustainable in the long term.

2.6 Climate adaptation and implications of climate change for development cooperation

It is important to ensure that all development assistance will continue to be of use as the climate changes. Toward this end it is important to incorporate climate issues and risk analyses in all development assistance planning. It is equally important to make certain that development assistance does not contribute to climate change. While it cannot be the task of development assistance to finance mitigation in developing countries, to the extent that development assistance is extended to support energy production, the projects must be climate-conscious. Projects involving large scale hydroelectric power and fossil fuels may, for example, contribute to climate change and also give rise to social conflict. The need to vet assistance in the light of climate change may be seen to reinforce the urgency of an already acute need for sustainable practices in all development efforts. It may be expected to lead to re-evaluations of many basic strategies in the areas of irrigation, agricultural practices and energy systems.

¹⁵ See note 9 above.

The issue of how *adaptation to climate change* should be achieved is broader than that of incorporating climate-consciousness into development cooperation in the sense that it involves social processes and demands resources far beyond the scope of development cooperation. Climate adaptation needs to strengthen the ability of both ecosystems and people to cope with climatic variations. It is important that these measures also help to eradicate poverty, an effect that cannot be taken for granted. Preparedness for climate change in the form of better infrastructure, conversion to drought-tolerant crops, etc., will not be enough. Adaptation of infrastructure etc., is of the essence, but it is equally important to reduce *people's vulnerability*, which may have economic, ecological, social and – ultimately – political roots. Furthermore, it is important to *strengthen people's ability to cope* with a changing climate, which requires in-depth knowledge about local livelihoods and the strategies that people have developed to deal with current variability. It also requires that barriers to their adaptation are identified and removed.

Another important facet of any successful climate adaptation strategy is to manage and *strengthen the local ecosystems* that people, to greater or lesser degrees, depend on for their livelihoods. Ecosystem services must be maintained, and poor people's access to them improved. Climate change makes it even more important to preserve biodiversity; the resilience that biodiversity provides will be needed in the face of the stress and challenges that climate change implies.

One vital aspect of adaptation is the need to promote sustainable water use. Climate change may seriously impact on an already precarious situation with respect to access to fresh water in many regions around the world. Shortages of blue water, i.e. water in its liquid form, has called attention to the potential use of so-called 'green water'. Green water is that portion of precipitation that infiltrates into the soil, where it moistens the soil and then evaporates, returning to the atmosphere. Green water is the basis for all rainwater-fed biomass production on the planet: crops, forests, pasturage, etc. Green water reserves can be secured through land management measures and enhanced through small-scale technology for collecting rainwater, so-called *water harvesting*.

The potential for economic use of ecosystem services in both new and traditional ways needs to be taken advantage of. Experience shows that local management of natural resources can result in sustainable use of ecosystems in poor societies. Technologies that are adapted to local needs and conditions are needed to enable people to exploit the economic potential of the ecosystem sustainably. *Agroforestry* and agro-ecological techniques are examples of knowledge and technology that can strengthen local ecosystems. There are also major unexploited potentialities in decentralized energy production.

An **ecosystem** is a community of interacting organisms and the physical environment in which they live: forests, grassy plains, marshes, islands, coral reefs, etc. Cultivated land and pasturage are ecosystems, too — agro-ecosystems.

Ecosystem services are products and services that people derive from ecosystems. Some of these services have long been assigned economic value: e.g., crops, lumber, fibers. Others – like pollination, the water-retaining properties of soil, the climate-regulating function of oceans, air purification performed by vegetation – have become appreciated (and begun to assume economic value) only recently.

The Millennium Ecosystem Assessment is a global scientific assessment of the planet's various ecosystems. Carried out by 1360 experts from 95 countries under the auspices of the United Nations, the results of the study were presented in 2005. Some important findings are that some ecosystem services – crops, livestock, wood – have increased and led to greater prosperity, but at the expense of other ecosystem services such as clean air, potable drinking water, and the decay of waste. Most important, the vitality of ecosystems has declined, which impairs their capacity to continue to deliver vital ecosystem services in the long term.

Views of Church of Sweden

- Climate concerns need to be integrated into the development and poverty-reduction strategies of poor countries. The international Commission on Climate Change and Development, appointed by the Swedish Government in late 2007, is a valuable initiative in this context.
- Climate adaptation measures must focus on reducing people's vulnerability, strengthening people's ability to adapt to climatic variations, and strengthening local ecosystems.
- People at risk and people who have suffered consequences of climate change must be included in the planning and execution of climate adaptation projects. It is unfortunate that the mandate from the Bali conference mentions only vulnerable *countries*, not vulnerable *people*. Climate adaptation has to be guided by a rights-based approach, where the individual's right to food, health and water is kept in focus.
- Energy investments financed through ODA (official development assistance) must contribute to the development of sustainable energy systems. The fact that the World Bank's Clean Energy for Development Investment Framework in practice undermines, rather than

accelerates, conversion to, and development of, sustainable energy systems in developing countries is alarming.¹⁶

3. The roles and responsibilities of Church of Sweden

3.1 Climate aspects in Church of Sweden's cooperation with international partners

According to the strategic plan that guides Church of Sweden's international work, climate change and issues related to sustainable development will increasingly imbue our cooperation with partners in the south. Sustainability is one of three guiding perspectives in our work. The sustainability perspective means that we take the long view and emphasize the durability of the initiatives we take part in. The activities and projects shall contribute to a positive development for both people and the environment, and all the measures we support shall be guided by criteria of sustainability. Sustainable development is also one of four focal areas in our work. It includes measures to prevent or mitigate catastrophes, risk management and rehabilitation, and natural resource management and rural development.

Several facets of our work in developing countries today are climate-related. A growing share of the humanitarian relief that Church of Sweden helps to provide is directed to victims of climate-related calamities. Rural development projects include components relating to farming and forestry practices that respect ecological cycles and enhance the resilience of flora and fauna in the face of climate change. Improvements in local ecosystems may also serve as carbon sinks, since trees and humus bind and sequester atmospheric carbon dioxide. Church of Sweden also supports projects that provide energy-efficient cooking facilities and develop renewable energy sources. More projects like these can and should be developed.

The climate-related work of Church of Sweden needs to be strengthened and made more visible, in dialogue with our partners. It is a challenging task to develop assistance to climate adaptation on the basis of a rights-based approach, taking into account the experiences, capabilities and resources of vulnerable people.

3.2 Changing lifestyle

¹⁶ Swedish analysts Lundin and Hagberg conclude: "The energy investment portfolio is far away from a meaningful and credible shift to a clean and sustainable energy mix for developing countries." Lundin and Hagberg: Assessment of the World Bank's Clean Energy for Development Investment Framework. IVL Swedish Environmental Research Institute, April 2008.

Church of Sweden wishes to call attention to development issues in the context of public discussion and policy-making regarding climate change. The Church also hopes to contribute to Sweden's climate reform by urging political and structural changes and by inspiring people to adopt climate-conscious habits and practices in their daily lives. Individuals can do their part, but it is when many act together that major changes can be achieved. Church of Sweden wants to serve as a such a community and to offer venues for discussion, reflection and action.

Despite the fact that we have enough information and understanding to be certain of an urgent need for corrective action, reform processes are exceedingly sluggish, and information is not spread as widely as it must. The keys to translating knowledge into action in a serious way lie more in the area of our fundamental social values, our behavior and attitudes and, not least, our social roles. At a deeper level it is a matter of our self-understanding and such core existential questions as the meaning of life and sense of powerlessness. The work of Church of Sweden that relates to lifestyles is founded on a conviction that the Church and faith can be a positive resource in this regard.

It is extremely important that we examine how our habits, our lifestyle – as individuals, as a faith, as part of a worldwide fellowship – influence the future of the planet. Meanwhile, more and more people in Sweden seem to be coming to the realization that the predominant lifestyle here in the West is not sustainable, not even on a personal or community level.

Through the 'Climate Justice' initiative, the Church of Sweden seeks to help bring about necessary changes in lifestyle in our part of the world in a way that underlines our essential bonds with, and responsibility toward, people who are most vulnerable to the consequences of climate change. 'Climate Justice' means that individuals and congregations in Sweden strive to reduce their own emissions of greenhouse gases, while helping those most at risk through contributions paid in proportion to those emissions.

It is also essential for Church of Sweden to reduce its own emissions and to use its financial capital to promote sustainability in the business community.

3.3 The existential dimensions to the climate crisis

In its work Church of Sweden seeks to point out the links between these issues of global survival and aspects of our daily lives. We also seek to provide a conducive venue for discussions of existential reflection on themes like meaning, power/powerlessness, hope, doubt, quality of life, fellowship/solidarity, etc.

Climate change is the great issue of our time, and its consequences will extend well beyond the coming generation. It has some bearing on everyone on the planet today, and the choices we make in our daily lives will be decisive for human life and the environment for many years to come. The many images of disaster that we take in almost daily can engender paralyzing fear and despair rather than inspire the will to change.

The contribution Church of Sweden can make in this context is not to deny the seriousness of the situation and the urgency of the need to respond to it, but to inspire confidence in the feasibility of change, that is, inspire the hope of a better world. The possibility of change is a fundamental theme in Christian faith. The tremendous challenges of a changing climate bring our basic values concerning the definition of a good life into the spotlight. Church of Sweden seeks to respond by raising these issues in congregations and in society at large, taking our starting point in the hope of a more just world and an eye to the needs of those of our fellow human beings who are most at risk.

4. In conclusion

Global warming is the most momentous issue of our times. We know that people in developing countries will suffer the consequences most, yet the climate issue is a singular reminder of our common bonds and our mutual interdependence. The national security implications of climate change are a current topic among policy-makers at the highest levels.¹⁷

At the same time, climate change may also promote deeper, more conscientious cooperation among nations. A precondition for this to occur is that the climate policies of wealthy countries are motivated by solidarity rather than by fear, crass self-interest or a desire to prevent future migrations of climate refugees.

Sweden can fulfill its responsibility to mitigate the climate crisis by

- reforming all sectors of Swedish society to substantially reduce domestic emissions (by 40 per cent by 2020),
- supporting mitigation in developing countries through technology transfer,
- supporting developing countries' reduction of greenhouse gas emissions by the protection of forests,
- supporting developing countries' adaptation to climate change.

¹⁷ In advance of the EU summit 13-14 March 2008, President of the European Commission Jose Manuel Barroso and EU's High Representative for the Common Foreign and Security Policy Javier Solana presented a report entitled, "Climate Change and International Security".

All facets of the responsibility are equally important; one cannot be substituted for another. A high level of ambition in one endeavor does not relieve us of the responsibility to take vigorous action in the others, as well.

None of this work should be financed out of the development cooperation budget; resources must not be diverted from other urgent development objectives. The problem of global warming creates new needs, and the financial resources currently available for development cooperation are not even enough to help developing countries attain their Millennium Development Goals. In addition, it is becoming increasingly apparent that tax revenues will not suffice to meet these challenges. New and innovative sources of financing need to be developed.

The climate crisis underlines the need for coherent policies in Sweden and the European Union. Climate policy, development assistance policy, trade policy, defence policy and so forth must all combine to support developing countries in a more explicit manner.

Church of Sweden is working to foster a deep understanding of the challenges we face, to help poor people who suffer the consequences of climate change, to persuade people to adopt sustainable habits and lifestyles, and to mobilize support for forceful strong and equitable climate policies, in Sweden and on the part of the community of nations.