

A Global Contract Based on Climate Justice – The Need for a New Approach Concerning International Relations

A Conference held in the European Parliament in Brussels on 11 November 2008

Conference summary

This summary has been prepared by the Ecosocial Forum Europe in consultation with the conference speakers on the basis of the speeches, presentations and discussions, which took place at the conference.

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Imprint

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Foreword

Working together for climate protection and global justice

Current scientific findings warn that climate change is advancing much faster than was predicted only a couple of years ago. Furthermore, the effects of climate change will be more dramatic and connected with much higher human and material damage. At the same time, the gap between rich and poor is getting wider – not only with regard to material prosperity but also relating to access to vital natural resources. These worst-case scenarios are threatening to become normality for us.

The financial and economic crisis showed us quite plainly that the concept of unregulated „free markets“ does not work. Clear and binding regulations for the globalised economy are necessary in order to avoid crises and market failures as far as possible. We need a change in the system towards economic activity, which holds environmental, social and economic sustainability at its heart. With its ecological, social and economic objectives in article 3 (3) the European Union’s Treaty of Lisbon comes close to this demand.

In the context of the post-2012 climate agreement, the principle of climate justice plays a crucial role. If the countries of the world do not succeed in reaching a global agreement, which brings together the whole – inclusive of the historic – responsibility of the industrial nations on the one hand, and the growing responsibility of the transition and developing countries as well as their right to development on the other, we will not accomplish the system change in relation to climate.

The topic of climate justice therefore took the centre stage at the high-level conference „**A Global Contract Based on Climate Justice – The Need for a New Approach Concerning International Relations**“ in the European Parliament in Brussels on 11 November 2008. It was organised by the Ecosocial Forum Europe in cooperation with the Potsdam Institute for Climate Impact Research, and hosted by the Members of the European Parliament Jens Holm, Othmar Karas, Jo Leinen, Caroline Lucas, Vittorio Prodi and Anders Wijkman. The aim of this international meeting between scientists, experts, Non-Governmental Organisations, other stakeholders and politicians was to raise awareness of the notion of climate justice and to conduct a broad and open discussion on the basic principles and core elements of a global contract based on climate justice. The main results of this inspiring and fruitful discussion fed into a Concluding Memorandum, which was elaborated as a common message of the organisers, hosts, many of the speakers and participants in view of the ongoing international negotiations on a global post-2012 climate agreement.

I would like to take this opportunity to sincerely thank all of those who participated in and contributed to the discussion. I was also very delighted with your collaboration and support of the Concluding Memorandum. Many thanks also to the Potsdam Institute for Climate Impact Research for your excellent cooperation, particularly in preparing the policy paper "A Global Contract on Climate Change" on behalf of the Ecosocial Forum Europe, to the hosting Members of the European Parliament and other cooperation partners for your

support, to the staff of the Ecosocial Forum Europe for your valuable work and to the sponsors for your financial assistance.

A special thank-you also goes to all of the conference speakers. Thanks to your excellent speeches and presentations you have widened our understanding of climate change and justice and encouraged us to reflect and act. With the document at hand, I am very delighted to provide you with a summary of the conference and I cordially invite you to relive the successful conference in this way. May it serve as stimulation for your further work in the interest of global sustainability.

Faithfully yours,

A handwritten signature in blue ink, reading "F. Fischler". The signature is written in a cursive style with a horizontal line above the first letter "F".

Franz Fischler, Chairman of the Ecosocial Forum Europe

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INTRODUCTION

Franz Fischler, Chair

Chairman of the Ecosocial Forum Europe

Welcome address

- Welcome and many thanks to the speakers and the supporters, the Members of the European Parliament (MEP) hosting the event, the different departments and services of the European Parliament (EP) that have assisted us with the organisation, as well as the sponsors and other cooperation partners.
- I am very glad that so many of you have come because our topic today is no more and no less than one of the most urgent and complex challenges of our society.
- Our current efforts to combat climate change are totally inadequate. We are no longer teetering on the brink, we are starting to jump. If we are not ready to change our policies and lifestyles radically, we will end up with a world we do not want to live in.
- Talking about climate justice means talking about a drastic global imbalance: Industrialised countries have experienced unprecedented economic growth for the past 200 years. This has gone hand in hand with growing emissions. With climate change becoming more dangerous, we need to reduce greenhouse gas (GHG) emissions drastically to reach the target of the European Union (EU). This target limits global warming to a maximum of 2 degrees Celsius compared to pre-industrial levels. Unfairly, the poorest countries have to bear the heaviest burden when it comes to the damage caused by climate change. The developing countries and thus the majority of the world population have not yet had the chance to share or benefit from the enormous economic growth. According to the last Human Development Report, as many as 1 billion people live in extreme poverty and this number may increase by 600 million by 2080 due to climate change.
- Science has shown that there is no doubt that climate change is man-made. There is no more time for wait-and-see positions. Therefore, we must discuss here today the core questions of the issue:
 - Which target should be set for emissions that is environmentally efficient, economically feasible as well as fair and just?
 - What should be done to achieve this target? How should we set up a global carbon market? How should we manage the necessary development of green technologies and the necessary change in our energy system? How should we fight deforestation and land use change?
 - How should the developing countries contribute to the efforts and what would a balanced share of effort between developed and developing countries be like?
- Our big task today is to find answers to these questions and common ground in view of a global contract on climate change that is effective and just.
- The conference aims at:
 - Opening a broad and critical discussion of the policy paper “A Global Contract on Climate Change” prepared by the Potsdam Institute for Climate Impact Research (PIK) and published prior to the conference in order to integrate the debate into the communication process.
 - Listening to you first and elaborating the Concluding Memorandum afterwards, which will be our contribution to the Conference of Parties (COP) in Poznan starting on 1 December 2008.

Stavros Dimas

EU Commissioner for Environment

Introductory speech by the European Commission

- Combating climate change requires a global contract, an agreement whereby every country contributes to the solution according to its capability. The principle of common but differentiated responsibilities and respective capability needs to be applied to every country in the world as it will apply in the EU.
- The EU must strive for climate justice worldwide, just as the European Commission (EC) is pushing for climate justice within Europe. The EU has been at the forefront of combating climate change for some time. It played a major role in the international process that led to the Kyoto Protocol and has been a key actor in promoting its ratification around the world. The EU has a great interest in continuing the international efforts to combat climate change after the Kyoto process, which ends in 2012.
- EU climate policy is based on solid and eminent scientific sources such as the Intergovernmental Panel on Climate Change (IPCC). The EU is convinced that a new global agreement is needed to limit global warming to no more than 2 degrees Celsius compared to pre-industrial levels. Science tells us that this is the threshold for an irreversible climate change, possibly with catastrophic consequences.
- This means that global emissions will need to be at least halved by 2050 compared to 1990 levels. Industrialised countries must cut their collective emissions by 30 % by 2020. The EU has already made its commitment to this target, provided that our developed world partners commit themselves to comparable targets under the new international agreement. Regardless of international negotiations, the EU has made a commitment to cut GHG emissions by 20% by 2020.
- Industrialised countries must take the lead in cutting down their emissions according to their capabilities and their historic responsibility but they cannot succeed without the contribution of emerging economies. Developing countries must slow the growth rate of their emissions while allowing themselves to grow economically. Developing countries, and especially emerging economies, should reduce their emissions from business-as-usual by 15-30%.
- The EU has thus demonstrated its willingness and seriousness in combating climate change. The climate and energy package includes concrete measures to deliver these emission cuts and raise the share of renewable energy to 20% by 2020. The package is based on the principles of cost-effectiveness, fairness and solidarity. To raise the share of renewable energy, national targets were set taking into account nominal factors and relative wealth as measured in Gross Domestic Product (GDP). In this way, the EU puts into practice the principle “common but differentiated responsibilities and respective capabilities”. I believe that our approach can serve as a model in the international context for diversified countries.
- The economic downturn makes the measures more necessary than ever. It will push Europe towards a low carbon economy, enhance energy security and strengthen the competitiveness of European industry, creating high-quality jobs. We need a paradigm shift in European economic policy.
- But the EU cannot achieve the goals alone. International cooperation is necessary. First we must convince other developed countries that action is necessary. The participation of the USA in the new agreement is crucial in convincing developing countries to come on board a new international agreement.
- Ministers have recognised that the global average GHG per capita can be reduced to around 2 tonnes of carbon equivalents. In the long run, the national per capita percentage of GHG emissions between industrialised and developing countries needs to gradually converge according to national circumstances, such as climatic conditions and economic factors, in order to produce fair results.

- In order to achieve a just and efficient agreement in Copenhagen in 2009 the EU must show its seriousness about reducing its own emissions and willingness to support the developing countries in climate change mitigation and adaptation. Combating climate change requires substantial investments in low-carbon technologies, which can be reinforced through a global carbon market. It also requires public funds. This is fundamental to any structure of a climate agreement.
- As a global problem, climate change needs global solutions. The EU is determined to turn this challenge into an economic opportunity. The climate and energy package, which provides the tools for reducing emissions in Europe but also for supporting developing countries, is a model that other countries should follow.

Felix Finkbeiner

Member of the UNEP–Junior Board 2008-2010,

Initiator of the student initiative “Plant-for-the-Planet – Trees for Climate Justice”

Message on behalf of children

- It is unfair that some people can pollute the atmosphere with more CO₂ than others without paying for it. A price should be put on carbon.
- Every child knows that it is urgent to act. This room could be filled with more students. Two weeks ago I had a bad experience. I was invited to a conference at which an industrial boss also gave a presentation. Concerning the climate crisis he was talking about patience and said that we should not go too fast. He said that we should solve this problem with sound measures. I would like to say to Commissioner Dimas that he should not give up so easily. After this experience I came to the conclusion that adults and decisions makers think in a different way to the youth. We young people have a life expectancy of 80-90 years, while the older people only have, let's say, 30 years left. We won't be able to hold you accountable for your inaction, because you will all be dead when it is time for us to solve the problems that you have not dealt with.
- Last June we had a conference with 700 children from over 100 countries and came to two conclusions: that we want to plant as many trees as possible all over the world and that each tree would be a symbol for climate justice.
- I am here on an official mission because I think that the decision makers and the youth need to work together. I am a representative of the UNEP (United Nations Environment Programme) Junior Board. We consist of seven students/children and each is responsible for one continent. I am responsible for Europe. We will have our next conference in Korea in August 2009 and are collecting input for Copenhagen. It is also possible to contribute via Internet, so everybody can play a part. We would very much appreciate your support for the conference.

Peter Kruse

Managing Partner of nextpractice GmbH,

Professor for General and Organisational Psychology at the University of Bremen

Introduction to the online consultations

- What we would like to do with you today is like a collective intelligence experiment. We are organising a deliberation process on a large scale.
- All the computers here are connected to each other. During the online exchanges of views after each panel, you can use the computers to contribute your ideas. During the larger online consultation from 4:00 till 5:30 pm we will use the system for a big brainstorming session so that we can take a full advantage of your expertise.
- The basic idea behind collective intelligence is the question of how people and computers can be connected so that together they are more intelligent than any single individual would be.
- Collective intelligence is an interesting topic currently. Collective intelligence is in some ways about basic system equation. We have invested a lot and enhanced global connectivity to a fascinating degree. Two challenges have arisen from this: 1) a growing complexity of the system, 2) more spontaneous dynamics in the system. This leads to increasing instability and higher unpredictability within the system.
- In a highly complex, instable and dynamic system it is not possible to make predictions, which puts a lot of pressure on us and the decision making process.
- It is illustrative that in the last few decades 4500 think tanks have been born and over 50 % of them have been founded after 1980. This shows a strong need for consultation and deliberation processes to get the right answers.
- There is a high level of expertise here today and it is important that everyone forms a part of the collective intelligence system in the room.
- Whenever you have complex and dynamic systems it is not possible to find solutions to the problems in that system at an individual level. We need to build networks and form complex and dynamic processes to get good answers and solutions to the problems we face. We need to build this like a global mobilisation process and we need to bring people in.
- Our task today is to create a collective intelligence process to make the right judgements. It is a fascinating experience and I hope that it will help to draft the Memorandum and to solve the problems we face.
- We invite you to use the computers in the room.
 - After the panels, just type in your idea and send it. It can be seen by everyone in the system. The ideas can be evaluated and supplemented by others and in this way we have a collective process. You have 10 minutes after each panel for this.
 - We will have a big brainstorming session on conflicting interests and solutions in the framework of a global contract. We will give you 1,5 hours for your input and then we will gather and evaluate it. In this way, we will have a good basis for the memorandum.

PANEL 1

Climate Change – The Necessity for a New Approach Concerning International Relations

Vittorio Prodi, Chair

Member of the European Parliament, Group of the Alliance of Liberals and Democrats for Europe

Introduction

- The issue of global warming requires swift action and global consensus in the definition of aims and methods. This kind of a global agreement should be fair. That is why we are talking about climate justice and common but differentiated responsibilities.
- This needs to be done in awareness of interdependency. There is not room anymore for a unilateral approach. We need a change in international relations. We need to acquire new tools for a multipolar world, with a reformed United Nations (UN) organisation and a more democratic Security Council in which global warming mitigation and climate change adaptation is addressed. It should include all stakeholders, especially the more vulnerable ones.
- We should change the world structure of emission allowances. This is an approach I have personally tried to promote here in the EP based on the formula “one person, one emission allowance”.
- The World Trade Organisation (WTO), the World Bank and the International Monetary Fund (IMF) should be redefined considering that market liberalisation is not an aim per se but a way of involving as many countries as possible into strong, peaceful and cooperative relations.
- The current financial crisis presents an opportunity to address these matters in a new and systematic way. This poses a challenge for negotiations of a new Bretton Woods. Climate change should be included in this context.
- However, global warming is just the first challenge followed by challenges regarding resources such as food and water. These will be even larger challenges because there is no external supply of these resources (unlike, for example, sun energy).
- We are facing the divide between war and peace and must learn how to act peacefully.
- In the EP a Temporary Committee on Climate Change has been established to systematically address global warming mitigation and climate change adaptation.

Lord Nicholas Stern

London School of Economics and Political Science

Climate Change – The Need for a Global Deal

- To understand the nature of a global deal and the importance of justice and equity within it, we have to consider two overwhelming challenges of the 21st century: fighting world poverty and managing climate change. We either succeed in both or fail in these two challenges together.
- If we fail to manage climate change we will create such a hostile climate environment that will undermine the progress we have achieved. Development will be irretrievably set back due to droughts, storms, floods, sea level rises and temperature rises.
- We can succeed in managing climate change in a way that minimises the damage and gives prospects

for growth in poor countries through low carbon growth. Low carbon growth is safer, cleaner, more biodiverse and generally more attractive. I believe that it will become the driver of growth in the next decades, making a strong attractive sustainable growth story which allows us to overcome world poverty. High-carbon growth and business-as-usual are not growth options for any time period and will disappear.

- These considerations need to be firmly kept in mind when considering climate change. Climate change and world poverty are clearly global problems and require a global deal in order to be solved. Yet a global deal can be established only if we are clear of the basic principles. To get a global deal, we must include all these three principles:
- Effectiveness: We have to ensure that emissions are cut on the scale required: We are in a bad starting place due to historic emissions. We now have concentrations of 430 particles per million (ppm) of carbon equivalent or higher in the atmosphere. What we should do is to keep concentrations to a maximum of 500 ppm and then start bringing them down by 2.5 ppm per year or less so that in 10 years we will be at 450 ppm. This requires emission reductions of at least 50% by 2050 (compared to 1990 levels). This is the scale of action and it must be an “at least target” which we aim for as a world.
 - This scale of action means reducing the 40 Giga tonnes (Gt) of GHG per year in 1990 to 20 Gt per year in 2050, corresponding to just over 2 t per capita in 2050 (world population of 9 billion in 2050). Currently Europe emits 12 t per capita per year; therefore 80% reductions in Europe are absolutely fundamental in the global deal.
 - We must be clear that doing business-as-usual is far more costly (far more than 5-20% of global GDP due to rapid climate change) than acting now (1-2% of global GDP or less if we manage to limit ppm to 500). Further costs of inaction would be the redrawing of the planet’s physical and human geography, massive movements of people due to the consequences of climate change, and global conflicts on a scale we have never seen before.
 - What we have to do is be more energy efficient, move to low-carbon technologies and stop deforestation.
- Equitability and justice: The past 200 years (or the industrial revolution) were not equitable. Yet, 2 t per capita of emissions for everyone is also not equitable. Average is average and we should not confuse it with equitability. We must also consider practicability. It is the question of emission allowances that we will have to discuss.
 - What is certain is that everybody has to be included. The population of today’s poor countries will be 8 billion out of a population of 9 billion in 2050 so this will not work without them. Yet the rich countries need to aim for at least 80% reductions and the poor need to find a pattern of low carbon growth and be supported in mitigation and adaptation. We will have to think of climate in a different way than before and integrate these considerations into our development goals.
- Cost-efficiency: We will need to keep the costs down, so we have to put a price on carbon, develop and distribute new technologies and stop deforestation. We need to include all countries, all sectors and all technologies. Otherwise it will be much more costly.
- The challenge now is to go on with what we have to do. We are starting to get commitments (EU, USA) in the right range. The next step is to make the commitments stronger, global and translate them into action.

- The current economic crisis is serious but we need to learn our lessons and manage climate change and economic crises simultaneously. The first lesson is that ignoring risks magnifies the consequences (the economic crisis has been simmering for the past 20 years), and the second is that we need to grow out of the crisis. We have to move from monetary policy to fiscal policy and invest in sustainable long-term future growth. That is to say invest in energy efficiency as well as in electricity and transport infrastructure. Here low carbon technology is a key driver.

Wāhu Kaara

Global Social Justice Activist

Climate Justice

- As I stand here today I want to be seen as a global citizen, and climate justice is a global question. Therefore I am here in the EP because the EU has a very important challenge and responsibility in the face of climate justice.
- For me climate justice is a wake-up call to us all to rethink what we have had and what we want to do. It can perhaps convince us and make us determined to ensure a future.
- For me climate justice is not only a question of global governance but also of global citizenship. It is about what the global citizenry does and says, and this is the reason why I think that I have been invited to this event.
- We have seen many negotiations between states and between bodies of global governance. But we have not heard the voices of the global citizenry very much. That is why I think that climate justice gives us an opportunity to be brave enough to stand up and realise that it is time to speak of a paradigm shift where global citizenry steers policy design and policy decision making, in order to deliver what the whole world wants. The world does not want merely endless meetings and negotiations. The people of the world want immediate commitment, decisions and action.
- Today's economic framework does not and cannot work. We need a rethink. We need to switch from economic growth to social growth, and to switch from demands dictated by profit to demands guided by needs and a sense of life. It is important to note in the debate on climate change that the climate does not change by itself but that we change it, driven by our economic activities.
- We cannot negotiate or debate on our own life and this is what climate justice is telling us.
- We have discussed poverty a lot and we have come up with many economic and development models of poverty. But, there is also another side to poverty because poverty is about one part of the world, the so-called developing world. Climate justice provokes us to differentiate between the developed and the developing world. That is why the question of over- and underconsumption is so critical, that is to say, how to balance the world so that it is not dominated by the principles of over- and underconsumption.
- We cannot leave this to the political decision makers or global governors. This has to be decided by the people of the world. The decision makers have shown a lack of commitment. The process of the people's protocol on climate justice is something we need to listen to. I appeal to those who can reach the decision makers of the world to say that we cannot and will not sit and wait.
- I am making this wake-up call because the world belongs to all of us and is at a crossroads. The crucial question here is how we can access resources and how we distribute them. How do we think and how do we become good stewardesses in environmental questions because our world is highly intertwined with nature.
- It is time for a paradigm shift. It is about life and not about profit.

Pavan Sukhdev

Managing Director and Head of Global Markets, Deutsche Bank India

Global Public Goods – Climate Change and Ecosystem Services

- The reason why I am here today is a project called TEEB “The Economics of Ecosystems and Biodiversity” that Germany and the EU supported.
- I would like to begin by talking about an ethical problem, which is currently mainly discussed as an issue of carbon store and biodiversity. This is the Amazon. The forest of the Amazon is of course the world’s largest forest carbon store. But, in addition to this, it is a huge forest water pump that with its transpiration puts 20 billion tonnes of water into the atmosphere. This natural cycle provides sustenance to the agricultural economy of Latin America.
- Unfortunately, there are no economics there, so nobody pays for the ecosystem services the Amazon provides to the people of Latin America. This issue is really taking us in the direction of the necessity of new tools for a multiple world.
- In simple terms, global public goods are goods, which are available to everyone. They can be public by nature like sunlight, they can be public by default like CFC (chlorofluorocarbon) emissions, before it was discovered that they had an impact on the ozone layer, or they can be public by design like primary education. There are ecological public goods like fresh air, water and species, for which we do not pay, and there are social public goods like streetlights.
- The important point with public goods is that there are typically neither markets nor prices for these goods, and they are usually free. This combined with the growing demand for environmental entitlements – i.e. the rights to make use of the environment by means of extracting natural resources or emitting pollutants, etc – and the lack of clarity over individual or collective property rights, with insufficient regulation by national laws or international treaties, produces situations which can be likened to what economists have dubbed the “tragedy of the commons” – where you find depletions of public goods beyond sustainability rates.
- What I suggest on the basis of the project is that the poor bear a lot of the suffering. Our report brought up the very significant size of the subsistence economy, and the huge welfare impacts of the loss of ecosystems and biodiversity. We spent a long time discussing the linkages with poverty.
- An example of the tragedy of the commons is the fisheries. Open access and perverse subsidies are the main drivers of the loss of fisheries. Today, half of the wild marine fisheries is wholly exploited and about a quarter of them are overexploited. It is forecasted that within the next few decades we will have lost the whole industry. It is not just the hundreds of billions of economic losses for millions of people (27 million jobs), of which many are at the subsistence level and are poor, but most important of all is the fact that fish is the main source of animal protein for a billion people around the world in poor countries and that is a health problem on a catastrophic scale.
- We really have to recognise the strong link between deforestation, loss of ecosystems and poverty. When talking about matrixes and economics, we have to look at the ‘GDP of the Poor’, accounting for the subsistence economy in countries. If we add a price to ecosystem services we have to ask to whom the benefits flow. When we work this out we see that it is the subsistence farmer and that we are talking about at least 60% of the livelihood income of the poor, which directly depends on ecosystem services. This is the connection that has to alert us when we talk about the loss of public goods in the forest and what they provide to the poor.
- Can we do something about it? Yes, by defining property rights that protect public goods against their degradation. Such property rights can be collective, e.g. strengthening the rights of the Amazon people to their forest, and they can also be private, with a focus on capturing public goods into the economic

system. The idea of privatising the use of certain ecosystem services, such as the provision of drinking water, is to enhance efficient use and to have users (e.g. water companies) pay according to their impact on the system – of course this requires that usage rights are clarified beforehand, and that those directly dependent on ecosystem services are not suddenly deprived of them. In a comparable way, the carbon market captures the bad “emissions” into the economic system to make them private and tradeable. It is a matter of public policy to decide if a good is public or private.

- I think that we have to rethink a couple of areas:
 - We need to rethink ethics and incentives. Is it ethically right and wise not to reward good behaviour but just to reward the reduction of bad behaviour? This should be done especially in poor countries where an incentive can easily become a perverse incentive.
 - Further work is needed on the legal architecture. By that I mean we need to think about who is already paying for ecosystem services. There are already many contracts in existence. We also need to look at the receiving side. The dialogue must not be a sovereign dialogue. It must not even be a sovereign and local government dialogue but a dialogue that moves down to the local community levels, to the real stakeholders on the ground. Present private contracts must be included in this dialogue.
 - We have to look at all ecosystem services. For example, in the case of the Amazon it is not only the carbon store but also the water pump that is of concern. We must ensure that we do not exclude any ecosystem services, especially water and biodiversity.
- My point regarding climate change and poverty is that the loss of biodiversity and ecosystem services are per se vital problems of today, mostly hitting the poor – but this loss furthermore augments their vulnerability to climate change, as ecosystems lose their adaptive capacities.

Ashok Khosla

President of the International Union for Conservation of Nature (IUCN),
Co-president of Club of Rome

Climate Change and Development Economics

- I think that if we want to secure a sustainable future for our children we have to do many things, not just decarbonise. My subject today is a new subject that does not actually exist yet, namely development economics of climate change and how the issues relate to each other and how their methods, issues and concerns come together.
- The IPCC has shown what impact global warming would have on ecosystems. With a temperature rise of 2 degrees Celsius, we would lose a quarter of the species and the resilience of the ecosystems would break down, among other impacts. Ecosystems would change substantially and would not be able to provide those kinds of services they used to. So climate, ecosystems and human livelihood are inseparably intertwined and affect each other.
- What is development economics? After the welfare economics of the 1950's till 1980's, development economics has evolved and with it, talks on issues such as employment, jobs, livelihoods, institutional capital, knowledge economy and technology. It recognises that there are additional tertiary sectors, informal sectors and even micro and decentralised sectors. Also, social justice in view of women, workers, minorities and indigenous people is a topic but not the focus.
- Again, the IPCC has looked at these issues, but from the northern point of view, that is to say from the point of view of rich people. What we need to do now is to start thinking about the development economics that we will need tomorrow and which deal with climate change, biodiversity loss and, in particular, with eradicating poverty. This has to do with things like valuing social capital, putting some

value on community and family, resilience and security of natural and social systems such as food, water, security, energy and social society. Sustainability needs to be integrated, recognising that resources are finite. Thus we need to have a very different view of the world. In the end, we also need to look at our social and civilisation values.

- We must consider mitigation and adaptation regarding climate change but also risk management. We must make a real economic analysis that leads to sustainable solutions while eradicating poverty and strengthening world security. This means changing markets and regulations on the one hand, and changing values and the behaviour on the other.
- What does this mean? It really means that the present economic system is collapsing. This is not only because of poor regulations and systems in the economic systems themselves, but also for ecological reasons. We are not only dealing with issues of climate change but also with the extinction of species, a loss of biodiversity, impacts on water availability, and impacts on food supply and food security. Half of the rural population in most developing countries lacks energy services and in developed countries there are concerns about energy supply and its security. Development economics has now begun to look at what consequences climate change has for the economy and society. Therefore, we need to give ecosystem services a value.
- The gap between rich and poor is widening. There is a growing population in poor countries as a result because they need to resort to having larger families to survive. Scenarios show that the lower the Human Development Index (HDI), the faster the population growth. And all these people will be emitting CO₂.
- So it seems that the climate change paradox is that unless you use more energy or energy services, at least for the very poor, you are going to end up with a much higher use of energy by 2050. This is one of the wedges to grasp to get ourselves onto a stable path, namely to accelerate an improvement in the lives of the poor. But there is the trap “poverty leads to markets and markets lead to nature destruction and nature destruction leads to climate change with increasing positive feedbacks to the cycle” and in order to resolve this development, economics has to understand this trap.
- The problem is not just climate change but also having to deal with climate change in the face of peak oil, water scarcity, ecosystems and biodiversity loss, food insecurity and exploding prices, and a financial system that has broken down. If we do not think of all these things at once and deal with them together, we will not solve anything.
- Development economics needs to start thinking beyond traditional issues. It needs to allow for different adaptation measures, especially to accelerate the development and thereby the demographic transition, – which I think is probably the most fundamental aspect right now – societal values from the environmental point of view, quality vs. quantity/growth, the community etc.
- This is what I hope that economics will look like and I hope that economists will start thinking about these issues.

PANEL 2

Climate Justice as the Core Principle of a New Global Contract

Jo Leinen, Chair

Member of the European Parliament, Socialist Group in the European Parliament

Introduction

- There is no justice in the field of climate change. We see the rich countries emitting considerably more than the poor ones and we know that the poor are the most vulnerable.
- Some time ago I read that 50-60 Member States of the United Nations could disappear as a result of climate change. We know how dramatic the situation will be and the consequences catastrophic if we do not manage climate change.

Vesile Kulaçoğlu

Director of the Trade and Environment Division, World Trade Organisation (WTO)

Climate Change and International Trade

- The climate change regime has evolved independently from the international trade regime. Trade has not been a subject in the climate change negotiations and no negotiations on trade-related aspects of the climate change are held in the WTO. On the other hand, twenty-seven trade ministers met in Bali in December 2007 to discuss informally the trade aspects of climate change policies and a preliminary information exchange was held in the WTO Committee on Trade and Environment last November.
- We can look at the intersection between trade and climate change from two angles:
 - First, is trade good or bad for GHG emissions? In this relation, we are familiar with the debate on the carbon footprint of international trade. There are those who argue that trade opening contributes to more GHG emissions due to increased use of fossil fuels. The carbon footprint of domestic-produced versus imported goods depends also on production methods used, and transportation plays a role. Yet, generation of emissions from the transport sector is small compared to emissions from industry or household activities. According to the International Energy Agency (IEA), 74% of the energy-related GHG emissions from trade stems from road transport and only 3% from maritime transport. 80% of trade in volume is transported by sea. Therefore, it is difficult to determinate a priori the contribution of trade to climate change.
 - Second, what is the relationship between trade policies, and climate change policies and measures? To understand this relationship, we have to look at the whole range of climate change policies from trade policy perspective. In the past ten years, many countries in the world have taken action on three fronts: (1) putting a price on carbon emissions to internalise the social cost of climate change; (2) setting regulatory measures and standards for emission reductions and improvement of energy efficiency and related labelling requirements; (3) facilitating access to climate friendly technologies through a range of measures to foster innovation and deployment for instance in the renewable energy sector.
- As these measures affect production and consumption patterns, they also affect competition between domestic and international producers. In this way, they also have an impact on international trade.

- There is an on-going debate on integrating climate change considerations into trade policies. This debate is being held outside the context of UNFCCC (United Nations Framework Convention on Climate Change) or WTO. In a number of countries, measures have been taken or being considered to impose costs on energy-intensive sectors of the economy. These countries may also seek to impose a cost to imported goods to level the playing field between domestic and foreign producers. The idea behind these measures is to protect the competitiveness of domestic producers in the face of international competition and to avoid carbon leakage. Recent suggestions are aimed at setting the same carbon price signal to domestic and foreign producers, through, for example, border measures such as border taxes and emission allowances/permits for energy intensive imports. These are, essentially unilateral measures where each country may follow its own approach.
- The question of the WTO-compatibility of such border measures is complex and cannot be answered a priori. Before taking unilateral measures, any adverse effects on the competitiveness of domestic energy-intensive industries and the extent of carbon leakage has to be better understood. More studies and information are needed in these areas in order to provide for policy makers with an adequate knowledge basis.
- Some positive developments in the trading system are taking place for instance WTO negotiations aimed at facilitating access to environmental goods and services. It is, however, the environmental regulations that will drive the demand for these products and services. Hence it is important to set the right environmental framework within which the market can operate and trade opening can take place.
- There is a need for collective action. In this regard importance should be attached to principles which are shared both by trade and climate change regimes. One important UNFCCC principle is “common but differentiated responsibilities and respective capabilities”, translated into WTO language as “special and differential treatment”. Another important UNFCCC principle requires that measures to combat climate change must not cause any arbitrary and unjustified discrimination in international trade.
- Finally, as a global environmental problem, solutions to climate change will need to be found in the environment arena and not in the trade arena.

Johan Rockström

Executive Director of the Stockholm Environment Institute (SEI)

Greenhouse Development Rights: Development in a Climate Constrained World

- I will be presenting a piece of research in view of a post 2012 global deal. It is an effort to bridge two areas in which we are currently failing: 1) Steering away from the imminent risk of disasters and from crossing disasters’ tipping points, and 2) Investing into the right to development taking into account the fact that 85% of the world population lives on below 20US\$ a day.
- The situation today starts with the so-called 80-20-dilemma. It is the lifestyles of 20% of the world’s population – the minority – which has caused a bubble of consumption and production. Currently we do not only have a financial invoice for this but also an invoice from the planet because we are living on debt of the planet.
 - The first push: A cynical reality is that if the remaining 80% of the world population – the majority – assumes the same lifestyle as the minority, we will cross unacceptable thresholds and might have done so already.

- The second push is the 350/450/550 dilemma. We are already at 450 ppm and are pushing at an accelerated speed towards 550 ppm. Even if we closed down the planet today we could not exclude that we face dangerous tipping points. The latest scientific research (IPCC) suggests that we should stabilise carbon concentration in the atmosphere at 350 ppm, so that we can soak up carbon from the atmosphere and not reach dangerous tipping points.
- Never in history have we needed such a strong and resilient planet as we need it now. We are eroding the capacity of the planet to be a puffer against shocks. Command and control is history. It has become clear that ecosystems do not evolve according to linear and incremental change, and predictable and controllable growth.
- This is very well illustrated by the links between land, oceans and the accelerated melting of the arctic ice sheet. Over the past 50 years, half of our global emissions has been sequestered by land and oceans. The drama is not only the ecosystem service but also that we are starting to see cracks in the planet's capacity to help us which means by and large the death of the planet. We are coming close to dangerous tipping points in several parameters. This is not just because of CO₂ emissions but also because of a loss of forests and biodiversity, fish stocks and much more.
- At lower levels of development and wealth, there is a right to development. Currently, 80% of the world population finds itself in a rapid growth phase. We have to combine this with what we have to do, in accordance with scientific necessity, which is stabilising global warming at a maximum of 2 degrees Celsius at the planetary level.
- The big drama is that even if the EU does everything it promises to do, and even if Obama takes on the same challenge, we are still only going to contribute as a minority. The rest falls on the majority, the developing countries. So there is an obligation at the planetary level, which is enormous and much larger than the contributions we can make in the EU/OECD (Organisation for Economic Co-operation and Development).
- Now we can start exploring a framework to take into account the principle of common but differentiated responsibilities in the light of the scientific necessity. This framework is called "Greenhouse Development Rights" (GDR) and constitutes a framework, which addresses the scientific and the planetary necessity. It is based on two basic algorithms:
 - Setting a capacity threshold: once an individual has a purchase power parity income of 20US\$ a day or more he has kicked off a number of Millennium Development Goals (MDG) parameters, and that is the minimum right to development. Below that, there is a minimum right to emit GHG.
 - Taking responsibility back to 1990. At that point the first IPCC assessment was out so there is no excuse for any political leader not to know that we were in trouble.
- This leads to a number of cutting points which means cutting the world into two:
 - Population below the capacity threshold. This is the development right portion of a country.
 - Population above the capacity threshold. This is the portion sharing the pathway that goes from 9 Gt of carbon to 1 Gt per capita by 2050 based on capacity.
- According to this approach, the largest amount of action has to be taken by the USA and the EU. The US mitigation necessity is 120% by 2025 and that of the EU is more than 100% by 2025.
- Why such dramatic reductions? This is what happens when you truly link scientific necessity with the development reality and a very pragmatic element of justice. This is what happens when you take science and justice and seriously connect them.
- Why is it so shocking? Because this is what we have to consider unless we allow ourselves to push the planet towards unacceptable tipping points. The approach does not appear to be politically possible today but it is a scientific necessity. This results in dramatically higher reductions than currently on the table. Not voluntary action, but hard commitments are needed.

- Conclusions: It is not just about climate change, it is about anthropogenic global environmental change. The battleground is moving from emissions to how we steer ecosystems to avoid surprises and feedback mechanisms of the big carbon stocks of the land and oceans. If we take science seriously we end up with much more ambitious targets than the present political compromises. 50% reductions by 2050 are not enough. This reduction target puts us in a very dangerous position because we are already facing dangerous tipping points. This is a scientific and planetary necessity. But we are not acting accordingly. This should be included in any agreement on the sustainable future of the earth. The poor countries of the world need to be seriously engaged, but there will be no engagement unless the two elements (capacity threshold, burden sharing based on capacity) are taken seriously. We need hard commitments with quantified targets and extensive investments.

Franz Josef Radermacher

Co-founder of the Global Marshall Plan Initiative,

Director of the Research Institute for Applied Knowledge Processing at the University of Ulm

Holistic Approaches – A Global Contract and the Global Marshall Plan

- I want to present a holistic approach to the issues on the table. The ideas I will present are not new but have a long tradition. These were already debated, among others, in the Club of Rome, the Ecosocial Forum Europe and the Information Society Forum of the EU almost in the same way 15 years ago. Our society did not act then, and there is the probability that we will not act now either.
- Earlier this morning we heard that we either fail or succeed in combating climate change and poverty. It seems that both topics are totally connected. In fact, the world would be an easier place if this were true. Ultimately, the climate issue is a problem that the most powerful people will have to address in their own interest. If they solve this problem, then that of the poor would be solved as well. However, the situation is not that comfortable. I will describe why.
- The so-called “Brazilianisation of the world” is the solving of the climate and resource problem in a way that does not overcome the development problem of the poor. The future of Brazilianisation means the following: There is no guarantee that the resource and justice problem needs to be solved by making the poor rich. We could also have a reverse development by making 98% of the rich poor. This is another way of solving the resource and justice problem. The 2% of the world population remaining rich may like the solution called “the Brazilianisation”. This would correspond to a global governance structure that is totally unsocial but in balance with nature. This is not a balanced solution but a solution that powerful actors might favour.
- We are experiencing an interesting moment in history because we are seeing a collapse of the whole financial system. This is of particular importance to the 2% most powerful and rich. We now have a major opportunity to change global governance by 2012. There are two issues to be dealt with today which affect 50% of global governance, namely the regulation of tax havens and the post Kyoto agreement. It is possible that Bretton Woods will be reformed in accordance with the interests of the rich minority in line with Brazilianisation and not in line with balance.
- Another important aspect has to be mentioned. Today, there are 20 funds, which control 40 trillion (40,000 billion) dollars of assets in the world. If we could generate an additional tax volume of 1% on these assets a year, this would mean 400 billion dollars additional tax income a year. This is a considerable part of the new indebtedness of states in a normal year. This is also maybe five times more than carbon trade would bring. Carbon trade and carbon justice is good but not enough for bringing about a better world.

- There is not just the climate change problem in the future, which has to be solved, but also the issues of the MDGs, Bretton Woods II and the financial markets. All these need to be integrated into one coherent approach and taken into account.
- The actors within the Global Marshall Plan Initiative (GMPI) work on a modest programme but even this is difficult to implement. The GMPI argues for five points, from implementing the MDGs to generating additional money for development cooperation. Hereby, carbon justice is one part, but we need more. A Tobin tax on financial transactions would be helpful. I am disappointed that even a crisis of this magnitude does not lead to more open attitudes towards a Tobin tax. As a consequence of a Tobin tax the chaos in the financial markets could partly be reduced in comparison to today because transparency would be increased considerably.
- We also need an ecosocial market economy, i.e. markets with ecological and social regulations to maximise the creation of wealth. This is more than arguing for a level playing field for everyone. The level playing field approach is often somewhat misleading because it frequently treats the unequal equally. But this is exactly not what equal treatment for everyone is all about. A democratic world needs democratic principles to deal with issues between states, and not only to deal with issues within states.
- We need at the very least a world tax agency that collects information on the tax situation in the world. On top of this, tax havens have to be isolated. This is a very important issue. Therefore I welcome the fact that the OECD Forum on Financial Stability has taken steps to regulate tax havens. This is at least as important as a fair climate regime.
- Regarding climate justice:
 - In my understanding, climate justice means that in the long run we establish a global cap and trade system based on the principle of carbon justice. This means that states hold emission rights for free, proportional to the size of their population. States can use those rights either internally or for trading. Heavy emitters will have to buy rights in poorer countries. This can finance technology transfer and increased carbon efficiency. It is very important to note that not all emission rights have to be traded because this would have bad consequences for poor countries and would not be fair because of the relative carbon-inefficiency of their industries. So, every country should be free to decide on how it uses its free emission allowances internally. What goes beyond that needs to be traded.
 - If states are not willing to be part of a post-2012 solution, countries participating should be free to implement cross-border tax adjustments to counter free riding. It is problematic from the trade justice point of view that if there are states that are not cooperating in a post-2012-agreement there may be problems within the WTO. Cross-border tax adjustments may face court proceedings and the outcome is not clear. This is a dilemma for those who want to act in an environmentally responsible way.
- In conclusion, climate justice is an important building block for a better future but has to be seen in connection with other elements.

PANEL 3 Cornerstones for a New Climate Agreement

Caroline Lucas, Chair

Member of the European Parliament, Group of the Greens/European Free Alliance

Introduction

- I am very pleased to have the opportunity to chair this session, which focuses on the crucial question of what a global contract could look like. We have talked a lot this morning about the principles of equity and fairness. But I think the question of how we really operationalise that and turn the idea into practice is the real question.
- This is a question that is posed with urgency. Scientists are telling us that we have a window of opportunity of 8-10 years. That is incredibly small to put in place a very different policy framework and get off the collision course we are currently on. What we are looking at here is not a usual model of economic growth, the business-as-usual model. What we are looking at is not adjusting the business-as-usual paradigm but a very different paradigm. Personally I think this paradigm should be based on a Steady State Economy.
- In many ways the conventional economic growth is also a very inefficient way of achieving poverty reduction. From 1990 till 2001 for every 100 dollars of per capita income just 60 cents found its target and contributed to a reduction in poverty below one dollar a day. This means that in order to achieve one dollar of poverty reduction we need 166 dollars of extra growth in production and consumption with all its environmental impacts, which hits the poor the first and the hardest.
- So my appeal to this session is that we do not just talk about economic growth but have a very serious discussion on redistribution as well.

Gunilla Carlsson

Swedish Minister for Development Cooperation

Adaptation and Risk Reduction – A Way Forward

- In order to reach a fruitful global agreement in Copenhagen in December 2009 we must take into account the links between climate change and development. Climate change is happening now and countries are adapting themselves to its consequences. There is a clear link between adaptation to climate change and development. Adaptation to climate change should be done in an integrated manner with other development components such as food security, health, access to energy, water and sanitation, and education. If we get more people over the threshold of 2 US\$ a day this will effectively contribute to more resilience capacity, perhaps more than anything else.
- Sweden considers disaster risk reduction measures irrefutable tools in our efforts to adapt to the effects of climate change. Due to the considerable human distress and economic losses as a consequence of natural catastrophes, more investments are needed in preventive risk reduction measures, for example early warning mechanisms, protection of vulnerable ecosystems and adherence to better building codes.

The entry point is to learn from experiences from natural disasters. Initiatives will be required at all levels, from the community to the regional, national and global levels.

- There is an urgent need to further our common understanding in disaster risk reduction in the face of rapid climate change. The disaster risk reduction and climate change communities still work as separate entities. I think we must promote the convergence in connection with the Kyoto agendas.
- One way in which Sweden has addressed the urgent climate change impact on the most vulnerable countries and communities is through the launch of the National Committee on Climate Change and Development, on which I am the chairperson. The committee will publish its final report in spring 2009 but we have already agreed on some recommendations. The added value of our work is that we have decided early to focus on understanding the local perspectives of adaptation to climate change and the ways in which the people will be affected.
- My interpretation of climate justice is to view climate change in the bottom-up perspective and look at climate change in the context of factors that affect poor countries and poor peoples' possibilities and priorities. This is too often forgotten and we need to listen to the views of the poor.
- My commission has discussed recommendations on how financial resources for adaptation can be mobilised and how an institutional framework for adaptation can be established. Adapting to climate change requires virtually all the activities for development but can be done faster and more effectively with extra resources available for disasters and other surprises. This requires economic growth that is sustainable ecologically and socially. While the Official Development Aid (ODA) must reflect climate change realities, funding for adaptation must go far beyond the present levels of ODA. The rich countries have failed to meet their emission reduction commitments and to scale up their ODA to 0.7% of GDP.
- Many of the adaptation measures resemble those needed for development. Knowledge of local impacts of climate change is still largely in the form of hypotheses and scenarios. While mitigation is measurable in ppm, progress in adaptation is harder to measure. It requires much more cooperation among institutions in different fields and needs more attention. National governments are responsible, but we must become better at understanding how we can support the important local institutions, including local governments, parliaments and community organisations.
- Climate change fundamentally affects the context and costs of development. The current global financial crisis has something to tell us. It is a real crisis affecting all countries. The handling of the financial crisis shows what is possible. We have agreed on rules and regulations for the financial markets, funds are being mobilised and there is a discussion about reforming the Bretton Woods institutions. I aim for the same kind of resolve in dealing with the challenges of climate change.
- Climate change will be an overarching priority of the Swedish EU Presidency in the second half of 2009. It is my ambition that the final results of the National Committee on Climate Change and Development to a large part are integrated into the presidency programme. Together with other Member States and the Commission we will strive for constructive input for the final deal in Copenhagen in December 2009 and beyond.
- In its essence, this is all about responsibility for coming generations.

Hans Joachim Schellnhuber CBE

Director of the Potsdam Institute for Climate Impact Research (PIK)

Excerpts from his speech “The Need for a Great Transformation”

- The crucial question today is whether we will qualitatively keep global warming to a regime, which we can still somehow manage. Hence the title of my talk “Avoiding the Unmanageable”.
- At our press conference today we were asked if it is still possible to hold the 2 degrees line and what it would cost. There are very good reasons to try to keep the 2 degrees line. Alternatively we must give up on climate control: If we land the world with 5-7 degrees global warming on average this would be absolutely unmanageable.
- What type of limitation of global warming can we achieve? To answer this question we have to consider not only the warming effect of GHGs but also the effect of ordinary air pollutants such as sulphate aerosols, which are cooling the planet. According to the last scientific findings, we would land at 2.4 degrees temperature increases if we stopped emitting aerosols right now and would stabilise the GHG concentrations at the present levels. This means that we have already committed the planet to about 2.4 degrees warming. But this also means that if we removed the ordinary air pollution immediately in China, India and so on, as Europe did in the 1980's, we would have an immediate global warming of another 1.6 degrees.
- Air pollution is also very important in another context. Talking about justice, we are in a deep moral dilemma already, which we cannot get out of easily. It is not just about global warming but it is also about agriculture and food production, as well as public health. Worldwide, air pollution is estimated to kill about 2 million people every year. We have to try to remove GHGs but maintain aerosols to keep the planet cool. But if we do that we risk less people dying in the future at the cost of more people dying in the present. This is the dilemma and we cannot resolve it anymore because we have already lost at least two decades of fighting climate change. So there are very difficult decisions to be made.
- Why should we try to limit global warming to less than 2 degrees? Aiming at 2 degrees is fundamental because of important tipping points, which will be irreversibly reached beyond that threshold. In the case of the Arctic and Himalayas ice sheets, the tipping points may be dangerously close. But I would still say that it is possible to save them.
- If we reduce GHG by 50% by 2050 and manage to reach considerable emission reductions in the next 10 years we have a chance. But to achieve this everything has to go right.
- Concerning the carbon concentrations in the atmosphere, I agree that we should aim at 350 ppm in the long-term to be on the safe side. However, it will be extremely difficult. We need something like an industrial revolution and it has to start now. It could turn out that we not only have to at least half CO₂ emissions by 2050 but we also have to extract existing CO₂ from the atmosphere. This is a big challenge.

Ottmar Edenhofer

Co-chair of the Working Group III “Mitigation of Climate Change” of the Intergovernmental Panel on Climate Change (IPCC)

Towards a Global Contract

- I would like to remind us all that there is definitely the risk of a dangerous climate change. Nevertheless, many policy makers and stakeholders also have another risk in mind, which is the risk of a dangerous emission reduction.
- What does “a dangerous emission reduction” mean? If we look at the wealth distribution on our planet - that is the capital stock per person - we can see that the US is rich, Latin America is poor and Africa is very poor. And it becomes very interesting if we compare this with the accumulated carbon emissions in the last five decades. It shows that all the countries that have been able to become rich have at the same time accumulated carbon emissions in the atmosphere. And this is nearly a one-to-one correlation. On a worldwide scale we observe that if the per capita wealth increases by 1% the carbon emission per capita will also increase by 1%. You can see this situation as a kind of wealth ladder. The question then arises, what will happen if all countries try to climb the wealth ladder?
- The crucial question is if there is any way to decouple economic growth from the accumulation of carbon debt and carbon emissions? The good news is that it is possible and we have the technical means to do this. We can manage this kind of transformation process and we need a mitigation portfolio with different options:
 - Increasing energy efficiency and energy savings,
 - Moderate use of fossil fuels and biomass/biogas in combination with carbon capture and storage (CCS). Renewable energy will play an important role, especially in the second half of the century,
 - Nuclear power can also play a role.
- It is important to be aware of the risks of this portfolio. I would like to highlight one risk here, the risk of an increasing oil price. The oil price is indeed the most important risk for any climate policy, for three reasons, which are also the reasons why emissions grow substantially:
 - The oil price increases at the same time as the gas price, which makes the use of coal very competitive especially in India and China but also in the US,
 - The increase in the oil price results in increased exploration of new oil fields especially non-conventional oil fields, and
 - High oil prices lead to huge investments in coal-to-liquid technologies.
- We have observed a substantial emissions growth and a switch to coal. This leads us to the next question: Do we have enough coal in the ground? We do not precisely know how much is in the ground. We also cannot expect that the fossil fuel scarcity can solve the climate problem. But we know how much fossil fuel we can use to stick to the 2 degrees Celsius limit. This simply implies that we have to leave a lot of resources in the ground.
- In the past five years we have observed the highest growth in emissions. This has been due to growing carbon intensity because of an increasing use of coal in China, India and also the US.
- The costs of climate protection calculated by integrated assessment models are only 1-2% of global GDP. If we can achieve climate protection at these low costs in the real world is an institutional question. Therefore, we need a global contract on climate change. This needs to consist of 4 major pillars, i.e.
 - A global carbon market with proper carbon pricing. One means of distributing emission permits is the convergence and contraction rule. This implies that by 2050 each person on Earth has the same right to emit. This is the equal per capita distribution, which is the minimum justice requirement. This

has to be implemented on such a global carbon market. This top-down approach (global scale) from implementing a global carbon market needs to be complemented by a bottom-up approach. The bottom-up approach consists of linking cap and trade systems all over the world, such as in the US and the EU. It would be an important political signal to establish a transatlantic carbon market and it should cover all emission sectors. The agreement reached in Copenhagen should allow combining the top-down and the bottom-up approaches.

- We need also a kind of technology protocol and an innovation boost.
- We need to avoid deforestation and need an international scheme for that. Again, the oil price plays a role. If the oil price is higher than the price of wheat, maize and rice then farmers all over the world have an incentive to invest more in bioethanol and biodiesel, which has a strong impact on deforestation. In emissions trading forests should be regarded as a capital good. The scheme should be implemented through international funding and people who take care of this public good should be compensated.
- Even if we manage to limit the temperature increase to 2 degrees Celsius, we certainly need to invest in adaptation and increase funds for adaptation because of the unavoidable climate change and because poor countries need support.
- When we talk about a global carbon market we should not talk about tiny details but about a new balance between freedom and justice on a global scale. Therefore we need a global contract.

Bo Ekman

President of the Tällberg Foundation

From Global Compact to Global Contract: Plan C – An Idealised Design for the Perfect Agreement and its Perfect Implementation

- I had a dream; a kind of a nightmare. I was jolted back to consciousness in my bed at the Arctic Hotel in Ilulissat in Greenland. I had dreamt that all of you and all of the world's leaders had been negotiating with Greenland's ice to stop it from melting.
- And there we were. Our leaders, all the military, political, financial, economic and religious power that humanity has amassed. Negotiations were tough. Nature decided to stonewall. It responded in defiance. In 1998 the Jakobshavn glacier moved at a speed of 18 m/day, in 2007 36 m/day and in 2009 at 48 m/day.
- We tried every trick in the negotiating trade book. We even threw in a self-imposed financial meltdown and an economic depression. It did not work.
- So we were left to negotiate amongst ourselves. And so far it has not worked. Kyoto did not work. Doha did not work. The Baltic Sea agreements did not work. The present governance of the financial systems did not work. The MDGs do not work.
- The world is organised in fragmented ombudsmen. The experts of our excellent panels are not the problem. We are the problem. And if we are going to get a perfect agreement, behind it there must be perfect implementation. And perfect implementation will only happen if we have a force behind it, that is a military and police force. That is still under the monopoly of the fragmented interests of nation states.
- Have you thought of the change that is needed to accomplish the move from a fragmented world to a systems world? Nature always forms a system. But there is a huge discrepancy between our understanding of the world and our management of the world.

PANEL 4

Outstanding Challenges for Climate Policy and Research

Jens Holm, Chair

Member of the European Parliament, Confederal Group of the European United Left – Nordic Green Left

Cédric Philibert

International Energy Agency (IEA)

Setting up a Global Carbon Market

- Do markets always work? There are market imperfections, for example, in the case of climate friendly technologies which are only rentable in the longer run. These market imperfections can be corrected by political measures and these should be implemented as a complement to the market mechanisms.
- Can emissions trading cover all emission sources? Most existing regimes only cover approximately half of the emissions. There are ways to include small emission sources, even mobile sources, within mixed regimes where emission trading does not relate directly to the emissions but to the extraction of fossil resources.
- How can developing countries participate? Developing countries can participate within regimes that are manageable, reportable and verifiable. Developed countries can support developing countries in a way that is, again, manageable, reportable and verifiable. Hereby, developing and developed countries exchange emission reductions for a certain amount of money. This system could be implemented if targets are close to the levels where a win-win-situation is achievable, for example, in the field of energy efficiency.
- However, developing countries are reluctant to implement this for several reasons, firstly, because of lack of infrastructure (the system needs to be administered), and secondly, because poverty eradication is a priority and there is the understanding that emission reduction is contra productive. There is an economic risk and there are uncertainties on the emission path.
- There are different options on how this could be implemented:
 - Broadening the Clean Development Mechanism (CDM), whereby the developing countries would need to take their share of the action at some point.
 - Trading with developing countries. This is a difficult option because of the risk of adverse selection between climate friendly and climate unfriendly alternatives. Some policies take emissions into account, while others do not. Therefore it is advisable to reward policies in a more comprehensive manner and to take into account all the policies of the country in question. This constitutes an incentive to reduce emissions. Domestic measures are not easy to implement if they are non-binding. However, it is a useful option to reward export policies.
 - Moving from a sectoral CDM to sectoral targets with crediting. You can choose to focus on energy intensive sectors for example. Take the growing use of electricity in developing countries. It is difficult to avoid including electricity (with the focus on emissions), but this is not very popular.
 - Binding just exports in relation to GDP. This is complex and not easy to negotiate and implement.
- Please note that 2.4 billion people in the developing world only use biomass as their energy source. This is inefficient, time consuming and environmentally unsustainable. Cleaner fossil fuels are an alternative and they are normally subsidised. But we have to be careful with this approach. In many countries the point is not to have a carbon price or carbon tax but to remove subsidies from energy consumption. But this is not very popular either.

- These considerations should be taken into account when debating the global carbon market.
- Regarding the global contract, the question arises if the “equal per capita” approach is useful. I am not convinced about this, although it is a vision of fairness, which departs from the assumption that GHG emission is a basic human right. Trading would represent the moral side. There is another way though: discover habits, production and consumption patterns and an appropriate infrastructure. But how do we share the costs between and within countries and with which implications?
- As a comparison between different tools, in “equal per capita” approach industrialised countries have few rights. Developing countries have more rights but they would presumably not use them. It will not help that industrialised countries need to pay. They will not want to reduce emissions any more. In comparison, “avoid harming the poor with climate change” approach would set a reduction target of 20% by 2020 for industrialised countries, and allow developing countries to increase their emissions by 20%.
- Conclusions: There is uncertainty regarding the climate, which is higher than the uncertainty of the level of emissions. Short-term emissions are certainly less important than long-term policy ambitions. Regarding a global contract on climate change mitigation, a single carbon market is not necessary. Firstly, because if costs in different regions are similar, linking regions within a carbon market does not bring high benefits. Secondly, because if costs are different, linking regions is politically very challenging as there are winners and losers. What we need more is the use of carbon markets everywhere - but not necessarily one single market. This can still be effective in mitigation.

Nebojsa Nakicenovic

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Low Carbon Technologies and Risk Management

- I will focus on important global challenges from the point of view of energy and climate change. There are several relevant issues here:
 - Equitable energy services are a prerequisite. Today one third of the world population has no access to energy services and therefore has to gain minimal (but not necessarily equitable) access to them. Another question here is how to make energy affordable.
 - How to make the energy supply and the system more secure and reliable.
 - Climate change mitigation requires deep emission reductions.
 - We have to increase R&D in energy and climate related technologies. This is a high priority. Today investments are extremely low.
- The challenge hereby is how to take an integrated view on the different aspects. We need a major system change, a paradigm change.
- As regards climate, the 4th assessment report of the IPCC shows various scenarios by 2100:
 - A very sustainable scenario B1: The world population peaks at 9 billion by 2050 and goes down to 7 billion. Steps are taken to decarbonise and low carbon technologies are implemented. There is even a switch to a more vegetarian diet to avoid energy and food/land use conflicts. This scenario implies a temperature increase of 2 degrees and by 2030 one additional degree.
 - Business as usual: This is a fossil-intensive scenario which results in a temperature increase of 3.5 degrees or more.

- The trouble with these very different scenarios is that in the next few decades the climate implications are similar for both. So we have to do double the work, mitigation and adaptation.
- So we have two very different futures:
 - B1: Fossil intensive energy sources such as coal will lose importance and gas, as the cleanest fossil energy source, will be used more widely. Also nuclear energy and renewable sources including solar and thermal energy will play a more important role. There will also be enormous efficiency improvements. In any case, energy efficiency is a crucial topic.
 - In the more conventional scenarios India and China will continue relying on coal. Temperature increases reach at least 4 degrees.
- According to the 4th assessment report of the IPCC, global emissions will have peaked within a few decades/by 2050 in any scenario and will then decline.
- The real challenge is to achieve the green path, the more ambitious scenario. This implies reducing temperature increases to 2 degrees Celsius – this is only 1.3 degrees in addition to the global warming we have already caused. This will be very difficult to achieve but I think it is a necessity.
- Substantial emissions reductions are needed by 2020/30 and even deeper cuts by 2050. One of the few technologies that can help to achieve this target is the use of biomass in connection with the CCS, possibly including removing carbon from the atmosphere. This requires a price to be put on carbon such as 100 dollars per tonne, as orientation, and increasing the price further when decarbonising the energy system.
- We have to reinvent our energy system. In the next 50 years new technologies will play a crucial role in moving in that direction, especially CCS. The bad news is that while several CCS pilot projects are running, there is no single large power plant. This would be a high priority. New infrastructure for renewable energies is also needed.
- What will be needed to achieve this?
 - Considerable long-term investments in these technologies. In the short term, the costs for these investments will be above market prices but in the longer run they will become very attractive.
 - Until 2030 these investments should amount 20 trillion dollars. This means 100 billion per year, which is double or triple of the investments today.
 - However, it is notable that in the more sustainable scenario, investment costs are only 10% higher than currently.
- If we halve emissions by 2050, the likelihood of reaching the 2 degrees target is 45%. This is not enough. We have to do better and have to more than halve emissions. If we aim at a maximum of 3 degrees our chances of halving emissions are much higher, namely 95%.
- To conclude on what we must do:
 - At least halve emissions by 2050,
 - Increase the share of non-carbon energy including CCS by at least 50% or even 80%. Basically this would mean turning the energy system around as currently we depend on fossil fuels to 80%,
 - Double energy efficiency,
 - Increase the price of carbon, starting at 100\$ in 2013 and increasing it to 200-300\$ by 2050,
 - Increase investments in technology,
 - Achieve a paradigm shift to renewables, CCS and nuclear energy.

Governance of Emerging International Bioenergy Markets and Sustainable Land Use

- In the context of a global contract and global governance, bioenergy is highly relevant. However, at the same time it is a very complex issue. Therefore, it is worthwhile looking at it more in detail.
- What is bioenergy about? It is not just biofuels. Bioenergy covers 10% of global energy needs today. Non-commercial traditional use that is not sustainable has to be distinguished from commercial modern use. Of the bioenergy sources, biomass has the largest share today. It is used for heating, combining heat and power, and for electricity production. Biomass is more important than biofuels.
- Regarding biofuels, bioethanol is in a key position. It is competitive and contributes to emission reductions. Biofuels are produced from crops in temperate regions. The share of palm oil is not large as an energy source. It has an inefficient production system and the palm trees grow on lands that used to be forests.
- Concerning the current land use: 20 million ha of land is used for the production of biofuels, which in this sense is marginal compared to the 5000 million ha used for food production.
- Currently, we have a climate crisis, oil supply problems, an economic crisis, an ecosystems crisis, agricultural and water availability problems. We have to look at all these sectors in an integrated manner and not one by one such as in the case of the Kyoto protocol which concerns only climate. Synergies need to be sought and identified, and bioenergy is in a position to provide these synergies.
- Regarding energy supply, when we look at the figures and quantitative analyses, we cannot afford to skip options but need them all, including bioenergy and CCS.
- Regarding agriculture and land use, we will need more food as there will be 9 billion people in the world in 2050. However, we cannot and do not want to use more land for agricultural production but need more forests. Agriculture and live stock are the main threat for biodiversity and land use change, even though climate change may become the main threat later on. Agriculture and live stock is also the main consumer of fresh water, a major emitter of GHG (more than transport). It is also interlinked with poverty: 70% of the poor lives in a rural setting, especially in areas where agricultural production has a low level of productivity and is unsustainable (land depletion and erosion is leading to further forest loss).
- The good news is that if we take advantage of all the possibilities to produce food more efficiently then we will be able to protect the biodiversity and produce the necessary food on 1/5 of the land area we use today for food production. This is because of massive productivity differences between continents at present.
- The overall message is that agricultural efficiency constitutes a key factor in how much land we need to cover food needs. The overall picture is that agricultural production has a conditional potential to be more effective, and bioenergy can become a sizeable energy option.
- But this is only achievable under certain conditions and to a certain extent. These conditions include the necessity to improve agricultural management, to call attention to the choice of crops (choose crops that cause less GHG, have lower costs, higher net energy per ha, and crops for which marginal land can be also used), and gain more commercial experience, especially at the international level.
- Considerable investments in agriculture, a green revolution, are essential to increase efficiency and protect the land.
- How can we achieve this? Bioenergy has a large market potential and is therefore able to remain an economic activity in rural settings. This is a lever that needs to be developed.

- The necessary framework/factors for developing energy in the direction we want to include:
 - Meet sustainability criteria, set a sustainability framework
 - Diversify the resource basis (integrate food crops)
 - Take a holistic approach to energy, agriculture and land use policy
 - Gain real market experience with new market systems (also concerning certification and the harmonisation of criteria).
- Bioenergy is at a crossroads. All the aspects land use, energy, climate and development need to be regarded simultaneously and the themes should be linked together. Hereby roles and synergies need to be clarified.

Othmar Karas, Chair

Member of the European Parliament,

Group of the European People's Party (Christian Democrats) and European Democrats

GENERAL DISCUSSION

Question 1: It is very encouraging to hear today the commitment to equity and justice. I feel that what we want to see is real commitment from the European Commission and the European Union to take things forward, in particular through accelerated action, by working more closely with the developing countries so that we can see the results on the ground in terms of resource transfers and investment in clean technology. We are seeing what can be done to overcome the financial crisis; let's see what we can do about the ecological crisis. It is a question of commitment and cooperation with those developing countries that are ready to move faster.

- **Answer by Ottmar Edenhofer:** I would like to emphasise a simple fact: the financial and climate crises have a common root, namely unsustainable investments. The financial crisis simply tells us that the financial system has destroyed its own basis for business. If we avoid taking action against climate change, we will simply invest a lot in unsustainable projects. To make a practical link: as Lord Stern said at the press conference today, we have put a great amount of liquidity into the system to solve the financial crisis. The next step we need to take is a fiscal boost. Good fiscal policy requires public investments, and you can make public investments in the right or in the wrong way. From my point of view it would be the wrong way if we simply built roads. We can move forward in a much smarter way, namely by investing much more in the electricity grid, CCS demonstration projects, for example for renewables, solar energy production and so on. There are a lot of opportunities now to steer investments in the right direction. So for me people who try to argue that there is an inherent trade-off between resolving the financial and the climate crises are like those on the Titanic: the casino has closed and the party is over but nevertheless the question remains whether we will crash into the iceberg or not.
- **Answer by Wahu Kaara:** I would like to make an important remark: Wealth is not only money or the capacity to make money. It is important for the people in the North to begin to think about what they can learn from the South. If we think of climate justice as the relocation of money from the North to the South we may not be able to address the problem in the best way and in the way time is demanding. Our partnership must be on an equal basis, between people confronted with a common question. It is not going to be resolved simply by feeding more money into development. We reacted like this to the oil crisis in the 1970's and we can see the consequences of that today. My main message is that business is not going to be the same anymore and it is not for those who have the money but for those who have creative imaginations and a very spiritual vision of a world in which life has primacy over everything we do in our everyday life. Justice and equity are so important that we need a totally new mindset, and for that I propose that we learn from the so-called developing world.

Question 2: We need a new mindset and values for large sections of society. What could the EU do to educate people in that direction, in order to get medium and long-term support for everything we do? What educational plans do we or should we have?

- **Answer by Vittorio Prodi:** This is a very important question. There are simply not enough natural resources to cover current consumption and production. We have to indicate different cultural developments, which are not based on material growth, but for example, on the Human Development Index. But this takes generations. This civilization is based on consumption, limitless resources and a limitless capacity to metabolise our waste. But this is not true. We need to build a new civilization, which is based on the limits of natural resources. The main challenge here is to find a consensus for a starting point for global warming mitigation and to extend that to a consensual way to manage scarce natural resources. This is what will come next, after global warming mitigation and climate change adaptation.

Question 3: Mr. Wijkman, a moment ago we spoke about the elephant in the room and I wondered if the elephant became visible. It might have to do with the global level of tipping point, or accelerated climate change driven by powerful feedbacks that would make most of our discussions today almost irrelevant. Why do you think that the elephant has not been exposed in other discussions and what do you think would be the consequences if we really took onboard that leading edge of risk in global climate science?

- **Answer by Anders Wijkman:** I am quite surprised myself that we are talking about 350-400-450 ppm and estimating that there is a 50% chance of keeping to the 2 degrees limit and then we simply move on. If I were a citizen who deals with this matter only occasionally, I would want to know more about those risks, what they entail and if it is reasonable to accept that we have just a 50 % chance of staying below 2 degrees. About the 2 degrees limit: there is a lot of scientific research suggesting that the 2 degrees line is not sufficient. So I agree with you. There is an elephant in the room, and not only in this room but in many rooms. I think it is because we do not really know any, and are not used to dealing with, long-term risks in this magnitude. We are very short-term oriented. Our political and economic systems are short-term oriented and our approach is vertical so that we are not able to see inter-linkages. We do not see things from a systems perspective. As the WTO representative showed today, the WTO deals with trade and the IPCC with climate. There are only few inter-linkages between them, especially formal ones. These are some of my comments to your question.
- **Answer by Vittorio Prodi:** I think that we are reasonably sure about the linear behaviour of the global warming model. The non-linear behaviour, the tipping points, are still full of question marks and the biggest elephants. We must ask more questions and give more resources to the scientific community to fill the knowledge gap about these tipping points. We should also enhance our knowledge of the cooling effect of aerosols.

Comment 1: The Kyoto Protocol has not delivered the promises with regard to adaptation. The current funding only covers about 1% of what is actually necessary. The question is how to generate predictable and adequate funding which amounts to billions of dollars per year. Hopefully the memorandum will contain some suggestions of how this can be done.

Comment 2: I have not heard anything today about keeping fossil fuels in the ground. There is a popular movement gaining strength in the world promoting this. Two governments have been elected on the grounds of this platform, in Costa Rica and in Ecuador. Many social movements in the world are insisting that keeping fossil energy sources under ground is the most direct way to stop global emissions that threaten all life and to maintain the targets. That has not been mentioned as a workable solution. It would stop the activities of the top four petroleum corporations and in doing so build on the initiatives that have been successful in halting the activities of these corporations in the past. Examples of such in recent years are the efforts of women in Nigeria to stop the flaring of natural gas by Shell, which has now led to Shell dropping their export quantities of oil from that country by 50 %, or the initiatives of indigenous people in Latin America that have expressed

themselves in all kinds of oil embargos and refusals to purchase fossil fuels. In this way companies have lost the basis for their profits. So this kind of citizens' initiatives surely should have some place in the discussion of mitigation or addressing climate change if we have any expectations of being successful.

A response to the previous comment from the side of the industry: We had a very interesting discussion with Pavan Sukhdev from Deutsche Bank India today. He touched upon a lot of the points the previous speaker spoke about, as well as the work in Ecuador that is being done to keep the oil in the ground. We also had a very interesting discussion on ecosystem services. We have therefore covered the issue in our debate and it is important to point out that we do try to keep oil in the ground sometimes.

Comment 3: Half a year ago an Agora governance workshop took place in this very room. It was a very interesting meeting of 500 civil society representatives who came to Brussels to discuss these issues and adopt, in my view, very worthwhile conclusions. I am wondering how that Agora meeting connects with this meeting here today.

Comment 4: I have read in a paper that by 2005 we were already committing to a 2.4 degrees temperature rise. How is it then possible to remain below 2 degrees? It is too late, so we should aim at zero emissions.

FINAL REMARKS

G rard Onesta

Vice-President of the European Parliament, Group of the Greens/European Free Alliance

- When I was the youngest MEP we voted on a global law about justice in this plenary room. But law is only a piece of paper. We also need policies and rules for the implementation of law. At the global level there is only one example of justice, namely the WTO which has a court for disputes. We do not have a court of justice in connection with any other international organisation. There is also no court of justice in the field of environment. So in the case of a problem, where is the judge and the police?
- Think of law when you think of justice. Climate is a non-justice system. There are guilty states and victims. Imagine a new system with proportional involvement. We have the principle "common but differentiated responsibilities". We need a truly global effort and to acknowledge the responsibility of industrial countries in financial and technological terms. We are the guilty. The effort must be more concerted. We must transfer technology including intellectual property rights to assist with green technologies. If we do not do that we do nothing.
- This is important in the Agora, too. And what about targets? I hope to receive an answer when we shortly adopt the energy and climate package. The Agora conclusions were very good and your conclusions are very good here, too. These should be written down in some manner in an EP resolution.
- My concern is that the European Council does not wait for the result of the vote in the EP with regard to the climate and energy package. The decisions in the European Council are taken by consensus. They do not vote and it is not a body to design European law. There are important persons there but it is not a process. The process is the triangle between the European Commission, the European Parliament and the Council of the Ministers. To obtain consensus, the European Council sets very low targets. After that, it is very difficult for us in the EP to obtain more. The only place to decide on the climate law is in this Parliament.

- Is it possible to have several crises on the agenda? Before the summer it was all about the climate crisis, since the summer it has been about the financial crisis and the climate crisis seems to have taken second ranking. There is a big risk if we do not understand that we must solve all crises to solve any crisis.
- The rare thing is not gas or oil, but time. We need your help. Even though the Climate Committee in the EP is deeply involved in the process, we need the help of all of you, business, NGO's and the global citizenship. We cannot rapidly solve these challenges alone. I thank you for your help.

Anders Wijkman

Member of the European Parliament,

Group of the European People's Party (Christian Democrats) and European Democrats

- To sum up what we have heard today and what I would like to take with me:
- Firstly, we have enhanced our understanding about the complexities of the problems we face. Due to these complexities, the world is more unpredictable. It requires more systems approaches and horizontal linkages. Addressing climate change alone is in a way ridiculous. It is not going to provide the necessary solutions. Several speakers underlined the importance of terrestrial ecosystems and oceans, their interplay, and that they live a life of their own with feedbacks over which we have little control. We do not have two crises, we have several crises: a financial crisis, a climate crisis, an ecosystems crisis, poverty and disparities. I hope the Washington meeting will understand that in order to be effective they need to take on a broader agenda.
- Secondly, we have improved our understanding of the seriousness of climate change. We already have a 2.4 degrees temperature increase in the system. This effect can be driven back with aerosols. This is a shocking piece of news, which was published only 6-8 weeks ago in a scientific journal. The IPCC does a very good job of improving our knowledge of the overall picture. I hope that in the future the IPCC and other scientific bodies will help us to understand risk panoramas better.
- If we take climate change seriously we need far more emission reductions. If we do not manage climate change, it will manage us.
- How the climate negotiations are organised follows a typical model of political negotiations. The governments system does not live up to the task. It is not about sovereignty.
- What have we agreed to do?
 - There is an impressive list but I think the most important is to agree on what a responsible target for GHG concentrations is. 500, 450, 400 or 350 ppm? I think we have to broaden the discussion, not least with our citizens.
 - And then we have to set targets, but not just till 2020. This is too short-term. We have to incentivise long-term investments.
 - We also have to design policy instruments such as carbon markets. The role of coal is critical here. I wish we would have a debate on this in Brussels as they have in the US.
 - We need new financial resources. We need to redistribute wealth, transfer technology, adapt to climate change and protect forests. We need to at least triple R&D in technology. But where do the resources come from? From auctioning or from taxes, for example. I cannot imagine a new agreement without addressing the issue of additional funding.
 - We also have to deal with ecosystems. For that we also need a new economic model. We need to give natural capital a value. It is a serious challenge for all political parties to reform the economic framework and go beyond GDP. Measures also have to be included.
 - Development policies have to be carried out in a different way. Until now, there has been little connection between ecology and economics, poverty and livelihood ecosystems. There is a special effort agriculture has to make to be more efficient and sustainable. If organised wisely, bioenergy has a role to play. Here, more investments in communities in the South are called for.

- Finally, we need a new set of values to guide us in the future.
- With regard to climate justice: As John Ralls puts it, we should organise society with a starting point, with you as a leader, you as the poorest citizen in your country. We could use his definition of justice as our guiding light.
- Felix, thank you. You inspired us a lot. You reminded us that it is your future that is at risk.

CONCLUDING MEMORANDUM

Climate change is threatening the world's prospects and prosperity. Strong scientific evidence shows that humankind needs to limit the increase of global mean temperature below 2°C relative to pre-industrial levels. Beyond this threshold, climate change is likely to become unmanageable and dangerous, pushing the components of the Earth system past known and as yet unknown tipping points which may fundamentally and irreversibly alter the operational mode of our planet.

Staying below 2°C will be challenging, as the latest scientific evidence suggests that the climate system already contains substantial global warming potential due to existing atmospheric stocks of greenhouse gases and due to the planet's decreasing capacity of sequestering carbon in natural sinks.

The threat is enormous. The solution is equally enormous: a complete decarbonisation of our energy system, a third industrial revolution. As Members of the European Parliament from across the political spectrum, and as representatives from academia, business, and civil society, we urge national delegates deliberating in Poznan to act quickly and decisively in order to avoid dangerous and unmanageable climate change.

We call upon **industrialised countries** to recognise their historic carbon debt and special responsibility to conclude a Global Contract based on climate justice. As part of this contract, they should legally commit themselves to a long-term reduction trajectory, which effectively cuts their 2050 greenhouse gas emissions by at least 80% compared to 1990 levels.

- In line with this target, they should immediately start implementing emissions trading with decreasing caps up to 2050 and beyond.
- They should significantly scale up their investments in energy saving and low-carbon technologies such as sustainable renewable energy sources.
- They should capitalise on the window of opportunity provided by the current financial crisis by redirecting investment flows to projects that will result in sustainable growth worldwide and strengthen institutions of global governance.
- They should provide the developing world with strong and broad support in climate change mitigation and adaptation, for example by boosting the sharing of technology, sponsoring incentive schemes for reduced deforestation, and providing sufficient adaptation funds.

We call upon **developing countries** to acknowledge their growing responsibility to future generations in line with their capabilities and to avoid the same fateful, carbon-intensive growth path the industrial world has taken.

- They should design and implement development plans and policies according to the principles of sustainable development.
- They should strengthen the rule of law and good governance provisions.
- They should implement means of carbon pricing, such as emissions trading or taxes, step by step and reduce fossil fuel subsidies.
- And they should ensure that adaptation funds reach the most vulnerable.

We call upon the **world community** to conclude a Global Contract based on climate justice, taking inspiration from the principle "one person, one emission right" while also addressing historic emissions, equity and development aspects. It is absolutely crucial for governments to agree on emissions reductions that will ensure a high likelihood of limiting global warming to less than 2°C relative to pre-industrial levels.

- The Global Contract should thus emphasise that a reduction well beyond 50% in global greenhouse gas emissions by 2050 compared to 1990 is the absolute minimum requirement for avoiding dangerous climate change.
- The precautionary principle would suggest that we have to aim for average per capita emissions of less than 1 tonne CO₂ equivalents in the long term.
- The contract should define the rights and responsibilities of all nations and allocate the burden of mitigation and adaptation in an effective, efficient, and equitable manner. The contract must be effective in addressing climate change and bringing down greenhouse gas emissions. It must be efficient so that scarce resources are used to the greatest benefit. And it must be equitable by acknowledging the common but differentiated responsibility among rich and poor countries and by advancing sustainable growth in the developing world.

After all, the fight against climate change and the fight against global poverty are won or lost together.