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# Climate Change, Justice, and Clean Development – A Review of the Copenhagen Negotiating Draft

## 1. How *current* climate goal discussions miss IPCC targets

Global climate protection will be in the center of negotiations during the Copenhagen Conference in December 2009. It is very likely that climate change is raising challenges for mankind which have never existed in these dimensions before. In redard to the sheer enormity of these problems, we might also have to think about solutions which have never been there before. Certainly climate is a complex matter. The bottom line of climate protection, however, is quite simple[2]: It is a matter of massively reducing greenhouse gas emissions. This means less consumption of oil, coal and gas. Consequently, the way of life which we established in the Western world over the last 200 years must be reconsidered since it is predominantly based on high fossil fuel comsumption. Even though it might not be clear to everybody, fossil fuels are literally part of everything: Not only of petrol and electricity, but also of thermal energy, fertilizers, of any given product, of plastics or transport of goods. Therefore, high consumption of meat, car travel, long distance vacation, overheated flats, consumer electronics and the many small inefficiencies of modern technology will be challenged by climate change.

Without significantly scaling up our climate protection efforts, the world will be facing economic, security and life-threatening consequences of unknown magnitude. Furthermore, it would be a big problem for global and inter-generational justice if climate change was not confronted more effectively. Let us assume every person has the same rights to a sufficiently stable climate and to equal access to energy; and "the same right" seems to imply that this equality occurs on a quantitatively rather low level, because of climate stability and the limited availability of resources. This seems intuitionally clear even without giving any detailed reasons.[3] The reality, however, is: Although Europe and Germany often claim to be the outrider in climate policy, a German still emits about triple the amount of greenhouse gases compared to a Chinese, and a multitude of what a person from Africa emits.[4] In addition, climate change will have a comparatively higher impact on people living in the southern hemisphere – but also on future generations: they are the ones that will suffer the most from repercussions caused by climate change despite the fact that they did not cause it.

But how big exactly is the challenge to prevent those damages? What would still be an acceptable per capita greenhouse gas emission in 2050? What should the criteria for an

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[2] This common phrase derives from Hänggi, Wir Schwätzer im Treibhaus. Warum die Klimapolitik versagt, 2008.

[3] See a philosophical and legal justification for this idea (and the idea of sustainability) in Ekardt/ v. Hövel, CCLR 2009, 102; Ekardt, Theorie der Nachhaltigkeit, 2009.

[4] See also Baumert/ Herzog/ Pershing, Navigating the Numbers, Greenhouse Gas Data and International Climate Policy, World Resources Institute, 2005, p. 22.

"effective" new global agreement on climate protection be in Copenhagen? It is often said[5] that global warming must be stopped at 2 degrees maximum and greenhouse gas emissions had to be reduced by 2050 by 80% in the developed world and by 50% globally compared to 1990. But international climate researchers of the IPCC demand more drastic efforts in order to avoid the possibly catastrophic developments. According to the IPCC, it is necessary to reduce greenhouse gas emissions worldwide by 50-85% from 2000 to 2050 in order to prevent global warming by more than 2-2,4 degrees Celsius. This assumption, however, is still regarded as maybe too cautious by the IPCC (because feedback effects are not included).[6] With a current world population of 6,6 billion and an expected growth to 9 billion in 2050, this IPCC target would require a yearly per capita emission reduction from 4,6 tonnes of $CO_2$ worldwide – in Germany about 11 tonnes – (without considering deforestation) down to 0,5-1 ton $CO_2$ per person.[7] In consequence, the developed world would have to reduce its emissions by 90% until 2050. However, (1) feedback effects are not considered yet, and (2) a global warming of 2-2,4 degrees could already imply essentially threatening scenarios. Besides this, (3) more recent research, e.g. by NASA[8], shows that IPCC's prognosis regarding climate change in 2007 is not consistent with reality. Climate change will occur faster and more drastic than assumed in the IPCC studies.[9] This basically means to target zero emission society by 2050 – in order to avoid disastrous damages.

One is hardly aware of all this, as climate change is a delayed phenomenon: greenhouse gases remain within the atmosphere for decades, and even if humanity became extinct tomorrow, global warming would still proceed for some time (around 1,5 Degrees Celsius). In a resolution of March 2009, the European Council of Ministers at least called for emission reductions of "up to 95%" until 2050.[10] The agricultural sector might cause virtually unavoidable emissions, which could in consequence require even negative emissions for the energy sector[11], namely recycling greenhouse gases from the atmosphere.[12]

In theory, the inevitable strategy is obvious: strict reduction targets for greenhouse gas emissions, more energy efficiency, more renewable energies – which are hypothetically as free from greenhouse gases as possible – are needed and probably also a certain quantity of sufficiency, as well as frugality, abandoning superfluous things and not a globalisation of a non-sustainable lifestyle.

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5 For instance, the 2 degrees target is mentioned by the G 8 conference in summer of 2009. The "50+80%" target was mentioned by almost every governmental or non-governmental resolution in Germany and the EU until spring of 2009.

6 See also IPCC, Climate Change 2007. Mitigation of Climate Change, p. 15, Index SPM.5.

7 See Hänggi, Treibhaus, p. 31. The author shows that based on the IPCC figures of 2007 – if the world population grows up to 9 billion – the allowed per capita emission output for 2050, without including the feedback effects, would be 1,3-0,4 tonnes $CO_2$ equivalents.

8 See also Hansen, Scientific Reticence and Sea Level Rise, Environmental Research Letters 2/ 2007.

9 See also the new synthesis-text, published by international climate researchers in June 2009 at a conference in Copenhagen. please provide a more specific reference, e.g. the title and date of the conference, or a website?

10 See the conclusions of the environmental council of 02. March 09, available at: http://register.consilium.europa.eu/pdf/de/09/st07/st07128.de09.pdf

11 Even a resolution, adopted by managers of big energy companies in April 2009, considers in any case a Zero-Carbon-Energy Economy until 2050, see Die Tageszeitung of 10.04.2009.

12 This, as discussed lately, does not necessarily imply a fertilization of the seas for better carbon sequestration, which could be problematic and even inefficient. However it could be possible to combine bioenergy with CCS, See Ekardt, Cool Down, chapter 15-16.

## 2. Failures of the Kyoto-Protocol

All in all, the present legal framework of global climate policy fails to meet those requirements. Adopted during the Earth Summit in Rio de Janeiro in 1992, the United Nations Framework Convention on Climate Change is a form of "constitution" of global climate protection and is also the overall target of the national climate strategies. This framework on climate change of the United Nations formulates the binding aim to prevent "dangerous" anthropogenic climate change (cf. Article 2 UNFCCC). The Kyoto-Protocol, adopted 1997, - whose follow up agreement may be adopted in Copenhagen – translates the framework convention consistently into precise reduction duties for greenhouse gas emissions for developed countries until 2012, measured (for most parties) against the base year 1990.

Although it is absolutely noteworthy that there is a global commitment for climate protection, the Kyoto-Protocol constitutes, despite its climate rhetoric, a troublesome child. According to the protocol, developed countries[13] have to reduce greenhouse gas emissions only by 5,2% from 1990 until 2012. Measured against the concept of a Zero Carbon Society, demanded for the occidental world by the IPCC, this is virtually little. Should this minimalistic aim be reached, then most certainly only due to the industrial breakdowns in 1990 in Eastern Europe. In fact, absolute emission rates are still increasing in some parts of the Western world – more precisely: in countries like Canada, Australia and the USA they rise drastically while in countries like Great Britain and Germany they decrease - slightly though. New industrialising countries like China and India are not even subject to any reduction obligations of the Kyoto-Protocol. On a global scale, climate gas emissions increased by 40% since 1990.[14]

However, this conclusion is even euphemistic for various reasons. Though global greenhouse gas emissions mainly result from fossil fuel provided, this is not the only source of greenhouse gas emissions. Deforestation, especially in the rain forest, and agriculture (as long as this does not only include oil for fertilizer production) are much more difficult to analyze and are therefore easily underestimated. Even more importantly: according to the Kyoto-Protocol, industrial countries do not have to fulfil their minimal obligations at home, but can add to their account the financing of climate-protecting activities in developing countries (Clean Development Mechanism), which, however, do not always show the intended effect or reduction. The European Union is even planning to expand CDM from 2013. This will be discussed in more detail later in this contribution. Furthermore: Of the big developed countries, the biggest greenhouse gas emitter, the USA, has refused to ratify the Kyoto Protocol. The position of the USA, together with Japan, Australia, and Canada, is once again problematic during the pre-negotiations of the Copenhagen Conference.[15]

Moreover, the base year 1990 leads to a euphemistic calculation. The real climate gas reduction obligation of the Kyoto-Protocol for Germany, for instance, is about 7% only for the time period 1990-2012. The rest of the agreed 21% of reduction obligation was already fulfilled by the breakdown of the GDR industry in 1990.[16] The situation in Eastern Europe is identical, thus the 20% reduction until 2020, agreed by the European Union for EU member

[13] This does not include the USA which are no party of the Kyoto Protocol.

[14] There are differences in the figures, see also Wicke/ Spiegel/ Wicke-Thüs, Kyoto Plus, 2006, p. 62.

[15] See also the Third World Network, Bonn News Update, No. 1/ 2009, http://www.twnside.org.sg/title2/climate/news/Bonn03/TWN.Bonn.update01.doc

[16] Cp. Wicke/ Spiegel/ Wicke-Thüs, Kyoto Plus, p. 62.

states, is a rather modest aim, bearing the challenge in mind: the required development for a kind of Zero Carbon Society.

## 3. Failures of the drafts of a Copenhagen Protocol (or an amended Kyoto Protocol)

The international community of states is currently striving in various preparatory conferences for a post-Kyoto-Regime, which is supposed to be adopted by the end of 2009 in Copenhagen and apply from 2013.[17] The planned Copenhagen-Protocol might become legally an amendment of the Kyoto-Protocol or it might consist of several legal frameworks. Following up the Bali Roadmap of 2007, the Copenhagen Conference on Climate Change Conference will focus on four areas:

- Emission reduction goals for industrial countries and if applicable also for newly industrialising countries;
- Adaptation to climate change and support for developing countries;
- Technology transfer management;
- Financial support of the developing countries – and in newly industrialising countries like China, India, Brazil, South Africa, or Mexico.

Technically, negotiations take place in two forums (one of the UN Framework Convention on Climate Change and another one of the Kyoto-Protocol); the negotiations could certainly finalise in one single agreement, regulating all issues. So far, many contradictory proposals compete for the above-mentioned negotiations topics. The conducts of negotiations have published all competing proposals of the different states.[18] Indeed it is unclear whether a new climate treaty will be signed in December. If so, the agreement will derive from the less ambitious cadre – due to the principle of consensus in international law.

Many countries suggest agreeing on a long-term goal till 2050 in Copenhagen. Under consideration are for instance: a 2 tonnes $CO_2$ output per capita, 2 degrees global warming or 50% of global greenhouse gas reductions until 2050. As we have seen, such proposals unfortunately clearly miss the IPCC results. The 2 degrees goal would be possible; but it can only be achieved if it is being realized that it requires a radical reduction of greenhouse gas emissions. Regarding the discussions around the proposed climate goals for 2020, nothing is leading into this direction. The USA may offer a 4% reduction target[19], Japan, Canada and Australia are going a similar way.[20] Although the EU is proposing 20-30% until 2020, requesting similar commitments by the newly developed countries, this will hardly be sufficient. The smallest archipelagic states (primarily the Pacific Islands), the poorest countries (LDC, i.e. least developed countries) and most of the South American countries are calling for -45%, following the IPCC-line. However, they refuse to accept long-term reduction obligations for developing countries. This holds also true for the G77, headed by China. Western countries in contrast are also asking for reduction obligations for the newly

[17] For this debate see also Mehling/ Massai, CCLR 2007, 45; Bausch/ Mehling, CCLR 2007, 4.
[18] The draft resolutions for the Copenhagen-Protocol are available at www.unfccc.int.
[19] Under the precondition the Waxman/ Markey Bill is passed in the US legislation procedure.
[20] The base year as well as the upcoming commitment periods are also heavily discussed.

developed countries, relative to the expected business-as-usual. Furthermore, there are no precise financial agreements of the Western countries for the Southern countries.

Unfortunately, the imminent result of Copenhagen might become thus relatively similar to the Kyoto-Protocol: the obligations for the industrial countries remain vague at best, targets for the newly developed countries in contrast are not binding; and there is only a questionable sanctioning for missing targets; many loopholes and exceptions prevail; there is not enough money for adaptation and to fight global poverty, which is still aggravated by climate change and underfunded financial aid in spite of clear financial demands of the developing countries.

## 4. Case Study: Problems of emissions trading and CDM

In order to ensure a successful climate turning point in Copenhagen, the climate would have to get what it did not get so far in the market: a price which represents its "scarcity" – or rather a clear reduction aim which makes the climate more expensive.[21] This sounds "expensive" as a start. It prevents, however, long-term costs of climate change as well as other drastic problems of climate change of existential or military nature. Moreover it prevents permanently rising energy prices due to fossil fuels running short. Prices for fossil fuels will direct us towards renewable energies and sufficiency. It would nonetheless be useless to introduce those options "in addition" to coal and oil. Coal and oil must be replaced by 2050. This is also (more or less) the goal of global emission trading amongst states according to the Kyoto-Protocol (and the European emission trading which is limited to certain branches of industries). The global (as well as the European) cap is still too high and the system characterized by too many exceptions.

An important exception for industrial countries is to be able to avoid emission reductions at home by reducing emissions in the southern hemisphere (and receive additional emission certificates for this). The purpose of this CDM[22] is to cheapen climate protection because climate activities in the developing countries are mostly cheaper to realize than in Europe. As a consequence, the CDM is not really an instrument for climate protection but only cheapens reductions of greenhouse gas amounts. Needless to say, the CDM only works if the activities in the southern hemisphere really save as many greenhouse gases as planned; however, it is this kind of additionality which is apparently questionable for about half of the CDM projects.[23] The process of evaluating additionality normally takes place in accordance with standard assumption and baseline regulations.[24] "Additional" are only those emission reductions which would not have also occurred without CDM. In practice, there are certainly various efforts to avoid these problems of additionality. For instance, some even asked for

[21] To the ideas of this chapter see also Hansjürgens, Zeitschrift für Umweltpolitik und Umweltrecht 2009, 123; Edenhofer et al., International Emissions Trading and the Global Deal, 2008; Bodansky et al., Strawman Elements. Possible Approaches to Advancing International Climate Change Efforts, 2008; Ekardt, Cool Down, Kap. 19-22; Aldy/ Stavens, Architectures for Agreement, 2007.

[22] Generally to CDM see also Knaus/ O'Regan, in: Rodi (ed.): Implementing the Kyoto Protocol – Chances and Challenges for Transition Countries, 2007; Werksman, CCLR 2008, 95 ff.; Streck/ Chagas, CCLR 2007, 53 ff.

[23] International Rivers, Bad Deal for the Planet: Why Carbon Offsets Aren't Working and How to Create a Fair Global Climate Accord, 2008, http://www.internationalrivers.org/node/2826

[24] This means the COP decisions guiding the CDM and its more detailed transformation regulations in national law. However, they do not specify additionality in detail.

calling any private (thus not development political) investment in development countries as "additional", or even any modern technical operation in a development country.

Apart from this, the CDM is subject to even more criticism. The CDM possibly detracts from other options for change and capabilities of the Western world itself. Moreover, it can be demonstrated that CDM projects are in part not as effective for the socio-economic development of political context as assumed.[25] In any case, most of the projects are placed in the newly industrialising countries, in no case in the poorest developing countries.

One of the proposals for Copenhagen is to restrict the CDM to developing countries excluding newly industrializing countries like China or India under certain preconditions. Another option would be to regulate the "additionality" more clearly. This could minimize administration costs at the same time. In contrast to this, another approach would be expanding the CDM – up to whole areas of life (like the electricity sector) and not only several projects anymore. This, however, leads to the following, hardly conquerable problem: The interests of investors as well as hosts aim at producing as much emission certificates as possible. Besides this, there is usually an informational advantage of the actors compared to the supervision institutions.

Some authors[26] therefore think that the CDM and emission trading are pointless per se and merely a selling of indulgences of the climate. The phrase ‚selling of indulgences' – if this means anything at all – may express the opinion that this instrument is only pretending to be an effective way of climate protection. This, however, is only correct regarding the emission trading amongst developed countries and amongst European companies *at the moment.* Instead of fundamental criticism, it might be better to aim for a reorientation of emission trading: with strict reduction targets and tying EU emission trading to the primary energy production[27], which would at least include the biggest part of the carbon dioxide emissions, as well as a 100% auctioning of the emission rights. This taken into account, emission trading could even replace several other instruments of climate protection – and with suitable arrangement also the CDM, as we will see in the following chapter:

## 5. Challenges and alternatives to the mainstream global climate politics

The main problem of the Copenhagen negotiations is that, in its causes and impending effects, climate change is a genuinly global problem which nation states alone cannot master. Furthermore, it is a problem of public goods: It makes little sense for individual states to push for change when they are incapable of saving the climate by themselves. This is all the more relevant as such efforts, such as charging companies with higher energy costs, might imply costs for nation states that would lower their competitive capacity within the global contest for investment.[28]

As the rich countries of the West can be charged with causing the bulk of climate change, many observers emphasize the responsibility of these states to press ahead with climate

[25] CDM-Watch, The World Bank and the Carbon Market, 2005, www.cdmwatch.org
[26] See also three articles of Winter, Wegener and Beckmann/ Fisahn in Zeitschrift für Umweltrecht 2009, No. 6.
[27] The EU ETS is focused only on single industrial branches.
[28] See also in more detail to the causes of not very effective climate policy Ekardt, Theorie, § 2.

protection initiatives. However, this points at another problem with regard to public goods which is partly responsible for the failures of effective climate protection to date: If developing countries do not have to comply with any reduction targets, as agreed upon in the Kyoto Protocol, there are reasons to believe that the amount of oil, coal and gas emissions that have been reduced in the Northern hemisphere will simply be produced in the South. The idea to spare developing countries the costs of climate politics could thus becomes absurd.[29] Moreover, the dangers of climate change are urgent and our hesitation is tempting oil barons to flood the market with their fossil fuel reserves.

What could be an alternative for Copenhagen? Global greenhouse gas emissions should be strictly limited and distributed equally per capita in order to avoid disastrous climate change.[30] These emission rights would be hold by the nation states then. The margin per head in 2050 should be around 0,5 tonnes carbon dioxide equivalents per year according to the IPCC – which is more than the current greenhouse gas emissions of many of the developing countries, however far less than the present per capita emission of the Western world. Instead of starting directly with 0,5 tonnes emission per capita on a global scale, one would approach this target by several steps before 2050 to ensure an effective implementation (starting for instance by 5 tonnes in 2013). Developed countries, emitting a high amount of greenhouse gases would usually have to buy emission rights from the southern countries, which do not need them due to their little national emissions. Although this kind of emission trading amongst states does exist already, it does neither include the southern countries nor stringent climate goals for Western countries.

Thus not only climate protection but also the second global problem could be tackled: global poverty. Additionally, strong climate protection could lead to dynamic economic development, which could help to manage the global financial crisis. Furthermore, developing countries need to be integrated gradually into global reduction obligations of greenhouse gas emissions by providing them transitionally with extra emission rights. In contrast, Western countries would have to be subject to higher restrictions. A global institution – like the existing UNFCCC Secretariat in Bonn - would need to be entitled to supervise the reduction of emissions and in case of need to sanction it strictly.

The annually decreasing aggregate number of emission rights held by each state or each group of states, for instance the EU, after international emission trading would have to be distributed amongst the producers of primary energy (like electricity and oil companies) by an extensive European emission trading system. Those producers of primary energy should only be allowed to emit greenhouse gases to the extent that they hold emission rights. This would cover, in contrast to the present EU emission trading scheme, which only includes some industrial sectors and weak targets, nearly all climate gas emissions, as production and consumption greenhouse gas emissions of all persons living in a state is all but most clearly

[29] On the following, see Sinn, Das grüne Paradoxon, 2008; Edenhofer/ Kalkuhl, Das „grüne Paradoxon“ – Menetekel oder Prognose?, 2008. The problem could be solved, if the EU moved forward in climate policy and combined this with a system of border adjustments for imports and exports; see Ekardt/ Schmeichel, Critical Issues in Environmental Taxation 2009, p. 737.

[30] On the following model see in more detail Ekardt, Cool Down, chapt. 19-22 and Ekardt/ v. Hövel, CCLR 2009, 102 ff.; partly similar Wicke, Beyond Kyoto. passim; Berger, Der lange Schatten des Prometheus. Über unseren Umgang mit Energie, 2008; slightly different: Kartha/ Baer/ Athanasiou, The Right to Development in a Climate Constrained World. The Greenhouse Development Rights Framework, Paper of the Heinrich-Böll-Stiftung, EcoEquity, and the Stockholm Environmental Institute, 2007.

represented by primary energy. In consequence some national climate instruments could be replaced. Primary energy companies would have to buy emission rights for instance at auctions and thus pass on those prices, distributed on products, electricity, heating and fuel, to the consumer. At the same time a nation or a group of states, like the EU, would distribute the auction revenues equally per capita to every citizen (so-called “eco-bonus”). Furthermore, sectors like land use, aviation and shipping as well as deforestation, which occurs in the rain forest, would have to be fully included in all this, as they are also relevant for the climate.

By this means, a significant reduction of global greenhouse gas emissions and of the consumption of fossil fuels would take place. In consequence this would massively lead to more renewable energies with low greenhouse gas emissions and energy efficiency, which would also be economical efficient – considering not only the high costs of climate change. Even from a short-term perspective energy efficiency and renewable energies are favourable – by enhancing new branches of the economy and simultaneously becoming independent from energy imports and increasing oil prices. By this means permanent energy supply is ensured and violent conflicts about decreasing resources can be avoided.[31]

It would be more than fair if Western countries paid southern countries by buying emission rights, as the per capita emission of a European is still several times more than that of an Indian or African – who should be allowed to emit more climate gases in order to overcome oppressive poverty in the southern hemisphere. All the more so when regarding the fact that people living in the southern hemisphere – as well as future generations – will be suffering the most from climate change, which was mainly caused in the Western countries. At the same time the “eco-bonus” would help socially disadvantaged persons in Western countries because they usually consume less energy and products (and therefore pay not more for the emission trading costs than they would get from the eco bonus). Hence energy would remain steadily affordable for anyone – independently from oil and gas prices. This applies even if the “eco-bonus” was low in the west and high in the south, because costs of international emission trading would be subtracted from the Western eco bonus and added to the southern one. A global economically and socially compatible turnaround in climate policy, which would be profitable for (nearly) everyone (especially for people in developing countries because of a high eco bonus and low emission trading costs, as they do not consume much energy at the moment), thus seems possible.

Therefore this model benefits developing countries not only in theory but advantages the people living in the South in concrete terms: in contrast to CDM projects there is not only a little bit of financial support for adaptation and climate protection for the benefit of a few privileged people. Furthermore funding - the popular instrument of climate and development policy – can be replaced. Funding for developing countries is likely to be adopted in Copenhagen in order to encourage a climate friendly development in the southern hemisphere as well as to finance adaptation to climate change. However there are possible problems: There will not be enough financial aid provided; donors renege on their initial commitments; and the beneficiaries of the funding may primarily be a few wealthy or corrupt people of the recipient countries. Thus a comprehensive strategy is likely to better guarantee financial and technical aid.

[31] See also Welzer, Klimakriege. Wofür im 21. Jahrhundert getötet wird, 2008.

## 6. Historical climate justice

Historical emissions and how to take them into account is one of the substantial issues in the negotiations between industrial nations and developing and newly industrialising countries. Historical emissions describe those emissions that have been mainly emitted by Western countries from the time of industrialization, 200 years ago, and have ever since been in the atmosphere. As a consequence many developing countries are calling now for the industrial world to clear their historical debts. Therefore they hope a Copenhagen protocol include financial aid without binding reduction targets for the developing countries. Developed countries - the EU, and even more the USA, Canada, Australia and Japan – however show only little interest in historic emissions or high reduction targets but promote instead little funding and a clear long-term reduction perspective for southern countries.

A compromise would be the idea presented above of global long-term reduction targets combined with an unequal initial allocation in favour of the South (but including binding targets for developing countries as well). Unlimited climate change will damage all humans and even future generations. Consequently there is a fundamental need for international (and not only Western) climate protection activities. As demonstrated above, a global climate protection plan can also include interests of people living in developing countries as poverty and climate change will be tackled jointly. An unlimited climate change itself would be of disastrous consequences for the poor throughout the world.

A more extensive compensation of historical emissions would however seem inappropriate for various reasons:

- It would be misleading to assume that industrial states enjoyed a great “benefit” from historical emissions. Countries like China or India are also profiting from such a “benefit” by importing Western technologies and economic systems, which enables them to establish comparatively rapidly an acceptable standard of living.

- Considering historical emissions – and the question of their exact amount - would moreover lead into a complex debate about the countries’ advantages and disadvantages of global historic developments during the last centuries. Thus it will remain impossible to precisely define “historical debts”.

- However most important: Referring to historical emissions means dealing with advantages and disadvantages of departed individuals and also regarding nations as collective entities. Nevertheless if the idea presented above of “one human – one emission right”, which comes from the individuality of human beings, is convincing those assumptions are incorrect. As I am not my grandfather I will not be responsible for his lifestyle.

By way of conclusion: limited consideration of historical emissions as well as the costs of adaptation - regarding extra emission rights for developing countries beyond the per capita formula, and simultaneously less emission rights for industrial countries – would be easier, less bureaucratic and more reasonable.

## 7. How the economics of climate change conceal the required turning point

Most economists researching climate change – which are becoming more and more dominating within the climate debate – would respond to these arguments by pointing out that "calculating" the right amount of climate protection would prove more rational. For instance, William Nordhaus[32] and his theories on how to handle the climate change are not only important within the debate on climate economics but also used to have influence over the US governmental position on climate change in the past. Nordhaus' analysis is based on economic theory: "The essence of an economic analysis is to convert or translate all economic activities into a common unit of account and then to compare different approaches by their impact on the total amount. The units are generally the value of goods in constant prices."[33]

Nonetheless the economic definition of "justice" based on the translation and calculation of opposing preferences into a market value has to be reviewed for various reasons[34]: Nordhaus does not consider historical emissions and future generations at all. Furthermore, calculating the costs of climate change (and, by corollary, the costs of climate policy) does not bear in mind that current circumstances, like the threat of damage to people's life and health, can hardly ever be quantified into monetary units.[35] Neither the absence of damage to life and health has a market price equivalent, nor peace in terms of "absence of resource conflicts". Thus, neither is adequately translatable into the economic effects of climate change and climate policy.[36] Furthermore the economic way of allocating market rates to priceless interests and issues is questionable as well. Hence, the importance of climate protection cannot be measured by a "hypothetical citizen's willingness to pay" for life and health (in terms of absence of climate turbulences and resource conflicts) since every willingness is fictitious and not representable. Furthermore, a citizen's willingness to pay is always depending on his ability to pay. This would lead to the remarkable conclusion that Bill Gates' interest are much more important than the one of a Bangladeshi – simply because Bill Gates is able to pay much more than the Bangladeshi. Apart from that, uncertain future events can hardly be precisely translated into costing in any event. Besides: if counting then at least counting with all real, identifiable monetary costs, so why does Nordhaus not consider military expenditures, for example for conflicts on oil and water, which may threaten the world due to climate change? For all the reasons given it is important that politics not be mainly based on alleged rational economic advice in Copenhagen.

[32] See Nordhaus, A Question of Balance, 2008.

[33] See Nordhaus, Question, p. 4.

[34] See a comprehensive review in Ekardt, Theorie, § 6; Ekardt, Cool Down, chapt. 36-37; Hänggi, Treibhaus, S. ....

[35] Even Stern, The Stern Review, 2007 admits this.

[36] Certainly it is possible to balance between different rights, values, or principles from a legal as well as a moral point of view; this balancing can follow universal standards and so clarify if politics take place within the scope of justice or breaking the rules; however balancing this cannot be a matter of mathematizing. See also Susnjar, Proportionality, Fundamental Rights, and Balance of Powers, 2009. Legal debates are trying to conceal the method of balancing though. Famous for this is Böckenförde, Staat, Verfassung, Demokratie, 1991, p. 188.