Ott, Hermann E.; Sachs, Wolfgang

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Ethical aspects of emissions trading: Contribution to the World Council of Churches Consultation on "Equity and Emission Trading - Ethical and Theological Dimensions", Saskatoon, Canada, May 9-14, 2000

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Hermann E. Ott
Wolfgang Sachs

Ethical Aspects of Emissions Trading

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Wuppertal Institute for Climate, Environment and Energy
Climate Policy Division
Dr. Hermann E. Ott
Dr. Wolfgang Sachs
Döppersberg 19

42103 Wuppertal
GERMANY

Tel.: 0202-2492-173 (Dr. Ott)
Tel.: 0202-2492-177 (Dr. Sachs)
Fax: 0202-2492-250
E-Mail: hermann.ott@wupperinst.org
E-Mail: wolfgang.sachs@wupperinst.org
http://www.wupperinst.org

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1 Introduction

This paper attempts to explore some of the ethical issues inherent in the concept of "Emissions Trading" (ET). While it is fairly novel in terms of practical application, the instrument has gained enormous publicity and importance since the adoption of the Kyoto Protocol in December 1997. Alongside the "meaningful participation" of Developing Countries, the inclusion of Emissions Trading in the Protocol was a top priority of the US and was of vital importance for other industrialised countries and for Russia. In fact, the question almost brought down the negotiations during the last night in Kyoto (Oberthür/Ott 1999, 188 et seq.). Afterwards the international process came to a standstill until the Parties to the Framework Convention agreed on a timetable for the resolution of the outstanding issues — the so-called "Buenos Aires Plan of Action".

According to this timetable, agreement on elaborated rules for Emissions Trading and the other instruments (Joint Implementation (JI), Article 6**,** and the Clean Development Mechanism (CDM), Article 12) should be achieved at the Sixth Conference of the Parties to the UNFCCC in The Hague, November 2000 (COP 6). The post-Kyoto process was — and still is — driven by the knowledge that without agreement on these instruments the Kyoto Protocol will not enter into force. Many of the expectations and opinions expressed on this subject must be seen against this background.

The "trading" of greenhouse gases (GHGs) is an integral part of the so-called "flexibility mechanisms". These mechanisms were designed to facilitate the fulfilment of the quantified targets set out in the Kyoto Protocol and to lower the overall costs of complying with the Protocol (Grubb 1999; Oberthür/Ott 1999). In theory, Emissions Trading is an instrument for reaching maximum efficiency of abatement efforts. Countries differ with regard to their marginal abatement costs because of their different dependence on production activities that emit GHGs, their relative resource efficiency and their dependence on and access to energy sources (coal, gas etc.). Under these conditions, each entity obliged to reduce emissions by a fixed amount is supposed to gain from trade, as long as costs differ between those two entities (Edmonds/Scott et al. 1999).

Due to the political struggles in Kyoto, only rudimentary provisions on Emissions Trading have been incorporated into the Protocol itself. The basic mechanism is simple: any country that stays below the limit of the binding limitation and reduction obligations established in Article 3.1 and Annex B may transfer the difference to another Party. The "assigned amount" of emissions that is transferred is then

subtracted from the allowed emissions of the seller-country and added to that of the buyer-country (Article 3 paragraphs 10 and 11). Article 17 of the Protocol completes this design with just three sentences: the Conference of the Parties (COP) of the Convention shall define the detailed rules; only Parties included in Annex B may participate in ET; and trading shall be supplemental to domestic actions.

These statements clarify that only Parties with binding limitation and reduction obligations will be able to participate in trading, since Annex B sets out the differentiated targets for each country. The quantitative "cap" is vital for the economic functioning of any trading regime and should ensure that overall emissions with trading do not exceed those without trading (save the "hot air" from Eastern European countries, see below). Most issues have been left unresolved, however. These unresolved issues include, *inter alia*, the time when trading might start, the definition of participants (i.e. whether private entities will be allowed to trade), which part of the Kyoto obligations may be achieved through trading (supplementarity) and the regulations regarding monitoring, verification and, ultimately, enforcement of the rules. Similarly, all institutional and procedural aspects of the trading regime will have to be developed. These more technical issues are elaborated elsewhere. (Bohm 1998; Edmonds/Scott et al. 1999; Grubb 1989 and 1999; Missfeldt 1998; Oberthür/Ott 1999).

For the purposes of the present paper, we will instead concentrate on some core questions regarding issues that tend to be neglected in the negotiations, which are usually more concerned with diplomatic manoeuvres and legal technicalities. We will focus on some of the ethical assumptions upon which an Emissions Trading architecture would rest. We proceed along core questions in building an ET system that, in our opinion, involve ethical decisions.

2 Why reduction targets?

Any Emissions Trading system rests on mutually agreed reduction or limitation targets. These targets define the overall volume of permissible emissions available for trade. Setting such limits requires an major commitment on behalf of all partners in the process. The ethical reasons, which sustain these commitments, therefore have a defining power and are likely to shape successive decisions as well. Although reduction targets are the common result of any approach, the storylines underlying these ethical reasons may differ considerably. For the purpose of the present discussion, we distinguish four storylines, entitled "avoiding threats", "optimising a resource", "holding in trust", and "respecting fellow-beings". A fifth one, called "rejoicing in creation" could be added, but is not considered here.

Optimising a resource

From a conventional economic perspective, the natural world appears as a storehouse of resources to be turned into value. Nature provides the sources, sites, and sinks for industrial activity, which produces valuable goods and services for consumers. However, neither the depletion of sources nor the degradation of sites or the overflow of sinks are accounted for in the books; nature is considered a free and potentially infinite good. External costs to nature become a problem only if somebody else's property is impaired. The rest falls into oblivion, overshadowed by the perceived duty of economic actors to increase efficiency in a competitive market.

Against this backdrop, the story-line "optimizing a resource" speaks about the failure of the narrow pursuit of self-interest and calls for collective rules instead. Egocentric ethics gives way to utilitarian ethics (Merchant 1990), which advocates the regulation of individual action in the name of the greater good of a greater number of people for a longer period of time. From a utilitarian perspective, the global atmosphere is seen as a sink that overflows because of its uncoordinated use by competitive, growth-producing economies. Regulation is regarded as necessary, because the accumulating of emissions over and above the capacity of the sink may eventually undermine the prospects of further economic progress. Such regulation will have to curb individual tendencies to enlarge economic power. Optimising advantages for everybody in the long run by limiting the maximisation of advantage by everybody in the short run is the economic rationale for setting reduction targets. As a consequence, the selection of targets will have to be guided by a utilitarian calculus of aggregate benefits and costs rather than the individual actor's self-interest.

Avoiding threats

Protecting the climate for protecting humans is the most widely accepted storyline underlying reduction commitments. As climate change may endanger possessions, health, and even survival, in particular of the weaker sections of the world population, many stakeholders call for action. Thus, perceived vulnerability is the reason for ethical commitment. In contrast to conflicts about, say, the conservation of forests, what is at stake is not in the first place the protection of nature from man, but the protection of man from nature.

Invoking threats to everyday security makes people listen. It is the strength of this storyline to offer a vocabulary by which consensus can be forged even in a morally indifferent world. After all, moral consensus is difficult to come by in contemporary society, since the grand ethical narratives which once told about "progress", "solidarity" or the "right social order" have withered away. In fact as the anthropologist Mary Douglas (1990) once noted, the concern for security and survival offers some of the last forensic resources available to muster support for common action in a post-ethical society. When shared norms about society fade, the concern for security is the only common concern left. Referring to security appeals to the common good, but to a common good stripped to its bones. As a result, necessity, not hope motivates action.

Holding in trust

With its formulation "protecting the climate system for the benefit of present and future generations", the FCCC refers back to a concept which has gradually come to the fore since the Conference on the Environment in Stockholm 1972. The well-being of future generations is supposed to enter into the set of factors to be considered for decision-making in the present. While for decades posteriority had only figured as future beneficiaries of progress, it now emerges as a possible victim of it. Justice across generations demands restraint today. The concept extends the principle of equity among the human community along the axis of time.

Climate protection in this storyline is a matter of rebalancing relations among people rather than between people and nature. It views the human community as a partnership among all generations – the living, the dead, and the unborn. For this reason, this storyline looks at the Earth as a trust, passed on to us by our ancestors, to be enjoyed, and passed on to our descendants for their own use (Brown Weiss 1992, 395). Just as the rights of the previous generation were matched by their duties to the present one, the rights of the present generation are matched by their duties to the subsequent generation. Being a beneficiary of the global commons today, therefore, also implies being their trustee. It is from a sense of identity that extends across time that concerns for climate as a common heritage emerges. To

what extent, however, will an age, which eagerly breaks its ties with the past, be able to establish ties with the future? This is the conundrum of this storyline.

Respecting fellow-beings

So far, the ethical frames presented have had a clear anthropocentric slant. The welfare of humans, today as well as tomorrow, has been the focus of attention. In contrast, this storyline starts with the assumption that humans are not entitled to inflict climate change upon the communities of plants and animals, which — along with humans and inanimate matter — make up the biosphere. In this account, non-human beings have rights as well. They have not just instrumental, but also intrinsic value. Climate, it can be said, has standing because it is essential to the flourishing of many species. Aldo Leopold's land ethic, which sees man/woman as a fellow of soils, waters, plants and animals, can be also applied to the largest community, the biosphere. Leopold's words can be used with regard to global warming: "A thing is right when it tends to preserve the integrity, beauty, and stability of the biotic community. It is wrong when it tends otherwise".

This affirmation remains valid even if one subscribes to a more dynamic concept of nature. The more nature is seen as self-organizing, disorderly, and partly unpredictable, the less interference by humans is in order. To live in partnership would imply to respect nature's freedom as an autonomous agent. Extending this line of argument to the realm of worldviews, it could be added that the perception of nature as an autonomous agent that is not part of the man-made world is engrained in many cultures, including the West. The prospect that there may no longer be such a thing as a natural weather event is deeply unsettling for this perspective.

Obviously, these four conceptions are not mutually exclusive. However, they do imply a gradient. Reading from 1 to 4, they increasingly afford more weight to the value of ecological effectiveness. As choices arise in the climate debate which have to balance ecological effectiveness against economic efficiency and equity, positions taken on these points will shape the outcome of the choices.

3 Who should have reduction obligations?

The climate regime has been vexed from its inception by the question of participation of developing countries in the effort to control greenhouse gases. Whereas in principle any effective strategy will require universal participation in the long run, considerations of historical responsibility, the polluter pays principle, the imbalance regarding adverse effects of climate change and the unequal capabilities between North and South call for a differentiated approach.

Under the FCCC, developed countries are requested to take the lead in combating climate change. Art. 3.1 reads as follows: "The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof." The text offers no explicit justification, but it is not difficult to identify four different reasons for this clause. First, industrialised countries are responsible for the bulk of carbon dioxide emissions accumulated in the past; some 80% of the rise in cumulative emissions since 1800 are caused by developed countries. Second, in 1996 developed countries were responsible for 61.5% (UNDP 1998, 202) of global carbon dioxide emissions. The fact that the emissions of the South will surpass those of the North sometime after 2020 (IEA 1998a) does not basically change this picture. Third, the adverse effects of global warming are going to be distributed unequally between North and South; those who cause the problem are — in relative terms — likely to be the winners, and those who have been the bystanders are likely to be the victims. Fourth, developed countries possess more capabilities to respond to climate change, at least with regard to financial resources and technical ingenuity.

The Convention largely attributes responsibility according to the "polluter pays" principle. As a consequence, Article 4.2 of the FCCC contains a loosely worded non-binding commitment by industrialised countries to "aim" at returning their emissions to 1990 levels (Bodansky 1993; Oberthür/Ott 1999, 34 et seq.). Moreover, the Kyoto Protocol, according to its letter, contains quantified targets for those industrialised countries listed in Annex B only, despite repeated attempts by the US and other non-European industrialised countries to achieve some substantive commitment from developing countries. These attempts will continue and occasionally disrupt negotiations, but will ultimately fail. Nevertheless, there is little doubt that quantitative commitments for the biggest and most advanced developing countries will be on the agenda for negotiations on the second commitment period, i.e. from 2005 onwards (cf. Article 3.9 of the Kyoto Protocol).

In any case, in envisaging climate-friendly scenarios for the next century, it is helpful to distinguish two distinct trajectories across a variety of initial conditions starting from the two opposite poles (GCI 1999; Shukla 1999). Generally speaking, industrial countries start their trajectory towards a low-risk and equitable level of fossil energy flows from high consumption levels, reducing them over time until they reach sustainable levels in terms of both ecology and equity. This may be called the trajectory of contraction. Developing countries, on the other hand, start from relatively low levels of fossil energy flows, increasing them over time until they approach the trajectory of industrial countries at sustainable levels of resource throughput. This may be called the trajectory of convergence. Each trajectory poses related, but different, challenges. For industrial countries the challenge consists of reducing resource flows. For developing countries, it consists of raising levels of resource consumption at a much smaller gradient than industrial countries did historically. Both trajectories will imply reduction commitments, at different levels and at different times.

However, a more fundamental question may be whether the juxtaposition of "developed" and "developing" countries still reflects social and economic realities. In climate negotiations, states are being constructed as subjects of responsibility. This puts climate policy firmly into the framework of what can be called "the Westphalian constellation". In this framework, the world of nation-states, which came into existence after the Peace of Westphalia in 1648, was seen as a series of containers, which hold a society and all its layers within a territorially bounded space. As these containers burst open with globalisation, some of the "Westphalian" assumptions become more and more fictitious. Related to climate policy, we will address the assumptions of internal homogeneity, of equivalence between states, and of states as sovereign actors.

First, since states are regarded as equivalent, their emissions are being considered equivalent. However, as has been pointed out by Agarwal/Narain (1991), the aggregation of equivalent emissions conceals the fact that they are of a very different social quality. Methane emissions from the rice fields of subsistence farmers in the Philippines and carbon emissions from the exhausts of US four-wheel sport utility vehicles are similar in their biophysical effect, but drastically different in their social content. Lumping subsistence emissions together with luxury emissions is hardly fair (Shue 1993), but it is common practice. Along with the socially neutralising effect of aggregating carbon emissions with non-carbon emissions in the basket approach, this statistical abstraction plays out in favour of high carbon emitting countries.

Second, assuming that states are relatively homogenous internally shields the fact that huge disparities among social classes exist within states. Affluent groups within industrialising countries, such as Brazil, Mexico, India or China, use about as much energy and materials as their counterparts in the industrialised world, which implies a level five to ten times higher than the average consumption in these countries

(Siddiqi 1995). As “Omnivores” (Gadgil-Guha 1995), just as their Northern counterparts, they are in the position to capture resources at the expense of the social majority. If the “polluter pays” principle were applied not to states, but to members of the global middle class, then most of the Southern middle classes would have to accept reduction commitments already today. At any rate, the trajectories of contraction and convergence also apply to the development paths of different social classes within countries.

Third, the focus on states as responsible actors obscures the fact that other entities, namely transnational corporations, may be at times more responsible for emissions than states. After all, among the 100 largest economies in the world today, there are only 49 countries, but 51 companies (Anderson-Cavanagh 1997). Comparing company emissions to country emissions yields interesting results. For example, British Petroleum’s operational emissions surpass easily those of a country like Belgium, while its production accounts for emissions that surpass those of its home country, Britain. Oil produced by Shell alone emits more carbon dioxide than most countries in the world, including Canada, Brazil, France, Australia and Spain, while those of Exxon Mobil equal some 80% of those from all of Africa (Bruno et al. 1999, 7).

4 How should allowances be allocated?

The Parties to the Kyoto Protocol have embarked upon the creation of a new "commodity" – the allowance to emit a certain amount of GHGs within a certain timeframe. In this way, an "initial allocation" of emission allowances has already taken place for the industrialised countries listed in Annex B. This rather arbitrary allocation of "assigned amounts" to industrialised countries follows the so-called "grandfathering rule", i.e. emission allowances are derived from historic emission levels (generally the base year 1990). As highlighted by China, India and other developing countries, starting from the status quo can hardly be seen as equitable, if applied to their own emissions.

According to the three principles developed by Thompson/Rayner (1998) for resolving practical problems at making fair allocation of resources, industrialised countries have thus claimed "priority": first in time, first in right. It is a pragmatic principle, derived from water laws and adapted to the international arena of Realpolitik. The other two principles are more complex – proportionality, i.e. the distribution of benefits according to criteria like rank, contribution or need, and parity, the egalitarian principle of equal rights to all claimants. The latter has gained considerable support in the South, but also among researchers in the North. India, for example, submitted language before COP 6 that equity between North and South should include "equity with respect to per capita greenhouse gas emissions, so as not to perpetuate existing inequities …" (Doc. FCCC/SB/1999/8, para.149 (b)). Brazil, in the run-up to Kyoto, presented calculations based on historical per-capita emissions (FCCC/AGBM/1997/Misc.1/Add.3). Also the above mentioned "contraction and convergence" approach is supposed to lead towards equal per capita emissions (The Corner House 1997; GCI 1999; Baumert et al. 1999). Under the convergence approach, equal per capita emissions would guide the allocation procedure over the long-term, i.e. per capita emissions of the various countries would converge to an amount considered to be sustainable.

Despite some claims that the egalitarian approach is the only ethically justifiable method of allocation (Agarwal/Narain 1991; Grubb 1995), it is not without problems. Industrialised countries do not start from scratch, but have locked themselves into a fossil-based infrastructure, which cannot be dismantled in the short and medium term. This may entitle them to a "bonus" for a first mover disadvantage. On a more fundamental level, aiming at a world with equal GHG emissions per capita – even only for a transition period – is about as attractive as aiming for a world with equal GDP per capita. Any such standardisation is a threat to diversity. While conventional development homogenised cultures in the name of

the dollar, climate policy does not need to follow the same route while "rescuing the world" from overdevelopment. Indeed, the egalitarian rule should not to be mistaken as a planning objective for planetary redistribution. It is rather a moral principle guiding an actor's behaviour. Loosely paraphrasing the Kantian imperative, it makes sense to say that a society can only be called sustainable if the maxim of its action is such that it can be the maxim of every other society. Accordingly, the principle of equal right of all people to the world's resources is in the first place a yardstick for the self-examination of each society, not a global planning norm.

In addition to ethical considerations outlined above, political realism will therefore tend to lead towards a solution of "adjusted egalitarianism". The contraction and convergence approach offers a framework within which modifications can be negotiated. This does not imply that egalitarian principles will be disregarded, but merely that they will not be used to prescribe the necessary outcome ("equal per-capita distribution of emission allowances"). Instead, egalitarianism may better serve as a regulatory principle, a "Leitbild" that determines the direction and provides guidance.

The long-standing debate on the fair differentiation of commitments between industrialised countries (Torvanger et al. 1996) has shown that there are a number of factors in addition to population size that need to be taken into account in order to allocate GHG emissions on a national basis under a global limit. These include geographical as well as climatic conditions, and strength and energy intensity of the economy. Taking such criteria as a starting point has greatly helped the European Union to finally agree on an internal "burden sharing". Admittedly, however, the final outcome looked very different from the initial allocation that was broadly based on rational factors (Oberthür/Ott 1999, 143).

5 Should there be trading of emissions?

When a given volume of GHG's has been defined by an international agreement as permissible over a certain period of time, emission allowances become, economically speaking, scarce goods. As demand will be higher than supply, allowances will command exchange value. This value will basically be determined by the size of supply on the one hand and by the perceived utility of fossil-based combustion (in the case of CO_2) on the other. Where the threshold regulating the permissible amount of global emissions is set depends on what kind of risk is politically accepted over what period of time and for whom. The more inclusive the ethical storyline adhered to; the lower will most likely be the level of risk accepted. And the desire for combustion will, inter alia, depend on the extent to which a society has embarked upon a sustainable development path; the more national income is decoupled from carbon emissions and the more well-being from national income, the less will be the pressure to emit.

Parcelling out shares of the global atmospheric commons to be exchanged among trading partners appears to be strikingly similar to the enclosure of communal forests in 18th century Europe. Just as the enclosures put in place both property rights and forest protection, denying access for common people, the assignment of emission permits ensures protection by granting property rights, eliminating unregulated use by any player involved. Following this analogy, trade regimes have been criticised for turning parts of the global commons into saleable pieces of property, i.e. commodities (Belliveau 1998). Indeed, such a conception would clearly contradict ethical narratives that see the atmosphere as common heritage of mankind, as integral to the Earth's bio-community, or as God's creation. Possibly for these reasons, the Indian government has demanded to ensure "that the Protocol has not created any asset, commodity or goods for exchange" (Doc. FCCC/SB/1999/8, para.149 f).

However, these objections would not hold if one considered the price of emission permits not as a rent yielded by a property, but as a fee to be paid for the temporary right to use the atmospheric commons beyond its sink capacity. In fact, the temporary nature of permits along with the fact that a price tag will be attached not to the use but to the overuse of the commons, suggests to interpret the price for a permit not as a price for acquired property, but the price for obtaining a user right. Money gives the right to access, but not to ownership.

Following this consideration, a trade in permits takes on a different meaning. It would not be instituted in the first place for identifying the most efficient allocation

of abatement investments, but for forming the price of user rights. After all, the market, under conditions of relative symmetry among players, is the most ingenious technology for determining prices.

Finally, however, who should own the revenue generated from the trade of permits? The answer is usually “governments”, since it is governments that create permits through joint action in the first place, and it is governments that receive payments for permits sold. But from a commons point of view, it is undoubtedly humanity that holds the biosphere in trust; all citizens equally share in the trusteeship of a commonly inherited patrimony. It follows from this line of thought that the revenue gained from issuing user rights belongs to all citizens; neither corporations nor governments are as a matter of course entitled to appropriate the sky rent. For dealing with this issue, the establishment of a Citizens Sky Trust has been proposed on the national level (Barnes 1999), but on the international level, a discussion is badly lacking.

6 Should there be international trading of allowances?

Broadly speaking, the Kyoto Protocol has been the outcome of two partly contradictory negotiation objectives. On the one hand, there was the move towards defining reduction commitments that are legally binding. On the other hand, there was the ambition to maximise "flexibility" in all directions in realising these commitments. Emissions trading is one of the three flexibility mechanisms in principle agreed upon at Kyoto, along with Joint Implementation and the Clean Development Mechanism. These still rudimentary defined mechanisms are the main reason for the confusing outcome of Kyoto; they would increase economic efficiency, but could undermine ecological effectiveness. Indeed, if the multiple forms of "flexibility" were implemented without restrictions (considering in addition the flexibility gained by including GHGs beyond carbon dioxide in the reduction targets and the enlargement of sinks in the actions to fulfil the commitments) CO_2 emissions in the United States, Canada and Australia could rise up to 20% above 1990 levels without breaching the letter of the Kyoto agreement (Grubb 1999, 181). Along with the absence of caps for developing countries, these provisions may lead to the ecologically perverse result that global carbon emissions will continue to grow at much the same rate for years to come, Kyoto notwithstanding.

What unites all three flexibility mechanisms is the intention to provide for geographical flexibility in locating investments for mitigating climate change. Each of these instruments allows Annex I-Parties to partly fulfil their obligation by investing in reduction abroad, in developing countries or in economies in transition. They have been introduced in the negotiations as measures to achieve emission reductions at high economic efficiency, allowing capital to be allocated where an additional amount of reduction can be achieved with the least amount of money. The power of the argument lies in the fact that it carries the logic governing the current wave of economic globalisation into the area of environmental policy. Just as under NAFTA and WTO corporations are invited to scan the world across countries for the most cost-effective investment opportunities, under the Kyoto provisions for flexibility environmental policy makers are invited to look at the entire world as an arena for cost-efficient mitigation investments. Both strategies converge in the assumption that neither place nor community matter when it comes to investment decisions. While economic deregulation limits the right of communities to protect themselves against negative externalities, mitigation flexibility limits their right to demand positive externalities. Both strategies attempt to "disembed" (K. Polanyi) economic action from any specific society with its particular institutions and history.

The consequence might be a perception that renders it futile to expect any responsibility – be in a negative or in a positive sense – on part of business for the common good of a particular society.

At this point, it may be helpful to distinguish two ways of understanding the global responsibility of the North. In a globalist sense, it comes to mean that the geographical scope of Northern responsibility has to be extended until it coincides with the scope of its negative effects. Given that the effects of the North reach all the way to the ends of the earth, its responsibility consequently has to be globalised. In a cosmopolitan sense, however, it means that the global effects of the North have to be reduced until they coincide with the circumscribed geographical scope of Northern responsibility. As global effects have their local origins mainly in the North, responsible action therefore has to be local in the first place, relieving the burden from other countries. The globalist notion of responsibility emphasises all-competence for the sake of efficiency, while the cosmopolitan notion focuses on self-limitation for the sake of a good global neighbourhood.

The tension between these two notions of responsibility lies behind the debate about the extent to which "trading shall be supplemental to domestic actions", as the Kyoto Protocol states without further specification. Several objections have been raised, in particular from the G77 and NGO's, against too much space for fulfilling commitments through international transfer rather than domestic action. The most widely voiced fear is that industrialised countries would try to buy their way out of their commitments. In essence, the opponents expect conversion of the sinner, not just payment for damages. In their eyes, it is not enough that the polluter pays; the polluter has got to change as well. "No reparation without re-socialisation" could be their slogan. Indeed, those in favour of domestic action have a localised and historical understanding of responsibility. For them, the causes of maldevelopment have to be removed, not just its effects contained.

A similar debate arose in 1992 when a controversial World Bank Memorandum argued that both exporting and importing countries can be made better off with a flourishing trade in waste. Also in this case, the language of Pareto optimality clashed with the language of responsibility (Linnerooth-Bayer 1999). Of course, the rationale for the moral imperative of self-correction is the need to exit from the path of maldevelopment. In this sense, sustainable development, not emission abatement has to be the priority for industrialised economies. The principle of cost minimisation underlying the concept of ET must be balanced against the generation of sufficient pressures to change course towards long-term stabilisation of cumulative emissions (Grubb et al. 1999, 193). Too much "flexibility" in the Kyoto Protocol could thus relieve Western industrialised countries from the pressure to initiate structural changes in their economy towards long-term technological and societal innovation. It is for this reason likely that a failure to maintain supplementarity would undermine the Convention's principle of leadership by Annex I-countries in mitigating climate change.

7 Should there be restrictions on trading?

Emissions Trading as an instrument of international environmental policy is clearly an offspring of the 1990s, after the political and ideological schism that had divided the world for almost 50 years. It thus belongs to an era where, first, the Earth could be viewed as one global playing field and where, second, economic efficiency has surfaced as the common denominator linking the elites almost worldwide. This is true also for Southern elites, mainly educated in Britain or the US (those educated in Russia have been mostly quick to adhere to the new paradigm as well). However, under certain circumstances, other values have the potential to disrupt the hegemony of this concept.

One such challenge to the prevalence of economic efficiency is the demand for ecological effectiveness. Both concepts must not necessarily exclude each other, but they are by no means easily compatible in the nitty-gritty of real world implementation. The principle of ecological effectiveness demands, for example, that global GHG emissions must not be higher with Emissions Trading than without. The "hot air" accumulated in the Eastern European Countries with Economies in Transition (CEITs) presents a serious threat to this principle. Although emissions under a trading regime including the hot air would not be higher than the "global cap" established in Article 3.1 (minus roughly 5 percent of industrialised countries' 1990 emissions) nominally, factual emissions would be higher than they would be without trading. This is because without trading the enormous "reductions" achieved especially in Russia (minus 30 percent from 1990 levels) would be "lost" and not emitted into the atmosphere. The biggest suppliers – Russia, the Ukraine and Poland – may actually offer the equivalent of about 2 percent of global CO_2 emissions for sale (Missfeldt 1998, 131).

The European Union has made an attempt to solve both problems (hot air and supplementarity) with one instrument and proposed the introduction of quantitative limits ("caps") on both the seller and the buyer of emission allowances (Oberthür/Ott 1999, 199 et seq.). According to their formula, the total amount of hot air available from Eastern European sellers would, compared with business-as-usual projections of the International Energy Agency, be reduced to about one-third. A second cap on potential buyers would limit the ability of countries to acquire emission allowances under another complicated formula. This was met with loud and outright protest especially from the US who accused the EU of "trying to rewrite the Protocol".

Balancing the demands of cost-effectiveness and the necessities of environmental effectiveness might thus require taking a different path. One rather elegant possibility is the proposal to charge a fee on all transactions under the trading regime, possibly with different levels for intra-OECD as compared to other trading activities (Tietenberg et al. 1998, 71). This would not preclude or limit the use of Emissions Trading including hot air, but instead would raise the transaction costs of trading, and thus improve the comparative advantage of taking domestic action to reduce GHG emissions. A fee of US$ 5 per tonne of carbon equivalent, levied on transfers of 300 Mt of carbon per year, might raise approximately US$ 1.5 billion annually during the first commitment period (Grubb et al. 1999, 223).

These resources might be used to assist developing countries in adapting to climate change (Oberthür/Ott 1999, 309; Ott/Oberthür 1999, 27; see also the proposal of AOSIS and other developing countries before COP 6, FCCC/SB/1999/8, para.157). The CDM might serve as a precedent, which must use a "share of the proceeds" to cover administrative expenses and certain costs of adaptation to climate change impacts in developing countries. This option would thus have the additional advantage of providing a more level playing field between the Kyoto Mechanisms. Furthermore, much like a Tobin tax, it would have a calming effect on emission markets. Given the long-lasting resistance by many industrialised countries to accept international "taxation", framing such a solution in a politically acceptable form will, however, require some creativity and the support of some major industrialised countries.

8 Should emission allowances be obtainable through JI and the CDM?

The other two flexibility mechanisms, Joint Implementation (JI) and Clean Development Mechanism (CDM), allow Annex I-Parties to receive emission credits abroad on a project-by-project basis. While JI is confined to the industrialised world, CDM involves non-Annex I-countries. In both cases, benefits are expected to accrue to both project partners; the recipient country would receive additional funds, modern technology and know-how, whereas the investing country would acquire CO_2 credits at a lower cost than taking action at home. However, what looks like a win-win situation in theory, conceals a number of problems, some even of ethical relevance.

First of all, both mechanisms rest on the idea of "environmental additionality". Since any project to be credited is supposed to generate climate change benefits, which would not be available otherwise, it becomes crucial to draw a line between "normal" and "additional" projects. A so-called baseline scenario has to be determined against which the specially achieved emission reductions can be calculated. However, it is neither possible nor desirable to normalise a development path. It is not possible because in the medium and long run there is likely to be a plurality of baselines, all of which with different implications in terms of climate policy (IPCC 2000). Countries are not likely to follow a pre-stabilised course; in what direction they move will depend on resource endowment, socio-economic conditions, relations of power, and cultural outlooks.

Moreover, normalising development is not desirable because development is a contested terrain, not just on the national, also on the international level. What development path, one might ask? In a divided world, drifting into biospherical turbulences, this is probably the most prominent question in social ethics. Any government today is called upon to move towards pro-poor and pro-nature development styles, regardless of flexibility mechanisms. A country, for example, which for reasons of equity promotes biodiversity habitats, resource-light production, livelihood agriculture or the institution of community rights, may already avoid a great deal of emissions, over and above any "additionality". Defining a baseline, all the more so in treaties with international partners, is therefore rather counterproductive for each country's search for sustainability; such a definition would most likely codify the dominating, conventional view of development. This will be particularly the case as both the receiver and the investor countries have a vested interest in assuming a business-as-usual baseline. The more conventional the

baseline, the more additional funds or credits, respectively, can be recovered from the flexibility operation.

Second, investors under JI and CDM will be inclined "to pick the low-hanging fruits first". Emission abatement with a low marginal cost – which comes cheap, in other words – is likely to be harvested away early, with the credits going to the high-emitting countries. Two effects can be discerned. First, receiving countries sell off easy reduction possibilities at an early date, while themselves being left with the more expensive reductions later on. Second, investor countries have little incentive to undertake restructuring at home; running the danger to get further locked into a fossil development path.

Third, not too many Southern countries will be considered worthy of CDM investments by Annex I-countries. As credits through the CDM can be reaped easiest in newly-industrialising countries which have already embarked upon a fossil-based energy path, most of the funds are likely to flow into 10-15 "emerging markets", reinforcing the actual distribution of private investment flows. In other words, resource transfer will happen not according to need, but according to planetary utility. In particular if the CDM partly replaces development aid, a pattern of redistribution could emerge which privileges environmental hot spots at the expense of globally less relevant countries. In this case, the CDM would reveal its seamy side, turning out to be an instrument for rich countries for both keeping competitors for biospherical space at bay and seizing more of this space.

In sum, opening the possibility to obtain credits for trading through JI and the CDM would likely backfire in terms of sustainability and equity. On the other hand, of course, the CDM can be seen as a way to meet the concern of the FCCC that Annex I-countries should assist developing countries financially and technologically in dealing with climate change. A way out of this dilemma could be to strictly focus the CDM on assisting non-Annex I-countries in the transition to a non-carbon economy (Agarwal/Narain 2000). Under such a scheme, only carbon-free energy, such as solar, biomass, wind, and hydro, would be promoted through CDM activities. Such an approach would definitely not be an easy low-cost option, but it is in synergy with sustainable development in the South, it favours non-carbon energy technology in the North, and, it is evidently the only viable long-term ecological solution.

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