

Equity as the Gateway to Environment Ambition

By Martin Khor, Executive Director, South Centre, 18 March 2015

In the quest for an international climate agreement on actions to address the climate change crisis, three aspects have to be the basis simultaneously: the environmental imperative, the developmental imperative, and the equity imperative. This EDE formula requires that the different pieces of the climate negotiations be seen and addressed as a whole, in a holistic way. In particular, setting the global goal for emission reduction has to take account of the environmental imperative, and also deal with the emission reduction of Annex I and non Annex I parties. Equity is the element and principle that cements the link between environment and development. Indeed, equity is the gateway to environmental ambition.

For example, fixing of a temperature target and of a global emissions reduction goal must be done within a paradigm or framework for the equitable sharing of the atmospheric space and the development space. The sharing of the mitigation efforts, and the support (finance and technology transfer) that must accompany this sharing, is a most critical piece of the jigsaw puzzle.

The UN Climate Convention recognises the equity principle; that developed countries take the lead in emission reduction, and that developing countries have development imperatives, and their ability to undertake climate actions depend on the extent of support they receive from the developed countries. Annex I countries will also meet the **agreed full incremental costs** of implementing developing countries' mitigation measures, as well as providing financing on adaptation and technology.

There are competing claims on a national budget or a family budget. The trade-offs and dilemmas are more acute for the poor. A poor family would put greater priority on feeding the children and on health care, and also on adaptation action such as preventing floods and rain from occupying the house, ahead of spending on mitigation. Thus, financial assistance is required if changing to more environmentally sound cook stoves, or having zero-emissions small industry or agriculture, are to be achieved by the family. So too regarding a typical budget making exercise by developing countries. They have to grapple with adaptation problems, loss and damage (and reconstruction after extreme weather events), as well as imperatives of social and economic development (provision of food, health care, education, water, electricity, infrastructure, etc), as well as the new obligations on mitigation. This is what the developing countries mean when they accepted the obligation of 'enhanced nationally appropriate mitigation actions by developing countries in the context of sustainable development, supported and enabled by technology, financing and capacity building', in the Bali Action Plan. A similar context is being put forward with regard to the 'intended nationally determined contributions' to be submitted in relation to the Paris COP in 2005.

The provision of support in terms of financing, technology and capacity building and the building in concretely of the appreciation of the need for sustainable

development are parts of operationalising of the equity principle, which in turn would be a necessary piece of effective global mitigation action. Recognising the gateway role of equity to higher environmental ambition is not a rhetorical but a logical and realistic way of getting to a successful mitigation framework.

According to the latest IPCC reports, total CO₂ emissions since 1870 have to remain below about 2900 Gton of CO₂ if global warming is to be kept at less than 2 degree C (relative to 1861-80= with a probability of over 66%. However 1900 Gton has been emitted by 2011, leaving the space of only 1,000 Gton between now and the future. Since the emission level was 49 Gton of Co₂ equivalent in 2011, the carbon space would be exhausted within 2 or 3 decades at current rates of emission.

This sobering set of figures makes it imperative that we find a solution based on international cooperation. Otherwise various types of conflictual conditions may arise.

The concepts of historical emissions and historical responsibility are important in this context. Of the cumulative global emissions Annex I countries accounted for 72% of the total compared to their share of population of about 25%. Developing countries accounted 28% of the total cumulative emissions, with their 75% share of population. If a "fair share" is defined as share of emissions corresponding to share of population, then it is possible to measure the extent of over-use or under-use of a country's share of resource, in this case "atmospheric space." The over-utilisation of the atmospheric space by Annex I in 1850-2008 was 568 Gton, the same as the under-utilisation by developing countries (up to 2009, in my estimation, in a paper on The Equitable Sharing of Atmospheric and Development Space: Some Critical Aspects, South Centre, Research Paper 33, 2010). This is a measure of "climate debt" or "climate credit." In terms of annual flow, Annex I countries as a group are still exceeding their fair share, as their share of total emissions exceeds their share of world population.

In sharing the remaining carbon space, say for 2015 to 2050 or beyond, two concepts are needed: (1) The allocation of carbon space as according to rights and responsibilities; (2) The actual carbon budget (and related physical emissions reduction schedule) that countries eventually put forward as what they can physically undertake.

There could be a difference between the allocation of responsibilities and rights, and the actual emissions reduction or related budgets. Therefore: Countries that cannot meet their allocated budget or emission cut can compensate for this unmet part of their obligation and countries that do not make full use of these rights, can obtain the funds for their actions, including actions on behalf of the former set of countries.

The WBGU (German Advisory Council on Global Change), in its 2009 paper "Solving the climate dilemma: the budget approach", was a pioneer in making combined use of the carbon budget approach, the historical responsibility principle, and emissions allocations for countries, and the use of "offsets" through carbon trading by countries that are unable to stay within their meet their allocated emission budget. For example, it found that three countries (USA, Germany, Russia) had

already emitted in 1990-2009 their entire allocated budget for 1990-2050 and therefore begin with negative emission allocations for the period 2010-50. In the WBGU model, the countries with high emissions can buy emissions rights from the countries with low emissions and have higher actual budgets than their allocated budgets, and thus stretch out their emissions for more years. The low-emission countries emit less than their rights and receive funds from the high-emissions group through the emissions trading mechanism. Such a model incorporates many concepts and features that are important for the discussion on equity and environment and points to a concrete solutions framework which can also include concrete figures of emissions allocations and actual emissions budgets, etc.

The equity approach has implications for the various topics in the UNFCCC discussion. In a discussion on global mitigation goal, the setting of a global goal for emission reduction should be accompanied by a clarification of the roles of developed and developing countries.

For example, a proposal of a global goal of 50% emissions cut and an Annex I goal of 80% cut, which has previously been put forward by a number of developed countries including Germany, raises several issues. Such targets, combined, in fact, attempts to set a global carbon budget as well as to allocate the shares (of responsibilities and rights) to which two parties -- developed and developing countries -- are to have. If two figures are given in an equation of three parameters, the third figure, which is the "remainder" responsibility (and right) of the developing countries can be fairly simply worked out.

The issues include the following. Firstly, the 50% global cut is environmentally not ambitious enough, as it would correspond to a carbon budget above what is required. Secondly, the implied distribution of the carbon budget gives Annex I countries a budget share of 30-35 per cent, compared to their 16% share of world population in this period. Thirdly, acceptance of this proposal means accepting not only an unfair distribution of the 2010-50 carbon budget, but also writing off the cumulative debt of developed countries.

Fourthly, accepting these figures (50%, 80%) implicitly accepts a specific emissions cut target for developing countries, and locking in this whole distribution of carbon budget and set of emissions cuts. It implies that in 2050, annex I total and per capita emissions would be cut by 80% while developing countries' per capita emissions would be cut to 1.5 ton or about half below 1990 levels; and compared to 2005 levels it would be around 40% below in absolute terms and 60% below in per capita terms. The cuts for developing countries would be even much deeper, compared to the 'business as usual' level of 2050.

For a fairer framework of carbon budgeting, the distinction should be made between the allocated national budget according to rights and responsibilities, and the actual budget to be implemented, with the difference to be made through "offsetting". Of course there should also be conditions set for offsetting. In this exercise, the concept of "negative emissions" needs to be used. Again, the WBGU's 2009 paper is a pioneer in this respect. For example, it found countries that had already exhausted

their allocated budget for 1990-2050 and therefore begin in 2010 with negative emission allocations for the 2010-2050 period. For example, in the WBGU estimation, the USA has an emission allocation of minus 56 Gton in its 2010-50 budget.

It would be a physical impossibility for even technologically leading countries to meet such high negative emissions targets, at least at the present stage of know-how and technology. The offset mechanism thus comes into play, in the WBGU model, with high-emission countries financing low-emission countries through an offset mechanism. This could be carbon trading or another mechanism such as payment into and drawing from a fund.

In my own estimation, if a target is set for developing countries as a group to only avoid a per capita emission cut by 2050 (compared to 1990 levels), they would retain a level of 3 ton per capita, and correspondingly Annex I countries would have to cut their emission by 147%. If a goal is set for developing countries to double their per capita emission to allow for more development space, Annex I would have to cut its aggregate emissions by 277%. If Annex I cannot realistically meet the targets set, especially at levels higher than 100%, then the mechanism of payment to assist in fulfilling the allocated targets can be used.

This exercise shows how difficult, physically and politically, it will be, to reach solutions. Even if the budget approach cannot be used in the end for lack of consensus, it is useful to illustrate the issues at stake.

In any case, an associated question is whether there can be sufficient technological solutions in fixing the climate crisis. One aspect is whether the developed countries with their know how and innovation capabilities can find solutions that meet the criteria of climate friendliness, environmental soundness, social acceptability and economic efficiency. We do not want solutions whose implementation causes situations worse than the problem itself.

The other aspect is the development pathways of developing countries. To meet both the imperatives of economic development and of environmental soundness, decoupling between emissions and economic growth is needed, through a technological, economic and social revolution we have not seen before. For this decoupling to have a chance, massive infusions of finance and technology, coupled with institutional and human capacity building is required. This is why equity is also embedded in the finance and technology issues.

The enormity of the problem was not lost on the economist Nicholas Stern who has said : "If the allocations of rights to emit in any given year took greater account both of history and of equity in stocks rather than flows, then rich countries would have rights to emit which were lower than 2 tonnes per capita (possibly even negative) The negotiations of such right involve substantial financial allocations: at \$40 per tonne CO₂e a total world allocation of rights of, say, 30Gt (roughly the required flows in 2030) would be worth \$1.2 trillion per annum".

On estimates on mitigation funds needed, the World Bank estimated that: "In developing countries mitigation could cost \$140 to \$175 billion a year with associated

financing needs of \$265 to \$565 billion. A study in India (by the CSE) of six sectors to determine India's low carbon growth options concludes: "There is no real way we can reduce emissions without impacting growth once we cross the current emissions-efficiency technology threshold...It is for this reason that India (and all other late entrants to the development game) must not give up on their demand for an equitable global agreement." For the power generation sector, a low-carbon strategy could reduce emissions in India cumulatively by 3.4 Gton by 2030-31. The additional cost of generating power from renewable technologies is estimated at US\$203 bil or about \$10 bil a year or \$60 per tonne of CO₂ emissions avoided.

On adaptation financing needs, the World Bank estimates up to \$100 billion a year, higher than the UNFCCC's financial flows report (at \$27 to \$66 bil a year). The most comprehensive estimate is a IIED-Imperial College study led by Martin Parry which found the adaptation cost for developing countries may come up to \$450 billion annually.

Financing for technology cooperation and transfer: The UNFCCC's expert group on technology (EGTT) estimates the total finance needs are \$300-1,000 billion a year; with developing countries' additional funding needs of \$182 - 505 billion a year, for deployment and diffusion of technology. This does not include research and development or demonstration costs in developing countries.

IMPLICATIONS FOR NEGOTIATIONS

(a) Global Goal: In the negotiations on global goal, developing countries have argued that a decision on a global goal (whether temperature limit or global emissions reduction) should be in the context of equity and to be preceded by a paradigm for the equitable sharing of the atmospheric space or resource. This should also be the case for the wording on a global peaking year.

This is a correct position because the global goals for temperature and emissions reduction have implications for the responsibilities of developing countries or for their options in their emissions and thus their economic pathways. This principle of equity in the sharing of atmospheric space has to be operationalised with the use of carbon budget and debt concepts. The data on fair shares and actual emissions and thus on debt/surplus also have major implications for the sharing of the carbon space in the 2010-2050 period, and thus of the allocation of emission obligations and rights as would be expressed in the shared vision's important element of "global goal for emissions reduction."

(b) Mitigation: The concepts and figures on cumulative emissions and carbon debt/surplus make it clear that Annex I parties must continue to "take the lead" in emissions reduction. If developed countries undertake only weak targets for the next commitment period and their emissions are only reduced a little (or even increases), then there is even less carbon space left for developing countries. The present pledges made either in the Copenhagen Accord/ Cancun pledges or Kyoto Protocol are far from adequate. Various analyses show that the Annex I (including the US) pledges add up collectively to only a 16% reduction (by 2020 compared to 1990) at best and if loopholes (through LULUCF and AAUs) are taken into account there can

even be a 6.5% increase in Annex I emissions.

(c) Finance: One way in which the historical carbon debt that developed countries hold may be discharged is through payments into the Green Climate Fund. Besides this, the developed countries have obligations under the UNFCCC to meet mitigation, adaptation and capacity building expenses. The quantum of funds for discharging the carbon debt and for meeting the additional costs are large, but this is to be expected since the financial requirements of adaptation, mitigation, capacity building and technology are massive. The amounts so far announced (\$10 bil a year in 2010-12 and \$100 bil by 2020) are inadequate. Moreover there is no road map between 2013 and 2020 and beyond.

(d) Technology Transfer: To play their extremely ambitious and difficult role, developing countries need technology at the most affordable rates. The following measures are proposed: (1) They must have the maximum access at least cost to the best technologies; (2) Barriers to technology transfer must be addressed, including the issue of IPRs; (3) Developing countries must be assisted in the development of endogenous technology and to undertake their own R and D and develop innovation, with international support; (4) R and D activities should be financed by UNFCCC funds, and the products from these should be in the public domain; (5) Sufficient funds should be provided for technology development and transfer to developing countries.; (6) A Technology Policy Board or Council should be set up under the UNFCCC to address the technology issues.

It would be useful to have a work programme or research agenda with the objective to examine the various aspects of equity as a principle and how it is to be operationalized in various issues (mitigation, adaptation, finance, technology, global mitigation goal).

The recognition and operationalizing of the equity principle will be a major gateway for the raising of environmental ambition, including in facilitating that the means of implementation can be provided in adequate amounts and appropriate forms to developing countries so that they can contribute more to the global mitigation effort as well as to meeting their adaptation needs.

(This paper was presented at an international symposium on “Climate Change in the Summit Year 2015” in honour of the German climate scientist Prof. Dr. Hartmut Graßl. It was held in Hamburg, Germany, on 18 March 2015.)