



EQUITY IN CLIMATE CHANGE A SUGGESTED APPROACH

Dr. Satyabrata Mishra

*Associate Prof. and HOD P.G. Department, of Environmental Economics, M.P.C. (A) College, Takhatpur, Baripada
Mayurbhanj, Odisha.*

Introduction

The Rio Declaration of the United Nations Framework Convention on Climate Change emphasizes that human beings are at the Centre of concerns for sustainable development and are entitled to a healthy and productive life in harmony with nature. This principle affirms that considerations of human well-being should guide policymaking for sustainable development and that conservation of natural entities must be reckoned as part of such well-being. This paper suggests an equity approach for all candidate ethical principles to be subject to identical tests of invalidation, either by means of the present methodology or some other agreed methodology. Those that survive may then form the bases of climate change policymaking. The point of this paper is to start a debate.

Terrain of 'Equity' in Climate Change

"Equity" refers to "fairness" or "ethical conduct". The broad scope of actions on addressing climate change - obligations in relation to greenhouse gas (GHG) mitigation, securing the interest (and involvement of) future generations, adaptation to (or compensation for) impacts of climate change and response measures and transfer of finances and technology to others need to be realised on the basis of equity if the arrangements are to have wide political acceptability and hence sustainability in practice. Thus, for example, the 13th Meeting of the Major Economies Forum observed "that equity is embedded in the Convention and that any agreement needs to be perceived as 'equitable' by Parties to be accepted".

Anthropogenic Perspective

One aspect of equity in climate change may be addressed at the beginning - that relating to the "rights" of non-human species or even non-living natural entities. Leaving aside the question of whether fairness is a meaningful concept in relation to non-human entities, I refer to Principle 1 of the Rio Declaration:

Human beings are at the Centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

This principle, an international policy consensus on sustainable development, affirms that considerations of human wellbeing should guide policymaking for sustainable development and that conservation of natural entities must be reckoned as part of such well-being.

A further political consensus on this aspect is captured in Article 2 of the United Nations Framework Convention on Climate Change (UNFCCC):

The Ultimate Objective of this Convention and any related legal instruments that the Conference of Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner (emphasis added).

The partial operationalization of the ultimate objective has been accomplished in the Cancun Decisions:

Further recognises that deep cuts in global greenhouse gas emissions are required according to science, and as documented in the Fourth Assessment Report of the Inter-governmental Panel on Climate Change, with a view to reducing global greenhouse gas emissions so as to hold the increase in global average temperature below 2°C above pre-industrial levels, and that Parties should take urgent action to meet this long-term goal, consistent with science and on the basis of equity ... (emphasis added).

The consensus accordingly, in relation to natural ecosystems, is that the maximum global average temperature rise that is permissible is 2°C above pre-industrial levels. There remains the issue of the time frame and a determination of equity in anthropocentric terms, besides science, is necessary to arrive at that outcome.

The fact that references to equity in the context of climate change essentially relate to human beings is also evident from Article 3 Principle 1 of the UNFCCC:



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.

Accordingly, I will refer to equity in the sense of fairness in relation to human beings, in the rest of this paper.

Approaches to Equity Norms

In *The Economics of Climate Change*,² Nick Stern asserted that advocates of equity norms such as "equal per capita rights to the global atmospheric space" must do more than simply assert the norm - they must provide justification.

The issue of formal justification of equity (or ethical) principles is an established discourse in normative theory. "Cognitivist" doctrines affirm, and "non-cognitivist" ones deny that ethical judgments are capable of rational justification. The non-cognitivist argument is the contention that disputes over ethical principles cannot be decided by cognitive considerations alone. If disputants agree on ethical principles, then cognitive considerations alone, including reference to empirical facts, will enable them to resolve the dispute. However, if they disagree on ethical principles, then cognitive considerations are of no use. Another argument on this question relates to the logical structure of ethical reasoning. Non-cognitivists argue that an "ought" cannot be derived from an "is", i.e., purely factual or descriptive premises cannot logically lead to an ethical judgment.

If one adheres to the non-cognitivist standpoint, no justification of particular equity norms would be possible and all arguments on the question would amount to a "war of intuitions". The cognitivist-non-cognitivist dichotomy is a hardy perennial in the literature on ethical theory - neither standpoint can be said to have prevailed categorically. In the interest of moving forward on the debate, I accept the cognitivist doctrine and the rest of the paper proceeds on this premise.

The cognitivist approach requires, at minimum, that ethical norms be based on reason and provide equal consideration to the interests of all persons in the relevant domain to which the ethical norms purport to apply.

Ethics and Meta-Ethics

The discipline of ethics is not concerned with whether particular policies, such as rates of a progressive income tax regime, are acceptable. Rather, it is concerned with attempting to arrive at acceptable universal ethical statements that could serve as standards for appraisal of particular actions, e.g., that the rich should pay taxes at higher rates than the poor. However, these standards or ethical norms are not self-certifying and, in turn, need to be justified.

Two major aspects of the discipline are normative ethics, i.e., the analysis and development of criteria for evaluating actions, and meta-ethics, i.e., the logical analysis of the meanings of ethical concepts and of the methods of validating ethical norms.

The central questions of normative ethics are of the form: What criteria justify claims about rightness or justice of public actions? Questions in the domain of meta-ethics are of the form: What (meta-ethical) criteria and/or procedures warrant the choice of (normative ethical) criteria employed to justify the claims about the rightness or justice of public actions?

Teleological and Deontological Equity

Two major types of normative ethics relate to whether the ethical norm focuses on adherence to certain principles (including procedural fairness in allocation of valued goods) or are inherently right (deontologists), or on whether they are to be judged by their consequences (teleologists).

Teleological theories supply aggregative criteria, e.g., social welfare maximisation, while deontological theories supply distributive criteria regulating the allocation of goods, e.g., allocation of seats in educational institutions. Teleological theories speak of conditional obligations (e.g., freedom might be compromised in the interests of national security) while deontological theories set forth absolute obligations (e.g., freedom is a generic right that cannot be compromised in any other terms). Teleological theories advance material or substantive criteria (e.g., pleasure, incomes) while deontological theories propose formal or relational criteria (e.g., social equity or administrative impartiality).

Teleological norms are goal-directed and may compromise on "means"; deontological norms would regard both "ends" and "means" adopted to achieve that end as equally important.

Teleological theories supply a unitary criterion, e.g., utility maximisation; deontological norms may be "material" or "formal". The former hold that the criteria of rightness of actions consists in some feature of the actions themselves or their



backgrounds (e.g., the right to be compensated for impacts of climate change) while the latter hold that it consists of some logically necessary relation between the rules in accordance with which the actions are performed.

Material deontological norms provide both plural (e.g., justice, freedom) as well as unitary (e.g., conformity to nature). These are termed "pluralistic" and "unitary", respectively. Formal deontological norms hold that if performing certain kinds of actions commits one to self-contradiction, the actions are not ethically justifiable.

Methodology for Evaluating Normative Ethical Criteria

A methodology for evaluating proposed normative ethical criteria, both teleological and deontological, is presented here. The methodology derives but also deviates from Duncan Mac Rae (1976).

Duncan Mac Rae's Methodology

Mac Rae's methodology is based on Karl Popper's (1968) critical rationalist philosophy of science, which holds that the growth of scientific knowledge occurs through deliberate attempts to *falsify*, rather than *confirm*, proposed hypotheses. Mac Rae attempts to formalise in ethical theory the accepted canons of the scientific method. There is wide agreement that the scientific method comprises the following steps:

- Formal statement of candidate hypotheses to explain observed empirical phenomenon in respect of a given domain in advance.
- Demonstrating that the hypotheses *relate* to the entire body of empirical phenomenon in the given domain.
- Demonstrating that the hypotheses are with accepted general "laws".
- Demonstration of consistency of the candidate hypothesis with observed empirical phenomenon in the given domain.
- Peer review, publication and open debate about the candidate hypotheses.
- Candidate hypotheses that survive these tests are taken as "not falsified".

In ethical theory, the parallel to scientific "laws" are well-established ethical principles that apply in the given domain. Similarly, counterparts to observed empirical phenomenon are widely shared ethical intuitions relevant to the given domain.

Mac Rae's technique requires that widely shared ethical intuitions must be reconciled with ethical norms (hypotheses). Reconciliation of widely shared ethical beliefs with a theoretical structure that may unify and justify these beliefs is known as the technique of "reflective equilibrium" (Rawls 1981). The technique assumes that people have a sense that particular arrangements are just (e.g., that judicial trial processes are just) and others such as slavery are unjust. Further, it assumes that people are able to arrange these intuitions in a way that identify some as more certain than others (e.g., that rule-based allocations of publicly-owned resources to private persons are better than discretionary methods). According to this technique, the task of ethical reasoning is to provide a structure of principles that supports the immediate convictions with two objectives: first, the principles must explain the convictions by showing the underlying assumptions they reflect; second, it should provide guidance in situations of ethical uncertainty.

Mac Rae's technique is essentially procedural, comprising (1) specification of candidate ethical hypotheses in advance; and (2) application of *common standards of assessment*, in turn comprising (a) (lack of) *generality*, i.e., the candidate hypothesis does not apply to a situation in which people have ethical convictions, (b) (Lack of) *internal consistency*, i.e., the hypothesis makes contradictory prescriptions in particular situations, and (c) *external consistency*, i.e., consistency with widely shared ethical intuitions.

Mac Rae applied his technique to teleological/axiological ethical principles to diverse fields of social sciences (economics, political science, psychotherapy, sociology). He did not, however, attempt to apply the technique to any examples of deontological ethical theories.

I present my methodology adhering as closely as possible to the scientific method as is possible in the field of ethics.

Specification of the Evaluation Methodology (Meta-Ethical Procedure)

The steps in the methodology are as follows:

- (i) **Specification:** The candidate ethical hypotheses are specified by the protagonists in advance.



- (ii) **Test of Domain:** The candidate ethical norm must apply to all situations that relate to the proposed domain of policymaking. In respect of climate change policy, I define the relevant domain as comprising relevant provisions of Articles 2 and 4 of the UNFCCC,
- (iii) **Adherence to Pre-specified (Meta) Ethical Criteria:** The identification of a set of mutually consistent (Meta) ethical criteria with which all candidate hypotheses should be demonstrably consistent. Different criteria would apply to deontological and teleological ethical hypotheses and comprise substantive requirements of the ethical norms.

The set of criteria that I propose are specified as follows:

(a) Teleological Ethics

These are the well-known Arrow's conditions together with a relevant formulation of the Principle of Universalisability.

1. **The Pareto Principle:** If everyone prefers societal State A to societal State B, then State A must be ranked higher to State B.
2. **Independence of Irrelevant Alternatives:** Whether State A is better than State B of society should depend only upon how individuals have preferences between States A and B and not depend upon their preferences over some other State c.
3. **Unrestricted Domain:** The ethical norm must hold for all logically possible sets of evaluations (preferences over) societal states.
4. **Non-dictatorship:** The ethical ordering cannot automatically be taken to be the same as that of one individual's preference irrespective of the evaluations of others.
5. **(Relevant Form of) Principle of Universalisability:** Interchangeability of individuals between particular societal positions without affecting the relative ranking of societal states.
Of course, the standard rationality conditions (comparability and transitivity) would also apply.

(b) Deontological Ethics

The principles adopted are the following:

1. **Principle of Universalizability:** "If some predicate p belongs to some subject s because s has some quality Q (where possession of Q is necessary and sufficient reason), then logically, P must belong to all other subjects S1, S2, S3 ...Sn. that have Q." The corollary is that since Q is both necessary and sufficient reason, predicate P must not belong to any Sj. that does not possess Q.
2. **Principle of Proportionality:** Obligations should be met in proportion to a specified underlying criterion.
3. Additionally, *material* deontological norms should adhere to the criteria set forth below:
4. **Pluralistic Criteria:** These include: (1) keeping promises, i e, discharging one's obligations in express or implied contracts; (2) repaying benefits received from others (whether individuals or community or other societal institutions), if not given as a gift, and not declined; and (3) avoiding (uncompensated) harm to innocent persons.
5. **Monistic Criterion:** The Principle of Consent, i e, an action is obligatory if the person who has accepted the obligation has done so voluntarily, expressly or by implication.

In case of *formal* deontological norms, the Principle of Universalizability:

(iv) External Consistency: Reflective Equilibrium: The candidate ethical hypotheses must support widely shared ethical beliefs in the given domain. This test, of course, conforms to the Popper an principle of deliberate attempts to *falsify* (rather than confirm) candidate hypotheses. In the present approach, consistency with each of the specified ethical convictions would count in favour of a candidate norm.

(v) Peer Review, Publication, and Open Debate about Rival Hypotheses: The results of the tests should be subject to peer review, publication and open debate.

(vi) Survivor (s): The candidate ethical hypotheses that survive all three tests in the methodology would then count as not invalidated.

Specification and Test of an Equity Principle

Specification

The candidate equity principle as follows:

Proposition 1: All humans should cooperate in securing the ultimate objective in respect of the global climate (furnished in Article 2 of the UNFCCC), the terms of such cooperation being as follows:

Proposition 1 defines the objective to be pursued by application of the ethical principle ("securing the Ultimate Objective"), as well as the locus of application ("all humans").



Proposition 2: In respect of persons of low capability, in order to remedy the *residual*²⁶ damage of climate change impacts (i.e., when the Ultimate Objective is met), persons of high capability should provide resources and technology in proportion to their respective capabilities.

Proposition 2 considers the question of remedying residual damage that would occur even if the Ultimate Objective is realised through cooperation in terms of the ethical norm. If the terms of the cooperation are met, nobody in particular is to blame for the residual damage. However, one's past and continuing emissions yield capabilities to oneself, and the norm considers that such capability is the basis of responsibility to remedy residual damage. The responsibility would relate to both impacts on one's own territory, as well as the territory of others.

Proposition 3: In respect of persons of low capability, in order to enable such persons to remain within their assigned entitlements to global environmental resources while continuing to develop unfettered, persons of high capability should provide resources and technology *in proportion to their respective capabilities*.

Proposition 3 asserts a right to development of persons of low capability while participating in the containment of global GHG emissions. Once again, it is noted that past and continuing emissions of persons have yielded their respective capabilities and the norm considers that such capability is the basis of responsibility to provide resources, if necessary, to those of low capability to remain within their assigned emissions.

Proposition 4: In respect of harm to persons of low capability *beyond residual damage*, i.e., when the ultimate objective is not met, persons who have exceeded their respective shares of the global environmental resource and have high capability must remedy such excess harm *in proportion to the extent to which they have exceeded their respective entitlements*.

Proposition 4 considers the case when the ultimate objective is not met. This would be the case when at least some participants exceed their assigned emissions and blame would attach to such excess, which would directly result in damage exceeding the residual. The norm considers that the basis of responsibility to remedy such excess damage is the excess emissions beyond the entitlements.

Proposition 5: In respect of those with low capability whose livelihoods are adversely affected by the actions of others to mitigate GHG emissions, assistance towards alternative livelihoods must be provided by those with high capability *in proportion to their respective capabilities*.

Proposition 5 considers the situation of participants adversely impacted by the response measures taken by others in respect of their emissions reductions obligations. Such actions cannot be blamed since they are intended as compliance with the equity norm. Once again, the capability that has resulted from past and continuing emissions is reckoned as the basis for responsibility to remedy the damage.

Proposition 6: All human beings have equal entitlements to global environmental resources. Each person is the legatee of her parents and carries their un discharged obligations as well as their unused entitlements. They may exchange these entitlements/obligations by mutual, prior, informed consent. These entitlements/obligations *in the aggregate* are limited by the ultimate objective of the Climate Change Convention.

Proposition 6 sets forth the basis of mitigation obligations of participants to collectively accomplish the ultimate objective and provides that the obligations are intergenerational in character. It also provides for voluntary cooperation in mitigation (through exchange of mitigation responsibilities).

The context of application of the ethical norm, of course, is global society comprised sovereign states, in turn, comprised and representing human beings. Thus the actual locus of the propositions will be sovereign states, rather than individuals.

Testing the Specified Equity Hypothesis

The various steps in the methodology set forth above are now followed:

Step 1: Test of Domain: (Article 4 of UNFCCC): The candidate norm must apply to the following situations:

- Obligations in relation to GHG mitigation, adaptation (Articles 4.1, 4.2).
- Securing the interests and involvement of future generations (Article 2).
- Obligations in relation to providing financial resources and technology transfer for mitigation, adaptation, and adjustment to response measures to developing countries (Articles 4.3, 4.4, 4.5, 4.7, 4.8).



- Obligations in respect of transfer of finances and technology to countries with low capability for undertaking GHG actions (Articles 4.3, 4.7).

(a) Obligations in Relation to GHG Mitigation, Adaptation and Response Measures: Propositions 6 and 3 relate to mitigation, while Propositions 2 and 4 and 5 relate to adaptation and response measures, respectively.

(b) Securing the Interests (and Involvement of) Future Generations: The candidate ethic provides that: (Proposition 6): " ... Each person is the legatee of her parents, and carries their un discharged obligations as well as their unused entitlements ... " This requirement enables future generations to both avail of entitlements (in respect of GHG emissions, finance and technology transfers), as well as discharge unfulfilled obligations (in these respects) of previous generations.

(c) Providing Financial Resources and Technology Transfer for Mitigation, Adaptation, and Damage from Response Measures to Developing Countries: Proposition 2 (adaptation to residual impacts), Proposition 3 (GHG mitigation), Proposition 4 (harm beyond residual impacts), and Proposition 5 (alternative livelihoods) refer in this context.

(d) Step 2: Adherence to Pre-specified Ethical Criteria:

The candidate ethic is an example of a *material, pluralistic deontological principle*. I subject it to tests of adherence to prescribed ethical criteria for this category:

(i) Principle of Universalizability: Proposition 6 of the candidate principle affirms that all humans have equal rights to the global environmental space, without further qualification. This part, accordingly, is consistent with the Principle of Universalizability.

The Principle of Universalizability requires identical treatment only of persons who are similar in relevant particulars. It thus allows for differences in treatment of human beings provided that the differential treatment is premised on the absence of relevant similarities. In case of the candidate ethical hypothesis, differentiated obligations follow from the relevant differences: (i) distinction between those with low capability and those with high capability; (ii) within those of high capability, differences in the respective capabilities; and (iii) between countries that have, and have not met their GHG mitigation obligations and have high capability. Within each of the three categories, countries are treated identically.

We thus hold that the entirety of the candidate equity principle is consistent with the Principle of Universalizability.

(ii) Principle of Proportionality: The stipulation that obligations should be met in terms of proportionality to a specified underlying criterion is provided in Propositions 2, 3, 4, 5.

Application of the Aristotelian dictum of proportionality enables each of these Propositions to provide a precise basis for reckoning obligations and entitlements, i e, in principle quantifiable.

(iii) Pluralistic Criteria: I now test the candidate equity principle against the three specified pluralistic criteria:

(1) Keeping Promises as in Express or Implied Contracts: The candidate ethic envisages two kinds of contracts: (1) that of exchange of entitlements to the global environmental space under conditions of mutual, prior informed consent (Proposition 6); and (2) that of providing resources to others under specified conditions (Propositions 2 to 5). The candidate ethical hypothesis implicitly requires fulfillment of these contracts since reneging on them would lead to breakdown of the global regime, which is to be based on the candidate principle. Since no situation of abrogation of these contracts is thus envisaged under the candidate ethic, I hold that it conforms to the specified criterion.

(2) Repaying Benefits Received from Others (Whether Individuals or Community or Other Societal Institutions), Not Given as a Gift, and Not Declined: The candidate ethic enables exchanges of entitlements to global environmental resources under conditions of mutual, prior informed consent (only) and using up the share of others without their informed consent is thus, by implication, proscribed. What does this imply for the historical responsibility of countries that have used up more than their allocation of global environmental space as per the candidate principle. The principle would not proscribe ex post contracts under conditions of prior, informed consent, and this provides a way of accounting for historical responsibility.

(3) Avoiding (Uncompensated) Harm to Innocent Persons: The question of "innocence" in the context of the candidate ethic relates to countries that live within their assigned GHG entitlement. The question of "harm", however, arises in three contexts: (1) the residual damage when the ultimate objective is met; (2) when the ultimate objective is not met, the excess damage over the residual; and (3) loss of livelihoods owing to mitigation actions by others. The candidate ethic provides that



in respect of the first, all low capability countries are to be compensated with contributions being made by those with high capability in proportion to their respective capabilities. In respect of the second, it provides that the excess damage is to be compensated by noncompliant countries of high capability in proportion to their respective non-compliance. In respect of the third, it provides that assistance for alternative livelihoods is to be provided to those who lose their livelihoods as a result of mitigation actions by those with high capability in proportion to their respective capabilities,

We thus hold that the candidate ethic meets this criterion also.

(e) Step 3: Conformity with Specified Ethical Convictions: I now administer the final test to the candidate ethic.

(i) 'Thou Shalt Not Steal': *In a society it is impermissible for anyone to divest others of their valued goods at their personal discretion, except that the former need it for life or basic sustenance:* The valued goods in question are entitlements of countries to carbon space. The candidate ethic states, inter alia: " ... They (i e, countries) may exchange these rights by mutual, prior, informed consent ... ". This would, by implication, proscribe theft (i e, appropriation of the carbon space of others without such consent). In case of countries of low capability that are unable to live within their allocation of carbon space while continuing to remove poverty, the candidate ethic provides that they may not resort to stealing the carbon space of others but that those with high capability would collectively provide the resources to enable them to undertake the necessary GHG mitigation.

(ii) 'No Slavery': *Voluntary contracts for the supply of inputs to production by others must be the norm:* The relevant input to production in this case is carbon space. The candidate ethic, by providing that countries may exchange their respective carbon space by mutual, prior, informed consent, clearly provides for such voluntary exchange and the ethic does not provide for involuntary transfers of carbon space. In respect of those of low capability who are unable to live within their entitled carbon space while continuing to develop unfettered, the candidate ethic provides that those with high capability should collectively provide resources to enable them to do so.

(iii) 'Polluter Pays': *Victims of harm committed by others must be compensated by the perpetrators:* In case of residual harm (i e, when the ultimate objective is met), all countries are responsible for the harm and, accordingly, none may be singled out as a "perpetrator". The candidate ethic provides that, in this case, the residual harm in case of those of low capability should be remedied through resources provided by those of high capability in proportion to their respective capabilities. In case of harm beyond the residual, the candidate ethic provides that polluters are to provide resources to remedy the excess damage in proportion to their respective excess emissions and is thus consistent with "polluter pays".

(iv) Poverty (i e, Serious Material and Intellectual Deprivation) Must Be Eradicated: The candidate equity principle provides that (i) where those of low capability are unable to live within their entitlement of carbon space while continuing to develop unfettered, which would include poverty eradication, resources would be provided by those of high capability for mitigation, (ii) in case of damage, whether residual (when the ultimate objective is met) or excess damage beyond the residual (in case of failure to meet the ultimate objective), those of low capability are to be compensated to remedy the damage, which would ensure that poverty is not worsened, and (iii) where livelihoods are lost due to GHG mitigation actions by others, assistance for alternative livelihoods should be provided by those of high capability in proportion to their respective capabilities. The candidate ethic thus ensures that poverty is not enhanced in any circumstance.

(v) No Unique Human Cultural Group Must Be Driven to (Cultural) Extinction: It is unlikely that residual damage (where the ultimate objective is met) would result in damage that threatens the survival of any human group as an identifiable cultural entity. Nevertheless, even in this case, these impacts are to be remedied. In case of excess damage when the ultimate objective is not met, all countries that suffer the excess damage are to be enabled to remedy the same by those who have inflicted the damage. The remedy, of course, in either case may include the provision of alternative living space and livelihoods when these are lost due to climate change impacts. Thus, the candidate ethic ensures the survival of all human cultural groups under climate change.

To sum up, the candidate equity principle survives each of the tests of invalidation that have been specified in advance: test of domain, consistency with given met ethical principles, and accommodation of widely shared ethical beliefs.

I thus hold that the candidate ethic is "not invalidated".

It would be necessary, in this approach, for all candidate ethical principles to be subject to identical tests of invalidation either by means of the present methodology or some other agreed methodology. Those that survive may then form the bases of climate change policymaking.



The point of this paper is to start the debate.

6.3 Unresolved Issues

The candidate hypothesis leaves several issues open for further debate:

(i) How is "capability" to be defined? Since countries are distinguished in several of the propositions in respect of their obligations and entitlements by their respective capabilities, agreement on this question is crucial. Moreover, is there a possibility of a further gradation of countries intermediate between low and high capability, which would not carry either the specific entitlements of the low capability group or the specific obligations of the high capability group but only carry those common to all countries? (ii) How are GHG emissions of a country to be reckoned? Do they refer to all emissions, which physically occur within the borders of a country or do they relate only to emissions related to goods and services consumed, and investments made within a country?

(iii) From what date does one reckon that historical responsibility starts: The beginning of the industrial revolution? From the date that industrial emissions began to overwhelm the earth's sinks? From the date specified in the UNFCCC as commencement of obligations?

References

1. Gewirth, A (1985): "Ethics" in *The New Encyclopaedia Britannica* (Chicago: Encyclopaedia Britannica).
2. Ghosh, P (1993): "Structuring the Equity Issue in Climate Change" in A Achanta (ed.), *Climate Change: An Indian Perspective* (New Delhi: TERI).
3. MacRae, Duncan (1976): *The Social Function of Social Science* (New Haven, Connecticut: Yale University Press).
4. Popper, K R (1968): *The Logic of Scientific Discovery* (New York: Harper & Row).
5. Rawls, John (1971): *A Theory of Justice* (Cambridge, Massachusetts: Harvard University Press).