
**GLOBAL WARMING AND THE SEARCH FOR A
SINGLE EQUITY PRINCIPLE FOR THE
DISTRIBUTION OF BURDENS**

Adane Kebede Hailemariam*

Introduction

The United Nations Framework Convention on Climate Change (UNFCCC, 1992) was adopted as an outcome of an understanding between states on the need for taking measures to avert the potential hazards of climate change. Such measures, among other things, include stabilization of the green house gas emissions by reduced fossil fuel consumption. Following this, the Kyoto Protocol (UNFCCC, 1997) was adopted for the implementation of the convention.

The Convention establishes principles to the effect that climate change measures will be taken on the basis of equity, common but differentiated responsibility and respective capabilities of the parties¹ It emphasized that the special needs of developing countries for social and economic development to be given due consideration²

Initially, the developing country parties are not subject to the level of commitments that the developed countries are

* LL.B, LL.M, Lecturer-in-Law Faculty of Law, Mekelle University
Former Judge of the Federal First Instance Court and Dean of the
Faculty of Law of Mekelle University in Ethiopia.

¹ United Nations Framework Convention on Climate Change (UNFCCC
1992) Article 3.

² Ibid .

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subjected to, both at the nonbinding framework convention and the specific and binding Kyoto Protocol³. But the fact that developing countries will consume much fossil fuels in the future and as such will be greater emitters of green houses gases has necessitated the need for attempts to be made to make them participants to the Kyoto commitments.⁴

To achieve such inclusion of the developing country parties in to the commitment, various differentiation proposals have been proposed by countries on the basis of which equitable distribution of green house gas emission allowances and burdens to be distributed between the parties. The negotiations are generally along the developed developing (North South) divide.⁵

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Neither of the various equity principles that guide the proposed rules of differentiation was accepted by all parties as equitable and enabling principle⁶. So far, no consensus exists as to a single principle of equity, which

³ Blanchard, Criqui, and Trommetter M., Laurent Viguiet (2001) Equity and efficiency in climate change negotiations: a scenario for world emission entitlements by 2030, Institut d'économie et de politique de l'énergie

⁴ Cazorla, Marina, and Toman, Michael, International Equity and Climate Change Policy, Resources for the Future climate issue brief No. 27, 2000

⁵ Ibid

⁶ Ibid, and Blanchard and others cited at f.n. no. 3 above.

should guide the climate change related global cooperation. The principles are regarded as favoring or imposing burdens on either the developed or the developing countries⁷ Most researchers have concluded that no single equity principle is available to guide the distributional issue in global cooperation.⁸

In this paper I inquire whether it is possible not to have a single equity principle.

After making a general treatment of the phenomenon called global warming and climate change, I deal with such problem from the perspective of law and economics. In this part, I arrive at a preliminary conclusion that the endowment effect and the none existence of compensatory mechanisms that the Kaldor Hick's potential Pareto improvement impliedly demands, make it necessary for the global coordination to take the distributional issue as a fundamental problem. Then I explore the premises and principles of the Climate change convention and the various proposals of differentiation. This part provides an overview of the underpinning theories of equality behind the proposals.

Finally, I raise the question that "Is there no single right answer to the problem?" By employing Ronald Dworkin's "The right answer thesis"⁹ and John Rawls "Original Position behind a veil of ignorance"¹⁰ I arrive at

⁷ Cazorla, and others (2000); Blanchard and Others (2001)

⁸ Ibid

⁹ Dworkin, R., A Matter of Principle (Harvard University Press, 1985)

¹⁰ Rawls John, Theory of Justice. (Cambridge, MA: Harvard U.P.: The Belknap Press, 1999)

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the conclusion that there is indeed a single best equity principle on which the distribution of green house gas emissions allowances can justly be distributed. Among all the competing equity principles suggested, I found the Principle of Equality of rights to be a single best answer to the problem.

I. Global Warming and Climate Change Policy

The gradual global warming which is intensified due to mankind's activity on earth has resulted in a threat of climate change. Thinkers in Law, Economics and science as well as policy makers have been considering different options of abating the problem. Scientific and economic uncertainties contribute much to the difficulties in choosing the right option.¹¹

Scientists generally agree that the burning of fossil fuels and deforestation are releasing greenhouse gasses in proportional size to the quantity of consumption of them. A consensus also exists in the scientific community that this emission of green house gasses is changing the composition of the atmosphere. That consensus also encompasses the fact that continued population growth and economic development in the centuries to come will

¹¹ The Economics of Climate Change: A Primer, congress of the United States, Congressional budget office (CBO).

cause substantial greenhouse gas emissions and further warming unless constraining measures are taken.¹²

In the international arena, despite the efforts to design a policy and course of action to deal with the climate change problem that led to the Kyoto protocol, countries have diverged both in the perspective from which they view the problem and the actions they took thereafter.¹³ Developing countries, for instance believe that it is the developed world that historically and largely contributed to the problem hence responsibility in abating the problem and the burden thereof should be allocated accordingly.¹⁴ The United States of America, on the other hand, withdrew from the Kyoto protocol demanding that the developing countries be subject to the same commitments under the Kyoto protocol.¹⁵ The European Union has already designed an implementing regulatory mechanism and issued a decree for a system of permits-cum- tradable emissions allowances that enable it reach the Kyoto target of reducing emissions.¹⁶ One of the flexibility mechanisms of the Kyoto protocol for reducing green house gas emissions is the creation

¹² The Economics of Climate Change: A Primer, congress of the United States, Congressional budget office (CBO). More recent scientific research reports, which this primer draws on, include Houghton and Others (2001); McCarty and others (2001); Metz and others (2001); Congressional research service (2001) and Weart (1997).

¹³ Ibid; And UFCCC.(1995, 1996, 1997); Yang (1999)

¹⁴ Ibid; and Ringuis (1997)

¹⁵ Peeters M.(2003);

¹⁶ The target set for the European Union is reduction of green house gas emissions (within the period of 2008-2012) by 8% from the 1990 level. Peeters M. (2003). Kyoto Protocol (1997).

and distribution of tradable emissions allowances.¹⁷ The distribution of these allowances or burdens of the climate change measures forms the focal point of the debates. The distributional issues within and between countries and the promotion of interests behind the available equity principles¹⁸ are also allied with the uncertainties in aggravating the difficulty of the path towards a sound policy and action.

The following section treats the climate change problem from the perspective of economic analysis of law.

2. The Law and Economics perspective of climate change policy

Amidst all uncertainties as to the economic impacts of climate change and the possible measures to abate it, the world is at an unprecedented greater effort to reach at a global cooperation for crafting climate change policy. This is done in adherence to the precautionary principle. The precautionary principle justifies taking proactive and cost effective measures to avoid potential hazards even if scientific uncertainties exist as to the realization of the risks intended to be avoided.¹⁹

¹⁷ The Kyoto Protocol established the modalities and procedures for the application of three flexibility mechanisms: Clean Development Mechanism (CDM), Joint Implementation and International Emissions Trading.

¹⁸ Cazorla and others (2000) ; Ringuis and others (1998);

¹⁹ Faure, Michael G., and Skogh, Goran, *The economic analysis of Environmental Policy and law: An Introduction* Edward Elgar Publishers (2003) see also UNFCCC (1992) Article 3(3)

Once the precautionary principle is adopted as a guiding principle, optimal choice of mechanisms and their costs and benefits become a subject of the optimality test. At this juncture, a question arises that “what should the law optimize?” From an efficiency point of view, the answer is optimally for resource spending. This, in essence, the costs and benefits must be balanced at the margin.²⁰

In the context of climate change; and from the perspective of Law and Economics, this involves analyzing the welfare effects of the different flexibility mechanisms of addressing the climate change problem. Among the flexibility mechanisms provided by the Kyoto protocol, the mechanism of tradable green house gas emissions allowances is the subject of this paper. This mechanism aims at the lessening of the level of green house gas emissions to a desirable extent.

Optimizing the use of scarce resource; meaning, in light of their current alternative uses on the one hand; and using them today and conserving them for their use tomorrow, is essentially a concern about their none renewable nature and scarcity.²¹

When optimality is dealt in the context of climate change, the concern is more of the damages caused/to be caused to the climate by the emission of green house gases. due to the excessive use of the none renewable fossil fuels.²² The emphasis heavily rests on the fact that the atmosphere is a scarce public resource rather than the scarcity inherent in the fossil fuels. The focus of reducing

²⁰ Ibid

²¹ CBO (2003)

²² CBO (2003)

the use of fossil fuels and looking for alternative energy, though weighting costs of substitution is still relevant, and the purpose of limiting the emissions at the cost of reduced development (wealth) is not conserving the fuels for their own sake. Rather, the perspective of conservation and scarcity is positioned from the angle of the atmosphere they harm. This means that, what are loaded at the balance are the costs of not using the fossil fuels and the benefit of abating climate change. Optimality also includes balancing the costs/benefits of alternative schemes of implementing this process.

Optimality in the law and economics of climate change therefore necessarily takes two dimensions. One takes the atmosphere as a scarce resource- the benefit of conserving it to be weighted against the opportunity cost of burning less fossil fuel. And the other deals with the search and tests of optimal instruments of reducing green house gas emissions in case optimality at the first dimension heavily rests towards favoring increased reduction of the use of fossil fuels.

Though, in theory, absorbing the green house gases from it can clean the atmosphere its costs are prohibitive.²³ In this sense no meaning can be ascribed to perceiving the atmosphere as a renewable resource -at least until a considerably distant future. With advances in technology, it is possible to think of cleaning the atmosphere. This is too far to be probable, however. The reason is that discounting future benefit of cleaning the atmosphere by spending current scarce resources to absorb gases from it makes the benefits fall next to zero. Thus, one may quite

²³ See works cited at note no.12 above.

reasonably take the atmosphere as a none-renewable resource.²⁴

Like wise, no sensible allocation of private property rights has been created on the atmosphere.²⁵ Hence the atmosphere is a public good. For this reason the atmosphere suffers from the tragedy of the commons.²⁶ It follows that, both in the past and currently, the price and incentive magic of the market has never been coordinating the action of the parties involved.²⁷

The role of international law is, therefore, that of clearing impediments to negotiations between governments²⁸ (that is seeking rules that reasonably satisfy them all) and supplying attributes to the process of using the atmosphere as if it were a rival and excludable good. The mechanism of tradable emissions allowances is a device to give the atmosphere such an attribute. Thus, in solving the question that what should be the role of the law in the context of climate change problem, both the normative principles are worth considering.

The manner in which society is currently using the Atmosphere and Climate demonstrates that (if the optimal use of them is thought to be regulated by the invisible hand of the market) fundamental impediments that dysfunction the hand of the market exist. The absence of

²⁴ CBO (2003)

²⁵ Ibid

²⁶ Nordhaus, William D. 1994. *Managing the Global Commons: The Economics of Climate Change*. Cambridge, Mass.: MIT Press CBO (2003); see also CBO (2003); Faure and Skogh G. (2003)

²⁷ Ibid

²⁸ Cooter, and Ulen T., *Law and economics*, 4th ed., International ed.; see also CBO (2003) also application to environmental problems as in Faure and Skogh (2003);

clearly defined property rights, lack of information and huge transaction costs rally to militate against market forces.²⁹ The fact that green house gas emissions come from virtually every one residing on the globe active in using the land and energy; coupled with the difficulty in individualizing the harm bearer in that the harms are to be born universally in space and time³⁰ (All in the globe and all generations to come) are the crucial factors that deny the valuing and price its virtue; private agreements impossible; free riding the order of the day, and Pareto-optimality only desired. Reinforced by many of the potential impacts themselves being public harms in their nature,³¹ the prevalent situation is characterized by one where the world is using a scarce public resource in an inefficient manner.

The first function of the law is therefore clearing the above impediments wherever possible.³²

It is noteworthy that the problem of climate change cannot be solved by the first normative principle alone. This is so because not all the benefits associated with the use of the Public atmosphere and Climate and the harms thereof are easily determinable and transferable by creating individual property rights and responsibilities.

²⁹ In this part I use the Coase Theorem as applied to environmental issues in Faure Faure and Skgh (2003); as Introduced in Cuter and Ulen (2004) and relate them to the futures of the atmosphere as in CBO (2003).

³⁰ Ibid

³¹ Faure and Sokgh (2003)

³² Ibid

Property rights can be created for some and not for others.³³

It is possible to delineate initial entitlements of property rights for emitting green house gases by burning fossil fuels.³⁴ To this extent the first normative principle of law may work in achieving its function of removing impediments to private bargaining. Thus creating tradable emission allowances and reducing transaction costs to the lower extent possible could lead to efficient exchange of the allowances to where they are more valued until the horizon where it is not possible for one to be better off without making the other worse off. It is possible to say that this process leads to optimal allocation of resources.

A conditional application of the Coase theorem would lead the forging discussion to the following conclusion. On the condition that allowances are supplemented by emissions permits, and in so far as distributional issues are separately dealt with and efficiency alone is of the current concern, regardless of how and to whom the allowances are allocated optimal use of the emission rights can prevail.³⁵

But, there are some other climate related rights and responsibilities that are impossible to deal with by creating private property institution. Such rights as enjoying a particular climate in a particular part of the world at a point in time; and such credits for carbon stored in the soil, trees of a forest stand or in the ocean are yet more complicated to define.³⁶ So, too, even if

³³ Ibid

³⁴ Ibid

³⁵ The Coase theorem as cited above

³⁶ CBO (2003)

property rights are determined, where transaction costs are prohibitive enough to hinder private bargaining, efficient allocation of resources can not prevail in the market.³⁷ Coupled with this, the fact that permits or allowances for green house gas emission taken separately may not serve to adjust for excessive emission of green house gases, therefore, the need for a cap on the desirable amount of annual emission, calls for the law to put its further functions in to action.

Both in the above situation and in the case where determination of private property rights is not possible, the true costs can not be reflected by the price mechanism for parties do not consider the negative externalities they create on others.³⁸ Due to this the second normative principle requires the law to be structured so as to minimize the social cost to society.

To achieve potential Pareto optimality the law should be of the kind that creates the effect of internalizing the externalities in the market system.³⁹ The system should imitate what would have prevailed if parties were able to freely negotiate with zero transaction costs thereby causing Pareto optimality to occur⁴⁰. This potential Pareto improvement, which is the essence of the Caldor Hike's criteria, leads to socially efficient outcome because the potential to compensate the losers exists if the gainers gain more than the losers lose⁴¹. The relevant factor here

³⁷ The Coase theorem as cited at note 35 above

³⁸ Faure and Skogh (2003)

³⁹ Ibid

⁴⁰ Ibid

⁴¹ Ibid

is the benefits being in excess of the losses and the existence of mechanisms to transfer this excess to the losers. The identity of the losers and the exact harms also bear the nature of potentiality. This may appear, in the process of weighing costs and benefits, in the form of complexity of information problems and resultant strategic behavior, rent seeking, capture and inefficient administration in the relations between the industry and the administrators.⁴²

This imports the idea of cost benefit analysis in climate change policy. In making such social cost benefit analysis, policy makers are confronted with economic trade offs among sectors in society, among countries and across time as in between generations.⁴³

The trade offs involved may be generally understood as a choice between the competing uses of the atmosphere. Primarily, the marginal benefits of using the atmosphere as a sink for green house gas emissions should be weighted in comparison to the marginal costs or benefits of either negative or positive impact of climate change that may happen as an outcome of the marginal green house gases emitted in making that marginal use of the atmosphere. In line with this, the marginal costs of investment in research on climate change should be balanced in comparison to the marginal benefits that are to be gained from advancement of knowledge.⁴⁴

The trade-off also involves balancing of the costs of mitigating the climate change by spending resources

⁴² Ibid

⁴³ CBO (2003)

⁴⁴ CBO (2003)

today in comparison to the costs to future generations of adapting to the climate change that would occur tomorrow. This questions whether it is cheaper to mitigate the climatic changes in the contemporary age or to adapt to them in the distant future.

Information is a fundamentally complicating factor in such a balance of trade offs. It comprises the issue of knowing the value that the price mechanism of the market does not tell; what people want to have, when they most want to have them ⁴⁵(all factors related to decision making under uncertainty). Largely, the scientific and economic uncertainties contribute to the complications in cost benefit analysis.

The process of balancing costs and benefits is peculiarly complicated in climate change policy. It is true that Climate Change cost benefit analysis like in all other cases would result in a greater benefit from all types of investments if the marginal return from all investments were the same at the margin.⁴⁶ But this is too difficult because the returns to be considered manifest spatial diversity in the globe, temporal diversity in long period of time, and expectation of returns fraught with uncertainty.⁴⁷ The appropriate course of action therefore heavily depends on the way one balances the competing

⁴⁵ Ibid

⁴⁶ Ibid

⁴⁷ Ibid

interests between generations and on how one account for the prevalent scientific and economic uncertainty.⁴⁸

This difficulty led some to propose pragmatic approaches with intent to save the regulator from the ups and downs of searching for costly information, which mostly is unavailable, and set a politically realistic target which in turn is to be achieved in a cost efficient way.⁴⁹

In this regard many researchers have designed models to choose from. For instance, what is called integrated assessment is attempted for analyzing the potential costs and benefits of averting climate change.⁵⁰ This applies the models of global and regional economic growth and climate effects. An estimation of the costs of emission control policies that would yield the greatest benefit in terms of economic growth and the resulting climate effects.⁵¹

Once the policy trade offs are given due attention and the targets are set in terms of emissions standards⁵² (or atmospheric standards so to say) arguably in the interest of the public, the question of cost effectiveness of the implementing mechanisms together with their effects on welfare unfolds to take us a long way in the quest for efficiency.

Various instruments can be employed as institutional devices for forcing market actors to internalize the negative externalities. They may broadly be classified as direct command and control measures and market

⁴⁸ Ibid

⁴⁹ Faure and Skogh (2003)

⁵⁰ CBO (2003)

⁵¹ Ibid

⁵² Ibid and Faure and Skogh (2003)

oriented measures. They generally comprise the pigouvian tax, Charges and tradable permits.⁵³

At the level of international coordination, Tradable permits are typically market-oriented instruments that are considered as one of the three implementation mechanisms of the Kyoto protocol.⁵⁴

Taking tradable permits and emissions allowances as a combined market oriented device of reaching the goal, the next issue is that of distribution of them⁵⁵. If efficiency is to prevail the distribution must insure that the marginal benefit of the marginal permit must be equal to all emitters of green house gases.⁵⁶ Information is once again a source of risking arbitrary distribution of the permits. Factors that range from lobbying to historical emission levels may skew the process of distribution towards inefficiency as a result of lack of information about the marginal benefit of the marginal permit to the emitters.⁵⁷

According to the Coase theorem,⁵⁸ the virtue of trade, as in all other exchanges, arrives to rescues the scheme from the in efficiency that would arise from lack of information on the incremental benefits. That is making the system one of emissions trading. If emissions

⁵³ Stavins (1997) and Ibid

⁵⁴ For a list of the flexibility mechanisms, see foot note no. 17 above.

⁵⁵ Faure and Skogh (2003), Peeters (2002) see also Stavins (1997)

⁵⁶ CBO (2003) Faure and Skogh (2003)

⁵⁷ Ibid

⁵⁸ Later I will discuss the Endowment effect that the willingness to pay may not reveal the true value of goods and the volume of trade may reduce.

allowances are traded the value of the marginal allowance to emission can be revealed, and market equilibrium would be established through the interaction of supply and demand.⁵⁹ Of course this takes controlling for other sources of inefficiency such as laws that are obstacle to trade; and strategic bargaining for quotas.⁶⁰ It also requires dwarfing other long established trade hindering moral beliefs by the superior benefits of trade⁶¹ for a higher and ultimate purpose of saving the atmosphere and the earth as the only cradle for life.

One other problem concerning the distribution of tradable allowances emanates from the fact that their initial distribution might result in transfer of welfare from country to country; and competition between firms in the market.⁶² They might be distributed gratuitously, or for consideration the price of which to be determined by auction.⁶³

At this point the concerns are if, at domestic level for instance, the distribution of emission allowances is not made in a uniform manner across states; and if some freely distribute while others auction them, the out come might be competition distortion at the domestic market.⁶⁴ In case allowances are distributed for free, the firms would appropriate the rents to be created as a result of having the marketable allowances for free. And this

⁵⁹ Ibid

⁶⁰ Ibid

⁶¹ Drown from The morality of trade as in Faure and Skogh (2003)

⁶² As in Peeters (2002)

⁶³ CBO (2003) also Peeters (2003)

⁶⁴ M. Peeters

would contribute to excessive demand for the allowances with its own harmful consequences on the achievement of the target. If, on the other hand, all permits are auctioned the rents will be appropriated by the government. This, though superior than the case of free distribution, its consequences still depend on how and to which direction the government channels the revenues.⁶⁵

From efficiency perspective, taking tradable emission allowances as market oriented devices is superior in that it allows for the market mechanism to operate, thereby allowances moving from country that values them less to the country that values them most. This however is heavily dependent on the creation of initial entitlement of each country for quantity of emission allowances per annum.

Creating an efficient way of controlling the climate change problem would satisfy the social welfare maximization approach of law and economics. This may take the form of designing a global climate policy that maximizes social wealth to society. In this regard, a system would be considered efficient, therefore superior if it results in a greater world economic development, regardless of which country is developing and which not; regardless of who bears the costs of climate change mitigation.

The above discussion is based entirely on concerns of efficiency. And it is only valid in so far as the Coase

⁶⁵ Ibid note 62. And Stavins (1997).

theorem is taken as the sole test. The fundamental thesis of the Coasean theorem is that in so far as transaction costs are zero or at least enable bargaining, efficient allocation of resources necessarily prevails. Regardless of who takes what efficiency prevails; wealth is maximized, therefore, initial distribution of resources does not matter. It is also based on the willingness to pay (WTP) as revealed by market price.

Treating this thesis in the context of Climate Change problem necessitates probing of issues. These are whether initial distribution of GHG emissions allowances does not really matter; and whether the WTP test can effectively serve the climate change problem?

The following section advances arguments towards this issues and reasons around why the United Nations Framework Convention adopted the principle of equity and differentiation.

3. The Limits of the Coasean approach In International Climate Change Policy

The difficulty in the nature of the Climate change problem is not only that of choosing the economically optimal harm abatement. Built-in, in it is the fact that it might endow some with gains while leaving others losers. This has raised the distributional issue across sectors, countries and generations.⁶⁶

There exists neither a mechanism by which the gainers compensate the losers nor willingness in part of the gainers to do so. In the world of such a kind; reasons exist

⁶⁶ CBO (2003)

for questioning the Coase theorem as to whether initial distribution of resources does not really matter.

The first concern on the application of Coasean conclusion to Climate change problem is that even if transaction costs are assumed to be zero the required unhampered transaction

of tradable emission permits may not prevail.⁶⁷ This is so because it is not always true that market price facilitates the move of resources from the one who values goods less to the one who values them most. This is due to what is called endowment effect.⁶⁸ Daniel K., Jack L. Kenetsch and Richard H. Thaler demonstrated that traders' willingness to pay (WTP) and willingness to accept (WTA) do not remain the same after initial distribution entitled them with the goods.⁶⁹ People tend to attach higher value to the already acquired goods than when they demand to initially acquire them. An important finding is that, even if transaction costs are actually minimal or assumed to be zero, the endowment effect reduces the volume of transaction. They also mention its particular relevance to tradable permits.⁷⁰ An important implication of the endowment effect thesis to the climate change issue is that even if efficiency alone is to be desired regardless of the wealth consequences of the distributional pattern, the disparity between WTP and

⁶⁷ Kahneman, Kenetsch, and Richard H. Thaler "Experimental Tests of the Endowment Effect and the Coase Theorem" *Journal of Political Economy*, Volume: 98, Issue: 6 (December 1990)

⁶⁸ Ibid

⁶⁹ Ibid

⁷⁰ See *ibid* p. 1345

WTA will render efficiency unattainable because of highly reduced volume of exchange that the Coase theorem attempts to facilitate through the elimination of transaction costs.⁷¹ Therefore, initial distribution in the world emissions trading order is a question that matter.

The Second concern emanates from the efficiency theory itself. Even if transaction costs are zero and WTP is accepted as revealing the true value of the goods for transaction, a condition embedded in the Kaldor Hick's criteria makes it mandatory to be concerned about distributional justice before one gives way to the Coasean conclusion that initial distribution dose not matter. This is addressed in the following paragraphs

When the second dimension of the law and economic approach sought for efficiency, it was the Pareto criterion that was taken as a litmus paper for the test of optimality. That is, efficiency can be attained if some can be better off while no others are worse off.

The Kaldor Hick's criteria of efficiency (potential Pareto improvement) takes us further in that efficiency is attained even if the ones who are better-off have gained at the expense of some remaining worse-off on the condition that the betterment to the gainers is larger than the losses that would be suffered by the losers thereby creating the potential to compensate the harm done.⁷²

This efficiency principle serves when no private negotiations are possible and the potential sufferers are unidentifiable. For the purpose of efficiency alone, this

⁷¹ Ibid

⁷² CBO (2003); Faure and Skogh (2003) Rubinfeld and Pindyak (2004) Cooter and Ulen (2004)

principle is what exactly fits the treatment of the climate change problem. But a note of the following must be made: Though superior in that it allows expanding the span of optimality that would not otherwise be attained due to lack of information and prohibitive transaction costs, it suffers from the fact that the gainers do not always compensate the losers or competent institutions with adequate funds for the transfer of what is gained beyond the point of Pareto optimality to the losers may not always exist.

When tuned to the issue of Climate Change, it poses a formidable problem as between economic actors in the domestic market as far as domestic regulation is concerned; across countries in the course of international coordination; and between the current generation and generations to come who are not yet extant to act for their own interests⁷³. These have appeared both at domestic level and, international negotiations in the form of distributional issues. It is the foregoing that necessitates conceptualization of the efficiency theory.

In the climate change context both the endowment effect theory and the unsatisfied condition of the Kaldor Hick's criteria (that no compensatory scheme can be taken for granted in today's environmental world order), prove the fact that the efficiency theory does not warrant a disregard for distributional concerns on the initial entitlements of tradable emissions allowances to countries.

⁷³ Faure and Skogh (2003); Cazorla and others ((200); Ringuis and others (2002); CBO (2003)

It follows that the principle of efficiency ensures neither the Compensatory Justice itself requires, nor an achievement of the desired objective of international cooperation for Climate change policy. I think, this conclusion underpins the adoption of the equity principle and differentiation at the UN framework convention for climate change.

An additional factor that calls for international cooperation based on the principle of equity is the fact that the reductions of GHG emissions by the developed countries alone can not bring the level of emissions to the desired target. This is so because it is the developing countries that will be the highest green house gas emitters associated with their future economic development needs, and at the same time with an inefficient use of energy resources and unable to adapt to the other alternatives for unbearable costs.⁷⁴

Therefore, if a sound Climate Change Policy is to be crafted through an effective international cooperation, the process must include the developing world. The approach based on efficiency alone is ex-ante incapable of doing so. It should therefore be supplemented by equity principle-an equity principle that never militates against efficiency, but equity that ex-post helps efficiency to prevail.

The United Nations Framework convention for Climate change and the Kyoto protocol are crafted taking this consideration into account. The following section deals with the equity principle that underlies both the UNFCCC and The Kyoto protocol.

⁷⁴ Cazorla and others (2000);

II. Towards an Equitable International Cooperation on Climate Change Policy

For the reason that the climate change problem is of global dimension, the issue of international coordination is an essential one. So far, a long way has been made in this regard and efforts are underway. It is the diverging approaches to the distributional issue that have proved a formidable challenge.⁷⁵

The debates demonstrated wide differences of perspectives in approaching the problem of distributing the burdens⁷⁶. Although some difference exists among the developed countries, the disputations have structured themselves so as to assume a pattern of economic development along the line of developed and developing countries.⁷⁷

Within the developed-developing dichotomy itself the distributional issue seems not to connote the exact meaning that the word itself is not sufficient to display the meaning to a reader. It imported a range of connotations as to require definitions. Hence, while common understanding exists for equitable distribution of the burdens, the developing countries approach of historical responsibility connoted that fairness was understood to mean "it is the industrially advanced

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ Ibid, also Blanchard and others (2001)

society that mainly contributed for the large some of green house gas emissions, and responsible to bear the burdens of abating it as well.”⁷⁸

But that was not the end of it. While an idea that viewed continued underdevelopment as a would be consequence of being subject to green house gas emission checks can be overheard from the developing country arguments, a thinking, that is apparently twin to the above concern, that future economic advancement of the developing countries coupled with population growth will make them a large green house gas emitters in the near future, has emerged from a considerable number of scientific and economic research models in the area.⁷⁹

This led to advocacies that proposed a variety of equity principles, that some times overlap⁸⁰ and at times clash at right angle as to their impact on where the burden falls. The following two sections treat the conventionally agreed but nonbinding equitable system of climate change policy premises and principles (UNFCCC).

1. The Policy premises under the United Nations Frame Work Convention For Climate Change

⁷⁸ Ibid

⁷⁹ Noticeable policy decisions that followed this attitudes is that of the US senate resolution opposing the ratification of the Kyoto protocol until the developing countries are committed to binding emission limits and in the same timeframe with the US. Byrd-Hagel resolution. Cazorla and Others (2000)

⁸⁰ Cazorla and others (2000); Ringuis and Others (2002)

The current efforts for crafting an international climate change policy are guided by policy premises and principles that are conventionally agreed by states parties to the UNFCCC. All actions towards an international climate change policy stem from the conviction that changes in the earth's climate and its adverse effects are a common concern of human kind (UNFCCC Preamble). As such, the global nature of climate change demands the widest possible international cooperation by all countries and this takes their participation in an effective and appropriate international response (UNFCCC Preamble).

The parties have acknowledged that giving recognition to the facts of the status quo that kept countries poles apart in their level of development is essential for tailoring just and effective cooperation. The current situation of the would-be cooperating countries displays a huge disparity among them. The status-quo is that countries are positioned at an absolutely different levels as to their current consumption of fossil fuels; their economic development; their potential to develop and exploit natural and atmospheric resources; and their respective capacities to bear the burdens that the responses to climate change bear on them.

First and foremost, the largest share of historical and current global emissions of green house gases has originated in developing countries. But the per capita emissions in developing countries had been and are still relatively low. Yet, the share of global emissions

originating in developing countries will grow to meet their social and economic development needs.⁸¹

Emanating from the above premises the parties are in agreement as to the level of actions each party is to take, and the responsibilities to which each country is to be subjected. Thus, the countries participation in international response to climate change will be in accordance with their common but differentiated responsibilities; their respective capabilities; and their social and economic conditions.⁸²

In line with this, and in recognizing that states should enact effective environmental legislation, and that environmental standards management objectives and priorities should reflect the environmental and development context to which they apply; the convention puts a vigilant policy premise that standards to be applied by some countries may be inappropriate and of unwarranted economic and social costs to other countries, in particular developing countries.⁸³

The convention further recognized the fact that various actions to address the climate change problem can be justified economically in their own right. A paramount emphasis is given to the special difficulties (as a consequence of actions to be taken on limiting green house gas emissions) of those countries, especially

⁸¹ UNFCCC, (1992) preamble. See also Cazorla and others (2002) and Blanchard and others (2001)

⁸² UNFCC (1992) Article 3

⁸³ Ibid, Preamble

developing countries, whose economies are particularly dependent on fossil fuel production, use, and exportation.

The need to integrate climate change responses with social and economic development with a view to avoiding adverse impact on economic development should be done (the convention requires) in a manner that takes full account of the legitimate priorities and needs of developing countries for the achievement of sustained economic growth and the eradication of poverty.⁸⁴

In recognizing the need of all countries to access resources required for the achievement of sustainable social and economic development, the convention emphasizes the special need of the developing countries of having an access to such resources. Accordingly, in order for developing countries to progress towards that goal their energy consumption will need to grow taking into account the possibilities for achieving greater energy efficiency and for controlling green house gas emissions in general.⁸⁵

Such premises and considerations led the parties to the convention to agree on the need for an immediate action by developed countries taking into account their past and present relative contributions to the green house effect.⁸⁶ And they further agreed to establish the principles that are to govern the establishment of international climate

⁸⁴ Ibid

⁸⁵ UNFCC (1992)

⁸⁶ Ibid

change policy. Such principles are discussed in the following section.

2. The principles of the United Nations Framework Convention For Climate Change.

The ultimate objective of the convention being stabilization of green house gas concentration in the atmosphere, any measure to be taken is expected not to endanger food production and not to hinder sustainable progress in economic development.⁸⁷ Pursuant to this objective and in accordance to the premises in the above section the implementation of the convention should be guided by the following principles.

The first principle is that measures to be taken in response to climate change problem should be based on Equity; common but differentiated responsibility of the countries; and respected capabilities of same.⁸⁸ Full consideration should also be given to the specific needs and the special circumstances of developing countries that are especially vulnerable to the adverse effect of climate change and that would have to bear a disproportionate or abnormal burden of compliance to the convention.⁸⁹

Also important a principle is that the parties have the right to economic development and a responsibility to develop in a sustainable manner.⁹⁰ Policies and measures to protect the climate system should be appropriate to the

⁸⁷ UNFCCC 1992, article 2

⁸⁸ Ibid Article 3(1)

⁸⁹ Ibid Article 3 (2)

⁹⁰ Ibid Article 3 (4)

specific conditions of each party and should be integrated with national development programs taking in to account that economic development is important for adopting measures to address climate change.⁹¹

The emphasis of International cooperation in addressing climate change problem should rest on establishing open and supportive international economic system. Thus, such economic system would lead to sustainable economic growth and development in all parties, particularly developing countries.⁹² The measures to be taken should enable the developing country parties to better address the climate change problems.⁹³ All measures be it unilateral or multilateral ones should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.⁹⁴

The climate change problem, thus, is to be addressed in accordance to the above principles. Any measures that lead to the establishment of climate change policy and actions thereafter should be consistent to the above premises and principles. The first international action taken for the implementation of the convention is the Kyoto protocol. The protocol has set flexibility measures for the implementation of the convention. In establishing an international system of green house gas reduction through tradable green house gas emissions allowances as

⁹¹ Ibid

⁹² Ibid Article 3(5)

⁹³ Ibid

⁹⁴ UNFCCC 1992, Article 3(5)

one of the flexibility measures, the parties have suggested different equity principles for the distribution of burdens and initial entitlements of emission allowances. Such is the theme of the following section.

III. The Kyoto Protocol

The Kyoto protocol (Known as UNFCCC, 1997) to the United Nations Frame Work Convention on climate Change (Known as UNFCCC, 1992) was at first seen as a success in the international efforts for combating the adverse effects of climate change.⁹⁵ While the UNFCCC, 1992 is a none binding convention composed of understandings on general premises and principles and as such signed by most of the participating countries, the UNFCCC, 1997 is a specific and binding document for the implementation of the convention (UNFCCC, 1992). This time, the countries were not as prompt as in the convention to sign the binding protocol at Kyoto.⁹⁶

The Kyoto protocol has specified the level of commitment of the industrialized countries (Annex B parties to the protocol) to reduce their green house gas emissions. As per the premises and principles of the Convention the protocol commits and binds the

⁹⁵ Blanchard, Criqui, and Trommetter M., Laurent Viguier (2001) Equity and efficiency in climate change negotiations: a scenario for world emission entitlements by 2030, Institut d'économie et de politique de l'énergie.

⁹⁶ Ibid

industrialized countries to reduce their green house gas emissions.⁹⁷ It also provided for various flexibility mechanisms to achieve the reduction of green house gas emissions to the desired level. The following part discusses the guiding principle of the protocol, specific levels of reduction and flexibility mechanisms.

1. The Guiding principle and Flexibility Mechanisms of the Kyoto protocol

The Kyoto protocol makes mention of its recalling the provisions of the convention and refers itself as adopted for the pursuit of the ultimate objectives of the convention.⁹⁸ Most importantly it makes a specific cross-reference to a principle of the convention that the parties to the protocol are guided by article three⁹⁹ of the convention in agreeing to the protocol. Hence, by virtue of the preamble to the Kyoto protocol all the policy premises and guiding principles of the Convention discussed above are part and parcel of the Kyoto protocol. It follows that the ultimate objective, the premises and the principles of the convention serve as the litmus tests for the validity of the rules and mechanisms that are established by the Kyoto protocol and all equity proposals and negotiations on them made thereafter.

⁹⁷ See the Kyoto protokol (UNFCCC, 1997); also Carzola and others (2002); Blanchard and Others (2001)

⁹⁸ The Kyoto Protocol (UNFCCC,1997) preamble

⁹⁹ Article 3 of the convention establishes the principle of equity, common but differentiated responsibility and respective capabilities of the parties.

The Kyoto protocol, after adopting the principles of the convention, proceeded to set rules of reduction commitments and flexibility mechanisms. In doing so, it provided that the annex B parties to the protocol (the Industrial countries in general) should commit themselves to reduce green house gas emissions by at least 5% from 1990 level in the period between 2008 and 2012. Specifically, it set a level of emissions reduction to the EU-US-Japan triad as -8%, -7%, and -6% respectively.¹⁰⁰

The convention also provides for flexibility mechanisms as Clean Development Mechanism (CDM), and the possibility for joint implementation and participation in International Emissions trading, of which the latter is the focus of the paper.

The green house gas emissions market, however, is not for every one. It is to be established as between the countries that are signatory to the binding commitments for green house gas reduction as set in the Kyoto protocol.¹⁰¹ These countries are the industrial annex B parties. However, the objective of the convention of stabilizing the atmosphere by reducing green house gas emissions cannot be achieved by the actions of the industrialized countries alone. This is the case because the developing countries are in need of greater and faster economic development hence more energy consumption with the possible association of inefficient consumption

¹⁰⁰ See the Kyoto protokol (UNFCCC, 1997); also Carzola and others (2002); Blanchard and Others (2001)

¹⁰¹ Blanchad and others (2001)

of it.¹⁰² No disagreement exists as to the fact that the developing countries will be the larger energy consumers and more green house gas emitters in the future. Therefore, designing a mechanism of inclusion that makes the developing countries participant in the process is part of an ongoing negotiation and debate since the adoption of the Kyoto protocol.¹⁰³

The acute need of the developing world for faster and greater social and economic development associated with existing poverty and considerable increase of population makes it impossible for them to follow the pattern of commitments the developed world has been subjected to under the Kyoto protocol. The developing countries are increasing their consumption of fossil fuel energy and will continue to consume much in the future.¹⁰⁴

Although equity, differentiation and respective capability are the guiding principles of the convention and the protocol, and relieving the developing countries of the commitment to reduce green house gas emissions in the first commitment period (2008-2012) while the developed country parties take measures of reduction is within the spirit of the convention, the ongoing process has proved difficult for implementing the objective of the convention. Two formidable reasons can be mentioned. First, the fact that the action of the developed countries to

¹⁰² CBO (2003); Carzola and others (2002); Blanchard and Others (2001)

¹⁰³ Ibid

¹⁰⁴ Carzola and others (2002); Blanchard and Others (2001)

reduce emissions to the quantity under the Kyoto protocol is not sufficient to achieve the desired target for developing countries will continue to emit in greater amount. Hence debates for international cooperation are taking this as a vital issue in the problem.¹⁰⁵ Second, not all the developed country parties are full heartedly engaged to their commitment under the Convention. For instance, the USA has withdrawn from the Kyoto protocol arguing it would not ratify the protocol unless the developed countries are subject to the same commitment.¹⁰⁶

The Climate change hazard is common threat to humankind. But, it is true that countries are not the same in their vulnerability to the hazards; in their historical contribution to the current level of green house gases in the atmosphere; and in their capability to cope with the hazards and their ability to bear the burden of compliance to climate change measures.¹⁰⁷

It is also a fundamental principle that the climate change measures should be taken on the basis of equity; common but differentiated responsibility; respective capability of the states parties with out hampering the right to use atmospheric resources; the right to economic development and in cognizance of the special circumstances and acute needs of the developing countries.¹⁰⁸

¹⁰⁵ Ibid

¹⁰⁶ Ibid

¹⁰⁷ Ibid

¹⁰⁸ UNFCCC, 1992

In an effort to make the developing countries participant in the grēen house gas reduction commitments, and in an attempt to adhere to the principles of the convention, various equity principles and rules of differentiation have been offered by countries. The equity rules are multifarious and some are of varying consequences to the extent affecting the economic development of the poor countries. While some are interest driven than the principles of justice that are built in the convention, neither of them shares a single equity principle. What follows is an overview of the differentiation proposals.

2. The Equity Principles Suggested by the Parties following the adoption of the Kyoto Protocol

A. Proposals Targeting Réduction of emission¹⁰⁹

¹⁰⁹ See Global Commons Institute. 1997. *Contraction and Convergence: A Global Solution to a Global Problem*. July. London, U.K.: Global Commons Institute;
Blanchard, Criqui, and Trommetter M., Laurent Viguiér (2001) *Equity and efficiency in climate change negotiations: a scenario for world emission entitlements by 2030*, Institut d'économie et de politique de l'énergie; and, Cazorla, Marina, and Toman, Michael, *International Equity and Climate Change Policy*, Resources for the Future climate issue brief No. 27 (2000)

One of the proposed rules of differentiation is **emission ceiling per capita**. Based on the criteria of per capita emissions, it sets a uniform ceiling of quantity of green house gas emissions that are not to be exceeded by each country. If this rule is to be followed it would render the ceiling lower to the developed countries than they already have reached and higher for the developing countries than they are currently emitting. One obvious outcome of this rule of differentiation is that the developing countries would be able to increase their level of emissions until they reach the determined per capita emissions.

Another proposal for differentiation is **reduction of green house gas emissions in proportion to per capita gross domestic product of each country**. Having GDP as its criteria, this rule is not directly related to the country's current levels of emissions or the costs of compliance it subjects them to. While one can see a virtue in this proposal that it gives a room to take in to account the priorities of the developing countries for meeting their basic needs, and an ability to pay that of developed countries, it never guarantees sufficient incentive owing to its divorce from the costs of compliance and current level of emissions of each country.

A differentiation proposal that bases it self on the criteria of the share of responsibility for the current global warming is an **allocation of emissions quotas pro rata to current or cumulative green house gas emissions**. This rule creates the initial entitlements for using the atmospheric resources at their current

proportion. If implemented, it would operate to the benefit of the industrialized countries for it establishes their current level of emissions as an acquired right. This “grandfathering” proposal would deny the developing countries a room for increasing their consumption of energy resources, which is critical for their economic development.

A proposal of differentiation based on emissions per unit of GDP is **setting a level of reduction for each country relative to its quantity of emissions per unit of GDP**. This means that those countries that have an energy technology that currently consumes high amount of fossil fuels thereby emitting huge amount of green house gases will be subject to the duty of making the greatest reduction of emissions. Both the industrialized and developing countries with energy systems that emit large amount of green house gases (e.g. The USA, China and India) would find this differentiation proposal operating to their disadvantage.

B. Proposals Targeting Costs of Compliance¹¹⁰

¹¹⁰ See Blanchard, Criqui, and Trommetter M., Laurent Viguier (2001) Equity and efficiency in climate change negotiations: a scenario for world emission entitlements by 2030, Institut d'économie et de politique de l'énergie; and, Cazorla, Marina, and Toman, Michael, International Equity and Climate Change Policy, Resources for the Future climate issue brief No. 27 (2000)

Two Cost based differentiation proposals namely: **Setting total abatement costs proportional to GDP or costs per unit of GDP in proportion to per capita GDP** on the one hand and **setting of total abatement costs in proportion to historical contribution of the country to the current global warming on the other hand**, correspond to the two differentiation proposals mentioned under A above targeting reduction of emissions based on Per Capita GDP and share of responsibility for global warming, respectively. Both the criteria each corresponding rule is based on and the reaction they receive from countries are the same. Another cost based rule of differentiation is setting costs of abatement for each country in proportion to its emissions per unit of GDP. This rule, too, directly corresponds to the emissions reduction proposal of differentiation of reducing emissions proportional to emissions per unit of GDP, both in its basis and the reaction it receives from the concerned parties.

Two other Cost based Proposals of differentiation with a different basis than the above are the Equalization of marginal abatement costs and setting total costs to country according to its willingness to pay.

The first, namely, the rule of differentiation by equalizing marginal abatement costs sets relatively high targets of reduction in countries whose energy use is inefficient where there is greater potential for low cost reduction of emissions than in countries

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whose use of energy is more efficient. From efficiency point of view, it implies optimality but it has the potential to leave the countries whose energy needs are yet evolving penalized provided that no compensatory mechanism and willingness exists.

The second i.e. the rule of differentiation by setting costs of mitigation based on willingness to pay, bases it self on the benefits each country would appropriate from climate change mitigation. Given the scientific and economic researches show that developing countries are more vulnerable to the adverse effects of climate change, it follows that it is this countries that would greatly benefit from climate change mitigation. Accordingly this rule of differentiation would impose the heights costs of mitigation on these developing countries with limited financial resources for their acute priorities of eradication of poverty and economic and social development.

An examination of the differentiation proposals as to the equity principles to which they belong is done in the following section. This section paves the way for the sections to follow that are aimed at establishing an equity principle based on the spirit and principles of the UN framework convention for climate change and conventionally accepted theory of justice.

IV.Principle of Equality and Distributive Justice as Fundamental Tenets of the UN Framework Convention

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The fact that the states parties proposed competing equity principles in advancing their conception of the system of equality to be established; and most researchers concluded that it is not possible to find a single equity principle, gave rise to the impression that there is no single right answer to the problem. Save for the pursuance of self interest of the parties-parties that are well informed of their endowments, their past performance and responsibilities, and their would be position in the future depending on what equity principle the system adopted- there is a single right answer to the question that “ Which equity principle is the right one?”¹¹¹

First, this takes accepting the framework convention as a desire of the parties to established a just system of emissions trading based on the principles of equality in which each expects to maximize its best interest and at the same time in need of a guaranty on the event that either of them happen to be the unfortunate least well-off in the new system that is to be established.

Second, since the source of the competition for a self interest maximizing equity principle and the resultant disagreement is the self-interest maximizing behavior of the parties coupled with the awareness of their past, current and future position, Rawlian method of “The

¹¹¹ This issue will be dealt in the last section of this paper applying the Dworkin’s “The right answer thesis.” Dworkin, R. , A Matter of Principle (Harvard University Press, 1985)

original position behind a veil of ignorance”¹¹² must be applied to find what exact rule the parties would need to maximize their self interest under a system of distributional justice based on an equality principles. This method takes all the information the parties have about themselves and puts them in the original position. Then, it lets them to negotiate for rules that best maximize their self-interest. I will do this in the last section that searches for the single right equity principle. In paving the way towards that, a purposive general discussion of the idea of equality and justice as underlying notions of the convention; and an overview of the conceptions of equality on which the parties (or researchers) are laying the foundation for their claims is necessary. This is what follows.

1. The principle of equality and justice

Amidst wide differences as to the exact meaning of equality¹¹³, the idea of equality (or for that matter inequality) is widely understood as an issue of justice, not as a single principle, but as complex group of principles forming the core of to day’s notion of social justice.¹¹⁴ The idea of equality is deeply imbedded within morality

¹¹² Rawls John, Theory of Justice (Cambridge, MA: Harvard University Press, 1999)

¹¹³ In explaining the degree of differences in understanding what equality is, Dworkin notes that people who praise or disparage equality finds them in disagreement as to what they exactly are praising or disparaging. Dworkin R., (2000),

¹¹⁴ Tempkin (1992) in Gosepath (2001)

and justice in general and distributive justice in particular.¹¹⁵ As such equality has always been considered a constitutive feature of justice. The question of the role equality plays in a theory of justice is understood as an issue of social justice. In solving this issue philosophers have defended variety of principles and conceptions of equality. In the following paragraphs the various premises and principles of the framework convention shall be explained in light of the constitutive features of equality on which the convention draws.

A. Formal, proportional and Moral equality

The framework conventions adopted the principle of sovereignty under international law and equal rights of sovereign states to advance economic development and have access to natural atmospheric resources. This demonstrates the fact that the convention draws on the principle of formal equality for formal equality demands persons of equal status in at least one normatively relevant respect to be treated equally with regard to that respect.¹¹⁶ This principle is thought to be a specific application of the rule of rationality because to treat equal cases unequally is inconsistent therefore irrational¹¹⁷ It is also thought that formal equality is desired because of a moral principle of justice is at stake i.e. an

¹¹⁵ Gosepath (2001) see also Albernethy (1959); Benn (1967); Brown (1968); Thomas (1949)

¹¹⁶ Aristotle in Gosepath (2001)

¹¹⁷ Berlin (1955-56), "Equality", *Proceedings of the Aristotelian*

acknowledgement of the impartial and universalizable nature of moral judgments¹¹⁸

Compounded with the above principles of equality one may consider the convention, in adopting the equality principle, as drawing from the principles of Moral equality that prescribes treatment of all persons as equals thus holding that every one deserves the same dignity and the same respect.

The notion of proportional equality, on the other hand, is understood as conveying the meaning that people that are different in some respects must be treated unequally. It justifies inequality to the advantage of those with endowment and past achievements.¹¹⁹ In no case the convention draws on this principle and it is considered as irrelevant in the treatment of distributional justice based on the idea of equality. It must also be contradistinguished from the concept of just inequalities to the advantage of the least well-off members in that it stands for justifying inequality to the advantage of the bettered-off.

B. The Principles of Distributional Equality

While the above mentioned equality principles are helpful in that they serve as conceptual frame works for starting an ethically or politically acceptable premises as the case may be and as tools of formulating a formal postulate,

¹¹⁸ Gosepath, (2001),

¹¹⁹ Gosepath (2001)

they remain of no avail when called for formulating a theory of distributive justice.¹²⁰

Hence, beyond the general principles of equality and inequality as to the rights of the states parties to the UN frame work convention on climate change, when it comes to the adoption of specific equity principle and rules of differentiation that it self requires further definition (and is prone to interest driven interpretation) the available specific theories of distributional equality should be consulted so as to establish a meaning to the principles of equity and differentiation as per the convention.

The presumption of equality is a starting point in constructing a theory of distributional justice. This presumption is a prima-fascia principle for equal distribution of all goods politically suited for public distribution. Any deviation from it or a move for unequal distribution must be justified in a reciprocally convincing and acceptable manner to all.

While strict equality is required in the sphere of political, legal and civil liberties with no room for a justification otherwise, with the exception of punishment; the social sphere requires fair equality of social opportunity. But, strict equality is not the rule when it comes to the economic sphere. Hence, in designing a system of distributional justice in the economic sphere unequal distributions can be adopted. This process of designing and adoption needs to be guided by the following rules.¹²¹

¹²⁰ Ibid

¹²¹ Rawls (1971) rev.ed (1999)

A. Need or differing natural disadvantages; B. Existing rights or claims (e.g. private property); C. Differences in the performance of social services; (desert, efforts, or sacrifices) D. Efficiency E. Compensation for direct and indirect or structural discrimination (e.g. affirmative action).¹²²

This being the framework for principle of equality in distributive justice, there exist various conceptions of distributive equality that respond differently to the same question. Most of them appeared to be theoretical foundations for the proposed rules of differentiation in interpreting the equity and differentiation principles of the UN framework convention for climate change. I now turn to such equity principles suggested by the parties to treat them in light of the theory of distributive justice; and the premises and principles of the convention.

2. The Proposed Equity Principles And The Equality Theories That Underpin Them

A. The Conception of Equality of Resources (Democratic Equality/Maxi-mini)

Propelled by the conception of equality of resources, a rule of differentiation is proposed to the effect that emissions reductions objectives be set proportional to per capita GDP; or total costs of mitigation for each country to be set proportional to GDP; or per unit of GDP proportional to per capita GDP.¹²³

¹²² Ibid

¹²³ Blanchard and others (2001) Cazorla and others (2002)

Strict application of this principle would require rules to be designed so as to maximize the net benefits to the poorest countries¹²⁴ This maxi-min principle can be achieved either through the allocation of the highest emission quotas in the initial entitlement to the poorest countries; or through the distribution of the largest amount of burdens to be born by the developed countries.¹²⁵

This Rawlian notion of distributive justice is based on the conception that equal opportunity is insufficient for distributive equality to prevail for it never compensates for unequal and purely arbitrary innate gifts. Thus individuals should be responsible for their decisions and actions but not for circumstances beyond their control. As such it excludes circumstances as race, sex, skin color, intelligence and social position from the criteria of distributive equality.¹²⁶

Human beings should have the same initial expectations of basic goods (All purpose goods)¹²⁷ While this should never preclude ending up with different amount of resources as a result of personal economic decisions and actions, the principle accords prime importance to an assurance of equal basic freedoms and rights¹²⁸ Inequalities may be

¹²⁴ Ibid

¹²⁵ Ibid

¹²⁶ Rawls (1971, rev. ed 1999) also Dworkin (2000)

¹²⁷ Rawls (1993)

¹²⁸ Ibid

considered as just when they fulfill two requirements i.e. they have to be linked to offices and positions open to every one under conditions of fair equality of opportunity; and they have to reflect the difference principle in offering the greatest possible advantaged to the least advantaged members of society.¹²⁹

When applied to the climate change problem, an equity principle based on democratic equality would threat the atmosphere as a primary social good. If the principle of Democratic equality is to guide a differentiation rule, it follows that green house gas entitlements should initially be distributed fairly. According to the difference principle, this fairness means maximizing the net benefits to the poor countries. Burdens would be shared considering the ability of the different countries to pay and to the best advantage of the least advantaged countries.¹³⁰

The differentiation principle proposed in accordance to this notion of distributive justice is clearly to the benefit of the developing country. An issue emerges that inquires whether the circumstances in which the system of international cooperation for green house gas emissions reduction satisfy the difference principle? Also Related is an issue as regards whether the principles and premises of the UN frame work convention for climate change are set in a manner that

¹²⁹ Ibid

¹³⁰ Ibid

suits the application of the Rawlian notion of distributive equality.

The convention has established a principle that the parties should act on the basis of equity. And this is also to be carried out based on the common but differentiated responsibilities of the parties. The fact that the respective capabilities of the parties should be taken into account is also an important principle in the convention. Moreover, the convention recognizes the economic circumstances in which the developed countries are positioned and their urgent needs for greater economic development and increased consumption of energy. The developing country parties are in unequal position with the developed country parties as regards their capability to meet the costs of compliance and their increased need of fossil fuel consumption.

Therefore, a principle of distributional equality that recognizes inequalities to be just on conditions of the “difference principle”¹³¹ and the basic requirement of the principle of the presumption of equality that: inequality in economic distribution is just when requirements like a need or differing natural disadvantages are prevalent is in accord to the principles of the convention. As mentioned earlier this Rawlian notion of justice will be applied for singling the best principle out in the section titled “The right answer thesis and the original position behind a veil of ignorance”

¹³¹ Rawls (1999)

B. The Conception Of Simple Equality (Equality of Rights)

The rule of differentiation based on equalization of per capita emissions is regarded as stemming from the conception of Justice that calls for equality of rights¹³². Based on the theory of natural rights, the principle of equality of rights asserts that human beings are considered to be in the state of perfect freedom and equality for they are born free and equal¹³³. Humans who are born equal with equal access to the benefits of what nature has to provide and having the same faculties, the principle of equal rights holds, they must be equal as between themselves¹³⁴. It follows that if the Principle of equality of rights is strictly applied as an interpretation of the equity principle under the UN frame work convention, each state would have the same right as regards the use of the atmosphere regardless of the different circumstances they are in, leaving no room for an unequal treatment that may be justified under other principles of justice. Strict application of this principle would justify the adoption of the rule of equalization of per capita emissions for each country. Various models show that adoption of this principle would highly redistribute welfare from the developed countries to the poor

¹³² Branchard and others (2000)

¹³³ Gosepath (2001)

¹³⁴ Ibid

countries.¹³⁵ From the perspective of initial distribution for atmospheric resources, this principle is considered fair and acceptable by most developing countries.¹³⁶

Together with the idea of equality it self, strict equality receives formidable criticism based on multiple grounds.¹³⁷ This is the case only when the principle is addresses from the perspective of redistribution. However, the case is different when seen from the angle of initial distribution of resources to society in forming a new economic order-in this case the system of emissions trading. Seen from the perspective of initial distribution of resources based on principle of distributional equality the conception of equality of rights has a basis of principle in the UN frame work convention. I will show how parties in an original position behind a veil of ignorance will adopt this principle and supplement it with the difference principle in a section that deals with selecting the one right principle.¹³⁸

C. The Conception Of Causal responsibility

One of the proposed differentiation rules suggested for mitigation of green house gas emissions in to the atmosphere is the rule of causal responsibility. It

¹³⁵ Blanchard and others (2001) See also Cazorla and others (2002)

¹³⁶ Ibid

¹³⁷ Gosepath (2001)

¹³⁸ See the section titled as " The single right answer thesis and the veil of ignorance" at the end section of this paper

requires either the emissions allowances each country is to be entitled or the costs of mitigation to be born by each country to be set taking in to account the contribution of the country to world emissions.¹³⁹ It emanates from the notion of justice that individuals are responsible for their own actions based on their own decisions.¹⁴⁰ It is in accord with the idea that externalities freely imposed on others should be internalized on the market system. Such is understood as "the polluter pays principle."¹⁴¹

Application of this principle would involve implementing the polluter pays principle at the international level. Since the primary emitters of green house gases both currently and historically are the developed countries, in the short run, it shifts substantial burdens of compliance costs to the developed countries¹⁴². For this reason it is considered as a principle that favors the developing countries.

Both historical and cumulative responsibility shifts much of the costs to the wealthier nations while cumulative responsibility might to some extent increase the burden of some high energy consuming developing countries as China and India leaving much of the developing world within its

¹³⁹ Ibid note 46.

¹⁴⁰ Ibid

¹⁴¹ Ibid

¹⁴² Ibid

differentiated treatment under the convention. If, however, current emissions levels are taken as the sole consideration, developed countries parties would remain free of the duty to internalize the externalities they created in the huge past and would be subject to relatively bearable costs for they are more energy efficient, and able to adapt to alternative mechanisms compared to much of the developing world which sees its consumption of fossil fuels increasing without having efficient energy systems and the resources and technology to adapt to clean development mechanisms.

Also important is the projected contribution of emissions of the developing countries. Albeit it is the developing countries that are historically large emitters of the green house gases to the atmosphere, the developing countries will be the largest emitters of green house gases in the very near future owing to their increased population, economic development and an increased need for consumption of huge quantities of fossil fuels.¹⁴³ Hence, the principle of causal responsibilities implies the reallocation of burdens in the future.

From the perspective of the principles of the climate convention, this principle conforms to the convention's premises that developed countries are historically the biggest contributors of green house gas emissions and as such they should take the

¹⁴³ Cazorla and others (2002) and Blanchard and others (2001)

primary lead to combat the adverse effects of the climate change. The fact that the governing nature of the convention's principle, in this case, that developing countries should not bear abnormal burden that would hinder their specific priorities, development needs and the consumption of increased fossil fuels required for their needed economic development, heavily depends on the manner by which the causal responsibility is determined i.e., past, current or cumulative responsibility.

As to the economic development needs of the developing countries and their need of increased consumption of energy, this principle is only acceptable but by no means superior.

D. The Conception Of Merit

Two differentiation proposals, namely: the reduction of green house gas emissions in proportion to emissions per unit of GDP; and allocation of total abatement costs proportional to emissions per unit of GDP; are regarded as having the Marxian notion of justice as for the first stage of communism (socialism) i.e. Merit as their underlying equity principle.¹⁴⁴ This principle advocates giving each according to his labor. The endowments to the person concerned are rewards for meritorious behavior and meritorious behavior is understood as the pursuit of virtue, effort etc. In the context of climate change, an application of this principle would greatly reward those countries that are capable of establishing less green house gas

¹⁴⁴ Blanchard and others (2001)

emitting economy by taking in to account their environmental performance. It rewards the less carbon intensive economies while penalizing those with carbon intensive energy systems.

Since this notion of justice aims at rewarding the one who better adapts to alternative energy mechanism and achieves energy efficiency, it essentially makes those who otherwise are inefficient or unadaptive pay for it. Its difference with the polluter pays principle in the case of causal responsibility is that, the merit principle rewards the rich countries that are advanced both in energy efficiency and adaptive methods, while the former penalizes the inefficient and with less adaptive capability.

E. The Conception of Utilitarian equality

Allocation of total costs according to willingness to pay; and equalization of marginal abatement costs have the utilitarian conception of justice as their underlying equity principle.¹⁴⁵

According to the Utilitarian conception of justice the only desirable universal goal is the greatest happiness for the greatest number. Actions can be judged bad or good depending on their effects on such goal. Thus actions are good if they maximize total utility and not of individual utility, calculated as a net balance of

¹⁴⁵ Blanchard and others (2001) and Cazorla and others (2002)

satisfaction in relation to the disadvantages each individual counting equally and treated impartially.¹⁴⁶ Applied to the climate change problem, the utilitarian justice would obtain if green house gas reduction is achieved through a differentiation criteria that would maximize total world economic growth net of adverse climate effects.¹⁴⁷ Countries should have the freedom to decide on the reduction they are willing to pay for, depending on their individual valuation of the reduced harm.¹⁴⁸ That this may lead to the concentration of the adverse effects and costs of mitigation on sacrificed regions is some thing to be treated within separate mechanism. Then non-existence of such mechanisms and, as a consequence, none cooperation of states is formidable challenge for the Utilitarian conception of justice to be an ex-ante guiding principle in the current efforts of climate change policy.¹⁴⁹ It also renders the requirements of equity, differentiated responsibility and respective capability that are meant to guide all actions to be taken pursuant to climate change policy inapplicable.

F. The Conception of proportional Equality

The rule of differentiation that is proposed calling for reduction of emissions to be achieved through the allocation of emissions quota on the basis of the

¹⁴⁶ Blanchard and others (2001) see also Jermy bentham as in Gosepath (2001)

¹⁴⁷ Ibid note 156

¹⁴⁸ Ibid

¹⁴⁹ Ibid

current or cumulative emissions each country is propelled by the notion of proportional equality.

This rule of differentiation seeks to maintain the current relative rate of green house gas emissions by a proportional reduction of emissions across all countries.

The underlying premises of this Aristotelian notion of Proportional equality are that people are unequal by nature and as such their unequal treatment is all natural and justified. Distribution should take the social position people are currently in as the sole factor for their current position is achieved through their historical efforts, achievements, and contributions to society.¹⁵⁰ It is a status-quo maintenance rule.

This “grand-fathering”¹⁵¹ differentiation proposal that seeks to set emissions quotas proportional to current rates would be justified by such conception of proportional equality, hence establishing the current higher emission levels as historically acquired rights of the industrial world and the low levels of energy use as the limits of the rights of the level of energy use by the developing countries.

From the perspective of the UN framework convention for climate change, it fails to fit to the principles of differentiation that should take in to account the increased need of green house gas emissions by the developing countries to advance

¹⁵⁰ Aristotle as in.Gosepath (2001)

¹⁵¹ See Blanchard and others (2001) and Cazorla and others (2002)

their economic development. It follows that its ultimate effect is denial of access to highly needed energy resources for the economic development of each country.

From the perspective of the principle of distributional equality, it is a notion irrelevant to address issues of distributional concerns.¹⁵² It clashes at right angle with most notions of distributional justice, Democratic equality being at the forefront.

Each proposed rule of differentiation has different welfare effects. While countries advance what most benefits them, researchers engaged themselves in search of politically acceptable models of differentiation. Is it because there is no right answer to what principle of equality and justice should govern the new international system of emissions trading? The following section treats this issue.

V. The Right Answers Thesis and the Original Position behind a Veil of Ignorance

The country parties proposed competing equity principles and researchers concluded it is impossible to arrive at a single equity principle that satisfies all of them. It is possible all might not agree. But it is not the case that there is no single right answer to the problem. It is the welfare maximizing self-interest of the states that is competing rather than the notions of

¹⁵² Gosepath (2001)

distributional equality. This right answer can be arrived at by employing Dworkin's "The right answer thesis,"¹⁵³ and Rawls method of "the original position behind the Veil of ignorance."¹⁵⁴

Once the states parties have agreed to the UN framework convention on climate change convention, the principles endorsed in it form a consensus reached between them. The convention also mentions that all negotiations and mechanisms to be made to the implementation of it must be in accordance to those principles. One such principle is the consideration of "equity, differentiation and respective capability" of the parties in distribution of the burdens. All the effects that the adherence to this principle may bring about are, therefore, deemed to be the desire of the states parties conceded for the achievement of the ultimate objective of the convention.

The quest for the equity principle that best advances the objective and intent of the parties therefore must be made with an appeal to the principles of the convention but not to the degree of outcomes that are to be calculated through interest maximizing, competing, and separate individual approaches. This makes the quest for the principle essentially an interpretation of the convention.

Following this line of reasoning, one finds the fact that different approaches are suggested by states

¹⁵³ Dworkin (1985)

¹⁵⁴ Rawls (1971 re.ed 1999)

parties and the conclusion that many researchers made that no single equity principle can govern the problem, as having their sources somewhere extraneous to the convention. And it is the self-interest maximizing strategic behavior of the parties that these conflicting proposals and conclusions emanate from. As conflicting conclusions cannot all be validly inferred from a given proposition, there must be a single right solution to the quest for an equity principle that best advances the objective of the convention.

Ronald Dworkin's "The right answer thesis" can usefully be applied here. Dworkin's thesis takes interplay of two levels of political consciousness—"Practical problems and philosophical theory, matters of urgency and matters of principle."¹⁵⁵

In relation to the case at hand, the practical problems are the policy considerations that researchers are giving weight too, while the matters of principle are what the convention warrants.

Dworkin further asserts that arguments of policy attempt to seek the merit of implementing a certain proposal in the fact that a community as a whole would be better off. Arguments of policy, on the other hand, follow the rights based reasoning and attempt to prove that those proposals need (not) be implemented depending on their impact on particular people, even if this might have the community's worsening-off as

¹⁵⁵ Dworkin..See also Arval A. Morris on Dworkin

its consequence. Therefore, the enterprise of Judgment (in our case the selection of the right principle) must be a matter of principle than a matter of policy.

All the proposals for differentiation are based on the question that what policy would maximize the interest of the state party? The conclusion of the researchers that no single equity principle can be found is also based on the policy consideration that states would not agree since an adoption of a given principle would ultimately have a welfare impact on one or the other. This approach is what Dworkin deems a non-principled judgment and a source of multiple solutions for a single problem-a problem that necessarily has one single right answer, hence, flawed.

According to Dworkin, a principled judgment would lead to the right answer. This means that, in a complicated case where legal rules seem not to give sufficient guidance, principles give a definitive guidance so that every judge would arrive at a single right answer. Ultimately the one on whose hand the case rests for judgment is a moral philosopher and the party before him has a right to a Judges single best answer. The quest for single best answer to a problem demands going beyond simple acceptance or denial of an objective truth. For there is little point in accepting or denying an objective truth.¹⁵⁶

¹⁵⁶ Dworkin as referred above at note 166.

The merit or demerit of the competing differentiation proposals must be given their due judgment based on the theory of equality that fits the principles that are embedded in the UN framework convention on climate change, and one equity principle among them must emerge as the single right equity principle for the initial allocation of tradable green house emission allowance.

Once the existence of a single right answer to the problem is established, the question remains “Which one is the single right equity principle?” A principled quest for that single solution can be made by engaging the states parties in a scenario where they distribute the emission allowances between them regarding each as equal with the other. And, John Rawls method of “the original position behind a veil of ignorance” can be implemented in the search for the right principle.

Rawls employed this method in his theory called the “original position”¹⁵⁷ the veil of ignorance is that making the parties ignorant of their endowments and strategic interests. In our context, Rawls would make the states unaware of what historical share of energy consumption they had, what role each has in contributing to global warming both in the past and in the future, what share of the adverse effects or

¹⁵⁷ Rawls (1971 re.ed. 1999)

benefits of climate change they may suffer or benefit as the case may be.

In this method there is no need to make the states benevolent actors. That they do not know what endowments and strengths they have, but they act to benefit themselves than any other and are super cautious to avoid any adverse impact the rules might cause to them suffice. In this situation the parties would strive to achieve the rule that best benefits and protects them. According to Rawls, this people would necessarily adopt the following rules:

First, they would adopt the principle of equal right to the most extensive total system of liberty compatible with similar system of liberty for all.

The states parties would be happy to adopt the equality of rights to the most extensive liberty in accessing the atmospheric resources. But in our case they already have this and their purpose is limiting the most extensive liberty to burn fossil fuels each equally have. Hence, a state would be satisfied if it can have adopted a system of rules that grants it equal extent of liberty to the extent possible (to be limited by the desired levels of green house gas concentration in the atmosphere) compatible with same extent of liberty for all others.

Second, these super cautious parties would need a rule of justice that would justify inequalities that would work to the advantage of the least well of

members. They would be happy to justify inequality with its qualification to be to the benefit of the disadvantaged, because they neither want others to have a better share than them, nor they are sure whether they will not be in the list of the least well-off members. So, it is a rule of security against losing ones fair share for the already better of members and against the uncertainty that either might be the disadvantaged one.

Hence the states would agree to have a rule of differentiation that works to the best advantage of the least well-off members. This is what Rawls calls the difference principle. According to him every member should have equal right to primary social goods and the difference principle justifies inequality only if it is designed to the greatest benefit of the least advantaged members of society.

In the initial distribution of green house gas emissions allowances to countries, the states in the original position would find it just if a rule can entitle each of them an equal amount of emissions allowances the extent of which to be determined by the purpose of limiting the GHG emissions, and to have a difference principle that would justify distributional inequality be it in the number of allowances or the outcome thereof, if only it works for the greatest benefit of the least advantaged members.

The states in the real original position have agreed for the principle of equity; common but differentiated

responsibility and respective capabilities of the states. They have also arrived at a convention that recognizes the special disadvantaged circumstance of the developing country parties and the need for considering this in dealing with the climate change problem. What does this mean? For states in the original position behind the veil of ignorance, this is acceptable for the meaning is clear to them and it best promotes their self interest both in having an equal share and being secured against any possible disadvantaged position.

But in the real position where states parties are aware of their respective endowments, economic and bargaining strengths and strategic outcomes of any position they hold in the negotiation process, parties claimed under a proposal that promotes their individual best interest regardless of its outcome on others and researchers arrived at different conclusions as to which equity principle is the right one. This is so because their arguments are based on policy considerations than adherence to principles. Hence any judgment on what equity principle is the right one must be validated through the principles of equal rights and the difference principle in conformity to the UN framework convention on climate change.

The foregoing is the framework of a principled judgment that would help identify the single right equity principle. Now I turn to apply this rule of principled judgment to identify the right equity

principle among the competing differentiation proposals of the parties.

The green house gas emissions allowances are the goods to be distributed among the parties. Currently all parties are enjoying equal unrestricted access to the atmosphere as a sink for their unrestricted emissions. But the green house gas emissions allowances have the effect of limiting the unrestricted liberty states used to enjoy. The Rawlian principle of equal liberty warrants equal restriction of emissions on all parties. This means that the GHG emissions allowances must equally be distributed.

Of all the proposed equity rules the following have an ostensible conformity with this first rule of distributive equality and I will show why after listing them:

1. The principle of Equality of rights
Equalization of per capita emissions ceiling
2. The principle of Democratic Equality (Maxi-mini)
 - A. Emissions reduction objective proportional to per capita GDP
 - B. Total Cost proportional to GDP or cost per unit of GDP proportional to per capita GDP

The following proposals demonstrate nonconformity with the first rule of distributive equality:

1. The Utilitarian principle of equality
 - A. Total cost supported according to willingness to pay

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- B. Equalization of marginal abatement costs
 - 2. The principle of Causal Responsibility
 - A. Amount of reduction proportional to the country's contribution to world emissions
 - B. Total abatement costs proportional to the countries contribution to world emissions.
 - 3. The principle of Meritorious Equality
 - A. Amount of emission reduction proportional to emissions per unit of GDP
 - B. Total emission abatement costs proportional to emissions per unit of GDP
 - 4. Proportional Equality
 - Emissions quota attributed on the basis of the current or cumulative emissions of each country.

Now I will subject each to the test of the first rule. For the sake of convenience, I will first deal with the nonconforming ones and later show which principle is the right answer among the ostensibly conforming ones.

If the countries in the original position behind a veil of ignorance are proposed with the utilitarian equity principle, they would not consider it as a rule that entitles them to an equal right to the extensive liberty for each, compatible with the same and equal right with it. First, the parties behind the Rawlian veil of ignorance are concerned with their self-interest and not with the maximization of total welfare to the whole taken in the aggregate regardless of the level of wellbeing a particular country might be positioned later. Second, they want to be insured that the system of equality allows just inequalities that would operate

to the greatest advantage of the list well-off countries on the event this happens to either of them. The utilitarian equity principle that is concerned with maximizing the happiness of the greatest number regardless of the individuals that may be competed out is therefore in contradiction to the Rawlsian concept of distributive justice.

If the countries are proposed with the principle of causal responsibility in distributing the burdens and benefits in climate change, the first problem this proposal faces is that the parties are ignorant of their endowments and capabilities. They are devoid of any information about their past performances or responsibilities. The veil of ignorance, therefore, never allows the parties to arrange distribution according to past responsibilities. Even when one allows for this information of past responsibility, hence making them aware of current and future contribution also, they will see the respective responsibilities they have will render them with unequal rights. Striving for their equal share in the original position, the countries would not adopt this proposal because it is in contradiction to the first rule of equal extensive liberty.

The same is true for the Idea of meritorious equality. First, their ignorance precludes them from considering the merits they have as they are presumed to be ignorant of their past and with equal status. Second if one allows for this information of merit, the parties will see the possibility of finding themselves

in different positions as to their merit and they will find adoption of this rule in contradiction with the second rule of justified inequality in that the rule of merit will justify inequality to the benefit of the meritorious ones but not to the least well-off countries. Hence, for reason of absence of merit in the parties in the original position and its contradiction with the difference principle, the countries in the original position cannot adopt this rule for distributional equality.

The equity principle of proportional equality is impossible to come up from countries in the original position in that it requires distributing the emissions allowances in an equal manner. Giving more to those who already are endowed with much of the emissions and less to those who are not, will not work for the parties are assumed to be unaware of their endowments hence no basis for this rule to be adopted. Allowing for this information would render it impossible for the proposal to be accepted by parties who necessarily must adopt a rule that gives them an equal right for extensive liberty compatible with same right for others. Since the proportional equality means justified inequality when that inequality is to the favor of the already in a higher position, it clashes with the difference principle that justifies inequality only when that inequality is to the best advantage of the least well-off members of the community.

Once the above discussed equity proposals fail to satisfy the Rawlsian principles of distributional

equality, the single right equity principle must be sought from the proposals that appeared to be in conformity with the first rule of distributional justice.

Though the principle of equality of rights and the principle of democratic equality appear to be different principles at face value, they are cumulative principles for the satisfaction of Rawls's notion of distributional justice.

The equality of rights proposal satisfies the parties in the original position in that it would distribute equal amount of emissions allowances for each, thus satisfying the equal right for the maximum liberty compatible with the enjoyment of equal rights to all. The parties in the original position, therefore, would readily accept this principle to govern the distribution between them.

What is advanced under the idea of democratic equality or maxi-min on the other hand distributes an unequal amount of burdens or benefits to parties in proportion to their GDP

Given the fact that the parties in the original position are assumed to be in an equal position with no information of the disparities of wealth between them, calling this principle a maxi-min appears to be a misnomer. But when one allows for the information of existent inequality between the parties, it can be justified as satisfying the Rawlian principle of distributional Justice. This rule never starts from distributing equal amount of rights, however. It is so

justified not because it conforms to the first principle of equal liberty, but because of its ultimate effects in that it creates inequality among the countries in favor of the poor nations, thus, in accordance to the difference principle.

The Principle of Equality of rights satisfies the first principle of the equal rights to all. At the same time, it has been reported by researchers that it is this principle of equal rights that creates substantial inequality in that it has a transfer of wealth consequences from the developed countries to the developing countries. From the perspective of the difference principle, this is just inequality.

The researches also demonstrate that it is the equality principle that favors the poor countries in its outcome compared to the maxi-min principle.

Since the circumstances of justice require equality of rights in distribution, and differentiation when the circumstance demands inequality to the greatest benefit of the least advantaged members, it is the principle of Equality of rights that can be readily be adopted by the parties in the original position behind the veil of ignorance.

Following the principled judgment approach, the single right equity principle for the distribution of tradable GHG emissions allowances is therefore the Equality of rights principle that distributes the GHG allowances equal to each of them.

Conclusion

The Coase theorem states that initial distribution of entitlements is immaterial for efficiency to prevail in so far as transaction costs are zero/low. Applying this theorem to the climate change problem means that if transaction costs are zero, regardless of who has received how much emission allowances, efficient allocation of resources prevails at the world emissions market.

However, there are reasons to believe that it is not possible to achieve global coordination for climate change and have an efficient market for GHG emissions allowances by taking the Coase theorem as a sole test.

First, the endowment effect theory shows that the discrepancy between willingness to pay and willingness to accept reduces the volume of trade. Thus even if transaction costs are zero, the manner in which initial distribution of resources is made matters for goods to be efficiently transacted. And this is particularly relevant for the emissions trading system.

Second, the fact that competent and sufficiently funded compensatory institutions do not exist renders the Kaldor Hick's criteria of "the gainers gain more than the losers with a potential to compensate the losers" insufficient to induce global cooperation without regard to distributional concerns. Hence the issue of how to distribute the GHG emissions allowances has formed an important problem in climate change policy.

Different parties have suggested competing differentiation proposals. Many researchers also

concluded that it is not possible to have one single equity principle to guide the distributional issue in climate change. Making a principled judgment, however, that single equity principle can be found. Applying Ronald Dworkin's the right answer thesis and John Rawls "Original position behind the veil of ignorance" can lead to the making of that principled judgment.

Put in the original position behind the veil of ignorance, the states would adopt the rules of distributional justice that would benefit them. Those rules would be the rule of equal rights for maximum liberty compatible with the same right for others, and the difference principle for having just inequality to the greatest benefit of the least advantaged members.

The single right answer to the distributional problem that would satisfy the rules of distributional justice is the "Equality of rights principle." This equity principle distributes green house gas emissions allowances equally. Various models have predicted that adherence to this principle would result in a transfer of substantial amount of welfare to the developing countries or majority of the costs to the developed countries. This again is justified by the second rule of distributional justice i.e. the Difference principle.