SEEKING CLIMATE JUSTICE: A CRITICAL RESPONSE TO SINGER

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ABSTRACT

Seeking just procedures to respond to and to handle climate change is the main goal of this thesis. Climate justice is a concept that relates to people’s behavior towards climate; it relates to people’s uses of carbon resources. Philosophers and researchers propose different principles to share the burden of carbon emissions and adapt with climate change. I critically respond to Singer’s views on climate justice. I use conceptual method that engages in interpreting different principles related to climate justice. Singer, in his work One World, offers two principles for sharing the burdens and benefits of climate change. One is the Polluter Pay Principle (PPP) and another is the Equal Share Per Capita Principle (ESPCP). I explain both principles and look at some difficulties for these principles in practical uses. I think Capacity to Pay Principle (CPP) is fairer than Singers’ principles. I suggest that as we know that there is a positive correlation between carbon emissions and development so that CPP would be more appropriate than PPP or ESPCP in distribution of burden and benefit to establish equality across the nations. The logic behind the claim that CPP is a fair principle for climate justice is that the past and present emissions of the developed world have greatly benefited the developed nations. As a matter of fairness, they should shoulder the burden of climate change. Finally, I discuss pluralistic approach for climate justice, where distributive procedure and procedural procedure take place. Distributive justice focuses on an even distribution of the burdens and benefits of climate change, and procedural justice focuses on resolving disagreements to take climate policy. Procedural justice take part in taking rational and just decisions by resolving disagreements among the nations and considering all parties’ concerns. Such decisions generate distributive process. So climate justice consists of both distributive and procedural justice. The study makes the policy makers aware and suggests the legislative bodies to respond to climate change on the basis of our moral thinking and the procedural procedure justifies decisions or policies that take part to mitigate and adapt to climate change. In climate justice we should emphasis on both even distribution of burden and benefit of climate change and just decision to generate distribution.
1.0: Introduction:

Climate means meteorological conditions of a given region for a long period of time (it may be 30 or 35 years). Meteorological conditions mean temperature, humidity, wind, rain, atmospheric pressure, etc. Statistics of meteorological conditions for 2 or 3 days is called weather. “The climate system is the result of complex and dynamic interactions between the earth’s atmosphere, biosphere and ocean” (Admian & Martin 2006:1). In a narrow sense, climate is defined as average weather. In broader sense, “climate is the status of a system which comprises the atmosphere, the hydrosphere, the cryosphere, the surface lithosphere and the biosphere” (Understanding Climate, A website of WMO: 1). They are all determinate factors of climate.

The atmosphere surrounds the earth. It contains Greenhouse Gases (GHG) and mostly controls the temperature of the earth’s surface. Others have little role in climate change. So the study focuses on climate change related to GHG emissions in the atmosphere. Climate change means changes in climate pattern for a long period of time in a certain region. Here pattern indicates the temperature, rain, snow, flood, etc and a region may be a state or planet. United Nations Framework Convention on Climate Change defines climate change as: ‘a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is, in addition to natural climate variability, observed over comparable time periods’ (UNFCC, Article 1: Quoted from Ethical Implication of Global Climate Change: 8). The changes are measured by comparing previous climate patterns or average weather conditions. But climate may change even if the average weather remains the same. The sunlight or the sun’s energy is the main factor for climate change. The atmosphere or the surface of the earth absorbs heat as energy from sunlight. The variation of absorbing the sun’s energy over a period of time causes climate change. Besides volcanic eruption, deforestation and varying Ocean’s circulation may be the other causes of climate change. Greenhouse gases and aerosols layer in the atmosphere maintain absorbing heat energy from the sun. Thus humans take part in climate change by releasing green house gases in the atmosphere. Hence both natural and human factors are responsible for global climate change. IPCC
In general sense, greenhouse effect controls the earth’s temperature. It is already mentioned that sunlight is the main source of heat on the earth’s surface. And, sunlight comes through the atmosphere to heat the surface of the earth and oceans. By radiation the heat energy goes back to space. Eventually, when the heat energy radiates upwards, it is absorbed by greenhouse gases in lower part of the atmosphere. This energy reradiates again and again until the energy returns to the space finally. So the surface of the earth becomes warm because of the recycling of the sun’s heat energy. This process is called Greenhouse Effect. The 4th Assessment Report of IPCC state that ‘the earth’s natural greenhouse effect makes life, as we know it, possible. However, “human activities, primarily the burning of fossil fuels and clearing of forests have greatly intensified the natural greenhouse effect, causing global warming” (Ethical Implication of Global Climate Change: 7). But, the earth would be colder if there is no greenhouse effect. “Without greenhouse gases, earth's average temperature would be -19°C instead of +14°C, or 33°C colder” (Facts about climate change, A website of WMO: 2). So life support could be impossible if there were no greenhouse effect. The earth’s temperature was in balance for human beings for fifty thousand years. But due to increase of greenhouse gases the earth surface becomes warmer for a few centuries. Human activities are responsible mostly for increasing greenhouse gases in the atmosphere. There are some natural causes relating to greenhouse gases - such as vapor of water is a significant element of greenhouse gases. The other elements of greenhouse gases are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), CFC and ozone (O₃). Besides, by burning fossil fuels humans release carbon dioxide gas and it concentrates greenhouse gas. Deforestation is also responsible, since the plants absorb carbon dioxide for making glucose/energy. However, carbon emission is the main cause of present global climate change and global warming and industrialization is the cause of carbon emission. In 1990, when IPCC published its first assessment report, it informed us about carbon emission rate and its effect on climate. Carbon emission then became a global threat.
Nevertheless, to control carbon emission then became global issue although every state (for example USA) did not respond positively. According to the 4th Assessment Report, ‘carbon dioxide (CO2) is the most important anthropogenic GHG. Its annual emissions grew by about 80% between 1970 and 2004. The long-term trend of declining CO2 emissions per unit of energy supplied reversed after 2000 (AR4 2007:5). By maintaining life stock farming, human’s activities release methane that increases greenhouse gas. In addition, human releases nitrous oxide by using chemical fertilizers in agriculture that concentrate greenhouse gases.

All greenhouse gases play a role to absorb heat and keep the earth’s surface warm. But it is unimaginable that the percentage of greenhouse gases in the atmosphere is very low. About 99% of the atmosphere consists of nitrogen and oxygen but they have no significant effect in controlling temperature on the earth. Only, the remaining 1% of atmosphere consists of greenhouse gases that play a vital role in controlling temperature on the earth. As we already noted that this tiny amount increases the earth's average surface temperature from -19°C to +14°C - a difference of about 33°C. A very low percentage of greenhouse gases have a great effect on the earth’s temperature.

In sum, naturally the climate has changed gradually. The intensity of sunlight varies and makes the earth warmer and colder. It is a regular fact of climate change. Ocean’s current and volcanic eruptions are also causes of climate change. The atmosphere of the earth has changed ignorable for the thousands of years. But for the last few centuries it has been becoming significantly warm. Now-a-days, we are in an urgency of balancing greenhouse gases and temperature for the survival of humans, animals and plants on the earth. The developed states of the world are now industrialized and releasing a lot of carbon in the atmosphere for producing goods for their necessary and luxurious purposes. Now-a-days we burn fossil fuels to make our houses and offices warm, run our vehicles, produce electricity for manufacturing various products. All of these human activities release carbon and it increases greenhouse gases in the atmosphere. Thus, it helps to enhance warming capacity of greenhouse effect.
Scientists all over the world now reach at a consensus that the world is becoming warm. Due to warm temperature, the glaciers have been melting and the sea levels are rising and the climate is changing corresponding with the natural changes of the earth. After the formation of Intergovernmental Panel on Climate Change (IPCC) in 1988, it forms a political issue to control carbon emissions that makes climate change for the sake of the present as well as the future generation. “After the 4th Assessment Report of the IPCC, published in 2007, it can be stated unequivocally that global climate change exists, that, it is a contribution of the past and present human activities and that it poses one, if not the biggest, threat to the future of life on earth as we know it” (Ethical Implication of Global Climate Change: 5).

In brief, climate change means changes of climate pattern, like temperature, rain, floods, cyclones, etc. Changes of such factors of weather due to climate change create some natural, social and economic problems also. “People most vulnerable to the direct effects of global climate change are those living in low lying areas, as well as small islands, large river deltas and certain coastal areas, as well as, those living in the Arctic where the melting of polar ice is threatening their livelihoods and traditional way of life” (Ethical implications of global climate change: 11). Those people who are living in Arctic area suffer from water of melting ice. Poor people suffer a lot since they have no means to protect themselves from heat and cold. They have no means also to adapt with changing climate. Most vulnerable people are those who are living in low lands and coastal regions, since global warming rises sea level and storm, flood, cyclone occur for such global warming.

People’s health is also suffering from global climate change. For example, old people and children suffer more than others because children and old people cannot adjust with warm weather. Warm weather causes respiratory problems, like asthma. In addition, old people suffer from blood pressure and heart diseases for global warming and children suffer from diseases that are caused by cold, like angina. According to 4th Assessment Report of IPCC, ‘some aspects of human health, such as heat-related mortality in Europe,
changes in infectious disease vectors in some areas, and allergenic pollen in Northern Hemisphere high and mid-latitudes (AR4, 2007:3)

Global climate change destroys ecosystem of nature and causes harm not only to human but also to other domestic and wild animals and plants. There is a close relation between sound ecosystem and human well being. We get our foods from different plants and animals and fishes. Due to increased acidity in ocean, number of fishes decrease day by day. According to 4th Assessment Report:

“The uptake of anthropogenic carbon since 1750 has led to the ocean becoming more acidic with an average decrease in pH of 0.1 units. Increasing atmospheric CO2 concentrations lead to further acidification. Projections based on SRES scenarios give a reduction in average global surface ocean pH of between 0.14 and 0.35 units over the 21st century. While the effects of observed ocean acidification on the marine biosphere are as yet remaining undocumented, the progressive acidification of oceans is expected to have negative impacts on marine shell-forming organisms (e.g. corals) and their dependent species” (AR4 2007:9).

Fishes are the greater sources of protein for coastal people. Fishing is a profession of many people who live in such coastal areas. Different threats causing from global climate change may be formulated under the followings heads:

1. It makes people who are living on coastal area, low lying islands and arctic area vulnerable by rising sea level and melting polar ice and glacier.
2. It destroys wealth and property.
3. It makes harm to people's health.
4. It destroys the ecosystem of nature
5. It destroys the general living pattern of vulnerable people and changes their cultural heritage.
6. It makes vulnerable people refugees.
7. It is a burden of immigration policy of other countries who give them (refugee) shelter and equal opportunities.
8. It is difficulty for animals and plants to adjust with rapid global climate change, since it changes the nature as a whole. Many animals and plants gradually lose their existence from the earth due to climate change.
9. It raises acidity of oceans and makes a threat for sea fishes to exist.
We have already mentioned that scientists all over the world are now working to mitigate and adapt with global climate change. There are some global organizations to identify the problems and take initiatives to mitigate and adapt with changing climate. In 1988 Intergovernmental Panel on Climate Change (IPCC) was jointly formed by United Nations Environmental Program (UNEP) and World Meteorological Organization (WMO). Thousands of scientists all over the world work there voluntarily to provide information about current climate conditions, mitigation and adaptation programs. The IPCC first published its assessment report in 1990. And philosophers now argue to take this year as base year for corrective justice (Singer 2002). IPCC published 4th Assessment Report in 2007 last and now working on 5th Assessment Report. The United Nations Framework Convention on Climate Change was signed in 1992. Already, 154 countries signed to agree on the proposal that greenhouse gases would be controlled at a safe level. UNFCC with IPCC arranges a meeting each year that is called COP (conference of participants). The last COP15 was held at Copenhagen in December 2009 to finalize the climate change dispensation that will be implemented from 2012. But failure of proper negotiation or agreement of the participant states does not convey the goal. After 2012, the global organization will follow the dispensation of COP15. Kyoto Protocol was signed in 1997. There (in Kyoto), Japan, Canada and 160 industrialized nations signed to reduce their carbon emission according to international agreement. The Kyoto protocol of 1997 set targets for developed countries to limit GHG (greenhouse gas) emission by 2012 to 5% below 1990 (as a base year) levels (8% for Europe, 7% for the USA), and accepted the principle of emission trading (Singer: 671, quoted from Howard 2009:5). But USA did not agree to follow this agreement. Europe seriously follows to maintain this agreement. The goal of the agreement is not possible to achieve if none agree to maintain, like USA that is the most polluter state. “The ongoing works of IPCC in establishing a scientific basis for discussions on climate change and the ongoing negotiations between parties to the UNFCC with a view to entering into binding international agreement on mechanisms and targets to address the challenges of climate change” (Ethical Implications of Global Climate Change: 4).
Our climate has already changed. And it becomes a threat for present and future generation. We need to mitigate the causes of climate change and to adapt with changing climate. We need to take steps immediately. Now we are in debates of climate justice. Fair procedures of sharing the burden and benefit of climate change are the goals of climate justice. It is related to moral basis of people’s uses of carbon emissions. This is the best time for philosophically minded people to talk about climate justice. We need to follow precautionary principle that evokes immediate steps and not to wait for scientific explanations and information more. However, the steps that need to be exercised are to mitigate and adapt that depends on regions, socio-economic conditions. Nevertheless, it is convincing that we must start to take steps to adapt and should lessen the cost of environmental change.

1.1: Statement of the problem
Climate justice is a concept that relates to the confluence of different streams of concern with fairness and ethical relations and they relate to people’s use of the world’s finite carbon resources (Robinson & Miller 2002). The atmosphere is not a property of a particular state. Besides it is not possible to divide the atmosphere like state for the use of each nation. So the climate change is a global issue. A concern of climate justice is built on the fact that the world’s poorest and those least responsible for the human causes of climate change are the most vulnerable and exposed to its effects (ibid). The carbon emission rate of developed countries is very high, except China (source). The USA is the highest emitter of the world and China is the second. Both USA and China release near about 40% carbon in the atmosphere. And the carbon emission rate of developing countries is comparatively low and in most cases within control rate. But the people of developing countries suffer a lot for climate change. Posner & Sunstein (2007) mentioned three independent reasons as: “first, they have much more in the way of adaptive capacity, second, a smaller percentage of their economies depend on agriculture, a sector that is highly vulnerable to climate change, third, the wealthy nations are generally in the cooler, highly latitudes, which also decreases their vulnerability” (p.1580). So it is accepted that climate change more or less affects the whole planet.
Table-1

<table>
<thead>
<tr>
<th>Region</th>
<th>2003</th>
<th>2004</th>
</tr>
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<tbody>
<tr>
<td>USA</td>
<td>22.7%</td>
<td>22.0%</td>
</tr>
<tr>
<td>OPECD Europe</td>
<td>16.9%</td>
<td>16.3%</td>
</tr>
<tr>
<td>China</td>
<td>15.3%</td>
<td>17.5%</td>
</tr>
<tr>
<td>India</td>
<td>4.1%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Japan</td>
<td>4.9%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Africa</td>
<td>3.5%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Russia</td>
<td>4.2%</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

Emission rate of year 2003 and 2004
(International Energy Outlook, 81 tbl.A8 2007)

Table-1 shows the emission rate of some developed and developing countries in 2003 and 2004 year. In the table, the USA, OPECD Europe and Japan are developed countries, whose emission rate is high. The USA is the highest emitter. China, Africa, India and Russia are developing countries. The emission rate of developing countries is very low, except China that increased 2.2% of its emission at 2004 compared to 2003. The developing countries also reduced their rate of emission but it is too low to control global climate change.

Table-2

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentages of GDP damages (when global warming rise 2.5° C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>4.93</td>
</tr>
<tr>
<td>Africa</td>
<td>3.91</td>
</tr>
<tr>
<td>OCEED Europe</td>
<td>2.83</td>
</tr>
<tr>
<td>High-income OPEC</td>
<td>1.95</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>0.71</td>
</tr>
<tr>
<td>Japan</td>
<td>0.50</td>
</tr>
<tr>
<td>USA</td>
<td>0.45</td>
</tr>
<tr>
<td>China</td>
<td>0.22</td>
</tr>
<tr>
<td>Russia</td>
<td>-0.65</td>
</tr>
</tbody>
</table>

Percentages of GDP damages when global warming rise 2.5° C
(Quoted from The geographical law journal, Vol. 96:1580)
Table-2 shows the damages of GDP of some developed and developing countries for increasing global warming per 2.5\(^\circ\) C. It shows that highest damage occur in India and Africa for rising per 2.5\(^\circ\) C global temperature. Where as developed countries have lesser damages for rising 2.5\(^\circ\) C global temperature. It proves that there is a reverse relation of damages of GDP and development status of the country. The developed countries have their means to adapt with changing climate but the developing countries are in more vulnerable position.

It is also important to note that “responsibility and inequality are unevenly distributed within nations as well as across nations” (Robinson & Miller 2009). We have a common atmosphere. So we are all responsible for using it. Though we are concerned about our responsibilities but our responsibilities made us different for the reason that the material, social and economic state of affairs is unequal across states. Climate justice means addressing the inequalities that exist between and within countries, and replacing the economic and political systems that uphold them (Cop15). Responsibilities also depend on historical contribution of emission to atmosphere that creates environmental problems and on diverse financial and technological capacity to challenge the problems of changing climate. Mitigation and adaptation are the protections from changing climate. “On the mitigation side – reducing greenhouse gases – and the adaptation side – how the world, nations and individual communities prepare for and cope with the unavoidable and unforeseeable effects of climate change” (ibid). “Due to the transboundary nature of the causes and affects of climate change, no state can hope to arrest climate change on their own. Nevertheless, collective action by sovereign states with different socioeconomic and environmental circumstances is extremely difficult” (Admian & Martin 2006). In this context the challenges of climate justice is mainly to differentiate responsibility among the states, equality and legitimacy.

1.2: Objectives of the Study

So, from the above discussion, we may raise the questions: First, who bears the burden of climate change? Second, how will we share the burden and benefits of climate change?
Third, how decisions are made about climate policies? Seeking just procedures to mitigate and adapt with climate change is the aim of my thesis.

1.3: **Scope and Focus**

A complete account of climate justice has to cover the following issues of different justice: a) Compensative justice, b) distributive justice and c) Procedural justice. Compensatory justice claims compensation for wrongful actions. If nations who suffer from effects of change climate are not responsible for changing climate, can they legally claim for compensation? Are they who are responsible for climate change bound to pay the cost of climate change? There is a general ethical claim that people are responsible for their wrongful actions. Even we should compensate those who are victim for our wrongful actions. But in global climate change there is an uncertainty to determine causal blame. Global climate change is an effect of cumulative and collective actions of many people. It is the result of not only actions of present people but also actions of past people. Actions of carbon emissions started since around 1750; the beginning of first industrialization. So it is difficult to make a causal blame clearly for climate change. If the issue of historical background of carbon emissions is resolved, then other ethical uncertainty in the context of compensatory justice arise, how the benefit of compensation exactly should be distributed.

The issue of distributive justice is that some countries or some nations have unfair burden of climate change. It is unfair because of they are not responsible for climate change or they do not emit highly. But they have been suffering a lot for climate change. In addition, who caused harm by releasing carbon emissions in the atmosphere did not know about the affects of emissions at that time. They thought that they helped people by producing different goods for their welfare. There is an uncertainty about determining exactly the unfair and unjust distribution of burden and benefit of climate change. Another issue of distributive justice in context of climate change is that resources (economic, social and natural) are unevenly distributed in the world. So capabilities of different states or nations vary to protect them from climate change.
The issue of procedural justice is the nature of decision making to prevent, mitigate and adapt with changing climate. The uncertainties in this regard are which process we follow to take decision about climate policy and who are included and who are excluded in decision making opinions. There is a probability to make decision in favor of interest groups. So it should ensure participation in decision making of vulnerable groups, the poor and the indigenous groups. Since climate change is a global issue so the procedural justice takes steps to resolve disagreements among the participants in decision making. It helps also to implement climate policy regarding mitigation and adaptation.

In my study, here, I mainly focus on fairness in sharing the burden of climate change. Here burden indicates past, present and future carbon emissions. I address climate justice as a principle of establishing equity regardless of nations. Climate justice means addressing the inequalities that exist between and within countries, and replacing the economic and political systems that uphold them (www.climatejustice.posterous.com). Fairness in mitigation and adaptation also take part in my study. I explain interlink between procedural justice and distributive justice as a just procedure of climate justice to mitigate and adapt with climate change.

1.4: Methodology
I am going to apply conceptual method that engages in analyzing philosophical issues. Conceptual analysis begins with identifying research questions. Peter Singer in his work One World offers two principles of climate justice. I will critically respond to both of Singer’s principles, ‘the polluter pay principle’ and ‘the principle of equal per capita share’. Conceptually, I will explain some uncertainties in applying these principles. I give weight of economic, social and natural conditions of developing and developed countries to share the burden and benefit of global climate change. Finally, I will give emphasis on ‘ability to pay principle’ by analyzing egalitarian concept of Rawls liberal society and cosmopolitan justice. I will consider Singer’s concluding remark that strong agreement among nations is necessary to reach at a fair process of climate justice. In this context, I will follow the principle of distributive justice with procedural principle that ensures fairness in climate justice by considering all victims opinions.
1.5: **The approach**

I begin, in the 1st chapter of the paper, by providing some basic information about climate change. Causes and effects of climate change are discussed in this chapter. The fact that human activities are directly and indirectly related to global climate change is considered here. I state some background of climate justice here. In the 2nd chapter, I will critically explain Singer’s arguments for climate justice in his work *One Atmosphere*. In this connection, I seek support from Rawlsian views on distributive justice. Simon Caney’s concept about giving weight of capability of polluters also helps me to hold my position that capability pay principle is fair for climate justice rather than polluter pay principle and equal per capita share principle. In the 3rd chapter, I will focus procedural process for taking climate policy that generates distributive procedure. In procedural process, I argue for both international and national agreements to implement decisions or policies regarding mitigation and adaptation of climate change. All victims’ opinions are considered in taking just decisions and implementations. Finally, I try to establish that joint approach of both procedural principle and distributive principle ensure just procedure in climate justice. A short conclusion ends the paper.

1.6: **Summary**

This is an overview of causes and effects of climate changes. Carbon emissions are the main factors of climate change. It is evident that vulnerable nations for climate change are not emitters. Climate justice is related to people’s uses of carbon resources. There is a positive correlation of carbon emissions and development. Developed nations are mostly responsible for climate change but developing nations are mostly sufferers. Climate justice is concerned about fair share of burden and benefits of climate change. Conceptual method is the tool of this study to analyze different principles and to find their limitations and to reach at a conclusion.
CLIMATE JUSTICE AND PETER SINGER: CRITICAL RESPONSE

2.0: Introduction

In this chapter, I am going to explain shortly Peter Singer’s position on climate justice in his work *One World*. He offers two principles for climate justice. I critically respond to both of his principles. Addressing his two principles of climate justice, I am focusing on some limitations in application. Singer himself admits some limitations and proposes overcome these limitations. Finding limitations of Singer’s principles, I offer another principle for climate justice in this chapter.

2.1: Peter Singer’s View on Climate Justice

Peter Singer is a famous applied ethicist in contemporary period. Singer (2002) discusses about climate justice in “One Atmosphere”, the first chapter of his work *One World* that discusses the topic on how to share the burden of climate change. He emphasizes global ethics by focusing the burden of emissions into the atmosphere. According to him,

“There can be no clearer illustration of the need for human beings to act globally than the issues raised by the impact of human activity on our atmosphere. That we all share the same planet came to our attention in a particularly pressing way in the 1970s when scientists discovered that the use of chlorofluorocarbons (CFCs) threatens the ozone layer shielding the surface of our planet from the full force of the sun’s ultraviolet radiation” (p. 14).

Addressing different issues of the 3rd assessment report of IPCC, he states that human activities are mostly responsible for climate change. In addition, he mentions that the history of emissions starts from industrialization and therefore industrialized developed countries are responsible for the emissions. Considering a brief account of the effects of changing climate, he states that the effects of climate change is more terrible than that of terrorists’ attack of September 11 in the USA. More people will die and suffer by the global climate change than that of the terrorists’ activities. He thinks that we should give more of our awareness and efforts to mitigate and adapt to climate change. Sharing the burden and benefits of climate change, Singer offers two principles: first, the Polluter Pay Principle (PPP) and second, the Equal Per Capita Share Principle (EPCSP). Singer also discusses some problems of implementing these principles practically. However, in the end, he takes a pluralistic view to accept both principles but in conclusion he defends
second principle (EPCSP) as a fair principle. He says, “Each of the four principles of fairness I have considered could be defended as the best one to take or we could take some in combination” (Singer 2002:43).

I will critically respond to Singer’s arguments in this chapter. Let us discuss both of his principles one by one.

2.2: The Polluter Pay Principle (PPP)

According to this principle, the polluters are responsible for the cost of global climate change. Singer formulate this principle as; “You broke it, now you fix it” (Singer 2002:27). According to the formation of PPP by Singer, it could be summarized by the following deductive argument:

Major Premise: Any nation, who is responsible for emissions, must pay the cost of emissions.

Minor Premise: A is a nation who is responsible for emissions.

Conclusions: Therefore A must pay for the cost of climate change.

Here by ‘the cost of climate change’ I mean ‘the cost of mitigation and adaptation’ to climate change. Since the GHG mostly have been released in the atmosphere by the industrialized countries, according to this principle, they will bear the cost of climate change and cut off emissions rate to bring the atmosphere at safe level.

The argument above rests “on moral intuitions about corrective justice- about wrongdoers and their victims” (Hunter & Salzman 2007). Corrective justice arguments are “backward-looking, focused on wrongful behavior that occurred in the past” (Louis & Steven 2005:12). In the context of climate justice, corrective justice therefore considers the rate of previous GHG emissions. So addressing the previous statistics, corrective justice argues that the USA is a wrongdoer who has harmed those who are vulnerable to climate change. In conclusion, “corrective justice requires that the United States devote significant resources to remediying the problems” (Farber 2005:1641). Conversely, India has a moral claim to get compensation from the USA, because India is vulnerable to climate change.
According to description of PPP by Singer, there is no room to consider the capability of paying of polluters. If the polluters belong to poor nations then according to PPP they must pay for their emissions. In the USA there are some poor people and suppose they do not support the emissions policy of the USA. In India there are also some rich people and they are releasing carbon by establishing industry. Why do the poor people in USA bear the responsibility, even though they do not support emissions? Why do not the people in India who are rich and releasing carbon, pay for the cost of emissions? The reasoning of this argument seems correct but in application it has some difficulties. Let us discuss some limitations of corrective justice, in the context of climate change.

2.2.1: The Problem of Ignorance

It is not rational to hold those people responsible for changing climate who are ignorant about the fact. People in past did not know about the fact of climate change. People are very much aware of causes and effects of climate change now, after the publication of the first assessment report of IPCC, though there were some initiatives taken globally before this. So it is not rational to hold them responsible for emission who were ignorant about causes and effects of climate change. Singer proposes ‘1990’, the year of first published assessment report of IPCC, as the base year for climate justice, since the publication of the IPCC report made us aware about the problems. He records pre 1990 as a period when people were not enough conscious about GHG emissions and post 1990 as a period when people were conscious about GHG. But it raises an open question: who are responsible for emissions before 1990? Who will pay for the emission before 1990? So the solution of the burden of carbon emissions before 1990 is a limitation of Singer’s argument. I am going to explain others limitations of corrective justice to show that PPP is inadequate to solve climate change problems practically.

2.2.2: Problem of Identifying Actor and Victim

The present situation of the atmosphere is a result of previous emissions by those people who are already dead. Historically, the emissions begin around 1750. The main problem of corrective justice is that it is impossible to punish those who have done emissions in
the past because many citizens of developed countries are immigrants or offspring of immigrants. And their past generations are not responsible for previous emissions. It is impossible to force them to compensate victims for their suffering by climate change. For example, it is unfair on the basis of corrective justice to blame present American for their ancestors’ wrongdoings. There is an empirical difficulty of corrective justice in the context of climate justice. It is difficult to measure how much benefits the Americans get from the emissions of their past generation. Therefore are difficulties in applications of the idea of PPP on the basis of corrective justice to hold responsibilities to present nations for their ancestors’ wrongdoings.

Suppose the several uncertainties that we have discussed regarding corrective justice could be overcome and it is proved that the present generations of developed countries have benefited from their previous generations who caused harm by releasing GHG in the atmosphere. Then another uncertainty arises that the developed countries have claimed that developing countries also get benefit from getting different products by their previous industrialization. So developing countries should also be compensated, according to corrective justice. A correct accounting to determine actual responsibility seems empirical and conceptual problem. Thus PPP on the basis of corrective justice does not seem fit to climate justice when it is applied.

Then the question arises who does get compensation for climate change? We have stated in previous chapter that vulnerable nations by climate change should get compensations. But there is still another uncertainty regarding victims entitled to compensation, according to corrective justice. Corrective justice needs to identify victims who have claims against wrongdoers. Most victims of climate change belong to future generations. So at present they are unable to make claims. In limited sense, dependents of victims may have claims. But they are in more future than victims. What is plausible is that there is uncertainty to make a direct claim by future victims. So there is uncertainty to apply corrective justice at present.
2.2.3: **Problem of causal relationship**
Corrective justice needs to establish a plausible explanation of causes and effects relationship. It requires that the wrongdoer’s actions are the cause of harms. In the context of climate change, there is uncertainty concerning how to establish this. The people of low lying have rightly claimed that they are affected by floods. It is probable that the cause of such floods is emission of GHG. But the cause of floods may also be other complex natural circumstances, for example, an earthquake may be a cause of flood. Therefore, it is difficult to establish a certain causal relationship between cause and effect in the context of climate change.

In sum, PPP principle based on corrective justice does not fit in application of climate justice.

2.3: **The Equal Share Per Capita Principle (ESPCP)**
This principle states that each person has equal right in sharing the atmosphere. It does not consider the person’s past generation history, whether they are highly emitter or safe level emitter or lower than safe level emitter. This equal share principle or per capita share principle start now and it will continue in the future as well. How much is this per capita share? How could it is measured? Singer proposes that per capita share can be calculated as follows:

1. Establish the total amount of greenhouse gases that we can allow to be emitted without causing the earth’s average temperature to rise more than two degrees Celsius (3.6 degrees Fahrenheit), the point beyond which climate change could become extremely dangerous.
2. Divide that total by the world’s population, thus calculating what each person’s share of the total is.
3. Allocate to each country a greenhouse gas emissions quota equal to the country’s population, multiplied by the per person share.
4. Finally allow countries that need a higher quota to buy it from those that emit less than their quota. (1,2,3&4 quoted in Peter Singer 2007: 2)
Here equality in sharing atmosphere is the basis of this principle. **However, there is no room for considering the ability of people of a nation.** By ‘people’ here means ‘individuals people’. Singer argues that the principle of equal share of the atmosphere is fair, since no one is entitle to a greater share. Singer states “that we support the second principle, that of equal per capita future entitlements to a share of the capacity of the atmospheric sink, tied to the current United Nations projection of population growth per country in 2050” (Singer 2002:43). The poor nations who have more quota of emission can sell and get benefit. On the other hand the rich nations also have opportunity to choice to reduce their emission or to buy quota from others. Distributive justice is the basis of this argument. The ESPCP is theoretically sound but its practical application is difficult. The difficulties of applications of ESPCP are as follows:

2.3.1: **Problem of Population Size**

Singer points out that the population size is a problem of application of the ESPCP. If the size of the population is increasing the per capita share of emission per year will diminish to keep the emission rates at a safe level. Then the increasing population of a country would be a new burden for the other countries. Even countries which have zero population growth need to reduce their emissions output to keep balance with growing populations elsewhere. Here the fact is like to hold others burden on own solder. Since having high population growth is a benefit for one who is responsible for this but burden for others who are not responsible at all. Singer proposed that “the per capita allocation could be based on an estimate of a country’s likely population at some given future date. For example, estimated population size for the next 50 years, which are already compiled by the United Nations, might be used” (Singer 2002:43). Each nation would be responsible for their population size. If any nation could reduce their growth rate compared with the estimated one then they will get reward of extra emission output and vice versa.

2.3.2: **The Problem of Reducing Standard of Living in Developed Country**

Practical application of distributive justice on the basis of ESPCP is difficult for developed countries. People of developed countries are used to leading a standard of
living that requires more emission output than developing countries. So on the basis of ESPCP if it is applying, the people of developed nations need to reduce their emissions to keep balance with others. But it is difficult for them to reduce their emissions to keep balance with ESPCP. Singer proposes that emission trading may be a solution for this problem. According to emission trading, the developed countries are allowed to buy the quota of developing countries to make a balance with their extra emissions. Then the extra quota of emission would be a resource of developing countries. If it is accounted previous emissions of developed nations then they have to pay a lot to keep balance according to ESPCP. If it would start from now then it would better for developed nations. Simon Caney argues that it would be unfair to hold responsible current citizens of high emission countries for their past emission and to allow them to share less than per capita share of atmosphere. His logic is that it violates the principle of equality of opportunity that is the basic of social justice according to Rawls (1971). In Caney’s words:

“It may be true that some people in the past will have had greater opportunities than some currently living people, but that simply can not be altered: making their descendents have fewer opportunities will not change that. In fact making their descendents pay for the emissions of previous generations will violate equality, because those individuals will have less than their contemporaries in other countries. So if we take an individualist position, it would be wrong to grant some individuals (those in country A) fewer opportunities than others (those in country B) simply because the people who used to live in country A emitted higher levels of GHGs” (Simon Caney 2008).

It ignores the burden of past emissions. If the developing countries would argue that they do not want to sell the quota but they like to produce emission according to their quota for their development then the developed counties only have left to reduce their emissions. There is another problem of emission trading that is the corrupt government of a country. If the corrupt government of a developing country does not use properly the funds it received for selling emission permits, then it does not bring any welfare for developing nations. Singer proposes that “the sale of quotas could be managed by an international authority answerable to the United Nations” (Singer 2002: 49). But he does not explain how international authorities control this trading process. So procedural issues also absence in Singer’s argument.
In conclusion, Singer advocates ESPCP as a fair process of sharing the burden of climate change. He admits that PPP also helps to clean up our atmosphere though having some limitations in uses. **From the above discussions, we get three attributes of Singer’s argument: First; he ignores responsibility of past emission, second, he does not consider capability of polluters to pay the cost of climate change and third, he ignores procedural issue (who take decision) of climate justice.** I would like to give weight of capacity of polluter to pay for climate change cost and role of procedural justice in taking just decision regarding climate policy. In this chapter I am going to argue that the capacity to pay principle is rational and just principle for climate justice and in next chapter I explain procedural issues of climate justice.

2.4: The Capacity Pay Principle (CPP)

According to this principle the burden of climate change should be shared on the basis of capability to pay for climate change. In broad sense, by ‘capacity’ I mean ‘all types of necessities that is required to protect climate change’. The idea of CPP, in accordance with Henry Shues’ explanations is that “among a number of parties, all of whom are bound to contribute to some endeavor; the parties who have the most resources should contribute the most to the endeavor” (Shue, 1999, p.537). Simon Caney (2008) address an argument for climate justice that gives weight to capacity of polluters. His arguments can be summarized as follows:

1. All are under a duty not to emit greenhouse gases in excess of their quota.
2. Those who exceed their quota (and/or have exceed it since 1990) have a duty compensate others (through mitigation and adaptation)
3. Regarding greenhouse gas emissions resulting from earlier generations, excusable ignorance and non-compliance: the most advantaged have a duty either to reduce their greenhouse gas in proportion to the harm resulting from (mitigation) or to address the ill-effects of climate change resulting from (adaptation).
4. The most advantaged have a duty to construct institutions to discourage non-compliance (1, 2, 3&4, Caney 2008: 704-705).
Here capacities of nations are addressed. Countries which are poor but have high rates of emission have an obligation but not so demanding as the PPP or the ESPCP. The argument addressed that advantaged nations have to bear most responsibility.

CPP considers both past and present burden but policy is made on the basis of present capacities of nations. Present capacities of polluters are considered to share the burdens of emissions. For example, if one nation was polluter but now in poor condition then CPP requires such nations not to pay for climate cost. On the other hand, it requires pay those nations that were not polluters but have ability to pay. Non polluters developed countries need to pay to even distribution of resources that need to protect climate change. Some nations may be rich in technology but non polluters. CPP demands those countries to pay their technology to protect climate change to those who are not good condition in technology. Equality is the basis of social justice as well as climate justice. But polluters developed nations are primarily responsible for paying climate cost. The agreement of paying for cost of climate change between polluters and non polluters, developed and developing nation is made by procedural process that I will discuss in later chapter. In the context of climate justice, here I discuss the role of distributive procedure on the basis of CPP. The argument is like a welfare argument. The argument is similar to “common but differentiated responsibilities”, set forth in the UNFCCC. According to Common but Different Principle, “the parties should protect the climate system in accordance with their common and differentiated responsibilities” (UN. 1995:5). It means that the nations’ obligation regarding climate change is determined by two factors: one is responsibility and other is capacity.

To explain the argument of climate justice on the basis of CPP, let us consider an example. Suppose there are two nations A and B. A is a developed nation and B is a developing nation. Annual income of each people of nation A is 20,000 US dollar and of B it is 5,000 US dollar. Suppose both A and B have emission rate that is double of allowing equal per capita share of emission. A is industrialized country and produces luxuries goods and emits more carbon and B is non industrialized agricultural country. The people of B are living with poverty. They lose their forest due to agriculture and use...
wood for cooking. According to PPP, both A and B have to for emissions. According to ESPCP, both A and B have to pay the same cost for emitting more. But people of B are living with poverty, since they have low income and few resources. Here the people of A will live a luxurious life even though they pay for their emissions. How could we justify these principles? According to CPP, it considers the capacity of paying of each nation. Therefore it requires more pay from A nation but less or not at all from B nation that is poor in capacity. Is CPP just procedure? To find the answer of this question let us discuss the following attributes of CPP.

2.4.1: Rawls Liberal Equality and CPP

Why is it fair that nations better off pay more than nations which are worst off? An overview of John Rawls (1971) “Theory of Justice” will make it clear. He offers an intuitive argument in favor of inequalities that goes for the development of poor people. He thinks any unequal distribution of resources is fair if it goes for the development of the worst off. About fair distribution of scarce resources in just society, his famous principle is called the difference principle. Rawls’ view on justice is that ‘all social primary goods, liberty and opportunity, income and wealth and the basis of self respect are to be distributed equally unless an unequal distribution of any or all of these goods are to the advantage of the least favored (Rawls 1971: 303, in Kymlicka 2002: 55). The difference principle is concerned with a just distribution of material resources in the society. His purpose is to formulate a just and fair principle that governs society’s resources. According to this principle unequal distribution of goods and services is justified if and only if it promotes the interest of the disadvantage and unacceptable if it trends to promote the interest of the well off. It states that distribution should be circumstances insensitive. Here ‘circumstances’ mean ‘position of people that they get naturally’. For example, one may be born in Bangladesh, that is, the most disadvantaged in case of climate change. So According Rawls theory of justice, it is just to pay more to Bangladeshi for the development of their disadvantaged, since they are in least advantaged by circumstances. Others claim that we need to help the poor without considering how they reach at worse off position. If we consider our above example of A and B, where A is well off and B is worst off, fair and just distribution is what that brings
advantaged for B, even though there is unequal distribution. Vulnerable nations for climate change are in disadvantaged position and poor also. So polluters developed as well as non polluters developed nations should contribute by paying climate change cost to mitigate and adapt to climate change that favors disadvantaged vulnerable nations.

How much more should A provide for their emissions than B? In response to this question Rawls explain his social contact theory that discuss people’s expectation from each other in an ideal contractual situation. In this connection, Rawls refers original position, where people accept his principle. In context of climate justice, I will discuss procedural justice in next chapter that makes just agreement to pay for climate change.

2.4.2: Cosmopolitan Views and CPP

Another important question is how the concept of fairness and justice apply to climate justice globally? To find the answer, let us now discuss cosmopolitan views on climate justice. The global climate change carries the message that we are all more or less responsible for climate change, wherever we are located. It is a global threat to all, irrespective of poor and rich. The poor nations (in coastal, low island, on arctic area) are more vulnerable than the rich nations who have capacities to adapt with changing climate. Singer (2002) mentions that climate change makes us realize that we are living in one world though there are different nations, different divisions. So climate change is a global issue and it needs cosmopolitan principle of justice to face climate challenges. According to cosmopolitan view, “principle of justice ought to transcend nationality and citizenship and ought to apply equally to all individuals of the world as a whole. In short, cosmopolitan justice is justice without border” (Kok-Chor Tan 2004:1). The cosmopolitan view demands justice in global level. Rawls (1999) also admits the necessity of cosmopolitan application of his distributive justice in global level in his work The Law of People. Cosmopolitan view demands that global distributive justice is needed to mitigate and adapt to climate change. Like domestic social structure to establish distributive principle, in global level cosmopolitan distributive justice also consider various social positions of nation and their life expectations. Vulnerable nations by climate change are considered worst off position and developed nations are considered as
capable of paying for climate change. Global institutions define people’s social position. We have already discussed that IPCC and UNFCCC are the global institution that work on global climate justice.

The social position of the people of A nation (in my example above) and B nation is not the same. People of A nations are more capable than the people of B. So cosmopolitan distributive justice also demands that A nation should bear more of the burden of climate change to help the B to achieve well being on level with A. Here capacity to paying is a vital issue. Some people may argue that humanitarian assistance is enough for facing global climate change. I am not going to debate whether it is possible or not. My argument is that in case of humanitarian assistance, ability to pay should be considered. The rich nations, who are able to pay, usually give aid to vulnerable nation when they fall in danger. So to protect the threat of climate change, developed polluter as well as non polluter should pay for the sake of vulnerable nations.

2.4.3: Human Right Grounds and CPP

On the ground of human rights principle, it demands that A should pay or A should be obliged to pay a large part of the burdens of climate change to ensure B a minimally decent human rights regime. CPP demands that those who are more able should take large part of burdens of climate change to ensure vulnerable nations a minimally decent human rights regime. Even though, they are not responsible at all.

According to CPP principle, China has less responsibility than Iceland for the cost of climate change though emission rate of China is higher than that of Iceland. But Iceland is in a well off position and China is in a worse off position. Here obligation is imposed on the basis of countries’ capacity to pay. I claim that CPP is just, since it ensures equity among nations. In my example of A and B, both have same emission rate but A is rich and B is poor. So according to this ability pay principle, A is obliged to pay more for climate change than B. Here A provides support to B to achieve the opportunity that A has. In the same way, Iceland should provide support to China to achieve the same opportunity that Iceland has. The application of the CPP on the basis of distributive
justice makes our nations fit to mitigate and adapt to climate change. CPP also ensure climate justice by establishing equity across nations.

Climate change is a global issue. And unfortunately the impacts of climate change and resources for adapting with this climate change are unevenly distributed. We have already discussed about the role of distributive justice to mitigate this uneven distribution of climate change cost. But distributive justice is not alone sufficient to mitigate and adapt with changing climate. Most of the policies (for example Kyoto Protocol) that was taken to reduce emission face disagreements among nations. Paavola (2005) in his works ‘environmental governance and climate change’ mentions that “the difficulty of reaching agreement on distributive justice in the context of heterogeneity means that the legitimacy of environmental decisions must rest at least in part on procedural justice” (p. 313). Who will control decision making process regarding climate change? To find the answer to this question, we will discuss procedural justice in next chapter.

2.5: Summary
Singer does not consider capacity of polluter to pay for climate cost in his arguments for climate justice. He also ignores emissions’ problem before 1990 and role of procedural process in the context of climate justice. PPP and ESPCP offered by Singer are inadequate in application of climate justice. There are several difficulties in the application of these principles for practical uses. I propose, CPP as a principle of distributive justice that can ensure climate justice. CPP ensures equality among nations to mitigate and adapt to climate change. But climate justice requires procedural procedures to generate distributive process in case of heterogeneous situations.
A CUMULATIVE APPROACH OF CLIMATE JUSTICE

3.0: Introduction:
In the previous chapter, we have noted that distributive justice is the heart of climate justice to solve fairly how to share the burden of emissions of GHG by using CPP principle. In this chapter, I am going to focus on some of its limitations and the roles of procedural justice in climate justice. Finally, I explain the cumulative approach of climate justice.

Application of CPP as distributive principle in the context of mitigation and adaptation with changing climate requires agreements across the nations or states as well as societies or groups in a state. There are different opinions from different groups in the global climate decisions. It is evident that the target of the Kyoto Protocol to reduce emissions to safe levels by 2012 will fail because of disagreement with the USA. Besides, there are also interest groups who may pursue a decision in favor of them that is harmful for victims or repetition of injustice again. Here victims are vulnerable nations who are already sufferers from climate change. Our resources are limited. So it is impossible to take policies at a time that satisfy everybody’s demands related to climate change. Procedural justice plays a vital role here by justifying decisions through recognition and by taking democratic decisions which sacrifice some interests for the sake of others interests. Democratic and participatory decision-making procedures are “then both an element of and a condition for social justice” (Young 1990: 23). Irish Young (1990) argues that while theories of distributive justice offer models and procedures by which distribution may be improved, none of them thoroughly examine the social, cultural, symbolic and institutional conditions underlying poor distribution (quoted in Schlosberg 2004). According to Paavola (2005) climate justice requires both distributive and procedural justice. He illustrated the following figure to make it easy to understand.
<table>
<thead>
<tr>
<th>Level</th>
<th>Distributive Justice</th>
<th>Procedural Justice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Society of States</td>
<td>• Incidence of beneficial and adverse consequences between the states</td>
<td>• Consider capacity of the states to participate in climate planning and decision-making</td>
</tr>
<tr>
<td></td>
<td>• Arrangements to (re)distribute burdens and benefits between states.</td>
<td></td>
</tr>
<tr>
<td>Cross-level</td>
<td>• Incidence of beneficial and adverse consequences between the states and non-state actors.</td>
<td>• Consider capacity of non-state actors such as individuals, communities and organizations to participate in climate planning and decision-making</td>
</tr>
<tr>
<td>Interactions</td>
<td>• Arrangements to (re)distribute burdens and benefits between states and non-state actors.</td>
<td></td>
</tr>
</tbody>
</table>

Figure-1. Factors of Climate Justice

(Quoted from Paavola 2005:313, slight modified form.)

The figure describes that climate justice requires both distributive justice and procedural justice at international and national levels. I will discuss pluralistic approach of climate justice later after discussing procedural justice and why for procedural justice.

3.1: **Procedural Justice**

Procedural justice is a fair process that solves disagreements to reach a conclusion. It requires fairness when taking decision and making policy. Regarding climate justice, it helps to take fair decisions or policies for mitigating and adapting with changing climate. Procedural justice can be applied to such contexts in which it solves disagreements. Sharing the burden and benefits of climate change, it can take part to take rational decisions to resolve disagreements among nations. I am going to apply procedural justice to solve disagreements across the nations in sharing the burden of emissions and to protect climate change.

Let us now discuss the role of procedural justice in climate justice. Procedural justice relates to “the way in which parties are positioned-vis-à-vis the processes of planning or decision-making” (Fraser 2001). It focuses on the procedure that should be followed in taking policies on mitigation and adaptation responses. Who takes part in decisions making process? Who defines the addressing burden of climate change and how? These
are the concerning questions of procedural justice in the context of climate justice. Fair procedures make sure that the interests of the victims of climate change are considered in plans or decisions, even though their interests are ignored in a climate policy that it can endorse in other policies. It also enables affected parties “to express their descent or consent and maintain their dignity” (Schlosberg 1999:12-13). Procedural justice satisfies the issues such as recognition, participation and distribution of power in environmental planning, decision-making and governance (Paavola 2005: 314).

Fraser (2001) considers recognition as a foundation of procedural justice. It is just like a guideline for taking policy for changing climate. Before taking any decision or policy regarding climate justice, it requires to identify the consequences of the policy. For example, any executive order of president Obama needs approval of federal government to identify and address the consequences of their programs and policies. There federal agencies provide guidelines for taking any decisions by analyzing and observing consequences of their policies and actions. Before taking final decision they consider effects of the decisions on minority and least advantaged peoples. Like the USA’s president order, in climate change regime, the National Adaptation Plans of Action (NAPA) require public support to take any decision about adaptation plan. It seeks public consultation for taking adaptation policies. Public consultation or guidelines recognize groups’ interests.

Participation needs also recognition. In participation simply hearing from the affected parties gives power to the victims to take decision. Public participation may be considered under the following heads: firstly, participation in climate policy making, secondly, right to get information and to be understood about climate policy, thirdly, access to remedies to climate change harms and to get through of climate regulations and fourthly, having the right to review the performance of implementing policy of mitigation and adaptation with changing climate. In international environmental governance, “each of these aspects of public participation presents issues related to rights at the national level of environmental decision-making within one’s own country, right at the national
level of decision making in another country and the right at international level” (Fitzmaurice 2003:339).

3.2: Why Procedural Justice?
In the previous discussion, I attempted to ensure fairness in climate justice through establishing equity across the societies by applying APP. This is a process of distributive justice. To establish equity on a global level is a complex process. “But it is also remarkable that equity is not the only issue of justice. Other fundamental critiques include the relationship between social, cultural and ecological devastation and obviously, the lack of democratic participation in the construction and ongoing processes of governing institutions” (Schlosberg 2004). About environmental justice Schlosberg’s (2004) argument is that

“....notion of environmental justice needs to be logically grounded, theoretically broad and plural-encompassing issues of recognition, distribution and participation. In this regard, liberal theories of justice, such as Rawls are inadequate as they focus solely on fair processes for goods and benefits” (P. 52).

The same is true for climate justice. Recognition and participation are two major factors of climate justice and they are parts of procedural justice. Before taking any decision or policy regarding climate change, it requires guidelines about its consequences and consensus of parties. About environmental justice Schlosberg admits both procedural processes (recognition and participation) and distributive process. Schlosberg argument supports that climate justice as a part of environmental justice is a cumulative process of distributive justice as well as procedural justice. Rawls himself also thinks about his justice in context of particular society. Some social justice theorists have argued that justice is specific to particular communities or that rules of justice are tentative and likely to vary across issues and contexts (Ranid 1996, Paavola 2005:303). Walzer’s (1983) notion of complex equality in turn requires the absence of domination by one group across ‘spheres of justice’. For example, health and education should be protected from domination of income. Justice demands the fair distribution of these benefits to avoid repeating of injustice. It is possible by a fair distribution of income and wealth.

“But even if the existence of spheres of justice is acknowledge, it remains difficult to agree on distributive justice when the values, goals, resources, interests and
positions of actors are heterogeneous – a commonplace in global environmental politics. The difficulty of reaching agreement on distributive justice in the context of heterogeneity means that the legitimacy of environmental decisions must rest at least in part in on procedural justice” (Paavola 2005:313).

Miller (2003) argues in favor of procedural justice. He states that “different principles of justice applicable in different sorts of situations and principles of justice should be developed depending on the social make-up of those making the claim and on the relationship they have with other parties in a justice dispute” (Schlosberg 2004: 520). According to Miller; recognition is the precondition of distributive justice. He claims that recognition here is like respect and dignity of Rawlsian distributive theory. In the USA, for example, “the issue of distribution is always present and always key, but is always tied with recognition and political participation” (Schlosberg 2004: 522). Any executive order of Obama needs to be recognized by lower representatives. That means recognition is a procedure of their decision-making. Miller also considers recognition as a sole part of procedural justice. Therefore social justice as well as procedural justice requires both distributive justice and procedural justice.

Rawls (1971) argues in favor of his social contact theory in his work *A theory of justice* to reach an agreement. He states that people behind a ‘veil of ignorance’ reach at agreement. In a veil of ignorance people are unaware about his position in society and people are moral also. Then they all accept his difference principle, since it brings welfare through establishing equity across the society. Rawls veil of ignorance seems little bit utopian (Source). And the veil of ignorance and present world situation is different. Now people are more or less aware of their position and interests. For example US president Bush did not sign in Kyoto Protocols for reducing emission below 1990’s level by 2012. He offered two arguments; a) he did not want to compromise with living standard of American people, since development and emissions is correlated and b) India and China should also be included in emissions reducing process. India and China also had counter argument which the stated in the first chapter. So, interests groups play a role in taking decision concerning climate justice. With such heterogeneous opinions, it
requires strong agreement to reach a conclusion. Singer says “agreement would need to be likely to satisfy the requirement of equity or fairness” (Singer 2002:14). To solve disputes of disagreements, distributive justice needs to be complimentary with procedural justice.

David Schlosberg suggest that “the justice demanded by global environmental justice is really threefold: equity in the distribution of environmental risk, recognition of the diversity of the participants and experiences in affected communities and participation in the political processes which create and manage environmental policy” (Schlosberg 2004:517). Climate is a vital part of environment. And same argument is feasible in the context of climate justice. The first one could be solved by applying the CPP principle. But the second and third are subject matters of procedural justice that could generate distributive process on the basis of CPP. Climate justice here is comparable with Kant’s view on knowledge. Kant (1981) in his famous work Critique of Pure Reason states, “thoughts without content are empty; intuitions without concept are blind” (p. 136). Both intuitions and concepts play a role to knowledge. Similarly in the context of climate justice distributive justice without procedural justice is blind and procedural justice without distributive justice is empty. “Distributive justice focuses on the distributional consequences of climate change policies ranging from the uneven spatial and social impacts of climate change to the variable impacts of response strategies” (Justice and Equity in adaptation). Procedural justice focuses on how and by whom policies on mitigation and adaptation responses are taken. “Distributive justice and procedural justice are often intertwined in the key substantive justice issues of mitigation and adaptation of climate change” (Justice and Equity in Adaptation).

3.3: A Cumulative Approach of Climate Justice
Recognition and participation of parties help to take rational and just decisions concerning climate change problems. And rational decisions help to generate distributive justice by applying APP. Consensus decisions of parties determines to what extent one can consider his (party) interests in climate policy. This means that distributive justice and procedural justice are joined together in climate justice. The factors of procedural
justice, recognition, participation and distribution of power, influence the making of rational and just policies or plans. On the other hand, distributive results affect participation, recognition and power to take action in context of climate change problems. Thus climate policy reproduces both distributive and procedural justice matter. In the context of climate justice, distributive justice concerns about how goods are to be distributed to achieve the goal of minimum equity across the nations. Here minimum equity means satisfaction of demand accordance to different levels. The dilemma of distributive justice is to solve everybody’s problems because of limited resources. In that case, procedural justice helps to take rational decisions about whose interests are sacrificed in which degree to satisfy some other interests. Distributive justice is called the heart of climate justice since it deals with how to share the burden of emissions of the atmosphere. UNFCCC, IPCC, etc are international institutions that deal with climate change problems. These international institutional solutions of climate change problems address procedural justice issues in taking decisions about climate policy.

<table>
<thead>
<tr>
<th>Level</th>
<th>Distributive Justice</th>
<th>Procedural Justice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Society of States</td>
<td>• Assistance to developing country states for participation in the convention activities</td>
<td>• One state, one vote</td>
</tr>
<tr>
<td></td>
<td>• Assistance to developing country states for adaptation measures</td>
<td>• Capacity building</td>
</tr>
<tr>
<td></td>
<td>• Technology transfer and provision of insurance</td>
<td>• LDC Expert Group and other special procedure templates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dispute resolution</td>
</tr>
<tr>
<td>Cross-level Interactions</td>
<td>• Responsibility and compensation for climate change impacts</td>
<td>• Participation of observers at COPs</td>
</tr>
<tr>
<td></td>
<td>• Financial assistance for adaptation projects</td>
<td>• NAPA guidelines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Complaints procedure</td>
</tr>
</tbody>
</table>

Figure-2. Justice in Climate Change  
(Quoted in Paavola 2005:316)

3.3.1: **Distributive Justice at International and National Level**
Distributive justice commits developed countries to cover the costs of climate change in order to meet their obligations. There is a correlation between development and
emissions. So it is thought that developed countries are mostly responsible for climate change. Moreover, according to CPP developed countries should pay for climate change even though they are not responsible for climate change that I stated in previous chapter.

Here obligations mean to give supports to developing countries to mitigate and adapt to climate change. Resources are unevenly distributed to protect climate changes and most resources (including technology) are in developed countries. So distributive justice requires redistributing such resources among vulnerable countries to adapt and protect from climate change. CPP principle can be used in distributive justice to establish equity across state. And equity is the basis of social as well as climate justice. At global level international institutions such as UNFCCC play distributive role which distribute international assistance. Assistances have been given through the GEF (Global Environmental Fund). The UN Convention has “the Adaptation Fund, the Special Climate Change Fund and the Least Developed Countries Fund to assist developing countries” (Paavola 2005:317). A cross-level distribution is also needed to distribute assistances in national level. Individuals, organizations and communities have rational claim to distribute assistances equally. Finally, cross-level distributive justice is responsible to distribute assistance according to social, natural and financial conditions.

3.2.2: **Procedural Justice at International and National Level**

Taking decisions and to implement these decisions regarding global climate change needs global agreements. Though the developing countries do not have so much capacity as developed countries, international institutions like as UNFCCC treat all nations equally in taking decisions regarding climate change. This is called one nation, one vote. For example, in the UN convention, there is a provisions to attend the Least Developed Countries Expert Group to take part in decisions though the developing countries has less ability to support their expert group. This procedure to consider opinions of different developing as well as developed countries to take decisions regarding climate change resolves disputes in international climate change debates and actions. Procedural justice that addresses issues among states is not sufficient to take decisions regarding climate change. Procedural justice needs to address issues of individuals, community, etc and it is called cross level procedural justice that plays a role both across the nations and among
communities. The convention process has also established guidelines for the preparation of National Adaptation Plans of Action (NAPA) which requires multidisciplinary and public consultation in the preparation of the NAPAS (Decision 29/COP7, in Paavola 2005; 318). At the cross level procedural justice, the issues and interests of vulnerable groups to climate change are considered. One way to address cross level procedural justice in the climate change regime would be to create a body to investigate public complaints (Paavola & Adger, 2005b). The NAEEC (North American Agreement on Environmental Cooperation) is an example of body that investigates public complaints regarding climate change policy. This agreement formed CEC (Commission for Environment Cooperation) with a secretariat and public advisory committee. The public can give opinions about climate change policy and the secretary seeks response from the public by giving questions. Then the secretary develops a factual record on the basis of public opinions which is considered to make decisions on climate change and to negotiate on the global level. Such types of cross level procedural justice throw light and public consideration on climate policy. Outcomes of cross-level procedure would be used in mitigation and adaptation policy in national and international climate planning. The process would carry a strong voice to bargain at international level because it has records of grassroots level considerations.

3.3: Summary

I am arguing for climate justice as a twin form of distributive and procedural justice. Distributive justice takes part in sharing the burden and benefit of climate change. Where as procedural justice takes part in taking rational decisions or resolving disagreements over climate policies. In the context of climate justice distributive justice and procedural are complement each other. Procedural justice generates distributive process by resolving disagreements. In climate justice both distributive and procedural procedures take part in international as well as national level. A global consensus agreement needs to form for sharing the burden of emissions. Procedural processes play a role there. It requires considering capacity of nations. In sharing the burdens and benefits we need to follow CPP, global agreements always generate distribution on the basis of CPP.
SUMMARY AND CONCLUSION

4.0: Introduction
Findings of the study and implications of the study are addressed in this chapter. A short final conclusion ends the chapter.

4.1: Findings of the Study
Climate justice is concerned with the fair distribution of burden and benefit of climate change and the moral obligations connected to people’s uses of carbon resources. Carbon emission that concentrates GHG is the main cause of climate change. Industrialized nations are the main sources of carbon emissions and there is a positive correlation between development and emissions. The developed nations have made the largest contribution to carbon emissions in the atmosphere. They are also capable of paying for the cost of climate change. Therefore they are responsible for paying climate change cost. The study concludes that climate justice is pluralistic. Both distributive justice and procedural justice must take place within climate justice. Since there is a positive correlation between carbon emissions and development, CPP would be more appropriate than PPP or ESPCP as a basis for the distribution of burdens and benefits in order to establish equality across the nations. There are several uncertainties when applying both PPP and ESPCP. According to PPP, polluters should pay for the climate change cost but it is difficult to make fair claims based on this principle due to some problems: the identity problem, the ignorance problem, and the causal relationship problem. In the same way, ESPCP poses some problems in application: size of population, measurement and corrupt governments, etc. So both PPP and ESPCR are inadequate in application when distributing the burdens and benefits of climate change. The logic behind the claim that CPP is a fair principle for climate justice is that the past and present emissions of the developed world have greatly benefited the developed nations. As a matter of fairness, they should shoulder the burden of climate change. Procedural justice is concerned with taking rational and just decisions by resolving disagreements among the nations and considering the victims opinions. Such decisions generate a distributive process. So climate justice consists of both distributive and procedural justice.
4.2: **Implications of the Study**
The research will heighten the awareness of policy makers and legislative bodies to response to climate change on the basis of moral thinking. The discussion in the thesis is relevant to the discussions of the parties of UN Conventions of climate change. The parties may share the sentiment of the research in their policy making. The existing human beings have to bear the responsibilities of climate change and adopt just policies to mitigate and adapt with climate change. Though carbon emission have marked the beginning of the industrialization, the past generations may have been irresponsible for climate change because of their ignorance concerning the causes of climate change. Most of them are now dead and it is therefore difficult to identify the victims and actors. Besides most victims will be future generations and their claims are not still mature enough to prove causal relationship. Initiatives need to make on the basis of present situations. Initiatives or policies that have attempted to protect climate change have failed due to a lack of agreement. For example, USA, the most emitter in the world, did not agree on Kyoto Protocol agreement. They have some argument also and thus it will fail to achieve its goal. The study proposed to follow procedural process to make climate policy by considering all parties’ concerns that will generate distributive justice to establish equity by following an even distribution of burdens and benefits related to climate change.

4.3: **Conclusion:**
Social and political issues of climate change aroused after the publication of the first assessment report of IPCC. Issues of sharing the burden and benefits of climate change are the main subject matter of climate justice. The study is an attempt to resolve the moral debate of the ethical basis of our responses to global climate change. Who will share, and how, the burdens and benefits of climate change is the debate in climate justice. Equality is the basis of social as well as climate justice. To establish equality among the nations by distributing the burden and benefit of climate change is the goal of my study. I critically respond to Singer’s principles (PPP and ESPCP) and propose another principle (CPP) as a just principle for distributive justice. I also give emphasis to the procedure of decision making in order to generate CPP. Agreements are also needed
to make acceptable decisions that generate a distributive process. So, finally, I accept a pluralistic approach of climate justice, where distributive justice focuses on an even distribution of burdens and benefits of climate change and procedural justice which resolves disagreements by considering all parties’ concerns.

REFERENCES


22. Peter Singer 2007, A Fair Deal on Climate Change, Available at: [www.utilitarian.net/singer/by/200706--.htm](http://www.utilitarian.net/singer/by/200706--.htm), dated on 25th May 2010.


