

## **Climate Insecurities: Global and Regional Responses**

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### **I. Climate Risks**

Recently released IPCC report warns the possible disastrous consequences due to the climate change. Climate change, particularly temperature increases, has affected on many natural systems. The resilience of many ecosystems is likely to be exceeded by the 21<sup>st</sup> century due to flooding, wildfire, insects, and ocean acidification. Approximately 20 to 30 percent of plant and animals species are also likely to be at increased risk of extinction in case the global average temperature exceeds 1.5 to 2.5 °C. While global food production is expected to increase with the likely increase in local average temperature over a range of 1 to 3°C, the production of the food is likely to be decreased over the average temperature increase in 3°C. As a result of the sea level rise, millions of people are projected to experience floods. Most affected areas will be coastal areas of Asia and Africa while small islands are particularly vulnerable. Climate change will also pose serious threats to the health of the people. Increases in malnutrition, increased deaths, diseases and injury, increased frequency of cardio-respiratory diseases and altered spatial distribution of infectious diseases are only some examples. Water sector is also a vulnerable area to climate change. Losses from glaciers, reductions in snow cover are likely to lead to the reduction of water availability, hydropower potential, and changing seasonality of flows in regions.

On the other hand, the vulnerability to climate change is various depending on the regions. Asia is to be exposed to high climate risks. Freshwater availability in many parts of Asia is expected to decrease. By 2050s, the volume of freshwater in the river basin of Central, South, East and South-East Asia will be likely drastically decreased. Coastal areas of these regions are also in an extreme high risk because there will be increased flooding as well as sea level rises. Frequent floods and droughts will lead to diarrheal disease which will eventually increase endemic morbidity and mortality. In the Pacific region, significant loss of biodiversity is expected to happen by 2020. By 2030, increased droughts are projected in Australia and New Zealand. This will be likely lead to the loss of agricultural and forestry productions. This region is also exposed to the risk of frequent flood and sea level rise.

Africa is one of the most vulnerable regions to climate change. There will be likely increased water stress. This problem associated with other climate change problems is expected to result in drastic decrease in agricultural production up to 50 percent. Food security and malnutrition will be likely important issues in Africa by 2020. Of course, sea level rise will be also a likely threat to this region by the end of this century.

Other regions such as Europe and Latin America are also vulnerable to climate change. Increased inland flood, frequent coastal flood and erosion due to the sea level rise, reduced water availability, increased health problems resulted from heats and frequent wildfires are some of the expected problems. Loss in biodiversity is particularly

significant in Latin America due to the gradual replacement of tropical forest by savanna in eastern Amazon.

## **II. Ways of enhancing climate security**

All these likely problems arising from climate threat call the orchestrated efforts by the entire globe. They are not just environmental problems, but potential sources for the conflicts between and among the states. Without appropriate responses to the climate securities, the whole world will be exposed not only to the threats to the welfare of human populations, but also to a vulnerability of these populations to the impacts of threatening development. Efforts to enhance climate security may either address threats or vulnerabilities or to a combination of both of them. Prevention and mitigation are actions to keep threatening climate change risks from arising or from limiting the impacts or intensity of those adverse developments. On the other hand, adaptation, which is passive in nature, is to address weak capacity of the society against the vulnerability to climate threats. If prevention and mitigation actions are fully implemented, those of adaptation may not be necessary as the climate risks would be entirely addressed. Because complete prevention of the climate change may not be possible to realize, efforts to enhance climate security will be a combination of prevention, mitigation and adaptation.

### *Prevention and mitigation*

Addressing threats resulting from climate change to human beings involve more than two states. One or more are contributors to the problems. Others are victims of the problems. More often, states are both contributors and victims at the same time. In any case, international cooperation is necessary to prevent and mitigate the climate risks. The popular form of cooperation is through treaties such as United Nations Framework Convention on Climate Change and Kyoto Protocol among the states. This way provides valuable opportunities for the states to engage in discussions on how to prevent and mitigate the climate risks. Currently, legally binding obligations of so-called Annex I countries along with utilization of the market mechanism including the emission trading, clean development mechanism and joint implementations have been made available among the parties to reply on to prevent and mitigate the climate change. However, the problem of free rider has posed obstacles for this approach to fully function.

Followings are some examples of prevention and mitigation strategies.

- Introducing legally binding mitigation commitments
- Promoting green technology
- Promoting green industry
- Promoting green finance
- Developing cap and trade

### *Adaptation*

Adaptation is only necessary where prevention and mitigation efforts can not address the issues of climate risks as a whole. In the case of climate change, adaptation has not received sufficient attention as there have been concerns over the possibility that emphasizing the importance of adaptation issues may deviate the focus of efforts to address climate risks from prevention and mitigation (which are more important to cope with climate change) to adaption.

Several adaptation strategies can be employed to enhance climate security including the

followings:

- Assessing current climate risks
- Assessing socio-economic conditions
- Assessing and enhancing adaptive capacity
- Formulating appropriate adaptation strategies
- Continuing the adaptation process

### **III. Responses**

Considering climate change is a global problem, global response should be a primary way of response. However regional responses are also important as the global responses may not be sufficient under the lack of coordination among the related stakeholders.

#### **1. Global responses**

Global responses to climate change to prevent and mitigate climate risks have been made mainly through the multilateral fora. United Nations Framework Convention on Climate Change (UNFCCC) along with the Kyoto Protocol has played a key role in coordinating global efforts to prevent and mitigate greenhouse gas emissions. UNFCCC has identified key issues and encouraged states to make agreeable targets to prevent and mitigate climate change. As related organizations, some other international organizations such as the United Nations Environment Programme, International Panel on Climate Change, International Energy Agency and OECD have also added their resources to build up the concerted efforts at the global level.

Yet, global efforts through multilateral fora have faced serious limitations due to the combination of sovereign concerns of states, i.e. being negatively affected by prevention and mitigation actions and the free rider issues. Principles of common but differentiated responsibility and historical responsibility, that have been regarded as the main legal principles in allocating the amount of responsibilities of states in preventing and mitigating climate risks, have failed in playing their roles as appropriate guidelines to the states on their actions of prevention and mitigation. Utilizing the market mechanism such as the Kyoto mechanism has become not a viable option due to the difficulty in maintaining credible level of transparency and implementation.

Recent global crisis seems to provide a new opportunity. In a way of responding to the global economic crisis, many policy packages have been formulated by focusing on green technology and industry. G8 and G20 meetings seems to search for a new global agenda which could help states achieve the environmental protection as well as sustainable growth. If we consider the fact that top 20 major economies represent most of the greenhouse gas emission in the entire globe, it might be more effective to prevent and mitigate climate risks by guiding those major economies to focus on low carbon green economy.

Regarding the adaptation strategies at the global level, several organizations have played leading roles. They include UNFCCC, United Nations Development Program, the World Bank and Global Environment Facility. These organizations have assisted developing states by developing adaptation strategies and mobilizing resources for the capacity building of developing countries such as financial assistance and technology transfer. However, limited available resources have brought limited impacts on enhancing climate security through adaptation.

## 2. Regional responses: A Case of Asia

Much has not been done at the regional level to enhance climate security. Main focus on prevention and mitigation has been made at the global level. Considering the global nature of climate risk, regional initiatives to prevent and mitigate climate risk would be premature until global guidelines would be made. However, several initiatives have been traced in Asia to supplement the global initiatives. For example, UN ESCAP has developed its Green Growth initiative in order to achieve the environmental protection and sustainable economic growth. After the introduction of the Green Growth initiative to the region, it has quickly acquired strong supports inside the region. One of the good examples is the Low Carbon Green Growth policy of Republic of Korea. Sharing the sprits and principles of the Green Growth Initiative of ESCAP, President Lee of ROK announced ROK's new vision on Green Growth. Identifying possible focus areas of green technology and industry, ROK has made a big stride to develop national plans in mitigating climate risks. It plans to announce its voluntary emission reduction target before the Copenhagen Climate Meeting in 2009. Furthermore, approximately 200 million USD were pledged to assist developing countries in Asia to cope with climate risks. Indeed, regional responses to prevent and mitigate climate risks are in place in Asia.

However, furthering efforts are necessary in the area of adaptation. While some initiatives such as above mentioned ROK's East Climate Partnership may be implemented as a part of adaptation strategies at the regional level, more coordination is necessary to better secure financial and other resources. In this regard, effective facilitating role of relevant regional organizations such as ESCAP and Asian Development Bank may be crucial. More importantly, political back-up by the key regional states should be secured. This could be achieved through utilizing already existing regional fora such as ASEAN plus Three and APEC. Eventually regional efforts should be combined with the global strategies on prevention, mitigation and adaption of climate risks in order to maximize their effectiveness.

## **IV. Conclusion**

It is undeniable that climate change poses serious risks to the entire globe. Despite its serious potential impact on human being, efforts of prevention, mitigation and adaptation have not been sufficient. In order to enhance climate security, better coordination both at global and regional levels is required to maximize effective use of existing resources and further secure additional resources. And this can be better realized by increasing political wills of key countries.