Policy Brief

JICA Research Institute

No.7

For Promotion of Climate Change Mitigation Measures in Developing Countries[1]

JICA Research Institute*

Policy Recommendations

1. For effective implementation of Nationally Appropriate Mitigation Actions (NAMAs) by developing countries, support for early incorporation of the perspective of low carbon in development strategies should be promoted, while the methodologies of measurement, reporting and verification (MRV) should be promptly established, and efforts in sharing such methodologies and results with donors and developing countries should be promoted.
2. The establishment of a mechanism to properly reflect eliminated greenhouse gases as carbon-offset credits is required.
3. Attempts to eliminate greenhouse gases through intercity and interregional cooperation, which are more actively pursued than the international framework, should be further promoted.
4. Public funds should be invested efficiently to encourage more private funds to be allocated to voluntary mitigation actions in developing countries.

In order to achieve the goal of limiting a rise in temperatures to below 2°C, which was agreed upon at the COP16 Cancun Conference, the entire world must address this issue with all seriousness toward a low carbon society. “Mitigation measures” to reduce greenhouse gases (“GHG”) to mitigate damage from climate change entirely depend on what effective actions can be implemented in developing countries in Asia where population growth and economic growth have been remarkable. However, there are some areas where “adaptation measures” to adapt a social and economic system to climate change must urgently be taken, because there is deep concern that the impacts from climate change might be actualized. Therefore, the establishment of an international framework of mitigation measures is urgently needed.

So far, developing countries have shown a cautious attitude toward an international commitment of GHG emissions reductions. However, the Durban Platform was established at COP17 and a road map toward the construction of a legal framework in the future which applies to all countries by 2020 was revealed. The necessity for international cooperation to support developing countries’ efforts for mitigation measures continues to increase. Developing countries also have a motive to implement mitigation measures, as their activities to reduce emissions will hopefully result in a reduction in energy consumption, establishment of energy security and improvement in environmental pollution associated with the use of energy. The problem is how to draw up an international framework which developing countries can proactively participate in. With this in mind, we conducted research to consider a mechanism for the promotion of mitigation measures in developing countries as well as the roles of advanced countries to promote such mitigation measures in developing countries, collecting case examples in developing countries in Asia, and compiled a book titled “Climate Change Mitigation and International Development” (Taylor & Francis). This policy brief takes up important points from this book concerning necessary activities for construction of an international mechanism and the roles of advanced countries and international cooperation to promote mitigation measures in developing countries.

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* These recommendations were authored by Ryo Fujikura, Visiting Research Fellow and Tomoyo Toyota, Research Associate based on JICA Research Institute’s Research Project “Study on Climate Change Mitigation Measures.”

1. The policy brief is an excerpt from Fujikura and Toyota (Forthcoming). The corresponding chapters and authors are detailed in the Notes.

Recommendation 1:

For effective implementation of Nationally Appropriate Mitigation Actions (NAMAs) by developing countries, support for early incorporation of the perspective of low carbon in development strategies should be promoted, while the methodologies of measurement, reporting and verification (MRV) should be promptly established, and efforts in sharing such methodologies and results with donors and developing countries should be promoted.

The per capita emissions in developing countries are now currently at the level of advanced countries. Figure 1 shows the CO_2 per capita emissions by country from two years (1990 and 2007). The increase in emissions is remarkable in Korea, Thailand and China, which are Non-Annex I Parities in Asia. As relates to per capita emissions, Korea has already surpassed Japan. In China, per capita emissions are still relatively small, but China is now the world's No. 1 GHG emissions country (as of 2011).

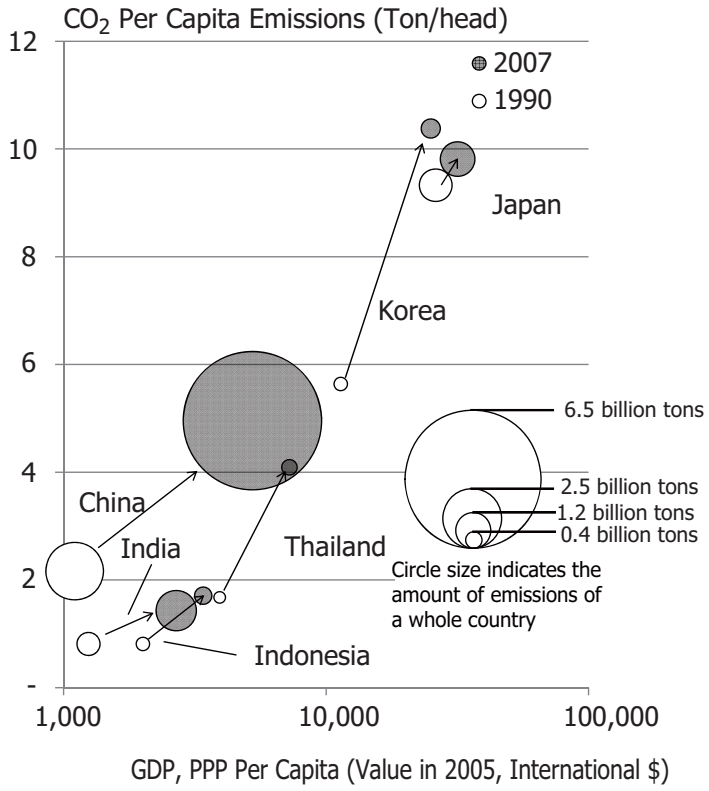

Figure1. Transition of Per Capita Emissions
Source: Prepared by the author with reference to World Bank 2011.

The increase in emissions in developing countries is striking particularly in cities that use huge amounts of energy. Figure 2 compares per capita emissions by city, and shows that Beijing, Shanghai and Bangkok discharge double the amount of GHG emissions of Tokyo.

At the COP16 Cancun Conference, it was agreed that developing countries will implement NAMAs by obtaining technical and economic support from advanced countries in the context of sustainable development.

In order for NAMAs to be widely implemented in developing countries, it is necessary to provide support to such developing countries to encourage governments to adopt policies to expand energy saving and new energy markets, while actively incorporating the perspective of low carbon into their development strategies through Development Policy Lending, etc., focusing on policies for climate change. Donors should support these efforts more actively, while promoting attempts to share their lessons and results with developing countries.[2]

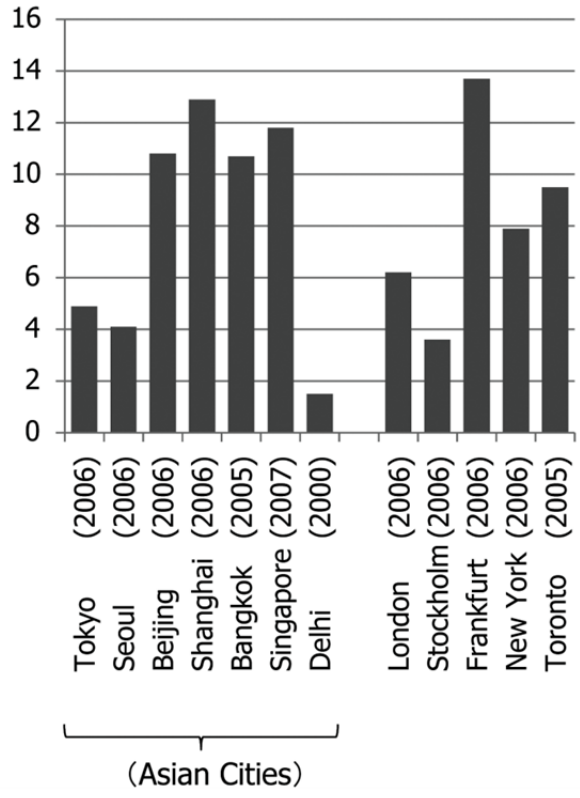

Figure2. CO_2 Per Capita Emissions by City (Unit: Ton CO_2)
Source: Prepared by the author with reference to Hoornweg et al. 2011

2. Katsurai and Murakami (Chap. 8)

To do that, procedures and formalities regarding NAMAs and MRV should be established internationally. There are many issues to be resolved with respect to institutional reform, dissemination and enlightenment, and quantitative evaluation methods of indirect GHG emissions reduction amounts by implementing projects such as training.[3]

Recommendation 2:

The establishment of a mechanism to properly reflect eliminated greenhouse gases as carbon-offset credits is required.

It is also an important task to create incentives so that not only developing countries but also advanced countries and donors can provide more active support for these activities. The possibility of greenhouse gas emissions reductions by REDD+ (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries) is tremendous, and the creation of a mechanism for the promotion of REDD+ is urgently needed.[4]

In Asia where coal resources are abundant, demand for this inexpensive resource is expected to continue to increase in the future. Under these circumstances, it is critical for donors to support the dissemination of highly efficient coal utilization technologies. In addition, co-benefits such as antipollution measures are expected from these energy-saving projects at the same time.[5]

In consideration of the present circumstances, these projects are hardly recognized as CDM. Recognizing these activities as such will provide donors with a strong incentive to expand these activities. It is necessary to establish a mechanism to evaluate reduced GHG emissions by projects as carbon-offset credits more swiftly and efficiently.[6]

3. Yamada and Fujimori (Chap. 7)
4. Matsumoto (Chap. 4)
5. Toyota (Chap. 9)
6. Yamada and Fujimori (Chap. 3)

Recommendation 3:

Attempts to eliminate greenhouse gases through intercity and interregional cooperation, which are more actively pursued than the international framework, should be further promoted.

Aside from COP, active efforts toward measures against climate change are being made in regional frameworks such as APEC, including the adoption of a "Declaration on Climate Change and Energy," and International city-to-city cooperation is also being promoted between cities and has achieved successful results in the fields of waste disposal measures and environmental education.

In promoting low carbonization, local governments closely linked to citizens' activities groups serve an important role in promoting grass-roots climate change measures, because local governments not only provide dissemination, enlightenment and guidance to local residents and enterprises but also have authority to develop city plans related to construction and transportation. Therefore, it is meaningful to create a network to share citizens' and local governments' small but solid experiences among cities.

There are few international city-to-city networks which have low carbonization as their objective, but there is a possibility for such networks to promote their activities toward low carbonization based on their accumulated experiences. For example, in Japan, companies and local governments have promoted carbon-offset credits on a voluntary basis, but internationally there is a possibility of promoting intercity technical collaboration and business development by local companies toward low carbonization. The progress in international city-to-city cooperation can also be expected as a new platform. However, local governments do not have sufficient motivation, experience, know-how, human resources and/or financial resources to provide international cooperation.[7]

In order to contribute to low carbonization in Asian cities and regions, the Japanese government, research institutions, NGOs and companies should positively be engaged in these activities, and should strive to construct

7. Nakamura and Mori (Chap. 5)

a low carbon society, utilizing ongoing regional frameworks and international city-to-city environmental cooperation, the basic foundation of which has already been formed.[8, 9]

Recommendation 4:

Public funds should be invested efficiently to encourage more private funds to be allocated to voluntary mitigation actions in developing countries.

The main factor behind the rapidly increasing GHG emissions is the increase in emissions from the electricity sector. About 90% of the power generation method is thermal power generation using fossil fuels, and 40% out of this relies on coal fired power generation, which is cheap and abundant in resources, but enormous in carbon emissions.

As about 1.4 billion people around the world and about 800 million people in developing countries in Asia lack access to electricity, new demand for power is expected in the future (IEA 2010). As increased demand for power is also expected in cities due to rapid economic development and population growth, appropriate mitigation actions are required.

To meet this demand, renewable energy technologies such as wind generation and solar power could play a role, as they have already circulated around Asian countries. Whether developing countries can leapfrog onto a low carbon society from BAU depends on whether they can obtain funds and technologies to use and promote renewable energy. If costs are reduced through competition and technological innovation, the dissemination of new energy would accelerate all at once.[10]

In past development cooperation, the transfer of existing technologies demonstrated in advanced countries has been pursued, but in the future, cooperation with technological research and development organizations and development assistance agencies should be further promoted to allow for the transfer of potential new technologies.[11]

Public funds and technologies which are available from donors are limited. However, such funds and technologies could contribute to swifter low carbonization if they are used, for example, for the cooperation between public and private sectors as well as technical development to create markets that contribute to low carbonization in developing countries and introduce private funds to such markets.

(March 2012)

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8. Kameyama (Chap. 2)
9. Fujino (Chap. 11)
10. Ling (Chap. 6)
11 Kaneko, Komatsu, and Ghosh (Chap. 10)