

**UNITED NATIONS
ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC**

The First Policy Consultation Forum of the Seoul Initiative on Green Growth:
“Promoting Sustainable Infrastructure Development”

6-8 September 2006
Seoul, Republic of Korea

**Policy Directions and Recommendations for
Sustainable Infrastructure Development
in Asia and the Pacific**

BACKGROUND

1. The First Policy Consultation Forum of the Seoul Initiative on Green Growth: “Promoting Sustainable Infrastructure Development”, held on 6-8 September 2006 in Seoul, Republic of Korea, was jointly organized by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the Ministry of Environment, Republic of Korea in cooperation with the Korea Environment Institute with the generous funding from the Government of the Republic of Korea.
2. It was attended by about 100 participants from Ministries of Environment and relevant ministries responsible for infrastructure development, public works, transport, energy, economic development and planning of 17 UNESCAP member states, representatives of UN organizations and international financial institutions, NGOs, private sector and research institutions.
3. The Policy Consultation Forum reviewed various options and policies to promote eco-efficient and environmentally sustainable infrastructure development focusing on water, waste, energy and transport infrastructure in Asia and the Pacific. The Policy Consultation Forum also took stock of a vast range of experiences, successful national examples and models, as well as lessons learned in the area of eco-efficient and environmentally sustainable infrastructure.
4. To incorporate the concept of sustainable infrastructure into the various stage of infrastructure development, there is a need to deliver the message of the Policy Consultation Forum to high level decision makers of relevant ministries responsible for infrastructure development. This “Policy Directions and Recommendations for Sustainable Infrastructure Development in Asia and the Pacific” is the summary of the findings and conclusions of the Policy Consultation Forum.

IMPORTANCE OF SUSTAINABLE INFRASTRUCTURE

5. Infrastructure is a key element for realizing sustained economic growth and sustainable development to achieve the Millennium Development Goals (MDGs), and in particular, MDG 1 (Poverty Reduction) and MDG 7 (Environmental Sustainability). The unmet demand for social and physical infrastructure to support the delivery of housing, transportation, energy, water services and to overcome the deficiency of food limits economic opportunity and is therefore a major barrier to the achievement of MDG 1.
6. Patterns of infrastructure development determine the environmental sustainability of “green” economic growth. In turn, eco-efficiency should be one of the key criteria for the development of sustainable infrastructure. Eco-efficiency of infrastructure has long-term and significant impacts on both economic and environmental sustainability.
7. Currently, many developing countries are at the cross road of developing and further expanding their infrastructures in support of robust economic growth. This is an opportune time for them to adopt and apply eco-efficiency concept in their infrastructure development.

ASIA-PACIFIC SITUATION

8. So far, discussions on infrastructure development have been focused mainly on financing issues and engineering aspects in the region. Mainstreaming environmental aspects and incorporating the eco-efficiency concept into various stages of infrastructure development have not been considered as much as they should have been.
9. Improvement in the awareness of eco-efficiency concepts is urgently needed among policy-makers, planners and decision-makers. However, the criteria applicable to, and measures for developing eco-efficient and sustainable infrastructure are yet to be fully identified.
10. In many cases decisions for development of infrastructure are dependent on political decisions, which sometimes are not scientifically and environmentally sound.
11. A systematic or holistic approach was not sufficiently considered for infrastructure development in the past.
12. Strategic Environmental Assessment (SEA) and lifecycle assessment, taking into account the long term impact of infrastructure use, have not been widely applied in infrastructure development in the region.
13. The discussions have pointed out that lack of comprehensive statistical data and valuable information to understand the current eco-efficiency levels of existing infrastructure (including long term environmental impact of usage and lifecycle of the infrastructure) and future development plans.
14. Buildings account for 50% of the total fossil fuel use in developed economies. Most of the building environment control system was developed for cooler and less humid

climate zones, such as North-America and Europe. These are not appropriate for the hot and humid climate in the Asia and Pacific region.

15. Countries in the region are not taking full advantage of partnership building opportunities and multi-stakeholder consultations when developing infrastructure projects, such as partnership between environment and transport sectors, transport management plan between road and rail infrastructure, and private and public transport.

POLICY DIRECTIONS AND RECOMMENDATIONS

16. After discussing various experiences and policy options of infrastructure development, the First Policy Consultation Forum conclude that:

- It is necessary to develop sustainable infrastructure development policies and strategies, taking into account the eco-efficiency concept that includes all aspects of infrastructures and also seeks to merge and combine such systems, such as transportation and energy;
- A holistic approach is needed in infrastructure development, considering both consumption and production aspects, physical and non-physical aspects, different stages of infrastructure development, different levels of organizations, and role of different stakeholders;
- Conventional Environmental Impact Assessment (EIA) is not enough to reflect the long-term environmental impact of infrastructure development. Thus, Strategic Environmental Assessment (SEA), which takes into account the long-term ecological impact of infrastructure, can be an important policy tool in promoting sustainable infrastructure;
- Green GDP can be a useful tool in promoting green growth in that it makes possible to measure pollution cost. However, it has also a limitation as the valuation of environmental degradation is difficult and it does not cover the social cost causing from inefficient use of resources;
- The technical expertise of the private sector in development of infrastructure will definitely be beneficial. However, the private participation does not automatically guarantee the promotion of sustainable infrastructure. The private participation in infrastructure development needs to be carefully evaluated and scrutinized;
- It is necessary to develop strategies for attitude change, including education and awareness raising and ensuring decision making processes that give conscious attention to environmental and social objectives;

(Water)

- There is a need to apply eco-efficiency concept into water infrastructure development. Not only efficiency of infrastructure investment but also eco-efficiency of operation and maintenance of water infrastructure need to be improved;

- Opportunities for improving eco-efficiency in water infrastructure include reducing water demand by increase public awareness, applying integrated water resource management, increasing water recycling, and minimizing water loss;
- New paradigm for rainwater management is required in order to maintain environmental sustainability and mitigate flooding and drought. Rainwater could be the main source of water supply with less energy input;

(Energy)

- There is a need for developing countries in the region to include a goal such as “enhanced energy independence” in their infrastructure development plans so that local and renewable energy resources may be used to generate power for buildings and fuel for transportation. Two key components are the need to diversify energy supplies so that one source does not dominate and hence control the market demands. The other is to start investing in development of renewable and sustainable energy resources now rather than later;
- Climate responsive building design codes applicable to each country need to be developed. This could reduce the cooling demands in the countries, which most likely will increase in the years to come. Such climate responsive building design code will have the goal to reduce the heat gain, while using natural ventilation and natural cooling;
- Eco-efficient and effective air-conditioning systems need to be developed, taking into account the climate of the countries and the use-side of energy efficiency;
- It is necessary to develop energy efficiency strategies in respect to which will increase awareness and education in housing and building design and householder behavior (e.g. insulation, choice and use of heating systems, dryers, lighting, and hot water);
- The energy sector is a good example of how “agile energy” infrastructures can be created that combine “central grid” and local “on-site distributed” energy from renewable energy transmission over lines from long distances to local green building complexes that use energy conservation, efficiency and solar energy;

(Transport)

- It is necessary to work towards improving the eco-efficiency of transport sector by developing and realizing an appropriate vision of eco-efficient and sustainable transport firmly rooted in the concept of green growth;
- Regional approach to promote eco-efficient and sustainable transport is needed, in such areas as regulation, technology, and innovation. In order to move towards eco-efficient transport systems, it is necessary for the countries in the region to develop guidelines for eco-efficient and sustainable transport based on local traffic and land use conditions.

THE WAY FORWARD

17. The secretariat of the Seoul Initiative Network on Green Growth (SINGG) and UNESCAP in collaboration with UN and international agencies will continue working in the area of sustainable infrastructure through the network of experts created during the First Policy Consultation Forum of the SINGG. To follow up overall progress on sustainable infrastructure issues in the region and to address the needs of the country senior officials and experts, the secretariat of SINGG and UNESCAP will consider the opportunities for further analytical and policy work as follows:

- carrying out in-depth studies and analysis of regional experience on eco-efficiency project development compilation of good practices, as well as organization of capacity-building programme, and development of pilot or demonstration projects;
- furthering the work on the eco-efficiency indicators to include eco-efficiency indicators for sustainable infrastructure development, while considering existing indicators such as water loss rate, solid waste generation rate, and energy use rate/intensity in transportation;
- dissemination of information on the importance and good practices of eco-efficiency in sustainable infrastructure development among decision-makers, planners, academics and related stakeholders;
- developing conceptual methodologies to improve eco-efficient infrastructure, such as congestion cost estimation to include not only time delay and oil consumption, but also environmental cost;
- developing guidelines for achieving eco-efficient infrastructure development in the region using existing information as much as possible, considering potential policy tools (such as economic incentives, life-cycle cost saving, and strategic environmental assessment) and strategies that are appropriate to different sectors, development stages, urban and rural conditions.