

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

Fifteenth Senior Officials Meeting (SOM) of NEASPEC

17-18 March 2010

Tokyo, Japan

REVIEW OF PROGRAMME PLANNING AND IMPLEMENTATION

(Item 5 (c) of the provisional agenda)

**Implementing the Regional Master Plan for the Prevention and Control of Dust and
Sandstorms in North-East Asia**

Note by the Secretariat

CONTENTS

I. Overview of Progress.....	2
II. Issues for Consideration.....	4

Annex I. Project Document on Implementing the Regional Master Plan for the Prevention and Control of Dust and Sandstorms in North-East Asia

I. OVERVIEW OF PROGRESS

1. The Regional Master Plan for the Prevention and Control of Dust and Sandstorms (DSS) in North-East Asia¹ was jointly developed in 2005 by the Asia Development Bank (ADB), United Nations Environment Programme (UNEP), United Nations Convention to Combat Desertification (UNCCD) and United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), and adopted by the Governments of China, Mongolia, Republic of Korea and Japan to address DSS in a comprehensive manner through prevention and monitoring at the subregional scale.
2. In order to follow up the Master Plan, the Secretariat had consulted with NEASPEC member countries and international agencies, including UNEP, UNCCD, UNDP and ADB, to develop a demonstration project focusing on the prevention of dust and sandstorms at source areas. In particular, the Secretariat had extensive consultations with the State Forestry Administration of China and the Ministry of Nature, Environment and Tourism of Mongolia during 2006-2007, and received a project proposal "DSS Monitoring and Assessment Capabilities in Source Areas" from the Mongolian Government for the review and decision at the 13th SOM in 2008.
3. The 13th SOM decided to support the proposal in principle using its Core Fund while requesting the Secretariat to further develop a detailed project document in collaboration with the concerned governments and recommended to strengthen coordination with other ongoing initiatives on the relevant subject, including, in particular, a TEMM (Tripartite Environmental Ministers Meeting of China, Japan and the ROK) project on monitoring and early warning of DSS. Subsequently, the Secretariat had consultations and fact-finding missions to China and Mongolia in 2008 and prepared a project proposal.
4. The 14th SOM reviewed the project proposal entitled "Prevention and Control of Dust and Sandstorm (DSS) from Source Areas in China and Mongolia" and recognized that the proposed activities are reasonable and achievable. Thus, the Meeting approved the project and received the expression of member countries for providing additional technical supports to the project implementation.

¹ The Master Plan provides a guide for regional collaborative activities to reduce DSS in North-East Asia. It consists of two independent but interrelated components, namely Component I: Establishment of a regional monitoring and early warning network for DSS in Northeast Asia and Component II: An investment strategy for the prevention and control of DSS through demonstration projects with the former conducted by UNEP and ADB and the latter implemented under the guidance and supervision of ESCAP and UNCCD. The planned timeframe to complete the two components is 15 to 20 years commencing from 2004/2005.

5. Although the project document was approved during the 14th SOM, the Secretariat needs to follow ESCAP's in-house procedures with respect to the approval of project document, work plans, monitoring and evaluation. ESCAP Quality Assurance Team (QAT) and Project Acceptance Committee (PAC) recommended preparing the project within the broad regional/subregional framework of action so that it better reflects subregional perspectives. In this connection, the project document was reformulated with the new title, "Implementing the Regional Master Plan for the Prevention and Control of Dust and Sandstorms in North-East Asia" to clearly indicate that the project is a follow up of the Plan while the major activity components have not been revised.

6. In the Plan, the respective governments of China and Mongolia nominated four focus areas as well as a joint demonstration area at Erinhote on the Chinese side and Zamiin-Uud on the Mongolian side, and requested national and international agencies to undertake concrete action in the selected areas.² Thus, the project directly responds to the Plan by piloting one of its proposed transboundary DSS prevention activities between China and Mongolia. In particular, the project is expected to assist China and Mongolia in replicating successful practices from existing experiences among the countries to increase the overall effectiveness of DSS prevention throughout the Gobi desert and North-East Asia.

7. The project will focus on i) demonstration project through simple irrigation system using wastewater and irrigated natural wind- and sand-breaks, and self-financing mechanisms for the two systems; and ii) subregional experience sharing, best practice learning and capacity development.

8. While this demonstration project has a single geographic focus, technical assistance from Japan, ROK and the Russian Federation in DSS prevention activities would largely be beneficial. Their experience and expertise gained through making regional and subregional cooperation in combating other environmental problems would be of critical importance to the success of the project.

9. Implementing the project does not require allocating additional budget from the Core Fund as the 14th SOM approved US\$ 220,350 from the Core Fund. And all internal arrangements within the Secretariat for the project implementation have been finalized.

² The four focus areas of the China are all located in Inner Mongolia Autonomous Region namely, Hulunbuir, Xilingol, Ordos, and Alashan. The four areas in Mongolia are Sukhbaatar, Omnogobi, Dornogobi, and Ovorhangai.

II. ISSUES FOR CONSIDERATION

10. The Meeting may wish to request the Governments of Mongolia and China to nominate national implementation agencies that execute planned activities and/or provide major technical supports to the project.

11. The Meeting may wish to request other member countries to nominate national institutions/ focal points to participate in the project for technical supports.

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Annex I. Summary of the Project on “Implementing the Regional Master Plan for the Prevention and Control of Dust and Sandstorms in North-East Asia”

Executive Summary

In recently years, the frequency and intensity of dust and sandstorms (DSS) have worsened partly due to the effects of climate change. With the reduced precipitation over the Gobi desert region, unsustainable land management practices have made significant contributions to the increased rate of land degradation and desertification, which has in turn created conditions that are more susceptible to developing DSS.

Within the framework of the North-East Asia Subregional Programme for Environmental Cooperation (NEASPEC), this project intends to prevent and control DSS at its source through the replication of proven technique and knowledge among NEASPEC countries and the development of new innovative mechanism to reduce the number of anthropogenic factors causing DSS. The key characteristic of this proposal is reflected in its focus on a test model through a demonstration project and knowledge-sharing in the subregion. The indigenous knowledge combined with modern science and technology in preventing and controlling DSS acquired through the demonstration project are viewed as a first step of continuing efforts for expansion and replication in the subregion. Besides Mongolia and China, the project will engage other member countries to provide additional technical supports.

Situation Analysis

Dust and Sandstorm (DSS) is an environmental phenomenon in North-East Asia, which involves strong winds that carry large quantities of dust and fine sand particles away from the ground surface of deserts and arid areas in parts of Mongolia and China over long distances with severe environmental, economic and health impacts along the way. Therefore, varying effects of DSS are felt throughout the subregion, and damages caused by DSS include the loss of income, disruption of communications, transport and utility infrastructure, loss of arable lands, livelihoods and biodiversity and adverse health effects.

In recent years, exacerbated by effects of climate change, the frequency, combined with the extent and severity of impacts of DSS events, has increased significantly. Although DSS is a natural phenomenon, which has occurred in the subregion for thousands of years, unsustainable land management practices including overgrazing, deforestation, and mismanagement of water resources due to growing human and livestock populations in the Gobi desert where DSS originates have led to rapid land degradation and further desertification and contributed to the worsening DSS events throughout the subregion. Despite this fact, it is worth noting that DSS is also found to neutralize acid rain, absorb

atmospheric pollutants and act as a cooling agent to curb off atmospheric temperature rise. Nonetheless, socio-economic, health and environmental trade-offs have observed to be much larger than the gains.

An average of five DSS events per year was recorded in 1950s in China, and in 1990s, this number has nearly quadrupled. Furthermore, DSS poses tremendous threats to the economies, infrastructure and public health of those affected parts of North-East Asia. For instance, the costs of damages caused by DSS in China alone are said to be from US\$ 70 million to US\$ 239 million annually.

A number of measures have been used in the past to control dust and sandstorms, including biological, mechanical, engineering and chemical approaches. In almost all dust and sandstorm-impacted countries in Northeast Asia, biological measures are the key solutions to fight against dust and sandstorms. An example of the biological approach is the establishment of windbreaks/sandbreaks, revegetation of degraded rangeland in China. "Straw checkerboard" is one typical mechanical approach to protect railways and highways from sand buries and sand accumulations around Tengger Sand Desert in countries such as China and Turkmenistan. The engineering approaches are mainly focused on runoff forestation.

Measures taken in isolation from one another cannot solve the dust and sandstorm problems. In this connection, there have been a number of initiatives at various levels to address DSS applying an integrated approach. China, for instance, has formulated a national policy on desertification and DSS, and implemented various land and water management and DSS monitoring activities through its National Bureau to Combat Desertification and State Environment Protection Agency in the Inner Mongolia Autonomous Region and throughout its territory. Mongolia has also implemented a nation-wide programme called, "Green Wall National Programme" by its Ministry of Nature, Environment and Tourism to address both deforestation and desertification issues. Meanwhile, Japan, Republic of Korea and China conduct regular DSS monitoring over their territories. All these initiatives involved multi-stakeholders to address the DSS issues.

In support of national initiatives, the "Regional Master Plan for the Prevention and Control of Dust and Sandstorms in North-East Asia" was jointly developed in 2005 by four international and UN organizations, i.e. the Asia Development Bank (ADB), United Nations Environment Programme (UNEP), United Nations Convention to Combat Desertification (UNCCD) and United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), and four countries, i.e. China, Mongolia, Republic of Korea and Japan, which aims to address DSS in a comprehensive manner through prevention and monitoring at the subregional scale. The Master Plan provides a guide for regional collaborative activities to reduce DSS in North-East Asia. It consists of two independent but interrelated components, namely

- Component I: Establishment of a regional monitoring and early warning network for DSS in Northeast Asia implemented by UNEP and ADB;
- Component II: An investment strategy for the prevention and control of DSS through demonstration projects implemented by ESCAP and UNCCD.

As a follow-up project of the Component II of “Regional Master Plan for the Prevention and Control of Dust and Sandstorms in North-East Asia”, this project aims to prevent and control DSS at its source through the replication of proven technique and knowledge among NEASPEC countries and the development of new innovative mechanism to reduce the number of anthropogenic factors causing DSS.

Strategy

Overall Strategy

NEASPEC supports the implementation of the Regional Master Plan by piloting one of its proposed transboundary DSS prevention activities between China and Mongolia, as part of its on-going effort to promote effective cross-border environmental cooperation throughout the subregion. Therefore, NEASPEC aims to demonstrate both practical DSS prevention techniques and effective transboundary cooperation to share knowledge, experiences and technology to enhance the quality and sustainability of the project outcomes. Subsequently, NEASPEC also hopes to assist China and Mongolia in replicating successful practices and results from this pilot activity and from the past experiences in other DSS source locations to increase the overall effectiveness of DSS prevention throughout the Gobi desert and North-East Asia sub-region.

NEASPEC recognizes that there is a need for both long-term and short-term measures in order to address DSS issues in a comprehensive manner. While the existing capacities in the subregion in carrying out short-term measures such as DSS forecasting and early warning in each affected country, combined with the existing transboundary efforts, long-term measures such as soil stabilization, grazing control and sustainable land and water management at DSS origins require much stronger and more coherent efforts by all stakeholders of the subregion. Without taking appropriate long-term action, it will not only result in further desertification at DSS origins but also increased socio-economic, environmental and public health impacts of DSS along its coverage area across the subregion and beyond. In addition, the success of such long-term measures is likely to be determined by the level of public support and consensus, particularly at the local level since results may not be easily quantifiable in terms of their cost-benefit relationships. Therefore, it is crucial to apply an inclusive approach to involve all stakeholders throughout the process in order for them to take proper ownership of

the measures and results.

Project Approach

The proposal will explore ways in which the following two areas of focus can be effectively addressed and demonstrated:

1) Demonstration project through simple irrigation system using wastewater and irrigated natural wind- and sand-breaks, and self-financing mechanisms for the two systems: A plot of land on the windward side of the railway line in Zamyn-Uud, covering approximately 40 hectares, will be used to demonstrate an irrigated natural wind- and sand-break system to stabilize soil erosion, and to prevent shifting sands and DSS from crossing the railway line. Meanwhile, a robust underground wastewater collection tank and an irrigation pump near the demonstration plot will be installed to provide up to five tons of household wastewater to irrigate the wind- and sand-breaks. In addition, the self-financing mechanisms for the above two systems will be installed or at least explored through intercropping vegetable and fruit cultivation in the wind- and sand-breaks.

2) Subregional experience sharing, best practice learning and capacity development: Although the demonstration site is chosen to be a bordering area of Erinhot and Zamjin-Uud, the knowledge, experience and best practice generated from the demonstration would have wider influence and implications for the subregion through knowledge dissemination and spill-over effects. A subregional expert group meeting will be organized to share experience, knowledge and best practices as well as explore possibility of expanding and duplicating the project in other parts of the subregion.

Results Framework

Project Goal

Enhanced prevention and control of dust and sandstorm in the North-East Asia through transboundary cooperation

Outcome

Participating countries develop measures to prevent and control dust and sandstorm, including through transboundary cooperation

Outputs and activities

Output A: An innovative and financially sustainable model for prevention and control of DSS is available for replication in other DSS-source areas in Mongolia and North-East Asian countries.

Activity A-1: Installation and maintenance of a wastewater irrigation system and natural wind- and sand-breaks along the railway in Zamyn-Uud including:

- Appraisal for determining a precise demonstration location, species to be planted and structure of a wastewater irrigation system
- Installation and maintenance of a wastewater irrigation system and natural wind- and sand-breaks
- Monitoring and evaluation

Activity A-2: Self-financing and income-generation including:

- Assessment of socioeconomic situations shaping the situation of forest and soil degradation
- Assessment and application of potential agricultural and horticultural practices for sustainable livelihood of local communities and sustainable land management
- Design of a clear self-financing and fund allocation mechanisms to maintain and expand the irrigation system and wind- and sand-breaks

Output B: Policymakers and other target stakeholders are knowledgeable about innovative, financially sustainable and replicable approaches for prevention and control of DSS in North-East Asia.

Activity B-1: Design and implementation of the overall capacity development and awareness-raising strategy

Activity B-2: Up-scaling of the intervention results through a NEASPEC expert meeting (in tandem with mid-term and final reviews) to review, expand and replicate the activities and results

Activity B-3: Develop and distribute an interactive CD-ROM version on DSS, which will be a useful knowledge management tool for provision of additional instructive references, examples of best practices, and project background materials.

Budget Plan

Budget Line	Description	Year 1	Year 2	Total
1100	Professional Project Staff / Consultants	10,000	10,000	20,000
1500	Travel	5,000	5,000	10,000
2000	Subcontracts / Grants	80,000	40,000	120,000
3000	Group Training / Workshops	20,000	20,000	40,000
5000	Reporting / Miscellaneous	2,500	2,500	5,000
	Subtotal	117,500	77,500	195,000
	Programme Support Cost (13%)	15,275	10,075	25,350
	Project Total	132,775	87,575	220,350