

News Letter

Malé Declaration on Control and Prevention of Air Pollution and Its Likely Transboundary Effects for South Asia

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H.E. Namo Narain Meena, Hon. Minister of State for Environment and Forests, India with the participants of the Network Meeting 2005

The network meeting 2005 on the “*Malé Declaration on Control and Prevention of Air Pollution and Its Likely Transboundary Effects for South Asia*” was held in Delhi during 11-15, October 2005. The meeting follows a continuation of the process, which began in Bangkok in March 1998, where a policy dialogue concerning regional air pollution in South Asia was initiated. The 1st network meeting after the adoption of Malé Declaration was held in Kathmandu in February 1999; the 7th network meeting and its subsidiary forums (stakeholders meeting and coordination meeting) were held in Delhi, India during 13 - 15, October 2005.

The meeting was inaugurated by the Chief Guest Shri Namo Narain Meena, Honorable Minister of State for Environment and Forest, India. The Honorable Minister, in his inaugural address, stressed the importance

of generation of air quality data including continuous measurements and real-time dissemination to stakeholders. He said that through the Malé Declaration Programme, the participating countries have initiated the process of appreciating issues arising from transboundary air pollution.

The meeting reviewed the progress of Phase II implementation and approved the work plan for the Phase III. Data report for the year 2005 was presented to the network meeting, as a part of the progress. The meeting appreciated this first data report and requested monitoring agencies to focus on the quality assurance and quality control programme during the next phase. The next phase, Phase III, will focus on strengthening the monitoring capacities based on common methodologies and protocols established during Phase II at the national level, and impact assessment

studies. Phase III activities will promote a situation where the monitoring network is capable of monitoring rainwater as well as air quality (TSP, PM₁₀, NO₂, SO₂ and O₃), across the monitoring stations in each of the eight participating countries.

National capacities for studying the impacts of transboundary air pollution will be enhanced through case studies and training programmes. Specific activities include the monitoring programme initiated during Phase II, establishment and maintenance of a regional database on air pollution deposition for the Malé Declaration, promotion of research and data analysis at NIAs and staff exchange programs, study of the impacts of air pollution on health, corrosion of materials and on agriculture, and the development of a regional emission inventory, and integrated assessment model.

Increasing Stakeholder Participation under the Malé Declaration

National Stakeholders Forum, Second Regional Stakeholder Meeting, and the First Regional Coordination Meeting

The Malé Declaration is an agreement to achieve inter governmental cooperation to address the increasing threat of transboundary air pollution and consequential impacts due to pollutant gases and acid deposition on human health, ecosystem function and corrosion of materials. In addition to intergovernmental cooperation, declaration is also a call for cooperation among the key stakeholders intackling the transboundary air pollution.

In view of this a stakeholders forum for the Malé Declaration was established during the first regional stakeholders meeting in October 2003. The second regional stakeholders meeting was organized on 14th October 2005 in Delhi. The stakeholders forum created a platform for generating enthusiasm and knowledge about air pollution issues associated to a variety of interests, policy makers and civil society and other groups of concern in South Asia.

The regional stakeholders meeting was followed by a regional coordination meeting on 15 October 2005. The sixth network meeting of the Malé Declaration held in October



The Second Regional Stakeholder meeting & the First Regional Coordination meeting, NRC - Delhi, India

2004 in Tehran, Iran had requested for a regional coordination meeting. The main objectives were to review the air pollution related initiatives in South Asia by the intergovernmental meeting of the Malé Declaration and to enhance coordination and information sharing among the ongoing initiatives on air pollution in the region as well as from other regions.

Participants in the regional coordination meeting included National Focal Points, National Implementing Agencies of Malé Declaration; representatives from NGOs, Universities of participating countries of Malé Declaration, representatives of ongoing initiatives on air pollution, such as Acid Deposition Monitoring Network in East Asia (EANET),

International Union of Air Pollution Prevention and Environmental Protection Associations (IUAPPA) and the Convention on Long-Range Transboundary Air Pollution in Europe (CLRTAP).

The meeting requested the continuation of the process initiated by this first coordination meeting under the Malé Declaration. The meeting also requested the Malé Declaration to expand the coordination meetings to national level. In this regard, the national advisory committee meeting of Malé Declaration was identified as a potential forum for national level coordination of air pollution initiatives.

National Stakeholders Forum: Pakistan



A National Stakeholders Forum of the Malé Declaration was held in Islamabad, Pakistan in December 2004. Nearly 30 participants representing Pakistan Environmental Protection Agency (Pak-EPA), UNDP, WWF, JICA Expert, IUCN, SUPARCO, NGOs, medical institutions and Universities attended the forum. During the inauguration speech, Mr. Javed Hasan Aly, Secretary, Ministry of Environment, Pakistan stressed the government's commitment to address air pollution issues including the transboundary air pollution. Mr. Asif S. Khan, Director General of Pak-EPA, and Mr. Surendra Shrestha, Regional Director, UNEP also addressed the forum.

The stakeholders forum reviewed the implementation of Malé Declaration in Pakistan, and discussed the air pollution related activities in Pakistan

Sustainable Housing is Practical

Introduction

Modern habitats and construction practices have been shaped by the limitations imposed by rapid urbanization, population growth and economic growth. The long lives of the structures being built extend their impacts over several generations. Any policy to mitigate the impacts of the construction sector will reap widespread and long-lasting benefits.

Current urban settlements create and intensify many ecological and social impacts. Resource depletion and the generation of pollutants and waste is a major concern. Globally, around 40 % of raw materials and energy and 16 % of the annually available fresh water, is consumed by the construction sector. The sector is a major contributor to Climate Change, accounting for around 35 % of global CO₂ emissions.

They also add to the exclusion and marginalization of the poor, resulting in glaring disparities. Pressures on urban services such as piped water, sanitation, drainage, transport, health care and education, affect the poor disproportionately since they do not have the resources or capacity to adapt. In addition, global and local concerns like Climate Change, pollution, waste generation and resource depletion, takes a greater toll of the poor and marginalized. Many architectural traditions are also getting extinct due to over-emphasis of techno-commercial aspects.

These concerns led the UN to convene the United Nations Conference on Human Settlements (Habitat II) in Istanbul, in 1996. 171 Governments agreed to adopt the Habitat Agenda and the Istanbul Declaration, thereby agreeing to integrate sustainable development in the housing sector, along with ensuring the supply of housing for all. The concept of eco-housing pro-



Expert group meeting on eco housing; September 2004

vides these Governments with a useful tool to achieve these goals at the local level.

Concept of Eco-housing

Eco-housing is an evolving concept that applies the concepts of sustainability into the entire lifecycle of a housing project: from design, through construction, maintenance to the end of life activities. It also tries to merge traditional and modern day architectural practices. Many of its concepts have been used by humans for centuries to ensure comfortable conditions in their habitats.

To achieve its objectives, eco-housing integrates several environmentally friendly and sustainable approaches: site assessment, material selection, energy performance, water management, waste management, and indoor environment quality are some of these.

Site Assessment

Appropriate site selection, site planning and settlement layout maximizes the bio-climatic and socio-cultural features of the site.

Material Selection

Traditionally building materials have been selected based on cost,

durability, performance and aesthetics. In addition to these features, eco-friendly building products have enhanced environmental and health characteristics.

Energy management

Energy management of buildings and the use of renewable sources of energy help conserve the energy resources and minimize pollution. Energy management involves two steps: a) energy load reduction, followed by b) the use of energy efficient equipment and practices. Load reduction can be achieved by proper siting, building form, fenestration design, and the appropriate use of thermal mass. Proper siting and orientation of the building is necessary to take maximum benefit of the sun, wind and daylight. Building form and orientation has a great impact on cooling and heating loads. In general, a lower surface to volume ratio reduces the heat gain/loss. Fenestrations have to be designed to optimise air movement, daylight, heat gain and glare. Adequate thermal mass of the building helps to store heat during daytime and release it during the night, especially at the places with considerable variation in day and night temperatures. With load reduction, a 10 fold reduction in

energy demand, compared to that of an equivalent construction, is not unusual. Renewable energy applications, like those based on solar energy (photovoltaic and solar thermal), wind energy, energy from biomass and waste help to reduce reliance on fossil fuel based energy.

Water management

Sophisticated plumbing systems with optimized water flow and pressure, and specialized water and wastewater treatment technologies are easily available. With these technologies, recycling of wastewater is also possible. Water harvesting, which involves collecting rainwater and either storing it in tanks or using it to recharge groundwater, is one of the traditional water management techniques that is being propagated at present.

Waste management

Waste management techniques such as reusing and recycling helps in controlling waste generation. The unavoidable waste needs to be utilized properly through technologies such as biogas digesters. To successfully operate a large-scale solid waste man-

agement programme, an important step is to segregate the organic waste from the inorganic waste at the household level itself, and to ensure timely collection and disposal of the waste.

Indoor Environment Quality

People spend 80-90% of their time indoors. Hence, the quality of the indoor environment is important. Indoor air quality, thermal comfort, visual comfort, and acoustical quality are the factors that affect indoor environment quality. Thermal comfort is achieved by maintaining appropriate air temperature, air speed, and humidity. With the assistance of the bio-climatic features of the site, comfort conditions can be achieved with minimal usage of mechanical air conditioning systems. Indoor air quality is affected by ventilation rates, temperature, humidity, type of building materials, use of unflued devices, and by outdoor air pollution that finds its way indoors. Biological contaminants such as moulds, fungi, mites, water-borne microbes, animal dander etc., also affect indoor air quality. Visual comfort can be achieved by utilizing daylight to the

fullest extent possible, and by using a properly designed lighting system that takes into account lighting quality factors such as luminance levels, and glare. Acoustical quality is obtained through appropriate noise attenuation through the building envelope, and by control of noise from equipments in use.

Conclusion

Widespread application of eco-housing could help us to decrease the resource and energy intensity of our economies. Governments would benefit from savings in oil imports and in reduced capacity additions to civic infrastructure. Users stand to gain through reductions in operational costs and ecological and socio-cultural impacts. Eco-housing could assist the poor and marginalized to realise a better quality of life. Global concerns like Climate Change and pollution are effectively addressed through this strategy. No doubt, the sustainability of planet earth is being challenged by the type of human settlements we have and in eco-housing we have a much needed panacea.



Inauguration ceremony of the “Damniyangama” Eco-village was held in Lagoswatte, Sri Lanka on 28 March. The eco-village, which was constructed by Sarvodaya, a local largest people’s movement in Sri Lanka, and inaugurated by Mahinda Rajapaksa, President of Sri Lanka, is one of six such demonstrations sites currently being supported by UNEP. The “Damniyangama” eco-village provides a model for village developments not only in Sri Lanka but also in the region.

Eco-housing guidelines for tropical regions of Asia is available at www.rrcap.unep.org/ecohouse

Capacity Building Programmes

Training Programme in Pakistan

A one-week hands-on training programme on monitoring transboundary air pollution was organized together with the Pakistan Environmental Protection Agency (Pak-EPA) in Islamabad, Pakistan during 6-10 December 2005. The technical training included basic theory on air pollution and related issues, followed by lectures and hands-on exercises on sampling and analysis of transboundary air pollutants using the equipments provided under the Malé Declaration. Four technical personnel from the Department of meteorology and eight technical personals from Pak-EPA were trained on sampling and analysis of air pollutants.



The trainees will participate in the operation of the Malé Declaration transboundary air pollution monitoring stations in Pakistan. All the trainees were awarded a certificate by Mr. Asif S. Khan, Director General of Pak-EPA during closing section of the training programme.

Regional Refresher Training

Regular refresher training programmes are being organised under the Malé Declaration. The aims of the refresher trainings are to strengthen the capabilities of the monitoring network with the use of common methodologies and standards at the national level and to exchange the experiences on developing national monitoring stations.



The Fourth regional refresher training was held at United Nations Environment Programme Regional Resource Center for Asia and Pacific (UNEP RRCAP), Pathuthani, Thailand during 13 - 16 March 2006. Apart from the

discussions on the issues encountered in operating the monitoring sites in each country, Quality Control and Quality Assurance (QA/QC) programme was introduced during this training.

The training program was attended by laboratory technicians and project managers who are in charge of Malé Declaration monitoring station in participating countries as well as the members of Monitoring Committee (MoC), and representatives from SEI, IVL, UNEP RRC.AP and AIT. Surendra Shrestha, Regional Director, UNEP Regional Office for Asia and the Pacific, distributed certificates to the participants at the closing session. Mr. Surendra, in his closing remarks, appreciated the efforts of National Implementing Agencies in establishing the monitoring stations under the Malé Declaration.

Installation of AAS in Bangladesh

In Bangladesh, the transboundary air pollution monitoring is being conducted by the Department of Environment (DoE) in Khulna district. As a part of the



capacity building programme an Atomic Absorption Spectrometer (AAS) was installed in the DoE's Khulna divisional laboratory. Nine technical personals from DoE were trained on operation of the AAS during 26 - 27 February 2006. Khulna divisional laboratory is now capable of analyzing major cations and anions found in the transboundary air pollutants.

Upcoming Events

- **Training workshop:** A training workshop on emission inventory compilation and Intergrated Assessment Model is scheduled to be held in July 2006.
- **Intergovernmental Meeting:** The Eighth Session of the Intergovernmental Meeting of the Malé Declaration is scheduled to be held in Thumpu, Bhutan during 6-7 September 2006. The Intergovernmental Meeting will be followed by Regional Stakeholders cum Regional Coordination Meeting.
- **Training on Impact Assessment:** Training programmes on rapid urban assessment, corrosion impact assessment, crop impact assessment and health impact assessment are scheduled to be held in August and October 2006.

National Focal Points (NFP) and National Implementing Agencies (NIA)

Bangladesh

NFP: Ministry of Environment & Forest

NIA: Department of Environment
Dhaka

Bhutan

NFP & NIA: National Environment Commission
Thimpu

India

NFP: Ministry of Environment and Forests

NIA: Central Pollution Control Board
New Delhi

Iran

NFP & NIA: Department of Environment
Tehran

Maldives

NFP & NIA: Ministry of Environment, Energy and Water, Malé

Nepal

NFP: Ministry of Environment Science and Technology

NIA :International Centre for Integrated Mountain Development (ICIMOD)
Kathmandu

Pakistan

NFP: Ministry of Environment, Local Govt. & Rural Development

NIA: Pakistan Environment Protection Agency, Islamabad

Sri Lanka

NFP: Ministry of Environment & Natural Resources

NIA: Central Environment Authority, Colombo

Coordinating Agencies

UNEP Regional Resource Center for Asia and the Pacific (UNEP RRC.AP)
Bangkok, Thailand



South Asia Co-operative Environment Programme (SACEP)
Colombo, Sri Lanka



Stockholm Environment Institute (SEI)
Stockholm, Sweden



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Malé Declaration Newsletter

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