

News Letter

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

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Network Meeting 2004



The 6th Network Meeting of Malé Declaration, held in Tehran from 11-12 October 2004, reviewed the progress of implementation and developed plans for the implementation of the Declaration for the next 3 years. The annual event was attended by National Focal Points (NFPs) and National Implementing Agencies (NIAs) of all the participating countries and representatives from South Asia Cooperative Environment Programme (SACEP), UNEP Regional Resource Center for Asia and the Pacific (RRC.AP) and Stockholm Environment Institute (SEI). Member of the Malé Declaration Monitoring Committee also attended the meeting.

Opening the network meeting, H.E. Dr. Hojjat, Deputy Head, Department of Environment, Iran, identified reduction of air pollution as a major factor in attaining sustainable development and indicated that the Malé Declaration as a successful example for regional cooperation towards sustainable development.

Mr. Surendra Shrestha, UNEP Regional Director for Asia and the Pacific, in his opening remark called for a focus on preventive actions during the next phase of Malé Declaration. In this regard he proposed promotion of preventive measures such as hybrid cars and eco housing concepts in addition to the ongoing

In this issue

Network meeting 2004

Air pollution requires a focus on prevention

Three more stations started monitoring Activities

Towards mitigation

Upcoming events

capacity building programme on monitoring and impact assessment.

Review of Phase II

During the Phase II implementation, all the countries indicated their commitment to the long term objectives of the Malé Declaration, by their initiatives in setting up the monitoring stations. Significant contributions to the long term goals were made during this phase, by developing the institutional structure and local capacities in monitoring transboundary air pollution. Phase II has also helped in the development of a common methodology, training of technical staff, strengthening of monitoring stations and the establishment of scientific and stakeholder networks.

Plan for Phase III

The meeting developed and adopted the plan for the next 3 years of

Air Pollution Requires a Focus on Prevention

20th Anniversary of UNEP Sasakawa Environment Prize was celebrated in Beijing, China during 28–30 September 2004. UNEP Regional Director, Mr. Surendra Shrestha presented a thematic paper on air pollution at this ceremony. His presentation is presented here for the Malé Declaration Newsletter.

I. BACKGROUND

The United Nations Conference on Environment and Development (UNCED), the Rio Summit, held in June 1992 articulated the Agenda 21, a blueprint for action for sustainable development. The World Summit on Sustainable Development (WSSD), held in September 2002 focused on the implementation of this blue print through partnerships to achieve tangible results for sustainable development. The Summit, participated by 104 Heads of State and Government, also set sustainable development as the target for national governments. Society, economy and environment are considered the three pillars of sustainable development.

Social Development: World population has more than doubled over the last half century, from 2.5 billion in 1950 to 6.5 in 2004. It is projected that the population will stabilize at 9 billion in the next 50 years. During the past half century, life expectancy has increased throughout the world with advances in public health, vaccines, antibiotics, and food production. There is, however, disparity in these advances and poverty remains as the major challenge for the 21st Century. 2.5 billion to 3 billion people now live on less than \$2 a day. Approximately 1 billion people in Asia live in extreme poverty on less than US\$1 a day, which is around 2/3 of the world's poor. The poor are the most vulnerable to environmental changes. For example, between 2 and 3 times as many disaster events were reported in the United States in 1999 as in India or Bangladesh but there were 14 times and 34 times more deaths in India and

in Bangladesh, respectively, than in the United States.

Economic Development: The global economic output has grown from just under \$7 trillion (in 2001 dollars) of goods and services in 1950 to \$46 trillion in 2000, a gain of nearly sevenfold. Average income per person worldwide nearly tripled during the period from 1950 to 2000, and the same time the population doubled. The global economy is expected to grow at 3.1 percent during the next 15 years. Asia will be the engine of growth with an average growth rate of 6 percent during the next 15 years.

Environment: World primary energy consumption increased by 2.9 percent in 2003. The demand for primary energy is expected to double every 28 years; in Asia, demand doubles every 12 years. The demand for energy has increased the pressure on the environment; land, air, water and biodiversity.

II. CURRENT SITUATION

The steep development trajectory followed since the industrial revolution has resulted in the release of air pollutants into the atmosphere at a rate beyond nature's capacity to absorb. For example, atmospheric CO₂ levels rose from an estimated 280 ppm at the beginning of the industrial era in 1760 to 373 ppm in 2002. The concentration of CO₂ has increased by 1.3 ppm per year since 1960. Approximately 28.2 billion tons of CO₂ are being released into the atmosphere annually. Based on the average absorption rate of a U.S. commercial forest, around 9.6 billion hectares of forest is required for sequestering the CO₂ annually released. This is 2.5 times the current

forest area which is around 3.8 billion hectares. It is estimated that annual SO₂ emission, another major air pollutant, in Asia alone will reach 80 million tons by 2010 or 110 million tons by 2020. UNEP's Global Environment Outlook report shows that of the 15 cities in the world with the highest levels of particulate matter, 12 are located in Asia. Six of these cities also have the highest levels of SO₂.

The late 1990s and early 21st century has been marked by increasingly "extreme" weather and climate-related events. Millions of lives around the world are adversely affected by climate-related environmental crises each year. Natural disasters cost the world over \$60 billion in 2003 up from around \$55 billion the year before. Poor air quality in urban areas is related to approximately 0.5 million deaths each year in Asia and contributes to the plight of millions who suffer from asthma, chronic lung and cardiovascular diseases, and lung cancer. India is spending over \$100 billion every year on treatment of diseases caused by air pollution. Cost of air pollution in China is estimated at 7 percent of GDP. These costs are estimated to rise to 13 percent of GDP by 2020. According to the Asian Development Bank (ADB) air pollution is costing Indonesia US\$400 million a year and this could increase tenfold by 2010 in the absence of pollution controls.

Temperature rise by global warming has accelerated the natural process of glacier melting to a great extent. For example, with the temperature rising by 10° C, the Alpine glaciers have shrunk by 40 per cent in area and by more than 50 per cent in volume since 1850. In Africa, mapping of Mount

Kilimanjaro between 1912 to 2000 shows that its snow cover has shrunk by 82 per cent. It is predicted that by 2015 it will have no snow cover. A recent study by the UNEP (United Nations Environment Programme) and ICIMOD (International Center for Integrated Mountain Development) shows that the Himalayan glaciers are retreating up to 30 meter per annum. Himalayan glaciers are extremely sensitive to global warming.

Scientific discoveries within the last decade has revealed that long-range transport of gases and particles in air has lead to widely distributed haze layers. Initial impact studies shows that the haze layers will have significant impacts on human health, on crop yield and the water budget, through changes to the seasonal monsoon pattern.

Urbanization is another mega issue coupled with air pollution. In 2000, 47 percent of the world population lived in urban areas and the number is expected to increase to about 60 percent by 2030. The urban transition, coupled with economic growth, will further stimulate the knowledge based economy. The urban sector will receive massive investments over the next 50 years, especially on motorization and infrastructure, which will determine resource and energy consumption patterns for decades.

III. FUTURE CHALLENGES

Legal measures: Since air pollution issues are transboundary in nature, legal frameworks through intergovernmental cooperation could provide effective means of addressing air pollution issues. In Europe, the UNECE Convention on Long-Range Transport of Air Pollution was established to address transboundary air pollution, particularly the threats from 'acid rain. The convention is recognised as one of the earliest and most effective examples of international collaboration on environmen-

tal problems. The most recent example is the 2002 Agreement on Transboundary Haze Pollution of the Association of Southeast Asian Nations (ASEAN), which entered into force in November 2003. The agreement, signed by the 10 member countries of ASEAN, is the first such regional agreement in Asia that binds a group of contiguous states to tackle transboundary haze pollution resulting from land and forest fires. The agreement also has the provision to include other air pollutants in the future. At the national level, legal measures have been successful in phasing out use of leaded petrol in many countries, the use of polluting two-stroke three-wheelers (eg Thailand and Nepal) and shifting public transport to natural gas (New Delhi).

Technical measures: A strong focus on prevention is advocated in addressing the mega-issue of air pollution. Intergovernmental initiatives should also be supported by provision of technical measures that national governments could incorporate within their development process. Wind energy generation capacity has increased six fold from 4800 megawatts in 1995 to 31100 megawatts by the end of 2002. The advancements in fuel cell technology is setting the stage for the evolution of the hydrogen based economy. The fuel cell is more efficient than an internal combustion engine and it is clean, emitting only water vapour. In 2002, Iceland decided to move from fossil fuels to hydrogen by converting its public transport to the hydrogen fuel. Hybrid cars are commercially available. Toyota alone expects to sell 130,000 Prius hybrids in 2004 which gives double the mileage of a comparable gasoline car and reduces emissions of CO₂ by 50% and CO, HC and NO_x by 90% below Japanese standards. China and India have announced large investments in hydrogen and fuel cell vehicles.

Fiscal measures: one of the major

challenges in tackling air pollution issues is the incorporation of cleaner technologies into the development process at an early stage. It could be achieved by making cleaner technologies financially affordable using fiscal measures. The Thai Government, for example, restructured the vehicle tax system in August 2004 to promote energy saving. According to the new system, a 10 percent duty will be reserved for hybrid, electric-powered, and fuel cell vehicles, well under the 30 percent or higher rates generally levied on passenger sedans.

IV. CONCLUSIONS

World's gross domestic product (GDP) will increase fourfold in the next 50 years. The Asian economy is projected to grow two times the world average. Rising income levels, middle class and urbanization coupled with globalization will have a growing impact on the level of motorization and infrastructure developments in Asia. This will have significant impacts on energy use and pollution load into the atmosphere. Unless action (example: a major shift towards renewable) is taken now, the planet will face unpredictable challenges that will increase in intensity over the coming decades.

The linkages and interactions between atmospheric and other environmental issues are complicated. Under the framework of existing regional initiatives, scientific capacities need to be developed to provide a quantitative base on which to base policy decisions in an integrated manner, at a regular basis, at the regional level. Legal, financial and technical interventions can be made from the solid scientific base.

Prevention aspects need to be advocated and incorporated as part of economic and social activities with a focus on the ecosystem and changes in the life style. This should lead to a major shift from a high-consumption

Three more stations started monitoring Activities



Bangladesh

The Department of Environment in Bangladesh started the operation of Malé Declaration monitoring site in July 2004. The site is located in the southwestern tip of Bangladesh in Shatkhira District of Khulna Division.

Bulk collectors for monitoring rainwater chemistry and passive samplers for monitoring sulphur dioxide and nitrogen oxides are installed at this site.

Latitude and longitude:

N22° 18'; E89° 02'

Site type: Rural site, located about 30 km north of the Sundarbans forest.



India

The Central Pollution Control Board (CPCB), the National Implementing Agency in India started the operation of Malé Declaration monitoring site in India. The site is situated in Canning town of South 24-Pgs district, West Bengal State bordering Bangladesh. This site is located in the campus of Central Soil Salinity Research Institute where a National Meteorological observatory unit is also situated.

Latitude and longitude:

Approx. N22° 15'; E 88° 40'

Site type: Rural site, close to the Sundarbans



Iran

Department of Environment in Iran started the operation of Malé Declaration monitoring site in May 2004. The site is located in Chamsari in the Ilam Province.

Bulk collectors and wet only collectors for monitoring rainwater chemistry and High Volume Samplers for monitoring sulphur dioxide, nitrogen oxides, and particulate matter are installed at this site.

Latitude and longitude:

N 32° 24'; E 47° 31'

Site type: Rural site, 40 km south of the town Dehlaran and about 200 km south of Ilam, the headquarter of the province.

Towards mitigation

Indian NE Railway for Jatropha Plants

India's North-Eastern Railway will grow 450,000 Jatropha Curcas plants this year along railway tracks and other land under its control for bio-diesel. The NE Railway General Manager said that bio-diesel extracted from the plant had been successfully tested in rail engines.

Source: Business Line, New Delhi, 14 August, 2004

Upcoming events

National Stakeholders Consultation

The Malé Declaration is an intergovernmental agreement to tackle the issue of transboundary air pollution in South Asia. In addition to the intergovernmental cooperation, the Declaration also calls for the participation of stakeholders in tackling transboundary air pollution. Regular stakeholders forums now review the implementation of the Declaration at both national and regional level. A national stakeholders forum in Pakistan is scheduled to be held in Islamabad on 14 December 2004.

➤➤ page 1

implementation (Phase III). The general objective of Phase III is to continue to promote the establishment of a scientific base for prevention and control of transboundary air pollution in South Asia and to encourage and facilitate coordinated interventions of all the stakeholders on transboundary air pollution at national and regional level. The focus of Phase III includes: (i) strengthening regional cooperation and Stakeholders participation under the Malé Declaration; (ii) strengthening capacity building programmes initiated during phase II; (iii) enhancing the analytical and impact assessment capabilities at the national level through integration of findings from local pollution prevention studies and by conducting impact assessment studies; (iv) providing decision support information for prevention; and (v) raising awareness for action through targeted dissemination.

Independent view

Mr. Rajamani, an independent facilitator, said that he was impressed with the progress so far and expressed hopes that the data will start to flow from next year. He requested for the continuation of the capacity building program initiated during the Phase II implementation.

➤➤ page 4

society to a sustainable society. Awareness for action among political leadership is key to integration of social, economic and environmental goals. A **Circular economy** is being promoted in China, especially in Guiyang City which is a participating city under the China Council for International Cooperation on Environmental Development (CCICED). Guiyang had very severe acid rain in the past and ranked as the most polluted city in the world. After 10 years of efforts, the situation has substantially improved. Japan promotes the concept of 3Rs (Reduce, Reuse and Recycle). The Group of Eight (G8) industrialized countries will launch the 3Rs Initiative to encourage more efficient use of resources and materials. The initiative will be formally launched in 2005 at a ministerial meeting in Japan. These are good examples of sustainable development paths. UNEP has taken a lead role in developing a global ten-year framework of programmes on sustainable consumption and production - one of the key outcomes of the WSSD (World Summit on Sustainable Development). •

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 Home Affairs, Housing & Environment
Malé

Nepal

NFP: Ministry of Population & Environment

NIA: International Center for Integrated Mountain Development
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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