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**Work Plan – Thematic Working Group (TWG) on  
Air Quality**

By: Thematic Working Group members on  
Air Quality

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## **Work Plan – Thematic Working Group (TWG) on AIR QUALITY**

### **1. BACKGROUND**

Deteriorating air quality continues to be a serious concern in the region. Increase in emissions is attributable to the combined impacts of population growth, urbanization, motorization and increased energy use. As a consequence, the health of a large part of the urban population in the region continues to be at risk. The World Health Organization (WHO) estimates that about 500,000 persons die prematurely in Asia because of exposure to urban outdoor air pollution each year.

Air quality programs in the region have been focused on the management of a limited number of pollutants such as Carbon monoxide, total suspended particles and Sulfur dioxide. In the future, more attention needs to be given to the control of fine particulate matter, which in many of the Asian cities is the main pollutant of concern, as well as air toxics and heavy metals. The rapid growth in motorization has already resulted in an increase of Nitrogen oxides and ozone. Urban air pollution is one of the common issues in the region.

Health impacts of indoor air pollution is growing concern in the developing countries. Indoor air pollution from household energy is ranking as the fourth leading health risk in poor developing countries. The widespread use of traditional biomass results in the premature deaths of an estimated 1.5 million people each year from breathing elevated levels of indoor smoke, with women and children being most significantly affected. Public concerns related to indoor air quality have increased social issues in Asian countries. Exposure to indoor air pollutants can bring about respiratory diseases such as rhinitis, asthma, and pneumonia and hypersensitive diseases like atopic dermatitis, especially to individuals who are physiologically sensitive to air pollutants.

In addition to the issues of urban and indoor air pollution, increasing evidence is becoming available on the linkage between local, national, regional and global levels of air pollution. Emissions from so-called regional air pollutants such as sulfur oxides, nitrogen oxides, ammonia, tropospheric ozone, heavy metals, aerosols, black carbon, and persistent organic pollutants give rise both to local impacts and also regional effects resulting from long-range transport. It is important to fully optimize the potential linkages between health efforts to reduce local and regional urban air quality problems as well as transboundary air pollution.

During the First Regional Meeting of the Thematic Working Group (TWG) on Air Quality on May 7, 2007, Seoul, Republic of Korea; the TWG concluded the decision to divide the regional work plan into 3 sub-groups; which are urban air pollution, indoor air pollution, and transboundary air pollution based on the important air quality issues as described.

### **2. OBJECTIVES**

The Regional Work Plan aids the formulation and implementation of air quality management (AQM) policies which are health driven through the following objectives.

2.1 Reducing health burden imposed by deteriorating air quality linked with population growth, urbanization, motorization and increased energy use by reducing emissions of air pollutants from sources at the indoor, local, national and regional level.

2.2 Strengthening the cooperation by providing a mechanism for sharing knowledge and experiences, improving policy and regulatory frameworks at the national and regional level, and promoting the implementation of integrated environmental health strategies and regulations.

2.3 Capacity building of researchers and scientists by promoting cooperative research and development in the region focusing on air quality and health effects.

### 3. ACTIVITIES

To achieve the overall objectives, the following set of activities and timelines of three-years are proposed based on the major issues and the necessity of this region. The proposed activities include knowledge management and technical support, progress reporting to the Regional Forum, and coordination and advocacy.

#### 3.1 WORK PLAN ACTIVITIES FOR SUB-GROUP ON URBAN AIR POLLUTION

##### 3.1.1 Reducing health burden imposed by deteriorating air quality

Categories	Activities	Timelines		
		2007	2008	2009
<b>Knowledge management and technical support</b>	1. Document existing AQM standards and compliance levels	→	→	
	2. Dissemination of updated WHO guidelines		→	
	3. Scenario development on revision of standards for different AQ contexts		→	→
	4. Develop and harmonize Air Quality Index Map		→	→
	5. Develop methodologies to enhance poverty integration in AQM planning and implementation		→	→
	6. Introduce knowledge management (KM) system to AQM		→	→
<b>Progress reporting to the Regional Forum</b>	1. Prepare and submit progress report to the High level meeting and Regional Ministerial forum		→	→
<b>Coordination and advocacy</b>	1. Working group meeting will be jointly organized by 3 sub-working groups	→	→	→
	2. Presentations in regional and national level workshops		→	→

##### 3.1.2 Strengthening the cooperation

Categories	Activities	Timelines		
		2007	2008	2009
<b>Knowledge management and technical support</b>	1. Sharing information related to health impact and air quality e.g. Fuel Quality & Additive	→	→	
	2. Document, analyze and exchange information on existing monitoring of air toxics and heavy metals		→	→
	3. Formulate recommendations on standards and monitoring protocols for air toxics and heavy metals		→	→
	4. Establishing regional network			

	on AQM			
<b>Progress reporting to the Regional Forum</b>	1. Prepare and submit progress report to the High level meeting and Regional Ministerial forum		→	→
<b>Coordination and advocacy</b>	1. Working group meeting will be jointly organized by 3 sub-working groups	→	→	→
	2. Presentations in regional and national level workshops		→	→

### 3.1.3. Capacity building

Categories	Activities	Timelines		
		2007	2008	2009
<b>Knowledge management and technical support</b>	1. Strengthening capacity of researchers on air pollution and health impact	→	→	→
	2. Promoting Local Training Center		→	→
	3. Increasing collaboration Regional Training activities		→	→
<b>Progress reporting to the Regional Forum</b>	1. Prepare and submit progress report to the High level meeting and Regional Ministerial forum		→	→
<b>Coordination and advocacy</b>	1. Working group meeting will be jointly organized by 3 sub-working groups	→	→	→
	2. Presentations in regional and national level workshops	→	→	→

### 3.1.4. OUT PUTS

#### 3.1.4.1. Reducing health burden imposed by deteriorating air quality

- 1) Overview of AQ standards at beginning and end of activities
- 2) Recommendations on standards and monitoring protocols for air toxics and heavy metals
- 3) Policy guidance on integration of poverty in design and implementation of air quality management policies

#### 3.1.4.2. Strengthening the cooperation

- 1) Overview and analysis of health impact studies on ambient air toxics and heavy metals
- 2) Overview of ambient air toxics and heavy metals monitoring in Asia
- 3) Documented methodology how to study linkage of poverty-health-air quality

#### 3.1.4.3. Capacity building

- 1) Researchers on air pollution and health impact having capability to carry out their own studies.
- 2) Training of researchers and scientists in health impact studies

### 3.1.5. RESOURCES

Objectives	Required resources
<b>Reducing health burden imposed by deteriorating air quality</b>	Operational funds for travel and workshops
<b>Strengthening the</b>	Funds for analysis of monitoring

<b>cooperation</b>	data and health impact studies as well as standard setting
<b>Capacity building</b>	Operational funds for travel and training

### 3.2 WORK PLAN ACTIVITIES FOR SUB-GROUP INDOOR AIR POLLUTION

#### 3.2.1 Reducing health burden imposed by deteriorating air quality

Categories	Activities	Timelines		
		2007	2008	2009
<b>Knowledge management and technical support</b>	1. Document existing Indoor Air Quality (IAQ) standards and compliance levels	→	→	
	2. Dissemination of revised WHO guidelines		→	
	3. Evaluation of building materials and Heating Ventilation and Air Conditioning (HVAC) system operation		→	→
	4. Health impacts related to indoor air pollution		→	→
<b>Progress reporting to the Regional Forum</b>	1. Prepare and submit progress report to the High level meeting and Regional Ministerial forum		→	→
<b>Coordination and advocacy</b>	1. Working group meeting will be jointly organized by 3 sub-working groups	→	→	→
	2. Presentations in regional and national level workshops		→	→

#### 3.2.2 Strengthening the cooperation

Categories	Activities	Timelines		
		2007	2008	2009
<b>Knowledge management and technical support for health risk and exposure assessment</b>	1. Document and analyze existing monitoring of indoor hazardous air pollutants (HAPs)	→	→	
	2. Document existing health impact studies: for example, Sickness Building Syndrome (SBS), and Second Hand Smoke (SHS)	→	→	→
	3. Formulate recommendations on standards and monitoring protocols for hazardous indoor air pollutants	→	→	→
<b>Progress reporting to the Regional Forum</b>	1. Prepare and submit progress report to the High level meeting and Regional Ministerial forum		→	→
<b>Coordination and advocacy</b>	1. Working group meeting will be jointly organized by 3 sub-working groups	→	→	→
	2. Presentations in regional and national level workshops	→	→	→

### 3.2.3. Capacity Building

Categories	Activities	Timelines		
		2007	2008	2009
<b>Knowledge management and technical support</b>	1. Provision of education program and training instructors related to IAQ	→	→	
	2. Education and training of scientists related to IAQ in this region		→	→
	3. Pool preparation of Asia-experts related to IAQ	→	→	→
<b>Progress reporting to the Regional Forum</b>	1. Prepare and submit progress report to the High level meeting and Regional Ministerial forum		→	→
<b>Coordination and advocacy</b>	1. Working group meeting will be jointly organized by 3 sub-working groups	→	→	→
	2. Communication by hot-line between IAQM board and working group members	→	→	→

### 3.2.4. OUT PUTS

#### 3.2.4.1. Reducing health burden imposed by deteriorating air quality

- 3) Overview of IAQ standards at the beginning and end of activities
- 4) Recommendations on standards and monitoring protocols for indoor hazardous air pollutants
- 5) Providing the policy guidance on integration of quality of life (QOL) in design and implementation of air quality management policies of governments in Asian countries

#### 3.2.4.2. Strengthening the cooperation

- 1) Overview of hazardous indoor air pollutants' monitoring in Asian countries
- 2) Overview and analysis of health impact studies on indoor hazardous air pollutants
- 3) Documented methodology how to study linkage of QOL–health-indoor air quality

#### 3.2.4.3. Capacity building

- 1) Training of IAQ professionals
- 2) Courses of IAQ education

### 3.2.5. RESOURCES

Objectives	Required resources
<b>Reducing health burden imposed by deteriorating air quality</b>	<ul style="list-style-type: none"> <li>• Operational funds for travel and workshops</li> </ul>
<b>Strengthening the cooperation</b>	<ul style="list-style-type: none"> <li>• Funds for replication of study and national level policy forums</li> </ul>

<b>Capacity building</b>	<ul style="list-style-type: none"> <li>• Funds for analysis of monitoring capacity and health impact studies as well as standard setting</li> <li>• Funds for education &amp; training</li> </ul>
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### 3.3 WORK PLAN ACTIVITIES FOR SUB-GROUP TRANSBOUNDARY AIR POLLUTION

#### 3.3.1 Reducing health burden imposed by deteriorating air quality

Categories	Activities	Timelines		
		2007	2008	2009
<b>Knowledge management and technical support</b>	1. Develop methodologies for conducting health impact assessment of PM and ozone in rural areas	→	→	
	2. Conduct health impact assessment of Atmospheric Brown Clouds (ABC)		→	→
	3. Conduct health impact assessment of Dust and Sandstorm (DSS)		→	→
	4. Study health impact assessment of Transboundary haze		→	→
	5. Develop a knowledge base on air pollution and human health in collaboration with other sub-working groups		→	→
<b>Progress reporting to the Regional Forum</b>	1. Prepare and submit progress report to the High level meeting and Regional Ministerial forum		→	→
<b>Coordination and advocacy</b>	1. Working group meeting will be jointly organized by 3 sub-working groups	→	→	→
	2. Presentations in regional and national level workshops	→	→	→

#### 3.3.2 Strengthening the cooperation

Categories	Activities	Timelines		
		2007	2008	2009
<b>Knowledge management and technical support for health risk and exposure assessment</b>	1. Training workshop on transboundary pollutants	→	→	→

<b>Progress reporting to the Regional Forum</b>	1. Prepare and submit progress report to the High level meeting and Regional Ministerial forum		→	→
<b>Coordination and advocacy</b>	1. Working group meeting will be jointly organized by 3 sub-working groups	→	→	→
	2. Presentations in regional and national level workshops	→	→	→

### 3.3.3 Capacity Building

Categories	Activities	Timelines		
		2007	2008	2009
<b>Knowledge management and technical support</b>	1. Conduct training programme and case studies on health impact of PM and Ozone in rural areas	→	→	→
<b>Progress reporting to the Regional Forum</b>	1. Prepare and submit progress report to the High level meeting and Regional Ministerial forum		→	→
<b>Coordination and advocacy</b>	1. Working group meeting will be jointly organized by 3 sub-working groups	→	→	→
	2. Presentations in regional and national level workshops	→	→	→

### 3.3.4. OUT PUTS

#### 3.3.4.1 Development of methodologies for conducting health impact assessment of PM and ozone in the region

- 3) Guidelines and methodologies for monitoring of PM and ozone
- 4) Guidelines and methodologies for conducting health impact assessment of transboundary air pollution
- 5) A training workshop on monitoring and conducting health impact assessment of transboundary air pollution

#### 3.3.4.2 Assessment of health impact PM and ozone

- 1) A review of all studies related to impact of regional air pollutants on health, including epidemiological surveys
- 2) Data and information on the composition and characteristics of regional air pollution affecting the Northeast and Southeast Asian region
- 3) An assessment report on impact of PM and ozone on the health of people living in northeast and southeast Asia
- 4) A workshop organized for participants from northeast and southeast Asia to disseminate the information in the assessment report and discuss future activities

#### 3.3.4.3 Assessment of impact of Atmospheric Brown Clouds, Dust and Sandstorm, and Transboundary Haze on human health

- 1) Compilation of data and information on Atmospheric Brown Clouds
- 2) Assessment reports on the impacts of Atmospheric Brown Clouds on human health
- 3) Assessment reports on the impacts of Dust and Sandstorm on human health
- 4) Assessment reports on the impacts of Transboundary haze on human health

### 3.3.5. RESOURCES

Objectives	Required resources
<b>Reducing health burden imposed by deteriorating air quality</b>	<ul style="list-style-type: none"><li>• Funds for review and compilation the necessary data and developing the guidelines and methodologies</li><li>• Operational funds for travel and training workshops</li></ul>
<b>Strengthening the cooperation</b>	<ul style="list-style-type: none"><li>• Funds for analysis of monitoring capacity and health impact studies on a regional and local scales</li></ul>
<b>Capacity building</b>	<ul style="list-style-type: none"><li>• Operational funds</li></ul>

### 3.3.6. MONITORING AND REPORTING ON THE TWG ACTIVITIES

The annual report to the High level meeting and Regional Forum will give an overview of:

- Activities implemented over the last year based on Activities and Outputs listed above
- Activities planned for the coming year