

## Chapter 6

### Activities of the TF HTAP

#### 1   **7.1 Formation of the TF HTAP**

2           The Task Force on Hemispheric Transport of Air Pollution (TF HTAP) was established by  
3 the 22<sup>nd</sup> session of the Executive Body of the Convention on Long-range Transboundary Air  
4 Pollution (LRTAP Convention) in December 2004. The Task Force was charged by the Executive  
5 Body to:

6           “(a) Plan and conduct the technical work necessary to develop a fuller understanding of the  
7 hemispheric transport of air pollution for consideration in the reviews of protocols to the  
8 Convention;

9           (b) Plan and conduct the technical work necessary to estimate the hemispheric transport of  
10 specific air pollutants for the use in reviews of protocols to the Convention and prepare  
11 technical reviews thereon for submission to the Steering Body of EMEP [UNECE, 2004]”

12           The European Community and the United States were designated as the lead parties for the  
13 TF HTAP. The co-chairs nominated by the lead parties are Dr. Terry Keating (U.S. EPA) and Dr.  
14 André Zuber (European Commission, DG Environment). The chairs were encouraged to invite the  
15 participation of individuals with relevant expertise, including experts from countries outside the  
16 Convention within the Northern Hemisphere. In April 2005, the Secretariat of the LRTAP  
17 Convention sent invitations to approximately 75 national governments, as well as a series of  
18 accredited international organizations, across the Northern Hemisphere to provide nominations of  
19 experts to the TF HTAP.

#### 20   **7.2 Task Force Meetings**

21           The first TF HTAP meeting was held 1 to 3 June 2005 in Brussels and hosted by the  
22 European Commission. The meeting had more than 60 participants from 17 Parties and 4 non-  
23 UNECE countries. The main objective for this first meeting was to identify the scope of the  
24 hemispheric transport issue and lay out a plan for future work leading up to an assessment of  
25 intercontinental transport of air pollution. 2009 was selected as a reasonable target date for an  
26 assessment report. To guide its future work, the TF HTAP adopted a number of key policy relevant  
27 science questions to guide its work of the following years (see Box 1 in Chapter 1). In addition, the  
28 TF HTAP proposed a workplan for 2006, which was decided later by the Executive Body.

29           The second TF HTAP meeting was held 6 to 8 June 2006 in Moscow and co-hosted by the  
30 Russian Federation and EMEP MSC-E. The meeting had more than 70 participants from 17 Parties  
31 and 7 non-UNECE countries. The main aim of the second meeting was to take stock of the existing  
32 information on intercontinental transport of Hg and POPs, the intercontinental transport of air  
33 pollution into the Arctic, and the role of methane as a precursor for tropospheric ozone. In addition,  
34 the TF HTAP proposed a workplan for 2007, which was decided later by the Executive Body.

35 The third meeting of TF HTAP took place 30 May to 1 June 2007 in Reading, U.K., hosted  
36 by the U.K. DEFRA. [The meeting had more than X participants from Y Parties and Z non-UNECE  
37 countries.] The main emphasis of the meeting was to discuss and adopt the TF HTAP's interim  
38 assessment report to inform the review of the 1999 Gothenburg Protocol, which is to be concluded by  
39 the end of 2007. The TF HTAP also had an initial discussion of the relationship between climate  
40 change and hemispheric air pollution. In addition, the TF HTAP proposed a workplan for 2008,  
41 which was decided later by the Executive Body.

### 42 **7.3 Scientific Workshops**

43 To address the identified policy-relevant science questions, the TF HTAP has organized a  
44 series of specific scientific workshops. Summary reports and presentation materials for each of the  
45 workshops are available on the website described below in Section 7.4

46 A workshop on the organisation of the HTAP model intercomparison was held 30 to 31  
47 January 2006 in Washington, U.S., and hosted by the U.S. EPA. More than 100 experts participated.  
48 The main goal was to organise a model intercomparison and evaluation exercise and to identify the  
49 key model experiments to be done by different models. The workshop also included presentations of  
50 about thirty posters on recent research results related to the intercontinental transport of air pollution.  
51 Further details on the design and progress of the HTAP intercomparison are presented below in  
52 Section

53 A workshop on emission inventories and projections for assessing intercontinental transport  
54 of air pollution was held 18 to 20 October 2006 in Beijing, People's Republic of China, and hosted  
55 by Tsinghua University. About 80 experts participated. The main objective of the workshop was to  
56 take stock of what information is available on emission inventories that can be used for the study of  
57 intercontinental transport of air pollution and to identify major gaps in our knowledge.

58 A workshop on integrated observations was held 24 to 26 January 2007 in Geneva,  
59 Switzerland and co-hosted by the TF HTAP and the WMO, in coordination with the GEO  
60 Secretariat. About 120 experts participated. The workshop aimed to take stock of the current state of  
61 observations relevant to hemispheric transport studies for the TF HTAP assessments, as well as for WMO  
62 weather, climate and environmental prediction applications and for the societal benefit areas of GEO. In  
63 addition, the workshop identified gaps in observations for priority air pollutants and in data management  
64 and made recommendations on how to fill those gaps, taking into account ongoing efforts under regional  
65 networks, GAW, IGACO, and the development of the GEOSS.

66 A workshop to discuss progress and plan future phases of the HTAP intercomparison is planned  
67 for 17-19 October 2007 in Jülich, Germany, and hosted by the Forschungszentrum Jülich.

### 68 **7.4 Websites and Listservers**

69 The TF THAP has made efforts to provide most of the information of planned and ongoing  
70 work through the website [www.htap.org](http://www.htap.org) supported by the U.S. EPA. All of the reports and  
71 presentations from the meetings and workshops, as well as the draft and final versions of the  
72 assessments reports, are publicly available on this site. A major objective of the open and transparent  
73 information is to facilitate the outreach activity of the TF THAP. Links are provided also from  
74 websites of the lead Parties as well as from the LRTAP Convention websites.

75 Additional public and private websites to support specific aspects of the work of the TF  
76 HTAP have also been established by other institutions, including the European Commission's Joint  
77 Research Center, Ispra; Research Centre Jülich; Washington University, St. Louis, U.S.; and the  
78 Norwegian Institute for Air Research (NILU). These efforts help to facilitate collaboration by experts  
79 contributing to the TF HTAP and are much appreciated. In the future, further efforts will be made to  
80 coordinate the evolving network of websites and information and communication portals.

81 For the TF HTAP, the U.S. EPA has also established several electronic mail listservers to  
82 distribute general information and announcements about the TF HTAP activities and to facilitate  
83 communication among smaller sub-groups, including the HTAP intercomparison participants and the  
84 authors of this report. Subscription information for these listservers can be found on the TF HTAP  
85 website.

## 86 **7.5 Assessment Reports 2007 and 2009**

87 The main purpose of this 2007 interim assessment report is to inform the LRTAP Convention  
88 in the review of the 1999 Gothenburg Protocol. This interim report focuses on those air pollutants  
89 relevant for tropospheric ozone, particulate matter, acidification, and eutrophication. The TF HTAP  
90 intends to produce a more comprehensive assessment in 2009. The 2009 report will update the  
91 interim report in view of new information from ongoing research, in particular the HTAP  
92 intercomparison. In addition, the 2009 report will address other atmospheric air pollutants of interest  
93 under the LRTAP Convention, such as atmospheric mercury and persistent organic pollutants.

## 94 **7.6 HTAP Model Intercomparison**

95 This interim report presents some of the initial results of an ongoing series of model  
96 evaluation and intercomparison experiments organized by the TF HTAP, beginning with the January  
97 2006 workshop, to:

- 98 • Produce some estimates of intercontinental source-receptor relationships
- 99 • Improve our understanding of the variability and uncertainty in current model estimates
- 100 • Guide future model developments to decrease uncertainties in source-receptor relationships

101 The model intercomparison and evaluation efforts are open to all interested participants and  
102 has so far attracted contributions from about 30 models. A website hosted by the European  
103 Commission's Joint Research Centre (<http://aqm.jrc.it/HTAP/>) has been established to provide  
104 interested experts with more detailed information on the complete set of model experiments,  
105 including guidance for inputs and requested outputs. In addition, a data server and discussion wiki  
106 have been established by the Research Centre Juelich ([http://icg-ii-wikis.icg.fz-  
107 juelich.de/HTAPWiki/](http://icg-ii-wikis.icg.fz-juelich.de/HTAPWiki/)). As stated above, an email listserver has also been established to facilitate  
108 communication between the intercomparison participants.

109 Based on the January 2006 workshop, a series of four sets of experiments have been  
110 identified:

- 111 • Experiment Set 1. Source-Receptor Emission Sensitivity Studies: The simulations consist of  
112 a reference simulation (2001) and simulations reducing anthropogenic emissions by 20% in

- 113 Europe, North America, East Asia, and South Asia. Provisional results are presented in this  
114 report.
- 115 • Experiment Set 2. Process and Tracer Studies: These experiments will develop a simple set  
116 of diagnostics that can be used to understand the model differences that occurred under  
117 Experiment Set 1. The studies will try to isolate the relative roles of mixing/transport and  
118 chemical processes using analyses of CO, colored tracers, Rn<sup>222</sup>, and NMVOC.
  - 119 • Experiment Set 3. Detailed Process Studies: These experiments will explore specific process  
120 relevant for intercontinental transport. Potential topics include pulsed NO<sub>x</sub> versus tagging of  
121 NO<sub>x</sub>, mercury fate, aerosols (in conjunction with AEROCOM), comparison of model results  
122 to campaigns (TRACE-P and ICARTT), the role climate change and variability, and vertical  
123 mixing of ozone.
  - 124 • Experiment Set 4. Improved Estimates of Source Receptor Relationships: Building on the  
125 previous sets of experiments, this set would generate improved estimates for inclusion in the  
126 2009 assessment report.

## 127 **7.7 Support by LRTAP Convention Bodies**

128 The TF HTAP is organized under the Steering Body of the European Monitoring and  
129 Evaluation Programme (EMEP), the atmospheric science arm of the LRTAP Convention (see  
130 <http://www.emep.int/>). Under EMEP, there are four centres, all of which provide support to the TF  
131 HTAP. The EMEP MSC W has now extended their modeling domain to include the entire Northern  
132 Hemisphere and participate actively in the HTAP intercomparison for ozone and particulate matter.  
133 The EMEP MSC E participates in the HTAP intercomparison for mercury and POPs and has  
134 organized sessions on mercury and POPs at the TF HTAP's meetings and workshops. The EMEP  
135 CCC has provided input to the TF HTAP's meetings, workshops, and assessments related to the  
136 observational evidence of intercontinental and hemispheric transport. Likewise, the EMEP CIAM  
137 has been active in the TF HTAP's activities related to emissions inventories and projections. In the  
138 future, the EMEP centres will continue to play an important role in assessing intercontinental and  
139 hemispheric transport and in linking the work of the TF HTAP to the ongoing analytical efforts  
140 focused on the geographic scope of EMEP.

## 141 **7.8 Outreach Activities**

142 Reaching out to experts in non-UNECE countries and building trust in the scientific  
143 underpinnings of the assessments is an important part of the work of the TF HTAP. To date, experts  
144 from 12 non-UNECE countries have participated in TF HTAP meeting or workshops: Cambodia,  
145 China, Egypt, India, Japan, Korea, Malaysia, Mexico, Nigeria, Pakistan, the Philippines, and Thailand.

146 UN organisations, such as the WMO and the UNEP Regional Resource Centre for Asia and the  
147 Pacific, have been active in the TF HTAP. Others, such as IMO, ICAO, and UNFCCC, receive the  
148 announcements and reports of the TF HTAP meetings and workshops. The GEO Secretariat has been an  
149 active participant in our meetings and workshops. The TF HTAP has been able also to establish  
150 important links with regional initiatives on air pollution, such as the Acid Deposition Monitoring Network  
151 in East Asia (EANET) and the Clean Air Initiative – Asia, and efforts focused on building capacity for air  
152 quality management and regional cooperation, such as the RAPID-C project and the Global Air Pollution  
153 Forum. These international organisations and cooperative efforts are important both from the point of  
154 view of providing insight into air pollution issues at different scales and through providing a future basis  
155 for cooperation on any policy applications.