2007 UN Graz Symposium: *Review*

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UN Symposium on Space Tools and Solutions for Monitoring the Atmosphere in Support of Sustainable Development

"development that meets the needs of the present without compromising the ability of future generations to meet their own need"

9-12 September 2008
Austrian Academy of Sciences, Institute for Space Research • Graz, Austria

2007 UN Graz Symposium
Space Science and Technology

- Space science and technology and their applications can provide important information in support of policy and decision-making for sustainable development.
- In some cases space-based solutions are essential or afford the only or most cost-efficient means of collecting specific data.
- For example, the gathering and assessment of global environmental information can often only be accomplished by space-based sensors.

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Overview

Sponsors	United Nations Office for Outer Space Affairs Government of Austria European Space Agency Supported by NASA
Host	State of Styria, the City of Graz
Dates	11-14 September 2007
Goals	Promote the benefits of using space science and technology to carry out the plan of implementation of the World Summit on Sustainable Development

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Background

2003 to 2005 : Water resources and sustainable water management

2006 : Space Technologies for monitoring air pollution and energy production

2007 : Space tools and solutions for monitoring atmosphere – air pollution, weather and climate

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Objectives

Themes: Air Pollution, Climate and Weather

Objectives:

- Inform about the WSSD framework and the work of the United Nations Commission on Sustainable Development and provide a comprehensive introduction to the context and role of atmosphere monitoring in support of sustainable development
- Promote and inform about ongoing relevant national, regional and global initiatives (e.g. Committee on Earth Observation Satellites (CEOS), Group on Earth Observations (GEO) and their applications related to the monitoring of the atmosphere, in particular addressing air pollution
- To examine what type and level of training would be required, and for which target groups, in using space technologies for addressing air pollution.
- To examine the strategy for including space technology-based tools and information in the decision-making process in monitoring air pollution and other thematic areas.

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Themes

24 Invited Presentations and 18 presentations by funded participants

5 Major Themes

1. Global and regional initiatives

- Developments on Global Earth Observation System of Systems (GEOSS)
- WMO's space program to not only address weather but climate and air quality
- European Environmental Agency to provide wide range of information services (air quality, climate, weather)

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Themes

2. **Space Tools for Atmospheric Monitoring**

GEONETCAST and dissemination of data and products.

Atmospheric Composition Constellation

African Monitoring of Environment for Sustainable Development

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Themes

3. **Climate Change and Weather**

Monitoring Land Surface for sustainable development

METEOALARM – European system for advanced warning

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Themes

4. Air Quality – Ozone and Particulate Matter

- The global air pollution problem and transport of air pollution
- Air Quality forecasting and near time analysis using satellite data

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Themes

5. **Interactive training on satellite tools and applications for air quality monitoring – New!**

- Sponsored and organized by NASA.
- Training session based on “hands-on” utilization of satellite and other data for assessing air pollution
- Participants analyzed case studies and discussed outcomes

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Participants

Participants: 59 participants *including **34** countries*

Algeria Austria Bangladesh Cambodia Cameroon
China Ecuador Egypt Germany
India Indonesia Iraq Kenya
Lebanon Mexico Myanmar Nepal
Nigeria Pakistan Seychelles Slovenia
South Africa Sudan Suriname
Syria Thailand Philippines USA
Gambia Tunisia Uganda Uruguay
Uzbekistan Vietnam

Organizational Participation

- Central Institute for Meteorology and Geodynamic of Austria (ZAMG),
- International Institute for Applied Systems Analysis (IIASA),
- Intergovernmental Panel on Climate Change (IPCC),
- International Year of Planet Earth (IYPE),
- European Commission,
- European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT),
- European Space Agency (ESA),
- National Aeronautics and Space Administration (NASA),
- United States Geological Survey (USGS),
- World Meteorological Organisation (WMO),
- United Nations Office for Outer Space Affairs (OOSA).

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Conclusions and Recommendations

- Capacity building efforts in space science and technology are major focus areas of UNOOSA by supporting regional centers for space science and technology education.

- Representatives of GEO Interface Committee and Asian Institute of Technology presented proposal for air quality training.

- Participants split into two groups
  - Training and capacity building
  - Data and tools for atmospheric monitoring

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Working group summary

- Large number of existing training opportunities exist at Regional Centers and some provide scholarships to support applicants.
- Recommendations to structure training by working with customers was also recommended.
- Group recognized success of hands-on training using relevant satellite data sets
- Timely access of data sets to assess continental and intercontinental scale air pollution was suggested.
- Data sharing protocols were discussed.
- Participants volunteered to champion the cause of raising awareness in their country regarding air pollution and data sets.

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Participants Survey

Survey of 2007 Symposium participants

Highly positive

Great hospitality

Experienced lecturers

Useful training

Lots of valuable information