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**Committee on the Peaceful  
Uses of Outer Space  
Fifty-first session  
Vienna, 11-20 June 2008**

## **Draft report**

### **Chapter II**

#### **Addendum**

#### **F. Space and society**

1. In accordance with paragraph 51 of General Assembly resolution 62/217, the Committee continued to consider, under the agenda item entitled “Space and society”, the special theme for the focus of discussions entitled “Space and education”, in accordance with the workplan adopted by the Committee at its forty-sixth session,<sup>1</sup> in 2003.

2. The representatives of Argentina, Brazil, Canada, Chile, India, Iran (Islamic Republic of), Italy, Japan, Nigeria, South Africa, Spain, Syrian Arab Republic and the United States made statements under the item. Statements were also made by the observers for ESPI, ISPRS, UNESCO and UNU.

3. The Committee heard the following presentations:

(a) “Activities of the IAF administrative committee on space and society”, by M. Heppener (IAF);

(b) “Space for societal applications: the Indian context”, by S. A. Bhaskaranarayana (India);

(c) “Space technology education in Indonesia” by E. S. Adiningsih (Indonesia);

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<sup>1</sup> *Official Records of the General Assembly, Fifty-eighth Session, Supplement No. 20 (A/58/20)*, para. 239; and *ibid.*, *Sixty-first Session, Supplement No. 20 (A/61/20 and Corr.1)*, paras. 245 and 260.



(d) “The International Year of Planet Earth (IYPE)”, by W. Janoschek (International Year of Planet Earth);

(e) “Korean astronaut programme”, by N. Choe (Republic of Korea).

4. At its 593rd meeting, on 18 June 2008, the Director of the Office for Outer Space Affairs made a presentation on the education and capacity-building programme of the Office.

5. The Committee noted that the Space Education Programme of UNESCO was aimed at enhancing space subjects and disciplines in schools and universities, in particular in developing countries, and raising awareness among the general public of the benefits of space technology for social, economic and cultural development. The Committee noted that UNESCO was the lead United Nations agency for the United Nations Decade of Education for Sustainable Development (2005-2014).

6. The Committee noted that there were a number of national educational initiatives and activities aimed at using content, materials and applications unique to space activities for training students and teachers and for educating the general public on matters relating to outer space, which included the initiatives and activities of the Angkasawan programme and space awareness programmes of Malaysia; the National Commission on Space Activities (CONAE) and the Mario Gulich Institute for Advanced Space Studies, both of Argentina; the Brazilian Space Agency and the Brazilian Society for the Advancement of Science; the Canadian Space Agency; the Iranian Space Agency; the Italian Space Agency; the General Organization of Remote Sensing of the Syrian Arab Republic; the JAXA Space Education Center of Japan; the National Space Research and Development Agency of Nigeria and the African Regional Centre for Space Science and Technology Education—in English Language, also based in Nigeria; and the NASA Educator Astronaut Program and Explorer Schools Program, as well as the education programmes implemented by the Science, Engineering, Mathematics and Aerospace Academy of the United States.

7. The Committee noted the educational opportunities being provided by a number of national universities, including hands-on training opportunities for university and graduate students in space science and engineering. In that regard, the Committee noted the activities undertaken through the International Space Education Board (ISEB), a joint initiative of the Canadian Space Agency, ESA, JAXA and NASA launched in 2005, and the University Space Engineering Consortium (UNISEC).

8. The Committee noted that a number of national tele-education initiatives were providing educators and students at all levels, including those in remote areas, with high-quality education consisting of the latest teaching resources, vocational and teacher training and adult education.

9. The Committee noted that data derived from outer space and services such as remote sensing and telecommunications were improving the lives of people throughout the world, including in remote and rural areas. The Committee also noted the important applications of space technology in many fields, such as distance education, water resource management, weather forecasting and fisheries, and, in that regard, took note of the single delivery mechanism initiated by the

Indian Space Research Organization through its Village Resource Centres and the very small aperture terminals introduced by South Africa.

10. The Committee noted the activities at the regional level for capacity-building through education and training in space science and technology applications for sustainable development, including the achievements of the African Regional Centre for Space Science and Technology Education—in English Language, APRSAF and the pro tempore secretariat of the Fifth Space Conference of the Americas.

11. The Committee noted with satisfaction that, at the global level, a large number of educational and outreach activities and programmes for children, young people and the general public were being established by national space and educational organizations and international organizations to promote awareness of the benefits of space science and technology and to encourage children to consider careers in the fields of mathematics and science.

12. The Committee noted the role played by the International Space Station in education and in reaching out to education communities worldwide.

13. The Committee noted that World Space Week, observed from 4 to 10 October each year pursuant to General Assembly resolution 54/68 of 6 December 1999, contributed to the development of education and raised awareness about outer space, in particular among young people and the general public.

14. The Committee was of the view that sharing scientific and technical knowledge and achievements in the field of space activities would have a positive impact on future generations.

15. The view was expressed that illiteracy and a lack of adequate education continued to constitute major problems for developing countries and that the United Nations Programme on Space Applications should place more emphasis on supporting education and training for capacity-building in developing countries and on strengthening international cooperation.

16. The view was expressed that consideration should be given to addressing specific ways to overcome the potential shortage of scientists, mathematicians and engineers that both developed and developing countries would face in the next decade.

17. The view was expressed that States should be encouraged to improve the dissemination of space-related educational materials in order to increase general awareness of the importance of the use of space technology for attaining sustainable development.

18. The view was expressed that it might be useful to identify some specific priority areas, beyond exchange of information, where international cooperation relating to space education could be further strengthened, such as by identifying ways and means for the regional centres for space science and technology education, affiliated to the United Nations, to serve as regional focal points for the training of primary and secondary school teachers in the use of space materials in teaching. That delegation expressed the view that any priority areas of space education identified by the Committee could then be considered as special themes under the agenda item entitled “Space and society” or in symposiums held on the margins of future sessions of the Committee.

19. The view was expressed that the studies by ESPI on political issues regarding the exploration and use of outer space were of great significance. That delegation urged ESPI to consider extending its scope of studies to Latin America.

20. The Committee noted that the General Assembly, in its resolution 62/200 of 19 December 2007, had declared 2009 International Year of Astronomy and that a number of States were planning to use the Year to highlight the importance of the use of space science and technology. The Committee was informed that presentations about those initiatives would be made at the forty-sixth session of the Scientific and Technical Subcommittee.

21. The Committee agreed that, in view of the importance of space and education, it would continue to consider the special theme at its fifty-second session, in 2009.

## **G. Space and water**

22. In accordance with paragraph 52 of General Assembly resolution 62/217, the Committee continued its consideration of the agenda item on space and water.

23. The representatives of Algeria, Argentina, Brazil, China, India, Iraq, Japan, Spain and the United States made statements under the item.

24. The Committee heard the following technical presentations under the item:

(a) "Space perspective on ocean and inland waters", by A. Neumann (Germany);

(b) "Water for livelihood: watershed development strategy through space", by S. K. Shivakumar (India).

25. The Committee noted the broad spectrum of water-related issues, ranging from too little water, reducing populations and consequently food production, to too much water, causing floods and destruction. Space technology and its applications had an expanding potential to obtain information useful for scientific research on water-related issues, for the support of sound water management practices and for policy- and decision-making.

26. The Committee noted the large number of space-borne platforms that addressed water-related issues, including those at the planning and theoretical stages. Data gathered by such platforms had great potential for expanding the use of applications of space technology to address water-related issues on Earth.

27. The Committee noted various national, regional and international water-related activities, including the Canada-Iraq Marshlands Initiative; the International Centre for Water Hazard and Risk Management; the International Flood Network and its Global Flood Alert System; the joint programme of Algeria, the Libyan Arab Jamahiriya and Tunisia for monitoring sub-Saharan water resources; the Rajiv Gandhi National Drinking Water Mission, using Earth observation products obtained from the Indian remote sensing satellite system; the Sentinel Asia project; the ESA Terrestrial Initiative of Global Environmental Research (TIGER), focusing on the African region and conducted in cooperation with UNESCO; and contributions to the Global Earth Observation System of Systems (GEOSS) of the Group on Earth Observations (GEO), addressing the "societal benefit area" of water.

28. The Committee noted the recent discovery that the global water cycle directly affected precipitation and water resource management on a national and regional scale, which had demonstrated that obtaining an understanding of the global water cycle through combined space-based and in situ observations was vital in order to be able to predict the future of the global water cycle and improve the quality of people's lives. Global water cycle observations and their data might soon be used operationally for daily weather forecasts, river management and food production systems.

29. The Committee noted that space technology could be used in combination with non-space technologies to contribute to monitoring and mitigating the effects of flood disasters and to improving the timeliness and accuracy of forecasts. For example, space technology had played a significant role in helping to control the formation of the "quake lakes" that had resulted from the earthquake in the Sichuan Province of China in May 2008 and threatened the lives of millions of people.

30. The Committee expressed its appreciation to Saudi Arabia for its support of the United Nations/Saudi Arabia/United Nations Educational, Scientific and Cultural Organization International Conference on the Use of Space Technology for Water Management, held in Riyadh from 15 to 19 March 2008. The Committee took note of the establishment of the Prince Sultan Bin Abdulaziz international prize for water, which was a significant contribution to addressing global water issues. It also noted that space technology applications would be the topic of one of the four "specialized branch" prizes in the fourth round of the competition (2008-2010).

31. The Committee agreed to continue its consideration of the item at its fifty-second session, in 2009.

## **H. International cooperation in promoting the use of space-derived geospatial data for sustainable development**

32. In accordance with the agreement reached by the Committee at its forty-ninth session and endorsed by the General Assembly in paragraph 54 of its resolution 62/217, the Committee considered this item under a multi-year workplan.<sup>2</sup> According to the workplan, at its fifty-first session the Committee would hear expert presentations on experiences in the establishment of appropriate national infrastructure for space-derived geospatial data collection, processing and application, including human resource training, technical infrastructure and financial requirements, and institutional arrangements.

33. The representatives of Argentina, Brazil, Chile, Colombia, Hungary, Iran (Islamic Republic of), Japan, Nigeria, the Syrian Arab Republic and the United States made statements under the item. A statement was also made by the representative of OCHA, on behalf of the United Nations Geographic Information Working Group (UNGIWG).

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<sup>2</sup> *Official Records of the General Assembly, Sixty-first Session, Supplement No. 20 (A/61/20)*, paras. 301-303; and *ibid.*, *Sixty-second Session, Supplement No. 20 (A/62/20)*, paras. 265 and 281.

34. The Committee heard the following technical presentations under the item:
- (a) “United Nations Spatial Data Infrastructure (UNSDI): time for partnerships”, by S. Ulgen (OCHA);
  - (b) “Use of geospatial data for sustainable development: the Indian context”, by S. K. Radhakrishnan (India);
  - (c) “National and international collaboration in geospatial data utilization for sustainable development in Nigeria”, by J. Akinyede (Nigeria);
  - (d) “Acceleration of the establishment of the Indonesian geospatial data infrastructure”, by A. Santoso (Indonesia).
35. The Committee noted that a number of national, regional and global initiatives were addressing issues related to the use of space-derived geospatial data for sustainable development.
36. The Committee took note of the Global Spatial Data Infrastructure (GSDI) Association, the umbrella organization through which the international community was sharing experience in the development of spatial data infrastructure, and the GSDI Small Grants Program, which had directly benefited many African countries. It also took note of the Mesoamerican Regional Visualization and Monitoring System (SERVIR), based in Panama City, to monitor the environment, improve land use and agricultural practices and assist local officials in responding faster to natural disasters. Following the success of the SERVIR project in Central America, an African node was being established in Nairobi.
37. The Committee took note of the establishment of national spatial data infrastructure and related national geo-information policies in several member States.
38. The Committee noted developments related to global open data access policies and access to geospatial data, provided either free of charge or at a nominal cost. The United States Geological Survey (USGS) was planning to provide the international community, free of charge, with electronic access to all Landsat scenes held in the USGS-managed national archive of global scenes dating back to Landsat-1, launched in 1972. By February 2009, any archive scene selected by a user would be automatically processed to make it a standard product and prepared for electronic retrieval. The Committee also noted that several other ongoing or planned satellite missions would disseminate their data sets, in accordance with open data access policies.
39. The Committee noted that GEONETCast, a near real-time, near-global, satellite-based environmental information delivery system developed within the framework of GEO, had significant potential to address bottlenecks in data dissemination because it could, through the use of low-cost receiving stations, enhance access to a wide range of information and reach users in developing countries with limited or no access to high-speed Internet connections.
40. The Committee took note of the progress of UNGIWG in the development of the United Nations Spatial Data Infrastructure (UNSDI). It noted the establishment of national coordination offices for UNSDI by the Czech Republic, Hungary, the Netherlands and Spain. The Committee welcomed the continued development of

UNSDI and invited the secretariat of UNGIWG to report to it at its fifty-second session, in 2009, on the progress made.

41. The Committee noted the significant societal benefits of using timely and high-quality, space-derived geospatial data for sustainable development in application areas such as agriculture, deforestation assessment, disaster monitoring, drought relief and land management. While those benefits were widely known, it was recognized that there was still a need to enhance capacity-building in many countries to ensure that geospatial data could be exploited to the fullest extent possible. The Committee also noted that several member States and non-governmental organizations were contributing to such capacity-building activities.

42. The view was expressed that making use of open data access and open source software represented the best approach to combine the efforts of developed and developing countries to promote the use of space-derived geospatial data for sustainable development.

43. The Committee noted that, in accordance with the multi-year workplan agreed at its forty-ninth session, at its fifty-second session it would evaluate the activities undertaken within the United Nations system that were directly related to the use of space-derived geospatial information for sustainable development and consider ways to highlight the links existing among those activities and the means to give them stronger international recognition. The Committee also noted that, in accordance with the multi-year workplan, it would draft a report containing recommendations on ways and means to foster international cooperation with a view to building up national infrastructure to use space-derived geospatial data.

44. The Committee requested the Secretariat to prepare a summary of the discussions in 2007 and 2008 on this agenda item, for consideration at its fifty-second session, in 2009, and to include information on activities undertaken within the United Nations system that were directly related to the use of space-derived geospatial information for sustainable development.

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