

**Report of the Committee on the Peaceful Uses of Outer Space\***  
**Forty-seventh session**  
**Vienna, 2 – 11 June 2004**

**G. Space and water**

227. In accordance with paragraph 46 of General Assembly resolution 58/89, the Committee considered a new agenda item entitled “Space and water”.

228. The Committee noted with satisfaction the addition of this item to its agenda. The Committee also noted that the General Assembly, in its resolution 58/217 of 23 December 2003, had proclaimed the period from 2005 to 2015 the International Decade for Action, “Water for Life”.

229. The Committee heard a presentation entitled “Application of space-based technology in water resources and management in Nigeria: experiences and expectations”, by C. Maduabuchi of Nigeria.

230. The Committee noted with satisfaction that several space- and water-related events had been held, such as the international workshop entitled “Earth Observation for Integrated Water Resources Management in Africa”, held in Rabat in October 2003; the International Conference on Space and Water: Towards Sustainable Development and Human Security, held in the context of the International Air and Space Fair in Santiago in April 2004; and the upcoming Symposium on Water for the World: Space Solutions for Water Management, to be held in Graz, Austria, in September 2004.

231. The Committee noted that important initiatives had been undertaken since the issue had been raised during the forty-sixth session of the Committee. Among them was the “TIGER” initiative on Earth observation for integrated water resources management in Africa, developed in cooperation with the Office for Outer Space Affairs, UNESCO and CEOS in response to the World Summit on Sustainable Development.

232. The Committee noted that, in response to the deepening water crisis, space technology could contribute to improving water resource management by providing data and information on the availability of water resources and water use. In that regard, the Committee also noted that space-based data were an important element in the promotion of international cooperation in water resource development and management.

233. Some delegations expressed the view that space technology could offer the basis for a leap from a competitive to a cooperative approach to water management and for the joint integrated development and use of that increasingly scarce resource. Those delegations also expressed the view that space-based data could contribute to confidence-building among countries sharing water resources.

234. The Committee took note of the importance of having up-to-date and accurate information on levels of sea and river water, approaching storms, rainfall and the state of water-related structures in preventing and mitigating the consequences of floods.

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\* The Report of the Committee will be issued as Official Records of the General Assembly, Fifty-ninth session, Supplement No.20 (A/59/20).

235. The Committee noted that the issue of water resources had been considered by United Nations bodies at the national level for several decades and that the shortage of water resources was acute in many regions, particularly in arid and semi-arid areas.
236. The Committee noted that groundwater was an important source of water for a number of countries and that remote sensing was useful in the search for groundwater prospect zones, as it provided basic information on geology, landforms, soils, land use and land cover, surface-water bodies and other variables promptly and reliably at less cost and with less manpower than conventional techniques.
237. The Committee further noted that space technology could be used to assess, among other things, precipitation activity, soil moisture, changes in underground water storage, flood areas, surface temperature, levels of radiation, and vegetation type and health, as well as to forecast the growth of poisonous algae in seas, lakes and rivers.
238. The Committee noted the ongoing use of satellites to protect water resources and identify and assess water-related problems, including various hydrological extremes such as El Niño and La Niña and monsoons, that could result in floods and droughts. Those satellites included the Synthetic Aperture Radar Satellite (RADARSAT)-1 of Canada, a series of remote sensing satellites of China, the China-Brazil Earth Resources Satellite (CBERS), Japan's missions on board national and foreign satellites, NigeriaSat-1 of Nigeria and operational and research satellites of the United States.
239. The Committee noted that significant work on water resource management was being carried out by India using the Indian Remote Sensing series of satellites.
240. The Committee noted that remote sensing could provide local, regional and transboundary monitoring of water quality, including the impact of pollutants and erosion as indicated by changes in water colour, turbidity and/or biological activity. Remote sensing could also measure wetland boundaries and map surface vegetation and water, thereby helping to monitor the overall health of a region. The Committee also noted the need for the global water cycle to be observed by satellite in order to reduce the uncertainty of local assessments and forecasts.
241. The Committee noted that the scientific data on water resources provided by satellites, once converted into practical information, could be used to formulate policy and implement programmes at the national, regional and international levels, including those of the World Bank and other entities of the United Nations system.
242. The Committee agreed that it was essential to assess possible contributions by space technology in order to improve the management of water resources. In that regard, the Committee noted that States members and observers of the Committee and entities of the United Nations system should be invited to share their experiences in the use of space-related technology for water resource management. The Committee invited the United Nations Development Programme and the World Bank to report on the potential for the implementation of space technology in national and international water resource management at the forty-eighth session of the Committee, in 2005.
243. The Committee appealed to national and international space agencies to share their knowledge and provide assistance to water management institutions. The Committee also invited its members to formulate and implement pilot projects in water resource management with the use of space technology.

244. The Committee agreed that more seminars and regional conferences should be held on the use of space-based applications in water resource management.

245. The Committee agreed to continue the consideration of this item at its forty-eighth session, in 2005.

246. The view was expressed that water resource management should become a priority issue for the United Nations Programme on Space Applications.

247. The Committee noted that, given that global issues such as climate change, disease-monitoring and human safety were becoming increasingly important in day-to-day life, the future role of satellite technology was likely to extend beyond the applications currently known. The Committee also noted that improved capabilities of future technologies would assist in providing near-real-time information products and render them increasingly user-friendly and more compatible with other data sources.