

Report of the Committee on the Peaceful Uses of Outer Space

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G. Space and water

276. In accordance with paragraph 39 of General Assembly resolution 59/116, the Committee continued to consider the agenda item entitled "Space and water".

277. The representatives of Austria, Canada, Chile, Colombia, Cuba, France, Greece, Japan, Nigeria, the United States, the observer for Bolivia and the observer for the Economic Commission for Africa made statements under the item.

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

- (a) "Space and water for life", by Yolanda Berenguer (UNESCO);
- (b) "Japan's activities related to space and water", by Toshihiro Ogawa (Japan);
- (c) "Looking from space on oceans and inland waters", by Andreas Neumann (Germany).

279. The Committee welcomed consideration of the item, as water shortages and floods caused serious problems in developing countries and space applications could contribute to cost-effective water resource management as well as to prediction and mitigation of water-related emergencies. The Committee noted that, in view of the unequal distribution of water resources, consideration of the item was of particular importance to developing countries.

280. The Committee noted the large-scale problem of access to water and the great loss of human life associated with that problem and that the right of access to water was closely linked to the right to life. It also noted the increase in water pollution and destruction of ecosystems, especially in developing countries, as well as the link between desertification and migration resulting from shortages of water for consumption and economic activities. In that regard, the Committee noted that such shortages represented a source of insecurity.

281. The Committee agreed that scientific data converted into practical information, which was readily available thanks to various space applications, should be used on a wider scale by decision makers and policymakers in managing water resources and in predicting and mitigating water-related emergencies.

282. The Committee noted with satisfaction that water-related issues were gaining more prominence on the international development agendas and welcomed the attention given to the matter by the United Nations, in particular by the High-level Panel on Threats, Challenges and Change. The Committee

further noted the relevant recommendations contained in the United Nations Millennium Declaration.

283. The Committee noted that, in order to ensure a greater focus of the international community on water-related issues, 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", to commence on World Water Day, 22 March 2005.

284. The Committee noted that space-based data could contribute to confidence-building among States sharing water resources and that no consideration of economic, social or environmental development was possible without considering the issue of water. It also noted that, in sharing limited water resources and coping with the growing demand for water, it was important to move away from the perception of a "zero-sum game".

285. The Committee noted the new possibilities of obtaining data and information from space-borne platforms and that developments in water science and the use of satellite technology provided a broader view for local water use, water availability and its quality, as well as reduced uncertainty of local assessments and forecasts.

286. The Committee noted the importance of understanding the global water cycle and rainfall in water resource management, food production and natural disaster management. It also noted that the global water cycle was vast and could not be fully understood with only in-situ observation networks. In that regard, the Committee noted that satellite observations offered an alternative means of seeing the entire Earth and were essential for understanding remote and inaccessible places, especially in case of sudden climate change.

287. The Committee noted that satellites could provide information on the state of the oceans and on the potential for floods and droughts or on the high numbers of intense thunderstorms. It further noted that numerous remote sensing satellites had contributed to determining various water management indicators, such as precipitation, snow cover, soil moisture, changes in underground water storage, flood inundation areas, estimates of evaporation, surface temperature, wind speed, short- and long-wave radiation, vegetation type and health, the impact of land use and climate variability on groundwater recharge, groundwater-related biomass concentrations and digital elevations, as well as river flows and water highs in large rivers and lakes. The Committee also noted the use of telecommunication satellites for gathering data on water quality.

288. The Committee noted the contribution of the Global Earth Observation System of Systems (GEOSS) to the solution of water-related issues, such as the National Integrated Drought Information System (NIDIS) of the United States, which could help predict and monitor droughts.

289. The Committee noted that a number of national initiatives involving space applications for water resource management, including flood management, had been or were being implemented by developing countries. It also noted that a number of international projects involving space applications had been initiated, including on monitoring of monsoon flooding in Malaysia, obtaining up-to-date and accurate resource data, information dissemination and environmental management in the Mekong basin, identification of potential underground sources of potable water in drought-prone regions in Brazil, improvement of water resource management in Burkina Faso and identification of natural mosquito habitats and prediction of malaria risks in Africa, as well as on analysis of the global water cycle and improved accuracy of weather forecasting.

290. The Committee noted with appreciation the presentation on progress in preparing a pilot project that would apply space applications to the restoration of Lake Chad and the management of water resources in the Lake Chad basin. The

Committee noted that, with the assistance of the Office for Outer Space Affairs, a partnership was being established among the States of the basin, with the participation of the Lake Chad Basin Commission, to initiate that pilot project.

291. The Committee agreed to invite the representatives of those States which were involved in the pilot project on Lake Chad to report to the Committee at its forty-ninth session on the progress achieved in implementing the project.

292. The Committee noted the important contribution to the pilot project and to the consideration of space and water made by the United Nations/Austria/European Space Agency Symposium on Water for the World: Space Solutions for Water Management, held in Graz, Austria, from 13 to 16 September 2004. The Committee also noted that participants at the symposium had developed a document entitled the "Graz Vision", which summarized the findings and recommendations of the symposium and which had been put into practice in the preparation of the pilot project in the Lake Chad basin. The Committee further noted that in 2005 the United Nations/Austria/ESA symposium would address the topic of "Space systems: protecting and restoring water resources".

293. The Committee noted a number of national and international initiatives that had been undertaken since its forty-seventh session aimed at building capacity in the use of space applications for water management. In that regard, it agreed that the recommendations made by various space- and water-related activities needed follow-up.

294. The Committee noted the transfer to developing countries of space technologies and expertise that could be used for water resource management. It also noted the initiatives aimed at assessing the readiness of North-West African States to receive science and technology capabilities to enhance their water management activities.

295. The Committee appealed to national and international space agencies to share their knowledge and provide assistance to water management institutions and support the capacity-building activities of developing countries to use space applications for water management.

296. The Committee noted plans for future environmental satellites that would collect and disseminate data about the Earth's oceans, atmosphere, land, climate and space environment, thereby providing high-quality and sustained environmental measurements for use in monitoring the global water cycle and related weather phenomena. It further noted the planned initiatives aimed at monitoring variations in water cycles and natural disasters, including torrential rains, typhoons, floods and droughts, as well as weather forecasting.

297. The Committee noted that water resource management was closely linked to forestry and that satellite data on forests constituted an important input to understanding of the water cycle.

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

299. The Committee agreed to continue the consideration of the item at its forty-ninth session, in 2006.