United Nations A/AC.105/L.331/Add.4

General Assembly

Distr.: Limited
6 June 2022

Original: English

Committee on the Peaceful Uses of Outer Space
Sixty-fifth session
Vienna, 1–10 June 2022

Draft report

Addendum

Chapter II

Recommendations and decisions

D. Space and sustainable development

1. The Committee considered the agenda item entitled “Space and sustainable development”, in accordance with General Assembly resolution 76/76.

2. The representatives of China, France, India, Indonesia, Japan, Kazakhstan, Mexico, the Netherlands, the Russian Federation, South Africa, Thailand, the United Arab Emirates, the United States and Venezuela (Bolivarian Republic of) made statements under the item. The observers for the Square Kilometre Array Observatory and the World Space Week Association also made statements. During the general exchange of views, representatives of other member States also made statements relating to the item.

3. The Committee had before it the following documents:

(a) Report on the United Nations/Austria World Space Forum on the theme “Space 4 climate action” (A/AC.105/1266);

(b) Report on the United Nations/Brazil/United Arab Emirates Space for Women expert meeting on the theme “Initiatives, challenges and opportunities for women in space” (A/AC.105/1267).

4. The Committee heard the following presentations under the item:

(a) “Satellite application in emergency management in China (2021–2022)”, by the representative of China;

(b) “Maintaining a harmonious coexistence of the outer space environment and space activities”, by the representative of China;

(c) “India’s earth observation applications for national development and governance”, by the representative of India;

(d) “Capacity-building activities in the field of space in India: an update”, by the representative of India;

(e) “Space technology: contribution to sustainable development in Iran”, by the representative of Iran (Islamic Republic of);

(f) “JAXA sustainable space principles: contributions of JAXA to the Sustainable Development Goals”, by the representative of Japan;

(g) “Space for food security”, by the representative of the Netherlands;

(h) “Disaster monitoring and construction of spatial information using Korea Land Observation Satellite images”, by the representative of the Republic of Korea;

(i) “Brazil, Russian Federation, India, China and South Africa (BRICS) Intelligent Telescope and Data Network (BITDN) flagship project: BRICS State global optical telescope network”, by the representative of the Russian Federation;

(j) “Innovative, cross-cutting, advanced space technology training programme for developing countries”, by the representative of the Russian Federation;

(k) “Remote monitoring systems to study marine ecosystems”, by the representative of the Russian Federation;

(l) “Capacity-building for a nascent space industry”, by the representative of the Philippines.

5. The Committee reiterated its acknowledgement of the significant role of space science and technology and their applications in the implementation of the 2030 Agenda for Sustainable Development, in particular for the Sustainable Development Goals, in the realization of the Sendai Framework for Disaster Risk Reduction 2015–2030 and in the fulfilment by States parties of their commitments to the Paris Agreement on climate change.

6. The Committee noted the value of space technology and applications, as well as that of space-derived data and information, to sustainable development, including in improving the formulation and implementation of policies and programmes of action relating to environmental protection, land and water management, urban and rural development, marine and coastal ecosystems, health care, climate change, disaster risk reduction and emergency response, energy, infrastructure, navigation, seismic monitoring, natural resource management, snow and glaciers, biodiversity, agriculture and food security.

7. The Committee noted with satisfaction the holding of the series of World Space Forums, organized by the Office for Outer Space Affairs in cooperation with the Governments of Austria and the United Arab Emirates.

8. The Committee took note of the information provided by States on their efforts to integrate cross-sectoral activities at the national, regional and international levels and to incorporate space-derived geospatial data and information into all sustainable development processes and mechanisms.

9. The Committee also took note of the information provided by States on their actions and programmes aimed at increasing awareness and understanding in society of the applications of space science and technology for meeting development needs.

10. The Committee noted the continued role played by the International Space Station in scientific research for sustainable development.

11. The Committee noted with satisfaction the large number of outreach activities carried out by States at the regional level to build capacity through education and training in the use of space science and technology applications for sustainable development.

12. The Committee noted the value of international cooperation and partnerships for the realization of the full potential of space science, technology and applications for sustainable development.

13. The Committee noted that the fourth Ministerial Conference on Space Applications for Sustainable Development in Asia and the Pacific would be held in Indonesia in October 2022.

E. Spin-off benefits of space technology: review of current status

14. The Committee considered the agenda item entitled “Spin-off benefits of space technology: review of current status”, in accordance with General Assembly resolution 76/76.

15. The representatives of Algeria, Brazil, India, Italy, Mexico, the Russian Federation, South Africa and the United States made statements under the item. During the general exchange of views, statements relating to the item were made by representatives of other member States.

16. The Committee heard the following presentations:

(a) “The SAOCOM project as a national capacity-building engine”, by the representative of Argentina;

(b) “Natural hazards monitoring using the Zhengheng-1 electromagnetic satellite and Gaofen (GF) remote sensing satellites”, by the representative of China;

(c) “Russian new-generation very long baseline interferometry (VLBI) network”, by the representative of the Russian Federation.

17. The Committee took note of the information provided by States on their national practices regarding spin-offs from space technology involving various actors, including the private sector and academia.

18. The Committee noted that the publication entitled “Spinoff 2022”, issued by NASA, was available on the NASA website. The Committee expressed its gratitude to NASA for the “Spinoff” publication series, which had been made available to delegations every year since the forty-third session of the Committee, in 2000.

19. The Committee took note of innovations in numerous areas, such as agriculture, indoor vertical farming, pollution and toxic chemical remediation, sustainable water and natural resource management, forestry and wildfire detection, geology, geophysics, ecosystem preservation, the identification and development of arable land, fisheries and mineral deposits, health, medicine, prosthetics, biology, chemistry, the environment, education, electronics, communication, navigation and timing, materials applications, energy storage, transport, safety, Internet access, laser data transfer, processing, analytics and storage, and disaster management. In addition, it noted that many of the technologies developed for space applications and licensed by space agencies had been transferred to industries and had led to practical applications in society. In particular, various types of medical support equipment that utilized space spin-off technology had been developed by commercial actors to address the coronavirus disease (COVID-19) pandemic.

20. Some delegations expressed the view that technology transfer programmes of space agencies facilitated economic development in various industries, which in turn allowed innovations to be made available to entrepreneurs, companies, academia and government agencies. The delegations expressing that view also expressed the view that those programmes had contributed to strategic initiatives to create an integrated international space ecosystem that fostered private sector growth, industrial self-reliance, attracted foreign business investment and encouraged international collaboration.

21. The view was expressed that dedicated public sector entities tasked with working directly with industry and academia had supported commercial participation

and facilitated the application of space-derived technology to achieve widespread use and greater socioeconomic benefit.

22. The view was expressed that as a result of a long-term study on the socioeconomic effects of public sector investment in the space sector, benefits could be identified in how suppliers and users of space-derived technology had improved their performance and innovation potential. The delegation expressing that view also expressed the view that, in particular, products and services that were spun off from space technology, including Earth observation, navigation and timing technology, improved the commercial availability of a wide variety of products and services and contributed to more effective and efficient research and development.

23. Some delegations expressed the view that remote sensing, geospatial and Earth observation programmes, in particular images, data and analysis, were important for disaster management and emergency response, urban and agricultural planning, mapping health, energy, food safety, border surveillance, the control of illicit crops and illicit mining, logistics, the construction industry, tourism, ecology, combating desertification and supporting the processing of large volumes of data through neural network technologies, artificial intelligence and machine learning. The delegations expressing that view also expressed the view that those programmes were important to achieving sustainable projects and helped to inform the decisions of entities affected by climate change.

F. Space and water

24. The Committee considered the agenda item entitled “Space and water”, in accordance with General Assembly resolution 76/76.

25. The representatives of Algeria, Brazil, France, India, Indonesia, Iran (Islamic Republic of), Japan, Mexico and Thailand made statements under the item. The observer for the Prince Sultan bin Abdulaziz International Prize for Water also made a statement under the item. During the general exchange of views, other member States also made statements relating to the item.

26. In the course of the discussion, delegations reviewed water-related cooperation activities, giving examples of national programmes and bilateral, regional and international cooperation that demonstrated the beneficial effect of international cooperation and policies on the sharing of remote sensing data.

27. The Committee noted that water and the issues related to it were becoming some of the most critical environmental problems of the twenty-first century. The Committee also noted that, in order to contribute to the achievement of the Sustainable Development Goals, it was important to make use of space technologies, applications, practices and initiatives enabled by space-borne observations of water.

28. The Committee noted that a large number of space-borne platforms addressed water-related issues and that space-derived data were used extensively in water management. The Committee also noted that space technology and applications, combined with non-space technologies, played an important role in addressing many water-related issues, including the observation and study of sea levels, global water cycles and unusual climate patterns; the mapping of surface water bodies, watercourses and basins, including the mapping of their seasonal and annual variabilities; the monitoring of water volume levels in dam reservoirs; the assessment of sedimentation processes in reservoirs and rivers; river run-off; the monitoring of evapotranspiration; the estimated values for water quality parameters; the estimation of snowmelt run-off; the monitoring of groundwater resources; the planning and management of reservoirs and irrigation projects; early warning with regard to hydrological disasters; the monitoring and mitigation of the effects of floods, droughts, typhoons, cyclones, landslides and glacial lake outburst floods; the monitoring of soil moisture; the reuse of agricultural drainage water; the harvesting of rain; the identification of prospective zones of groundwater development; the

improvement of the timeliness and accuracy of forecasts; and the identification of emergency situations, such as fires, pollution, salinization, water blooms, pipeline accidents and oil spills.

29. Some delegations expressed the view that climate change had become a crucial issue for stable water management, as it had caused serious droughts and water-related disasters, as well as sinking land, around the world.

30. The view was expressed that space-based technology supported the monitoring of water quality in rivers, lakes, wetlands and coastal waters, especially in large and remote water bodies, including the monitoring of contaminants in water bodies, and that space technology contributed insights in relation to ecological disasters, such as industrial spills or diffuse pollution sites that could impact groundwater at the regional level.

31. The Committee noted that Sustainable Development Goal 6, on clean water and sanitation for all, could not be achieved without the successful implementation and monitoring of integrated water resource management.

32. The view was expressed that space technology and applications had the potential to contribute to the development of water-related policies and coordinated efforts to achieve Sustainable Development Goal 6.

33. Some delegations expressed the view that there was a need for policy development, capacity-building, knowledge exchange, technology transfer, access to space-based data and in situ data, and interdisciplinary thinking with regard to the Sustainable Development Goals in order to build the capacity of stakeholders to use space-based information and promote innovation to empower communities to deal with emerging risks related to water resources.

34. The Committee noted the value of the Space4Water portal of the Office for Outer Space Affairs, and the role of the portal in the dissemination of the use of space technology for water-related purposes was highlighted.

35. The Committee took note of the holding of the fifth International Conference on the Use of Space Technology for Water Resources Management, which was hosted by the Government of Ghana and co-sponsored by the Prince Sultan bin Abdulaziz International Prize for Water from 10 to 13 May 2022 in Accra.