United Nations A/AC.105/1318

General Assembly

Distr.: General
28 March 2024

Original: English

Committee on the Peaceful Uses of Outer Space
Sixty-seventh session
Vienna, 19–28 June 2024
Item 13 of the provisional agenda*
Use of space technology in the United Nations system

Report of the Inter-Agency Meeting on Outer Space Activities on its forty-second session and its nineteenth open session

(Brindisi, Italy, 17 and 18 October 2023 and 19 October 2023)

I. Introduction

1. The Inter-Agency Meeting on Outer Space Activities (UN-Space) was established in the mid-1970s as a coordination mechanism for promoting synergies and avoiding duplication of efforts related to the use of space technology and applications in the work of United Nations entities.

2. The General Assembly, in its resolution 78/72, urged UN-Space, under the leadership of the Office for Outer Space Affairs of the Secretariat, to continue to examine how space science and technology and their applications could contribute to the 2030 Agenda for Sustainable Development, and encouraged entities of the United Nations system to participate, as appropriate, in UN-Space coordination efforts.

3. The present document contains the report of UN-Space on the following activities:

(a) Forty-second session of UN-Space, held in Brindisi, Italy, on 17 and 18 October 2023;

(b) Nineteenth open session of UN-Space, entitled “Earth observation and integrated applications for disaster risk management and sustainable development”, held in Brindisi on 19 October 2023.

II. Forty-second session of UN-Space

A. Background and attendance

4. The forty-second session of UN-Space was held in Brindisi, Italy, on 17 and 18 October 2023 in collaboration with the Service for Geospatial, Information and

* A/AC.105/L.337.

Telecommunications Technologies of the United Nations Global Service Centre, part of the Department of Operational Support, in Brindisi, Italy.

5. The session was chaired by a representative of the Service for Geospatial, Information and Telecommunications Technologies and was attended by representatives of the following United Nations entities: Department of Economic and Social Affairs, Economic and Social Commission for Asia and the Pacific (ESCAP), Food and Agriculture Organization of the United Nations (FAO), International Atomic Energy Agency, International Telecommunication Union (ITU), Office for Outer Space Affairs, secretariat of the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, United Nations Global Service Centre, United Nations Human Settlements Programme, United Nations Office on Drugs and Crime (UNODC), World Food Programme (WFP) and World Meteorological Organization (WMO). A list of participants is contained in annex I to the present report.

B. Opening of the session

6. The Chair, in his opening statement, welcomed participants, on behalf of the United Nations Global Service Centre, the United Nations entity mandated to ensure efficient and effective United Nations operations through the core logistics and geospatial and information and telecommunications technology services it provided, to the unique premises of the Global Service Centre in Brindisi, which was housed on a base together with the Air Force of Italy.

7. The Chair, recognizing the value of the Meeting in building and maintaining collaborative partnerships, recalled that it was the first time a session of the Inter-Agency Meeting had been held in Brindisi and noted the value of holding the sessions in different locations with a view to engaging different voices from within the United Nations system.

8. The Chair, and the Meeting as a whole, expressed gratitude to the Global Service Centre team for hosting and supporting the Meeting; providing a tour of the base, which provided critical logistics and geospatial and information and telecommunications technology services and training to, inter alia, all United Nations peacekeeping and special political missions around the world; and arranging a networking evening for participants that included a historical tour of Mesagne, a town in the region.

9. In addition, special appreciation was expressed to the experts who had given demonstrations and provided training during the session (see sect. II.I), in particular to those who had travelled to make presentations in person during the training day.

C. Adoption of the agenda

10. In accordance with the agreement reached at its thirty-fourth session, in 2014, that a more flexible agenda could allow for the consideration of ad hoc items, UN-Space adopted the following agenda for its forty-second session:

1. Opening of the session.
2. Adoption of the agenda.
3. Update on the latest developments in the peaceful uses of outer space, including on the “Space2030” Agenda.
4. UN-Space special reports on initiatives and applications for space-related inter-agency cooperation.
5. Report of the Secretary-General on the coordination of space-related activities within the United Nations system.
6. UN-Space publication.

7. United Nations Global Service Centre services and products in support of the UN-Space community: United Nations Global Service Centre showcase.

8. Coordination of future plans and programmes of common interest for cooperation and exchange of views on current activities in the practical application of space technology and related areas.

9. Organization of open sessions.

10. Any other business.

D. Update on the latest developments in the peaceful uses of outer space, including on the "Space2030" Agenda

11. On 25 October 2021, the General Assembly adopted, without a vote, resolution 76/3, entitled "The 'Space2030' Agenda: space as a driver of sustainable development". At the forty-second session of UN-Space, the Secretary of UN-Space provided the Meeting with updated information on the latest developments in the peaceful uses of outer space, including on the "Space2030" Agenda. She emphasized that the "Space2030" Agenda facilitated the integration of space activities and tools into Member States' efforts to attain the Sustainable Development Goals, and recalled the range of space-related tools, mechanisms, projects and platforms that were available for use by Member States and that served to facilitate partnerships and ensure equitable access to the benefits of space for all.

12. The Secretary also provided an update on the work of the Committee on the Peaceful Uses of Outer Space, recalling the recommendation that the Committee should carry out a midterm review in 2025, followed by a final review in 2030, of progress made in the implementation of the "Space2030" Agenda. The Secretary emphasized that the Committee continued to be a unique multilateral forum for international cooperation in space activities.

E. UN-Space special reports on initiatives and applications for space-related inter-agency cooperation

13. UN-Space recalled that the themes addressed in its previous special reports had included the following: new and emerging technologies, applications and initiatives for space-related inter-agency cooperation (A/AC.105/843); space benefits for Africa: contribution of the United Nations system (A/AC.105/941); use of space technology within the United Nations system to address climate change issues (A/AC.105/991); space for agriculture development and food security (A/AC.105/1042); space for global health (A/AC.105/1091); the role of United Nations entities in supporting Member States in the implementation of transparency and confidence-building measures in outer space activities (A/AC.105/1116); space weather (A/AC.105/1146); partnerships (A/AC.105/1200) and space for climate action (A/AC.105/1264).

14. Given the importance of the topic of space debris, in particular to the sustainability of outer space activities, UN-Space decided that its next special report, to be presented to the Committee on the Peaceful Uses of Outer Space at its sixty-seventh session, in 2024, would focus on that topic.

F. Report of the Secretary-General on the coordination of space-related activities within the United Nations system

15. UN-Space recalled that, at its thirtieth session, held in Geneva from 10 to 12 March 2010, participants had agreed that the reports of the Secretary-General on the coordination of space-related activities within the United Nations system served as a strategic tool for the United Nations to avoid duplication of efforts in the field of

space science and technology, and that future reports should highlight the efforts of the United Nations system in delivering as one with regard to space-related activities for the development agenda.

16. Also at that session, the Meeting had agreed that the reports of the Secretary-General should be issued on a biennial basis, starting with the period 2012–2013, and that a review of that reporting structure should be made in 2017. The Meeting had further agreed that in the years when there was no report of the Secretary-General, a special report on a selected topic should be considered (see sect. II.E above).

17. At its thirty-seventh session, held in Geneva on 24 August 2017, UN-Space had expressed its satisfaction with the existing reporting structure and had agreed that reports of the Secretary-General on the coordination of space-related activities within the United Nations system and special reports of UN-Space should continue to be issued biennially on an alternating basis.

18. In 2014 and 2016, the focus of the reports of the Secretary-General had been on addressing the post-2015 development agenda (A/AC.105/1063) and the 2030 Agenda for Sustainable Development (A/AC.105/1115), respectively. In 2018, the report was entitled "Coordination of space-related activities within the United Nations system: directions and anticipated results for the period 2018–2019 – a United Nations that delivers" (A/AC.105/1179), and in 2020, the report was entitled "Coordination of space-related activities within the United Nations system: directions and anticipated results for the period 2020–2021 – megatrends and realization of the Sustainable Development Goals" (A/AC.105/1230).

19. The most recent report, published in 2023, had covered the period 2022–2023 and had been focused on capacity-building for an inclusive future (A/AC.105/1292). In the report, the pivotal role of capacity-building in efforts to coordinate space-related activities within the United Nations system had been emphasized and the importance of tailored approaches in capacity-building initiatives, particularly for historically marginalized or underserved groups, had been underscored.

20. UN-Space recalled that, in accordance with paragraph 30 of General Assembly resolution 76/3, a midterm review of progress made in implementing the "Space2030" Agenda should be carried out in 2025. In that regard, UN-Space noted that a future report of the Secretary-General on the coordination of space-related activities within the United Nations system could focus on the midterm review. UN-Space also noted that potential topics of the report to be produced in 2025 could include Earth observations for the Sustainable Development Goals or the Early Warning for All initiative.

21. UN-Space agreed that the focus of its report to be presented to the Committee on the Peaceful Uses of Outer Space at its sixty-eighth session, in 2025, would be decided at the forty-third session of UN-Space. Participants were invited to propose and consider topics for future reports of the Secretary-General.

G. UN-Space publication

22. UN-Space recalled the publications it had produced, which included the following: "Space solutions for the world's problems: how the United Nations family uses space technology for achieving development goals" (ST/SPACE/33); *Space and Climate Change*; "Space for agriculture development and food security: use of space technology within the United Nations system" (ST/SPACE/69); and "Space-related activities within the United Nations system" (ST/SPACE/84).

23. UN-Space acknowledged that its publications served as important tools for increasing awareness of the benefits of space for sustainable development and the role and activities of United Nations system entities, and for fostering synergies for enhanced cooperation within the United Nations system.

24. UN-Space agreed that a new UN-Space publication, to be finalized in 2024, would be developed jointly by FAO and the Office for Outer Space Affairs, on the theme of space tools for agriculture and food security. UN-Space agreed to produce that publication in electronic format.

H. United Nations Global Service Centre services and products in support of the UN-Space community: United Nations Global Service Centre showcase

25. Representatives of the United Nations Global Service Centre showcased in detail the Centre's unique services and products in support of the UN-Space community, highlighting that the Centre had served the needs of peace operations for more than 20 years, initially as the United Nations Logistics Base, and then, since 2010, as the United Nations Global Service Centre under the Department of Operational Support.

26. The related presentations by the Global Service Centre were focused on the following topics: geospatial catalogue of services; available imagery services: from acquisition to delivery (which included the showcasing of the Discovery Tool); analytical services, imagery intelligence, groundwater exploration, ground-penetrating radar and environmental analytics; United Nations Maps (UN Maps), an initiative providing the most accurate and up-to-date location-based information for United Nations operational activities; and Global Service Centre service management.

27. The Global Service Centre invited United Nations entities that might have needs related to data management and satellite imagery to contact the Centre in order to further explore possible options for support and collaboration.

I. Coordination of future plans and programmes of common interest for cooperation and exchange of views on current activities in the practical application of space technology and related areas

28. UN-Space recalled that the Committee on Earth Observation Satellites (CEOS) had been created in 1984 to coordinate and harmonize Earth observations with a view to making it easier for the user community to access and use data. The CEOS membership mainly comprised space agencies with an Earth observation programme, which were the members, and associate members that had significant programmatic activities linked to CEOS activities. Since 1994, the Office for Outer Space Affairs had been an associate member.

29. Following the joint meeting of UN-Space and the CEOS Working Group on Capacity-building and Data Democracy, held in March 2023, which had been devoted to the identification of needs of Member States and United Nations entities for capacity-building in the use of space-based observations (see A/AC.105/1291, para. 45), the secretariat of UN-Space had worked with CEOS to arrange, as a unique component of the forty-second session of UN-Space, a day featuring demonstrations of technologies, and training sessions on tools, to meet such needs.

30. Contributing to the programme of the dedicated training day, the senior consultant for the Copernicus programme at the European Union Agency for the Space Programme shared perspectives on leveraging European Union space data for sustainable development. The remote sensing specialist of the European Space Agency (ESA) provided both an introduction to remote sensing and data accessibility and a focused training session related to Sustainable Development Goal 1 that was dedicated to the topic of flood mapping using the Sentinel-1 satellite. The scientific director of the Regional Image Processing and Remote Sensing Service (SERTIT), which provided services to the CEOS Recovery Observatory, described the relationship of his intervention to Sustainable Development Goal 1 and discussed the use of satellites to support disaster recovery efforts. The representative of the

Downstream and Application Services Department of the Italian Space Agency (ASI), who had been seconded to the Italian Civil Protection Department, addressed Sustainable Development Goal 15 and shared information on deforestation monitoring using the Constellation of Small Satellites for Mediterranean Basin Observation (COSMO-SkyMed) of Italy. The Earth scientist of the Pacific Northwest National Laboratory of the United States of America, who was also a collaborator with the Group on Earth Observations, discussed Earth observations for mapping urban heat islands and urban heat exposure, making clear connections to Sustainable Development Goal 11.

31. As part of the dedicated training day, the Global Service Centre facilitated a comprehensive tour of the base and offered participants in the session visits to the Strategic Air Operations Centre; the facility for the Field Remote Infrastructure Monitoring platform (Unite FRIM); the Data Centre; the Network Control Centre; and the Digital Technology Room at the Digital Twin and Virtual Operations Centre (part of the extended reality and virtual training capacity initiative), where participants were able to engage with simulations and personally try out virtual reality tools. That allowed participants to gain a first-hand understanding of some of the key operational and technical support services made possible by teams based at the Global Service Centre.

32. UN-Space recognized that it was the first time that a dedicated training day had been arranged as a component of a UN-Space session, that the expertise shared had added value to the session and that the demonstrations and training sessions had contributed to meeting needs previously expressed by United Nations entities.

33. During the discussions under agenda item 8, participants shared experiences and practices and considered challenges in obtaining and sharing satellite imagery to support the implementation of United Nations mandates. UN-Space recognized the need to improve coordination in obtaining and sharing commercial satellite imagery across the United Nations system in order to reduce costs and redundancies.

34. In that connection, UN-Space requested the Office for Outer Space Affairs to work towards coordinating data-sharing, building United Nations system capacity and cooperating on the procurement of space-based information, to accelerate the application of space assets in order to achieve the Sustainable Development Goals, and to raise extrabudgetary funds for human resources and technical capacities in order to lead in those efforts. UN-Space noted that a representative of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) would report on that work to UN-Space at its forty-third session, in 2024.

35. As part of that activity, a platform was to be established to list focal points for obtaining and sharing satellite imagery, the intentions of United Nations entities to purchase satellite imagery and the needs of Member States for which satellite imagery had to be requested, and to provide a repository of images already purchased, using, wherever possible, the resources and infrastructure that already existed, and drawing on the work that had already been done, within the United Nations system. The Global Service Centre agreed to provide the necessary infrastructure and operational support, subject to the availability of resources.

36. UN-Space noted that UN-SPIDER, along with other United Nations entities, would participate in the negotiations with selected vendors and in the finalization of the new United Nations system-wide contract for purchases of very high-resolution imagery, which was an effort led by the United Nations Group on the Information Society.

37. UN-Space encouraged United Nations entities to nominate focal points for the inter-agency coordination mechanism and requested the secretariat of UN-Space to maintain a list of such focal points in order to facilitate coordination between entities.

38. UN-Space agreed to explore the use of the SharePoint platform for the exchange of information on the activities of United Nations entities dealing with the following matters:

(a) Space-derived information;

(b) Space applications and products and related training and capacity-building;

(c) Normative frameworks related to space activities.

J. Organization of open sessions

39. UN-Space recalled that the themes of its previous open sessions had included the following: public-private partnerships and innovative funding approaches in the United Nations system to promote the use of space technology and its applications; space-related activities of United Nations entities in Africa; space technology for emergency communications; space and climate change; space for agriculture and food security; space and disaster risk reduction: planning for resilient human settlements; and the identification of needs of Member States and United Nations entities for capacity-building in the use of space-based observations.

40. The Meeting noted that the nineteenth open session of UN-Space, which was scheduled to be held on 19 October 2023 in Brindisi, Italy, directly following the forty-second closed session, would be focused on the theme “Earth observation and integrated applications for disaster risk management and sustainable development”.

41. UN-Space noted that its open sessions brought together United Nations entities, Governments and other stakeholders for the purpose of advancing the strategic role of space science, technology and applications for the implementation of the 2030 Agenda for Sustainable Development. Open sessions provided a platform for collaboration and dialogue, leveraging the collective expertise, resources and knowledge of different stakeholders to achieve common goals.

K. Any other business

42. The Meeting discussed whether the frequency of sessions of UN-Space could be increased, noting that the scheduling of sessions in conjunction with other space-related events might encourage wider participation.

43. UN-Space agreed that the exact date of its forty-third session would be determined during the intersessional period by the Office for Outer Space Affairs in its capacity as the secretariat of UN-Space.

44. UN-Space agreed that the agenda for the forty-third session would have a structure similar to that of the agenda for the forty-second session, meaning that the substantive items on the agenda would include the following: (a) update on the latest developments in the peaceful uses of outer space; (b) preparation of the report of the Secretary-General on the coordination of space-related activities within the United Nations system, to be submitted to the Committee on the Peaceful Uses of Outer Space at its sixty-eighth session, in 2025; (c) special report by UN-Space on initiatives and applications for space-related inter-agency cooperation; (d) coordination of future plans and programmes of common interest for cooperation and exchange of views on current activities in the practical application of space technology and related areas; and (e) organization of an open session of UN-Space. UN-Space noted that the agenda for the forty-third session would be finalized by the secretariat closer to the date of the session.

III. Nineteenth open session of UN-Space

A. Background

45. The nineteenth open session of UN-Space was held in Brindisi, Italy, on 19 October 2023, directly following the forty-second session of UN-Space, in collaboration with the Service for Geospatial, Information and Telecommunications Technologies of the United Nations Global Service Centre and with ASI. The session, entitled “Earth observation and integrated applications for disaster risk management and sustainable development”, represented an opportunity for representatives of Member States, United Nations entities, industry and the private sector to connect, exchange views, share information, learn about each other’s work and explore possible synergies in connection with the theme of the session.

46. Given the location of the open session, special consideration and emphasis was given to case studies from the broader space community of Italy and, in particular, the Apulia region.

47. The full programme of the open session is contained in annex II to the present report, and presentations made at the session have been made available on the website of the Office for Outer Space Affairs (unoosa.org).

B. Earth observation and integrated applications for disaster risk management

48. The discussions during the morning session were focused on the use of Earth observation technologies and applications for disaster risk management.

49. The representative of UN-SPIDER detailed efforts to ensure that all countries had access to, and developed the capacity to use, all types of space-based information (e.g. derived from Earth observation, global navigation satellite systems and satellite communications) in support of the full disaster management cycle. Regional support offices, the UN-SPIDER knowledge portal and partnerships, including for the acquisition of very high-resolution satellite imagery, were described.

50. Representatives of the Global Service Centre shared information on flood analytics and the role of UN Maps in making data available to any humanitarian actor in order to enable quick and actionable decisions. The data workflow of UN Maps and the role of artificial intelligence were explained. Among the case studies presented was one on data collection and mapping for the earthquake in Morocco and floods in Libya and another on the support and services provided by the Centre for disaster response.

51. The representative of WMO gave a presentation on the WMO Space Programme, the outcomes of the nineteenth World Meteorological Congress and strategic initiatives of WMO, such as Early Warning for All and Global Greenhouse Gas Watch. He highlighted the role of WMO in coordinating with space agencies on observations of the cryosphere (polar regions and high mountains), and the importance of satellite data in weather forecasting, nowcasting and climate monitoring.

52. A joint presentation given by representatives of the United Nations Educational, Scientific and Cultural Organization and the Geo-Statistical Laboratory of the Economic and Social Commission for Western Asia (ESCWA) provided insights into challenges, limitations and opportunities with regard to mapping natural and human-induced disaster-related events for integrated socioeconomic and environmental indicators. Information was shared on the steps involved in generating comprehensive geostatistics on ESCWA member States, detailing the data sources used and comparisons between data sets.

53. The representative of ASI illustrated how Earth observation satellites could support emergency management services in an effective operational framework. Firstly, following the characterization of thematic domains (e.g. the response to critical events such as floods, fires, earthquakes and eruptions), related information needs were focused on the identification of the areas impacted by critical events (in terms of distribution and extent) and on mapping related damage and its degree of severity. Products to be prepared were then characterized in terms of user requirements. The response to the flood in the Emilia-Romagna region of Italy in May 2023 was highlighted as a case study related to event response and the daily monitoring of flood evolution, and thus a case of a combined national and European (i.e. Copernicus) response. In particular, Earth observation input data and on-demand acquisition planning were highlighted.

54. A representative of the Italian Civil Protection Department emphasized the utilization of satellite data for enhancing the effectiveness of prevention and of emergency response. The case studies presented included an early warning system for meteo-hydrological risks using satellite data on soil moisture, support for the State fire fleet in managing forest fires and the capabilities of the early warning system for anticipating floodplain overflow risks and seismic risks. The recovery efforts highlighted included responses to the Vaia windstorm, mudslides in Casamicciola Terme on the island of Ischia and the forest fires on the Aspromonte mountain massif. The presentation emphasized that emergency response services were dedicated to supporting responses to critical events and were focused on accurate damage mapping after such events. The overarching goal was to manage natural and human-made disasters by providing crucial information that aided in protecting lives, assets, settlements and the environment during and immediately after a disaster.

55. The representative of the Apulian Aerospace Technology District, a not-for-profit consortium with the mission of increasing the competitiveness of its members and of the aerospace value network of Apulia and Italy, focused on the use of uncrewed aerial systems in enhancing risk management efforts. He spoke about the Grottaglie Airport Test Bed, an infrastructure for research and flight testing of uncrewed aerial systems that was intended to serve as a one-stop shop for the provision of simulation, experimentation, certification and presentation services for research, development, and the promotion of products and solutions. He noted that global navigation satellite systems services and satellite communications services were essential for operations involving uncrewed aerial systems.

56. The representative of Planetek Italia spoke about the application of the Copernicus Emergency Management Service, which offered on-demand mapping modules to support emergency situations, humanitarian crises and risk and recovery mapping. He focused on the post-disaster evaluation and risk assessment of landslides, detailing a case involving a landslide on Ischia in 2022, in which the Copernicus Emergency Management Service had supported the Italian Civil Protection Department in evaluating the post-disaster consequences of the landslide, and in which useful geospatial data had been provided for a preparedness analysis of Ischia.

57. The representative of Thales Alenia Space Italia shared information on IRIDE, an Italian multi-sensor satellite constellation for Earth observation that was under development and that would complement national and European assets. Designed as a “constellation of constellations”, IRIDE would collect large volumes of data and have very high revisiting capabilities, demonstrating a high level of flexibility, capacity and responsiveness and the ability to optimize the surveillance of areas of interest. Among its aims, IRIDE would support administrations in fighting hydrogeological instability and fires, protecting coastlines and monitoring critical infrastructures, air quality and weather conditions. The constellation’s operational strategy was emphasized, which included the optional capacity to process data on board and to provide information for quick action.

C. Earth observation and integrated applications for sustainable development

58. The afternoon session was devoted to examining various aspects of the use of remote sensing data, technologies and applications for sustainable development.

59. The representative of FAO outlined the overall mandate of the organization, which led international efforts to defeat hunger and improve nutrition and food security, and the specific contributions of its Geospatial Unit, which included the provision of geospatial data, information and services to support food security, monitor the use of natural resources and formulate proposals for policy-relevant solutions that employ remote sensing. The presentation covered, as one example, the severity of agricultural droughts in Afghanistan from 2021 to 2023, emphasizing the use of the Vegetation Condition Index to assess impacts on both irrigated and rain-fed agriculture.

60. The representative of ITU discussed the critical role played by radio spectrum management in Earth observation applications, outlining how ITU ensured the availability of radio frequency bands that are free from harmful interference for the effective operation of all Earth observation systems and encouraged greater coordination between national meteorological and hydrological services, disaster management authorities and development agencies. She also shared information on the ITU leadership, the ITU Constitution and the ITU Radio Regulations, and on the ITU World Radiocommunication Conference 2023, which had been held in Dubai, United Arab Emirates, in November and December 2023.

61. The representative of the secretariat of United Nations Convention to Combat Desertification situated the work of the entity within the context of its 2018–2030 Strategic Framework and highlighted the related strategic objectives, which included improving the condition of affected ecosystems, combating desertification and land degradation, promoting sustainable land management, mitigating and managing the effects of drought, improving the living conditions of affected populations, generating global environmental benefits and mobilizing financial and non-financial resources by building partnerships. He also emphasized the importance of open data access and Earth observation as a data source in helping countries to report on Sustainable Development Goal indicator 15.3.1. As a result of the entity's work, the indicator had been elevated to tier 1 status by the Inter-Agency and Expert Group on Sustainable Development Goal Indicators. The high rate of reporting on that indicator by countries had allowed the secretariat of the Convention to compile aggregated regional and global data on degraded land for the monitoring of global status and trends.

62. The representative of WFP shared information on the Asset Impact Monitoring Service, which leveraged satellite and climate data to inform WFP operations and programmes, and placed emphasis on the monitoring of interventions aimed at building resilience. It had become a fully operational service that utilized satellite image analysis and landscape monitoring techniques to assess the impact of asset creation projects. The Service's ability to monitor in highly insecure areas inaccessible to staff and detect biophysical variables invisible to the human eye, and its scalability, were emphasized. Recent developments in the Service included the automation of workflows, the integration of additional high-resolution data sets, the introduction of new data sets including temperature and soil indicators, and the development of the Soil Indicators for Improved Livelihood and Programming (SoILPRO) project.

63. The representative of UNODC outlined how the Office utilized Earth observation data in various thematic areas related to drug production and trafficking, illegal mining, deforestation and illegal fishing. In that regard, he highlighted illicit crop monitoring, the monitoring of crop substitution projects and illegal mineral mines, and support for law enforcement and anti-corruption programmes. Collaboration on the development of Earth observation applications was also emphasized, as exemplified by the Office's work with ESA on security applications

related to illegal mining and other illegal activities, with the University of Salzburg, Austria, and the National Autonomous University of Mexico on risk mapping of potential illicit crop cultivation, and with ITU on a competition related to the use of geospatial artificial intelligence for cropland mapping in Afghanistan.

64. The representative of ESCAP highlighted the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018–2030). He shared information on a geospatial good practices database and dashboard, and on a compendium series which was aimed at disseminating knowledge and experience in using geospatial information for sustainable development, noting that the 2024 edition of the compendium would focus on East and North-East Asia and would address the leveraging of digital innovations, subregional needs and policy recommendations. His presentation also focused on various initiatives to build institutional capacity for using integrated spatial-temporal data in local monitoring and decision-making.

65. The representative of ASI recalled the critical milestones achieved in, and the contributions of, the use of space technology to support sustainable development, placing them in the relevant historical context. She shared information on key satellite missions of ASI and its partners, including launch sites and planned lifetimes, as illustrated by the COSMO-SkyMed, PRISMA and PLATiNO satellites. She highlighted contributions to, inter alia, change detection in vegetation, land, water and ice monitoring and to climate forecasting. She also discussed the impact of space debris on space missions.

66. The representative of ESA spoke about maximizing the impact of European Earth observation assets for society and fostering European competitiveness in making the best use of all Earth observation missions, delivering scientific excellence, pioneering novel applications, growing the downstream sector, leveraging digital innovation, exploring disruptive technologies and preparing for upcoming missions. She detailed use cases from the ESA Future Earth Observation and Global Development Assistance programmes and highlighted partnerships for expanding the use of Earth observation in addressing areas such as fragile states, climate resilience, disaster resilience, agriculture and public health.

67. The representative of the Mediterranean Agronomic Institute of Bari detailed a case study on the use of Earth observation for sustainable water resources management in agriculture, focusing on Egypt. He shared information on the development of an Earth observation technique to estimate crop water stress and evapotranspiration using data from the Ecosystem Spaceborne Thermal Radiometer Experiment on Space Station (ECOSTRESS) mission and the PRISMA satellite, and on the development of a model to estimate actual crop evapotranspiration, which would be integrated into a web platform designed to support end users in managing irrigation from the perspective of productivity.

68. The representative of e-GEOS showcased activities carried out by a consortium of six European companies led by e-GEOS in the fields of Earth observation, remote sensing, open-source intelligence and socio-spatial intelligence, and in the integration of technology into the ESA Global Development Assistance project on fragility, conflict and security. She shared information on preparedness studies for resilience in the Ishkashim area on the border between Afghanistan and Tajikistan, in the context of the Copernicus Risk and Recovery Mapping service, and on the Copernicus Enhanced Tools for Anticipative Response to Climate Change in the Emergency and Security Domain project.

69. The representative of Meteorological Environmental Earth Observation highlighted the company’s commitment to transforming environmental data into actionable insights for various sectors, including agriculture, urban planning, atmospheric and marine studies, public health, climate change, forestry, cultural heritage and infrastructure monitoring. Providing case studies, he elaborated on work undertaken in relation to abandoned fields, farming advice and pest risk management.

70. The representative of SITAEL discussed how the company promoted the growth of its supply chain, thereby transforming its industrial ecosystem into an attractive environment for the space economy in Italy. He presented case studies on: (a) the use of the ASI PLATiNO-2 spacecraft and the NASA Multi-Angle Imager for Aerosols mission to study air pollution-related health issues by combining satellite observation data with data from ground-based pollution sensors; (b) the PLATiNO satellites for the IRIDE satellite constellation, which were to be used for hyperspectral imaging in support of agriculture; and (c) the ESA ICUTrain project, aimed at leveraging railways to enhance medical emergency response in Europe.

D. Concluding remarks

71. In their concluding remarks, the co-organizers of the open session emphasized the success of the event in bringing together representatives of Member States, United Nations entities, industry and the private sector to exchange views, share information and practices, showcase advanced Earth observation programmes and the exploitation of cutting-edge technologies, and explore possible synergies for enhancing global resilience through the use of satellite technology for comprehensive disaster management.

72. Special appreciation was expressed to ASI for its collaboration with UN-Space, which had helped UN-Space to facilitate new partnerships and include diverse voices in its nineteenth open session. Gratitude was also expressed to the United Nations Global Service Centre for hosting the session.

Annex I

List of participants in the forty-second session of the Inter-Agency Meeting on Outer Space Activities (UN-Space), held in Brindisi, Italy, on 17 and 18 October 2023

Chair: J. Neme-Lozano (Service for Geospatial, Information and Telecommunications Technologies of the United Nations Global Service Centre)

Secretary: A. Duysenhanova (Office for Outer Space Affairs)

Participating United Nations entities

Department of Economic and Social Affairs	S. Fan
Economic and Social Commission for Asia and the Pacific	P. Budiyanto
	S. Medrano
	H. Mok
Food and Agriculture Organization of the United Nations	M. Henry
International Atomic Energy Agency	D. Delattre
	N. Koop
	R. Pelich
	X. Tang
International Telecommunication Union	V. Glaude
Office for Outer Space Affairs	L. Czaran
	J. Del Rio Vera
	T. Keusen
Secretariat of the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa	B. O'Connor
United Nations Global Service Centre	I. Aiello
	L. Diaz
	S. Fernandez
	D. Gonzalez Ferreiro
	J. Johnson
	J. Kwoba-Abungu
	A. Leggieri
	M. Montani
	M. Noviello
	B. Palade
	M. Picci
	F. Raeli
	O. Retsilidou
	J. Stewart
	M. Tola
	F. Vinci
	G. Violante

	G. Zekios
	K. Zouab
United Nations Human Settlements Programme	J. Ashiali
	D. Githira
	E. Kochulem
	G. Ogutu
	M. Runguma
United Nations Office on Drugs and Crime	A. Bourdet
	C. Bussink
	A. Nobajas
	L. Vita
World Food Programme	H. Kemper
World Meteorological Organization	H. Pohjola

Annex II

Programme of the nineteenth open session of the Inter-Agency Meeting on Outer Space Activities (UN-Space), held in Brindisi, Italy, on 19 October 2023

Earth observation and integrated applications for disaster risk management and sustainable development

Welcoming remarks

Digital Transformation Section, Economic Development Department of the Apulia region of Italy	V. Bavaro
Italian Air Force Airport Detachment “O. Pierozzi”	M. Minonne
United Nations Global Service Centre	G. Ceglie
Office for Outer Space Affairs	A. Holla-Maini

Introduction

Office for Outer Space Affairs	T. Keusen
Italian Space Agency	N. Paradiso

Earth observation and space integrated applications for disaster risk management: session 1

United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER)	L. Czaran
United Nations Global Service Centre	M. Noviello
	M. Montani
World Meteorological Organization	H. Pohjola
United Nations Educational, Scientific and Cultural Organization	E. Sattout
Economic and Social Commission for Western Asia	Geo-Statistical Laboratory Team:
	A. Iaaly
	S. Labaki
	S. Rahman
	S. Rastan
Italian Space Agency	L. Candela
Italian Civil Protection Department	P. Pagliara
Apulian Aerospace Technology District	A. Zilli
Planetek Italia	M. Zotti
Thales Alenia Space Italia	A. Nassisi

Earth observation and space integrated applications for sustainable development: session 2

Food and Agriculture Organization of the United Nations	M. Henry
International Telecommunication Union	V. Glaude
Secretariat of the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa	B. O'Connor
World Food Programme	H. Kemper
United Nations Office on Drugs and Crime	C. Bussink
Economic and Social Commission for Asia and the Pacific	H. Mehmood
Italian Space Agency	E. Cianfanelli
European Space Agency	M. Corvino
Mediterranean Agronomic Institute of Bari/International Centre for Advanced Mediterranean Agronomic Studies	B. Derardja
e-GEOS	L. Bettili
Meteorological Environmental Earth Observation	S. Natali
SITAEL	G. Tuccio

Concluding remarks

Office for Outer Space Affairs	A. Duysenhanova
Italian Space Agency	N. Paradiso