



**Committee on the Peaceful
Uses of Outer Space****Report on activities carried out in 2022 in the framework of
the United Nations Platform for Space-based Information
for Disaster Management and Emergency Response****I. Introduction**

1. In its resolution [61/110](#), the General Assembly decided to establish a programme within the United Nations to provide universal access to all countries and all relevant international and regional organizations to all types of space-based information and services relevant to disaster management to support the full disaster management cycle by being a gateway to space information for disaster management support, serving as a bridge to connect the disaster management and space communities and being a facilitator of capacity-building and institutional strengthening, in particular for developing countries.
2. At its fiftieth session, the Committee on the Peaceful Uses of Outer Space agreed that progress reports on the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) and its future workplans should be considered by the Scientific and Technical Subcommittee under a regular agenda item on space-system-based disaster management support.
3. As part of the responsibility of the Office for Outer Space Affairs of the Secretariat for promoting international cooperation in the peaceful uses of outer space, and in line with its mandate, UN-SPIDER fosters knowledge management, builds bridges between providers of space-based information and users of services in the disaster risk management and emergency response communities and provides technical advisory support to Member States as needed.
4. The 27 regional support offices¹ of UN-SPIDER are hosted by relevant national and regional organizations. Those offices provide, on a voluntary basis, regional coverage for UN-SPIDER activities, rendering valuable support from institutions specialized in Earth observation, disaster risk reduction and emergency response.
5. Most of the regional support offices also contribute pro bono to UN-SPIDER international conferences, capacity-building programmes and technical advisory and institutional strengthening missions. They also provide content for the UN-SPIDER knowledge portal.

¹ In 2022, two new regional support offices were added to the network. Further information is available at www.un-spider.org/network/regional-support-offices.



6. The present report contains a summary of activities carried out under the UN-SPIDER programme in 2022.

II. Activities carried out in 2022

7. The work of UN-SPIDER in 2022 was carried out with the resources allocated through the regular budget of the United Nations and with voluntary cash and in-kind contributions from Member States and collaborating entities. Several activities were conducted in a virtual format owing to the continued travel restrictions related to the coronavirus disease (COVID-19) pandemic.

8. An in-person meeting of focal points of UN-SPIDER regional support offices was held from 14 to 16 November 2022, for the first time since the onset of the COVID-19 pandemic. The meeting also served as an opportunity to introduce the two new candidate regional support offices, provide updates on ongoing and upcoming activities and discuss thematic issues as well as joint workplans and potential cooperation for 2023 and beyond.

9. As part of its technical advisory support activities (see sect. A below), UN-SPIDER carried out formal technical advisory missions to Armenia, Paraguay and the Philippines. It also carried out institutional strengthening missions to Ghana and Nigeria and provided virtual support to several countries in Africa, Asia and the Pacific and Latin America and the Caribbean. The programme also provided short-term consultants to carry out activities at the national level in Mongolia and Sri Lanka and to compensate for the inability to undertake follow-up activities addressing specific technical advisory mission recommendations in those countries during the pandemic.

10. The outreach activities conducted by UN-SPIDER (see sect. B below) included workshops, conferences, networking sessions, webinars and training courses. UN-SPIDER also contributed to various outreach activities and training courses organized by its partners.

11. The programme supported emergency response actions and operations in several countries and promoted the universal access initiative under the International Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (also referred to as the International Charter on Space and Major Disasters) among disaster management authorities of countries in Africa, Asia and the Pacific and Latin America and the Caribbean.

12. In addition, the programme continued to raise awareness regarding the Copernicus Emergency Mapping Service and the Copernicus Risk and Recovery Service.

A. Technical advisory support

13. The activities carried out in 2022 included technical advisory missions to Armenia, Paraguay and the Philippines, institutional strengthening missions to Ghana and Nigeria and the provision of virtual technical advisory support to the Dominican Republic, Honduras, Mongolia, Mozambique, Nigeria and Sri Lanka.

Technical advisory mission to Armenia, 27 June–1 July 2022

14. At the request of the Ministry of Emergency Situations of Armenia, UN-SPIDER carried out a technical advisory mission to Armenia from 27 June to 1 July 2022 to identify existing capacities and needs related to the use of space-based information in disaster management efforts and to help the Ministry take full advantage of opportunities made available by the space community. The mission was carried out with the support of experts from Ben-Gurion University of the Negev in Israel, Delta State University and Oklahoma State University in the United States of

America, the Iranian Space Agency, the Asian Institute of Technology in Thailand and the Group on Earth Observations.

15. The mission team visited 10 government agencies, including the Ministry of Emergency Situations, and met with the United Nations country team, which supports the coordination of national disaster management efforts. The mission took note of the use of geographic information systems by many of the institutions visited and of their efforts to make better use of satellite imagery to analyse natural hazards in the country.

Technical advisory mission to the Philippines, 26–30 September 2022

16. At the request of the Philippine Space Agency, and in coordination with the National Disaster Risk Reduction and Management Council of the Philippines, UN-SPIDER carried out a technical advisory mission to the Philippines from 26 to 30 September 2022 to identify existing capacities and needs related to the use of space-based information in disaster management efforts and to help the Agency and the Council take full advantage of opportunities made available by the space community. The mission was carried out with the support of experts from the University of Central Lancashire in the United Kingdom of Great Britain and Northern Ireland, Saint Xavier University in the United States, the Asian Institute of Technology in Thailand, the Group on Earth Observations, the Continuum Planning and Development Trust of India, the Pacific Disaster Centre, the Indian Institute of Remote Sensing, the International Water Management Institute and BlackSky Technology.

17. The mission included visits to several government agencies, universities and the United Nations country team office, which supports national disaster management efforts. The mission took note of the use of geographic information systems by many of the institutions visited and of their efforts to use satellite imagery to analyse natural hazards in the country.

18. The mission included a national workshop with more than 130 participants from various institutions in the Philippines. The workshop raised awareness among stakeholders regarding ongoing disaster management efforts in the Philippines and elicited their input on current challenges inhibiting the use of space-based information in disaster management.

Technical advisory mission to Paraguay, 21–25 November 2022

19. At the request of, and in coordination with, the Paraguayan Space Agency, UN-SPIDER carried out a technical advisory mission from 21 to 25 November 2022 to encourage government agencies and stakeholders to take full advantage of the opportunities made available by the space community regarding space-based information, services and products for disaster management. The mission was carried out with the support of experts from the National Commission on Space Activities of Argentina, the National Institute for Space Research of Brazil, the Agustin Codazzi Geographic Institute of Colombia and the Federal University of Santa Maria of Brazil.

20. The mission team visited several government agencies, including the National Emergency Secretariat, as well as two universities, and met with the United Nations Resident Coordinator and staff of the United Nations Development Programme, which supports the national space agency. The mission took note of the use of geographic information systems by those institutions and of their efforts to increase the use of satellite imagery to analyse natural hazards in the country.

21. The mission included a workshop with more than 20 participants from the above-mentioned institutions. At the workshop, participants discussed ways to enhance inter-institutional cooperation, the sharing of geospatial information and capacity-building needs to address the challenges posed by natural hazards.

Institutional strengthening mission to Ghana, 9–12 May 2022

22. UN-SPIDER carried out an institutional strengthening mission to Ghana from 9 to 11 May 2022 to support the National Disaster Management Organization in its planning of an earthquake simulation exercise that was held in June 2022. The simulation was organized by the National Disaster Management Organization and several government agencies, with support from the National Guard of North Dakota, United States. The simulation exercise was based on a hypothetical earthquake impacting the southern region of Ghana, triggering impacts in communities and several sectors of development. Many government agencies participated in the exercise.

23. UN-SPIDER proposed that a simulated activation of the International Charter on Space and Major Disasters be included in the exercise in order to raise awareness regarding the provision of space-based information for disaster response efforts, which is provided by that emergency mechanism free of charge to national disaster management agencies.

24. The mission included a meeting with the Minister of the Interior and other high-ranking officials from institutions under the Ministry, as well as a planning workshop related to the exercise.

Institutional strengthening mission to Nigeria, 12–16 September 2022

25. At the request of, and in coordination with, the National Space Research and Development Agency (NASRDA) of Nigeria, UN-SPIDER carried out an institutional strengthening mission to Nigeria from 12 to 16 September 2022. The aim of the mission was to continue to raise awareness of the benefits of the use of space technologies in disaster management applications.

26. The mission included a three-day workshop on the use of emergency operations centres to coordinate the response of government agencies and the international community in the case of very large floods in Nigeria. The workshop was attended by more than 100 participants from Nigeria and included presentations by several institutions and a simulation of the activation of the International Charter on Space and Major Disasters. In addition, the workshop benefited from the support of experts from the Centre for Remote Sensing of Land Surfaces of the University of Bonn, Germany, in its role as a UN-SPIDER regional support office, and from the National Disaster Management Organization of Ghana.

27. The mission team carried out institutional visits to the National Emergency Management Agency, the Nigeria Hydrological Services Agency, the National Oil Spill Detection and Response Agency, the Nigerian Meteorological Agency and the Office of the Surveyor General of the Federation.

28. In addition, the mission included a meeting with partners from NASRDA, the National Emergency Management Agency, the Nigerian Meteorological Agency and the Nigeria Hydrological Services Agency, the National Disaster Management Organization of Ghana, the Centre for Remote Sensing of Land Surfaces of the University of Bonn and the Copernicus Global Flood Awareness System. The meeting was held to advance the implementation of a project to improve flood early warning systems in Nigeria and Ghana through the incorporation of impact-based forecasts making use of the Global Flood Awareness System, archived information on the historical impacts of floods from the National Emergency Management Agency of Nigeria and the National Disaster Management Organization of Ghana, hydrological modelling by the Hydrological Services Agency and weather data from the Nigerian Meteorological Agency.

29. The mission allowed NASRDA and the UN-SPIDER team to raise awareness of the benefits of the use of space-based information provided through the International Charter on Space and Major Disasters in the case of very large floods and of the combined use of archived and newly collected satellite imagery to monitor the extent of the Lagdo dam waters in Cameroon. Information on the geographical extent of the

reservoir is of relevance to Nigeria, as floods may occur on the Benue River in Nigeria when the dam gates need to be opened to release water.

Virtual support for the Dominican Republic, 2022

30. At the request of the National Emergency Commission, and with the support of the national office of the United Nations Development Programme, UN-SPIDER organized two webinars to train new members of the Geospatial Information Team for Disaster Management of the Dominican Republic on space technologies for disaster management. The Team was established by the Commission in 2012 upon the recommendation of UN-SPIDER and includes professionals and specialists from more than 15 organizations in the Dominican Republic with skills related to geographic information systems and remote sensing. The aim of the Team is to contribute to disaster risk reduction, preparedness and response efforts through the generation of relevant space-based and geospatial information.

31. More than 20 members of the Geospatial Information Team participated in the two-day virtual training course, which included an introduction to examples of the use of space technologies to map the geographic extent of floods and mudslides and the burn severity of forest fires, as well as procedures for preparing flood and storm surge hazard maps.

Technical advisory support for Mongolia, January, February and September–December 2022

32. UN-SPIDER continued to offer the National Emergency Management Agency of Mongolia the services of a national consultant for five and a half months in order to facilitate the use of space-based information in disaster management.

33. With a view to providing continued support in 2022, the National Emergency Management Agency, with the support of UN-SPIDER, increased its capacity for making use of space-based information to contribute to disaster risk reduction, preparedness and response efforts.

Technical advisory support to Sri Lanka, January 2022

34. In 2022, UN-SPIDER again offered the services of a national consultant to the Disaster Management Centre of Sri Lanka for one month. The consultant worked with the Centre and the International Water Management Institute, a UN-SPIDER regional support office based in Sri Lanka. That collaboration was expected to lead to the creation of data to be incorporated in the geospatial dashboard and to facilitate the monitoring of targets under the Sendai Framework for Disaster Risk Reduction 2015–2030 at the country level.

B. Outreach and networking activities

35. The present section covers: (a) events organized or co-organized under the UN-SPIDER programme; and (b) contributions to events organized on the initiative of various partner organizations.

1. Events organized or co-organized under the UN-SPIDER programme

Third international Multi-Hazard Early Warning Conference, 23 and 24 May 2022

36. Recognizing the need to continue promoting the implementation of multi-hazard early warning systems in order to reduce losses triggered by natural hazards, the Office for Outer Space Affairs (through UN-SPIDER), as well as the United Nations Office for Disaster Risk Reduction, the World Meteorological Organization and other partners of the International Network for Multi-Hazard Early Warning Systems organized the third international Multi-Hazard Early Warning Conference, which was held in Bali, Indonesia, on 23 and 24 May 2022.

37. The Conference was attended by nearly 750 participants representing international, regional, national and local organizations, as well as other stakeholders. It was held as a prelude to the 2022 session of the Global Platform for Disaster Risk Reduction and afforded the International Network on Multi-Hazard Early Warning Systems an opportunity to take stock of progress in the implementation of the Sendai Framework.

38. The Conference included several technical sessions and hands-on segments. UN-SPIDER used the opportunity to remind participants that Earth observation provides geospatial information to enhance understanding of Earth systems, and that nearly 50 years of satellite-based observations are available for use as baseline data to improve multi-hazard early warning systems.

39. During the conference, speakers, panellists and members of the audience stressed the need for adequate hazard, exposure, vulnerability and impact data, and commented that modern information and communications technologies offered opportunities to improve and tailor early warning data and services that could facilitate anticipatory action. They also stressed the need for effective, inclusive and gender-responsive early warning systems and actions. The accountability of governments, including subnational and local governments, for ensuring access to people-centred early warning systems was also stressed, bearing in mind the need for co-ownership and the need to enable anticipatory early action through impact-based forecasting.

Networking session on the theme “Bridging the gap: linking the space and disaster management communities” at the European Space Agency Living Planet Symposium, 25 May 2022

40. During the European Space Agency (ESA) Living Planet Symposium held at the World Conference Centre in Bonn, Germany, from 23 to 27 May 2022, the German Aerospace Center and UN-SPIDER co-organized a networking session on 25 May to bring together representatives from the space and disaster management communities to discuss ways to use the solutions developed by the space community to confront the challenges posed by natural hazards in developed and developing countries.

41. Participants discussed the challenge of gaining access to space-based information, in particular when disasters affect communications technologies and reduce the available Internet bandwidth. Additional discussions were held on upcoming rapid mapping efforts by the Copernicus Emergency Management Service and on the challenges that the International Charter on Space and Major Disasters faced in relation to the interactions between end users and appointed project managers.

Regional workshop on assessing drought risks and launch of the South Asia Drought Monitoring System, 31 August–2 September 2022

42. The regional workshop was organized by the Disaster Management Centre of the South Asian Association for Regional Cooperation with support from the UN-SPIDER programme, the International Water Management Institute and the Indian Council of Agricultural Research. It was attended by more than 25 participants from Bangladesh, India, Maldives, Nepal, Pakistan and Sri Lanka.

43. The workshop provided a much-needed platform to discuss how Earth observation and meteorological data, along with ground data, can be used to assess drought risks well in time to provide early warnings to vulnerable communities. The workshop also offered an opportunity to launch the South Asia Drought Monitoring System, developed by the International Water Management Institute. The participants were briefed on the capabilities of the System with regard to drought monitoring and early warning, and a training session was offered to encourage the use of the System at the national level.

Second annual workshop on combating disaster and climate change in arid regions using space-based and geospatial technologies, 5–8 November 2022

44. UN-SPIDER also contributed to this workshop, which was co-organized by Delta State University in the United States, in its role as a UN-SPIDER regional support office, and by the Egyptian Society of Environmental Change and Matrouh University in Egypt. The workshop was held in Cairo and was attended by participants from Armenia, Azerbaijan, Bahrain, Egypt, Iran (Islamic Republic of), Oman and Türkiye.

45. The workshop included a training session on the capture, processing, analysis and use of space-based data for use in combating the effects of climate change-driven disasters in arid regions. Special emphasis was placed on spatial-temporal analysis methods which aid in the processing of freely available satellite data products and services to understand and mitigate the effects of climate change-driven disasters.

Annual meeting of UN-SPIDER regional support offices, 14–16 November 2022

46. The annual meeting of UN-SPIDER regional support offices was attended by representatives of 17 regional support offices. Two new candidate regional support offices were also introduced and attended the meeting. UN-SPIDER used the opportunity to brief the regional support offices on ongoing and upcoming activities. The meeting included presentations on relevant work by all current regional support offices and candidate offices. In addition, discussion sessions were held on topics such as the engagement of end users, gender inclusivity and the potential for cooperation between regional support offices.

47. The meeting allowed the identification of joint activities to be organized in 2023 and discussions on potential project proposals and other resource mobilization efforts to be submitted to potential donors in order to continue implementing UN-SPIDER activities worldwide.

Workshop on space-based technologies for disaster risk reduction, 7–9 December 2022

48. The workshop, which was held at the United Nations Conference Centre in Bangkok, was co-organized by the Office for Outer Space Affairs and the Economic and Social Commission for Asia and the Pacific (ESCAP), in collaboration with the Ministry of Emergency Management of China, the Asia-Pacific Space Cooperation Organization, the Geo-Informatics and Space Technology Development Agency of Thailand and the Asian Institute of Technology.

49. The workshop brought together more than 130 participants from Asian, African and European countries, as well as from entities of the United Nations, regional and international organizations and UN-SPIDER regional support offices. It provided a forum for disaster management communities and geospatial experts to strengthen their knowledge and capabilities on the use of space-based information to identify, assess, monitor and respond to disaster risks and to integrate space technology in long-term disaster risk management efforts.

50. The workshop was followed by a five-day hands-on training course, supported by the Asia-Pacific Space Cooperation Organization, which was aimed at enhancing the technical skills of some 25 selected participants from national disaster management authorities in the region.

51. The workshop was organized concurrently with the forty-first session of the Inter-Agency Meeting on Outer Space Activities (UN-Space), a formal inter-agency mechanism established in the mid-1970s to enhance the coordination of space-related activities within the United Nations system. Within the workshop programme, a joint UN-Space/ESCAP high-level panel on space-based technologies for disaster risk reduction was organized on 9 December 2022, enabling all workshop participants to benefit from the information shared.

2. Organization of or contributions to other initiatives, events and webinars

52. UN-SPIDER contributed to a training course for students enrolled in the master of science programme in “Geography of environmental risks and human security”, offered jointly by the United Nations University Institute for Environment and Human Security and the Department of Geography of the University of Bonn. The training course, which was held from 21 March to 7 April 2022, was designed to provide students with an introduction to the use of geographic information system tools, including QGIS and Google Earth Engine, and analytical methods for analysis and remote sensing.

C. Knowledge management

53. Knowledge management is at the core of UN-SPIDER activities. By systematically and continuously compiling knowledge and available resources held by individuals and institutions, UN-SPIDER aims to transfer lessons learned, highlight innovations and foster collaborative practices. The communities involved in the field of work of UN-SPIDER include many different actors: disaster responders, disaster risk specialists, policymakers, remote sensing experts, space technology providers, academics and researchers.

Knowledge portal

54. The UN-SPIDER knowledge portal (www.un-spider.org) continues to be one of the cornerstones of the programme, as it hosts information on all activities conducted by the programme and by the disaster management, emergency response and space communities. By the end of 2022, the total number of content items had increased to more than 9,200. The sections of the knowledge portal with the highest growth rates included the news, events (including training events), data sources and disaster management sections.

55. The average number of monthly visits to the knowledge portal decreased slightly, from an average of 45,000 users per month in 2021 to around 42,000 users per month in 2022. The largest numbers of portal visitors were from the Philippines, India, the United States, Nigeria and Germany (in descending order by number of visitors).

56. To enable a broader audience to access the information in the knowledge portal, the programme and its partners created step-by-step procedures, known as “recommended practices”, for online sharing. The Space and Upper Atmosphere Research Commission of Pakistan, which is a UN-SPIDER regional support office, provided a recommended practice on the topic “Agriculture drought monitoring and hazard assessment using Google Earth Engine”.

57. To facilitate access to online learning resources and to enable self-paced learning for users of the knowledge portal, a new section containing a selection of links to on-demand online courses offered by a variety of institutions was introduced.

58. Efforts were made to incorporate additional content into the Spanish and French versions of the knowledge portal. As a result, the number of visits to the Spanish version of the portal continued to increase compared with previous years.

59. In order to facilitate the discovery of relevant content in the knowledge portal and encourage users to explore related pages, the website’s information architecture has been further improved by linking content that covers the same natural hazards, space technologies and UN-SPIDER activities.

60. UN-SPIDER has also improved the links on the knowledge portal to the activities of the regional support offices and the hazards that those activities address.

Use of cloud-based solutions

61. Given the limited information available on the technology resources of civil protection agencies, as observed during technical advisory support activities, UN-SPIDER increased the use of cloud-based geographic information system solutions. Examples include the use of online data analytics platforms and systems such as Google Earth Engine in recommended practices and the promotion of web-based systems and applications such as the ESA Charter Mapper tool for the International Charter on Space and Major Disasters.

D. Support in the case of emergencies

62. As part of its activities, UN-SPIDER facilitated activation of the International Charter on Space and Major Disasters:

(a) On behalf of the National Institute of Disaster Management of Mozambique and the Department of Disaster Management Affairs of Malawi at the end of January 2022. The request was elevated owing to the very large floods triggered in those countries by Tropical Cyclone Ana. An expert from the Federal University of Santa Maria of Brazil, a UN-SPIDER regional support office, served as project manager in the activation;

(b) On behalf of the National Institute of Disaster Management of Mozambique in response to Tropical Cyclone Gombe, which affected the northern region of Mozambique in early March 2022. An expert from the Federal University of Santa Maria served as project manager during the activation;

(c) On behalf of the Philippine Space Agency, at the request of the National Disaster Risk Reduction and Management Council, in response to Tropical Storm Megi in April 2022;

(d) On behalf of the Philippine Space Agency, at the request of the National Disaster Risk Reduction and Management Council, in response to Tropical Storm Ma-On in August 2022;

(e) On behalf of the National Emergency Commission of the Dominican Republic owing to the floods triggered by Hurricane Fiona in September 2022. An expert from the Federal University of Santa Maria contributed to the activation as a value-added provider;

(f) On behalf of the Philippine Space Agency, at the request of the National Disaster Risk Reduction and Management Council, in response to Tropical Cyclone Noru in September 2022;

(g) On behalf of the Permanent Contingency Commission of Honduras in response to the floods and landslides triggered by Hurricane Julia in October 2022. An expert from the Federal University of Santa Maria contributed to the activation as a value-added provider;

(h) On behalf of the Philippine Space Agency, at the request of the National Disaster Risk Reduction and Management Council, in response to Tropical Cyclone Nalgae in October 2022.

63. UN-SPIDER also supported the national disaster management agencies of Ecuador and Honduras in their activations of the International Charter by identifying project managers and value-added providers.

64. Furthermore, UN-SPIDER supported the national disaster management agencies of Honduras, Nicaragua and Panama in their efforts to become authorized users of the International Charter. Those disaster management agencies were accepted as authorized users in 2022.

Training courses and other activities co-organized with the International Charter on Space and Major Disasters

65. To enhance the use of the International Charter on Space and National Disasters in the case of disasters, the Coordination Centre for the Prevention of Natural Disasters in Central America and UN-SPIDER joined forces to organize a simulated activation of the International Charter as part of an exercise organized by the National Coordinating Agency for Disaster Reduction of Guatemala. The exercise was carried out at the beginning of February to contribute to disaster preparedness for earthquakes. The simulated activation of the Charter benefited from the provision of archived satellite imagery by the National Space Research Institute of Brazil and the Federal Space Agency of the Russian Federation.

66. At the request of NASRDA of Nigeria, the International Charter and UN-SPIDER joined forces to organize a virtual course on 6 September 2022 to train nearly 50 professionals from various government agencies of Nigeria in the use of the Charter Mapper. Experts from ESA and Terradue of Italy served as instructors. The training course was carried out in preparation for a national workshop organized by NASRDA, the Centre for Remote Sensing of the University of Bonn and UN-SPIDER that included a simulated activation of the Charter in response to large floods.

Raising awareness of the Copernicus Emergency Mapping Service

67. In addition to the International Charter, the Copernicus Emergency Mapping Service was also highlighted and described in detail in statements and presentations at international events and missions during the reporting period, with a view to increasing the familiarity of disaster managers worldwide with all of the mechanisms at their disposal.

III. Voluntary contributions

68. In its resolution [76/76](#), the General Assembly once again encouraged Member States to provide UN-SPIDER, on a voluntary basis, with the additional resources necessary – in addition to the small United Nations regular budget allocation – to address the increasing demand for support successfully and in a timely manner. Since its establishment, the programme has benefited from voluntary contributions (cash and in-kind) from the following Governments: Austria, China, Croatia, Czechia, France, Germany, Indonesia, Mexico, Republic of Korea, Spain, Switzerland and Türkiye.

69. The successful implementation of activities in 2022 benefited from the support and voluntary contributions received from the following Governments and entities:

(a) The Government of China extended an existing funding agreement and previously contributed funds in order to continue to support the activities of the UN-SPIDER office in Beijing while a new funding agreement for the next period was being developed. In addition, the Government of China offered the services of two national experts on loan from national government entities, based in the Beijing office;

(b) The University of Bonn contributed 101,474 euros towards the conduct of activities by the UN-SPIDER office in Bonn between June 2021 and June 2022. The University provided the same amount for the conduct of activities between June 2022 and June 2023. Within the scope of the cooperation agreement between the University of Bonn and the UN-SPIDER office in Bonn, UN-SPIDER plans and implements international conferences and expert meetings, undertakes knowledge management efforts and provides technical advisory support to Member States in Africa;

(c) The Government of Germany contributed the services of an associate expert as a junior professional officer;

(d) The Government of France contributed the services of an associate expert as a junior professional officer on a part-time basis (until October 2022).

70. In-kind contributions made by members of the network of regional support offices have been acknowledged in the present report. Memorandums of understanding were renewed with several regional support offices. Two new organizations formally became regional support offices: the Asian Institute of Technology in Thailand and the University of Central Lancashire in the United Kingdom. Another candidate, the Central European University in Austria, has submitted an application to join the network.

IV. Conclusions

71. UN-SPIDER is systematically working to achieve its mission by being a gateway to space information for disaster management support, serving as a bridge between the disaster management, risk management and space communities and being a facilitator of capacity-building and institutional strengthening, in particular for developing countries.

72. In the first half of 2022, UN-SPIDER had to carry out several of its activities in a virtual format because of the global pandemic. However, the easing of travel restrictions in the second half of the year allowed the programme to organize several events, carry out technical and institutional strengthening missions and participate in events organized by partners.

73. Throughout the year, the UN-SPIDER team continued to reach out to and work together with other expert bodies and entities to facilitate knowledge-sharing and access to data, as well as to develop new cooperative ideas in the delivery of its mandates. The team participated in the disaster-related work of the Committee of Experts on Global Geospatial Information Management, in the work of the relevant working groups of the Committee on Earth Observation Satellites and in the efforts of the Group on Earth Observations, and cooperated or liaised with private sector entities on both the data collection and provision front (Maxar Technologies, Airbus Defence and Space, Planet Labs, ICEYE, BlackSky Technology and others) and the data processing and analysis front (Esri, Google and others). Efforts are ongoing and will continue into 2023 to mobilize additional needed resources through collaborative partnerships.