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Report on the United Nations International Conference on Space-based Technologies for Disaster Risk Reduction: A Policy Perspective and Commemoration of 10 Years of the UN-SPIDER Beijing Office

(Beijing, 11–12 September 2019)

I. Introduction

1. In its resolution 61/110, the General Assembly decided to establish a programme within the United Nations to provide all countries and relevant international and regional organizations with universal access to all types of space-based information and services relevant to disaster management in order to support the full disaster management cycle by serving as a gateway to space information for disaster management support, as a bridge to connect the disaster management and space communities and as a facilitator of capacity-building and institutional strengthening, in particular for developing countries. The Assembly agreed that the programme should be named the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER).

2. The United Nations International Conference on Space-based Technologies for Disaster Risk Reduction is the annual event of the UN-SPIDER programme of the Office for Outer Space Affairs of the Secretariat. It has been held in Beijing since the first Conference, in 2011. The 2019 Conference and commemoration of 10 years of the UN-SPIDER Beijing Office were held from 11 to 12 September and co-organized by United Nations Office for Outer Space Affairs and the Ministry of Emergency Management of China, in collaboration with the Ministry of Foreign Affairs of China, the China National Space Administration and the Asia-Pacific Space Cooperation Organization.

3. The highlights and agenda of the Conference are available on the website of the Officer for Outer Space Affairs.[1]

4. The inaugural ceremony of the Conference and commemoration of 10 years of the UN-SPIDER Beijing Office was attended by the Vice-Minister of the Ministry of Emergency Management of China, the Vice-Minister of the Ministry of Social Welfare, Relief and Resettlement of Myanmar and the Member of Parliament and Vice-President of the Economic, Technology and Environment Committee of the Lao

[1] See www.unoosa.org/oosa/en/ourwork/psa/schedule/2019/presentations-of-the-9th-annual-un-spider-conference.html.

People's Democratic Republic. The Conference brought together 100 participants, including 27 women, representing civil protection, national disaster management and national space agencies, science and technology agencies, research institutions, non-governmental organizations and private entities, among others.

5. Participants came from the following 27 countries: Austria, Bangladesh, Bhutan, Cambodia, China, Ethiopia, France, Germany, India, Indonesia, Iran (Islamic Republic of), Japan, Lao People's Democratic Republic, Mexico, Mongolia, Myanmar, Nepal, Nigeria, Pakistan, Peru, Sri Lanka, Sudan, Thailand, Turkey, United States of America, Venezuela (Bolivarian Republic of) and Viet Nam.

6. As a part of the capacity-building efforts of UN-SPIDER, 30 participants from developing countries attended the international training programme on space-based technologies for disaster risk assessment, from 5 to 9 September 2019. The training was co-held by UN-SPIDER, the Asia-Pacific Space Cooperation Organization and the National Disaster Reduction Centre of China and hosted at the Regional Centre for Space Science and Technology Education for Asia and the Pacific, at the Beihang University, in Beijing. Experts from the National Disaster Reduction Centre of China, Delta State University, the International Water Management Institute and the Economic and Social Commission for Asia and the Pacific and representatives of two private companies, Airbus and SuperMap, conducted the lectures and hands-on sessions.

7. On 10 September 2019, 60 participants in the Conference and officials from Chinese government entities attended the project management training of the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (the International Charter). This training was co-held by UN-SPIDER and the National Disaster Reduction Centre of China, with support from the China National Space Administration, which is a member of the International Charter. The training was conducted by experts from the Centre national d'études spatiales and the Center for Resource Satellite Data and Applications of China.

8. The Conference is part of a series of conferences conducted since 2011 that have covered various themes based on current issues and the needs of countries identified in the course of UN-SPIDER technical advisory activities. Those activities are aimed at enabling Governments to make effective use of space-based information in disaster risk reduction and emergency response and form the UN-SPIDER contribution to the activities of the Office for Outer Space Affairs.

9. Previous conferences covered best practices for risk reduction and rapid response mapping (2011), risk assessment in the context of global climate change (2012), disaster risk identification, assessment and monitoring (2013), multi-hazard disaster risk assessment (2014), a consolidating role in the implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030 (2015), understanding disaster risks (2016), building resilience through integrated applications (2017) and enhancing disaster preparedness for effective emergency response (2018). The conferences have provided a forum for disaster management communities and experts to strengthen their capabilities in using space-based information to identify, assess, monitor and respond to disaster risks and integrate space technology into long-term disaster risk management efforts.

10. The theme of the 2019 Conference was "A policy perspective". The Conference marked another step in the long-term efforts of the Office for Outer Space Affairs and its UN-SPIDER programme to build on the commitments of the Sendai Framework and the 2030 Agenda for Sustainable Development.

11. The Conference brought together national agencies involved in disaster management and the use of geospatial information in the countries where UN-SPIDER technical advisory support had been provided or offered. The Conference was also attended by representatives of nine UN-SPIDER regional

support offices, various regional and international organizations, and experts from centres of excellence located in different parts of the world.

12. The Conference marked the commemoration of 10 years of the UN-SPIDER Beijing Office by acknowledging the contribution of donors, partners and regional support offices. A booklet titled “Ten Years of the UN-SPIDER Beijing Office” was published on this occasion.[2]

II. Background and objectives

13. The Sendai Framework is the first major agreement of the United Nations development agenda beyond 2015, with seven global targets and four priorities for action. Target E focuses on disaster risk reduction strategies and is defined as “Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020”. Progress towards this target is measured by the increase in the number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework. International Strategy for Disaster Reduction regional platforms, including the International Strategy for Disaster Reduction Asia Partnership, have held special regional meetings to promote target E, which is considered a precursor for achieving other global targets.

14. To contribute to meeting target E, UN-SPIDER has promoted the following concept through its technical advisory missions to several countries over a decade: (a) advanced Earth observation systems provide “evidence-based spatial information”; (b) evidence-based spatial information provides an enhanced understanding of “risks”; and (c) strategies based on “risk information” lead to fact-based disaster risk reduction strategies.

15. Several countries are incorporating the use of space-based information in their revised or new disaster risk reduction policies and strategies, and other countries need to follow this example. The objectives of the Conference were to:

(a) Highlight the role of space-based technologies in disaster risk reduction policies;

(b) Present national disaster risk reduction policies that accord a well-defined role to space-based technologies;

(c) Discuss the importance of building geospatial infrastructure;

(d) Share examples where the policy of using space-based information in disaster risk reduction strategies is translated into action.

16. Participants in the Conference called upon high-level decision makers to incorporate the use of science and technology-based tools, including space-based tools, in relevant policies, to achieve target E.

17. The Conference provided a platform to discuss a policy perspective and sharing on peripheral issues, such as data-sharing, spatial data infrastructure and the institutional coordination needed for achieving the targets of the Sendai Framework. Thus, the Conference contributed to the efforts of Member States and UN-SPIDER to implement the Sendai Framework, the 2030 Agenda and the Paris Agreement adopted at the twenty-first session of the Conference of the Parties to the United Nations Framework Convention on Climate Change.

18. Participants in the United Nations International Conference on Space-based Technologies for Disaster Risk Reduction of 2019 built upon the outcomes of previously held conferences and elaborated on the role of Earth observation in the implementation of the Sendai Framework.

[2] Available at www.unoosa.org/documents/pdf/psa/activities/2019/UNSPIDERBeijing2019/19-07423_UN_SPIDER_ebook_spreads.pdf.

III. Programme

19. The Conference included a special segment on the commemoration of 10 years of the UN-SPIDER Beijing Office, during which all countries working with UN-SPIDER, UN-SPIDER regional support offices and other partners were acknowledged for their efforts in support of the UN-SPIDER Beijing Office.

20. The technical programme of the Conference comprised two keynote presentations, four plenary meetings, three parallel breakout meetings and a visit to an institution. A total of 31 presentations and 20 lightning talks were given on the following topics during the plenary and breakout meetings:

(a) First plenary meeting: policy perspective – using space-based technologies for successful disaster risk reduction;

(b) Second plenary meeting: using space-based technologies as a supporting instrument to achieve targets of the Sendai Framework;

(c) Third plenary meeting: advances in Earth observation and open-source data to support disaster risk reduction;

(d) Fourth plenary meeting: networking and engagement with the UN-SPIDER network;

(e) First breakout meeting: contributions of space-based information to reporting under the Sendai Framework;

(f) Second breakout meeting: opportunities for institutional strengthening and capacity-building from a policy perspective;

(g) Third breakout meeting: guidelines for the use of Earth observation during emergency response.

21. A visit to the National Disaster Reduction Centre of China was organized on the eve of the Conference.

IV. Programme of activities

A. Policy perspective – using space-based technologies for successful disaster risk reduction

22. The first plenary meeting was focused on the use of space-based technologies for successful disaster risk reduction from a policy perspective. The Sendai Framework recognizes the value of space-based technology and Earth observation in understanding disaster risk and preparedness for effective emergency response. This paves the way for building more resilient societies through effective disaster risk management. The meeting was focused on the national disaster risk reduction plans, standing orders, guidelines and other policy measures that lead to the incorporation of space technology into disaster risk reduction strategies. Participants also discussed the preparation needed to perform rapid response mapping, case studies and success stories, and provided guidance on becoming authorized users of the International Charter.

23. It was noted that, notwithstanding the growing number of disaster management organizations that used space-based Earth observation data and geographic information systems for disaster management, convincing decision makers to integrate space-based data into relevant policies remained a challenge. At the national level, disaster management agencies need to work with multiple stakeholders to evaluate the need for information related to disaster risk reduction, to get access to Earth observation and in situ data and to integrate data in order to derive products from them. A policy instrument is needed at the national, regional and international levels to facilitate this task.

24. China was cited as a country that gave due attention to national policies for developing integrated applications that made practical use of space-based technologies in disaster risk reduction.

25. While implementing the Sendai Framework, attention was given to policy aspects, such as the formulation of a new law related to the prevention of disaster in line with the national strategy on risk management, as in the case of the Lao People's Democratic Republic. Such policy interventions result in institutional reforms and have an impact on national and local plans for disaster prevention, reduction, relief and response.

26. It was reiterated that cooperation with UN-SPIDER and other international organizations facilitated the strengthening of policy instruments.

27. The case of Myanmar was mentioned, as the cooperation between the Government of that country and UN-SPIDER, which dated back to 2012, had resulted in the creation of a geographic information system and remote sensing division in the emergency operation centre, and Myanmar had become the first country in the Association of Southeast Asian Nations region to gain the status of authorized user of the International Charter. All those efforts have been in line with the key policy instrument in Myanmar that is the Myanmar Action Plan on Disaster Risk Reduction.

28. Regional policy instruments also play a critical role. Cases from the countries in the Lower Mekong region were introduced by a representative of the Asian Disaster Preparedness Center. Drought and rice yield forecasting in Viet Nam and a flood hazard index in Myanmar were put forward as examples of how the strategic provision of capacity-building in the region through co-development and ensuring political ownership and partnership had been key contributing factors to the success of those projects.

29. The key point of the session was that policy interventions could facilitate the effective use of space-based technologies in disaster risk reduction. Participants shared views and ideas on operational policies and data-sharing protocols for removing major obstacles faced by disaster managers in gaining timely access to accurate information products derived from space and geospatial technologies.

B. Using space-based technologies as a supporting instrument to achieve targets of the Sendai Framework

30. The second plenary meeting was dedicated to using space-based technologies as a supporting instrument to achieve targets of the Sendai Framework. Earth observation is an important tool to assess risks, damages and losses during disasters and helps with efforts to build back better. However, the benefits of these technologies cannot be reaped without having geospatial policies in place. Geospatial policies are needed as a supporting instrument for disaster risk reduction strategies. Participants explored the role played by disaster management agencies in triggering national geospatial policies, such as a one-map policy or national spatial data infrastructure, that can facilitate the use of Earth observation-based inputs in disaster risk reduction.

31. The benefits of space-based technology and Earth observation for disaster management and emergency response are clearly acknowledged in the Sendai Framework. At the international level, the role played by the international mechanisms and platforms, including the Copernicus Emergency Management Service, the International Charter, Sentinel Asia and UN-SPIDER, is of great significance to disaster management agencies. Those mechanisms and platforms were highly commended for their role in bringing together data providers, experts and decision makers. It was noted that they illustrated an excellent integration of institutions, space resources, products, systems, operational mechanisms and policies that enabled Member States to access Earth observation data during emergency situations. Through its technical advisory missions, UN-SPIDER had facilitated the

development of policy and institutional arrangements in several countries and enabled them to take full advantage of those mechanisms.

32. An innovative concept for reducing recovery time to lessen the impacts of disasters was presented. Such impacts can be mitigated if risks are well understood and pre-disaster recovery plans have been prepared. Space-based technologies can be used to plan recovery operations in advance and effectively, as they can provide information on transport routes and the populations at risk, and the amount of supplies needed can be calculated well in advance. Efforts must be put into the integration of satellite remote sensing for recovery planning.

33. The natural disaster information management and emergency relief system in China, including the space-based emergency relief decision-making and commanding system, was cited as an example. The joint project of UN-SPIDER and the Disaster Management Centre of Sri Lanka on the development of a geospatial repository for Sendai Framework monitoring were also referred to.

34. Participants discussed the challenges of using geospatial information for monitoring the implementation of the Sendai Framework. National and regional challenges included discontinuity in the generation of geospatial data by data providers, lack of awareness among disaster managers, difficulties with trans-boundary cooperation among regional partners in the use of geospatial data for disaster emergency response and the need for finding jointly agreeable methodologies for monitoring the implementation of the Sendai Framework.

35. Participants highlighted the importance of using space-based technologies to achieve targets of the Sendai Framework, as well as the importance of policies facilitating quick access to satellite data, institutional arrangements for generating information products from Earth observation data and the dissemination of information in the right format and to the right target groups.

C. Advances in Earth observation and open-source data to support disaster risk reduction

36. The third plenary meeting was dedicated to advances in Earth observation and open-source data that supported disaster risk reduction. Space technology is advancing at a great pace and the types and quantity of data gathered are increasing dramatically. Much of the space-based information is accessible through open-source portals that offer great potential for integrating geospatial data with in situ data, which is an effective way to better use Earth observation data for disaster risk reduction. Participants focused on trends, applications, research and developments in integrating satellite-based observations with in-situ information. They encouraged a dialogue between experts in space technologies and disaster managers to clarify the requirements of the national disaster management programmes related to understanding disaster risks and better preparedness for emergency response.

37. Participants discussed advances in Earth observation satellites for disaster management and emergency response, communication satellites for early warning and the integration of space-based information, satellite-based navigation services for risk monitoring and integrated tools for innovative solutions, such as risk transfer through index-based insurance.

38. Examples from China and Japan were given to illustrate the critical role of communication satellites in early warning and emergency response. Participants emphasized the need for dynamic real-time data and a timely dissemination of the critical information through smartphones and other information and communication technology platforms to contribute to decision-making.

39. Participants discussed the promotion of disaster risk management strategies through investments in risk insurance, which called for a better understanding of risks through multi-hazard risks assessments and prioritized climate insurance programmes through public-private partnerships. Related pilot projects in India and Bangladesh

had shown how remote sensing data (optical and synthetic aperture radar) and modelling tools could be used to develop index-based insurance design for transferring risks from communities through Government and the insurance industry to manage the financial resilience and livelihood of vulnerable communities effectively.

40. The concept of blue-green infrastructure in managing climate risks was explained. Such an infrastructure helped to create sustainable urban landscapes for future generations by providing green and nature-based climate-resilient solutions to landscape architects, urban designers, civil engineers and others. Sponge cities in China and green highways in India were cited as best practices of ecosystem-based disaster risk reduction. Blue-green infrastructure also has broader applications in storm-water management, climate adaptation, heat stress reduction, biodiversity preservation, ensuring food security at the local level, air quality improvement and sustainable energy production. It was suggested to promote the idea of rural-urban nexus, given the fragile complexity of urban landscapes.

41. Participants highlighted the importance of open-source satellite data during all phases of disaster management and the potential of space-based information for helping to achieve targets of the Sendai Framework. They emphasized the need to promote operational multi-hazard mapping or dynamic monitoring of all major hazards in near real-time (i.e., on a daily basis) to support emergency management. Satellite data providers in China were implementing an open-data policy to promote the sharing of satellite-based Earth observation data and international cooperation.

42. Participants also highlighted key points of the *Asia-Pacific Disaster Report 2019*,[3] which showed how disasters were closely linked to inequality and poverty, each feeding on the other and leading to a vicious cycle. The report contained an assessment of the scale of losses across the disaster risk landscape and an estimation of the amounts that countries would need to invest in order to outpace the growth of disaster risk. It showed the negative effects of disasters on economies in the region and where investments were more likely to make the biggest difference.

D. Networking and engagement with the UN-SPIDER network

43. The fourth plenary meeting was dedicated to networking and engagement with the UN-SPIDER network. The meeting provided an opportunity to gain insight into the activities supported by UN-SPIDER in partnership with national disaster management agencies and included discussions on the ways and means of making those activities more effective and relevant to the needs of Member States. The meeting was aimed at encouraging the engagement of the Member States and partner organizations with UN-SPIDER.

44. It was noted that, with the support of the Member States, regional support offices and other partners, UN-SPIDER had been able to build a wide network of governmental agencies, international and regional organizations, non-governmental organizations, scientific organizations, private companies and other stakeholders. UN-SPIDER had carried out several technical advisory missions, capacity-building programmes and outreach activities in Africa, Asia and the Pacific and Latin America.

45. Updates were provided by representatives of regional support offices and partners, namely, the Asian Disaster Preparedness Center, the Asian Disaster Reduction Center, Delta State University, the Mexican Space Agency, the International Centre for Integrated Mountain Development, the National Space Research and Development Agency of Nigeria, the International Water Management Institute, the National Institute of Aeronautics and Space of Indonesia, the Pakistan Space and Upper Atmosphere Research Commission and the Disaster Management Centre of the South Asian Association for Regional Cooperation.

[3] Available at www.unescap.org/publications/asia-pacific-disaster-report-2019.

46. A number of countries had conducted technical advisory missions with UN-SPIDER. Representatives of Bangladesh, Bhutan, the Lao People's Democratic Republic, Myanmar, Nepal, Sri Lanka and Viet Nam gave presentations illustrating those joint efforts.

47. Participants drew attention to the enormous contributions made by UN-SPIDER over the previous 13 years and the UN-SPIDER Beijing Office over the previous decade to raising the awareness of disaster management stakeholders at the highest levels in several Governments with regard to the need to use space-based information; training government officials on a wide range of technology applications; generating technical materials, guides and handbooks; and addressing the gap between policy and coordination related to the use of Earth observation in disaster management.

48. Representatives of Member States and regional support offices proposed activities that UN-SPIDER could carry out in the coming years.

E. Regional cooperation and scientific applications of Earth observation for disaster risk reduction

49. At the first parallel breakout meeting, participants discussed regional cooperation and the scientific applications of Earth observation to disaster reduction. The discussions were linked to Sustainable Development Goal 17 (strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development).

50. Participants provided an overview of regional cooperation mechanisms, such as Asia-Oceania Group on Earth Observations and other regional initiatives in North America and the Pacific region.

51. Regional partnerships can be enhanced by aligning them with the common framework, such as Sustainable Development Goal 17. Such partnerships are vital for promoting the use of scientific applications for Earth observation in disaster management, for example, to develop flood simulation models or tools for sharing data products with end users.

F. Institutional strengthening and capacity-building

52. At a second parallel breakout meeting, participants discussed institutional strengthening and capacity-building with regard to space-based technology and data for disaster management and emergency response. The discussions were linked to Sustainable Development Goal 4 (ensure inclusive and equitable quality education and promote lifelong learning opportunities for all).

53. Participants introduced six Regional Centres for Space, Science and Technology Education affiliated with the United Nations, in China, India, Jordan, Mexico and Brazil, Morocco and Nigeria. Beihang University, the host of the Regional Centre for Space Science and Technology Education for Asia and the Pacific in China, referred to an education capacity-building index framework to address challenges currently faced by educational institutions in their capacity-building efforts.

54. Better capacity related to the use of Earth observation in disaster management can be developed through people-oriented programmes. Such capacity can be increased by facilitating access to and the capacity to use satellite data. These efforts should be supported by a policy framework that encompasses data exchange, access to space-based information and expertise in the building of satellites.

55. Open-source data, data access tools and processing software are valuable resources for developing capacity.

G. Utilization of Earth observation during emergency response

56. A third parallel breakout meeting focused on the use of Earth observation during emergency response. Participants discussed the demand for partnerships among space agencies and other entities in resource-sharing for emergency response. Cooperation between them is one way of ensuring the continued use of Earth observation satellites for emergency response. The discussions were linked to Sustainable Development Goal 11 (make cities and human settlements inclusive, safe, resilient and sustainable).

57. As a result of the communication gap between the scientific communities and policymakers, cartographic products are not efficiently used by disaster managers. There is a need for efficient communication mechanisms between space scientists and the user community, as well as the space community and policymakers.

58. To ensure efficient emergency response and to build back better, it is essential to document existing infrastructures and risks and to do so before the advent of a disaster. Reference was made to a project in Nigeria regarding an infrastructure at risk of river flooding that had been mapped on the basis of high-resolution satellite images to create an adequate database for flood risk assessment.

V. Observations and recommendations

59. Since its establishment in 2006 as a programme of the Office for Outer Space Affairs, UN-SPIDER has supported countries, in particular developing countries, all over the world in gaining access to and making use of space technologies for addressing natural and technological disasters, and in implementing the Sendai Framework.

60. Since its establishment in 2009, the UN-SPIDER Beijing Office has been working with national stakeholders and regional and international organizations to strengthen disaster management capacities in the region. Through its technical advisory support activities, training courses and annual conferences held in Beijing, the Office has contributed to building the capacity of Member States to use space-based information in disaster management and emergency response.

61. The Conference, through its segment on the 10-year commemoration of the UN-SPIDER Beijing Office, aptly captured the impact of the work carried out in the past decade, which was highlighted in the interventions made by several national disaster management agencies.

62. Since its inception in 2011, the Conference has been an annual event of the UN-SPIDER Beijing Office. It has explored wide-ranging themes to contribute to disaster risk reduction and focused on supporting the Sendai Framework since 2015.

63. It was noted that the disaster management sector, being interdisciplinary in nature, needed robust policies to address access to data, licensing, data-sharing and dissemination, the formats of value-added products and institutional arrangements at the national, regional and global levels, with a specific focus on, inter alia, space-based tools, systems and information. The Conference confirmed the crucial role of UN-SPIDER in working with national disaster management agencies as an adviser on the development of policies that integrate Earth observation data, geospatial information and in situ information derived from multiple sources. The Conference advocated the formulation of such policies to strengthen disaster risk reduction.

64. It was also noted that space technology offered promising results with respect to the full cycle of disaster management, including disaster risk, early warning, disaster monitoring, damage assessment and reconstruction. The Conference advocated using such technologies as Earth observation, global satellite navigation and satellite communication to facilitate disaster planning and risk reduction, as they provided the greatest return on investment.

65. UN-SPIDER is achieving its mandate with the great support of the network of regional support offices, the Regional Centres for Space Science Technology Education affiliated with the United Nations, Member States and other partners. UN-SPIDER and its international network are enabling countries to gain access to much-needed space-based information for emergency response.

66. Participants recommended that UN-SPIDER and international organizations continue their efforts for sharing satellite data worldwide. They suggested that all national disaster management agencies become authorized users of the International Charter and develop the capacity to use the data and products provided through the mechanisms that support emergencies.

67. The representatives of the disaster management agencies stressed the need for UN-SPIDER technical advisory support to develop institutional capacity to use space-based technologies in disaster risk reduction and to report on the implementation of the targets of the Sendai Framework.

VI. Conclusion

68. Strengthening the policy framework of national disaster management agencies for using space-based information in line with the Sendai Framework is critical. Understanding disaster risk is a non-negotiable requirement for disaster risk reduction strategies and risk-informed development. Disaster risk reduction strategies that are based on risk information translate into the right policy and action. Space-based technologies, mainly Earth observation and navigation, play an important role in providing such information.

69. Disaster risk reduction strategies that incorporate the use of space-based information would also drive related policy instruments, such as geospatial policies and capacity-building strategies. It is therefore important to link disaster risk reduction strategies to the policies related to the geospatial sector, such as remote sensing policies, data-sharing policies and national spatial data infrastructure.

70. The national disaster management agencies of developing countries need continuous guidance on the incorporation of space-based information in national disaster risk reduction strategies. International collaboration and partnerships between providers and users are critical for the collection, sharing and analysis of space-based data.

71. In conclusion, participants reaffirmed the role of UN-SPIDER in preparing the policy perspective for supporting the implementation of the Sendai Framework, which would in turn contribute to the implementation of the global frameworks, namely, the 2030 Agenda and the Paris Agreement.