General Assembly

**Committee on the Peaceful
Uses of Outer Space**

Report on joint activities carried out in 2014 by the regional support offices 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 agreed that the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) programme should work closely with regional and national centres of expertise in the use of space technology in disaster risk management and aim to form a network of regional support offices to implement the activities of the programme in their respective regions and in a coordinated manner. The network was from the beginning seen as an important source of knowledge and a key to the success of the programme.

2.   The network of regional support offices should be able to contribute to any of the specific activities included in the UN-SPIDER workplan by taking on the responsibility for identifying resources and for funding and implementing a specific activity jointly and in coordination with UN-SPIDER. Such activities could include: hosting a regional workshop, promoting capacity-building activities in a region, contributing to missions in a region to support national disaster management planning, supporting national and regional vulnerability assessments, providing mapping support during emergencies, contributing to the systematic compilation of relevant information (including the development of country profiles and the compilation of specific geospatial databases), supporting awareness-raising campaigns and promoting the establishment of regional and national networks of experts.

3.   The existing network of regional support offices is even more important in the current context, when limited resources are available to the programme. Despite the efforts of the main supporters, the programme is doing its best to optimize the use of the available resources, and regional support offices become an essential complement to this effort to address requests for support, or act on the

implementation of identified recommendations resulting from past advisory activities.

4.   Sixteen UN-SPIDER regional support offices are currently being hosted by the following 11 national organizations: Agency for Support and Coordination of Russian Participation in International Humanitarian Operations (EMERCOM, agreement signed in 2013); Algerian Space Agency (ASAL, 2009); Augustín Codazzi Geographic Institute of Colombia (IGAC, 2012); Iranian Space Agency (ISA, 2009); Károly Róbert University of Hungary (2012); National Academy of Sciences and State Space Agency of Ukraine (NASU-SSAU, 2010); National Commission on Space Activities of Argentina (CONAE, 2012); National Institute of Aeronautics and Space of Indonesia (LAPAN, 2013); National Space Research and Development Agency of Nigeria (NASRDA, 2009); Romanian Space Agency (ROSA, 2009); and Space and Upper Atmosphere Research Commission of Pakistan (SUPARCO, 2010). The following five regional organizations also host regional support offices: Asian Disaster Reduction Center (ADRC), based in Kobe, Japan (2009); International Centre for Integrated Mountain Development (ICIMOD), based in Kathmandu (2013); Regional Centre for Mapping of Resources for Development, based in Nairobi (RCMRD, 2010); University of the West Indies, based in Saint Augustine, Trinidad and Tobago (UWI, 2010); and Water Center for the Humid Tropics of Latin America and the Caribbean, based in Panama City (CATHALAC, 2010).

5.   Previous activities and joint efforts of those regional support offices are regularly highlighted in a number of UN-SPIDER activity reports, as well as in various conference room papers submitted to the Committee on the Peaceful Uses of Outer Space and to its Scientific and Technical Subcommittee, and can be consulted on the website of the Office for Outer Space Affairs.

6.   More recently, a number of other regional or national centres of expertise have enquired about the possibility of joining the network of UN-SPIDER regional support offices. Such offers of support are currently being evaluated in the respective regional contexts. The Office for Outer Space Affairs is already in advanced negotiations for the signing of a regional support office cooperation agreement with the International Water Management Institute (IWMI), member of Consultative Group on International Agricultural Research (CGIAR) Consortium for Spatial Information, based in Sri Lanka, which will hopefully be done at the beginning of 2015, and is also continuing its discussions with the South African National Space Agency (SANSA) in this regard.

7.   More detailed and continuously updated information and background on each regional support office, as well as relevant contacts and resources, can be found on the UN-SPIDER knowledge portal (www.un-spider.org/network/regional-support-offices).

8.   The UN-SPIDER regional support offices agreed to meet every year, resources permitting, during the sessions of the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space, to review the work carried out during the previous year and to plan future activities in support of the programme.

9.   The first meeting of the established and prospective UN-SPIDER regional support offices was held on 9 and 10 February 2010. It focused on the work of the network and on offices' involvement in the implementation of the programme.

On 8 and 9 February 2011, the second meeting was held. It built upon the discussions of the previous year and benefited from the presence of representatives of several existing mechanisms that made space-based information available for emergency response during the expert meeting on space-based technologies and emergency response, which was held jointly on the second day of the meeting. The third meeting of the network took place on 6 and 7 February 2012, during the forty-ninth session of the Scientific and Technical Subcommittee. The fourth meeting of representatives of the regional support offices and UN-SPIDER took place during the fiftieth session of the Scientific and Technical Subcommittee, on 11 and 12 February 2013. The fifth meeting was held on 13 and 14 February 2014, during the fifty-first session of the Scientific and Technical Subcommittee. It focused on an agreed joint workplan for regional support offices that is better aligned with the adopted UN-SPIDER programme of work, as well as on developing a regional support office strategy document for longer-term planning.

II. Workplan and joint activities for regional support offices in 2014

10. As noted in paragraph 9 above, the most recent coordination meeting with the regional support offices took place in February 2014. A report of that meeting was made available under the symbol A/AC.105/2014/CRP.10 for the fifty-seventh session of the Committee on the Peaceful Uses of Outer Space in June 2014. The meeting agreed on a more detailed workplan with a view to setting some targets for the joint activities between the programme and the regional support offices during 2014 and into 2015. The workplan was also presented in conference room paper A/AC.105/2014/CRP.11.

11. In summary, the workplan agreed for the period 2014-2015 includes items such as: continued support by all regional support offices for UN-SPIDER technical advisory missions and for any mission follow-up activities such as training or capacity-building; the continuing development of the agreed recommended practices and booklets addressing space-based technology in disaster management; the consideration of pooling satellite imagery and data resources or funds with a view to better sharing data across institutions, countries or regions; the definition of a consolidated approach and concrete plan of action for the upcoming Third World Conference on Disaster Risk Reduction, to be held in Japan in March 2015; and the sustained contributions to the outreach and knowledge management activities of the programme.

12. The following sections of the present report highlight some of the joint activities and efforts implemented in line with the UN-SPIDER mandate, together with the regional support office network. As noted before, a number of collaborative activities have been initiated as a result of previously agreed regional support office network workplans, as also highlighted in earlier reports; some of the activities detailed in this report thus were continuing into 2014, while others were initiated in 2014.

A. Advisory support and capacity-building efforts

13.   Perhaps the most significant contributions made by the regional support offices to the implementation of UN-SPIDER are their participation in various technical advisory missions in 2014 and their support in organizing follow-up activities, mainly for capacity-building, in countries already visited. CATHALAC, CONAE and IGAC have released one expert each for the regional expert meeting on early warning systems organized by the Coordination Center for the Prevention of Natural Disasters in Central America (CEPREDENAC), UN-SPIDER and the Secure World Foundation (SWF) in El Salvador, as well as for a technical advisory mission. CONAE also provided a virtual training course in 2014 to the Geo-Spatial Information Team for Risk Management (EIGEO) as a follow-up to the 2013 mission to the Dominican Republic. RCMRD has released one expert for technical advisory missions to Kenya (March 2014) and Zambia (May 2014), while also hosting a stakeholders workshop in Kenya during the mission there. ICIMOD released one expert for a technical advisory mission to Bhutan in June 2014. It also hosted the international training event in Kathmandu on flood forecast and hazard mapping, together with UN-SPIDER. In addition, ICIMOD provided trainers for and financed participants in the training. LAPAN hosted the regional workshop in the Association of Southeast Asian Nations region, held in Yogyakarta, Indonesia. It released experts to attend the workshop and funded participants. EMERCOM invited the UN-SPIDER coordinator to the workshop entitled "Introduction to management concepts in crisis situations for the Commonwealth of Independent States (CIS)", held in Moscow in March 2014, providing an opportunity to discuss stronger collaboration with that new regional support office and identifying the needs of CIS countries in the use of Earth observation data and products for disaster management and emergency response.

14.   Regional support offices and UN-SPIDER have also agreed on designing and implementing an evaluation method that includes a definition of responsibilities and mechanisms to measure the impacts of technical advisory support and of completed technical advisory missions, with a view to improving their effectiveness in the future.

15.   Demand for support in the implementation of recommendations and actions identified by the various technical advisory missions is increasing. The participants in the 2014 regional support office meeting discussed the question of how to optimize the use of joint resources by better communicating schedules, merging activities in order to reduce travel expenses or taking a train-the-trainers approach. It was also agreed that it could be possible to organize regional activities to review and assess the implementation of recommendations made by technical advisory missions. Such efforts would ensure that the programme and its network of regional support offices provided more support and better follow-up to Member States after every technical advisory mission.

16.   ISA, RCMRD and SUPARCO were represented at the United Nations/Germany Expert Meeting on Space-based Information for Flood and Drought Risk Reduction, held in Bonn on 5 and 6 June 2014, where they took the opportunity to discuss ongoing joint efforts with UN-SPIDER staff.

17.	ISA, EMERCOM, RCMRD, SUPARCO and LAPAN were represented at the United Nations International Conference on Space-based Technologies for Disaster Management: Multi-hazard Disaster Risk Assessment, held in Beijing from 15 to 17 September 2014.

18.	LAPAN and SUPARCO were represented at the international training course on drought monitoring and assessment using space technology, organized by UN-SPIDER and held in Beijing from 18 to 22 September 2014.

19.	UN-SPIDER and the network of regional support offices have embarked on a series of publications on experiences and practices on the use of Earth observations for various types of risks and disasters. The booklet produced by SUPARCO was the first of the series to be completed and was recently published on the UN-SPIDER knowledge portal, with support of UN-SPIDER staff.

20.	Other publications in preparation address the following subjects: effective use of space-based information to assess tsunami impact: lessons learned from the recent tsunami in Japan, coordinated by ADRC; effective use of space-based information to assess drought at the national level: experiences from the Islamic Republic of Iran, coordinated by ISA; and the application of remote sensing for forest and land fire monitoring, coordinated by LAPAN. Those booklets are in advanced stages of production or final review before publication. It is expected that they will be considered by a large number of national authorities and institutions facing challenges in over 30 countries, already supported by UN-SPIDER, where the availability of such best practices and recommended processes was deemed important. A dedicated page has been launched on the UN-SPIDER knowledge portal to highlight recommended practices (www.un-spider.org/advisory-support/recommended-practices).

21.	The regional support offices also provide important input to the UN-SPIDER knowledge portal. An evaluation of the knowledge portal in 2012 showed that there was specific user demand for the adding of step-by-step instructions on how to process satellite imagery to derive useful information for disaster risk management and emergency response. Several regional support offices have contributed to that activity by preparing recommended practices. The first two practices published on the knowledge portal deal with synthetic aperture radar (SAR) flood mapping, based on input from NASU-SSAU, and with flood modelling.

22.	In the process of compiling practices, RCMRD has also agreed to review its draft practice on land degradation with a view to giving it a stronger focus on disaster risk management. IGAC, CONAE and NASRDA agreed to complete and update their practice on flood risk assessment, and NASU-SSAU is incorporating the discussed and agreed changes into the practice on crop yield prediction. Those practices will also be disseminated through the knowledge portal.

23.	The UN-SPIDER Beijing office continued its work with the Asian regional support offices (ADRC, ISA and SUPARCO) in addressing the agreed workplan. ICIMOD has frequently joined technical advisory missions and attended the annual Beijing conference organized by UN-SPIDER, contributing to various sessions and providing specific training to conference attendees; it has also joined other outreach efforts, such as the preparatory work for the World Conference on Disaster Risk Reduction, and participates in ongoing joint projects with the UN-SPIDER Beijing office to support national efforts as follow-up to technical advisory mission

recommendations, in collaboration with other relevant United Nations entities (such as the United Nations Development Programme (UNDP) in Bhutan).

24.   ISA is working on sharing its experience in developing a web-based fire detection and risk assessment system and on drought monitoring using Moderate Resolution Imaging Spectroradiometer archive imagery. This recommended practice for the combined use of archived and up-to-date satellite imagery to monitor the effects of droughts is expected to be used in Central America as soon as it is ready for uploading to the UN-SPIDER knowledge portal. ISA also conducted a project addressing the role of e-learning systems for awareness-raising on disaster management through the use of a case study on drought monitoring and risk assessment. That effort could also become part of the web-based capacity-building efforts of the programme.

25.   IGAC shared with UN-SPIDER a training manual, written in Spanish, on the use of the SPRING remote sensing software developed in Brazil. It also developed a recommended practice on the use of remote sensing products and ground-based surveys to generate flood hazard maps. Efforts are under way to complete the revision of this practice and to upload it to the UN-SPIDER knowledge portal.

26.   The regional support office at Károly Róbert College in Hungary is supporting a joint Hungarian-Slovak project in the Sajó valley combining the application of airborne hyperspectral data with satellite imagery for flood management, including the development of risk estimation. The regional support office provided flood control support to the National Water Directorate for the main rivers of the country as part of its national commitment; experience accumulated and materials developed can be widely shared in the UN-SPIDER context to support other countries facing similar challenges.

27.   The regional support offices agreed at the 2013 meeting to consider means of better using precipitation data obtained by satellites to help provide related information to countries that do not have modern meteorology services or the required in situ data-collection network. This is an ongoing effort, as the need for the provision of such data has often been identified during technical advisory missions. The effort would be in addition to ongoing work on facilitating wider use of archived satellite imagery in disaster management activities.

28.   In the case of emergency response, CONAE and the UN-SPIDER Office in Bonn, Germany, joined forces to support the Dominican Republic in the activation of the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (also called the International Charter on Space and Major Disasters) in connection with a forest fire. As a follow-up effort, CONAE and the UN-SPIDER Bonn office will target national emergency operation centres in countries in Latin America and the Caribbean where Spanish is the official language, to make them aware of the universal access modality that the International Charter has launched recently. Through the universal access modality, the national emergency operation centres will be able to make requests directly to the secretariat of the International Charter for its activation in case of large disasters.

B. Activities related to outreach, joint project development and fundraising

29. Improving the sharing of information on relevant activities planned by either the regional support offices or UN-SPIDER is important in order for coordination to be more effective and resources used more efficiently, and is also a part of knowledge management. Reaching out to other relevant organizations has to be considered as well. This was the guiding principle of the 2014 regional support office meeting where it was also agreed that more attention should be given to social networking aspects, both on the UN-SPIDER knowledge portal and in general in the implementation of the programme.

30. UN-SPIDER presented to the regional support offices different options for an online collaborative platform, including some social network platforms. Facebook, UNDP Teamworks and the UN-SPIDER Open Atrium platform were presented in detail, and the advantages and disadvantages of each platform were discussed. It was agreed to have a trial period using the Open Atrium platform. The regional support office representatives mentioned the need to use one platform first to identify any difficulties in online collaboration.

31. Regional support offices, especially those that had joined the network recently, were made aware of the content and structure of the dedicated regional support office pages on the UN-SPIDER knowledge portal. It was highlighted that they could update their profiles, edit as necessary and post news and events of relevance, through direct access to the content management system of the knowledge portal.

32. Regional support offices also agreed to develop and submit joint proposals for specific project funding or to involve other regional support offices and UN-SPIDER in relevant funding proposals already being developed. Such proposals would address themes close to the mandate of UN-SPIDER in its support for developing countries.

33. A funding proposal was submitted in the spring of 2014 to a European Union Horizon 2020 Research and Innovation Staff Exchanges (RISE) call for proposals, which could help to support scientific exchanges and collaboration between regional support offices. It was agreed to establish a specific section on joint project proposals in the Open Atrium platform. Sharing information on calls for proposals and on intentions to apply for specific calls can be of mutual benefit to the regional support offices and facilitate opportunities for partnerships.

34. NASU-SSAU identified the RISE call for proposals and contributed significantly to the joint project development within Horizon 2020. ROSA played a major role as lead agency in a project proposal on innovative methods for flood risk assessment based on Earth observation data. Regional support offices from all regions, private sector partners and the German Aerospace Centre contributed to the proposal as project partners.

35. NASU-SSAU also made a presentation on UN-SPIDER regional support office activities at the Group on Earth Observations (GEO)-Ukraine 2014 conference (see http://geoss-conf-2014.ikd.kiev.ua). Other regional support offices have used opportunities created by their participation in various workshops and conferences to

promote the UN-SPIDER programme and raise awareness about the utility of space technologies in disaster management.

36.   One cooperation opportunity worth highlighting, given its current importance, is the consolidated approach and concrete plan of action for the upcoming Third World Conference on Disaster Risk Reduction, in Japan. The Office for Outer Space Affairs leads a consortium of United Nations entities and international organizations in identifying commitments and defining the framework for this purpose. Several regional support offices are involved in this effort. It is hoped that the partnership will help better highlight the role of space-based information in disaster risk reduction as well.

III.   Conclusions and way forward

37.   Currently, as agreed at the 2014 regional support office meeting, UN-SPIDER is developing a strategy document to further strengthen the network of regional support offices and the cooperation both within the network and with UN-SPIDER. The Open Atrium platform will be used for this purpose, to allow transparent interaction with all regional support offices in the process. Once a first draft is finalized, a discussion will be initiated. A review of progress can also be made during the meeting of regional support offices scheduled to be held in Vienna on 12 and 13 February 2015, during the fifty-second session of the Scientific and Technical Subcommittee.

38.   The strategy will also build on the implementation of the knowledge portal road map compiled following the 2012 comprehensive and survey-based evaluation of the portal. Regional support offices welcomed the strategy development initiative and mentioned the importance of ensuring the sustainability of the programme.

39.   The network of regional support offices has proved to be a cornerstone of UN-SPIDER success. It has grown since the establishment of UN-SPIDER and welcomed new members in recent years. The interest in becoming a UN-SPIDER regional support office is still running high, as proved recently. The support of the regional support office network for the activities of the programme, including its technical advisory missions, the knowledge portal, and the outreach and capacity-building or awareness-raising efforts defined in its workplan, have all been essential in setting up and sustaining the programme and making it much better known globally and clearly more successful in implementing its mandate.

40.   Nevertheless, the definition of future cooperation and collaboration, as well as a vision of the goals of the regional support office network, should be open for continuous discussion. The development of the strategy document is giving UN-SPIDER an opportunity to collect some thoughts and visions regarding the future of the network. As the regional support office network grows, and as part of the strategy, it was agreed that a candid evaluation of the role of each regional support office should be made, in order to consider not renewing the collaboration agreements with those that cannot offer the concrete support or contributions originally agreed.

41.   UN-SPIDER will continue to work and collaborate with relevant external partner organizations in order to increase the number and impact of regional support

offices in every region of the world. For example, following a successful partnership with the Regional Visualization and Monitoring System (SERVIR) programme regional nodes, enabling them also to become regional support offices, it was recently agreed that new SERVIR nodes such as the one planned for West Africa could, once identified, also become UN-SPIDER regional support offices.

42. Other ongoing activities, such as liaison with the executive secretariat of the International Charter on Space and Major Disasters so that regional support offices can be trained as project managers or so that countries visited by a technical assistance mission can become authorized national users in the context of universal access, and the partnership with the GEO secretariat in addressing the promotion of universal access are worth mentioning, especially as they will continue in the coming years until reaching the goal stated in General Assembly resolution 61/110, by which UN-SPIDER was established: that all countries and international and regional organizations have access to and develop the capacity to use all types of space-based information to support the full disaster management cycle.

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