



## UN-SPIDER Technical Expert Meeting underpins efforts to support Namibian Pilot Project

AS PART OF its ongoing capacity building initiatives aimed at assisting the disaster management community in Namibia, UN-SPIDER hosted a Technical Expert Meeting in Bonn, Germany, from 24 to 26 August, 2009. Its purpose was to further develop the Namibia SensorWeb Pilot project on integrated flood management and water- and vector-borne disease modeling.

This meeting brought together about thirty renowned specialists, among whom were delegates from the Department of Water Affairs of the Ministry of Agriculture Water and

Forestry (MAWF) in Namibia, representatives from the German Space Agency (DLR), the US National Aeronautics and Space Administration (NASA), the US National Oceanic and Atmospheric Administration (NOAA), Ukraine Space Research Institute (SRI), City University of New York, Johns Hopkins University and the Bloomberg School of Public Health. In addition, colleagues from other Bonn-based UN organizations took part in the meeting, such as the United Nations University-Institute for Environment and Human Security (UNU-EHS), the United Nations International Strategy for Disaster Reduction- Platform for the Promotion of Early Warning (UNISDR-PPEW) and the United Nations Water Decade Programme on Capacity Development (UNW-DPC).

During the meeting, a delegation of the expert group presented the pilot project initiative to the ambassador of Namibia to Germany, His Excellency Neville Gertze. This project was envisaged as a joint effort combining high resolution satellite imagery with in-situ data and modeling approaches, with the purpose of deriving useful flood and water-borne disease forecasting tools. It is supposed to serve as a scientifically sound and operational trans-boundary flood management system for decision makers, covering the Southern African region.

However, ample effort had to be invested in implementing this joint effort, and it was

generally agreed upon that the submission of proposals to international donors was a crucial step to attain the full execution of the project.

This meeting has been conducted against a backdrop of various previous UN-SPIDER attempts at supporting national authorities in Namibia. These originated with the activation of the International Charter Space and Major Disasters for the 2008 floods, a Technical Advisory Mission in February 2009 and were followed by even further activations of the International Charter during the 2009 floods. These disasters have inspired the building of collaborations between entities which have been pursuing cost-effective and rapid access capabilities for international satellite assets.

It is also worth noting that UN-SPIDER has been actively working with the Global Earth Observation System of Systems (GEOSS) Architecture Implementation Pilot projects, co-leading some initiatives to better bridge the available technical expertise and resources with the needs of the users in the field, at the United Nations or the national level. Additionally, it is also cooperating with the Committee on Earth Observation Satellites (CEOS) Working Group on Information Systems and Services (WGISS) experts for an improved use of their capabilities and available space technologies and applications in the disaster management framework.

### In this issue:

#### Workshops

Namibia SensorWeb Pilot Project -  
Technical Expert Meeting 1

UN Economic Commission for  
Africa - Consultative Meeting on  
Climate Activities Database 2

#### Technical Advisory Support

Technical Advisory Mission to Togo 2

#### Case Study

UN-SPIDER cooperation with  
Namibia 3-4

#### Staffing

Dr. Shirish Ravan 4

#### Interview

with Mabel Wantim, Department  
of Geology and Environmental  
Science of the University of Buea,  
Cameroon 5

#### Knowledge Portal

Beta version of Knowledge Portal  
goes live 6

#### Network

Expanding Network of Regional  
Support Offices and National Focal  
Points 6



Members of the Technical Expert Meeting together with H. E. the Ambassador of Namibia to Germany Neville Gertze (center)

## UN-SPIDER bolsters disaster management community in Togo



The city of Lome, Togo, affected by severe flooding.

### *Technical Advisory Mission succeeds in connecting various organizations involved in disaster management*

FROM 13 TO 17 JULY 2009, UN-SPIDER conducted a technical advisory mission in Togo in response to an official request of the Togolese Government to assess the existing use of space-based technology and information for disaster management and emergency response in the country. Following Burkina Faso, Ghana and Namibia this was the

fourth UN-SPIDER advisory mission to Africa. The mission proved successful in connecting various local and regional organizations involved in disaster management. It also managed to generate awareness amongst these organizations, inciting them to undertake collective efforts towards the incorporation of space-based information to support disaster management activities. It also pointed

out the need to update national disaster management plans, placing an emphasis on space-based technology and information as well as efforts to establish a National Spatial Data Infrastructure (NSDI) in Togo. The mission team succeeded in strengthening the links between Togo and a number of regional organizations, a step forward that will help the country in developing capacity building plans and in benefiting from advisory support from these regional organizations in the long run.

On this mission, UN-SPIDER staff members were accompanied by a number of experts delegated by various international institutions, among them the United Nations- Office for the Coordination of Humanitarian Affairs (UN-OCHA) Regional Office West Africa in Senegal, the World Health Organization (WHO), the National Space Research and Development Agency in Nigeria, the Regional Centre for Training in Aerospace Surveys (Nigeria), and the African Regional Centre for Space Science and Technology Education in French Language, based in Morocco. Unquestionably, it could be concluded that this broad range of expertise and in-depth knowledge guaranteed a high quality of technical advice and an excellent base for ensuring forward looking partnerships and cooperation in the future.

#### Workshops

## UN-SPIDER helps develop guidelines for establishing ACPC Climate Activities Database

UNOOSA/UN-SPIDER PARTOOK of a consultation group composed of African regional co-operators and various international players during the UN Economic Commission for Africa's Consultative Meeting on Climate Activities Database, held in Addis Ababa, 1-3 September 2009.

Recent developments have seen the African Union Commission, the Economic Commission for Africa (ECA) and the African Development Bank initiating the ClimDev programme, under which the African Climate Policy Centre (ACPC) was established to coordinate and strengthen policy response to climate change. Among the pressing needs of the ACPC was a dedicated Climate Activities Database (CADb) to support the work of the ACPC scientists and discipline specialists. Much attention has been drawn to this need, especially after the recognition of the scarcity of relevant geospatial data and information resources in many African countries. This problem is exacerbated at regional levels, where data and information needs are expected to be aggregated from national sources. As a result, decision makers are left to rely on third party sources, or alternatively embark on project-specific data gathering. Unfortunately, this project-specific approach often results in wasteful duplication of efforts, possible inconsistencies in conclusions and decisions, delays in project execution, as well as an increase in overall project costs.

On that account, the main aim of the Addis

Ababa ECA meeting was to provide a forum to learn from selected institutions and individuals who have had experience in managing similar databases. Participants have been invited based on a review by the Co-Chairs and Secretariat of the United Nations Geographic Information Working Group (UNGIWG). Mr. Josue Dione, Director of Food Security and Sustainable Development Division at ECA, inaugurated the workshop with a speech that stressed that one of the key issues characterizing the response to climate uncertainty in Africa is the lack of confidence in currently available information.

During the work sessions, Mr. Lorant Czarán, head of UN-SPIDER Bonn office, presented the ongoing implementation of the UN-SPIDER web portal, which will be a gateway to space information for disaster management support. The portal will serve as a bridge to connect the disaster management and space communities and will additionally act as a facilitator of capacity-building and institutional strengthening. Other technical presentations were provided by ECA on requirements and existing systems, followed by the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Cartographic Section, the United Nations Environment Programme (UNEP), the Regional Visualization and Monitoring system (SERVIR) Africa, the Sahara and Sahel Observatory (OSS), the African Centre of Meteorological Application for Development (ACMAD),

the Global Change and Hydrological Cycle (GLOWA) Project and finally the Inter Governmental Authority on Development- Climate Prediction and Applications Centre (IGAD/ICPAC).

Discussions then highlighted Information Dissemination as one of the key issues of geospatial database management in Africa, stressing that the ACPC Climate Activities Database should be built on existing accessible datasets. The participants underscored the pivotal role that the United Nations should play in developing a common framework to strengthen the national data networks. The adoption of a phased approach was proposed, where several interoperable databases are linked into a distributed virtual database based on agreed protocols. The meeting recommended a Network Approach for a cooperative, multi-stakeholder approach to production, management, and dissemination of data. Immediate actions included maintaining communications within the group through an online forum, and secondly, given the low bandwidth available at ECA, exploring the possibility of hosting CADb's feature services at the UNOOSA/UN-SPIDER facilities in Bonn.

In conclusion, further action and future plans hung on the hope that the Geo-information community will indeed succeed in helping define relevant indicators for the evaluation of climate change impact; assessing magnitude and level of risk of vulnerable zones; and mapping African vulnerability to Climate Change effects. ■

# Namibia and UN-SPIDER: A long-running cooperation in flood relief and risk management



UN-SPIDER'S SUPPORT TO Namibia reveals the myriad services offered by UN-SPIDER, and shows what benefits countries can receive from this programme. It also unveils the ways in which countries themselves can contribute to the UN-SPIDER mandate. Mutual efforts and close cooperation in various fields have been building enriching partnerships, as this article will show.

declared a state of emergency on 5 March. A request to provide satellite imagery for northern and north-eastern regions of Namibia came to UNOOSA from the Department of Water Affairs, Ministry of Agriculture Water and Forestry (MAWF) and the Country Office of the United Nations Development Programme (UNDP) in Namibia. The request asked for international support regarding satellite images and the involvement of an emergency mechanism to receive these images on a priority basis, with higher resolution and no cloud cover obscuring. Subsequently, on 14 March, 2008, UNOOSA triggered the International Charter to help Namibia in its combat against the grave impacts of the floods and the outbreak of cholera. UN-SPIDER provided support and followed up closely with both UNDP and the Department of Water Affairs of Namibia, helping the country to take full advantage of what the inter-

national community was providing. **October 2008 - Outreach** Following a request from the Government of Namibia, UN-SPIDER fielded a mission of three experts from UN-SPIDER and the German Aerospace Center's crisis information team (DLR/ZKI) to Windhoek to provide technical advice and train local experts in remote sensing techniques for flood mapping. A two day kick-off workshop on 29-30 January 2009 brought together relevant disaster management stakeholders to evaluate past experiences and lessons learnt.

**Feb 2009 - Capacity Building** A field visit to flood-prone regions enabled local disaster managers to gain on-the-field experience with GPS devices. Afterwards, the mission team provided a week-long technical hands-on training on utilizing earth observation data for water and flood mapping. The Mission was funded by the Ger-

man Technical Cooperation (GTZ). **Feb 2009 – Disaster Management Support**

The United Nations Office for Outer Space Affairs (UNOOSA) triggered the International Charter twice, once in February and once in March 2009, after devastating floods struck parts of Namibia and extended to the surrounding regions of Angola, Zambia, and Botswana. With a death toll of more than 130 people, displacement figures of 300,000, and a great fear of an exacerbated cholera outbreak, a state of disaster emergency was declared in the country. UN-SPIDER has been actively involved in invoking the assistance of the space community and providing resources to the disaster management one, acting as a nexus between the two.

**Aug 2009 – Horizontal Cooperation** From 19 to 21 August, 2009, UN-SPIDER hosted a Technical Expert Meeting in Bonn, Germany, to further develop the "Namibian SensorWeb Pilot project on integrated flood management and water- and vector-borne disease modeling" (see also: article by J. Szarzynski in this issue). This meeting brought together about thirty experts representing the Department of Water Affairs of the Ministry of Agriculture Water and Forestry (MAWF) in Namibia, the German Aerospace Center (DLR), the US National Aeronautics and Space Administration (NASA), the US National Oceanic and Atmospheric Administration (NOAA), Ukraine Space Research Institute (SRI), City University of New York, Johns Hopkins University and the Bloomberg School of

Public Health. The experts also had the opportunity to present the pilot project initiative to the ambassador of Namibia to Germany, His Excellency Mr. Neville Gertze. The pilot project will combine high resolution satellite imagery with in-situ data and modeling approaches in order to derive useful flood and water-borne disease forecasting tools for local decision makers within a scientifically sound, operational trans-boundary flood management system for the Southern African region.

UN-SPIDER will continue to work closely with Namibia to improve preparedness and response mechanisms in order to save lives and mitigate human suffering. Other countries are invited to join in the UN-SPIDER programme and contribute to the implementation of its mandate: being a gateway to space-based information for disaster management support, serving as a bridge between the disaster management and space communities and facilitating capacity building and institutional strengthening. ■

## Shirish Ravan appointed Head of UN-SPIDER Beijing Office

DR. SHIRISH RAVAN has joined the UN-SPIDER Programme as Head of the prospective UN-SPIDER Beijing Office. Dr. Ravan brings in over 16 years of experience in the use of space-based technologies for operational projects in the areas of disaster management, environmental monitoring, natural resources management, biodiversity research, watershed development, and infrastructure planning.



Since 2004, Dr. Ravan had been stationed in Afghanistan as head of the Illicit Crop Monitoring Programme of the United Nations Office for Drugs and Crime. The Programme enabled Afghan nationals within the Government and the United Nations to utilize space technology in the monitoring of illicit crop cultivation.

Prior to joining the United Nations, Dr. Ravan played a key role in developing a GIS-based Disaster Management Information System (DMIS) for the Maharashtra State in India. The DMIS addressed all phases of the disaster management cycle, including mitigation, preparedness, response and recovery.

Dr. Ravan holds a Bachelor's degree in Agriculture, a Master's in Environmental Sciences and a PhD in Forest Ecology. His doctoral research explored the use of remote sensing technologies for natural resources management, and he has authored over 45 publications on the subject matter. ■

### March 2008 - Disaster Management Support

The support to Namibia started during the March 2008 floods, when the UN-SPIDER team proved instrumental in ensuring access to the International Charter "Space and Major Disasters" and other existing opportunities to support the Namibian government. A severe flood, which started at the end of January 2008, reached its peak around mid-March. The Namibian government

**February-March 2008:** Heavy flooding in Namibia.

**February-March 2009:** Heavy flooding in Namibia and Angola.

**Early March 2008:** Namibia Hydrological Services requests help from international community; UN-SPIDER responds.

**27 February 2009:** UNOOSA activates the International Charter "Space and Major Disasters". Satellite-derived maps are delivered to Namibia.

**14 March 2008:** UNOOSA activates the International Charter "Space and Major Disasters". Data on the floods are collected by earth observation satellites, data is analyzed, and maps are delivered to Namibia.

**13-15 October 2008:** Representatives from Namibia Hydrological Services present the lessons learned at the Second International UN-SPIDER Bonn Workshop: "Disaster Management and Space Technology - Bridging the Gap" in Bonn, Germany. At the workshop, discussions are held on the possibilities of technical cooperation to prepare for future floods.

**20 March 2009:** Due to severe flooding, UNOOSA again activates the International Charter "Space and Major Disasters". Satellite-derived maps are delivered.

**January 2009:** Government of Namibia requests a UN-SPIDER technical advisory mission.

**28 March 2009:** United Nations agencies launch flash appeal of \$2.7 million for humanitarian needs related to the Namibian floods.

**27 Jan – 2 Feb 2009:** Experts from UN-SPIDER and the German Aerospace Center's crisis information team (DLR/ZKI) provide technical advisory services to government agencies and train local experts in Windhoek, Namibia. German Technical Cooperation (GTZ) provides funding.

**30 July 2009:** Flash appeal is raised to \$7 million to address residual humanitarian needs.

## INTERVIEW with Mabel Wantim, participant in the Prague Symposium on Cartography and Geoinformatics for Early Warning System and Emergency Management

**M**ABEL WANTIM FROM Cameroon is currently a PhD student of the sandwich programme of the University of Ghent in Belgium and the University of Buea in Cameroon. Her work is centered on using Geographic Information Systems (GIS), Remote sensing techniques, field-ground truthing and models to assess lava flow hazards from Mount Cameroon Volcano and environs, as well as producing lava flow hazard and risk maps, topographic maps, human infrastructure and land cover maps for this volcano and its environs. It is worth noting that Mount Cameroon Volcano is the most active one in Central Africa, and the University of Buea (UB) is situated at the foot of this volcano.

Ms. Wantim was funded by UN-SPIDER to participate in the Prague symposium in January this year, where she presented a study by the Department of Geology and Environmental Science of the University of Buea titled "The use of GIS and Remote Sensing techniques in assessing lava flows and ash fallout on Mount Cameroon Volcano and environs with special focus on the 1999 and 2000 eruption sites."

**UN-SPIDER:** Ms. Wantim, what is your overall impression of this conference? Have your expectations been met?

**M. WANTIM:** First of all, I wish to say the conference was extremely successful. I think it left a very good impression on me since it was my first time attending a conference of such magnitude on cartography, GIS and remote sensing and it was the first time that I was given an opportunity to present my work.

**UN-SPIDER:** How would you sum up the thematic coverage of the different contributions?

**M. WANTIM:** Several issues were examined at the conference. Actually, it was more of an educative forum with many contributions and suggestions. The importance of Geo-information sciences and remote sensing in crisis preparedness and management was certainly the key subject in all the presentations and keynote speeches. Furthermore, it was emphasised that disasters are not restricted by administrative boundaries, so there is need for a joint effort to succeed in crisis management. Also, the term "interoperability" came up in most of the presentations. The conference called upon all involved sectors related to crisis preparedness, management and setting up of early warning systems to work together.

**UN-SPIDER:** Which aspects would you say were of special relevance?

**M. WANTIM:** There were some key points that were stated as criteria for success in crisis management and disaster preparedness, which at the same time are some of the main challenges to the disaster management community. They include such concepts as the sharing of knowledge, instead of centralizing it. At the same time, redundancies should be avoided. Also, fluent communication between the IT and GIS departments is essential, which could be embodied in communication channel flexibility and knowledge access. Another issue that was addressed was the involvement of private enterprises in disaster management and in the provision of data. The provision of free access to relevant data was also discussed, which was particularly interesting, especially from the developing countries' point of view.

**UN-SPIDER:** Was there anything that you would personally highlight as a valuable lesson learnt in this event?

**M. WANTIM:** Well, to me it was an eye opener to hear what has been done in Europe and North America, in particular with regards to the setting up of early warning systems and emergency management. I discovered that there were so many stakeholders such as the military, governments, public and private enterprises, non-governmental organisations and other groups and individuals involved in work on crisis and disaster management. I began to better appreciate



Mabel Wantim

the role GIS, cartography and remote sensing play in all these. I learnt how the science of cartography, GIS and remote sensing has been evolving with time with the advent of more sophisticated software and more satellite sensors which had led to the production of images with very high resolutions.

In addition to that, I took particular interest in the point raised about the provision of free access to data. I think this is a central issue to be dealt with in the future if we want to make more people benefit from these technologies.

**UN-SPIDER:** Ms. Wantim, thank you very much for this interview!

The next Geo Information for Disaster Management (Gi4DM) symposium is going to be organized by the Ad-Hoc Committee on "Risk and Disaster Management" and ISPRS, WG VIII/2 "Hazards, Disasters and Public Health" in February 2010, Torino, Italy. [www.gi4dm-2010.org](http://www.gi4dm-2010.org).

# UN-SPIDER Knowledge Portal goes live

WHAT IS UN-SPIDER	DISASTER INFORMATION	VISUAL GLOBE																					
<p>UN-SPIDER aims at providing universal access to all types of space-based information and services relevant to disaster management by being a gateway to space information for disaster management support; serving as a bridge to connect the disaster management and space communities.</p>	<table border="1"> <thead> <tr> <th>Disaster</th> <th>Region</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>▶ Floods</td> <td>India, Andhra Pradesh and Karnataka</td> <td>05/10/2009</td> </tr> <tr> <td>▶ Tsunami</td> <td>Tonga</td> <td>02/10/2009</td> </tr> <tr> <td>▶ Floods</td> <td>Italy, Sicily</td> <td>02/10/2009</td> </tr> <tr> <td>▶ Tropical Cyclone</td> <td>Cambodia</td> <td>02/10/2009</td> </tr> <tr> <td>▶ Tropical Cyclone</td> <td>Philippines</td> <td>02/10/2009</td> </tr> <tr> <td>▶ Tropical Cyclone</td> <td>Lao P. Dem. Rep.</td> <td>30/09/2009</td> </tr> </tbody> </table> <p>1 of 6 &gt;&gt;</p>	Disaster	Region	Date	▶ Floods	India, Andhra Pradesh and Karnataka	05/10/2009	▶ Tsunami	Tonga	02/10/2009	▶ Floods	Italy, Sicily	02/10/2009	▶ Tropical Cyclone	Cambodia	02/10/2009	▶ Tropical Cyclone	Philippines	02/10/2009	▶ Tropical Cyclone	Lao P. Dem. Rep.	30/09/2009	
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FRIDAY, 5 JUNE 2009 witnessed the first official launch of the UN-SPIDER Knowledge Portal which took place during the 52nd session of the Committee on the Peaceful Uses of Outer Space (COPUOS) at the United Nations Office in Vienna. The beta-version can now be accessed at [www.un-spider.org](http://www.un-spider.org).

The functional architecture and design of the Knowledge Portal were elaborated in close cooperation with the Potsdam University of Applied Sciences, Department of Interface Design, Germany, resulting in a prototype demonstration which was presented at the second International UN-SPIDER Bonn Workshop in October 2008. At this Workshop, an Iteration Core Group of 64 members from 29 countries volunteered to give detailed comments on the prototype. The results mostly approved of the proposed architecture and gave valuable recommendations for highlighting and prioritizing certain functions.

The main objective of the UN-SPIDER Knowledge Portal is to take full advantage of up to date web technology in order to support the UN-SPIDER network in all its operational domains. These include providing information to all participating and interested parties, fostering alliances and establishing communities of practice, conducting outreach activities and raising awareness, in addition to implementing projects, activities, and capacity building. The portal therefore provides services and tools for communication purposes, process support as well as information dissemination.

So far, the informative part comprises a news section, a disaster information table and an events calendar and is currently being supplemented by the Space Aid and Knowledge Base sections. The former contains information required mainly to support the operational application of space technology during the entire disaster management cycle. The Knowledge Base, on the other

hand, provides in-depth and background information on technology, procedures, pertinent organizations and personnel, just to name a few.

The search function for navigating within the information content is threefold: semantic (keyword-based), thematic, and spatial. Thematic search will be facilitated by the three-dimensional Space Application Matrix which allows for a triple search profile consisting of a combination of space technology, disaster type and disaster management cycle phase. Zooming in on a region of interest on the Visual Globe embodies the spatial approach, and will allow to search for localized content items such as disasters, projects, systems, objects, case studies, institutions, etc.

Finally, since the UN-SPIDER Knowledge Portal is currently in beta status, we would like to invite all UN-SPIDER portal users to register at <http://www.un-spider.org> and provide feedback, using the given form at the bottom of every page. ■

## Network

### UN-SPIDER expanding Network of National Focal Points and Regional Support Offices

*Great effort recently invested in expanding the UN-SPIDER network of National Focal Points in Member States*

As defined by the United Nations General Assembly, a National Focal Point (NFP) is a national stakeholder nominated by its government to represent the disaster management and space application communities. Among them are for example members of the national civil protection or space agencies. NFPs embody the main institutions at the national level with which UN-SPIDER staff work, with the aim of promoting access to and the use of space-based solutions for disaster management in the respective country. They work with UN-SPIDER staff to strengthen national disaster management planning and policies and implement specific national activities that incorporate space-based technology solutions in support of disaster management.

*Establishment of four Regional Support Offices stipulated in June 2009*

During the 52nd Session of the Committee on the Peaceful Uses of Outer Space (COPUOS), the United Nations Office for Outer Space Affairs (UNOOSA) signed cooperation agreements to establish UN-SPIDER Regional Support Offices with the Islamic Republic of Iran, Nigeria, Romania, and the Asian Disaster Reduction Centre. The establishment of the Regional Support Offices was agreed upon by the United Nations General Assembly in its Resolution 61/110, stating that UNOOSA should "work closely with regional and national centres of expertise in the use of space technology in disaster management to form a network of regional support offices for implementing the activities of the UN-SPIDER programme in their respective regions in a coordinated manner". Furthermore, they are encouraged "to take advantage of the important experience and capabilities being offered, and to be offered, by Member States, particularly by developing countries". These four Regional Support Offices will contribute to ensuring that all countries are able to access and use space-based information to support disaster management activities. Additional offers to host a Regional Support Office have been put forward by Algeria, Pakistan, Philippines, South Africa and Ukraine.



UNITED NATIONS  
Office for Outer Space Affairs

The United Nations Office for Outer Space Affairs (UNOOSA) implements the decisions of the General Assembly and of the Committee on the Peaceful Uses of Outer Space and its two Subcommittees, the Scientific and Technical Subcommittee and the Legal Subcommittee. The Office is responsible for promoting international cooperation in the peaceful uses of outer space, and assisting developing countries in using space science and technology. In resolution 61/110 of 14 December 2006

the United Nations General Assembly agreed to establish the "United Nations Platform for Space-based Information for Disaster Management and Emergency Response - UN-SPIDER" as a new United Nations programme to be implemented by UNOOSA. UN-SPIDER is the first programme of its kind to focus on the need to ensure access to and use of space-based solutions during all phases of the disaster management cycle, including the risk reduction phase which will significantly contribute to the reduction in the loss of lives and property. UN-SPIDER Newsletter, Volume 2/09, October 2009. © United Nations Office for Outer Space Affairs.