

# UN-SPIDER Newsletter

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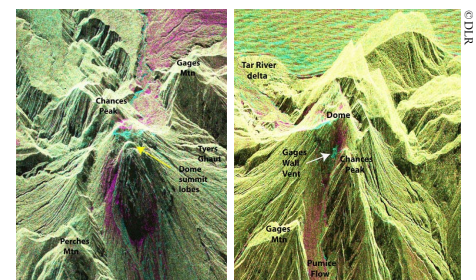
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## UN-SPIDER Connects Disaster Managers with Satellite Imagery Providers

*Assists Satellite Imagery Acquisition for Volcanic Activities in Montserrat and Flooding in Southeast Nepal/Indian Bihar*

ON 26 JULY 2008, seismic activity at the Soufriere Hills Volcano started to increase in Montserrat, a British Overseas Territory in the Caribbean. This volcano has been intermittently active for 13 years. On 28 July, an explosion took place on the west side of a large lava dome at the summit. The dome partially collapsed, and there was a strong possibility that the explosion had caused instability in the rest of the dome, with the possibility to cause further collapses and endanger inhabited areas of the island.

The Montserrat Volcano Observatory (MVO) is part of Montserrat's disaster management system and plays an important role in providing early warning to the authorities of a possible eruption of the volcano. Staff at the MVO, however, were not able to make any assessment of the sta-



Before-and-after false-colour satellite radar images of the volcanic dome

bility of the dome this time, due to persistent clouds obscuring the volcano. Aerial surveys or optical satellite imagery could not penetrate the clouds. An additional challenge was to obtain a set of comparable before-after images that would allow the staff to analyse the terrain and determine the extent of change in the volcanic dome.

(see "Satellite Imagery" on page 3)

## UN-SPIDER Readies Technical Mission to Burkina Faso

*Will Advise Policymakers and Practitioners on the Use of Space-Based Information for Disaster Management*

AT THE UNITED Nations Committee on the Peaceful Uses of Outer Space (COPUOS) meeting in Vienna in June



UN-SPIDER preparatory visit to a disaster management office in Ouagadougou, Burkina Faso

2008, the government of Burkina Faso made an official request to UN-SPIDER for a Technical Advisory Mission. The Mission, taking place from 12 to 21 November 2008, will assess Burkina Faso's existing use of space-based information for disaster management, identify potential areas where such information could play a greater role, and propose recommendations on how to improve Burkina Faso's utilization of this information.

The vulnerability of Western African countries such as Burkina Faso to climate and environmental change is likely to increase as demands on resources continue to rise in tandem with rapidly growing populations. The disaster management agencies in the region have to adapt to the increasing number of natural disasters, ranging between the poles of drought and flood. Additional impacts triggered by environ-

(see "Advisory Mission" on page 4)

# UN-SPIDER Workshops

*UN-SPIDER Organised Regional and International Workshops to Promote Space-based Information for Disaster Management and Emergency Response*

Right: Paulina Mufeti from the Namibia Hydrological Services greets Daniel Mandl from NASA at the UN-SPIDER Workshop in Bonn



## *Caribbean Region (Barbados)*

FROM 08 TO 11 July 2008, more than 60 participants attended the “United Nations Regional UN-SPIDER Workshop: Building Upon Regional Space-based Solutions for Disaster Management and Emergency Response for the Caribbean.” The workshop was co-organised by UNDP Barbados, OECS, and CDERA. The funding was provided by the Government of Austria, which put forward resources in addition to the support it is already providing to the UN-SPIDER Programme. A total of 25 participants received support to attend the workshop.

The Caribbean is regularly hit by hurricanes and tropical storms, but volcanic eruptions, tsunamis, floods and landslides also constitute important hazards in the region. The objectives of this workshop were therefore to present the current status of space technology for disaster management and emergency response within the Caribbean Region; to showcase regional space-based initiatives relevant to disaster management support including risk reduction and emergency response; to identify approaches towards the harmonization of the various existing initiatives that are contributing to helping developing countries in the region access and use space-based technologies for disaster management and risk reduction; and to reflect on the best

concepts for delivering support to both national activities and to national planning and policies, that consider the use of space-based technologies.

Participants included senior experts from disaster management institutions within the region, national and regional institutions responsible for capacity building in and promoting the use of space-based technologies, UN agencies, space agencies, academic and research institutions, and experts from the private sector.

The presentation sessions provided the

## **A “tyranny of distance” poses unique challenges to the Island States.**

participants with the opportunity to learn about existing initiatives using space-based information, about the use of such solutions in disaster management and about possibilities for collaboration. Regional disaster managers and experts also presented to which extent and under what kind of constraints they are currently using space-based information. Discussions within the break-out groups then focused on capacity building and knowledge management, on possible elements of a regional coordinating framework, on increasing access to space-based information and on a template for national disaster management offices.

The workshop was very dynamic and participants identified a series of recommendations that will enhance the access and the use of space-based information for disaster management. Further information can be found at the UN-SPIDER website.

## *Pacific Region (Fiji)*

Over 50 decision makers and senior experts from disaster management and space technology communities from 17 Pacific Island countries and neighbouring regions gathered in Suva, Fiji, from 16 to 19 September 2008, for the UN-SPIDER regional workshop for the Pacific. The workshop was organized in cooperation with UN-ESCAP and the Pacific Islands Applied Geoscience Commission (SOPAC).

Many disaster management offices on the Pacific islands have only extremely limited resources available in terms of human and financial resources. The area is essentially dominated by the oceans surrounding the individual islands. Disaster management experts from the region pointed out that a “tyranny of distance” posed unique challenges to the Pacific Island States. Moreover, many islands do not have populations big enough to allow for the maintenance of costly infrastructure. In the case of disaster, help may take days to arrive. Identifying vulnerable populations in advance and monitoring hazards to enable early warning were found to be key elements in successful disaster management in the Pacific.

Close regional and international cooperation were also seen as essential in making space-based information and technology more accessible to the Pacific region. The workshop participants were invited to attend the launch of the Pacific Disaster Net ([www.pacificdisaster.net](http://www.pacificdisaster.net)), a web-based portal that helps link disaster management specialists and resources throughout the Pacific region.

(continued on next page)



Left: Group photo in Barbados. Right: Breakout discussion in Fiji.



## *International (Bonn)*

On 13-15 October 2008, over a hundred international experts and decision-makers from over forty countries gathered at the UN Campus in Bonn to participate in the Second United Nations International UN-SPIDER Bonn Workshop: "Disaster Management and Space Technology - Bridging the Gap." At the Workshop, the delegates were enthusiastic about the first preview of the UN-SPIDER "Knowledge Portal," a web-based platform for knowledge exchange and communication. Throughout the remainder of the workshop, the delegates contributed additional improvements to the Knowledge Portal and joined "Core Groups" to continue these discussions even after the close of the workshop.

The Workshop also stressed the importance of vulnerability and risk assessment, early warning systems, and disaster medicine. The session on vulnerability and risk assessment, chaired by the United Nations University – Institute for Environment and Human Security (UNU-EHS), featured the latest developments in this field from Latin America, Asia, and Africa by linking academic research with real-world case studies. The session on early warning systems, organized by the International Strategy for Disaster Reduction - Platform for the Promotion of Early Warning (ISDR/PPEW), placed the focus on public-private partnerships. ISDR's Douglas Pattie, the session chair, stressed the importance of utilizing the creativity and entrepreneurial drive of the private sector in improving the current state of early warning technologies and systems. The workshop also featured a full-length session on aspects of health in the context of disasters. Medical doctors and researchers shared their experiences from the field and highlighted the importance of space-based information in their line of work.

Those in attendance included experts from international organizations such as OCHA, UNHCR, and WFP; and regional organizations such as the European Commission. Many space agencies and national civil protection agencies were present, including those from China, Europe, India, Iran, Nigeria, Ukraine, and the United States. The Workshop was organized by the United Nations Office for Outer Space Affairs (UNOOSA) and the German Aerospace Center (DLR), with support from ISDR/PPEW and UNU-EHS. ■

## **Satellite Imagery for Montserrat**

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Within this backdrop, Roderick Stewart, Acting Director of MVO, requested assistance from the scientific community, including his fellow participants at the recent UN-SPIDER workshop for the Caribbean region, in order to obtain satellite imagery of the Volcano.

The assistance obtained led to several satellite imagery acquisitions and the activation of the International Charter "Space and Major Disasters," a mechanism which provides for the rapid acquisition of sat-

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**"I would particularly like to thank the forces that got me to the UN-SPIDER meeting in Barbados. None of this would have happened if I hadn't been there."**

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ellite imagery over disaster areas. A set of high resolution radar images fulfilled the requirements and was analysed for terrain change after the explosion. The imagery data allowed MVO to determine that the lava dome had not been destabilized by the explosion. As a result, the Government of Montserrat was able to save valuable resources by cancelling an evacuation that had been planned as a precautionary measure.

Reviewing the chain of events that led to this positive outcome, Mr Stewart remarked, "I would particularly like to thank the forces that got me to the UN-SPIDER

meeting in Barbados. None of this would have happened if I hadn't been there." While most of the International Charter activations happen after disaster has struck, the Caribbean island of Montserrat provided an example of how satellite imagery can be used to assess and prepare for an imminent disaster.

## **Floods in South Asia**

The 2008 summer monsoon in South Asia added a new dimension to the recurrent flood events in the Gangetic plain. The Kosi river broke its banks and changed path, flooding villages and fertile farmland in southeast Nepal and the Bihar state of India. Over 3 million people were displaced in India, and more than 70,000 flood victims needed assistance in Nepal.

In order to provide emergency service workers up-to-date geographic information regarding the extent of the flooded area and the further development of the river's course, UNOCHA and UNESCAP requested the activation of the International Charter "Space and Major Disasters." By utilizing radar satellites which could "see through" the monsoon cloud cover, mapping agencies obtained a truer picture of the flooded area. UNOOSA is a cooperating body of the Charter and regularly channels requests from UN agencies to the Charter Secretariat. UNITAR/UNOSAT provided a set of flood maps in the context of this Charter activation. UN-SPIDER ensured the availability of additional resources, including an early flood map from DLR/ZKI and additional maps from ITHACA. ■

### **Regional Support Offices**

#### **UN 4th Committee Agrees with Guidelines for Establishment of UN-SPIDER Network of Regional Support Offices**

**I**N ITS RESOLUTION 61/110 of December 2006, the United Nations General Assembly agreed that the UN-SPIDER Programme 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 to implement the activities of the programme in their respective regions in a coordinated manner. The Committee on the Peaceful Uses of Outer Space in its last meeting in June adopted specific guidelines for the

establishment of these Regional Support Offices with regards to the procedure of setting up these Regional Support Offices. These guidelines were also agreed by the 4th Committee of the General Assembly when the Committee met in October to discuss the agenda item "international cooperation in the peaceful uses of outer space". Currently UNOOSA is working with Algeria, Iran and Nigeria to establish Regional Support Offices in each region.

## Spring School on Natural Disasters and Spatial Solutions in Brazil

*UN-SPIDER supports young professionals from disaster management and geosciences backgrounds exchange experiences and learn new space-based approaches*

FROM 8 TO 12 September 2008, the first in a series of planned Spring Schools took place in Santa Maria/Brazil. The Spring School was organized by the Brazilian campus of the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean (CRECTEALC) and supported by UN-SPIDER, the Group on Earth Observations (GEO), INPE/GEODESASTRES-SUL, PNUMA, and UFSM. It brought together 35 participants from 11 countries in South America and this year's course set focus on emergency response for floods, a



Spring School Participants and Staff

major type of disaster in Latin America.

Young professionals from both disaster management and geosciences backgrounds exchanged their experiences and were introduced to new space-based approaches. Availability of free satellite imagery, techniques for image processing in the detection of flooded areas, and the integration of field work, civil defence and national health authorities through geo-technologies were some of the topics covered. Course participants were excited to discover how the integration of spatial information on flood events through common data proto-

cols can lead to a better coordination and response delivery by civil defence and national health authorities.

During the Spring School, Ms Tania Maria Sausen, who coordinated the course, was awarded a silver medal from Civil Defence Brazil for outstanding research on geo-technologies for disaster management with her research group at GEODESASTRES-SUL. More information on the Spring School can be found on the UN-SPIDER website. ■

## Technical Advisory Mission to Burkina Faso

(continued from page 1)

mental conditions such as vector borne diseases and locust plagues additionally deteriorate the living conditions of the local population.

One important objective of the UN-SPIDER Technical Advisory Mission is the further development and integration of space-based technology within already existing national disaster management plans. Thus, technical visits to the national disaster management institutions, CONASUR, and to organisations involved in the processing of geo-information such as the national geographic institute are important components of the mission programme. The mission team includes UN-SPIDER and UNOCHA experts as well as remote sensing experts from the upcoming UN-SPIDER Regional Support Office in Algeria (in the process of being set up by the Algerian Space Agency) and from the French Space Agency, CNES. The mission team will have technical meetings with institutions involved in disaster management in Burkina Faso as potential users of space-

### UN-SPIDER's support to Burkina Faso builds upon other activities in West Africa.

based information, and visit technical institutions working with space-based and geo-information.

UN-SPIDER's support to Burkina Faso builds upon other activities in Western Africa, such as the recent International Conference 'Global Change and Water Resources in West Africa', in Ouagadougou, Burkina Faso, from 25 to 28 August 2008. The conference offered a platform for researchers to meet with West African politicians and stakeholders from Burkina Faso, Ghana, Benin, and Morocco in the framework of the GLOWA (Global Change in the Hydrological Cycle) program. The conference was hosted by the German Federal Ministry for Education and Research (BMBF) and organized by the Center for Development Research (ZEF) of Bonn

### Staffing

#### Former ReliefWeb Map Centre Manager Joins UN-SPIDER Bonn Office

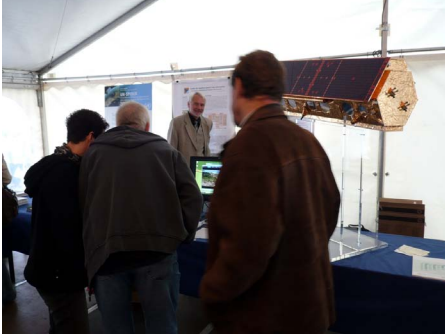
MR LORANT CZARAN of Romania has been appointed as Head of the UN-SPIDER Bonn Office. He is well known within the humanitarian, geospatial, and UN communities for his commitment to making available innovative geospatial solutions to support the work of the UN. He continues a long career in the UN, having first joined UNEP/GRID-Arendal in 1996. He then worked at the UN Cartographic Section in 2002, later transferring to UN DPKO (Department of Peacekeeping Operations) when the Cartographic Section was absorbed by DPKO. Later, he joined the UN Disengagement Observer Force (UNDOF) in the Golan Heights in 2005. Most recently he has served as the Map Centre Manager for ReliefWeb within UN OCHA. Mr Czaran has commenced his new duties on 30 October 2008.

University, Germany. UN-SPIDER, represented by Joerg Szarzynski, also took part in this event. ■



## UN-SPIDER presented to African Ambassadors at UN-Day in Bonn

*From German Townspeople to African Ambassadors, UN-SPIDER Draws High Interest*



Top: Ambassadors from Africa gather at the United Nations Campus in Bonn.  
Bottom: UN-SPIDER greets Bonn Citizens.

ON 25 OCTOBER 2008, the City of Bonn celebrated “UN Day” with a diverse programme under the auspices of the Lady Mayor of Bonn, Ms Baerbel Dieckmann, and the executive director of the United Nations Environmental Programme (UNEP), Mr Achim Steiner. The UN-SPIDER Bonn Office was present in several events on this occasion.

The UN agencies in Bonn invited over 30 ambassadors from Africa in order to present the manifold activities of the United Nations, particularly with respect to Africa. Many African countries are increasingly exposed to natural hazards such as drought, flooding and epidemic diseases, so there was a marked interest in the UN-SPIDER

programme. Several countries requested additional information from UN-SPIDER with regards to training and advice in accessing space-based technologies.

In the following weekend UN-SPIDER set up an information booth in the central plaza in Bonn along with the other UN agencies. The UN-SPIDER staff discussed the work of the office with the general public and answered their questions. The UN-SPIDER stand turned out to be a popular place of interest for the visitors, with a variety of people, from small children to old retirees, taking interest in the benefits made available by the UN-SPIDER programme. ■

### Outreach

## UN-SPIDER Supports Iran Workshop and Convenes UN Meeting

*Iranian Space Agency Takes the Lead in the Region*

THE IRANIAN SPACE Agency (ISA) organized from 6-8 October 2008 in Tehran: the “ISA/UN-SPIDER Regional Workshop: Building Upon Regional Space-based Solutions for Disaster Management and Emergency Response” which brought together 400 people for the Opening Session (see photo) and over 60 regional experts for the workshop itself.

H.E. Dr Taghipour, distinguished Deputy Minister and President of the Iranian Space Agency welcomed all participants and provided the initial thoughts which guided the intense discussions that took place during the next three days. Mr Saman Jalayerian, workshop Coordinator and Head of International Relations at the Iranian Space Agency, and his team did an excellent job organising the workshop which

had both presentation sessions with and discussion sessions. During the Discussion Session the experts focused on specific UN-SPIDER activities for the region to be carried out by the Regional Support Office. Iran has committed itself to setting up a UN-SPIDER Regional Support Office to carry out specific UN-SPIDER activities in the region.

### *UN Agencies Meet in Bonn to Discuss Available Space-based Solutions*

The United Nations Office for Outer Space Affairs (UNOOSA) convened the “5th UN-wide Meeting on the Use of Space Technologies for Emergency Response and Humanitarian Assistance,” which was held in Bonn, Germany on 16-17 October 2008. Thirty-one representatives from 25 UN

agencies and partner institutions attended this two-day meeting which focused on understanding the current evolving operational environment and the need for closer coordination among the UN community.

The meeting had two presentation sessions: the first one with presentations from the UN community with several contributions from the field offices (UNDP and OCHA) and a second session with contributions from partner institutions which included ITHACA, CartONG, DLR/ZKI and GEO. UN representatives updated the Common Vision to reflect the discussion points raised during the meeting. All UN representatives confirmed UNOOSA’s role as Cooperating Body and agreed that all requests for Charter activations should be sent by UNOOSA only. ■



Left: ISA/UN-SPIDER Regional Workshop in Tehran. Right: UN-wide Meeting in Bonn

# UN-SPIDER Active in Major International Workshops

*UN-SPIDER Staff Present Their Activities in the International Disaster and Risk Conference 2008 in Davos and the Fourth European Congress on Disaster Management in Bonn*



Scenes from the Fourth European Congress

## *International Disaster and Risk Conference 2008*

THE ACTIVITIES OF UN-SPIDER were presented at the International Disaster and Risk Conference (IDRC) 2008 in Davos, Switzerland, 25-29 August. During a session dedicated to the role of the Global Earth Observation System of Systems (GEOSS) in integral risk management, the ongoing cooperation between UN-SPIDER and GEOSS was outlined and discussed. Several organizations at the session, including CATHALAC (Water Center for the Humid Tropics of Latin America and the Caribbean) and JAXA (Japan Aerospace Exploration Agency), showed their interest in cooperating with UN-SPIDER.

The motto of IDRC Davos 2008 was “Public-private partnership - Key for integral risk management and climate change mitigation and adaptation,” reflecting the need for holistic and collaborative solutions in view of increasing numbers of dis-

asters and enhanced vulnerability. Under the patronage of UN-ISDR, UNESCO and UNEP and in collaboration with a large number of other international institutions including FAO, OECD and the World Bank, the conference brought together more than 1,000 representatives from international bodies, national governments, disaster management and relief organisations, science and research, and private companies. Major topics were Climate Change Adaptation and Disaster Risk Reduction, Critical Infrastructure Protection and Resilience, Pandemics and Diseases, and Integral Risk Management.

## *Fourth European Congress on Disaster Management*

More than 1000 participants from 43 states participated in the 4th European Congress on Disaster Management in Bonn, Germany, 8-9 October 2008. The main theme was “Disaster Management in Europe: Information – Coordination – Operation.”

The high-profile event included 12 international ministers and state secretaries leading country delegations. UN-SPIDER was represented by Joerg Szarzynski, who was invited as a speaker in the session on coordination. Mr Szarzynski presented the role of the UN-SPIDER programme within the international disaster management context.

Since its inception in 2005, the “European Congress on Disaster Management” has developed into a noteworthy event within the calendars of European institutions which are responsible for civil protection and disaster management. The two-day congress in 2008 was supported by international experts from various government ministries, the European Commission, the European Joint Research Centre (JRC), experts from NATO and UN bodies, and national disaster management authorities, as well as representatives from the private sector. Additionally, ten panel sessions provided the background for detailed discussions among the Congress participants. ■



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.

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