Capacity Building Activities at SANSA

Dr Jane Olwoch
MD Earth Observation, SANSA
Chair WGCapD (CEOS)

GEO Capacity Development Side Event
8th November 2016
SANSA Programmes

Earth Observation
- Image acquisition
- Image distribution
- Value-added services
- Value-added products

Space Science
- Geo-space observations
- Space physics
- Space weather
- EM technologies

Space Operations
- Launch support
- In-orbit testing
- Emergency support
- Carrier monitoring
- Hosting

Space Engineering
- Satellite development
- Industry development
Capacity Development: EO short courses, tools and products

In the name of data democracy, to drive innovation and research, the Department of Science and Technology provides funding to the South African National Space Agency which enables distribution of Fundisa disks.
Training courses

- **Introduction to Remote Sensing for Educators**

**Target Audience:** School Teachers (Grade 10-12)

**Outcomes:** To provide practical GIS & RS lessons, to improve the way in which Geography is taught in schools.

**Partners:** Private companies, Depart. of Education, Universities & Local Conferences.
Training courses

- Introduction to Remote Sensing for Local Authorities

**Target Audience:** Local authorities/municipalities; Government departments

**Outcomes:** To provide practical RS to local authorities, to improve service delivery through adoption of EO.

**Partners:**
• Spectrometry and Spectral Analysis

**Target Audience:** Students (Honours, MSc, PHD), Lecturers, Interns.

**Outcomes:** To enable quality RS research and increase knowledge-base for analysing spectral data.

**Partners:** Universities; Research Institutions
Courses for Educators

- **JICA Hands on Training on Japanese EO Satellites**
- **Advanced SAR Training Course**
- **SAR Interferometry Training Course**

**Target Audience:** Scientists, Government institutions, Research councils, Private companies, municipalities.

**Outcomes:** To build capacity on SAR processing for various applications.

**Partners:** Space Agencies
Capacity Building Resources

• **Fundisa Disk & Portal** – Contains SPOT, VAPs, Self-Guided Tutorials, RS lecture Series, Open Source Software, 3rd Party resources (2TB Hard drive).

• **Posters** – On Various RS Applications.


• **Fundisa School’s Edition** – Open source, RS data, and self-guided tutorials (DVD disk)
Courses for Educators

- Sci-Fest National Festival
- SASOL Science Festival
- National Science Week
- Site Tour for School Learners
- School visits

![Bar chart showing the number of learners reached from 2013-14 to 2015-16.]
Feedback

COURSE INSTRUCTOR & MATERIAL SATISFACTION

Course Material Rating

- Unsatisfactory: 0%
- Fair: 4%
- Good: 17%
- Very Good: 31%
- Excellent: 48%

Instructor Overall Rating

- Unsatisfactory: 0%
- Fair: 4%
- Good: 7%
- Very Good: 41%
- Excellent: 48%

Overall Course Rating

- Unsatisfactory: 0%
- Fair: 0%
- Good: 15%
- Very Good: 30%
- Excellent: 55%
<table>
<thead>
<tr>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CB-2</strong>: Build awareness and demonstrating the value and applications of EO targeting teachers, students and practitioners in major conferences. The first of these is an event during the Living Planet Symposium (ESA and DLR) in 2016 and SANSA at ISRSE (2017) (ESA, DL and SANSA)</td>
</tr>
<tr>
<td><strong>CB-4</strong>: Continue exploration and providing of appropriate E-learning courses in relevant applications (ISRO, INPE, NOAA and NASA)</td>
</tr>
<tr>
<td><strong>CB-7</strong>: Survey of CEOS Capacity Building activities and a task report on capacity Building in CEOS + Document on best practices in Capacity building (SEO, NASA, SANSA and USGS)</td>
</tr>
<tr>
<td><strong>CB-9</strong>: SAR Training Workshops. Two planned SAR data access and basic processing training workshops. (SANSA, ESA, DLR)</td>
</tr>
<tr>
<td><strong>CB-16</strong>: SRTM- Training Workshops (USGS, NASA and SANSA)</td>
</tr>
<tr>
<td><strong>CB-14</strong>: Create a planning document for the release of newsletters and mail-outs (SEO, SANSA, NASA, USGS and ISRO)</td>
</tr>
<tr>
<td><strong>CB-4</strong>: Contribute to Capacity Building Portal (GeoCab Portal) ; Populate the Capacity Building Portal. Joint Project with GEO (NASA, GEO, USGS)</td>
</tr>
</tbody>
</table>
Contribute in bridging the skills gap of SAR technology in the region and to provide awareness on how and where to access freely available SAR data and processing software such as the Sentinel Application Platform, commonly known as SNAP.

The working group’s contribution to the “Training the Trainer” initiative, about 95% of the workshop participants were lecturers at universities. Such an approach ensures that the knowledge and material acquired can be shared with students.

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Surname</th>
<th>Organization</th>
<th>Country</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr</td>
<td>Phila</td>
<td>Sibandze</td>
<td>SANSAS</td>
<td>South Africa</td>
<td>Course Coordinator</td>
</tr>
<tr>
<td>Prof</td>
<td>Christy</td>
<td>Hansen</td>
<td>Delft University of Technology</td>
<td>Netherlands</td>
<td>Course Coordinator</td>
</tr>
<tr>
<td>Prof</td>
<td>Chris</td>
<td>Schmullius</td>
<td>Friedrich-Schiller-University Jena</td>
<td>Germany</td>
<td>Course Coordinator</td>
</tr>
<tr>
<td>Prof</td>
<td>Chris</td>
<td>Stewart</td>
<td>European Space Agency</td>
<td>Italy</td>
<td>Course Coordinator</td>
</tr>
<tr>
<td>Prof</td>
<td>Mikhail</td>
<td>Urbazaev</td>
<td>Friedrich-Schiller-University Jena</td>
<td>Germany</td>
<td>Course Coordinator</td>
</tr>
<tr>
<td>Mrs</td>
<td>Joalane</td>
<td>Marunye</td>
<td>National University of Lesotho</td>
<td>Lesotho</td>
<td>Participant</td>
</tr>
<tr>
<td>Mr</td>
<td>Aniceto</td>
<td>Chauque</td>
<td>Universidade Eduardo Mondlane</td>
<td>Mozambique</td>
<td>Participant</td>
</tr>
<tr>
<td>Ms</td>
<td>Hilma</td>
<td>Nghiyalwa</td>
<td>University of Namibia</td>
<td>Namibia</td>
<td>Participant</td>
</tr>
<tr>
<td>Ms</td>
<td>Zodwa</td>
<td>Ndlela</td>
<td>University of Swaziland</td>
<td>Swaziland</td>
<td>Participant</td>
</tr>
<tr>
<td>Dr</td>
<td>Fadzai</td>
<td>Zengeya</td>
<td>University of Zimbabwe</td>
<td>Zimbabwe</td>
<td>Participant</td>
</tr>
<tr>
<td>Dr</td>
<td>Cosmo</td>
<td>Ngongondo</td>
<td>University of Malawi (UNIMA)</td>
<td>Malawi</td>
<td>Participant</td>
</tr>
<tr>
<td>Dr</td>
<td>Proches</td>
<td>Msigula</td>
<td>Sokoine University of Agriculture</td>
<td>Tanzania</td>
<td>Participant</td>
</tr>
<tr>
<td>Dr</td>
<td>George</td>
<td>Chirima</td>
<td>Agricultural Research Council</td>
<td>South Africa</td>
<td>Participant</td>
</tr>
<tr>
<td>Mr</td>
<td>Moses</td>
<td>Chisola</td>
<td>University of Zambia</td>
<td>Zambia</td>
<td>Participant</td>
</tr>
<tr>
<td>Dr</td>
<td>Douly</td>
<td>Chibamba</td>
<td>University of Zambia</td>
<td>Zambia</td>
<td>Participant</td>
</tr>
<tr>
<td>Mr</td>
<td>Michael</td>
<td>Phiri</td>
<td>National Remote Sensing Centre</td>
<td>Zambia</td>
<td>Participant</td>
</tr>
<tr>
<td>Ms</td>
<td>Phoebe</td>
<td>Odour</td>
<td>RCMRD</td>
<td>Kenya</td>
<td>Participant</td>
</tr>
</tbody>
</table>
Zambia SAR Training Workshop (10-14) October: Participants

Big Question: What is the future plan for these SAR Workshops??

Collating all available SAR tutorials, tools and online courses and provide access to those that have participated in face-to-face SAR training workshops. (ESA, DLR, NASA and SANSA). WGISS—CEOS Data Discovery Webinar **
A four-day Regional Training on Shuttle Radar Topography Mission (SRTM-2) took place from 19 – 22 September 2016 at the International Centre for Integrated Mountain Development (ICIMOD) Headquarters, Kathmandu, Nepal.

The training focused on the use of 30-meter elevation SRTM-2 datasets, which are freely and publicly available, and are extremely valuable for addressing critical issues impacted by the Earth’s topography, including water flow, heavy rainfall, river plain flooding, coastal storm surges, agricultural stresses; and public health challenges.

Participants were from relevant Government Ministries and agencies in Hindu Kush Himalaya (HKH) and Mekong regional countries, the training was facilitated by experts from NASA SERVIR hubs.

Expected outcomes: The ability to describe the availability, applications, and limitations of satellite DEMs at varying spatial scales in different thematic areas.

Ability to use DEM data for demarcation of river basins, flood inundation mapping, and hydrological modeling.

Understanding of the accuracies of DEM derived products at various spatial scales.

The US Government (NASA, USAID, NOAA and USGS) and CEOS (WGCapD), and the Secure World Foundation (SWF) were partners and collaborators with ICIMOD to organize the training.
# Gift Workshop for Teachers

<table>
<thead>
<tr>
<th>Activity</th>
<th>Progress</th>
</tr>
</thead>
</table>
| Gift Workshop in Cape Town  
27-28 August 201, Iziko Museum | ![Image of workshop participants] |
| WGCapD represented by ESA and SANSA | |
| Also distributed: ESA School Atlas, SANSA School Atlas, SANSA FUNDISA Disc and access to its Portal | |
## New Strategic Initiatives

<table>
<thead>
<tr>
<th>Activity</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity Building in support of UN Sustainable Development Goals</strong></td>
<td>The Working Group’s future plan is to re-structure in order to support CEO strategic objectives – Example SDGs and Data cubes. The most important enabler is resource availability in terms of people and funds.</td>
</tr>
<tr>
<td><strong>Data Cubes</strong></td>
<td>Discussion underway to implement a capacity Building activity in support of GEOGLAM.</td>
</tr>
<tr>
<td><strong>GEOGLAM</strong></td>
<td>USGS and NASA are our representatives on GEO Capacity Building Task team. Discussions are underway to bring more coordination in GEO capacity building tasks and other teams.</td>
</tr>
</tbody>
</table>
• 2\textsuperscript{nd} SAR Training Workshop (Pretoria) 23-25\textsuperscript{th} January 2017 Funded by JICA in support of RESTEC and JAXA
• 3\textsuperscript{rd} SAR Training Workshop (Gabon) (Date?? February 2017) Funded by ESA Copernicus Office
• WGCapD 6\textsuperscript{th} Annual Meeting: To be hosted by DLR (March 27-29)

• Space Agencies, GEO and CEOS will benefit from coordination of their capacity building activities

• Welcome to Pretoria for ISRSE-37 May 8-12 2017
Earth observation provides integrated National solutions towards social and economic development

Thank you

jolwoch@sansa.org.za