Are we doing the right thing? And are we doing the right thing right?

– A GMES perspective.

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Executive seminar on *Capacity Building in Disaster Geo-information Management in Developing Countries*
23 - 25 Sept 2009, Enschede, NL

content

- **The right thing?**
  - geoinformation for emergency response and humanitarian action – the case of rapid mapping
  - operational requirements and provided services – the Charter
- **Doing it right?**
  - capacities of users and providers
  - validation of services/products
- **Conclusions**

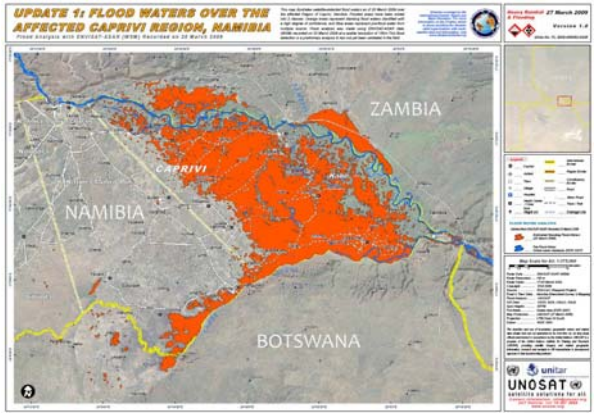
Who is ‚we' (who am I)?

- **Research (GMES – LIMES, SAFER, G-MOSAIC)**
- **capacity building implementation (Z_GIS)**
- **UN-SPIDER (e-SPIDER)**
- **GEO CBC**
- **AARSE**

-> remote sensing and GIS
-> research
-> networks for capacity development

Executive seminar on Capacity Building in Disaster Geo-information Management in Developing Countries, Enschede
P. Zeil | 24 Sept 2009 - www.zgis.at/research

The right thing?
Floods in Namibia – March 2009



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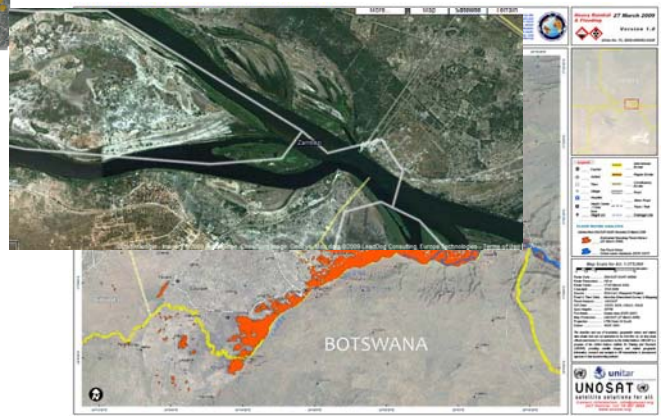

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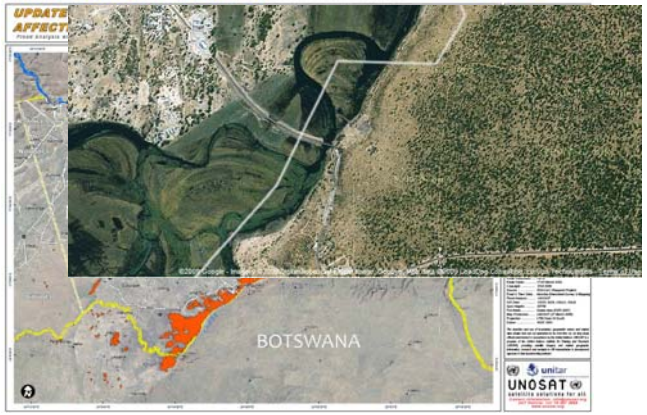

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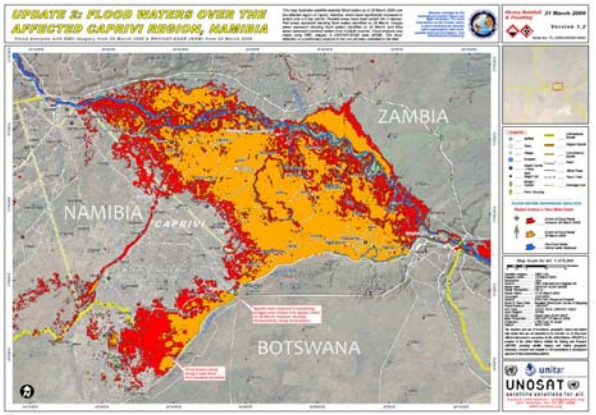
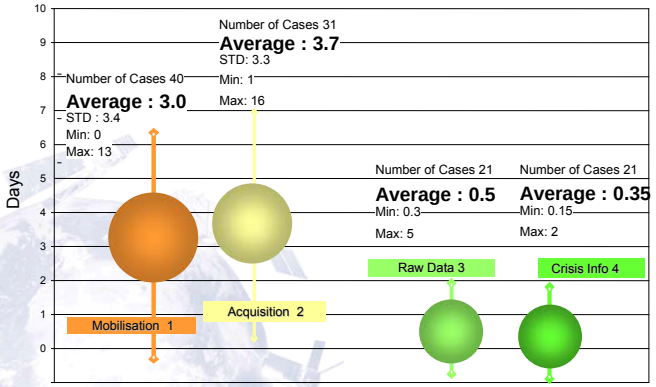


Chronogram Statistics: RESULTS

Average Rapid Mapping Times Compilation from www.disasterscharter.org and Sertit's experience

sertit



Method looks at first output for each element (not average). Typical events versus large events: impact on Acquisition time and on VA production time.

The right thing?
Global Monitoring for Environment and Security

- **Joint initiative of European Commission (EC) and ESA (European Space Agency)**
  - Implementation period: 2004-2011
  - EC: Research Projects in EC FP 5/6/7
    ➔ validation period 2008-2010
  - ESA: GSEs (GMES Service Elements)
- **Overall goal**
  - Harmonize data sources (EO data and in situ observations), make data use more effective
  - Provide operational services and tools
- **Core services**
  - Emergency response
  - Land monitoring
  - Marine services
  - Atmosphere
  - Security

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GMES Core Elements

Stakeholder	Central Elements	Implementation
	Applications & Services	ESA GMES Service Elements EU Integrated Projects EU Pilot Services
esa	Space Segment	Sentinels 1 to 5 National Missions "3rd Party" Missions
EUMETSAT	In Situ Systems	Terrestrial, Marine & Atmospheric Networks Airborne Sensors Socio-economic data
	Ground Segment & Data Management	Data Acquisitions Flight Operations Processing, Archiving & Distribution Networks

The right thing?
GMES Service Elements in the context of emergency response

- **Outside Europe: RESPOND (GMES Services supporting humanitarian relief, disaster reduction & reconstruction)**
- **Within Europe: Risk-EOS**

Respond *(GMES Service Element, ESA Earthwatch Programme)* is an alliance of European and International organisations working with the humanitarian community to improve access to maps, satellite imagery and geographic information.
> www.respond-int.org/

The right thing?
GMES Emergency Response Core Service

- **Support to Emergencies and Humanitarian Aid / Project SAFER**
- **The pre-operational emergency service of GMES is currently provided through the FP7 project SAFER which addresses the following domains**
  - Civil protection
  - Humanitarian aid
  - Security crises

The right thing?

- The right intention – but failing in delivery
- Data acquisition takes too long
- In-situ information not available / accessible

- Better performance for medium- / long-term tasks:
  - Reconstruction and preparedness
  - spatial planning support (hazard zoning, vulnerability assessment and monitoring, risk analysis)

-> e.g. update on flood extent March 27 – March 29

Doing it right?

Two requirements for improvement:

- Developing the capacity of users and providers
- User validation – providers' learning

Who ?

Universities

many

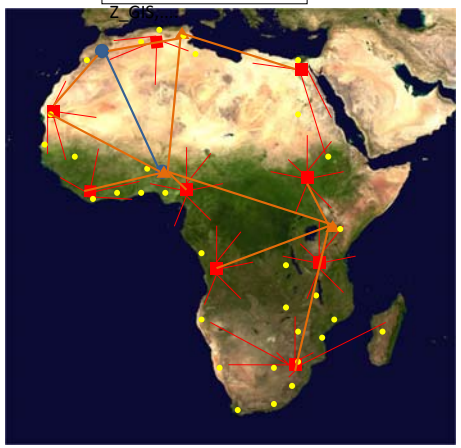
Expertise: research, capacity buidling, national institutions

With whom ?

UN Regional Centres – Regional Centers of Excellence – RSOs - Universities

e-SPIDER – elements

ITC, ADPC, AIT, Z_GIS



Train tutors
Build content
Deliver capacity building to target groups (seminars, workshops, summer schools, block courses, near real-time exercises)
Facilitate formal qualification (link to academic institutions – UNEDRA)

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point of learning (courses, university education) and authors (content providers) connected by e-Learning infrastructure

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e-Learning ≠ distant education

Support learning on different levels (region, centres of excellence, international expertise)

Accreditation – only possible through academic institutions: UNU, ITC, UNIGIS, local universities (UNEDRA)

Quality management:
-Feedback from participants
- ‚quality assessment board'
- external evaluation

The Summer School Concept

one week Summer School

⑤ Monitoring Impacts Of Tech. Hazards

Real-time Exercise

GMES Research
GMOSS Real time exercise – Nuclear Power Plant Accident

User Requirements
Detailed information on the current landuse in the contaminated areas and the affected population (< 36hrs)

⑤ Monitoring Impacts Of Tech. Hazards

Real-time Exercise

Data used & Methods
- SPOT 5 (pan-sharpened 2.5m GSD)
- population data based on administrative units

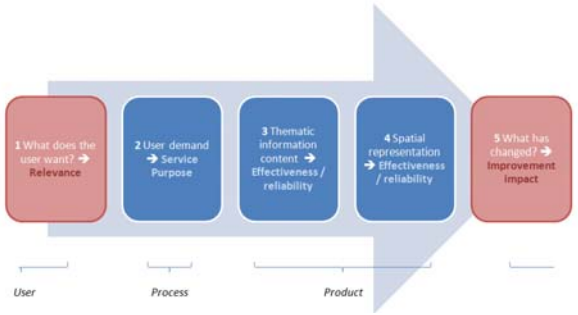
- dasymetric mapping utilizing information of population figures on municipality level and the land cover classification based on SPOT 5 data

Conditioned Information
We provide information on where, in which amount, and in which composition population is affected.

Doing it right?
Independent Service Validation Group (ISVG)

- **As a means to better 'qualify' GMES services**
- **major aspects to the validation work**
  - Start with the user perspective (what was needed) (relevance);
  - Analyse the constraints that condition the RESPOND service outputs (e.g. the use of the Charter, variable sensor inputs, technical & operational factors) (service purpose);
  - Accuracy of spatial and thematic information content (effectiveness & reliability);
  - End with the user perspective (what were the accrued benefits) (impact)
- **Scientific 'precursor' to ERCS validation -> Workshop at JRC ("scientific validation")**

Doing it right?
Quality issues



conclusions

- **Translation**

Capacity building in Disaster Geo-information Management in Developing Countries **-> Developing the geo-information capacities of users and providers for effective Disaster Risk Reduction (global)**

- **Effectiveness / Efficiency**

of emergency response (short-term) and preparedness (long-term) can only be improved when geo-information services (derived from satellite data) are provided by local actors (institutions)

- **A step in the right direction**

Building and maintaining networks for sharing knowledge, skills and problems

Thank you