



# UNOSAT

satellite imagery for all

United Nations facilitating **global** access to  
Earth Observations for **local** disaster risk reduction

*From rapid mapping to Capacity Building*

*World Conference on Disaster Reduction  
Thematic Session on EO for Global Risk Reduction  
Kobe, 21 January 2005*

# Facilitated access to reliable georeferenced information: an essential requirement

- The global challenge of reducing disaster risks requires more and better earth observation from global to local scales
- Cooperation, integration and easier access are key system requirements

# Our vision

## Integrated Mapping Services for Humanitarian Relief and Sustainable Recovery

**UNOSAT works to enhance the availability of dedicated EO and ICT applications:**

- ✚ to UN as well as the humanitarian and disaster management community at large,
- ✚ based on user needs and requirement and
- ✚ in collaboration with the international space community
- ✚ with the aim of supporting emergency response, disaster prevention and post-crisis recovery
- ✚ with a focus on the local level

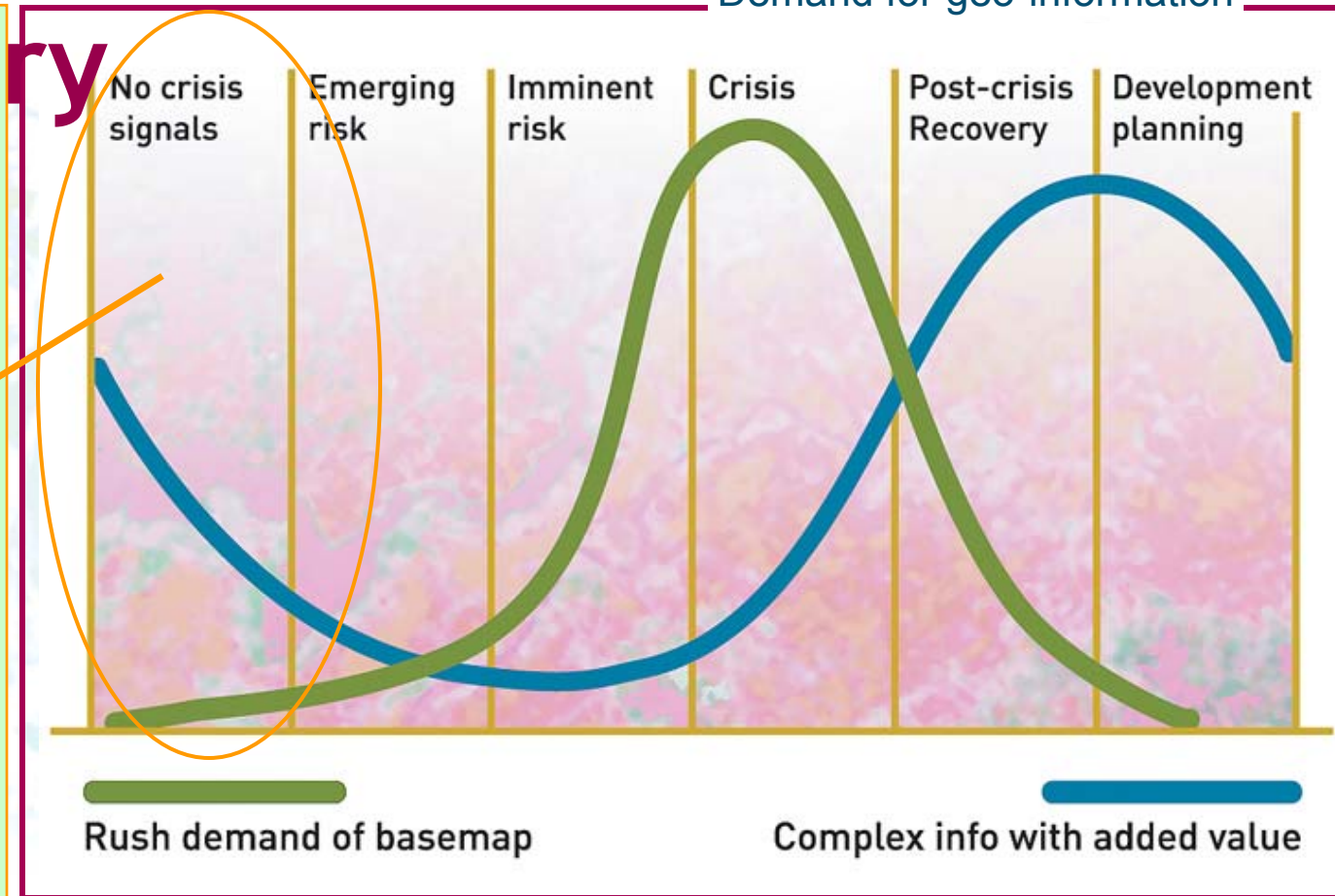
# humanitarian emergency response and sustainable

Demand for geo-information

Aiming at scenario forecasting, locally active public and private institutions:

- gather reference information;
- integrate updates, analyses and complex information on risk causes and dynamics.

Legitimate insiders like UNOSAT can fuel the process by supplying with a wide range of EO data and information





# Why the UN is the best framework to mainstream EO for achieving global disaster reduction

Supply side angle: all countries in the world are members and can participate and benefit as shown in the follow-up through COPUOS and pioneering initiatives such as:

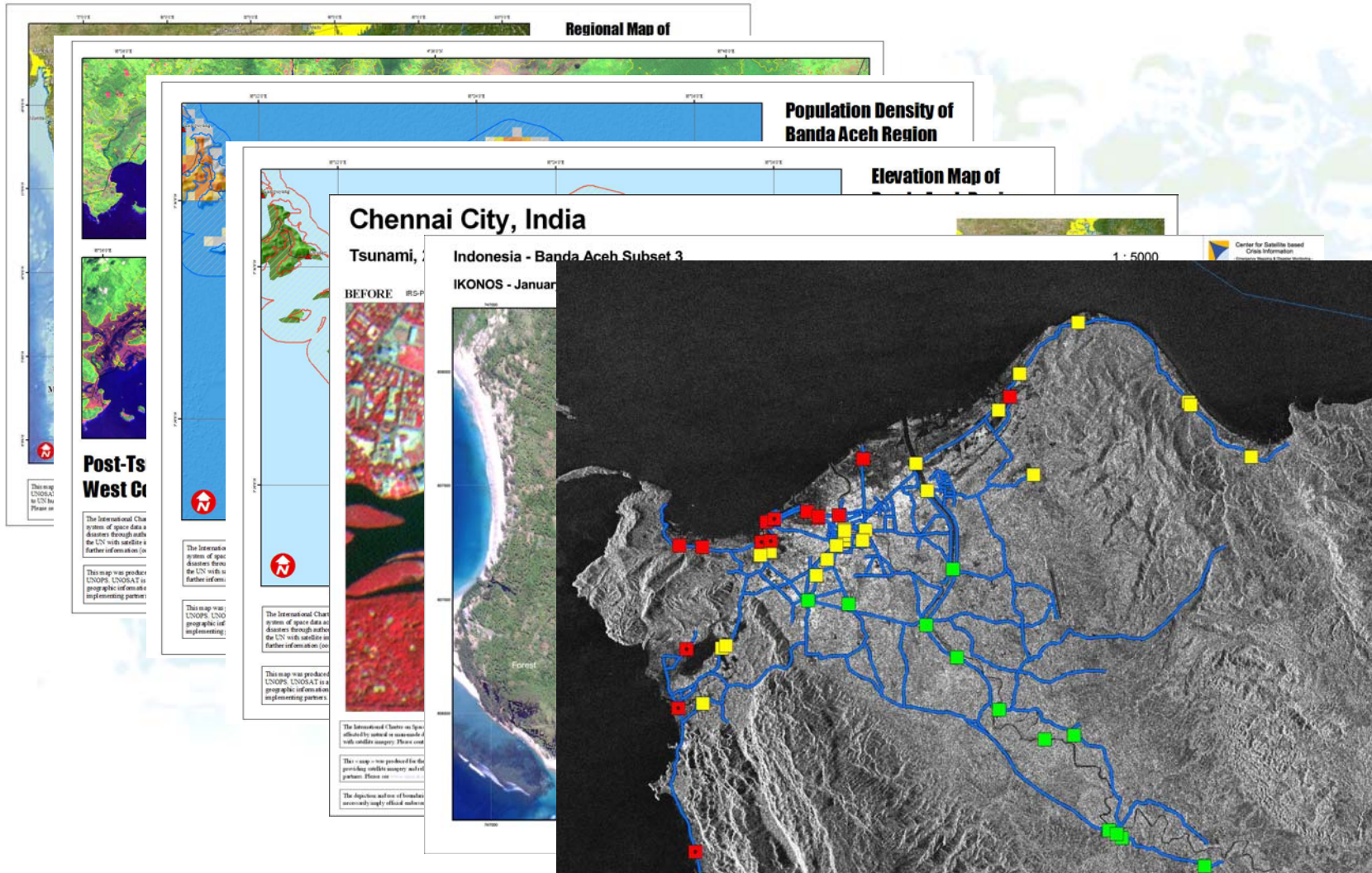
- The International Charter “Space and Major Disasters”
- The Global Monitoring for Environment and Security
- The GEOSS promoted by the Group on Earth Observations

User side angle: the UN system has

- An increasing responsibility in the coordination of international response efforts
  - The culture of inter-agency cooperation
  - A partnership approach with Science, Business, Governmental, National and Local public sectors
- **Mature experience of running operational interface platforms such as GIST, Reliefweb, GDAS, UNOSAT**

# From Rapid Mapping to Capacity Building

PHASE ONE - Sharing knowledge during emergencies





# From Rapid Mapping to Capacity Building

*PHASE TWO - Supporting recovery using information gathered during emergency*



- ✚ Collaboration with local authorities in the aftermath of Hurricane Mitch, 1998;
- ✚ Destructive phenomena: flash floods, debris flows, landslides
- ✚ Immediate assistance to victims and their settlements based on poorly informed decisions

# EXAMPLE 1 - Charter Call 79

## Indian Ocean Tsunami

### Emergency starts at 26/12/04 11:00AM GMT

- Internal consultation
- Call and coordinate with OCHA (Virtual OSOCC)
- Calls from UN, NGO, Media, Space agencies, GO
- Request OOSA to trigger the Charter on 27/12/04 4:00 PM GMT for Sumatra, Thailand and Maldives (Sri Lanka and India done already by ISRO and CNES)
- Nomination as PM (ordering data from 13 satellites from CNES, ESA, CSA, ISRO, CONAE)

### Data processing starts on 27/10/04

- Archive space-maps
- Population density maps
- Topographic maps
- Crisis space maps
- Change detection and pre-post crisis maps
- Damage assessment maps

### Data dissemination starts on 28/12/04

- Publishing of maps at [www.unosat.org](http://www.unosat.org) (updated every 6 hours, 40,000 downloads in 10 days)
- Active coordination and cooperation with UNEP Grid Geneva, JRC, SERTIT, CNES, ESA, CSA, ISRO, DLR,
- Letter sent to the Secretary General and to all PR of the member states
- Dissemination on partner portals (Charter, ReliefWeb, IFRC-EIS, AlertNet)
- Pushing information availability through SMS virtual OSOCC system

### Analysis and Integration of user feedback starts on 31/1/05

- With humanitarian organizations
- With UN colleagues: OCHA, UNDP, UNEP, UNJLC, WFP, FAO, WHO, etc...
- With national civil defense and disaster management institutions
- With affected local communities (training request 2<sup>nd</sup> week)
- With donors (WB office in Djakarta, ECHO, UNDP, etc...)



# EXAMPLE 2

## Implementation of a GIS



- ❑ Establishment of GIS office for improved risk assessment and urban planning
- ❑ Local authorities focus on safety and territorial management
- ❑ Know-how transfer to facilitate geographic data management (staff trained by UNOSAT)
- ❑ In Nicaragua, CIGMAT is currently generating its own projects and has its own clients

# Why Building Capacities at Local Level

The local level (communities, municipalities, etc...) is where vulnerability reduction can be planned and carried out

- Where conflict of interests in land use happen
- Where mediation can be effective
- Where negotiated solutions can be accepted and implemented
- Where vulnerability reduction and culture of risk are linked

To support these complex processes, objective and comprehensive information is required...

which can be drawn in a cost-effective manner from data extracted from satellite imagery of different time and sources



# The value added by UNOSAT in GMES and GEOSS

- + **Robust IT infrastructure** (CERN, GEANT network, DataTAG, EGEE)
- + **Team:** quality and motivation
- + Member of the **coordination mechanisms** of global crisis response (Inter-Agency forum, UN Working Groups (GI, ET), member of IASC)
- + Permanent contact with **member states** (donors and recipients of aid) through permanent missions in Geneva
- + **Culture of partnership** with:
  - + Science (CERN, ESA, CNES, DLR, Universities mainly in Europe)
  - + Large EC ESA programmes: GMES, EGEE, GMOSS
  - + UNOSAT consortium VAC partners
  - + Media (reliefweb, alertnet, etc...)
  - + Private sector (UNOPS is the main outsourcing instrument of the UN)
  - + Non governmental organizations (CARE, MSF, ICRC, AU, etc...)
  - + Local government organizations (CGLU-UCLG)
  - + Disaster management institutions (ADRC, PDC,
- + **Mandate of capacity building** in challenging domains: multilateral diplomacy, conflicts, environmental conventions, climate change, decentralized cooperation, new technologies
- + Committed to **serve UN across the board** in peace building (UNDPKO), humanitarian (UNOCHA, HCR, WFP, etc... ), development agencies (UNDP, UNEP, ISDR, ILO, UNESCO) and IFI (IFAD, WB, IDB, ADB) with projects on going in more than 50 countries



# Proposals for improvement

- The possibility of replicating the **Matagalpa** success by creating a **large international programme** associated to the International Trust Fund for Disaster Reduction, that facilitates *inter alia* the access to processed satellite products, analytical assistance and training services on the model of the small grant programme of the Global Environment Facility
- The International Charter “Space and Major Disasters” should be expanded by:
  - Relying on financing sources external to the space agencies budgets (ODA budget) for data acquisition
  - Incorporating new active members (Russia, China, Algeria, UK, among others) to s
  - Expanding its mandate to other humanitarian emergencies, including conflicts
  - Lifting restrictions on the use of data for disaster reduction efforts
- Possibility to use the **GLOBAL MAPPING FACILITY** established as a Special Purpose Grant Fund by UNITAR to receive contributions from private and public entities to finance as a PRECURSOR for the GDRF and Charter Plus.

# Enabling future progress

## SAFER

### What it is:

A UN-CERN-ESA initiative under the auspices of UNESCO started by UNITAR with support from UNOPS to increase the mobilization of the research IT infrastructure and know-how and Space Systems in support to the UN efforts for a SAFER world.

### Invited partners:

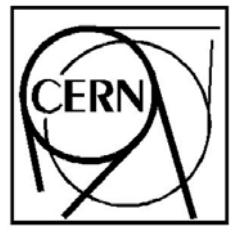
Space agencies members of the Charter, JAXA, UNESCO, ISDR, UNOCHA, UNHCR, WFP, FAO, UNEP, ILO, UNDP, UNDPKO, GEANT Users Network, European Commission, UNOOSA, ITU.

### Examples of applications:

Telecommunications, High-speed Internet, GRID, geo-positioning, Messaging, Voice Mail, Earth Observations, etc...

### Possible domains of applications:

Humanitarian aid, refugee protection, human rights, peace-keeping, education, health, environment, disaster reduction, local economic development



GENÈVE, SUISSE  
GENEVA, SWITZERLAND





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[www.unosat.org](http://www.unosat.org)