

UNIVERSITY OF TWENTE.

Proposal for an
IRDR International Centre of Excellence in
Spatial decision support for
integrated disaster risk reduction



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FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION

THE ITC AND ITS MISSION

Space for Global Development

Providing *international education* the Faculty of Geo-Information Science and Earth Observation aims at capacity building and institutional development of professional and academic organisations and individuals specifically in countries that are economically and/or technologically less developed.

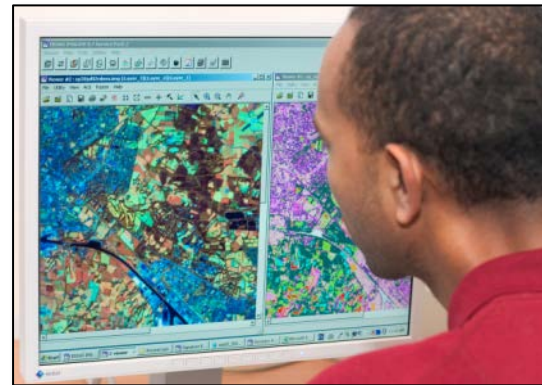
ITC acts as a *two-directional gateway for knowledge exchange* in the development and use of *geo-information science and earth observation*

THE ITC: ORGANIZATION

- 60 years of experience in international development
- Since 2010, Faculty of Geoinformation Science and Earth Observation of the University of Twente
- ~300 scientific and support staff
- Annual budget 28.4 million
 - Base funding from the Ministry of Foreign Affairs (ODA funds): 55%
 - Project funds (50/50 research and capacity development projects): 45%
- Organization: 6 scientific departments

THE ITC: EDUCATION

- Three MSc programs:
 - MSc GEO (with 6 specializations)
 - MSc Spatial Engineering (2017 start)
 - GIMA (GeoInformation Management)
- 135-150 MSc students per year
- 700+ short course students (3 weeks to 3 months)
- More than 20000 alumni worldwide
- Excellence scholarship paying 75% of the tuition fee

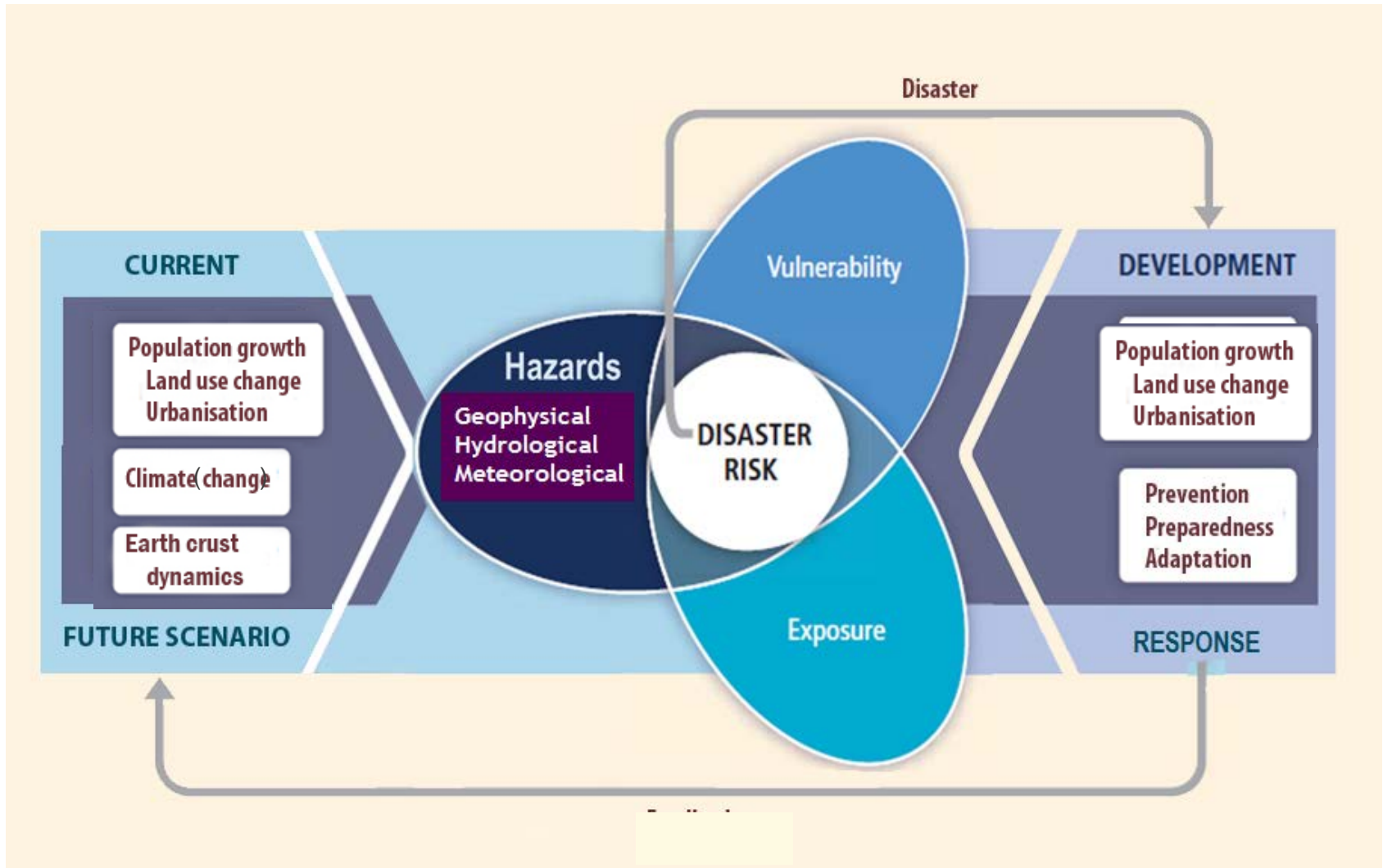


RESEARCH THEMES (20 FULL PROFESSORS)

- Food security
- **Disaster Risk Management**
- **People, Land and Urban Systems**
- Water management
- Renewable energy and earth resources
- Earth Crust Dynamics
- Environmental management and biodiversity
- Spatial-temporal analytics
- Health (new chair)

DRR issues cut across many of these themes.

RISK FRAMEWORK FOR NATURAL DISASTERS



PHD RESEARCH IN DISASTER RISK REDUCTION

- 9 PhD's in Climate and Hazard processes and Risk
- 11 PhD's in Urban planning and growth, and disaster resilience and vulnerability
- 6 PhD's in spatial data problems related to disaster management and rapid damage assessment and recovery
- 12 PhD's in food security and biodiversity, related to environmental degradation, drought and other hazards

In ITC, MSc research is integrated with PhD research and project capacity development opportunities

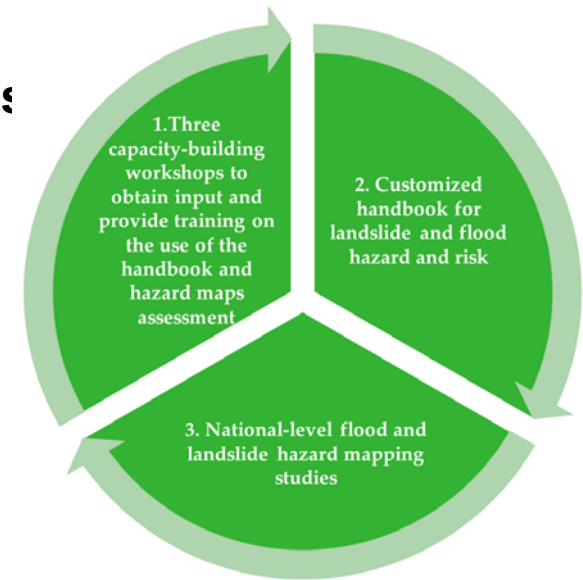
PROJECT EXAMPLES DECISION SUPPORT FOR DRR

- **CHARIM** – World Bank project in the Caribbean for national flood and landslide hazard assessment for planning, engineering and disaster management (*charim.net*). Counterparts Ministry of Works and National Planning Agencies.
- **Kampala flood risk assessment** – UN Habitat project “Cities and climate change” with Makerere University and Kampala City Council Authorities
- **MaMaSe** (MauMau Serengeti) – Sustainable Water Initiative. Stakeholder driven sustainable water management (*mamase.org*)
- **Hazard atlas** as a tool for decision support: Georgia (<http://drm.cenn.org/index.php/en/>) and Beichuan, with Chengdu university (China, regional)
- **CHANGES** – Marie Curie research project: risk in mountainous areas due to climate change, RiskChanges Decision Support System (<http://www.changes-itn.eu/>)
- **STARS** – Gates Foundation project: use remote sensing technology to improve agricultural practices of small farmers in Africa (<http://www.stars-project.org>)



A regional initiative focusing on floods and landslides

1. Create a methodological framework to incorporate hazard and risk information into planning processes
2. Train technicians and decision-makers to use it
3. Assess and improve upon hazard and risk data availability



To support my decision-making process...

... what hazard/ risk information do I need...

... how can I use this information...

...and what input data do I need to create it?

DECISION SUPPORT IN EDUCATION

- Multicultural student body promotes understanding in how decisions are reached in group processes
- Group decision room with interactive digital tables to create collaborative response strategies and actions



RECENT DEVELOPMENTS IN NETWORKS

- MoU with Ministry of Education of Ethiopia and NUFFIC to support scholarships for 3 universities in Ethiopia (MSc, PhD)
- MoU with NASA-SERVIR Bangkok (ADPC) students do MSc/internship, using satellite images for DRM and food security (Thailand, Laos, Cambodia, Vietnam)
- Membership of GEO, co-chair (proposed) for Capacity Development, involved in DRR and food security and human planet initiative
- Nepal informal links with various organizations via Alumni, after the recent earthquake
- Involved in the PeriPeriU network in Africa
- Close ties with universities in China, Indonesia, Thailand, Myanmar, East and West Africa
- Co-chair of the technical advisory group of the Caribbean Disaster Emergency Management Agency (CDEMA)
- UN-ISDR: Request for STAG membership; membership of Urban Planning Advisory Group.
- European Planning Schools: Resilience and Risks Mitigation group

OUTREACH ACTIVITIES

Red Cross Princes Margriet Fund “Prevent the disaster” program
ITC organized with the Red Cross a Mapping Party for a flooded area
Malawi.



Volunteers (290 students, staff, school children) mapped 20000 houses and nearly 1000 km of road in the space of 4 hours, at ITC, IHE Delft and in Nairobi (alumni).

AMBITIONS AND PLANS WITHIN IRDR

- Exchange staff (based on common research goals)
- Tender on projects together
- Provide student MSc and internship opportunities
- Open source software: ILWIS, various models and information systems
- Research and knowledge transfer on application of drones in pre & post-disaster situations
- Create awareness of the ITC excellence scholarships within IRDR
- Create opportunities for tailor made training together

AMBITIONS AND PLANS FOR THE ICOE

As member of IRDR:

- Focus research closely on Sendai goals: informed risk analysis, build back better, early warning, by international cooperation
- Provide integrated risk assessment, based on a holistic view of hazard processes, vulnerability and stakeholder resilience
- Further develop methods for multi-hazard risk assessment and risk dynamics
- Provide stakeholders with spatial information and methods and tools to support DRR decision making in complex risk contexts
- In the capacity of IRDR-ICoE, forge a close relation with UN-ISDR, promote IRDR as a network of excellence
- Within IRDR create a best practices online database
- Organize/contribute to an IRDR side event in the upcoming UN-ISDR conference in Cancun (May 2017)

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THANK YOU



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