ISSUE 2011-1

ALUMNI MAGAZINE
FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION
UNIVERSITY OF TWENTE

ITC NEWS

ERASMUS MUNDUS PROGRAMME

CROPS FROM SPACE

RURAL TRANSPORT POLICY

OBITUARY

SPACE FOR GLOBAL DEVELOPMENT

THE FACULTY GEO-INFORMATION SCIENCE AND EARTH OBSERVATION (ITC) OF THE UNIVERSITY OF TWENTE IS ONE OF THE WORLD'S FOREMOST EDUCATION AND RESEARCH ESTABLISHMENTS IN THE FIELD OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION WITH SUCH A WIDE RANGE OF DISCIPLINES AND ACTIVITIES IN THIS FIELD.

CAREER PERSPECTIVES

At the heart of ITC's activities lies capacity building and institutional development, the processes by which individuals, groups and organisations strengthen their ability to carry out their functions and pursue their goals effectively and efficiently. This dynamic setting offers attractive career perspectives, enabling qualified personnel to put their skills and expertise to excellent use.

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Over the years, ITC has developed a wide selection of courses in its degree, diploma and certificate programmes in geo-information science and earth observation. These courses are offered in the Netherlands, online and abroad by ITC itself or by ITC in collaboration with reputable qualified educational organizations.

DEGREE COURSES IN GEO-INFORMATION SCIENCE AND EARTH OBSERVATION FOR:

- Applied Earth Sciences
- Geoinformatics
- Governance and Spatial Information Management
- Environmental Modelling and Management
- Land Administration
- Natural Resources Management
- Urban Planning and Management
- Water Resources and Environmental Management

FOR MORE INFORMATION

Faculty ITC
University of Twente
PO Box 217 - 7500 AE Enschede
The Netherlands

INFO@ITC.NL WWW.ITC.NL

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ITC

6

11

12

21

28

COVER

CONTENT

Staff and students enjoying lunch at the University of Pune, India. The University kindly hosted the selection meeting for the Erasmus Mundus Regional Asia Programme.

INTRODUCTION

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Managing Editor
Janneke Kalf

Editor
Jorien Terlouw

Editing
Janice Collins

Design&PrePress
Composer DTPservice
Henk Scharrenborg

Printing
Drukkerij Roelofs Enschede

Correspondence to
Managing Editor
ITC News
PO Box 217
7500 AE Enschede
The Netherlands
Phone +31 (0)53 487 44 11
Fax +31 (0)53 487 45 54
E-mail itcnews@itc.nl

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Readers of *ITC News* generally expect to find a mine of information on new developments in the ITC core processes of education, research and project services between its covers. And this issue will surely live up to that expectation. But what about the covers in question? After more than a decade, we feel that the time is ripe for a new layout, inside and out – a layout that will reflect the coming-of-age of a newsletter that continues to chart the events and changes at ITC. We certainly hope that this new format meets with your approval and will be more than happy to hear your reactions.

'Change' – merely a word listed in any dictionary, but a word that is increasingly in use these days. Still, what does it signify? Well, as we have seen in the opening paragraph, it can mean a change in style, in format. It can also be an acronym, as you will discover if you turn to page 3 to read about the new initiative undertaken within the framework of the Marie Curie Initial Training Network. Indeed, it can indicate that with the closing of one door another one opens – as the article on page 18 bears out.

Geo-Information Science and Earth Observation is a wide-ranging scientific field, both vertically and horizontally. Avid readers of this issue will find articles that deal with the planet Mars (page 15), pedestrians here on terra firma (page 6), capacity building in Vietnam (page 21) and new instruments (page 12) to promote sustainable management of the world's natural resources But amidst all this scientific progress, we owe a great debt to those who have gone before – those whose vision has borne fruit and created the foundation on which we, in this technological age, can securely build. Sadly we have to report (page 26) that Professor Jacub Rais, a great friend and a loyal fellow of ITC, passed away on 28 March 2011 in Jakarta, Indonesia, at the age of 82 – active to the last in the field of toponomy. He will be sorely missed.

But now over to you. The new-style *ITC News* is in your hands. We hope you enjoy reading it as much as we have enjoyed redesigning it and compiling its contents. And, who knows, perhaps you will feel inspired in the future to contribute an article yourself.

Virtually yours,

Janneke Kalf
Managing Editor

Jorien Terlouw
Editor

MAIN FEATURES

CHANGES: CHANGING HYDRO-METEOROLOGICAL RISKS – AS ANALYSED BY A NEW GENERATION OF EUROPEAN SCIENTISTS

A Marie Curie Initial Training Network

Cees van Westen westen@itc.nl
Dinand Alkema alkema@itc.nl

From January 2011, ITC has been the coordinator of an EU Seventh Framework project in the so-called Marie Curie Initial Training Network programme, which aims at improving the research capacity of young scientists in Europe. The CHANGES network (Changing Hydro-Meteorological Risks – As Analysed by a New Generation of European Scientists) will develop an advanced understanding of how global changes (related to environmental and climate change as well as socio-economic change) will affect the temporal and spatial patterns of hydro-meteorological hazards and associated risks in Europe, and how these changes can be assessed, modelled, and incorporated in sustainable risk management strategies, focusing on spatial planning, emergency preparedness and risk communication.

Environmental changes in Europe due to global change and resulting reactions in ecosystems, combined with expected changes in socio-economic development, will lead to adjustments in land use in areas that are exposed to hydro-meteorological hazards such as flooding, landslides, severe erosion, snow avalanches and wind storms. These hazards will also have domino effects (e.g. the effect of land use change on runoff, severe erosion, and consequent landslides and river damming leading to flooding) that are still not properly understood. The effects of these changes need to be analysed and modelled using probabilistic hazard and risk methods that can be applied by stakeholders from different sectors. The probabilistic models should incorporate the uncertainties in the temporal probability, spatial extent and magnitude of the hazards, as well as the uncertainties of the vulnerability of the exposed elements at risk. The modelled chan-

A kick-off meeting was organized on 13 and 14 January, bringing all the partners together to discuss the project planning in greater detail

ges in hazard and risk patterns need to be incorporated in disaster risk management strategies, and will form an important factor in land use planning activities at stakeholder-relevant levels. They will also have a large impact on risk governance policies, which need to be adapted.

The CHANGES Network is focusing on the development of an integrated risk management approach that is applicable at both regional and local scales and which will combine the efforts undertaken so far. Up to now, there has been no such approach that could be used within a European context.

In several documents, the European Commission has identified the need for adaptations in risk management as a consequence of climate and environmental changes. The implementation of risk management measures such as disaster preparedness programmes, land use planning, regulatory zoning and early warning systems are considered essential. Spatial planning is only one of many aspects in risk management and is, in general, not involved in risk assessment. Further, multi-risk assessment approaches are not used in planning practice: risk indicators are hardly used and vulnerability indicators are not used at all. Integrated approaches are therefore needed to integrate spatial planning in disaster risk management. In addition, scientific advances in hazard and risk assessment and the demands of stakeholders/end users are still not well connected. In many cases, the scientific outcomes remain rooted solely within the scientific community or insufficient new knowledge is fabricated to be implemented by stakeholders and end users. A key cause of the gap between the science community and stakeholders/end users lies in the complexity of human-environment interactions. This has led to the development of a diversity of approaches, often not easy to implement by the end-user community. The CHANGES network recognizes the shared responsibilities of all stakeholders for whom shared knowledge is the key element. Therefore, the network aims at transparency by putting communication via visualization of the whole risk management cycle and scenarios at the centre. There is a need to develop a harmonized decision-making tool structure for applying hazard and risk mitigation through spatial planning in risk-prone areas and to develop a guideline on natural hazard mitigation within the context of the EU Environmental Assessment Directive.

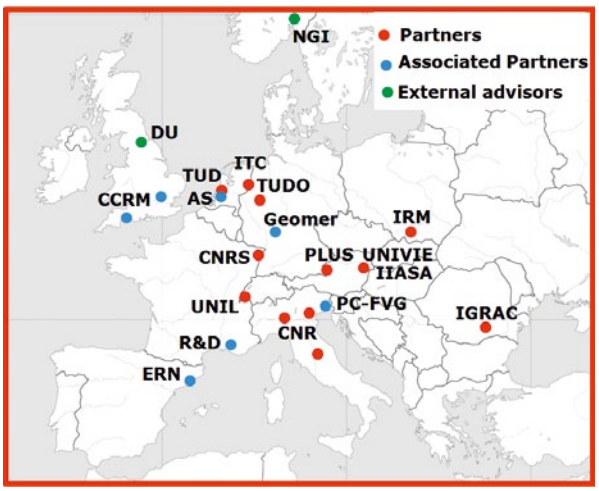
The main objectives of the CHANGES network are:

1 To provide young European scientists with high-level training, teaching and research in the field of hazard and risk management within a changing environmental context
2 To reduce the fragmentation of research on natural processes
3 To develop a methodological framework combined with modelling tools for probabilistic multi-hazard risk assessment, taking into account changes in hazard scenarios (related to climate change) and exposed elements at risk.

The CHANGES network is interdisciplinary and intersectoral by its nature. Active stakeholder participation and the dissemination of the project results are important features of the project. High-level training facilities, as well as scientific and technological excellence, will be provided to the next generation of researchers in the field of hazard and risk management. This is expected to facilitate young European scientists in finding employment in European organizations in different sectors. The CHANGES network hopes to contribute to Topical Action nos. 2 and 3 of the UN-ISDR Hyogo Framework for Action, as risk assessment and management, combined with innovation and education, are considered essential to confront the impacts of future environmental changes.

The CHANGES network has the following research objectives:

- To analyse changes in the frequency, magnitude and extent of hydro-meteorological hazards as a result of environmental changes. These are analysed both as single hazards and in a multi-hazard context, looking specifically at the interaction of the hazards. The analysis results are stochastic scenarios of possible triggering events, based on a combination of historical information, the identification of mechanisms, the downscaling of climate change models and the use of predicted storm tracks, together with the resulting scenarios of hazard magnitude, extent and frequency.
- To analyse the changes in exposed elements at risk and their vulnerabilities. This starts with an inventory of exposed elements at risk, and their characterization in terms of aspects that can be used for vulnerability assessment. The uncertainty in the expression of vulnerability is an important component. Uncertainties become large when dealing with the evaluation of future changes in exposed elements at risk based on several land use scenarios.
- To combine probabilistic hazard scenarios with scenarios of exposure data and vulnerabilities to assess the risk in a probabilistic manner. Given the large uncertainties involved in predicting changes in risk, a probabilistic scenario is the most feasible one. A flexible modelling platform will be developed for multi-hazard assessment at different scales. Depending on the scale and requirements for risk management, the modelling platform will use various statistical or physically based models. It is able to link hazard processes that are controlled by certain thresholds to forecast domino effects. Research is focused on the performance of these models in relation to data requirements and their effectiveness for multi-risk assessment at different scales. The modelling platform will be user-friendly and destined for use by stakeholders/end-users dealing with hazard and risk management.
- To combine hazard, vulnerability and risk assessment models into a web-based platform based on open source software that



Eleven partner institutions and six associate partners participate in CHANGES

enables methods applicable in priority areas to be harmonized/standardized.
- To implement the risk reduction measures in a decision support system, which is also integrated in the platform. The risk scenarios form the starting point for defining risk management strategies that will concentrate on spatial planning and emergency preparedness.

CHANGES has 11 partner institutions that host one or more researchers, and six associate partners that co-supervise research projects, offer internships and participate in CHANGES network events:

- Faculty of Geo-Information Science and Earth Observation, University of Twente, Netherlands (ITC)
- Institut de Physique du Globe de Strasbourg (IPGS) and Laboratoire Image, Ville, Environnement (LIVE), Centre National de la Recherche Scientifique (CNRS), France
- Department of Geography and Regional Sciences, University of Vienna (UNIVIE), Austria
- Institute of Geomatics and Analysis of Risk, University of Lausanne (UNIL), Switzerland
- Research Institute for Hydro-Geological Protection (IRPI) and Institute for the Dynamic of Environmental Processes (IDPA), Consiglio Nazionale delle Ricerche (CNR), Italy
- Centre for Geo-informatics, Paris-Lodron Universität Salzburg (PLUS), Austria
- Faculty of Spatial Planning, Technische Universität Dortmund (TUDO), Germany
- Department of Water Management, Delft University of Technology (TUD), Netherlands
- Institutul de Geografie (IGRAC), Romania
- Instytut Rozwoju Miast (IRM), Poland
- International Institute for Applied Systems Analysis (IIASA), Austria
- Risques & Developpement (R&D), France
- Geomer Gmbh, Germany
- Alert Solutions (AS), Netherlands
- Estudios de Riesgos Naturales (ERN), CIMNE, Spain
- Climate Change Risk Management (CCRM), UK
- Protezione Civile of Regione Friuli-Venezia-Giulia (PC-FVG), Italy.

The research methods and the methodology will be applied and tested in four pilot study areas where hazards are currently evident and some risk management procedures have already been implemented. The study areas are located in the French Alps, Northeastern Italy, Romania and Poland.

Courses will be held in different locations, including each of the pilot study areas. PhD and MSc researchers from outside the CHANGES network are also welcome to join these intensive courses. Furthermore, local stakeholders, administration officers and civil protection representatives are invited to participate.

The following courses are intended to increase the professional skills of early stage researchers:

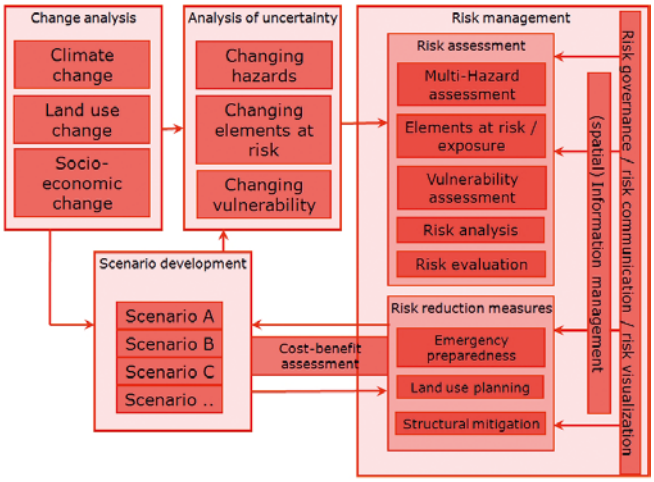
- Research Work Plan Development and Scientific Writing (September 2011, Poland)
- Research Ethics (September 2011, Poland)
- Valorization of Scientific Results (June 2012, Italy)
- Dissemination of Scientific Results to the Public (June 2013, France)
- Writing Research Grant Proposals (September 2012, Romania)
- Project Management (September 2014, Switzerland).

The following courses are intended to train early stage researchers in the technical skills related to the research theme:

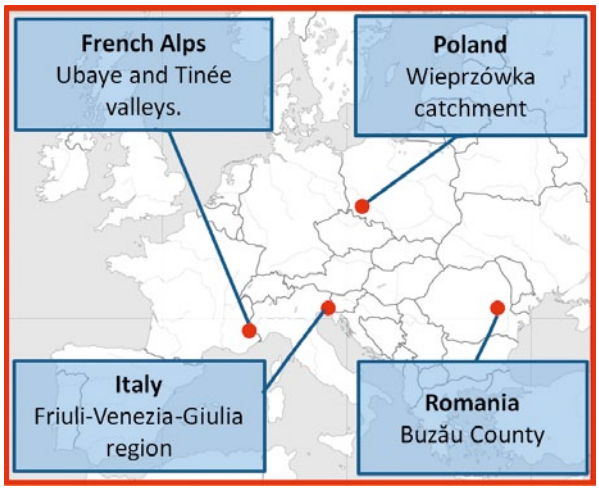
- Probabilistic Risk Assessment (September 2011, Poland)
- Monitoring and Prediction of Environmental Changes (September 2012, Romania)
- Web-GIS and Spatial Data Infrastructure (December 2012, France)
- Tools for Risk Management (April 2013, Austria; and European Geosciences Union)
- Use of Risk Information in Spatial Planning (September 2013, Italy).

During workshops focusing on the individual network topics, early stage and experienced researchers and all partners (full partners and associated partners from the private sector) present their results and discuss the relationships between the different project components. The following workshops are planned:

- Risk Governance Implications of Changing Risks (June 2012, Italy)



Structure of the CHANGES project



The study areas are located in the French Alps, Northeastern Italy, Romania and Poland

- Environmental Changes (June 2013, France)
- Modelling Changes in Hazard and Risk (December 2012, France)
- Changes in Risk Management (September 2013, Italy)
- Web-based Platform (September 2014, Switzerland).

Project results will be published in ISI journals (co-authorship of early stage and experienced researchers stimulated). Intermediate results will be presented at international conferences (e.g. European Geosciences Union conference), and at the end of the project an international conference will be organized to disseminate the results. The software tools developed will be distributed as open source software through a web-based platform. The CHANGES network seeks active collaboration with other relevant EU FP7 research projects in the field of hazard and risk assessment.

The CHANGES project aims to:
- develop the careers of young researchers as experts in the field of natural risk assessment, management and mitigation
- increase the intersectoral mobility between academia and industry
- strengthen research capacity in multi-hazard risk assessment
- provide an e-learning package
- provide open source tools for loss estimation
- increase international cooperation. ■

FOR MORE INFORMATION:
on CHANGES: www.itc.nl/changes
on the Marie Curie Initial Training Network Programme and Early Stage Researchers:
http://ec.europa.eu/research/mariecurieactions/

IMPROVING USABILITY OF PEDESTRIAN NAVIGATION SYSTEMS

Ioannis Delikostidis delikostid13285@alumni.itc.nl

Using a mobile navigation system or, in other words, a geo-mobile application for orientation and navigation, is becoming increasingly popular nowadays as people's mobility increases. People move in geographical space much more than they did in the past, and extensive travel to both familiar and unfamiliar destinations has become commonplace. Imagine, for example, a traveller arriving by train in an unfamiliar city – being confronted with its reality for the first time as he or she exits the train station. Would it be easy for them to know where they are and which way to go without asking someone for directions or looking at a map? And even so, is it possible to reach a planned destination without the risk of getting lost or making unnecessary detours? Often this is a difficult task.

Mobile navigation systems, mostly relying on cartographic interfaces, offer a convenient, more interactive alternative to paper maps. However, most of them are not very suitable for pedestrians. The special contexts of use and users, the limitations of the mobile devices, and the technology-focused solutions provided are some of the main reasons for this. Often, users of these systems do not have a clear understanding of where they are in geographical space. To deal with this problem, a PhD research was carried out with the overall aim of designing and evaluating a cartographic interface for geo-mobile applications that facilitates personal geo-identification (orientation) and supports the spatial activities of pedestrian users in unfamiliar spatial environments.

Multi-Source Interactions of Users

The mental processes through which users of navigation systems connect with mobile maps and the environment makes map representation a complex, but interesting, research problem. Personal geo-identification – for instance, the notion of "where am I" – is for the mobile-map user a fundamental activity that can be influenced by various aspects of mobile-map representation. In particular, personal geo-identification is the result of mental interactions involving several sources of input: reality; the cartographic representation of reality on a mobile display; and the user's own cognitive or mental maps (Figure 1).

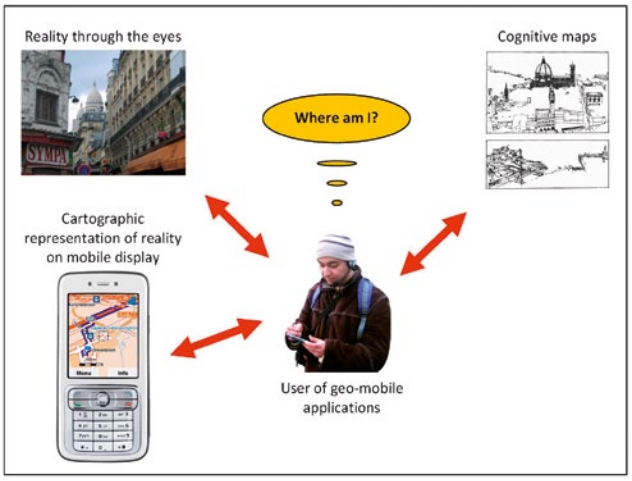


Figure 1: Personal geo-identification through interaction with different sources of information

Human spatial understanding, choices and behaviour depend largely on the use of such mental maps. These are representations of reality inside the brain, a product of knowledge derived from physically navigating in space or from information provided by maps, literature, communication with other people, or some other source.

The human mind has particular ways of solving spatial problems using different sources, scales and sensors. Mobile cartographic interfaces can only be helpful in solving such spatial problems if the information these interfaces provide is effective, efficient and satisfies users' needs – in other words, if they are usable. When the design and implementation of these applications is primarily supply-driven rather than user-oriented, their usability is negatively influenced. To develop usable geo-mobile applications, the capabilities of the application, together with the real needs and requirements of the prospective users in particular contexts of use, is of ultimate importance.

User-Centred Design Approach

To design usable applications in a methodical manner, several guidelines have been implemented under what is known as a user-centred design (UCD) approach. Originating from human-computer interaction science (which studies the usability of software interfaces), UCD strategies involve the investigation of users' tasks and goals, providing the results based on which decisions are made about the design and development of new products.

In this research, such a strategy was followed, starting with an extensive investigation of the current problems of geo-mobile applications and an evaluation of available solutions to these problems. Landmarks appear to be a very important element that connects reality, mobile maps, and the mental maps of people when orientating and navigating. To further understand the role of landmarks, but also to gather the information needs of pedestrian users of geo-mobile applications in real contexts of use, a field-based experiment was executed.

The participants in the experiment, which belonged to the UCD requirement analysis phase, were representative geo-mobile application users travelling to an unfamiliar city. Through task analysis performed on the experimental findings, the interactions of the users in four discrete tasks of orientation and navigation were determined. These tasks were: initial geo-identification; identification of destination and travel decision; route confirmation / route control / reorientation; and destination confirmation. Additionally, the corresponding information requirements and sources of disorientation were categorized.
Use case modelling was then applied to determine system design requirements for a usable mobile navigation interface, and specific new technical solutions were proposed. Among these solutions was a landmark visibility indication, a reverse overview+detail (dual) map, an electronic compass-based rotated map, multi-path routing to the destination(s) based on time availability, multi-perspective landmark photo provision and landmark filtering. Further, the system responses to the user questions for each task were established (Figure 2).

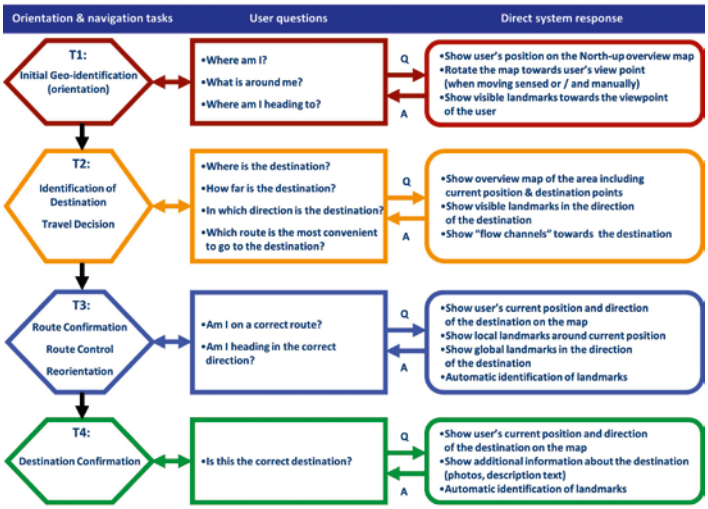


Figure 2: The system responses to the user questions for each task

Prototype Implementation and Usability Evaluation

Based on the established guidelines, a prototype interface called LandNavin (LN) was implemented in the Android JAVA software platform for smartphones (Figure 3). During the prototype implementation, several issues were addressed, such as the selection of important landmarks to appear on the map. In total, 30 types of landmarks were identified and then categorized according to height as local or global. A combination of custom sketches and pictograms was used for representation purposes.

Figure 3: Actual appearance of the interface, with examples of the technical solutions (dual map, a pop-up window with a selected-angle landmark photo, multi-paths, and landmark visibility indication)

To assess the usability of the completed prototype, a second field-based experiment was executed in real contexts of use with representative users. Here, four

test task scenarios were developed related to the main orientation/navigation tasks. The test areas were Amsterdam centre and Wibautstraat (with two destinations each).

The testing methodology comprised a combination of pre-selection questionnaires, observation, thinking aloud, screen logging, simultaneous synchronized video/audio recording and semi-structured interviews. To support this methodology, a custom-made field-based observation and recording system requiring very low human resources was used (Figures 4 and 5).

Results

The research data acquired from the LN usability testing comprised pre-test questionnaires, video/audio recordings of the test sessions, and audio recordings of the post-session interviews. These were qualitatively interpreted using verbatim transcription and coding, from which the problems, expectations, opinions and preferences of the test persons were extracted.

The analysis of the results showed that the usability achieved in orientation and navigation tasks using LN met most of the design requirements. Moreover, in the given context of use, the prototype exhibited better usability than the Google Maps application, which was also tested for comparison purposes. LN was considered less confusing, more helpful, more satisfactory, more interactive and more accurate. The most important problem was the GPS inaccuracies, as well as some difficulties with a dual map. Further development of the interface is possible but was not necessary, as the focus here was on formulating a sound methodological approach for developing a usable mobile interface. ■

IOANNIS DELIKOSTIDIS

Ioannis Delikostidis carried out his doctoral research at Faculty ITC of the University of Twente and was supervised by Prof. Dr. Menno Jan Kraak and Dr. Corné van Elzakker of ITC. He successfully defended his thesis on 16 March 2011.
For more information about his research:
delikostid13285@alumni.itc.nl

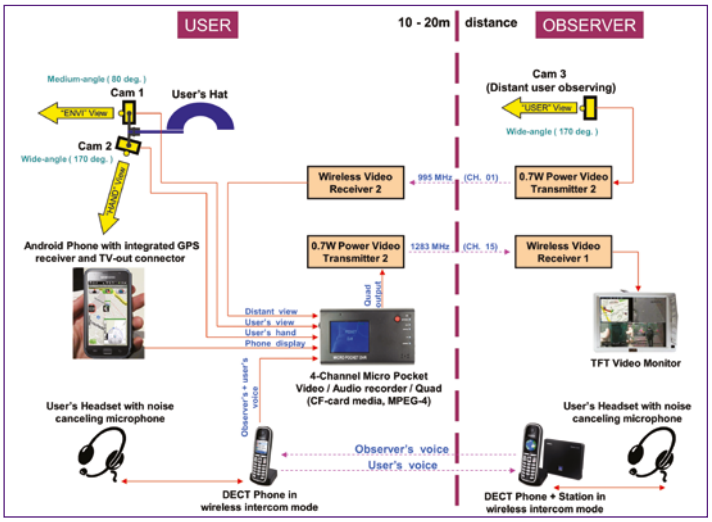


Figure 4: The field-based observation / recording system

Figure 5: An actual test session (left) and a screenshot of the recorded video material (right)

EDUCATION NEWS

UN Course Thematic Mapping

Barend Köbben kobben@itc.nl

In January 2011, we conducted a course for United Nations staff at the UN Logistics Base in Brindisi (Italy). This was a one-week course on cartographic design theory, thematic mapping and GIS-cartography workflow for the GIS specialists of several UN missions.

UN Mission Mapping

The UN's mandate and objectives obligate it to have a presence all over the world for purposes of peacekeeping, security, human rights and humanitarian assistance, as well as for supporting countries in transition to democracy. To this end, the UN sets up missions in many places; sometimes for short periods, sometimes longer; sometimes with only a few employees, sometimes with literally whole armies of people. For example, the longest running mission is the UN Truce Supervision Organization (UNTSO), which has monitored the various ceasefires in the Middle East since May 1948 until the present day. Quite a different one was UNASOG, established to verify the withdrawal of the Libyans from the Aouzou Strip. Running from May to June 1994, it employed only nine military observers, supported by six international civilian staff. Contrast these numbers with those applying to the Darfur mission UNAMID, where you will find almost 30,000 military and civilian personnel.

As spatial information is of course very important to these missions, almost all of them have GIS and mapping specialists in their ranks. These people provide the military and civilians with up-to-date maps of the mission area, the security situation, troop deployment, etc. Data and maps vary from large-scale and extremely detailed to small-scale and very sketchy.

Since the UN does not maintain its own military, peacekeeping forces are voluntarily provided by UN member states. The civilian staff are employed by the UN missions, which are independent organizations that find their personnel both locally in the mission countries and internationally.

UN Training Centre

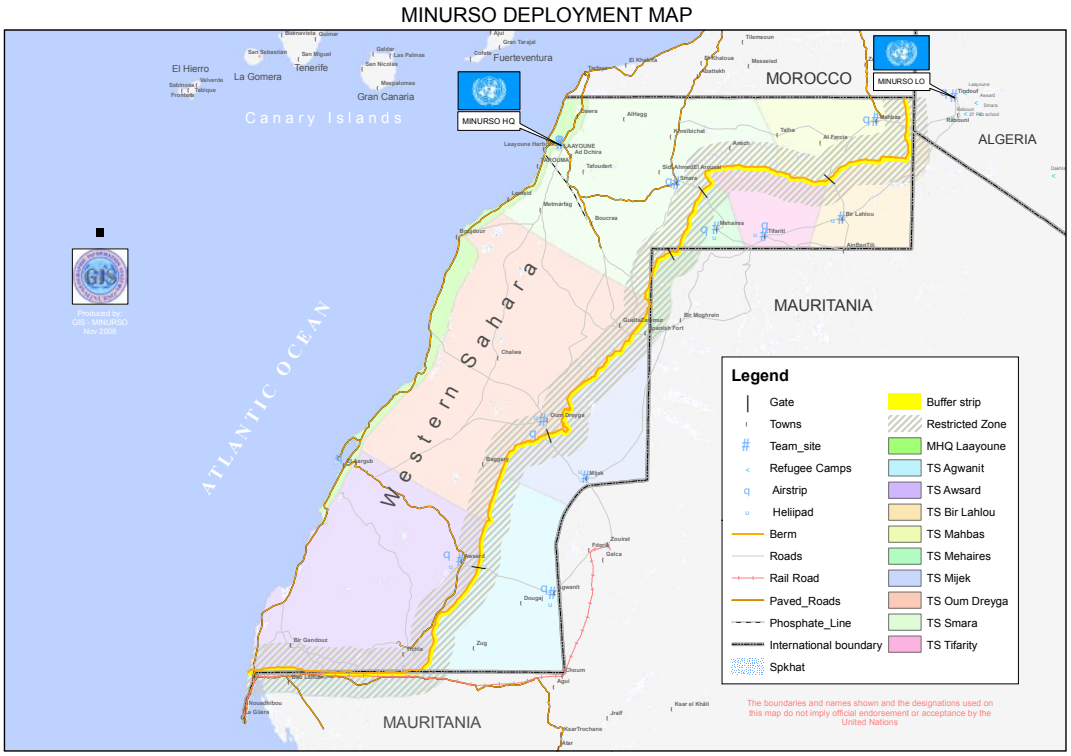
Support and training for the mission staff are organized at the UN Logistics Base (UNLB) in Brindisi, in the southern part of Italy. Here the UN Training Centre is located, where personnel of the various UN missions are trained before being sent out, as well as during mission deployment. Here too is the UN GIS Centre. This centre coordinates, advises and facilitates the GIS specialists stationed at the various mission locations. Apart from training, they are responsible for the production of base geodata and maps, the building up and maintenance of a geodata repository, as well as terrain analysis and other advanced analysis tasks.

Thematic Mapping Course

The course was set up at the request of, and in close cooperation with, the UN HQ Cartographic Section (New York). The course content was geared towards:

- giving a solid theoretical basis in cartography to the participants, who mostly came from a technical/GIS background with little formal training in cartography
- gaining a good understanding of, and a critical attitude towards, thematic mapping, with the intention of creating a common understanding of what thematic maps for UN missions could and should encompass
- taking the first steps towards developing a common "look and feel" and quality of thematic maps from the various UN missions.

UNLB Training Centre at the UNLB (Brindisi, Italy)



Example of a product from UN mission mapping: a deployment map of MINURSO, established to monitor the ceasefire between Moroccan and Polisario troops in Western Sahara and to organize a referendum on its future status

The course programme was made up of lectures, computer exercises using ArcGIS, and workshops, discussions, breakout sessions and the like. There was also a telephone conference with the UN HQ Cartographic Section on policy issues. The last day was wholly devoted to a workshop on improving UN thematic mapping by jointly developing guidelines for a workflow that could increase quality, reduce conflicts and inaccuracies, streamline editing work, and improve mapping style and usability.

Fourteen participants from nine different UN missions and from the Cartographic Section took part in the course. Among them were four ITC alumni, including Ayako Kagawa (from Japan). Having worked for a period at ITC, she is now employed at UN HQ Cartographic Section, and was our contact person and co-organizer. With a view to further developing the common "look and feel" and quality of thematic maps from the various UN missions, the UN HQ Cartographic Section will set up templates and propose a common layout and design specifications.

We are looking forward to further cooperation with the UN HQ Cartographic Section. There are plans to make this course a returning event on the UN Training Centre calendar. In addition, some research subjects have been identified that are relevant not only to UN mapping but also to the Geo-information Processing department's research themes. Moreover, UN HQ Cartographic Section staff will be active in the GFM2 module 13 on UN mapping. ■

Course participants during one of the workshops

Rural Transport Policy and Management Seminar

Leo de Jong leo@keypoint.eu
Mark Brussel brussel@itc.nl
Mark Zuidgeest zuidgeest@itc.nl

A workshop entitled "Rural Transport Policy and Management" took place in February 2011 in Yogyakarta. This workshop was one of the short courses that have been organized under the Indonesia Facility (INDF) agreement to establish the 18-month MSc programme Management of Infrastructure and Community Development. This programme started in September 2009 at the University of Gadjah Mada. The first batch of MSc students is expected to graduate in May 2011. The project partners Pustral, ITC and Keypoint have been intensively involved in the curriculum design, the development of course materials, and in lecturing.

During the first day of the workshop, the participants visited the affected slopes of the Merapi volcano. Before the visit, the workshop participants were informed by the Sleman Regency about the activities concerning evacuation routes and community empowerment.

On the second day of the workshop, keynote speaker Professor Danang Parikesit, chairman of the International Forum for Rural Transport and Development, gave a presentation entitled "Rural transport development: a catalyst for achieving the MDGs". Subsequently, Arif Wismadi (a current PhD candidate at ITC), Dr K. Pribadi, Tyrone Toole and Leo de Jong presented their topics, covering the formulation of rural transport policy, the IRAP project, management of rural roads, and the WSD approach to functional design of rural infrastructure.

The workshop was attended by national and international guests, who enjoyed the opportunity to work together, become involved in serious discussions and, last but not least, to share a pleasant three-day experience. ■

On the second day, keynote speaker Professor Danang Parikesit, chairman of the International Forum for Rural Transport and Development, gave a presentation

The workshop was attended by national and international guests, who enjoyed the opportunity to work together

During the first day of the workshop, the participants visited the affected slopes of the Merapi volcano

RESEARCH NEWS

Kick-Off Workshop WOTRO Research Project:

"How Can Local People Benefit from Global Climate Agreements?"

Emile Dopheide dopheide@itc.nl
Michael McCall mccall@itc.nl

Payment for environmental services (PES) is widely seen as an instrument to promote sustainable management of natural resources while contributing to local development. Many countries, including Mexico, are planning to participate in the new UNFCCC climate change programme on Reduced Emissions from Deforestation and Degradation in Developing countries (REDD+) by using forms of PES to reward rural communities for their sacrifices to reduce deforestation and forest degradation, and thereby sequester atmospheric carbon as well as reduce global carbon losses.

In this context a new WOTRO research project entitled "Linking Local Action to International Climate Agreements in the Tropical Dry Forests of Mexico" was approved in 2010 and started with a kick-off workshop in Morelia, Mexico, in the last week of February 2011. The main partners in this research project are the Centro de Investigaciones en Geografía Ambiental (CIGA) of the Universidad Nacional Autónoma de México (UNAM), and the Twente Centre for Studies in Technology and Sustainable Development (CSTM) of the University of Twente (UT). Gerardo Bocco (UNAM) and Margaret Skutsch (UT) are the principal project investigators. On behalf of ITC, Yola Georgiadou, Mike McCall, Anne van der Veen and Emile Dopheide from the Department of Urban and Regional Planning and Geo-information Management (PGM) are collaborating and supervising PhDs in the research project.

The main questions that are being addressed in the project through PhD and postdoc research are:

- How much carbon can be sequestered in tropical dry forests under community forest management?
- What happens to other eco-services (e.g. biodiversity) if the forest management focus is on increasing carbon stocks?
- Are local communities able to map, monitor and manage carbon stocks and other environmental services?
- What is the role of power and (spatial) information in developing PES schemes?
- Will the PES schemes being developed be effective and efficient?
- What do local communities gain and sacrifice if they enter into these schemes?

During the kick-off workshop, academic staff from the two institutes discussed the main research questions together with the PhD candidates. Invited experts from academia and NGOs in Mexico, who are working on similar issues and in the same envisaged study areas, provided their feedback on the research projects.

In a lively debate, the workshop participants defined the scope of the various research projects, explored synergy between the projects, and made an initial identification of areas for case study research.

During the last days, two potential study areas were visited (i.e. La Huacana in Michoacan and villages in the Sierra Cóndiro-Canales in Jalisco). In both areas, mechanisms are being developed to protect biodiversity, forest, wildlife, and water resources with payments to the local communities.

Through the workshop, the three PhD students (Miguel Salinas, Alejandra Larrazabal, Janik Granados) and a postdoc (Arturo Balderas) – three from Mexico, one from Bolivia – could further outline their research projects and had ample opportunity to interact with the supervising staff. In the coming years, the PhD candidates will work at Faculty ITC of the UT at regular intervals to develop their research.

In addition to the substantial challenges of the research, the project intends to be a

fruitful research partnership between the UNAM of Mexico and two related departments within the University of Twente (i.e. CSTM of the Faculty of Management and Governance, and PGM of ITC). Scientific policy and community-oriented results are expected during the coming four years. ■

Local community leaders participating in the payment for environmental services scheme in La Huacana, Michoacan

Potential case study area Sierra Cóndiro-Canales, Jalisco, Mexico

Crops from Space

Mobushir Riaz Khan khan@alumni.itc.nl

The thesis *Crops from Space* is all about the timely provision of accurate land use information, which is required for decision making regarding food security. To ensure a consistent supply of food, it is very important that countries and regions know the size of the harvest a particular area will produce. At Faculty ITC of the University of Twente, we have been able to develop methods to determine which crops are cultivated in which areas and how much production is harvested in these areas, using satellite-based remotely sensed data, crop statistics, crop calendar information and *in situ* observations to allow reliable, unambiguous and quantitative interpretation of the data.

The innovative element that characterizes this study is the identification of a combination of remote sensing and GIS techniques and crop modelling as a basis for developing an operational system to monitor and map agricultural land use.
The research first demonstrates "what" is grown "where", second "how much" is grown "there", and lastly "how much" is "produced".

Because of the practical relevance of the research work carried out, the thesis received considerable publicity in highly reputable newspapers in the Netherlands. Radio broadcasts, including a one-hour programme on Radio 1, also featured this work.

Mapping Crop Areas

The first stage of the study focused on identifying agricultural land and crop discrimination, using satellite images (hyper-temporal SPOT vegetation NDVI images) and field data. It turns out that the method provides an accurate reflection of the situation on the ground. The method developed in this part has practical importance and the thesis shows how location-specific crop monitoring can be achieved by using satellite imagery. The method produced in this research also demonstrated its relevance in evaluating subsidy claims. The method can benefit poorer countries as well as wealthier countries, as

the satellite images used are freely available.

The remote sensing image analysis techniques applied can be used to improve statistical methodologies for estimating crop areas. This holds for agricultural ministries (at country level) and for international organizations such as the European Union (EU), the Food and Agriculture Organization (FAO) of the United Nations, and the United States Geological Survey (USGS). Thus, the research techniques can potentially be incorporated in regional and international programmes such as FAO's agro-maps. Further, the outputs of this part of the study can be of great assistance to crop growth modellers, providing them with updated crop maps, which are an important prerequisite for regional crop growth models.

Crop Production Estimation

In the second phase of the doctoral research, a method of accurately estimating how much harvest an area will produce, based on the type of crop growing in the particular area, was developed. This method was based on the use of satellite images, together with information on local temperatures and a crop growth model. It made it possible to estimate the yield of an area measuring 1 km^2 to an accuracy of 95%. In this part, the application of the EU's CGMS (Crop Growth Monitoring System) crop growth model was also demonstrated at a finer scale (i.e. NUTS LEVEL 3 (provinces) rather than NUTS LEVEL 0 (country)) with a fair degree of accuracy.

The outputs (estimated crop yields and crop area maps) can be used for assessing the production at regional scales. This was demonstrated by combining the estimated rainfed wheat area map and the estimated rainfed wheat yield map with the administrative map of Andalucia, and generating the map of rainfed wheat production in Andalucia for 2001. This is very important information that is required by policy makers to implement timely decisions regarding food security.

Valorization of Research Outputs

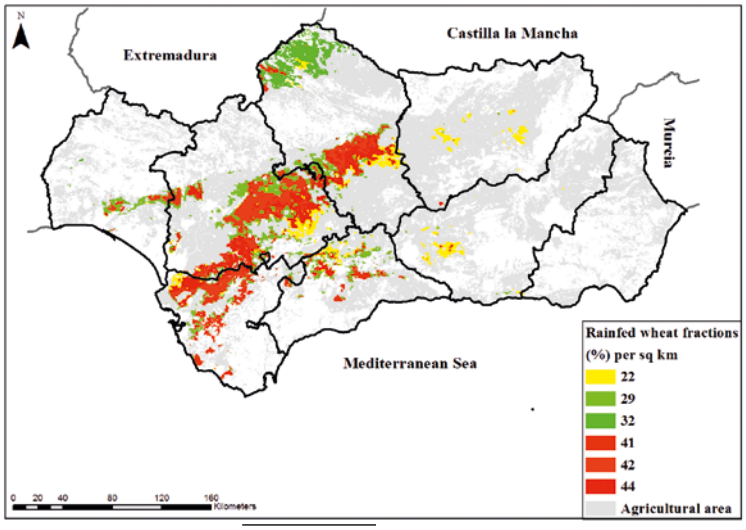
A survey has revealed that the vast majority of professionals who work with agricultural maps see added value in the new method and are interested in using it. The method will be further developed at Faculty ITC to increase its accuracy and make it suitable for a wider range of crop types. ■

Dr Mobushir Riaz Khan successfully defended his doctoral thesis on 23 February 2011

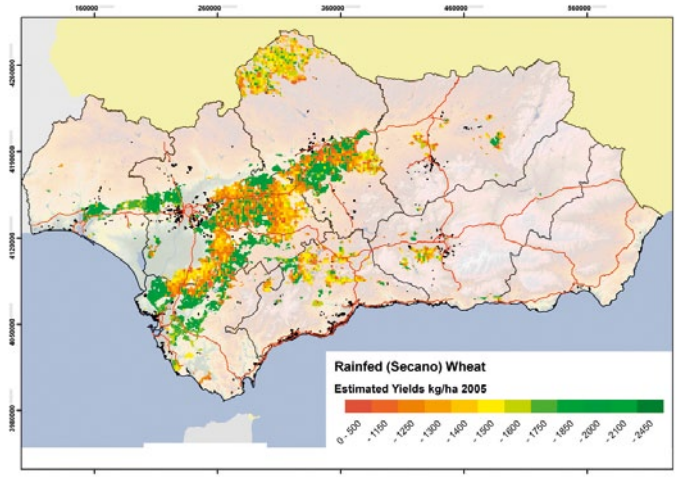
MOBUSHIR RIAZ KHAN

Mobushir Riaz Khan carried out his doctoral research at Faculty ITC of the University of Twente and was supervised by Professor Eric Smaling and Dr Kees de Bie of ITC and Professor Herman van Keulen of Wageningen University. He successfully defended his thesis on 23 February 2011.

Currently, Dr Mobushir Riaz Khan is working as assistant professor at the Faculty of Food and Crop Science at the PMAS-University ofa Arid Agriculture in Rawalpindi, Pakistan. For more information about his research: mobushir_riaz@yahoo.com or khan@alumni.itc.nl



Estimated rainfed wheat area map



Estimated rainfed wheat yield map

Earth Observation but then on Mars!

Joost Bruysters j.c.p.bruysters@utwente.nl

Faculty ITC of the University of Twente is involved in geo-information science and earth observation, but it seems that the techniques applied are suitable for use not only here on planet Earth but also beyond. Researcher Frank van Ruitenbeek and his colleagues have been using them to explore part of the surface of Mars.

Van Ruitenbeek was involved in the European Space Agency's (ESA) Mars Planetary Mapping Pilot Project. The aim of this project was to find out whether it is possible to use terrestrial technology to map the surface of Mars and understand more about the planet's geology. The research focused specifically on Nili Fossae, a region on Mars with an area of about 700 x 300 km that is located next to a large impact crater. Scientists have long been interested in this region because of its great mineral diversity and geologically interesting composition.

Van Ruitenbeek and his colleagues used data from the Omega spectrometer and stereo photos which, together with radar data, were collected by the Mars Express. The spectrometer data have provided a better understanding of the mineral composition of the rocks on Mars, while the stereo photos illustrated the three-dimensional structure of the planet's surface and the radar data gave a picture of the rocks under the surface.

Detailed Maps

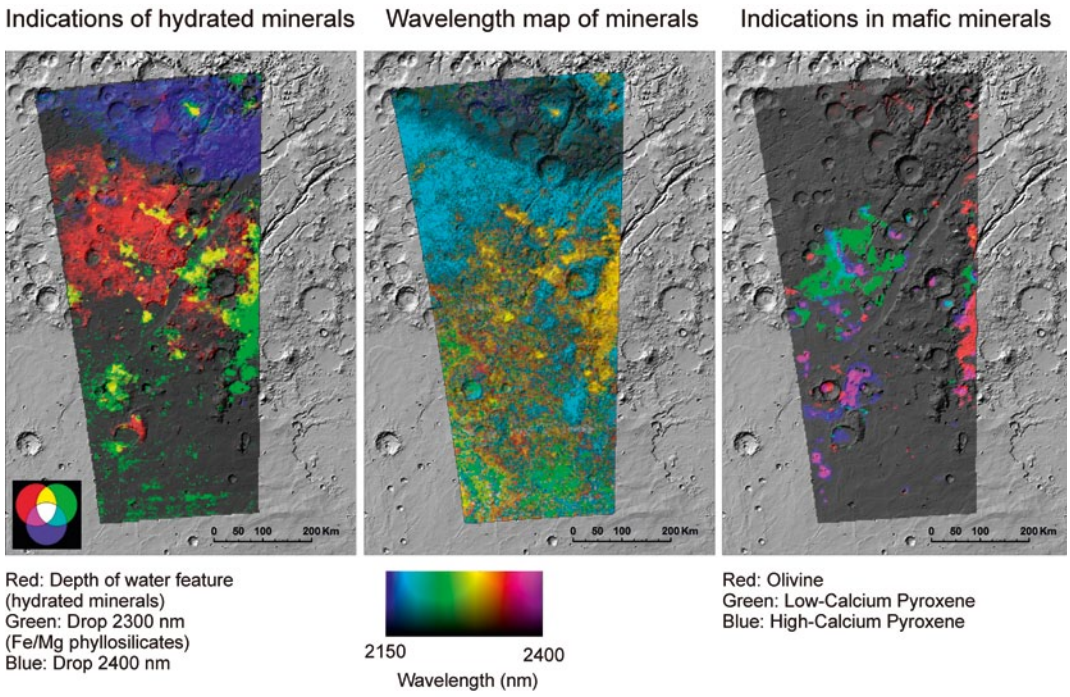
"Our contribution to the project was to process and transform the data into products which could also be interpreted by geologists," says Van Ruitenbeek. The project led to the production of detailed maps of the various minerals in the area, but the ITC researchers aimed to go even further. "Above all, we wanted to understand whether our techniques could be used to map other planets. We managed to develop a method of processing the available data, and this method is suitable for use not only on Mars but also on other planets, including here on Earth."

Mars Planetary Mapping Pilot Project

This project was an ESA initiative, and TNO and the British Geological Survey were partners in the project. Frank van Ruitenbeek's colleagues Wim Bakker and Harald van der Werff from ITC also participated in the project. ■

FOR MORE INFORMATION on this subject contact Frank van Ruitenbeek (ruitenbeek@itc.nl)

Omega data Mars



Processed hyperspectral imagery obtained with the OMEGA sensor at the Mars Express orbiter showing mineral diversity in the Nilli Fossae area on Mars.

PROJECT NEWS

ICTs to Empower Communities to Ensure Government Accountability in Tanzania

Maria Alphonce itcnews@itc.nl

In January 2011, the University of Dar es Salaam and the University of Twente (Faculty of Behavioural Sciences (GW) & Faculty ITC) developed a research proposal and submitted it to the Netherlands Organization for Scientific Research – Science for Global Development (NWO-Wotro) for funding. The aim of the research is to empower communities in Tanzania to effectively obtain adequate water and health services.

NWO-Wotro supports scientific research on development issues related particularly to poverty alleviation and sustainable development. In a workshop held in Arusha from 10 to 12 January 2011, Tanzanian and Dutch scientists in the fields of geo-information science, political science and software engineering, as well as stakeholders from NGOs, the media, government and civil society in Tanzania and Kenya, met to explore solutions to empower communities by giving them more control over their environment and making services providers more accountable to them.

The scientists aim to further develop what is termed the "Human Sensor Web", where citizens with mobile phones can report information about the quality and availability of health and water services. The citizens' reports are posted anonymously in an aggregated fashion and in real time on Google Maps. The reports concern the condition of water and health services. The Human Sensor Web will be simple to use: anyone with a mobile phone can send a report to this web, using the short message service (sms) and coded words such as *No Water* or *Bad Water*. The message can be delivered instantly to the relevant water authorities, government leaders of specific areas, and local media. It is hoped this will enhance responsiveness by informing relevant authorities of existing problems in a timely fashion.

The emphasis of this project is on bridging the gap between government and citizens. It will serve to assist the government and its various authorities in becoming more accountable, since information will be readily available to those charged with solving such problems.

The scientists hope that, if implemented, this new way of doing things will enhance the provision of public services. The first phase will focus on the water sector, where the project will work to ensure quality and its accessibility. In the second phase, the programme will document the availability of both health facilities, including drugs and medical equipment, and ambulances whenever the need for emergency transport arises. The information received from mobile phones will be checked for quality and displayed on Google Maps, consequently also identifying where problems are occurring.

The Human Sensor Web is a combination of a community of individuals who report observations through existing widespread mobile communication technology and a set of (web) services that provide both the means to disseminate observations made by the community and the means to receive feedback from individuals, specific user groups and civil society. Hence a service provider, say a government agency, can then use these data to analyse and improve water services. Furthermore, the same data can be used for general planning and for reporting on progress towards meeting MDG targets for clean and safe water. The aim of the whole project is to improve governance conditions in water and health services by providing novel, local community-based information to decision and policy makers in a focused, timely, and effective manner. Knowing exactly where problems with services are occurring can then assist them in prioritizing policy interventions.

The novelty consists in exacting accountability through publicly available, verifiable information on the status of, and relative performance in, water and health services management. For instance, one project

aim is to deliver essential information "up the pipe" directly from consumer to provider and decision maker through the use of standard mobile communications, and "down the pipe" to the consumer and to society in the form of community groups.

The political objective of the project is to provide continuous data on the quality of the service provision, and thus water availability and water quality at selected water points. This information will enable government leaders to accurately assess service coverage in the country. But in order to ensure that the project becomes embedded in government accountability structures, there is a need for political actors to fully participate and internalize this programme. This is due to the large pool of organizational, cognitive and practical resources available, and hence the high potential for equitable policy outcomes.

Within the same project, three excellent Tanzanian MSc graduates will be selected in a competitive process and given the opportunity to do PhD research concerning different aspects of the Human Sensor Web.

The Human Sensor Web has been tested in Zanzibar as part of the H2.O Monitoring Services to Inform and Empower programme (www.h20initiative.org/), which was launched by UN-Habitat and Google.org in January 2009. Currently, the various ways of collecting information regarding the provision of public services leave a lot to be desired, as most of the information is vague and unreliable. As a result, attempts to improve services largely fail. The Human Sensor Web may be a solution to the water and health woes that have plagued service providers and policy makers owing to the lack of information as to what is happening where. ■

In a workshop held in Arusha from 10 to 12 January 2011, Tanzanian and Dutch scientists met to explore solutions to empower communities by giving them more control over their environment and making services providers more accountable to them.

New NICHE Project at National University of Rwanda

Tom Loran loran@itc.nl

In March of this year, Nuffic awarded the second phase of the Institutional Cooperation programme with the National University of Rwanda (NUR) to a consortium led by ITC.

Consortium partners for this project are Ardhi University, Tanzania; Makarere University, Uganda; and the University of Utrecht. The direct project partners at NUR will be the Geography Department and the Centre for Geographic Information Systems and Remote Sensing (CGIS).

From 2004 to 2009, ITC was involved in an NPT project that also took place at NUR. During that project, curricula were developed for the courses Environment and Sustainable Development (MSc level), and Land Administration and GIS Applications (both at postgraduate diploma level). Also a large number of NUR staff members were trained to take up teaching commitments in the new courses.

The second phase of this project, which will be funded under the NICHE programme, will further develop the course curricula and the course materials, and will support the first implementation runs of the courses. Both the MSc course Environment and

Sustainable Development and the Diploma course Land Administration have been developed at the request of the Rwandese government and will provide urgently needed training opportunities for government employees.

A main aim of the second phase of the cooperation with NUR is to develop an applied research programme that responds to the needs of stakeholders and the labour market. The research programme, which will aim to place the NUR staff in an international academic network, will focus on applying modern GIS and remote sensing technology in various areas of application, such as environment, spatial planning, disaster management and land administration, as well as new ones such as public health and infrastructure. A group of representatives from selected stakeholder organizations will act as a sounding board to ensure that the research agenda remains relevant to societal demands and requirements.

In line with ITC's new Strategic Plan, and in response to the Nuffic requirement to align project activities with the needs of the labour market, methods will be worked out to stimulate public-private partnerships.

The project, which kicked off with inception meetings in Butare and Kigali, will last for four years. The ITC project director is Dr Sherif Amer of the Department of Urban and Regional Planning and Geo-information Management.

Alumni Meeting Kigali

Following the kick-off meeting in Kigali, there was a get-together with a number of alumni from Rwanda who had recently graduated. The meeting was held at the Manor Hotel in Kigali. The alumni are currently in the process of establishing an ITC alumni association in Rwanda. ■

The direct project partners at NUR will be the Geography Department and the Centre for Geographic Information Systems and Remote Sensing (CGIS)

The get-together with a number of alumni from Rwanda who had recently graduated

Mountain Risks: End of Research Training Network Involving ITC

Byron Quan Luna quanluna@itc.nl
Sabine Maresch maresch@itc.nl

Embarking on a research career is not always easy. With the Marie Curie Initial Training Networks programme, the European Commission offers so-called early stage researchers (ESRs) pursuing a PhD degree and experienced researchers (ERs) who have recently obtained a PhD degree the opportunity to improve their research skills, join established research teams, and enhance their career prospects.

The Mountain Risks project was a Marie Curie Research Training Network in the Sixth Framework Programme of the European Commission. The network focused on research and training in all aspects of mountain hazards and risks assessment and management. Its goal was to develop an advanced understanding of how mountain hydro-geomorphological processes behave, and to apply this understanding to living with the hazards in the long term. The observed increase in disastrous events over the last decade, associated with a low perception of risk by the communities involved and the lack of efficient socially accepted and environmentally remedial measures, were among the motivations behind this research.

MARIE CURIE **ACTIONS**

The network strengthened collaboration between several research groups, training centres and consulting companies with experts in mountain processes who have different backgrounds, play different roles in the risk management scheme, and work in different socio-economic, legal and environmental contexts.

The Mountain Risks project was structured into four main work blocks:

- Hazard Analysis
- Quantitative Risk Assessment
- Risk Management
- Risk Governance.

The research methodologies were applied to several case studies in four European countries (France, Italy, Spain and Switzerland) where mountain hazards are currently evident and some risk managements procedures have already been implemented.

Participants of the Mountain Risks network at the international conference Landslide Processes: From Geomorphologic Mapping to Landslide Modelling (Strasbourg, 6-7 February 2009; a tribute to Professor Theo van Asch)

Mountain Risks logo

Early stage researchers (ESRs) and experienced researchers (ERs) involved in the Mountain Risks network

The project organized various activities (intensive courses, scientific workshops and stakeholder workshops) to promote discussion of the scientific results; to expose the young researchers to a full range of research methods and techniques, and train them in these; and to disseminate knowledge among the partners, local stakeholders and other scientists or organizations involved in the project.

The four-year project started in January 2007 and ended in December 2010. It involved 14 partner institutes throughout Europe, each hosting one ER and one ESR position.

ITC played a key role in this research network, permanently hosting one ESR (Byron Quan Luna) and one ER (Simone Frigerio). Other visiting ESRs (hosted by the University of Florence, University of Vienna, University of Milano-Bicocca, University of Delft, University of Grenoble) were seconded to ITC on a temporary basis (ranging from one week to six months) to strengthen the collaboration between the researchers.

Within the network, ITC was also responsible for the organization of the intensive course Mountain Disaster Risk Management. This course was conducted in Barcelonette, France, and the main objective was to teach participants how to carry out a risk assessment of landslide and flood hazards and how to use the risk information in disaster risk reduction. A practical case study centred on the use of GIS and geospatial data for assessing hazard, vulnerability and risk in a typical mountainous area representative of situations in the European Alps. The developed training material was presented in the closing international conference on mountain risk that took place in November 2010 in Florence, Italy.

Following the success of the Mountain Risks project in terms of scientific achievements and collaboration, a new training network, this time with ITC as coordinating partner, has been proposed: Changing Hydro-Meteorological Risks – As Analysed by a New Generation of European Scientists (CHANGES). The project has been approved by the European Commission and has already (2011) started. ■

For more details about CHANGES, see article on page 3 or contact the project executive and management team: Dr Cees van Westen (westen@itc.nl), Dr Dinand Alkema (alkema@itc.nl) and Sabine Maresch (maresch@itc.nl).

Ground Reception Infrastructure Upgrade

Ben Maathuis maathuis@itc.nl
Chris Mannearts mannaerts@itc.nl
Harold Borkent borkent@itc.nl

Recently a Ku-frequency-based ground receiving station was configured at ITC, receiving images acquired by various sensors onboard ENVISAT over Europe a couple of hours after the images have been recorded. The data are broadcast by the European Space Agency Data Dissemination Service (ESA-DDS) using the EUTELSAT W2A communication satellite situated 10° East. To receive this free data service, a new parabolic antenna pointing to this communication satellite has been installed on the roof of the ITC building.

This ESA-DDS European Service, broadcasting full-resolution MERIS images, for example, supplements the data received by the three other services that have already been operationally received at ITC for some time, such as the C-band broadcast of the ESA-DDS and the C-band broadcast of GEONETCast for Africa. These services are received by a single larger parabolic antenna that is placed in the garden of the ITC building. This antenna points towards the Atlantic Bird 3 communication satellite situated 5° West. Because of the C-band frequency, the dish dimension is larger than that used for Ku-frequency reception. Another antenna, also on the roof of ITC, points to the EuroBird communication satellite situated 9° East, receiving nearly all GEONETCast Ku-frequency data services.

The various low-cost and off-the-shelf ground reception station hardware and software components have been newly set up and configured to effectively check and monitor reception, prepare animations of newly received near-real-time data, and produce new products. All newly received data are stored for various periods of time on a 15 TB file server (ITCNT31) that can be accessed within the ITC network. Some older data, especially those from Meteosat Second Generation, are transferred to external disks and can be provided off-line upon request. This new set-up facilitates effective training and capacity development in system set-up, administration and management for new Ku- and C-band frequency GEONETCast and ESA-DDS users.

To use these environmental data streams for education and research, various freeware tools are available. In addition, GEONETCast and ESA DDS toolbox plug-ins have been developed under ILWIS 3.7 for data import, visualization, data processing, etc. Currently, over 200 satellite image data types and derived products disseminated by these data streams are supported. Further software development is ongoing to support efficient import, visualization and processing of new products in these data streams. All utilities can be freely obtained from the "Download" area at 52North (http://52north.org). Moreover, additional information with respect to these global telecommunication-based free data dissemination services can be obtained from the newly established "Earth Observation" community at 52North. ■

The facilities are located in room 1-005A of the ITC building, opposite the ITC service centre helpdesk on the first floor. Additional information can be obtained from:
Ben Maathuis (maathuis@itc.nl),
Chris Mannaerts (mannaerts@itc.nl),
Harold Borkent (borkent@itc.nl)
or directly at the IT helpdesk.

The ground reception infrastructure facilities at ITC

PARTNERSHIP NEWS

Strengthening Capacity in Land Administration in Vietnam

Sjaak Beerens beerens@itc.nl

ITC and Kadaster (the Netherlands Kadaster, Land Registry and Mapping Agency) are engaged in a capacity building programme in support of the modernization of the land sector in Vietnam, which is considered an essential pre-condition to sustain the country's economic development.

Land Administration and Socio-Economic Development in Vietnam

In the past decade, the Vietnamese economy has experienced very rapid economic growth. It has turned out that the absence of a proper and well-functioning land administration system has obstructed investments to sustain this development. At the same time, the deficiencies in land administration result in conflicts over land, affecting in particular the poor in society. With a view to maintaining the pace of development and acknowledging the importance of a modern land administration system for national socio-economic development, the Vietnamese government has embarked on an ambitious programme of revising the land law in 2011 and developing a modern digital and automated land administration system.

The Vietnamese government has recognized the severe lack of human capacity necessary to transform the land sector and realize these ambitious plans. This deficiency concerns both institutional and organizational aspects (land policy, land law, land administration and business administration), as well as appropriate technological systems (information management and technology, database management, geographical information systems and international standards).

The land sector in Vietnam falls under the responsibility of the Ministry of Natural Resources and Environment (MONRE) and its General Department of Land Administration (GDLA). In a Memorandum of Understanding signed by MONRE and the Vietnam National University (VNU) in February 2009, the Hanoi University of Science (HUS, part of VNU) was assigned the task of supporting the GDLA in addressing its capacity requirements. In doing so, HUS faced the challenge of upgrading and improving the existing curricula to meet the requirements of new legal arrangements and modern digital and automated land administration systems.

ITC and Kadaster in Vietnam

ITC and Kadaster, who since 2006 have combined their expertise in capacity building under the umbrella of the United Nations University School for Land Administration Studies (see www.itc.nl/unu-las), have been individually active in Vietnam since the mid-1990s with workshops, short courses, seminars, staff exchange programmes, etc. This has involved in particular (staff of) HUS and the GDLA. Throughout these years, a considerable number of staff members from these organizations

Hanoi University of Science (© HUS)

Vietnam Facility Support

ITC and Kadaster are supported in the implementation of their capacity building efforts by the Vietnam Facility Programme administered by the NL Agency representing the Netherlands Ministry of Economic Affairs, Agriculture and Innovation.

This programme aims at strengthening the bilateral relationship between the Netherlands and Vietnam through transfer and exchange of knowledge, capacity building in Vietnam, and reinforcement of training and education programmes. The focus of the Vietnam Facility Programme is on human resources development. Through this support, the Dutch government recognizes the importance of a proper land administration system in support of investments and private sector development.

have graduated from ITC after attending courses. As a result, relations between the various organizations have been strengthened and have formed a fertile foundation for enhancing the collaboration on a more structural footing.

In 2008, the relationships developed over the years motivated ITC and HUS to embark on developing the joint MSc course Geo-information Science and Earth Observation for Land Administration. Initiated in the late 1990s and becoming an official part of ITC policy and strategy in 2001, strategic partnerships with academic institutions for the purpose of joint research and education constitute an important element of ITC's capacity building programme. The joint MSc course with HUS is scheduled to receive its first intake of students in September 2011. This course targets both GDLA staff at central, provincial and local levels and fresh BSc graduates.

The MSc course includes periods in both Vietnam and the Netherlands:

- Students spend the first nine months in Vietnam on Block 1, with modules dealing with geo-information science and earth observation, and on Block 2, with modules addressing land administration concepts and principles. Interestingly, the last module on land information infrastructure is organized in collaboration with the Technical University of Munich, Germany, in an e-learning environment through distance education. In this way, an education programme is provided from both Munich and Enschede to two different groups of students located in these places who are collaborating in the execution of learning tasks. It is the intention to expand this programme to cover the students at HUS.
- Subsequently, the students move to ITC in the Netherlands for a three-month period for Block 3. This prepares them for MSc research by offering learning opportunities in regard to research skills, advanced topics on specific research methods and tools, and research themes on which the students work in their final thesis proposals and in group research assignments concerning study-related state-of-the-art knowledge and research. Apart from these learning objectives, the transfer to Enschede exposes them to an internal learning environment, giving them the opportunity to exchange their ideas and experiences with students from other countries.

A Memorandum of Understanding was signed during a visit of a GDLA delegation to the Netherlands

- Finally, students return to Vietnam for the six-month Block 4, which covers individual MSc research and thesis writing. Formal assessment will be given by HUS and ITC staff at the mid-term presentation and at the final MSc exam taken jointly.

Before actually implementing a joint MSc course, intensive and elaborate preparation is required to customize the curriculum to meet local conditions, localize the training materials, prepare the staff for implementing the programme and agree on legal, administrative and financial issues. Experience shows that this process takes at least one but preferably two years before actual implementation can start.

Within the framework of developing the joint MSc degree course on land administration at HUS, four staff members/lecturers are participating in individual modules of the ongoing MSc Land Administration course at ITC (see box 2 *Back to the School*

Kadaster-implemented workshop Real Estate, Land Registration and Strategy at the GDLA (9-11 March 2011 (© Kadaster)

Tran Van Tuan (second from right) and Tran Anh Tuan (second from left) in the ITC benches

HUS Land Administration students at work (© HUS)

Back to the School Benches

Within the framework of the capacity building programme in land administration for Vietnam, senior staff members of the Faculty of Geography of the Hanoi University of Science (HUS) follow part of the MSc Land Administration course at ITC to prepare them for replicating that education in Vietnam as part of the joint MSc course.

Two senior HUS staff members, Associate Professor Dr Tran Van Tuan and Dr Tran Anh Tuan, both vice-deans of the Faculty of Geography at HUS, joined the ongoing MSc course at ITC in February. They are scheduled to stay for three months, with a view to grasping the substance of the course modules and localizing the education material for use in Vietnam. Going back to the school benches is quite something for two experienced lecturers who completed their own studies more than a decade ago!

Dr Tran Van Tuan, who is also deputy head of the Department of Land Administration at HUS, did his PhD at the Moscow University of Land Use Planning. He finished his education almost 20 years ago. He considers being back in the benches a good experience, acknowledging, however, that after so many years he has some difficulty in getting used to being a student again. When asked whether for him there is still something to learn at ITC, he reacts by saying that the professionalism in education, some teaching methods and the use of Blackboard are very useful new elements. He is particularly interested in the way students are stimulated and organized to participate in the workshop elements of the course.

Dr Tran Anh Tuan, who has a PhD from Kansai University in Japan, considers the learning approaches as the most challenging component of the joint MSc course. Although HUS adopted the student-centred learning approach in 2007, more experience is required. Tran Anh Tuan also feels experience of the workshop approach to be very useful, as it "will give students a chance to exchange ideas, knowledge and working experience, while it stimulates them to be more actively engaged in class work". He is particularly pleased with the e-learning approach at ITC, which he considers "a really effective method: saving time and budget; giving students a chance to access a new learning method; and sharing the education module with other institutions".

Both acknowledge the importance of the joint education, not only for the students but also for the lecturers involved in the education and educational collaboration, because this gives them the opportunity "to improve and update their knowledge and their teaching skills". When asked about the challenges for the students, Tran Anh Tuan observes that "most difficult for the Vietnamese students will be the English language. Additionally, Vietnamese students are very shy when they are facing activities such as workgroup discussions or presentations. It is part of the culture and behaviour, not only of students but of the Vietnamese people in general." Tran Van Tuan adds that Vietnamese students may lack the "skills to follow the e-learning approach, as e-learning will be new to them". But he assumes that their age will help them to get used to these new learning methods quite easily.

When asked about the collaboration with ITC and Kadaster through the United Nations University School for Land Administration Studies, Tran Anh Tuan refers to the HUS experience in several international collaboration projects with organizations in Canada, Belgium, India, etc. Although these projects each have their own goals, objectives and working methods, all have only one partner organization. "Working with two international partners, ITC and Kadaster, and one additional Vietnamese partner, the GDLA, is a new but good experience. Transparency is one of the most important principles of this collaboration and lets us get our results as easily as possible through negotiations and discussions. Understanding the objectives of, and conditions for, the other partners and discussing them in an open manner are very important when facing reality challenges."

Benches). In turn, ITC staff members are supporting HUS staff in Vietnam in preparing and localizing the education material to fit Vietnamese conditions, at the same time developing additional joint education modules that can be delivered from different places to students at different locations in the world.

Over the years, ITC has built up considerable experience in developing and implementing joint education and has concluded that research should be an integral part of any collaboration in education at degree level to ensure it becomes meaningful and sustainable. Research provides the cases and case studies to *localize* the education material, and hence make it more comprehensible to the students, who recognize the situations more easily. Enhanced research experience and capacity among the staff involved in the education programme allows the continuous internal upgrading and development of the curriculum essential to the scientific sustainability of an education programme.

Kadaster in turn supports the GDLA in upgrading the existing capacity (i.e. human resources) of GDLA managers and technical staff at central, provincial and local levels through short courses and workshops in Vietnam, such as New Approaches for Land Administration Systems; Real Estate, Land Registration and Strategy; and Geo-ICT and Land Administration. Kadaster collaborates with HUS staff in implementing these training workshops.

In the coming years, the collaboration will be enhanced to cover e-Land Administration, more specifically e-Cadastre.
To this end, during a visit of a GDLA delegation to the Netherlands in December 2010 a Memorandum of Understanding was signed by Mr Le Van Lich (deputy director-general) on behalf of the GDLA and Mr Godfried Barnasconi on behalf of Kadaster. ■

FOR MORE INFORMATION ABOUT THE UNU SCHOOL FOR LAND ADMINISTRATION:

Sjaak Beerens
Director UNU School for Land Administration Studies
Faculty of Geo-Information Science and Earth Observation
University of Twente
E-mail: beerens@itc.nl
Phone: + 31 53 4987329
Web: www.itc.nl/unu-las

Erasmus Mundus Regional Asia Programme

John Horn horn@itc.nl

With coordination by the University of Deusto, Bilbao, Spain, ITC participates in the Erasmus Mundus Action 2, Lot 11, Regional Asia programme, aimed at candidates from Afghanistan, Bhutan, Nepal, Pakistan, Sri Lanka, India, Indonesia, Malaysia, China, Maldives, Philippines, Thailand and North Korea.

ITC/UT received nearly 800 applicants for study, research or visiting staff exchange mobilities, with 300 of these placing ITC/UT as their first preference.

During a selection meeting kindly hosted by the University of Pune, India, at the end of February, the complicated task of selecting the successful candidates was performed. Initially, candidates are ranked on their academic credentials and suitability to join their chosen programme, although a number of additional parameters such as gender, country of origin and affiliation to one of the partner members have to be taken into account. Ultimately, the proposed selection list has to be placed within an overall budget allocated by the European Commission. It is envisaged that successful candidates for the awards will be informed of their grants within the next few weeks.

A similar programme has recently been announced by the EU for next year, and it is hoped that ITC will be able to participate again.

Erasmus Mundus Gulf States Programme

For the first time (2011), ITC is now a member of the Erasmus Gulf States programme. This is also being coordinated by the University of Deusto, Bilbao, Spain. The full list of programme consortium partners can be found at www.emgulfcountries.eu.

The full range of mobility types are possible under this programme, but only candidates from the participating partners were eligible to apply. During the application phase, a number of the European partners took the opportunity to hold "information sessions" at some of the Gulf universities, and ITC was very pleased to have the opportunity to address gatherings at both the University of Nizwa and Sultan Quaboos Universtiy in Oman.

Following the deadline for applications, a selection meeting was held in Bahrain to allocate the mobility grants. Regrettably, this proved to be a case of "wrong place wrong time" as precisely on the day the meeting was to be held, a state of emergency was

Dr Ivan Hutchins of City University London giving a presentation during the FFEEBB consortium meeting in Cardiff

Members of the Erasmus Egypt FEEBB consortium

Female staff and students enjoying lunch in the sun at Pune University

Members of the Erasmus Gulf States consortium during the selection meeting in Bahrain

declared in the island state! Fortunately, the meeting was held regardless, and the essential business was conducted as required.

ITC/UT looks forward to welcoming a small group of candidates from the Gulf during the summer of 2011, and will additionally be taking every opportunity to forge closer links with the various partners in the region.

Erasmus Mundus Egypt Programme

After the first highly successful round in 2010, ITC is delighted to participate for a second year in the Flow By Flow EU-Egypt Bridge Building Project (FFEEBB). Coordinated by the University of Wales Institute, Cardiff (UWIC), and with ten Egyptian partners and ten European partners, the programme promises to provide an unparalleled opportunity for a two-way flow of students and researchers between Egypt and Europe and vice versa.

The programme will provide funding for Bachelor (ITC does not currently offer a Bachelor's programme), Master of Science, doctorate, post-doctorate and visiting academic staff. The full list of project partners can be found at www.FFEEBB.com. ■

Obituary

Prof. Dr. Ir. Jacub Rais (1928–2011)

Prof. Dr. Ir. Klaas Jan Beek beek@itc.nl
Prof. Dr. Ir. Martien Molenaar molenaar@itc.nl
Drs Sjaak Beerens beerens@itc.nl

Prof. Dr. Ir. Jacub Rais, Honorary Fellow of ITC since 1988, passed away on 28 March 2011 in Jakarta, Indonesia, at the age of 82. He was laid to rest at the Karet Bivak General Cemetery in Jakarta on 29 March 2011.

Jacub Rais was born in Sabang, on the island of Weh, province of Aceh, on 18 June 1928. Following an active youth in which he fought against both Japanese occupiers and Dutch colonial forces, he started his study at the *Afdeling Geodesia* (Department of Geodesy) of the *Fakulteit der Technische Wetenschappen, Universiteit van Indonesië* (nowadays Institute of Technology Bandung, Faculty of Engineering), where he graduated in 1955. Jacub Rais held a Master of Science degree, which he obtained in 1969 from the Department of Geodetic Science of Ohio State University in Columbus, Ohio, USA, and a doctorate in Geomatic Engineering from the University of New South Wales, Australia, which he obtained in 1995.

From 1956 to 1960, he was head of the Cadastral and Land Registration Office in Semarang, Central Java. In this period, he was also very active in the academic world, being one of the founders of Diponegoro University in Semarang in 1957 and founder of the Department of Geodetic Engineering at Gadjah Mada University in Yogyakarta in 1957. In 1960, he joined Diponegoro University, serving in various academic positions, including that of rector from 1965 to 1967.

In 1970, he joined the Indonesian National Coordination Agency for Surveying and Mapping (BAKOSURTANAL) as deputy chairman and became head/chairman of BAKOSURTANAL in 1984, a position he held till 1994. In this period, he held various additional positions, among which member of the National Research Council of Indonesia.

Jacub Rais remained active after his retirement from BAKOSURTANAL. He was a training specialist/spatial development planner with the Marine Resources Evaluation and Planning Project from 1994 to 1998; consultant on the Coastal Resources Management Project from 1999 to 2004; and consultant on toponomy attached to the Department of Home Affairs from 2004 to 2009.

Professor Rais and ITC

ITC knew Professor Rais as a person of vision, who appreciated the value of international collaboration in human and technological development for the future of Indonesia. At the same time, he was a great networker, a professional in his field and a very amicable person.

First contacts between Professor Rais and ITC dated back to 1970, when he met Professor Visser, a member of the Dutch delegation at the 6th UN Cartographic Conference for Asia and the Pacific in Tehran. Professor Rais was at that time deputy chairman of BAKOSURTANAL and head of the Indonesian delegation. Since BAKOSURTANAL had only been established in 1969, he had informal discussions with Professor Visser on eventual collaboration in coping with manpower requirements for the ambitious Indonesian national mapping programme. When starting the first Five-Year National Development Plan in 1969, the base maps at 1:50,000 scale covered only 10% of the country's 1.9 million square kilometres and were mainly of pre-war origin.

Professor Rais realized the lack of skilled cartographic technicians and photogrammetric operators and the fact that formal training in these fields was not available in Indonesia at that time. The informal Tehran discussions (which he himself referred to as "the Tehran connection") resulted in an official Dutch mission (known as the Visser–Van Zuylen mission) to Indonesia in 1972 to discuss the setting up of a training school in Indonesia for photogrammetric and cartographic operators with the government of Indonesia. This school, the *Pusat Pendidikan Fotogrammetri dan Kartografi* (PPFK), was established in Bandung in 1975 as an international development collaboration project, and from 1980 was continued by the Bandung Institute of Technology. The school has been the main source of manpower in terms of cartographic and photogrammetric operators ever since. In 1986, a similar collaboration initiative was undertaken by BAKOSURTANAL and ITC in the field of applications of remote sensing technology at Gadjah Mada University, Yogyakarta: the *Pusat Pendidikan Interpretasi Citra Satelit* (PUSPICS).

But the collaboration with Professor Rais went beyond cartography, photogrammetry and remote sensing. As a man of vision, Professor Rais appreciated technological developments and their value, and strongly supported the joint research project Integrated Land and Watershed Management Information Systems (ILWIS) in South Sumatra in the 1980s, which also involved the Ministry of Forestry. In addition, through Professor Rais hundreds of Indonesian professionals were selected by BAKOSURTANAL to participate in the special ITC Diploma course Geographical Landscape Analysis for Indonesian Conditions (the N4 course). Finally, Professor Rais actively participated in the ITC organization of the very successful 1988 executive workshop Entering the 21st Century: Strategies for National Surveying and Mapping, and a similar event, Strategic Issues for the Next Decade, in 1991. Time and again, Professor Rais confirmed his confidence in ITC's expertise by inviting ITC staff to participate in advisory bodies for country-wide projects in resources mapping and land resources evaluation.

Honorary Fellow of ITC

ITC demonstrated its appreciation and gratitude for the relentless efforts of Professor Rais in initiating and supporting the collaboration between various organizations in Indonesia and ITC by conferring on him the Honorary Fellowship of ITC on 20 December 1988. In his words of thanks at the event, Professor Jacub Rais said: "BAKOSURTANAL is a national coordination agency for surveys and mapping and is charged with the responsibility of coordinating the production of national base maps, establishing a national topographic database and setting up a geographical information network for land resources evaluation and physical planning.
In the course of the development of BAKOSURTANAL, we recognized ITC's significant contribution … first in the mid-70s when we set up our mapping infrastructure at Cibinong, … and even at present, the ITC expertise again is contributing in our programmes of base mapping, including the quality control of aerial photography, the development of digital mapping technology, setting up specifications of and supervising the homogeneous levelling networks, and thinking of strengthening our unified geodetic network by GPS and absolute gravity observations for its accuracy … .

BAKOSURTANAL has grown from a dozen of staff in 1969 to close to 600 personnel in 1988; most of our scientific staff had post-graduate training at ITC, for which we are grateful. I consider the conferring of Honorary Fellow on me today as a credit to all staff and personnel of both ITC and BAKOSURTANAL for their excellent cooperation and understanding, without them the progress we obtain today will not be reality.

I would like to thank sincerely the Board of Governors for its decision to confer on me the title of Honorary Fellow of ITC. I am also grateful to the rector, vice-rector and staff of ITC, with whom I have indeed enjoyed their sincere collaboration in carrying out my task. Thanks is also extended to my collaborators and staff at BAKOSURTANAL and other government agencies closely linked with the work of BAKOSURTANAL; without their support I could not imagine how we can achieve our common goals.

We indeed look forward to a more close relationship with ITC in developing our manpower capability in mastering modern technology to assess the potential of our vast natural resources and to monitor our environment that is changing so rapidly due to our intensive development."

His final words were taken seriously by all concerned and, in the years following, collaboration between various organizations in Indonesia and ITC have flourished – in spite of political differences between the two countries!

ITC management meeting Honorary Fellows Professor Rais (left) and Professor Soekiman (centre) in Jakarta (May 2001

Even after his retirement, ITC kept in touch with Professor Rais, elaborating initiatives for collaboration. For example, in 2001 we met with Professor Rais and other senior professionals and academics, among whom ITC Honorary Fellow Professor Soekiman Atmosoedaryo, and discussed the way in which collaboration between ITC and Indonesian organizations could be strengthened. We last met with Professor Rais during a gathering of ITC alumni in Jakarta on 3 June 2009, when he spoke at length on the virtues of international collaboration.

On the day that, as a member of the national team for the standardization of topographical names, he was scheduled to go to the province of Riau on a mission to verify and validate the administrative area names in the province, Professor Rais passed away at the age of 82.

With the demise of Professor Jacub Rais, Indonesia loses a professional and a scientist of great vision, while ITC loses a great friend, and a true and loyal fellow. ■

Professor Klaas Jan Beek, rector of ITC, presenting the credentials of honorary fellow (Enschede, 20 December 1988)

EVENTS

Spatial Statistics Conference 2011

Nicholas Hamm hamm@itc.nl

The First Spatial Statistics Conference took place on the University of Twente (UT) campus in Enschede from 23 to 25 March 2011. The scientific organization was led by the conference chairs, Alfred Stein (ITC), Edzer Pebesma (University of Münster) and Gerard Heuvelink (Wageningen University), while the administration was handled by Elsevier. The conference, which was booked to capacity, was sponsored by Elsevier, ESRI, ITC and the CT de Wit Graduate School for Production Ecology and Resource Conservation.

You may be asking whether this was really the *first* spatial statistics conference. There have certainly been many conferences that have addressed the subject of spatial statistics; however, these have tended to take a primarily statistical (e.g. METMA, TIES) or application-driven orientation (e.g. GeoENV, Accuracy). This conference was unusual in that it brought together those whose primary field was statistics, geoinformatics and applied science (e.g. ecology, atmospheric science). This mixture delivered a varied and stimulating programme. Some sessions dealt with core statistical subject matter, such as regression, geostatistics and sampling, whereas others dealt with applications such as ecology, climate science and ecology. There were also three rich and varied poster sessions.

The conference kicked off with a keynote speech by Martin Schlather of the University of Göttingen, who presented the theory of statistics for spatial extremes in an accessible but rigorous way. When one considers the natural disasters that have occurred in the past few years, it becomes clear that the modelling and identification of spatial extremes has clear and important societal applications. Professor Schlather was directly followed by Roger Bivand from the Norwegian School of Economics and Business Administration, who called for openness and interdisciplinarity in the development of research projects and the peer review of research output. He proposed that open re-useable codes could be a bridge between disciplines. You may like or loath this idea. The first day concluded with a welcome drinks reception, sponsored by the CT de Wit School.

The second day of the conference included three inspirational keynote speeches. Noel Cressie, from the Ohio State University, showed how spatial random effects models and fixed-rank kriging could be applied to combining the outputs from an ensemble of regional climate models. The value of these techniques lies in their flexibility for modelling complex variables, while being able to cope with the processing of large datasets with limited computing resources. An application of this technique had also been presented by H. Nguyen the previous day. Professor Cressie continued his contribution to the conference with lively questions, following Harvard Rue's (Norwegian University of Science and Technology) keynote lecture on the integration of Gaussian Markov random fields with Gaussian fields (geostatistics). These are two topics that have, traditionally, developed separately. Professor Rue showed how they could be integrated using partial differential equations. This is supported by software made available at www.r-inla.org. The day's academic programme concluded with a keynote lecture by Gilberto Câmara of the National Institute for Space Research, Brazil, who continued with the theme of handling large datasets of satellite imagery for the identification of change in land cover (what is there) and land use (what it is used for). This remains a challenging topic from both a conceptual and technological perspective and is particularly important in developing countries, owing to a lack of official statistics. This means that more emphasis is attached to the use of satellite imagery. Dr Câmara showed how this is being applied in Brazil, using a suite of open source software based on Terralib. Dr Câmara closed with a call to go beyond "spatial". Spatio-temporal analysis tools and methodologies are required to answer the big questions of today and tomorrow.

The second day of the conference concluded with a dinner hosted by ITC at their magnificent building in Enschede. The ITC

restaurant provided a splendid feast that ended with a melange of ice cream! The dinner provided an opportunity for delegates to network and socialize in convivial surrounding. This was fuelled by a pleasant wine selection chosen by Professor Stein together with Frans Jannink. The dinner also provided the opportunity for visitors to become acquainted with both the physical infrastructure and mission of ITC. Historical tours of the building were provided throughout the evening, which were attended enthusiastically.

The size of the conference becomes apparent: six buses are required to ferry delegates from the UT campus to ITC

The final day of the conference kicked off with a keynote lecture by Tomislav Hengl from ISRIC, Wageningen, who is also an ITC MSc and PhD graduate. He built on the theme of open research presented by Professor Bivand on the first day. He presented an impressive array of datasets and proposed global modelling for local prediction. The day proceeded with sessions on geostatistics, uncertainty and social science applications. Of particular interest was the talk and poster of Chris Small on mapping anthropogenic change in night light. The day concluded with the final keynote lecture, this time by Peter Atkinson from the University of Southampton. He dealt with downscaling in remote sensing and discussed previous and ongoing research in this field, addressing both categorical variables (land cover classes) and continuous variables (temperature, reflectance, etc.).

The conference concluded with the presentation of prizes for the best oral and poster presentations. The prize for the best oral presentation was awarded to G. Mariethoz from the University of New South Wales, Australia, for a talk entitled "Parameterizing training images used for multiple-point simulations" (O39). The prize for the best poster was awarded to S.V. Vantini and co-authors for their poster "A clustering algorithm for spatially dependent functional data" (P1.47). There was general agreement that the conference had been a success, and the wish to proceed with another conference was expressed. This will probably take place in approximately two years' time at a different location. Elsevier will also release a new *Journal of Spatial Statistics*, which would seem to reflect the broad conference theme. There was a suggestion that the conference and journal should be renamed "Spatio-Temporal Statistics". Let's wait and see. ■

Ms. G. Mariethoz receives the prize for best oral presentation

Professor Veldkamp congratulates Professor Stein on a successful conference

ANNOUNCEMENTS

Refresher Courses 2011

Communication Department itcnews@itc.nl

Refresher courses, which are certificate courses (mostly of two-week duration) organized for alumni in their home countries or regions, are meant to increase the impact and prolong the effect of earlier training.

Refresher courses are funded mainly by the Netherlands Fellowship Programme (NFP). In principle, the target group of these courses consists of alumni who have completed any NFP-funded training or education at least two years before the planned starting date of the relevant refresher course. Furthermore, alumni of earlier DGIS and SAIL projects may participate. Colleagues and supervisors of alumni are also allowed to participate in (part of) a refresher course.

Refresher Courses 2011

- Application of Synthetic Aperture Radar (SAR) and Interferometric SAR (InSAR) in Geo-environmental Mapping and Modelling (Uganda)
- Dimensions of Biofuel Cropping (Zambia)
- Climate Change and Carbon Assessment for the Benefit of Community Forest in Central and Southeast Asia (Nepal)
- Biodiversity, Climate Change and Conservation (Namibia)
- Targeting Urban Poverty Alleviation (TUPA) (Tanzania)
- Combating Drought Using Geo-Spatial Information and Participatory Modelling (Tanzania)
- Remote Sensing of Soil Parameters for Erosion and Fertility Studies (Kenya) ■

FOR MORE INFORMATION AND APPLICATION:
www.itc.nl/Pub/Study/CourseFinder.

Best Student Paper Award for Yaseen Mustafa

On 4 May 2011, Yaseen Mustafa, PhD researcher in the Earth Observation Science department of the faculty ITC, received the Best Student Paper Award at the ASPRS conference 2011 in Milwaukee, Wisconsin, USA for his paper Improving forest growth estimates using a Bayesian network approach.

The paper was co-authored by faculty ITC staff members Alfred Stein, Valentyn Tolpekin and Patrick van Laake and will be published without any further modifications in Photogrammetry Engineering and Remote Sensing (PE&RS), the official journal of ASPRS.

Yaseen Mustafa (left) with former ASPRS President, Dr. Carolyn J. Merry (Photo by John O'Hara)

Best Paper Award for ITC Alumnus Gayantha Kodikara

The University of Ruhuna (Sri Lanka) at the Seventh Academic Sessions and Vice Chancellor's Awards Ceremony during 17 and 18 March 2010 awarded Applied Earth Sciences MSc graduate Gayantha Kodikara the Best Paper Award for a publication on Mapping evaporite minerals and associated sediments in Lake Magadi, Kenya, using Hyperspectral Hyperion data.

This paper, born out of the MSc research of Mr Kodikara was co-authored by faculty ITC staff members Tsehaie Woldai, Frank van Ruitenbeek and Freek van der Meer, Keith Shepherd (ICRAF, Nairobi) and G.J. van Hummel (MESA+, University of Twente).

Gayantha Kodikara during his MSc fieldwork in Kenya

Workshop: Use of 3D City Models in E-Government for Sustainable Urban Governance

Diego Navarra navarra@itc.nl

The workshop focuses on the use of 3D city models in e-government for sustainable urban governance. The aim is to bring together research, experiences and case studies of 3D city models' usage and applications in complex policy scenarios linked to urban governance. These should be in areas like housing, environment, tax compliance, infrastructure planning, rural/urban interactions, city marketing for public relations and tourism. We particularly focus on developing a global perspective and/or focus on conceptual contributions highlighting new applications.

Finally, this workshop will bring together state-of-the-art perspectives from research and practice and an additional outcome from the closing discussion and related post workshop activities will be the identification of future research directions, possibly leading to joint research projects. The workshop will be a one day event and will take place on 29 August 2011 at the IFIP e-government conference hosted at the Delft University of Technology. ■

Conference Logo

FOR MORE INFORMATION on the workshop please contact Diego Navarra (navarra@itc.nl). For more information on the conference please check the conference website: www.egov-conference.org/

LIFE AFTER ITC

Holland Alumni Meet and Greet Jakarta

Stephen Widjaja stephen.widjaja@nesoindonesia.or.id

On Friday, 21 January, more than 60 Holland alumni attended the Meet & Greet to toast the New Year 2011 and greet their fellow alumni. The event, which was organized by Nuffic Neso Indonesia in cooperation with IKANED, was marked by a lively atmosphere from start to finish.

The two representatives from Neso Indonesia (Mr Marrik Bellen, director) and IKANED (Mr Theo Lekatompessy, vice-chairman) welcomed all guests and extended their best wishes for 2011. In his opening speech, Mr Bellen not only pointed out the importance of having a regular platform for alumni to meet one another (such as content-driven seminars or social gatherings), but also encouraged the alumni to become active in generally promoting study in the Netherlands, because they are the best ambassadors in this respect. Alumni who are now holding senior positions are also expected to support younger alumni in terms of career development or vacancies.

Speaking to a mix of alumni from all parts of the Netherlands, with different academic backgrounds and careers, Mr Theo Lekatompessy highlighted the history and spirit of IKANED and emphasized the benefit of participating in IKANED activities. He said that together they could contribute to the development of Indonesia as well as individual networking.

As a continuation of the successful IKANED Professional Seminar Series held in 2010, Neso Indonesia is planning to organize a similar seminar series outside Jakarta this year. The seminars will be conducted in close cooperation with IKANED chapters to ensure that Holland alumni activities in Indonesia are sufficiently brought to the attention of alumni and related stakeholders. At the same time, alumni in Indonesia are also invited to visit the International Holland Alumni Network website (www.hollandalumni.nl) for latest news from the Netherlands and their alma mater. ■

Logo Holland alumni Network

Global Banquet Talk Series 2010

Hanna Lange hanna.lange@utwente.nl

Over the past few months, the University of Twente (UT) has arranged Global Banquet Talks in several cities in Turkey (Istanbul and Ankara), China (Beijing and Shanghai), Indonesia (Jakarta, Bandung and Malang), Belgium (Brussels) and Mexico (Mexico DF).

In each city, a professor has given a lecture on a topic relevant to that country. The UT objective is to strengthen through these lectures the network in focus countries and increase collaboration between participants. There were also many opportunities for informal contacts and networking during the gatherings. Among the participants were UT alumni, representatives of partner universities and relevant companies, and students who have applied for a study in Twente. There were social alumni gatherings in Greece, Spain, India, Germany and Romania as well.

ITC alumni are very welcome to participate in all UT alumni gatherings in the future. In some countries, such as Indonesia, they started to join in during 2010. We are looking forward to meeting all alumni who have been educated at the UT and/or ITC! ■

YOU CAN FIND MORE INFORMATION on the lectures at www.utwente.nl/alumni/en/alumnichapters and stay in touch by joining the Global Banquet Talk LinkedIn Group (www.linkedin.com/groups?about=&gid=3675031&trk=anet_ug_grppro)

The UT has arranged Global Banquet Talks in cities in China (Beijing and Shanghai)

The UT has arranged Global Banquet Talks in Indonesia (Jakarta, Bandung and Malang

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