

content

Main features

ITC and University Twente Join Forces	2
Flying the Benelux	4

Project News

Advanced Earth Observation Applications	7
ADB-GMS Core Environment Programme	9

Education News

First Graduates GSIM	11
First MSc Fair	12

Events

ISPRS Workshop in Iran	14
------------------------	----

Partnership News

MoU State Key Laboratory for Disaster Prevention	15
Joint Course GSI and NRSA	16
Joint Education IIRS	17
Visit Geological Survey and Mining Iraq	17
Graduation GISnaturem Ghana	18
MoU Geomatics Business Industry China	19
Interview President AARSE	20

Staff News

In Memoriam: Emmanuel Adjei Owusu	23
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Life After

Alumna Suda Swuttanakoon	24
New year's Reception Thailand	25
Refresher Course Tanzania	26
Alumni Association Philippines	28
Alumna Ari Susanti	29
Alumni India Meet	30
Alumni Iran Meet	31

2008

number 1

introduction

What does the future hold in store? That's a question that occupies most of us from time to time, and many a savant in days of yore hopefully scrutinised the movement of the planets and stars in an endeavour to come up with an answer. But ITC tends to look at things from a different perspective: earth observation is its forte, not star-gazing. Fortunately ITC News is on hand to pick up on those things not easily registered by the orbiting satellites. And although we cannot claim to operate in the realm of prediction, between the pages of this issue you will find much reflecting the Institute's plans and paths for the months and years ahead.

To start with, if you turn to page 2, you can read about developments in the strengthening relationship between ITC and the University of Twente as the two institutes head towards official integration with effect from 2010 - a far-reaching agreement that will bring opportunities and increased potential to both parties concerned.

Signings of memoranda of understanding are also featured this time round, with the Geomatics Business Industry in China (page 19), with the State Key Laboratory for Disaster Prevention of the Chengdu University of Technology (page 15), and with GEOSURV-IRAQ (page 17), such documents serving as vehicles to facilitate the development and implementation of agreed initiatives ... in the future.

So all in all, the year 2008 promises to be eventful in many and various ways. Alas, my crystal ball is now growing dim but, if you have any exciting plans or projects that you'd like to share with your fellow readers, remember: we're just an e-mail away!

Janneke Kalf
Managing Editor

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ITC and University of Twente Join Forces

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On 25 March, the University of Twente (UT) and the International Institute for Geo-Information Science and Earth Observation (ITC) signed the official agreement regulating the integration of the two institutions with effect from 1 January 2010. ITC is to be embedded as the sixth, special faculty in the UT.

Both parties see great advantages at national and international levels in the integration. Through the integration, ITC will be more firmly embedded in the Dutch academic education system, while the UT expects to be able to profit from ITC's international network.

Both sides are also expected to profit with regard to the recruitment and selection of foreign students and the relating procedural transactions. Intrinsically the cooperation - already partly in effect - can lead to innovative research and education in areas such as energy, environment, climate change, water, geo-information and earth observation, and disaster management.

The new relationship with the UT offers ITC and the UT interesting opportunities for joint research into new educational projects and markets. However, the mission of the UT differs from that of ITC. Consequently, full integration carries the risk that ITC will lose its prominent position as an institute for capacity building. Molenaar recognises this risk but a suitable arrangement has been made with the UT. "In view of the name and fame of ITC, our brand will simply continue. Neither our name, nor our policy or location will change. The ambition of the UT is to become an international university with a European orientation. ITC can help the UT to develop an institutional culture that is necessary for a status of this kind. Working together, the two parties can also develop strategies for activities outside Europe."

The immediate reason for the amalgamation is the fact that, with effect from 1 January this year, the subsidy from the Ministry of Education has changed in such a way that



The UT and ITC maces, the bedel's staff of office. RECTAS had commissioned the carving of a special ITC mace. Dr. Jide Kufoniye, ITC Alumnus and director of RECTAS, Nigeria officially presented the mace to ITC in 2003.

ITC funding is awarded no longer directly to ITC but via the budget of the UT. For the first 50 years, ITC was autonomous and was directly responsible to the Ministry of Education. The Bologna agreements have meant much more regulation of the international higher education market, and increasingly ITC must fit within the frameworks now created. The UT has been the official penman of ITC since 2002, and in 2006 the two institutes signed a declaration of intent concerning more intensive cooperation. This resulted at the beginning of 2008 in the agreement signed on 25 March in the town hall of Enschede by Dr Anne Flierman, chairman of

the Executive Board of the University of Twente, and Professor Martien Molenaar, rector of ITC. The mayor of Enschede, Peter den Oudsten, played host on this occasion. The amalgamation of ITC and the UT fits within the *Future Vision for Enschede 2020*, which can be summarised as follows: " In this vision of 2020 Enschede is renowned throughout Europe as a knowledge city that is the beating heart of the Euregional area, linking Netwerkstad Twente and the German towns of Münster and Osnabrück. It is a city where everyone is in paid employment and/or works in a different way for the community; where the socio-economic differences are smaller than now because everyone shares in the growth and prosperity. It is also a city that in many places looks better and more attractive; where people feel at home; where people live, dwell, study, work and relax in an environment that is inviting, pleasant, sustainable and green."

The histories of the two education institutes in Enschede are reasonably similar in length. For almost 60 years now, ITC has been engaged in international education at academic level, as well as with courses at intermediate and higher vocational levels. This has been combined with research and technical consulting in the area of geo-information science and earth observation, where remote sensing technology is used for collecting spatial information.

The University of Twente has been in existence for 47 years and engages in education and research in academic fields ranging from psychology and public administration to technical physics and biomedical technology. ITC has approximately 240 staff members and 1,700 students, while the UT has nearly 2,500 staff members and over 8,000 students.



Dr Anne Flierman, chairman of the Executive Board of the University of Twente, and Professor Martien Molenaar, rector of ITC



Mayor of Enschede Peter den Oudsten

Four Channels, Three Countries: Flying the Benelux

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Based in Antwerp, Belgium, Aerodata International Surveys is an airborne surveying and mapping company specialised in airborne data capture, photogrammetry and geoinformatics. It combines extensive know-how with high-quality technical equipment to offer innovative solutions mainly in Europe but also in Africa and the Middle East.

At the beginning of 2007, a challenging project was looming on the horizon of Aerodata International Surveys: capturing a countrywide digital orthophoto of the Benelux as fast as possible in order to create a time document. Aerodata has already carried out similar projects over the Netherlands in 2003 and 2005 (Figure 1), but this would be the first time over the whole of the Benelux. The importance of rapid image acquisition calls for an entire digital processing stream. Speed was top priority. In the days to come, Aerodata International Surveys was busy with what would become, according to those who participated, one of the fastest surveying projects ever concluded in the Benelux.

Weather conditions for aerial surveying in Central Europe can be rather nasty, even during the summer. However, in April 2007 four weeks of nice weather were expected in the Benelux. Synchronisation and planning of our missions played a key role during these weeks in achieving the fastest digital capture ever of the Netherlands, Belgium and Luxemburg.

Background

The demand for high-quality and immediately measurable geospatial source data is becoming increasingly important, putting greater reliance on better imaging technologies combined with advanced position systems and workflows that deliver results faster without compromising quality.

The Ultracam-D digital camera system is tied to a GPS-aided IMU, capturing imagery from a fast-moving Fairchild Merlin survey aircraft and from the Cessna 310 and 402 (Figure 2). The UltraCam-D simultaneously records colour and colour-infrared imagery (Figures 3



Figure 1 AeroGrid 2005: the whole Netherlands in 40 cm resolution

and 4), which satisfies multiple end users and applications. The colour orthophoto mosaic at 40 cm ground resolution is colour-balanced and shows a very high level of detail. Using the digital camera leads to significant improvement of the final product with respect to image clarity, brightness, contrast, and visibility of details in shadow areas. The aim of this product is to set a new standard for countrywide digital orthophoto



Figure 2 Fully equipped survey aeroplanes ready to fly



Figure 3 Aerial survey mission execution using a Cessna 402



Figure 4 Ultracam-D in action during a mission over the Benelux

Sebastian Ruik, an agricultural engineer from Uruguay, gained his Professional Master's in Geoinformatics/GIS at ITC, Enschede, the Netherlands. For three years, he was in charge of the GIS and Remote Sensing Department in 2000 Aviation Systems, Uruguay and Argentina, before joining Aerodata International Surveys, Belgium (www.aerodata-surveys.com). He is part of the flight operation team that plans, coordinates, models and executes Lidar, thermal, hyper-spectral and photo missions. Aerodata International Surveys relies on an experienced multicultural team in aerial surveying, photogrammetry, image processing, remote sensing and GIS to provide geoinformatics solutions in Europe, Africa and the Middle East.

databases for the community of GIS users that need current high-resolution imagery for their projects.

A fully automated workflow is utilised, based on different software packages for orthophotos, orthophoto mosaic production, automated digital elevation model (DEM) generation, and fast and reliable triangulation of large aerial photo blocks. The data are also delivered by an essentially new information technology infrastructure, including internet connectivity, which was built to distribute the imagery (Aerogrid) (Figure 5).

Project Details

- Area: 80,000 km²
- 12,000 images taken
- 23 flights made
- Mosaic details: GSD 40 cm, 1600 GB database
- Submetric precision
- Panchromatic, IR, RGB images
- Product description: orthomosaics, DTMs, multiband orthomosaics

Uses and Conclusion

Using the Vexcel Ultracam-D, which supports a high degree of parallelism in data collection, transferral and processing, we can reduce costs and diminish environmental effects. The result is unrivalled radiometry with

Figure 5 Off-the-shelf data provider from the Benelux



better matching accuracy, allowing more flying days in marginal weather as well as better interpretability and better stereo images. In addition to this, it collects true RGB colour and false-colour infrared all the time.

The near-infrared imagery is used for commercial and environmental uses in both rural and urban areas. By providing information on the extent of vegetation, and the types and health of plants and trees, it can be used to support advanced crop management and the analysis of ground vegetation. In urban areas, near-infrared imagery can be used to measure open spaces, analyse types of green space, and support habitat conservation programmes. It can also be used to evaluate the canopy size and location of trees, their relationship with surrounding buildings, and the potential for subsidence. This information is highly valuable to both tree preservation officers and insurance companies.

Many different clients are using these digital orthophoto databases to satisfy their own needs. Some examples are given below:

- Environment
for environmental monitoring through the four channels collected during the flight
- Forestry and agriculture
for forest inventory and management planning
- Municipal development
for large-scale digital mapping and modelling
- Public sector management
for spatial data infrastructure management, GIS for good governance, and land administration
- Rural development
for land administration and land management: cadastral mapping, valuation, land registration
- Telecommunication
for 3D modelling for mobile phone network planning
- Habitat monitoring
for tracking changes in habitat over time by using different years of aerial photography. Changes in habitat can be an indi-

cation of changes in the fauna, urban development, or even the climate.

- Town planning
for assisting urban planners to manage development effectively and share ideas through visualisation (Figure 6)
- Cartography
not only for creation but also for updating purposes
- Geospatial analysis
for building up a land use record of a specific area, which can be used across a range of industries. The human and physical geography of local areas is vitally important to a whole range of professionals. Analysing the spatial distribution of a range of features can aid understanding of a particular environment or location. This mosaic could be classified into different parcels of land, using a standard or non-standard classification.



Figure 6 European Commission building in Brussels

project news

Senior African Technical Experts Benefit from Advanced Earth Observation Applications

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The TIGER Capacity Building Facility (TCBF), which was established at ITC in the Netherlands in September 2006, successfully organised the Advanced Training Course in Earth Observation Applications for Water Resources Management from 26 to 30 November 2007. This training course hosted by the Regional Centre for Mapping of Resources for Development, Nairobi, brought the ESA capacity building efforts during the 2005–2007 TIGER implementation period to a conclusion.

The course targeted technical people holding senior positions in government ministries dealing with water resources, water management institutes/organisations, technical departments, and related professions in the respective countries. The selected participants not only possessed practical experience in water resources planning and management but were also familiar with geo-information techniques.

The 26 participants, drawn from Cameroon, Democratic Republic of Congo, Egypt, Ghana, Kenya, Libya, Niger, Nigeria, Senegal, South Africa, Uganda and Zambia, were decision makers themselves or were the position to communicate with policy makers and thus influence the individual governments concerned, heightening their appreciation of the value of earth observation (EO) technology as a tool for integrated water resources management.

The course focused on the applications of EO-derived products in integrated water resources management and trained the participants in the practical use of EO-derived products to improve water management. The following topics were covered, balancing theory and practical sessions led by experts from ITC and ESA–ESRIN:

- Overview and application of EO data for water resources and use of geo-information tools in water resource management:
 - catchment characterisation
 - surface water mapping and floods
 - drought monitoring and forecasting
 - water quality monitoring.

A fruitful round-table discussion was held after the training course to obtain feedback from the participants regarding their perceptions of African needs and proposals for EO-based solutions/projects for the future.

Random feedback from a cross section of the participants at the end of the training course revealed the following sentiments:

- *Charles Tanania Kabobo*, a senior expert in charge of the Congo River Basin Information System at CICOS (Congo River Basin Organization), based in Kinshasa, Democratic Republic of Congo: “One of the main problems we face in the DRC is the lack of use of EO data for the Congo Basin and the lack of networking with other member states of CICOS.

The course was useful because it has been a long time since I learnt remote sensing techniques, so it was very useful for revision purposes and for learning new updated techniques. I was here at the RCMRD five years ago for a course on the application of remote sensing to hydrology studies.”



Charles Tanania Kabobo

- *Patrick Khisa*, a regional surface water officer at the Water Resources Management Authority, Lake Victoria South Catchment Area, based in Kisumu, Kenya: “The course was very useful to me, especially in helping me to identify how/where to get data. I have been made aware of altimeter data, which provides a synoptic view of water levels. Until now, I have been monitoring the lake levels with ground data. The course has also triggered my interest and desire to do a PhD course in river-level monitoring, drought forecasting or flood monitoring/forecasting, since the biggest challenge in Kenya is water flux and regulating flow.”



Patrick Khisa

- *Christine Mukwaya*, a senior water officer dealing with transboundary water resources at the Directorate of Water Resources, based in Entebbe, Uganda: "The course was very fast. I was able to see the data but it was a bit too theoretical because interpretation of the data is a problem and it is not obvious what to do with the data. But the course was very valuable to be able to see data for wide coverage. I have had previous remote sensing training but this course showed me how easy it is to access data and software for image processing."



Christine Mukwaya

- *Aiman Mohamed Khalil El Saadi*, a researcher at the National Water Research Center based in Cairo, Egypt: "The course was very helpful to me and I was more interested in the exercises since I prefer practical sessions to theoretical information from lectures. In Egypt I run a project using remote sensing to monitor lake water and certainly this training course will be beneficial to my project."



Aiman Mohamed Khalil El Saadi

- *Ernest Kusi-Minkah*, a consultant (principal engineer) at the Hydrological Services Department, Ministry of Water Resources, Works and Housing, based in Accra, Ghana: "In terms of material content and exercises, the course was quite revealing. I enjoyed the interaction between lecturers and participants. Time was a big factor: too short, too much material to take in. As a consultant, I am personally interested in advising other organisations so that we can spread the knowledge learnt."



Ernest Kusi-Minkah

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See also <http://www.itc.nl/tiger>



Group picture of participants and resource persons at the opening ceremony of the training course

Prestigious Contract for ITC within the ADB-GMS Core Environment Programme SEA of the GMS North-South Economic Corridor

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The Greater Mekong Subregion Economic Cooperation Programme (GMS ECP) was initiated in 1992. The programme aims at enhancing co-operation, connectivity and competitiveness in the GMS region, comprising Cambodia, Lao PDR, Myanmar, Thailand, Vietnam and the two Chinese provinces of Yunnan and Guangxi.

To promote sustainable and equitable development in the GMS countries, the Asian Development Bank (ADB) established the Core Environment Programme as a joint initiative of GMS member countries. The Environment Operations Center set up in April 2006 is located in Bangkok and is responsible for implementing this programme, which consists of five components:

1. Strategic Environmental Assessments of GMS Economic Corridors and Priority Sectors
2. Biodiversity Conservation Corridors Initiative
3. Environmental Performance Assessments
4. Capacity Building for Environmental Management
5. Programme Development, Delivery and Sustainable Financing
6. GMS Economic Corridors.

It is in the first component, where different GMS economic corridors have been created, that ITC has been given an assignment

SEA for the North-South Economic Corridor

The GMS North-South Economic Corridor (NSEC) is one of three priority corridors targeted for infrastructure development under the GMS ECP. Ms Joan Looijen of ITC's

Department of Natural Resources will, as team leader and SEA specialist, be responsible for the strategic environmental assessment (SEA) of the GMS NSEC section running from Kunming to Bangkok (see Figure 1). The SEA technical team is made up of five international specialists and three national expert teams.

The northern part of the NSEC is generally sparsely populated, with abundant natural resources as well as a high level of biodiversity. The area is also home to many ethnic communities. Moving south of the corridor in the direction of Bangkok, population density increases and the areas become more urbanised, industrialised and commercialised.

The ultimate goal of the NSEC development is to reduce income disparities, increase employment opportunities, generate higher incomes, and improve the living conditions of people in the corridor and surrounding areas.

The SEA aims to ensure that NSEC development strategies and investment plans are environmentally sound, socially equitable and economically efficient. Identifying and assessing appropriate strategic alternatives or options is a key aspect of SEA. In the SEA for the NSEC and SAP (strategy action plan), the environmental, social and economic effects of the planned transport, tourism and trade developments will be assessed and alternative strategic options and scenarios considered, including different transport modes and model split options. The SEA will also address how these strategic options and measures can be integrated in the NSEC planning process.

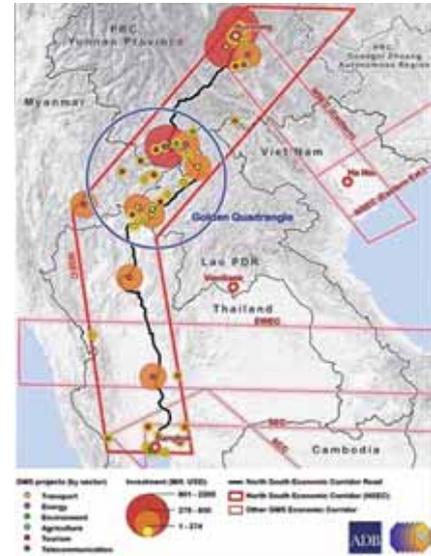


Figure 1 GMS North-South Economic Corridor

An integrated development strategy and action plan is being prepared for the NSEC (NSEC SAP) and will be considered for adoption by the GMS countries later in 2008. The SEA will also evaluate outcomes and improve subsequent versions of the NSEC SAP.

As a number of major infrastructure investments have already been undertaken, the SEA will have a post-evaluative character, focusing on cross-sector and transboundary issues, on the livelihood of vulnerable communities, on environmental safeguards for critical planning zones within the NSEC, and on mitigation measures.

Strategic evaluation methodologies, GIS and spatial decision support tools will be applied to assess cumulative effects, identify critical planning zones, generate alternative options, and integrate environmental, social and economic concerns in regional development planning.

Four missions in the region are related to the different stages in the SEA:

- inception phase in Bangkok (January 2008)
- site visit and consultations and regional scoping workshop in Kunming (April 2008)
- assessment workshops in Thailand, Laos and China (August 2008)
- regional SEA workshop in Bangkok (November 2008).



The team at work during the inception phase in Bangkok

Training and Capacity Building

On-the-job training and capacity building are key processes throughout the SEA, with the aim of improving the cross-sector collaboration and coordination during the GMS planning process. The proposed framework for the capacity building interventions will involve:

- a pilot SEA of the transport, trade and tourism sectors of the NSEC
- training sessions focused on SEA applications and benefits and the development of a technical package of skills for effective implementation of corridor plans and safeguards.

During the SEA pilot study, on-the-job training will be offered to introduce the applications and benefits of SEA and to develop skills in the implementation of all relevant activities, tools and procedures used in the pilot.

In addition to on-the-job training, a series of separate capacity building activities is being organised in regional and national workshops. These activities are being coordinated through the national environment agencies in China, Lao PDR and Thailand.

To multiply the impact and ensure sustainability, the training participants can in turn act as nodal agencies catering for the future capacity building needs in SEA in their own countries.

By bringing together organisations from three countries, a network will be created in the GMS region.

For more information:
<http://www.gms-eoc.org>



Sixiao eco-express way in Kunming



The NSEC region has a rich biodiversity



Fishing is an important source of income in the NSEC area



The NSEC is home to many ethnic communities

education news

First Graduates in Governance and Spatial Information Management (GSIM)

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March 2008, month of the MSc examinations, also saw the graduation of the first four GSIM students. The GSIM programme is a new MSc course in which social sciences and spatial information sciences are combined. The course is implemented in cooperation with the Faculty of Management and Public Administration of the University of Twente.

In the programme, a series of topics related to political science, law and economics are combined with the core curriculum on GIS and remote sensing, and information management. These are followed by courses on environmental policy, spatial planning, and regional and ecological economics in combination with such topics as land administration, information system development, spatial modelling, spatial statistics. In the research, the group focused on evaluating food security and poverty reduction policies in their countries of origin.

In his address to the graduates, Professor A. van der Veen (integrated assessment and governance) pointed to the multidimensional and multi-level aspects of the research in governance and space. This programme has brought the integration of social sciences and geosciences with new concepts and tools again to the forefront of research and education at ITC. In a cheerful mood, the course coordinator, Mr de Meijere, handed the degrees over to the students, stressing the importance of land for food and survival.

The GSIM course is now a fully fledged ITC MSc programme. In particular, this programme offers many challenges for students with a background in social sciences and with working experience in the public sector. Applications for the course starting in September 2008 can still be submitted. ITC can provide some fellowship support to the most promising candidates if no other financial support can be obtained.

For more information about the MSc degree course in Governance and Spatial Information Management, please refer to www.itc.nl/education/courses/course_descriptions/C08-GSIM-MSc-01.aspx



First graduates of the joint ITC–University of Twente MSc degree course Governance and Spatial Information Management

First MSc Fair Organised at ITC

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To mark the start of the process when the MSc candidates select their research topics, a new phenomenon has been introduced at ITC: the MSc Fair. This was organised for the first time on 12 March 2008.

A new structure consisting of four distinct blocks has been introduced for the MSc degree programme Geo-Information Science and Earth Observation (see Figure 1). The aim is to:

- give the students more control over the choices they make
- hand over control of the learning process to the students
- stimulate multidisciplinary research
- strengthen the link between education and research at ITC.

The MSc candidates of the 2007 intake are the first to experience this new set-up.

Seven courses are offered in the MSc degree programme (see Figure 2). Although the development of research skills is given attention throughout the programme, the MSc Fair marks the start of the selection process concerning the MSc research topics. Previously, students had been able to attend the MSc Day (last Wednesday of January), where selected participants of the preceding

MSc batch presented their research (a few weeks before the MSc examinations) and, by doing so, were in the race for the Klaas Jan Beek award, the prize for the best MSc thesis that is presented annually at the opening of the academic year.

The MSc Fair marked the start of the interaction between the MSc candidates and research staff concerning the choice of MSc research topics. The three sessions presenting the 15 research themes, together with the interactive poster session and the lively panel discussion, were geared to inspire the MSc course participants to formulate their own individual research goals. (The 15 presentations of the research themes are posted on the research web pages: see link in Figure 3).

The fair was a great success. At various times throughout the day, the auditorium proved too small to accommodate the public, and students and staff were engaged in elaborate discussions near the poster boards - so much so that they had to be called for the next session. The panel discussion at the end triggered discussion between students and staff on issues such as:

- How will I be prepared for the MSc phase?
- What are the benefits and pitfalls of interdisciplinary research?
- Are research and applied science contradictory?
- Can MSc students succeed in publishing their results?

These questions were raised by Dr David Rossiter, Professor Anne van der Veen, Dr Jantien Stoter and Professor Alfred Stein, respectively.

The first MSc Fair, a day full of inspiring moments, was concluded with drinks and snacks in the Annex.

Each MSc candidate is required to design, undertake and report on research where geo-information science and earth observation is used to develop techniques and/or deal with a related application problem, usually within the field of interest of the course. The precise focus of the research is determined by the candidate and supervising staff in dialogue, and falls within the scope of the research themes of the Institute (see Figure 3). The student adviser guides the MSc students in the selection process, and sees to it that the students' interests are best served. This means that stu-

Figure 1

Block	Modules	
1	1-4	Principles of geo-information science and earth observation Introduction and principles of remote sensing, GIS and databases
2	5-10	Application of geo-information science and earth observation in the field of interest Task-supported learning in the technical or application domain
3	11-15	Research orientation Research skills and methods, two advanced subjects of choice, engagement in a research project assignment, and proposal writing
4	16-23	Individual research Executing research and writing an MSc thesis

dents, provided they are properly qualified, can also select a topic in a neighbouring field of interest. Where relevant, MSc research topics are related to the topics of candidates following other courses, thereby stimulating interdisciplinary research. In exceptional cases, it is possible for a student to propose a special topic that fits one of the 15 research themes. All MSc candidates present their proposals at the end of August before a thesis admission committee. Interaction between MSc and PhD candidates and research staff is stimulated during the individual research phase. For the MSc candidates, the mid-term presentation in early November serves as an important check to see whether they are on the right track. The MSc research phase (six months) concludes with the presentation and defence of the MSc thesis (early March 2009 for present cohort).

The bridge between the taught part of the MSc course and the individual research period is made in Block 3 (see Figure 1). At the start of Block 3, the Postgraduate Diploma students enter their final assignment. They have followed the taught part (modules 1 to 10) together with the MSc candidates. Following the MSc Fair, the MSc candidates have to make their own choices for Block 3 (research skills: module 11, mandatory; modules 12 and 13: two advanced subjects of choice; and a (multidisciplinary) two-week group research project during modules 14 and 15). They have to submit these reasoned choices, together with their envisaged MSc topics (pre-proposal), to their course directors before the end of April. After approval of the submissions, each MSc student is assigned two supervisors and then the long and often rocky road towards the MSc degree summit starts.

We wish all the participants of the 2007 intake the best of luck and success in their work!

Figure 2

Seven courses are offered in the MSc degree programme in Geo-Information Science and Earth Observation

- Applied Earth Sciences (AES)
- Geoinformatics (GFM)
- Governance and Spatial Information Management (GSIM)
- Land Administration (LA)
- Natural Resources Management (NRM)
- Urban Planning and Management (UPM)
- Water Resources and Environmental Management (WREM)

For more information on each course, see:
<http://www.itc.nl/education/courses/default.aspx>

Figure 3

Research Themes

- Biodiversity in fragmenting landscapes (BIOFRAG)
- Carbon cycle and climate change (C-Cycle)
- Disaster management (DMAN)
- Earth systems science (ESS)
- Food security and environmental sustainability (FS-ES)
- Governance and integrated spatial assessment (GISA)
- Informed multilevel governance of urban regions (MUG)
- Land administration for informed governance (LA)
- Managing water scarcity (MWS)
- Spatial data infrastructure technology (SDI-T)
- Spatio-temporal data integration and visualisation (STDIV)
- Stochastic methods for image mining and data quality (DAQUAL)
- Sustainable urban-regional dynamics (SURD)
- Utilisation of sensor developments for efficient topographic mapping (TOPMAP)
- Water cycle and climate (WCC)

For more information on each research theme, see:
<http://www.itc.nl/research/themes.asp>



MSc Fair: The interactive poster session during the first MSc Fair

events

ISPRS Workshop on Geo-Information and Decision Support Systems

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The two-day workshop Geo-Information and Decision Support Systems (6-7 January 2008) was organised by the ISPRS WG II/IVI on Spatial Planning and Decision Support Systems, the Iranian National Cartographic Centre (NCC), the Iranian Space Agency (ISA), the Iranian Statistical Centre (ISC), the University of Tehran, the KNT University of Technology, and the International Institute for Geo-Information Science and Earth Observation (ITC). The workshop took place at the NCC premises in Tehran, Iran.

The overall objective of this conference was to enhance the role of GIS and remote sensing in management and decision-making processes. Remote sensing and geospatial information technology offer tremendous potential for capturing data through a variety of earth observation platforms, as well as for integrating/relating them through their common spatial denominator. They offer appropriate technology for data management, information extraction, routine manipulation and visualisation. However, they lack the necessary analytical capabilities to support decision and management processes. For improved decision making, the required tools, techniques, models and decision-making procedure have to be integrated in a user-friendly information processing system called the integrated spatial planning and decision support system. Within this context, the conference tried to create an international forum to enhance the role of GIS and remote sensing in management activities such as planning, decision making, and the moni-

toring and evaluation of processes supporting the sustainable development of resources.

The workshop was attended by delegates from Turkey, Austria, China, Russia, Germany and the Netherlands. Altogether 41 oral papers and 35 poster papers were selected from the 150 or so abstracts received, and these were presented in the plenary and parallel sessions. Despite the severe weather conditions, around 250 people attended the meeting.



ITC rector Professor Martien Molenaar (chair) and Dr Ali Sharifi (co-chair) at the opening session of the conference



The official opening of the workshop Geo-Information and Decision Support Systems



The workshop was attended by delegates from Turkey, Austria, China, Russia, Germany and the Netherlands

partnership news

Memorandum of Understanding Signed with State Key Laboratory for Disaster Prevention

Anneke Nikijuluw

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The State Key Laboratory for Disaster Prevention of the Chengdu University of Technology (CDUT-SKLG) was established in 1991. Ever since, the laboratory has worked with partners from academia and industry to develop integrated research on geohazards. Through project implementation, SKLGP has made continuous efforts to eliminate the threats to the environment in China, mostly in southwest China.

SKLGP has built a very competent and dedicated team of professionals. Not only do they conduct (perform) research into geohazard prevention and geo-environmental protection, but they also facilitate the implementation of the research results. Still, there is a gap in applying advanced technical aspects of the work, especially in the use of GIS and remote sensing for hazard and risk assessment. Therefore there is a great need to upgrade the knowledge and to educate staff and students in this area in order to strengthen the laboratory. This enables CDUT-SKLG to keep playing a key role, not only in China but also internationally.

ITC and CDUT share an interest in the application of geo-information science and earth observation to disaster management through the United Nations University-ITC School for Disaster Geo-Information Management (UNU-ITC DGIM) and the CDUT State Key Laboratory of Geohazards Prevention. Dr Niek Rengers was invited to CDUT-SKLDLP as a visiting professor and it is through him that the contacts were made.

The preparations for the visit and composing the text of the Memorandum of Understanding took some time. Eventually a date was set and Professor Martin Hale and Dr Cees van Westen visited Chengdu from 13 to 16 December 2007, together with Niek Rengers.



International Cooperation between CDUT and ITC
on Research and Capacity Building
14 Dec 2007, Chengdu, China



The Memorandum of Understanding was signed in the presence of Professor Huang Runqiu, Dr Tang Chuan, Dr Xu Qiang, Dr Li Tiabin, Dr Zeqin Li, Professor Martin Hale and Dr Cees van Westen

The Memorandum of Understanding was signed in the presence of Professor Huang Runqiu, Dr Tang Chuan, Dr Xu Qiang, Dr Li Tiabin, Dr Zeqin Li, Professor Martin Hale and Dr Cees van Westen. In April 2008, Dr Tang Chuan and Dr Xu Qiang will visit ITC to discuss further collaboration in more detail.



SKLDP and ITC staff proposing a toast to a fruitful cooperation

For more information about the
UNU-ITC School for Disaster
Geo-Information Management,
please refer to
www.itc.nl/unu/dgim

Joint Course with GSI and NRSA

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From 12 to 19 January 2008, ITC, together with GSI and NRSA, India, conducted the course Application of High-Resolution Imagery for Landslide Inventory, Hazard and Risk Management. ITC's Dr Cees van Westen and Dr Norman Kerle were involved in the teaching. They both gave a presentation on the first day of the workshop on landslide inventory, hazard and risk management under the RECLAIM project.

As part of this joint course, several fieldwork areas were visited. The first destination was Joshimath, located along one of the source rivers of the Ganges, close to one of the four pilgrimage sites for Hindus in the high Himalaya. A group of 30 participants (including the whole RECLAIM group) took part in the field trip, and it took them about 12 hours to reach their destination. The purpose of this visit was to evaluate different aspects of a recent landslide affecting the road and nearby army camp. The results were presented to the local authorities in the auditorium of the army camp. There was keen interest on the part of the present stakeholders in the landslide problem and possible solutions.

Afterwards, the participants travelled from Joshimath along the Alaknanda River to Chamoli, and then to the next main river and the pilgrimage site Okhimath. Along the way, the group visited a large landslide that had occurred a few months earlier and had almost blocked the entire valley. Around Okhimath, along the Mandakini River, is the area where Tapas Martha (PhD NRSA-ITC) performs his fieldwork. A severe landslide occurred in 1998, blocking the river and destroying several villages, even on the other side of the river.



In 1998 a very large landslide occurred around Okhimath, along the Mandakini River, blocking the river and destroying several villages, even on the other side of the river

The last visit was to the fieldwork area along the Mandakini River. This is the study area of Iswar Das (PhD IIRS-ITC). Rain was falling on the day of the visit and the slopes were reacting directly with small landslides. One of the cars was nearly hit by a rockfall that came down on the road just a few meters ahead. As the drivers were afraid of continuing, it was decided to work in the downstream area, around Bhatwani.

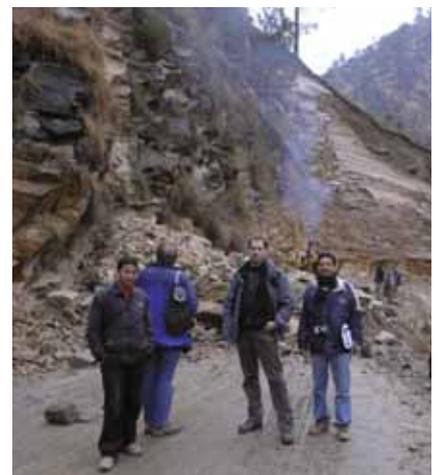
All in all it was an eventful and rewarding joint course, visiting the fieldwork areas of the PhD students and discussing their progress on site. The course was concluded with dinner and drinks offered by GSI.



Visit to the Bagariya River, upstream of Uttarkashi: on this rainy day the slopes were reacting directly with small landslides



The landslide that nearly hit us all



The purpose of this visit was to evaluate different aspects of a recent landslide that had affected the road and nearby army camp

Joint Education IIRS-ITC: Geo-Hazards Course

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On 9 January 2008, Dr Cees van Westen chaired the examination committee of five MSc students of the joint Geo-Hazards course (batch 2006-2008). All students performed well and obtained their degrees, which they received at the graduation ceremony on 11 January, alongside their fellow students of the Geoinformatics course.

While at the Indian Institute of Remote Sensing (IIRS), Dehra Dun, India, Dr van Westen also met the new group of seven IIRS students who are now at ITC for a three-month period as part of the joint education programme. All students have provided their own funding.

Point of Interest

At the moment, IIRS is restructuring the current Geo-Hazards course and has decided to offer only three specialisations:

- the hydro-meteorological specialisation
- the geological specialisation
- the environmental specialisation.

The course set-up is currently under review by a nine-strong committee headed by the person in charge of education quality assurance at IIRS. It is also the intention to synchronise the course in 2009 with the Geo-Hazards course at ITC. Both courses will then have the same starting date.



Graduates of the joint IIRS-ITC Geo-Hazards course (batch 2006-2008)

For more information about the MSc degree course Geo-information Science and Earth Observation for Geo-Hazards, please refer to www.itc.nl/education/courses/disastermgmt.aspx

Visit State Company of Geological Survey and Mining of Iraq

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The Dutch government recently organised a conference in The Hague on the assistance of the Netherlands in helping to rebuild Iraq. During the course of this meeting, Dr K.S. Al-Bassam, director-general of the State Company of Geological Survey and Mining of Iraq (GEOSURV-IRAQ), paid a surprise visit to ITC on 28 January to discuss the revival of the collaboration between ITC and GEOSURV-IRAQ that in the past had led to the training of GEOSURV-IRAQ staff - staff currently still in active service.

Discussions progressed smoothly and efficiently, and resulted in a Memorandum of Understanding confirming the intentions of ITC and GEOSURV-IRAQ and constituting the enabling vehicle to develop and implement mutually beneficial and agreed initiatives, with the training of GEOSURV-IRAQ staff being a priority.



The Memorandum of Understanding was signed by Professor Molenaar on behalf of ITC and by Dr Al-Bassam on behalf of GEOSURV-IRAQ

Graduation of Second Batch of GISnaturem students in Ghana

Louise van Leeuwen

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March 28 was an important day for eight young Ghanaians: after 18 months of hard work and seemingly endless struggle they were called on to the podium in the KNUST auditorium to receive their MSc degrees in front of proud relatives, KNUST staff and numerous students. This was the second group of students from the joint course in GIS for Natural Resource Management (GISnaturem). They had started in September 2006 in Kumasi, arrived in the Netherlands in January 2007 to follow modules 6 to 14 at ITC, and returned to Kumasi for fieldwork and their research period.

They had worked hard and it had not always been easy. In January, the change from warm sunny Ghana to cold dark Enschede had been especially difficult. One student once confessed that it wasn't just the cold that had made them shiver - they had come prepared for that - it was the fact that there was hardly any sun in those winter months that had made them sad and homesick. Fortunately, this passed quickly as they settled down to enjoy the summer months and the flowers in the Netherlands.

They chose interesting and relevant topics for their MSc research and developed their research proposals at ITC. This done, it was time to go home and do their fieldwork in a more familiar environment. They ran after butterflies, explored what was left after fires had ravaged the forests, bothered farmers with long questionnaires, measured trees, and made long bike tours in search of fuelwood. Under the guidance of two supervisors, one from KNUST and one from ITC, they carried out their research and wrote their theses. And these they successfully defended on 26 and 27 March.



The second group (2006-2008) of graduates from the joint course in GIS for Natural Resource Management

And there they were, in the KNUST auditorium, waiting to get their degrees. Suddenly it was all over: their time as students, the struggle to get that one image properly corrected, the stress to mail that particular chapter to the ITC supervisor, the worry about missing a crucial deadline, life in the guesthouse with their pals, the friendly interaction with the KNUST staff. When they received their MSc degrees on the morning of 28 March,

Daniel, Steve, Thomas, Yakubu, Stephen, Louis, Mawuli and Raymond were following in the footsteps of many predecessors - not simply last year's GISnaturem group but also thousands of other ITC alumni.

The formal ceremony attracted a large audience, including the vice-chancellor and pro-vice-chancellor of the university, numerous staff and many students. There were a couple



Plant a tree and save a life: the graduates contributing to a healthy environment



of speeches and then the degrees were presented. After the formalities, there were drinks and food. But before the food could be enjoyed, one more job had to be done. They had to make their contribution to a healthy environment: they had plant their trees. As the Ghanaians say:

"Plant a tree and save a life." So off to the site where last year's GISnaturem graduates had also planted their trees. Very carefully, the fragile young trees were planted and watered, a promise for a healthy environment. We hope that, just as these

young saplings will grow into big trees, so too the young graduates will grow into big men who will contribute to an environmentally healthy country. We wish them all the best for the future!

For more information about the International MSc course GIS for Natural Resource Management, please refer to www.itc.nl/education/courses/naturalresources.aspx

ITC Signs MoU with Geomatics Business Industry in China and the Netherlands

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ITC has been collaborating with the Heilongjiang Bureau of Surveying and Mapping in Harbin, northeast China, since 2000. A considerable number of Bureau staff are ITC graduates, having successfully completed Master or MSc studies at the Institute. In addition, several tailor-made courses and a range of study tours have been jointly organised by ITC and the Bureau for many geomatics professionals from all over China.

The Heilongjiang Bureau of Surveying and Mapping is a highly active and innovative organisation, and listed among its activities is the establishment in 2003 of a geomatics industrial park. The International High-Level Forum on Outsourcing Services and Geomatics Industry Development held in June 2007 signalled the official opening of the complex, and ITC was invited to present a keynote address at this event.

Not only is the Heilongjiang Geomatics Industrial Park the only domestic geomatics park, it is most likely the largest geomatics park in the world. In 2006, the 30 enterprises operating in the park had a total turnover of €10 million, with €3 million in overseas-funded projects.

Within the current (11th) five-year plan of China, the Geomatics Industrial Park pursues a number of ambitious objectives:

- 2000 people employed, with an annual turnover of €30 million, of which €14 million from export earnings
- 100 to 150 companies operating in the park
- two keylabs, two geomatics project centres with international collaboration partnerships
- organisation by the Northeast Institute of Wuhan University of training and education for some 3,000 technicians, 150 high-level developers/researchers and 30 information services pioneers.



The Geomatics Business Park located in Marknesse in the Northeast Polder, the Netherlands



The Heilongjiang Geomatics Industrial Park in Harbin, China

During various exchange visits to ITC by staff from the Heilongjiang Bureau of Surveying and Mapping and the Geomatics Industrial Park, regular visits have been made to the Geomatics Business Park located in Marknesse in the Northeast Polder (the Dutch equivalent of the Heilongjiang Geomatics Industrial Park), close to the National Aerospace Laboratory, and meetings convened with the staff. The Geomatics Business Park is a business and science park for companies and knowledge institutions that operate at the interface of remote sensing, geosciences and information technology - a unique collaboration of organisations that develop and market innovative geo-information products and services on the basis of remote sensing data and the like. This park offers innovative and knowledge-intensive companies operating in this market optimal access to state-of-the-art knowledge, technology and facilities, and challenging opportunities for cooperation. It is the most important centre in the Netherlands for knowledge development and the delivery of operational geo-information products and services based on remote sensing (www.geomaticspark.com). The companies involved currently provide value-added products and services related to water management, air quality, coastal zone management, off-shore engineering, land use and agribusiness.

These exchanges have made the various parties aware of the opportunities for collaborating on the development of products and services, worldwide market potential, scientific information and knowledge exchange, and capacity building. To officially consolidate these opportunities, the various parties have signed a Memorandum of Understanding to form an official vehicle to enable the development and implementation of mutually beneficial and agreed initiatives. The document was signed by representatives of the four organisations during a special ceremony at the Heilongjiang Geomatics Industrial Park in Harbin, China, on 15 February. It is anticipated that the first collaborative initiatives will be devel-

oped and carried out with support from programmes of the Dutch Ministry of Economic Affairs, thus enhancing scientific and economic collaboration between China and the Netherlands.



The Memorandum of Understanding was signed during a special ceremony at the Heilongjiang Geomatics Industrial Park in Harbin on 15 February



The International High-Level Forum on Outsourcing Services and Geomatics Industry Development in June 2007 signalled the official opening of the industrial park

Interview with Tsehaie Woldai, President AARSE

ITC News

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Could you tell us how AARSE came into being? When was it started? And what was the vision behind it?

The African Association of Remote Sensing of the Environment (AARSE) was formed in August 1992 during an international conference organised by the United Nations in cooperation

with the USA government. The conference was on Satellite Remote Sensing for Resources Management, Environmental Assessment and Global Changes Studies: Needs and Applications of Developing Countries and was held in Boulder, Colorado, USA. Among the reasons for forming

the Association were the following:

- the reported benefits being derived from the application of remote sensing and the contribution being made towards the indigenous development of these technologies by participants from many countries

- the prevailing low-level contribution of the natural resources to the socio-economic development of most African countries
- the resource and environmental management practice in Africa, which was resulting in the unprecedented depletion, destruction and degradation of the resource base
- the inadequate human and institutional capacity to redress the situation in order to evolve a sustainable development strategy.”

What is the organisational structure of AARSE? How does it undertake its various activities?

AARSE is composed of three main bodies: the Board of Trustees, the Executive Council and the Advisory Council Members. The Board of Trustees, which is composed of Africans and other dedicated members from outside the continent, looks after the well-being and the proper functioning of the Association. The Executive Council is composed of the president, the vice-presidents, the secretary-general, the treasurer, the conference president, the editor, the auditor, and one representative from a national society that has formally endorsed the AARSE constitution and fulfils the membership obligations.

The AARSE vice-presidents represent the five sub-regions of Africa: the North African Region, the West African Region, the Central African Region, the East African Region and the South African Region. Essentially, the selection of the vice-presidents is based on the need to reach out more widely to African scientists, engineers and other professionals, to register their membership of the Association, and to facilitate communication.

What are the key achievements of AARSE?

The formulation of the Association 15 years ago is finally gaining a measure of recognition. Moving from 10 foundation members in August 1992, the Association could proudly claim over 1000 members from Africa and abroad in November 2007. So far, it has gained recognition from the UN economic Commission for Africa (UN-ECA) and the African Union. In 1994, AARSE became a registered member of the International Society of Photogrammetry and Remote Sensing (ISPRS). Furthermore, in 1997 AARSE was co-opted as a member of the Standing Preparatory Committee for the UN Regional Cartographic Conference in Africa. During this conference, AARSE was honoured to become the umbrella organisation for all activities in remote sensing, GIS and the environment in Africa.

In the last few years, AARSE has worked closely with, and has received the support of, many international institutions and organisations, such as ITC, UNOOSA, UNESCO, UN-FAO, UNEP, the IEEE Geoscience and Remote Sensing Society, the Canadian Space Agency (CSA), the European Space Agency (ESA) and NASA.

In 2004, AARSE became an organisational member of GEOSS. Its active participation in the International Council for Science (ICSU) Regional Office for Africa, the UNESCO-GOOSE Programme, UNESCO-IYPE, UN-ECA CODIST (Committee on Development Information, Science and Technology), the African Reference Programme, Mapping Africa for Africa, and other initiatives in the African continent, as well as the unparalleled open support it enjoys from various remote sensing and GIS institutions and governments in Africa, is a reflection of its success and commitment to the betterment of Africa. This is not just about prestige. There is recognition that space is an essential tool for decision making and is a useful tool for Africa. These are no isolated developments. Across Africa, there are more than 20 national space agencies (also referred to as national remote sensing agencies), and there are also regional centres and universities with special expertise in this field. Nearly all are connected (as institutional members) to AARSE.

How does AARSE implement its objectives?

AARSE holds a biannual conference, annual workshops, symposia and tutorials to exchange and discuss ideas related to the usage of remotely sensed data and GIS in environmental and natural resources assessment in Africa and elsewhere. So far, it has undertaken:

- six AARSE conferences (Harare, Zimbabwe; Abidjan, Ivory Coast; Cape Town, South Africa; Abuja, Nigeria; Nairobi, Kenya; Cairo, Egypt), with the next one planned for Accra, Ghana, in October 2008



The Local Organizing Committee, International Organizing Committee and the Executive Council of AARSE with the 6th AARSE Conference Award winners for the best paper presentation, best poster and best paper by a young Scientist in Cairo, Egypt

- six AFRICAGIS conferences in collaboration with its partner organisation EIS-Africa in various parts of Africa (Ghana, Botswana, Nairobi, Senegal, South Africa, Burkina Faso)
- remote sensing workshops in collaboration with ISPRS (Benin, Tanzania) and GEOS (South Africa, Burkina Faso).

Furthermore, AARSE

- has participated as organiser of the AGIT conference at the University of Salzburg, Austria
- has been instrumental in the initiation of the African Space Science and Technology initiative
- encourages the creation of national societies/associations in each African country and the holding of seminars, symposia, workshops on the use of the technology in problems related to their countries
- promotes multinational training programmes dealing with the technology, system maintenance, operations and services for members and associate members in cooperation with and sponsored by appropriate institutions
- represents the African geo-information user communities in major space-related international activities

ties

- has signed a Memorandum of Understanding with major African and international organisations in the field of geo-information technology.

What are the future plans of AARSE?

AARSE will continue its advocacy for the establishment of an African Space Agency. It will also build on its ongoing initiative in the African Resources Management Satellite Constellation Programmes.

It will also pursue the best funding mechanisms, collaboration and networking actions. It is seeking to identify a network of excellence to link African platforms (e.g. AARSE, African Space Agency Initiative, ARMS) with other platforms (EC, ESA, CSA, NASA, etc.) in order to establish a dialogue with the following objectives:

- development of a policy framework
- development of an African space strategy
- joint plan of action for research (adaptation, validation of existing services)
- gap analysis
- new developments through synergies between African and other international services

international services

- outreach and capacity building (near-real time exercises, training measures)
- regular monitoring and evaluation of progress (in respect to plan of action).



AARSE 5th Conference in Nairobi, Kenya

More information about AARSE can be found at www.itc.nl/aarse

staff news

Welcome to ITC	Ms L. Pei	Staff member Support Unit E-learning, Bureau Education Affairs	1 January 2008
	Dr M. Bockarjova	Post-doc Department of Urban and Regional Planning and Geo-information Management	1 February 2008
Staff leaving	Ir S. Slob	Department Earth Systems Analysis	1 January 2008
	E.L. Poppe	Department Geo-information Processing	1 January 2008

In Memoriam: Emmanuel Adjei Owusu (1963–2008)

Paul van Dijk

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Emmanuel Adjei Owusu was born on 24 November 1963 in Tema, Ghana. He started his education at Aggrey Road Elementary School, Tema, and went on to West Africa Secondary School in Accra. He entered the University of Ghana, Legon, in 1987 to read geology with physics, and obtained his BSc in 1990. Through various positions, he developed further as a keen exploration geologist engaged mainly in gold prospecting throughout Ghana. Besides that, he also held teaching assignments, most recently at Western University in Tarkwa and Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi.



Emmanuel Owusu

Emma, as he was affectionately known, first came to ITC in 1997 to study for his MSc degree in mineral exploration at the ITC location then in Delft. His first steps in the international scientific community were successful and in 1999 resulted in an MSc degree with the grade "very good". Alongside this formal qualification, he also earned a multitude of friends among staff, fellow students and countrymen. In line with this professional development, he applied for doctorate studies in 2004, and was granted a scholarship by the Netherlands Fellowship Programme a year later. Back at ITC, now in Enschede, he committed himself to research on the gold potential of Ghana. The working title of his research, which was supervised by Professor Martin Hale and Dr John Carranza, was *Mineral Resource Assessment in a Poorly Explored Region: A Case Study from Ghana*. He was generating new knowledge about mineral exploration; he was on track for gaining the degree of Doctor of Philosophy; and he was deploying and refining his considerable

skills in gold exploration at an exceptionally exciting and prosperous time in the minerals industry. His professional future could hardly have been brighter.

Alongside research work at ITC that commanded the respect of his fellow scientists, Emma made sincere friendships with fellow researchers from Africa, Asia, Latin America and Europe. Through them, he had a global perspective on life and an international network on which he could rely. In large numbers, this diverse community - including the rector, many ITC staff, and the local Ghanaian community in Enschede, among whom Emma was well-known and highly regarded - was united in its expression of grief over Emma's tragic loss in a memorial service on Saturday, 19 January 2008. This same day, the funeral was held in Ghana, attended by ITC's vice-rector, Professor Martin Hale. The ITC PhD community (Emma was elected secretary of its representative committee in 2006) said: "He was cherished for his inherent sociable nature, maturity,

kindness and love, and his intellect when dealing with both scientific and social issues; those who were very close to him feel that they have lost not only a friend but a father whom they will dearly miss."

Despite these friendships and his demanding programme at ITC, he returned frequently to Ghana to ensure that his family enjoyed the caring support of their head of household. It is a remarkable sign of Emma's caring nature that, immediately prior to his departure for Ghana, he had just welcomed some newly arrived students at Enschede railway station. He could not visit his family over the Christmas break, and so went over to see them as soon as the New Year had started. It was during his stay in Ghana that he and his cousin Michael Acheampong were involved in a fatal car accident on 8 January 2008. Emmanuel leaves a wife, Yvonne, and two children, Jesse and Jonathan.

life after itc

ITC Alumna Director of Royal Khao Hin Sorn Project in Thailand

Marjan Kreijns

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ITC alumna, Ms Suda Swuttanakoon, is the director of a very special project in Thailand. It is one of the Royal Development Projects.

In February 2008, I visited the Khao Hin Sorn Royal Development Study Centre with my family and Dr Maria Bastidas (ITC alumna from Venezuela). Ms Suda explained that before it was set up the forest in the region had been mostly destroyed and the soil was badly degraded. As she went on to explain: "His Majesty saw the need to rehabilitate the soil as it had become sandy due to the continuous cultivation of field crops. Therefore, the main activity of this centre is to restore soil fertility."

Since the early days of his reign, His Majesty King Bhumibol Adulyadej of Thailand has visited numerous rural areas to see how people live. These visits inspired him to launch the Royal Development Projects to improve the lives of the people and promote the sustainable use of natural resources. The ultimate objective of these six projects is to tackle agricultural problems on a regional basis and enable Thai farmers to become self-reliant and self-confident.

Opened on 8 August 1979, Khao Hin Sorn is located about 100 km south-east of Bangkok in the Phanom Sarakham district of Chachoengsao province. The centre covers 1,900 rai and employs 269 workers.

A tour of the study centre highlighted interesting case studies of pioneering work in agricultural research and development, environmental rehabilitation and conservation, and social,



economic and community development, where the introduction of simple technology and know-how accessible to a grassroots population was

helping villagers and farmers to become self-sufficient.

We really enjoyed the visit - as well as the wonderful lunch at the centre!



Contact information:

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New Year's Reception at Renovated Residence of Dutch Ambassador in Thailand

Marjan Kreijns

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Since 1949, the compound of the Dutch embassy has been located in the middle of the busy Pathumwan district. It forms a beautiful park and an exceptional green oasis of trees, space and tranquillity amidst the hustle and bustle of the densely populated Bangkok metropolis.

In 2005, the construction of a new chancellery was completed in the compound and renovations started on the ambassador's residence. The beautiful villa was modernised, while maintaining its original architectural features. At the end of 2007, Mr Pieter Marres, the ambassador, took up residence again in the now-renovated villa and on 15 January he invited the Netherlands alumni to a New Year's reception. It goes without saying that it was a great honour for the alumni to be one of the first groups welcomed to the renovated residence.

Some 70 Netherlands alumni attended the reception hosted by the ambassador and NAAT (Netherlands Alumni Association of Thailand). The ITC chapter of NAAT was well represented by 20 attendees, who had lively discussions and enjoyed the buffet dinner.



The venue of the alumni reception: the residence of the Dutch ambassador in Thailand

More information

The ITC alumni in Thailand are very active. If you want to join the ITC alumni chapter (of NAAT), please contact the general secretary, Mrs Parida Kuneepong
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For general questions about ITC's activities in Thailand or for information on how to apply for ITC courses, please contact the ITC representative in Thailand, Mrs Marjan Kreijns
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T: +66 (0)2 3913663



Some 70 Netherlands alumni attended the reception hosted by the ambassador and the Netherlands Alumni Association of Thailand

Successful Refresher Course on Targeting Urban Poverty Alleviation in Sub-Sahara Africa

Alphonse Kyessi and Amin Mtoure
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A 14-day refresher course sponsored by NUFFIC and entitled Targeting Urban Poverty Alleviation in Sub-Sahara Africa was held in Dar-es-Salaam, Tanzania, from 19 to 31 November 2007. The course was conducted by Ardhi University in collaboration with ITC. Course coordination and execution was undertaken by Dr Javier Martínez and Dr Sherif Amer (ITC), Dr Alphonse Kyessi (Ardhi University,) and Dr Gora Mboup (UN-Habitat, GUO, Nairobi).

In total 20 participants from Ethiopia, Ghana, Kenya, Tanzania, Uganda and Zambia completed the course.

The main topics covered in the course included urban poverty dimensions and alleviation strategies; urban and intra-urban poverty indicators; data sources, potentials and limitations; global monitoring tools; and targeting urban poverty and mapping. The content included theoretical and practical approaches to urban environmental planning and management, with the focus mainly on developing countries, particularly in the Southern Sahara region. In the first week, the participants were exposed to sharing experiences concerning urban poverty/indicators, targeting the urban poverty dimensions and poverty reduction strategies, acquisition of data sources, potentials and limitations, and global monitoring tools. Participants were given the opportunity to present country-based studies. This was very useful and offered new and unique ways of dealing with urban poverty alleviation/reduction. The second week was devoted mainly to the application of spatial tools for targeting urban poverty and mapping. Spatial data

analysis, modelling and visualisation were carried out using Arc-GIS software.

Since agencies and governments suffer from limited capacity and even a lack of urban managers, fast-growing urban areas in Africa, as well as developing countries in general, are facing challenges in controlling and managing urban poverty. Poverty mapping (the spatial representation and analysis of indicators of human wellbeing and poverty) is becoming an increasingly important instrument for investigating and discussing spatial, social, economic and environmental problems. Such an instrument could assist in mapping public resources with increased transparency.

The course was therefore timely as it enabled participants to improve their skills and be exposed to ideas and methods that would be useful in their work as urban managers. The need to target urban poverty alleviation for urban development and to incorpo-

rate stakeholders' concerns as a primary focus within urban planning and management is widely recognised.

While most of the alumni found that the topics concerning urban poverty dimensions and alleviation strategies and urban and intra-urban poverty/indicators refreshed the knowledge and experience gained during earlier studies at ITC, the topic on targeting urban poverty and mapping using Arc-GIS proved a real eye-opener.

A one-day excursion was organised to an informal settlement in Dar-es-Salaam: the Kinondoni district in the Hanna Nassif area. Here the participants were able to gain practical experience of poverty alleviation strategies and of management project activities. The Hanna Nassif area has made good progress in terms of urban poverty reduction and the participants were able to acquire first-hand experience of how the commu-



Course participants in class

nity has been involved in the settlement upgrading process. Hanna Nassif was therefore a best practice example for the course, and we the participants gained a lot of knowledge and experience to take back home and apply in improving the urban poverty reduction techniques in our own cities.

The course also gave participants an opportunity to go to Bagamoyo, a city of historical significance on the coast of the Indian Ocean. The one-day excursion allowed the participants to see efforts to conserve important cultural and historical aspects of the town for future generations. Bagamoyo was famous as a shipping point for the slave trade. In its vicinity are the ruins of Kaole, which serves as a good example of how environmental changes can undermine the sustainability of human settlements. The decline of Kaole has been attributed to such causes as the silting up of the estuary, the expansion of mangroves, and the increased salinity of the groundwater.

During the closing ceremony, the participants received a certificate of attendance and a bundle of materials for reference purposes. On behalf of all participants, a presentation was

made to thank the course coordinators and sponsors, as well as the supporting staff who had facilitated many of the course events during the two weeks.

According to the course evaluation, the course was successfully conducted. Participants expressed the view that the knowledge acquired during the course would be of great benefit to their home organisations. It has become evident that better information has the potential to contribute to poverty mapping and subsequently to decision making. Therefore, the challenge is for all participants to make an effort to use better tools and accurate information and thus arrive at strategies geared towards strategies targeting the alleviation of poverty and the development of sustainable cities in Africa. So we look forward to similar courses organised for alumni, as these would go a long way to helping us to become better strategic thinkers in the field of urban poverty alleviation in our urban areas.

We therefore thank ITC, Ardhi University, and the sponsors for bringing alumni together and for helping to build stronger ties and links within the South-South and North-South.



Poor housing in Tanzania



Water supply

The Philippines Joins the Community of ITC Alumni Associations

Regina S. Reyes
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The Philippines has finally joined the network of ITC alumni associations (IAA), as it formally organised the IAA Philippines during a meeting held on 17 March 2008 at the Cabalen Restaurant in Ortigas Center, Mandaluyong City. The meeting brought together both new and longstanding ITC graduates, spanning the years from 2004 to as far back as 1969.

The highlight of the meeting was the initial drafting of the charter of the IAA Philippines, and the selection of the interim members of the Executive Committee. Mr Federico Nadel, who attended a photogrammetry course (P1) at ITC in 1969, was chosen from the 16 ITC alumni present to be president. Mr Reynaldo Adorador, also a photogrammetry graduate but this time in 1977 (P1) and 1980 (P2), was elected vice-president, while Ms Regina Reyes, who followed the course Natural Resource Management, Planning and Coordination (NRM3) in 2002, was elected secretary. As agreed by the group, the IAA Philippines will be temporarily housed at Certeza Surveying & Aerophoto Systems Inc.

Among the immediate concerns of the IAA Philippines is the wish to become a chapter of the Netherlands Alumni Association (NAA) of the Philippines. The group was fortunate to have, in the person of Ms Lilia Raffles, a representative from the NAA Philippines present at the meeting. Next on the group's agenda will be the drafting of a work plan for the association.

The above gathering of ITC alumni would not have been possible without the help of Ms Marina Geurts and Mr Jeroen Verplanke, respectively the present and the past ITC alumni coordinator. Both have been very supportive in the group's efforts to reach out to all ITC graduates and organise the IAA Philippines. Many responded to the official invitation sent by the ITC alumni coordinator. And while a number wanted to join the gathering, their locations prevented this because most of the alumni are located outside Metro Manila and some have moved to other countries. Nevertheless, they have expressed their interest and support in organising the IAA Philippines.

With the formal organisation of the IAA Philippines, it is envisaged that closer and more frequent contact will be established between Filipino alumni and ITC, with a view to promoting knowledge sharing, particularly with regard to new technologies and methods.



IAA Philippines: (from left to right, sitting in the front row) Rhodora Gonzales, Federico Nadel (president), Reynaldo Adorador (vice-president) and Regina Reyes (IAA Philippines coordinator/secretary)

Interview with Ari Susanti

Marina Geurts

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The Alumni Office interviewed alumna Ari Susanti (MSc NRM 2003-2005) from Indonesia. Ari is member of the ITC Alumni Association of Indonesia and works as a lecturer for the Faculty of Forestry at Gadjah Mada University in Yogyakarta.

Why did you choose to study in the Netherlands and at ITC in particular?

The Netherlands offers various scholarship schemes, and ITC is the centre of excellence when it comes to applying GIS and remote sensing in various fields. One such field is planning and coordination in natural resources management, and the Institute introduces students to many planning tools. Furthermore, it provides an international working environment, since the students and staff come from all over the world.

Any particular memories of the ITC facilities and staff that you would like to share with our readers?

The facilities are excellent, in line with those of other higher education institutions in Enschede, and the staff members are very helpful. I would like to say a special thank-you to the staff in the library. They did a very good job. However, student housing still needs more attention, especially with regard to internet and public facilities. The housekeepers are very disciplined, getting up early to welcome the students on every Wednesday.

What are your experiences as a student?

The end-of-module party was my favourite event. I hardly ever missed it. My Indonesian friends gave me a middle name because of this. They called me Ari "party" Susanti. The International Evening was great. I met my husband, Raymond Matthijs, at

the International Evening held on 20 November 2004. He was a student at the University of Twente, in the Faculty of Political Science. And we got married on 1 March 2008!

The sports centre was nice, but the large number of students who wanted to take part meant the schedule was too tight. I had to work hard at ITC to meet the standards, to be professional, and to stay abreast of new technological developments and information technology.

Did living in the Netherlands come as a culture shock?

I experienced no culture shock when I first arrived in the Netherlands. Everything was OK. Perhaps this is because I was used to working with many and various people. It's also easier to get used to something that is ordered and systematic. The culture shock hit me when I went back to Indonesia!

Any memories of Dutch food, the Enschede shops or the weather?

In general, Dutch food is plain and I don't like it very much, except the milk, cheese and chocolate. Compared with prices here in my country, it is very cheap. During my study at ITC, I ate mainly Indonesian food, since there are many Asian shops (toko) around. Asian foods are quite expensive but they saved me from going hungry.

Winter was incredible! December 2003 was the first time I'd ever seen real snow. When I arrived in the Netherlands, my first impression was one of clean air and a clean environment.

Any advice for ITC?

There should be more schemes to enable graduates to continue studying

for a doctoral degree at ITC or at other higher education institutions in the Netherlands. I also feel that more information regarding such opportunities should be supplied and that developing joint research with the institutions where alumni work would be a good idea.



International Evening, 20 November 2004



NRM field trip, 28 October 2003



Having met in the Netherlands, Ari Susanti and Raymond Matthijs (alumnus of the University of Twente) got married on 1 March 2008

ITC Alumni India Meet

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Coinciding with the Map India 2008 conference, the ITC Alumni India Meet was held on Friday, 8 February 2008. The meet was organised at Greater Noida, an ultra-modern township near Delhi.

Apart from exchanging pleasantries, the alumni discussed various issues regarding ITC and alumni interaction, and possible ways of strengthening the alumni association.

It was noted that these days NFP fellowships are quite scarce and that other funding possibilities need to be pursued for Indian students. A strong suggestion was made to tap the resources in the now-emerging private sector economy in the country for sponsoring candidates for higher education and short courses at ITC.

Earlier, through the ITC-IIRS exhibition booth in Map India 2008, a large number of potential students were informed of the various courses and funding options. ITC shared the exhibition with IIRS and was pleased to publicise the two joint educational programmes that are currently offered (MSc in Geoinformatics and MSc in Geo-Hazards).

Among those attending the meet were Major General R.S. Tanwar, surveyor general of India; Brigadier R. Sivakumar, convener, NSDI; Mr P.S. Uttarwar, director, Delhi Development Authority; and Prof. Dr Mahavir, ITC alumni coordinator for India.

ITC was represented by Dr Luc Boerboom, Dr Javier Martinez and Mr John Horn. Incidentally, the occasion also served as an opportunity to celebrate Mr Horn's birthday.



ITC exhibition booth with Mr John Horn (ITC) and Dr S.K. Srivastav (IIRS)



Newly appointed surveyor general of India Rajendra Tanwar with colleague Ashok Prim (both ITC alumni)



National Exhibition Centre, Greater Noida, venue for the Map India 2008 conference



Conference registration at Map India 2008



ITC alumni and ITC staff

ITC Alumni Party, Tehran, Iran

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On the evening of 7 January 2008, an alumni party was organised at the premises of the National Cartographic Centre (NCC). ITC rector Professor Martien Molenaar and ITC professors John van Genderen, Alfred Stein, Anne van der Veen and Dr Ali Sharifi, together with over 50 ITC alumni, attended the party. Two alumni from ITC's early days were present: Mr Vali Tavana and Mr Roshani Moghadam, who studied at the Institute in 1957 and 1965, respectively.

The party was officially opened by Professor Molenaar and a delicious dinner was served. The alumni were encouraged to keep in touch or re-establish contact with ITC by supplying their current address details.

During his trip to Iran, the author of this article paid a visit to the Dutch embassy in Tehran and had a meeting over lunch with the Dutch ambassador, Mr Radinck J. van Vollenhoven. The importance of the alumni network was emphasised during the course of this meeting.

