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2009 number 2

introduction

Well, here it is in black in white. After many months of discussion and negotiation, the integration of ITC into the University of Twente is into its final lap and on 1 January 2010 the Institute will embark on a new phase in its history as a university faculty with special status. On the same date Professor Martien Molenaar will relinquish the baton, and here in *ITC News* you can make the acquaintance of his successor, Professor Tom Veldkamp (page 2). So come the New Year, comes a new setting and comes a new hand on the helm.

Despite these changes hovering on the horizon, as far as ITC's core processes of education, research and project services are concerned, it's very much business as usual. Page 12 highlights the course Multi-Hazard Risk Assessment, which has already attracted many professionals back to the classroom. And in the May-June period, the materials were also used in a distance education course, a learning format often more convenient for those whose family and work commitments keep them firmly "on site". In June too, participants responded enthusiastically to the workshop-style refresher course Sustainable Economic Development Conditions for Land Administration conducted at the Polytechnic of Namibia in Windhoek. Pages 10-12 plot the whole undertaking and may inspire some ideas of your own.

This time round, topics not only crisscross the geographical borders of our globe, but also range from the soil under foot (page 3) to the Moon above (page 14). In different ways, the two articles concerned demonstrate how much is owed to pioneers in earlier years and how far science has progressed and is still progressing.

Notwithstanding the wonders of modern-age colour photography, such is the evocative power of black-and-white that it seems to be enjoying quite a renaissance in the creative arts. What's more, there can't be many nooks and crannies where the giant panda is not immediately recognised as the icon of the World Wildlife Fund. A rare animal species to be sure, but thankfully steps are afoot to promote its well-being in terms of habitat and food resources, and hopefully reduce its rarity. This research is covered on page 8. But enough of page numbers – it might be an idea to simply work your way right through the whole issue. That way, you won't miss a thing!

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Prof. Dr. Ir. Tom (A.) Veldkamp
New Rector/Dean ITC

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The Supervisory Board of the International Institute for Geo-Information Science and Earth Observation (ITC) has, following the approval of the Executive Board of the University of Twente, appointed Prof. Dr. Ir. Tom (A.) Veldkamp (46) to be rector/dean of ITC.
He will succeed Prof. Dr. Ir. Martien Molenaar, who is stepping down as rector on 1 January 2010


Prof. Dr. Ir. Tom Veldkamp

Tom Veldkamp has a PhD in agricultural and environmental sciences from the Wageningen University and Research Centre (WUR). He is currently professor of land dynamics, head of the WUR Landscape Centre and interim scientific director of the Centre for Geo-Information and Remote Sensing (Environmental Science Group, WUR).

Tom Veldkamp will be appointed part-time professor of spatial environmental quality no later than 1 October 2009, after which he will be appointed rector/dean of ITC as of 1 January 2010.

Through his chair, Veldkamp hopes to make a contribution to the increasing attention directed towards the quality of the environment, particularly in developing countries. For Veldkamp, the challenge lies in developing and applying new scientific methods of remote sensing and geo-information in the field of environmental quality. The methods that will be developed will be applied at different scale levels: from a single square metre to regional and global scales.

Veldkamp will utilise the period up to 1 January to prepare for his rectorship. He will be intensively involved with the further embedding of ITC as the sixth, special, faculty within the University of Twente as of 1 January 2010. The specific character and mission of ITC after the embedment will be maintained. The new rector/dean has the special task of carrying out the ITC mission within the new setting of the Institute as faculty of the University of Twente. Furthermore, Veldkamp will contribute to embedding the ITC faculty in the Dutch academic domain and he will give shape to the intensification of cooperation within the University of Twente and with other Dutch universities.

ITC, Soil Science and Earth Observation

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On 11 July 1950, the charter of foundation of the International Training Centre for Aerial Survey (ITC), authorised by the Minister of Education and the Minister of Agriculture, was signed by the vice-chancellors of the universities of Delft and Wageningen.

The objective of ITC was to make modern cartography, based on aerial photography, instrumental in the social and economic development of under-developed countries.

The initiative came from W. Schermerhorn, with the strong support of C.H. Edelman. Schermerhorn used his international name and fame in geodesy and photogrammetry to establish ITC as the international expertise centre in his field. Edelman added his international prestige to the introduction at ITC of aerial photo interpretation techniques in soil survey, geology, geomorphology and forestry. Edelman's physiographical approach, which relates landscape features to soil conditions, provided the basis for the stereoscopic interpretation of panchromatic black-and-white aerial photographs. On his recommendation, P. Buringh was appointed to become the first ITC soil scientist, publishing and teaching a systematic approach to aerial photo interpretation in soil survey and land classification. Key elements of Buringh's method were:

1. the use of vertical aerial photographs and photo mosaics as basic maps for fieldwork
2. pedological photo analysis in combination with fieldwork to identify soil boundaries and soil mapping units with greater accuracy for both soil and land classifications, for purposes ranging from land cover and soil erosion studies to highway engineering applications
3. pedological aerial photo analysis by experienced soil surveyors prior to fieldwork: a cost-effective method in thinly populated areas with difficult access to identify potential areas for more detailed field and laboratory studies.

ITC's overseas experience started with soil surveys and forestry inventories in coastal New Guinea in the early 1950s and Buringh's survey methods developed in Iraq. His successors at ITC, including Veenenbos, Vink, Goosen, Zinck, Jette and many other colleagues, further developed and applied interpretation methods and new tools and techniques that were becoming available with new earth observation technology from air and space and from the computer-aided techniques of geodata analysis and processing: the geo-information systems (GIS). Techniques were also developed for the in situ on-the-ground characterisation and monitoring of soil conditions, including the use of spectrometry to correlate the airborne and spaceborne spectral signatures of objects and properties.

During the pilot stages, ITC staff were intimately involved in interpreting a range of newly captured images and merging multi-source remote sensing data with contextual information. Such sources included hand-held small-format cameras in microlight aircraft, the first simulated stereo images of the

Study of the soil in the field

The soil landscape. An example from central Kenya where red soils with stones lines are common on undulating topography

SPOT satellites (PEPS Campaign), multispectral and more recently also hyperspectral signatures from air and space, space shuttle (SIR)-carried and satellite (ERS, Radarsat)-carried radar signals and infrared signatures.

During the 1980s, ITC started developing its own GIS software (Usemap, ILWIS), not only for educational purposes but also to stimulate its application at low cost in the countries of origin of the ITC postgraduate students. Such new ITC educational tools were also conveniently introduced in the sister institutes in Asia, Africa and Latin America.

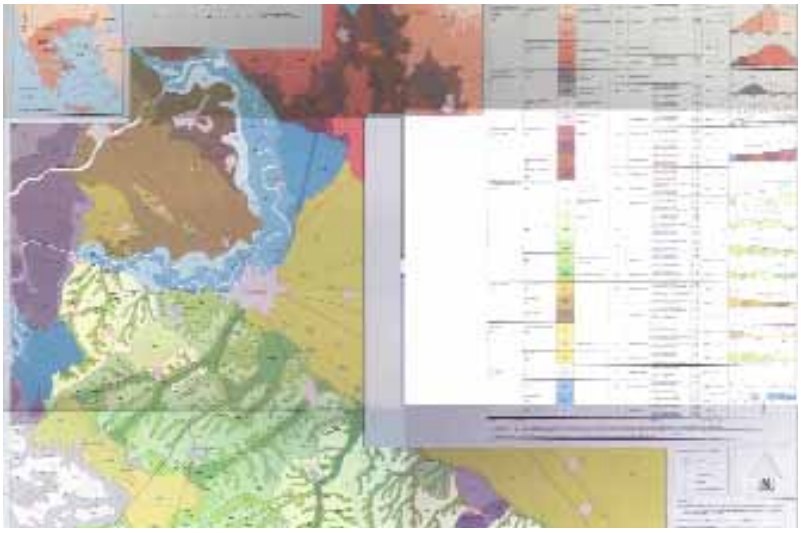
The GIS opportunities resulted primarily in the automated handling of traditionally collected soil data: the archiving, retrieval, analysis and presentation of soil survey information, and the matching with other (spatial) datasets. Since the original soil data collected did not always fit the requirements of such tools, ITC put great emphasis in its training programmes on updating soil information in the field and in the laboratory, in close collaboration with ISRIC.

The advent of modelling natural and human-induced environmental processes challenged the soil surveyors to provide up-to-date quantitative information on how soil properties and their spatial distribution change in both space and time. In earth observation, the spatial, spectral and temporal resolutions of satellite images of the Earth during the last two decades have increased rapidly. Also the "fuzziness" of soil boundaries has become part of the soil information base, ranging from sharp to very gradual boundaries between soils. In flat terrain, geomagnetic studies with ground-penetrating radar allowed the acquisition of additional subsurface spatial data on soil and hydrology.

Soil science acquired a role in data collection in a whole range of resource monitoring sciences. In the developed countries, soil survey institutions shifted their attention from agricultural resource inventories to environmental research. ITC focused on the developing countries with a substantial backlog in soil survey, and postgraduate training of soil surveyors continued, including the use of the modern geo-information tools – though presently within the broader context of land evaluation for sustainable land use planning and land management. Also the quantitative estimation of soil data influencing the status of complex and dynamic land qualities such as erosion hazard, crop yield, nutrient balances, soil pollution, salinisation and soil moisture supply benefited from the new remote sensing possibilities.

Since 1990, MSc and PhD research coordinated by Zinck has applied remote sensing techniques and GIS to the study of soil degradation (topsoil compaction, soil salinisation, integrated modelling), soil information for sustainable land management and land use planning, soil-related environmental processes and hazards (sheet erosion, gully erosion, mass movement vulnerability of natural ecosystems, erosion-sedimentation budgets), and radio-carbon dating of paleosols for the understanding of climate change.

In its turn, a more quantitative and process-oriented focus raised critical questions about reliability and variability in space and time of collected soil data (e.g. for erosion, surface runoff and pesticide leaching). Soil boundaries were revised regarding their fuzziness, and more accurately defined in the digital soil database, with the support of GPS and digital terrain models replacing the 3D block diagrams introduced by Goosen.



Part of the physiographic soil map of the Larissa area in central Greece

Large investments in development projects required clear statements about the reliability of the information on foreseeable variation of soils in space and time as part of environmental transformation processes. Geostatistical methods of error analysis that tested the reliability of model outputs of soil and landscape processes resulted in the formulation of cost-efficient sampling schemes for updating old soil information in the field.

Severe soil erosion in central Swaziland (Southern Africa)

All these technological and conceptual changes led to several name changes for ITC: from "Aerial Survey" to "Aero-Space Survey" during the 1980s and ultimately, with the development of advanced sensor systems in space, to "International Institute for Geo-Information Science and Earth Observation" in the 21st century, emphasising the fundamental role of geo-informatics, including geostatistics, for managing, modelling and analysing the often large and complex (remotely sensed) datasets.

Since its pioneering years, ITC has been focusing on creative interdisciplinary cooperation, making soil science instrumental in development studies. In the 1960s, at the request of UNESCO, the Dutch government established the ITC-UNESCO Centre for Integrated Surveys. Under the leadership of A.P.A. Vink, aerial photos became an integrating tool for cooperation between the biophysical and social disciplines. Landscape ecology, under the scientific leadership of I.S. Zonneveld, built important bridges between soil scientists, geographers and biologists. The systems approach to land evaluation for land use planning introduced by Bennema and Beek in the 1970s provided ITC soil scientists with an interdisciplinary framework for supporting dynamic models with more accurate data in order to better describe and predict natural and man-induced processes of change in the properties and qualities of the environmental conditions in space and time. With the growing awareness of the need for sustainable development, as well as for the mitigation of and adaptation to long-term processes of land degradation and climate change, earth observation tools and GIS became essential tools for environmental impact assessment.

Sustainable development includes disaster risk reduction and management. ITC has developed a strong curriculum in the spatial prediction of hazards and risks. Nevertheless, the underlying soil information is very scarce in developing countries and research is therefore being carried out to map relevant soil properties through integrating object-based and hyperspectral information from remote sensing images and combining climatic data, land use and land use change detection, and geomorphology derived from digital landscape data.

Soil science at ITC has become embedded in a team approach to bridge the gap between geo-information producers, potential users and decision makers. The ITC soils survey group started out as part of the natural resources department, with its main focus on the rural areas in developing countries. Nowadays, it has become part of the Department of Earth Systems Analysis, contributing primarily to the courses in applied earth sciences, but also contributing to other courses in geo-informatics, land administration, natural resources management, urban planning and management, water resources and environmental management (postgraduate, MSc and PhD levels). Good governance and sustainable development in the developing countries is a major goal of ITC's international programmes.

research news

ITC Research Mission Visits Brazil

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From 15 to 17 April 2009, an ITC delegation consisting of Professor Alfred Stein, Professor Bob Su, Professor Victor Jetten and Dr Rolf de By visited the Instituto Nacional de Pesquisas Espaciais (INPE; the National Institute for Space Research) in Brazil. The visit followed the presentation of the Schemerhorn lecture by INPE director Dr Gilberto Câmara and a follow-up visit by the directorate to this institute. INPE and CAST (China Association for Science and Technology) share tracking and control of the CBERS satellite, the Chinese-Brazilian Earth Resources Satellite, while INPE and CRESDA have their own processing solution for product generation. The aim of the visit was to identify possibilities for joint collaboration between ITC and INPE. To achieve this purpose, a two-day workshop was organised by Dr Thelma Krug, head of the International Affairs Office at INPE.

Collaboration in Brazil

It was possible to identify good possibilities for monitoring deforestation and sugarcane production, as well as various possibilities for developing spatial statistical models in this field in relation to collected images. With regard to deforestation, this could take shape by combining a spatial point pattern for new deforestation with a growth model for existing deforestation. It would be particularly interesting to deal with early uncertainty. With regard to sugarcane, the development of a good socio-economic spatial model could be taken up. Here, the effects of various policies would be identified.

Data Products for Africa

Collaboration will most likely take place within the INPE strategic initiative of making the CBERS satellite data freely available to Africa. The CBERS satellite has only a limited storage capacity, whereas regional networks could serve as such. Good arrangements must be made to allow free use of these data according to the INPE philosophy. INPE already has its own network within the GEOSS and AARSE context, as well as in related networks, while ITC could assist by identifying potential partners through its own alumni network in Africa. This might also lead to a change in products delivered by CBERS. At the moment, higher-order products and systems are focused on the Brazilian situation, with an extensive range of products related to deforestation and sugarcane monitoring. This may require some adjustment in order to make useful products within the African context. ITC has considerable research experience in Africa, and this might be exploited in the interests of synergy. For many countries in Africa, food security, drought and socio-economic issues are the most prominent problems. Other higher-order products need to be developed and ITC could assist in this respect. Therefore, a chain of products needs to be defined, from raw data up to higher-order products of the greatest relevance within the African context. African counterparts could be partners in developing such chains. GeoNetcast has spare bandwidth to proliferate potential CBERS products as soon as these exist.

There are further possibilities within the Tiger programme, which will last for three years and includes 20 projects. Raw data and hydrology-relevant products will be required that could be delivered by INPE (e.g. through TerraLib; see below). Through the ITC network, INPE would like to identify clients that would be able to use the TerraLib platform and products. It has been suggested that INPE should take a look at the ITC distance education courses, and that

The INPE-ITC workshop in action (photo Dr De By)

Antennas at the processing station at Cachoeira Paulista, where the CBERS data are processed (picture Professor Su)

INPE could host potential course participants. ITC is also willing to assist in critically assessing potential course material. There is interest in using algorithms developed by ITC regarding evapotranspiration and soil moisture, and in collaborating in *in situ* monitoring networks for land-atmosphere exchange processes.

Sometimes it may be difficult to obtain information from certain countries, as not all countries wish collected information to become publicly available. Compliance with international treaties, however, may be an incentive to proceed.

TerraLib

INPE is part of a team that has been developing TerraLib: an open-source GIS library for large-scale environmental and socio-economic applications (www.terralib.org). TerraLib is a GIS classes and functions library available from the internet as open source, allowing a collaborative environment and use of the library for developing multiple GIS tools. Its main aim is to enable the development of a new generation of GIS applications based on the technological advances in spatial databases. Super-pixel resolution mapping developed at ITC could become a useful addition to the TerraLib software package. This facility may lead to an open-source collaboration in the TerraLib suite and ITC's ILWIS system.

INPE support for African research institutes could be supplied within the context of both the AGCommons African agriculture project (if successful) and the ACP FP7 proposal for West Africa. In both cases, an African version of TerraAmazon, targeting agrarian land use and environmental monitoring, could be the central issue, together with data streams providing near real-time data. Two PhD students have recently started to work with TerraLib and may assist in its further development. In particular, there is opportunity for farming system analysis in Burkina Faso, where good data are available. This may then be linked, given INPE's experience, to deforestation work in the same country. In terms of software development, it would be extremely beneficial for INPE to discuss and share views with ITC experts on the specifications of TerraLib 5.

Education

INPE would very much like to develop a disaster management system. At this stage, the relation between hazards and risks should be investigated, in particular with regard to vulnerability. For this, socio-economic data are indispensable. INPE may possibly benefit from knowledge available at ITC – for example, in the form of courses using local datasets and focusing on real risk analysis, and looking at hazards and the action to be taken. Such courses should then be accessible to much of the Portuguese-speaking community in Brazil. Courses within the framework of TerraLib and TerraView for the Tiger project may be a good entry point for African clients.

All these points have to be worked out further and should lead to a successful and winning strategy for capacity building and for the distribution of INPE products in Africa. From an ITC short-term perspective, it is clear that these products are interesting and highly valuable for a range of activities in Africa. However, it may not be so easy to implement them fully and rapidly within a capacity building context.

Giant Pandas on the Move

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Earth observation with the aid of satellites and geographical information systems is a powerful instrument when it comes to mapping the distribution and quality of bamboo and the habitat of the giant panda – as the study of Tiejun Wang, doctoral student at the International Institute for Geo-Information Science and Earth Observation (ITC) in Enschede, goes to show.
Tiejun Wang was awarded his doctorate on 25 June 2009 at the University of Wageningen, based on research partly made possible by the World Wildlife Fund.

The main food source of the giant panda is bamboo, which is found among the undergrowth in the forests where the pandas live. To be able to comment on the quality of the panda habitat, we must be able to measure such things as the availability and quality of the food resources for the giant panda. However, there is hardly any information available on where exactly bamboo grows and how much can be found in the forests of China. This is because the possibilities for mapping this kind of vegetation are limited. Currently, increasing use is being made of earth observation with the aid of satellites with various scanners onboard – which is known as remote sensing. The data acquired by the scanners are sent to ground stations, and scientists can use these data in a geographical information system (GIS) to map all kinds of things, for example, vegetation. So satellite data can be used in attempting to establish the distribution of bamboo.

The problem, however, is that not all the bamboo can be directly seen with the aid of scanners because it often grows among the forest undergrowth and because it is chiefly the tree crowns that are visible from above. It is therefore important to develop new methods in order to be able to better map the distribution of bamboo. A good model to predict the spatial distribution of bamboo can help us to better understand what the habitat of the giant panda precisely looks like and to determine the food search behaviour and actual distribution of the giant panda. This kind of information is vital when it comes to devising an optimal strategy for protecting the giant panda.

The study objectives were to:

- design innovative methods for determining the food resources of the giant pandas and their habitat quality with the aid of remote sensing and GIS
- find explanations for the migration of giant pandas from low-lying to high-lying areas and vice versa
- find explanations for the distribution of giant pandas in a highly fragmented forest area.

A number of interesting conclusions have flowed from this research:

1. The vegetation indices obtained by analysing satellite images taken during the winter season (no leaves on the trees) can be successfully used to map the bamboo undergrowth in leafy forests.
2. The winter season is eminently suitable for determining bamboo in average mixed forests, regardless of the classification method.
3. Greater accuracy can be achieved in mapping bamboo undergrowth in a coniferous forest by using an algorithm integrating a neural network and an expert system.
4. Analysis of satellite images leads to more information on the amount of bamboo (food quantity) and the development stages of the vegetation (food quality). The migration patterns between high-lying and low-lying terrain of the giant panda and of another rare species, the golden takin, are linked with the available quantity and quality of food.
5. The driving force behind the season-specific height emigration of the giant panda is determined by the presence of bamboo shoots and the vertical temperature gradient.

photo by Tiejun Wang

6. Satellite image analysis shows that pandas are found to a significantly greater extent in large and relatively less fragmented tracts of forestland than in smaller and more fragmented tracts. This indicates a sensitivity to the size of forest tracts and the effects of isolation through fragmentation.

Through this study, we have been able to demonstrate the capability of remote sensing and GIS to map the distribution and quality of bamboo and the habitat of the giant panda. The results can contribute to a better understanding of the food search behaviour and spatial distribution of the giant panda. In addition, this study can make a contribution to evaluating and modelling the habitat of this rare animal species, so leading to the formulation of better policy measures for its protection.

Author's Biography

Tiejun Wang was born on 8 November 1970 in Shaanxi province, China. He attended Shaanxi Agriculture School in 1986, and received a professional diploma in 1990. After graduation, he started work with the Foping National Nature Reserve as a park ranger and the head of a field station. In 1995, he was appointed project coordinator to support the implementation of the GEF-China Nature Reserve Management Program in Foping. He joined the State Forestry Administration of China in 2000, where he served as an assistant in the Department of Wildlife Conservation. In 2001, he received a joint scholarship from WWF International and the Dutch government to do an MSc in rural land ecology at ITC in the Netherlands. He completed his MSc thesis with distinction in March 2003. He went back to China and was employed by WWF China, where he served as a project manager at the Xi'an office and a full-time consultant for the Species Programme in Beijing. In 2005, he was awarded an ITC scholarship, with partial financial support from WWF Netherlands and the Institute of Zoology of the Chinese Academy of Sciences, to pursue the PhD research at ITC and Wageningen University that resulted in this thesis.

photo by Yange Yong

education news

Sustainable Economic Development and Conditions for Land Administration

Land Administration Refresher Course in Namibia
8–19 June 2009, Windhoek, Polytechnic of Namibia

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Land administration, with land registration as a component thereof, can be considered a core task of any government in the world. It covers all aspects of access to land, tenure security and management of land resources. It is therefore linked to many different policies, such as spatial development planning, poverty reduction, urbanisation, land reform and resettlement. Governance criteria are important considerations in such policies in order to improve effectiveness and transparency. "Sustainability" links governance to the environment as the aggregate of all natural, biophysical and social resources.

While analysing sustainable economic development, one easily encounters conditions that should be created by land administration as public tasks. Aspects of equity are dependent on equity in access to land and housing. Aspects of viability are based on the evaluation of natural and man-made land resources. Aspects of bearability relate to the quality of life that is dependent on public land management, private land rights, hazard management, and social and cultural values. Land registration systems create rights and obligations, as well as the core data on which land administration policies can build.

From this perspective, a first version of the refresher course was given for Asian countries in June 2007 in Hanoi, Vietnam. Nuffic approval was then obtained for a second version of this refresher course to be given at the Polytechnic of Namibia for NFP alumni from Southern African countries.

Applications

More than 100 applications were received. A shortlist was drawn up of 25 people, who were requested to present an abstract of a presentation on their experiences after graduating from the ITC programme they had followed. On the basis of these abstracts, a final selection of 18 participants was made: two from Malawi, one from South Africa, one from Swaziland, one from Botswana, seven from Zambia and six from Namibia. Six of these participants were ladies.

Participants had previously followed different programmes (i.e. Cartography, GIM/LA, GFM, UPLA, NRM, ESM) and this mixture was a positive element in the programme.

Location and Staffing

The programme was hosted by the Department of Land Management of the Polytechnic of Namibia. The dean, Mr Lameck Mwewa, and the secretary, Sonja Samuels, provided excellent support in preparing and executing the programme. Two people from ITC went to Namibia to implement the programme (Johan de Meijere and Anthony Arko Adjei), and four staff members from the Polytechnic (one of whom was also an NFP alumnus) contributed to the programme (Tommy Bayer, Brian Mhango, Stephnie Devilliers, Frickie Lauw). The extensive experience in SDI development of Mrs Abigail Thabethe (from South Africa) was also a significant contribution to the programme.

Programme and Method

The course was more like a workshop than a taught course in character. The programme consisted of presentations by participants (30%), lectures from ITC/Polytechnic staff (25%), information modelling exercises (20%) and other elements such as excursions, guest lectures and video presentations (25%).

Participants' presentations were schematically modelled each day in diagrams (similar to UML diagrams and "rich pictures") by participants working in groups. The schematic mapping (the modelling exercises of these presentations) was essential to gain an overview of all the different topics and experiences presented. At the end of the course, these diagrams were clustered and analysed in the light of the questions formulated at the start of the course. The formal presentations throughout the programme provided a theoretical framework for the analysis of participants' experiences.

The method of implementing this refresher course turned out to be stimulating and effective. It meant a high degree of involvement and participation and created the opportunity to incorporate participants' experiences in the more theoretical parts of the programme. The quality of the plenary discussions each day was high.

Findings

Legal pluralism is a characteristic of land tenure in African societies. The differences between urban and rural societies exist also as differences in statutory and customary systems. Policies such as urbanisation and

Participants of the refresher course in Namibia

Mrs Abigail Thabethe from South Africa contributed to the programme through her extensive experience in SDI development

Presentations by participants

housing, wildlife and conservation management, resettlement, and mining – to name but a few –have to deal with aspects of this legal (and socio-cultural) pluralism. Many presentations from participants highlighted this point. Policies are often conceived from an urban-power elitist point of view. The further away the target area is, the greater the "decay" of the influence of the policy. Another way of looking at this is: the further away, the higher the resilience of traditional societies and customary systems to change. This point was demonstrated in one of the presentations based on research in Zambia. An interesting West Zambian case was presented where a customary system is still in place but linked "seamlessly" with the statutory system once a plot is to be used for housing in an urbanising area.

Participatory methods for policy making and participatory mapping were extensively discussed. A presentation on the legal framework for land administration highlighted the point that a framework consists of more than laws. Values, customary systems, principles, all play a role. A policy, written or not, will be effective only if it fits into the framework. The policy cannot be enforced, laws can!

Land reform and resettlement schemes are implemented in most Southern African countries. The political desirability and objectives of such policies are clear, but the effectiveness of many schemes is still largely unknown. From a sustainability perspective, approaches for monitoring were discussed.

Urban development and land allocation for housing were discussed in several presentations. High degrees of servicing are extremely expensive and bring the risk of immediate takeover by well-to-do income groups. The experiences reported concerning the traditional housing areas as opposed to sites-and-services schemes in Malawi provided some interesting insights.

A visit to housing schemes in Windhoek with different degrees of formality and servicing was highly clarifying. The concept of the "core house", a unit that is delivered to new urban areas and can be expanded by the owner in time, proved to be working well.

The establishment of an SDI by law, as in the case of South Africa, appeared an interesting way to get standards on core (spatial) datasets and their custodians in place. This fitted in with the concept of base data, which was also approached from a public administrative and governance perspective. It was observed that so far the national survey institutes in many countries have not been able to play a major role in the SDI developments.

At the end of the course, all presentations were revisited and clustered in themes: tenure regimes; land reform and resettlement; natural resources and wildlife management; urbanisation; organisational development/GIS systems; and SDIs. In groups, lists of "aha's" – sparkling ideas that were picked up from all the topics and presentations – were compiled.

Future Needs and Role of ITC

A special session at the end was dedicated to the type of training that participants thought necessary for their (junior) colleagues and staff in order to strengthen their institutions. There was agreement that training should preferably not be longer than 12 months. The tendency to reduce the PM and similar programmes at ITC was regretted. There was from an institutional perspective little interest in PhD programmes, as these tend to be too long and lead to loss of staff. Emphasis on insights in governance and sound technical knowledge and skills was thought to be the most important consideration. Some participants gave a very sharp picture of the need for capacity building within the public sector, especially at decentralised/local government levels. They stressed the importance of academic capacity

building at the middle level within organisations, which is considered to be the most crucial level in terms of continuity and decision making.

Conclusion
Refresher courses in the workshop format are very important for exchanging experiences gained in the period after finishing studies at ITC. Sharing these experiences leads to a better understanding of the complexities of the work being done in the public and private sectors and in civil society. From ITC's perspective, it helps to get a better understanding of course relevance and of the need for capacity building in the target organisations. In brief, a refreshing and stimulating experience for all!

Completion of Training Materials on Multi-Hazard Risk Assessment

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For a number of years now, the United Nations University–ITC School for Disaster Geo-information Management (UNU-ITC DGIM) has been working on the development of training materials and curricula for courses on the application of spatial information in hazard assessment, elements-at-risk mapping, vulnerability assessment and risk assessment.
Over the years, this has resulted in a large number of case studies and training materials. These materials have now been integrated into a complete course dealing with multi-hazard risk assessment.
The materials consist of:

- a guide book containing eight sessions, with tasks, further reading, internet links and self tests
- an exercise book, with over 20 different exercises dealing with GIS applications (participants can select exercises dealing with topics (hazard types) of personal interest)
- a DVD with datasets, digital versions of the guide book and the exercise book, videos, and open-source GIS software (ILWIS)
- a Blackboard site that is used for education support, where the answers are given to the tasks and GIS exercises, and where a discussion board facilitates interaction between participants and staff.

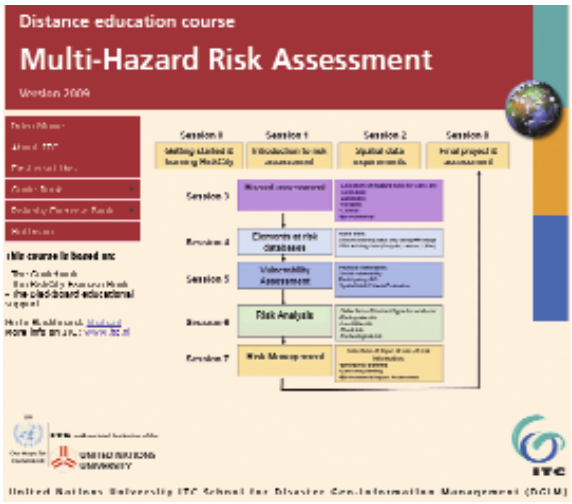
The course Multi-Hazard Risk Assessment deals with the procedures to collect, analyse and evaluate spatial information for risk assessment from natural and human-induced hazards (such as geological hazards, hydro-meteorological hazards, environmental hazards and technological hazards). On the basis of a case study of a city exposed to multiple hazards in a developing country (RiskCity), the course guides you through the entire process of risk assessment.

The course is designed for those who have to carry out risk assessment and who need the procedural knowledge and skills to do so using a GIS. This means not only professionals working in NGOs and governmental organisations related to disaster risk management, but also professionals, planners, engineers, architects, geographers, environmental specialists and university lecturers. Some basic background in GIS is desirable, although not strictly necessary as the course follows a step-by-step approach that allows participants to rapidly acquire the basic skills in handling GIS software. If you lack the basic GIS skills, it might be better to follow the course in a classroom environment, where more direct software support can be given. Courses on multi-hazard risk assessment are offered annually in the Netherlands, Mexico, Bolivia and Thailand, and fre-

Participants of the course Multi-Hazard Risk Assessment at the closing party at ITC

quently in India and China as well. In the period April-May 2009, a six-week course was organised using these materials and attracted 42 participants from many different countries (see figure), including students following joint education programmes with Gadja Mada University (Indonesia), the Indian Institute of Remote Sensing (India) and CLAS (Bolivia). The materials were also used in a six-week distance education course, which was organised in the period May-June.

The materials have been translated into Spanish and partly in Chinese, and form the basis of many short courses that are given with partner organisations in different countries.



Opening screen of the distance education course DVD, showing an outline of the course

partnership news

Indian Moon Mission Experience

Sekhar Lukose Kuriakose lukose11753@itc.nl

Dr Madhavan Nair, chairman of the Indian Space Research Organisation, Secretary of Space for the Government of India and holder of the Padma Vibhushan, India's second-highest civilian honour, addressed scientists at ITC, the Netherlands, on 27 May 2009.

While speaking to a group of selected world famous scientists as part of the ITC lecture series, Dr Nair elaborated on India's ongoing space programme and its keen interest in outer space exploration, mentioning in particular its most recent satellite launch to the Moon, the Chandrayaan-1 mission.

This was the third high profile visit to ITC from a representative of the Government of India, third to none other but the first prime minister of India, Jawahar Lal Nehru, who visited ITC in 1957, and the former ISRO chairman, Dr Kasturirangan, in 2001. Since then, several dignitaries from India, including the former Indian ambassador to the Netherlands, Her Excellency Shyamala B. Cowsik, has visited ITC, and several Indian civil servants, scientists and students have been educated at ITC. Dr Nair's visit marks another milestone in the long-standing relationship between the Indian and Dutch scientific communities.

Signing a framework cooperation agreement to embed the ongoing collaborations with ISRO agencies in a national institutional framework

ITC and India

ITC is an internationally recognised centre of excellence in capacity building and institutional development of professionals and academic organisations in geo-information science and earth observation across the world. The Institute's research interests are directed towards strengthening civil society by addressing issues of local, national and global dimensions, such as the multifunctional use of scarce resources (including space), the effects of climate change, and environmental security.

ITC's contacts with India date back to the early 1950s, when Professor Willem Schermerhorn, prime minister of the Netherlands and founder of ITC, visited the Survey of India and officers were sent to ITC for training. In 1957, the prime minister, Pt. Jawahar Lal Nehru, visited ITC; he was so impressed that he wanted to have a similar institute set up in India.

During the United Nations Cartographic Conference for Asia and the Far East held in Bangkok in 1964, discussions took place between the Indian and Dutch delegates to draft an agreement for collaboration between the two governments. This agreement was signed by the end of 1964, heralding the start of the project for technical assistance to set up the Indian Photo-interpretation Institute (IPI) in Dehradun, with ITC as executive authority. It was one of the first large bilateral technical assistance projects undertaken between the Netherlands and a developing country. IPI was renamed the Indian Institute of Remote Sensing and currently falls under ISRO. The cooperation between ITC and IIRS celebrated its 40th anniversary in 2006.

ISRO's Polar Satellite Launch Vehicle successfully launched the Chandrayaan-1 spacecraft, which is now exploring the Moon from lunar orbit (picture courtesy ISRO: www.isro.org)

By virtue of this academic collaboration, several Indian civil service officers, scientists and students have completed their postgraduate studies, PhD research and advanced training in geo-information science and earth observation, mostly with scholarships provided by various organisations, in-

cluding the Netherlands Organisation for International Cooperation in Higher Education (NUFFIC) and the ITC Research Fund.

Currently, the United Nations University–ITC School for Disaster Geo-Information Management (UNU-ITC DGIM), in collaboration with the National Remote Sensing Centre (NRSC), the Indian Institute of Remote Sensing (IIRS), the Geological Survey of India (GSI) and the Centre for Earth Science Studies (CESS), is conducting research into landslides in the two main landslide-prone regions of the country, namely the Himalayas and the Western Ghats. Since 2006, UNU-ITC DGIM has been annually conducting a training-cum-field workshop on geo-information for landslide hazard and risk assessment under the tripartite agreement on the Use of New Earth Observation Techniques for Landslide Hazard and Risk Assessment signed by the GSI Training Institute, NRSC and ITC.

The Department of Urban and Regional Planning and Geo-information Management, in collaboration with IIT Delhi and CEPT Ahmadabad, is conducting research for purposes of creating a better urban milieu in various Indian cities, with special focus on reducing carbon emissions through the increased use of cycles. In addition, ITC has several research,

Dr Madhavan Nair exchanging ideas with ITC's Indian PhD and student community

postgraduate education and training scholarships available to Indian students. Membership of the Indian ITC alumni network, which is spread across the whole country, is over 200 strong. The network organises annual get-togethers and offers support to prospective students who intend to undertake their research and studies at ITC. Members are also active on internet friendship sites such as LinkedIn, Facebook and Orkut.
Dr Nair's visit marks a major milestone in this Indo-Dutch scientific collaboration. With India emerging as a global player in satellite remote sensing and ITC being both pioneer and leader in capacity building in the technology and applications of satellite remote sensing data and geo-information science, this synergetic relationship will yield fruitful benefits for humanity in general and for India and the Netherlands in particular.

During Dr Madhavan Nair's visit, a framework cooperation agreement to embed the ongoing collaborations with ISRO agencies in a national institutional framework was signed. Currently, collaboration is ongoing with IIRS and NRSC and will soon be extended to the Space Application Centre. Dr Nair also gave a presentation on the Indian Space Research Programme and its relation to societal benefits, and exchanged ideas with ITC's Indian PhD and student community.

Cooperation between LAPAN and ITC in Remote Sensing

Tom Loran loran@itc.nl

Last month, a Memorandum of Understanding (MoU) was signed between the National Institute of Aeronautics and Space (LAPAN) of Indonesia and ITC that enables both organisations to engage in cooperation in the field of research and development in remote sensing.

The MoU was signed at the head office of LAPAN in Jakarta, Indonesia, by the head of LAPAN, Dr Adi Sadewo Salatun, and the rector of ITC, Professor Martien Molenaar. Cooperation with LAPAN already dates back a long time and will now continue into the future too.

Activities foreseen are specifically related to training and capacity development, transfer of technology, research, and the development and dissemination of knowledge concerning GIS, remote sensing and spatial information technology.

LAPAN is a national organisation that is responsible for developing and promoting activities that involve remote sensing. As part of its mandate, LAPAN is not only developing a wide range of remote sensing applications (e.g. in forestry, agriculture, coastal zone management, marine science and fisheries) but has also established a national data centre where national image data can be obtained. Besides that, LAPAN is working on the in-house development of technology. Together with the Technical University of Bandung (ITB), it has developed a system of using unmanned aeroplanes to carry out mapping campaigns, and it has recently launched its own satellite. A second generation of this satellite system, which can be used for the inventory and monitoring of natural resources, as well as the monitoring of natural hazards and disasters, is presently being developed and is scheduled for launch in 2011.

A Memorandum of Understanding has been signed between the National Institute of Aeronautics and Space (LAPAN) of Indonesia and ITC

A LAPAN staff member, Syarif Budhiman, is a PhD student in ITC's Water Resources department. Currently, he is taking part in the East Kalimantan Project (www.eastkalimantan.org) and through this he has been awarded a WOTRO (NWO) fellowship to do his PhD at ITC. His research at ITC is focused mainly on extracting suspended matter concentrations from remote sensing images.

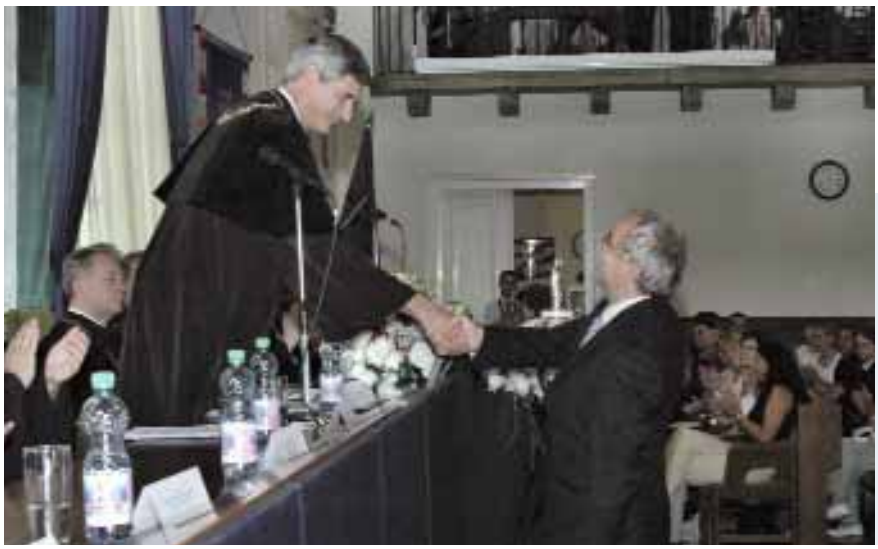
staff news

ITC Staff Member Appointed Honorary Associated Professor

Zoltán Vekerdy verkerdy@itc.nl

The Geo-information Faculty of the University of West Hungary, a long-time cooperative partner of ITC, held its diploma ceremony on 4 July 2009. Dr Gábor Mélykúti, dean of the faculty, presented awards and distinctions on this occasion, and Dr Zoltán Vekerdy from ITC's Water Resources Department was appointed honorary associate professor.

This appointment is an acknowledgement of our good cooperation in summer schools, worshops, teaching material development and joint projects, and further strengthens the link between the two institutions.



Dr Gábor Mélykúti and Dr Zoltán Vekerdy

visit to ITC

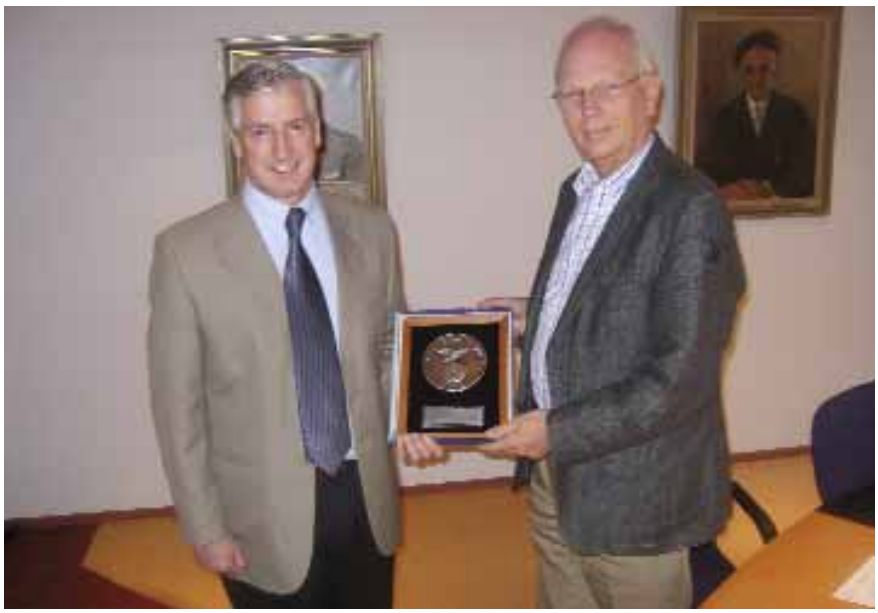
Visit of IGM Chile Director to ITC

John Horn horn@itc.nl

On Friday, 12 June, ITC was delighted to welcome Colonel Juan Vidal Garcia-Huidobro, the director of the Instituto Geográfico Militar of Chile.

Juan studied at ITC in 2002 and has maintained close links with ITC ever since. ITC has long enjoyed a close link with IGM, and for many years senior officers have attended the Master programme in Geoinformatics.

During the visit, Juan presented ITC's rector, Professor Martien Molenaar, with a commemorative plaque in recognition of ITC's contribution to capacity development at IGM.
In November this year, Chile will host the biennial conference of the International Cartographic Association, and IGM is the local conference organiser. The event will be held at the Military School in the Condé district of Santiago from 15 to 21 November, and some 1,000 delegates are expected to attend. ITC will be present at the conference, with an exhibition and several staff, and Professor Molenaar will be one of the keynote speakers and focus specifically on education and capacity building. It is anticipated that an ITC alumni event will be held during the conference.



During his visit, Colonel Juan Vidal Garcia-Huidobro presented ITC's rector with a commemorative plaque

Further information on the International Cartography Conference is available at www.icc2009.cl/

staff

Welcome to ITC	Dr Ing. D.C. Chavarro Rincon	Researcher Department of Urban Regional Planning and Geo-information Management	6 April 2009
	Dr T. Wang	Assistant Professor Department of Natural Resources	1 May 2009
	Ms J. Sheta MSc	Researcher Department of Urban Regional Planning and Geo-information Management	6 May 2009
	Dr M.F. Noomen	Assistant Professor Department of Earth Systems Analysis	15 June 2009
Staff leaving	E.W. Hartgerink	IT Department	1 June 2009

In memoriam

Patrick John Oxtoby (1933–2009)

After his retirement from ITC in 1994, Pat Oxtoby decided to return to his native land, England, with his wife Maisie, and not to stay in touch with ITC. This is what some people decide when they want to make a real fresh start to a new stage in life, and his former colleagues fully respected this personal decision. There was no question at all of a troubled relationship, and that is why, after 15 years of silence, the news of his passing came as a great shock to those at ITC who still remember him.

Pat worked for ITC for 33 years (since 1971) and was lured from England to Enschede by the late Professor Ormeling to become one of the founding fathers of the new Department of Cartography. Pat was a traditional practical cartographer in the best and fullest sense of the word: his work was always careful, neat and very accurate. Besides that, he enjoyed teaching these skills to young professionals. Over the years, he trained hundreds of cartographers from all over the world, always with patience and perseverance. And in this way he definitely contributed to the rise in international cartographic quality that was clearly noticeable in the last three decades of the 20th century. For most of his career, Pat was a lecturer and head of the section Design & Construction, but he also acted as director of studies and was involved in setting up a nautical cartography course. We remember him as the developer of the so-called *In-service Training Package for Cartographic Draftsmen,* a package that may be considered as the precursor to ITC's current activities in distance education and joint education programmes.

During the last five years of his ITC career, Pat worked at Bakosurtanal in Cibinong, Indonesia, as a member of the technical advisory team led by Lex Polderman (the Trans-V project) and as a base mapping expert in the LREP-II project.

We are convinced that our colleagues in Indonesia and cartographers all over the world who were trained and educated by Pat Oxtoby will share our sadness at his passing. Fortunately we will always retain our good memories of him.

Corné van Elzakker(on behalf of Pat's former ITC colleagues)

We remember "Pat Oxtoby at work" as a real British gentleman, in part because of the way he was usually dressed. On less formal occasions, however, he easily changed roles and was one of the leading lights (in particular the leading poet) at Cartography's famous social events.

In memoriam

Ad Bakker (1941–2009)

Ad (Aart) Bakker died unexpectedly in Enschede on Sunday 21st June 2009 at the age of 68.

Born on 18th March 1941 in Amsterdam Ad Bakker graduated from the Hotel School in Den Haag and held a couple of positions in The Netherlands before spending 5 years working for Pan Am in their hotel operations in Liberia.

He joined the ITC as the Deputy Director of the Schermerhorn Hall in May 1972. Most students from this period will remember him as "Mr. Bakker", from the Schermerhorn Hall/ Restaurant, who was always willing to listen to their requests, complaints, or suggestions, and to help them if their problems were reasonable, if it was within his power to do so.
He became Director of the Schermerhorn Hall in July 1973 but it was soon evident that he had the capability and interest to fulfil other managerial posts. The result was that, in addition to being Director of the Schermerhorn Hall, he was appointed as an assistant to the ITC Directorate in July 1977.
Thereafter he held various managerial positions in the ITC, including Head of Finance and Administration, until he left for early retirement in April 2002.

Although not one to wear his heart on his sleeve, Ad was never the less, a very forthright, affable, and dependable colleague, who was always willing to listen and help where, and whenever he could. Many of his colleagues and ITC's students can bear witness to this.
His managerial and analytical skills led to him becoming involved in other sectors of the community, more often than not as Chairman.

He will best be remembered as a very professional, efficient, and responsible man, with a strong penchant for writing memos to confirm agreements, put forward ideas, communicate information, and quite often to make sure that a certain action would take place.

Ad opted to take early retirement with the idea of being able to have more time for himself, family and friends but sadly this turned out to be much too short. He leaves his widow, Eef, children Christian, Sandra and Patrick, and six grand children.

Ad Bakker with colleages Chris Paresi and Emerson Howard

announcements

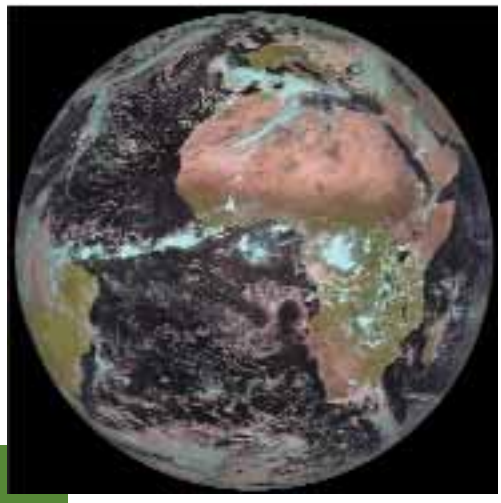
GEONETCast Toolbox for ILWIS 3.6

Automatic Processing of a Range of Satellite Data (for Non-Commercial Use)

Petra Budde budde@itc.nl

The GEONETCast toolbox is a low-cost system for obtaining, storing and processing a number of satellite images, such as MSG, GOES, Fengyun and MET7, in order to produce near real-time animations, leaf area index, NDVI, fire products, land surface temperatures, precipitation estimates, etc. for natural resources management and agricultural, hydrological and marine applications.

The toolbox, installed as a plugin in ILWIS 3.6, roughly consists of a data manager to (centrally) store satellite data; a data retriever to select time, bands and area; and numerous ILWIS scripts to process your data. Naturally, you can also build your own models or applications.



Real time earth observation (MSG)

If you are interested, please contact Ben Maathuis or check www.itc.nl/education for courses on this subject. Information can also be found at www.itc.nl/departments/wrs/geonetcast

Former ITC Journal Achieved Higher Impact Factor of 1.947

Alfred Stein stein@itc.nl

The International Journal of Applied Earth Observation and Geoinformation (JAG) has achieved an impact factor of 1.947 (source Thomson Reuters 2008, © Journal Citation Reports 2009). This is an increase compared to the Journal Citation Reports published last year (impact factor of 1.534).

Editor-in-chief, Professor Alfred Stein (Head of the department of Earth Observation Science) 'since Elsevier has taken over publishing the former ITC Journal since 2002 the quality of articles submitted and published has increased. From 2009 onwards six issues will be published yearly and there is a new cover with a larger page size.'

Furthermore, three special issues are being prepared on the subjects of Remote Sensing for Africa (guest editors Tsehaie Woldai and professor Harold Annegarn), Spatial Analysis (guest editors Liu Yaolin and Xinming Tang) and Geospatial Techniques for Disaster Management (guest editors Jonathan Li and Rifaat Abdalla).

The Journal publishes original papers that apply earth observation data to inventarisation and management of natural resources and the environment.

For online submissions and more information on the Journal please see: http://ees.elsevier.com/jag/default.asp.

A free online issue is available through http://www.elsevier.com/wps/find/journaldescription.cws_home/622741/description#description.

life after itc

ITC Alumni Gatherings in Indonesia

Tom Loran loran@itc.nl

Recently, Professor Martien Molenaar and Mr Sjaak Beerens, in their respective capacities as rector and director external affairs of ITC, made a 10-day visit to Indonesia. Besides visiting a number of partner universities and organisations, they also met with Indonesian alumni on two occasions. Both gatherings were attended by groups of alumni spanning a lengthy period of time. Some had graduated as recently as 2009, while others had long passed retirement age.

The first gathering was organised at the Mawar Restaurant in the Bumi Karsa Hotel, which is located in the centre of Jakarta. About 40 alumni from Jakarta and Bandung attended the function, all for the pleasure of meeting old friends, chatting, laughing, and enjoying dinner together. Representing the oldest alumni generation present that evening was Dr Jan Sopaheluwakan, who graduated from ITC in 1979, while at the other end of the scale was Mr Muh. Arif Suhattanto, who graduated from ITC in 2007. Professor Jacub Rais, honorary fellow of ITC, was also among the visitors that enjoyed the Jakarta gathering.

The session was opened by Dr Ridwan Djamaluddin, head of the alumni association, and then Professor Molenaar took the floor, updating those present on the latest events in Enschede. The alumni presented a typical Indonesian souvenir to Professor Molenaar and the ITC staff as a token of the good relationship between the Institute and its alumni. All the alumni attending the meeting received key rings sporting the ITC logo. A group photo session brought the dinner came to an close, and the smiling faces make a remarkable picture!

The second alumni gathering took place in Yogyakarta, where the alumni enjoyed a delicious dinner at

Professor Jacub Rais, honorary fellow of ITC, was also among the visitors that enjoyed the Jakarta gathering

Alumni gathering at the Santika Hotel, Yogyakarta

Alumni gathering at the Mawar Restaurant in the Bumi Karsa Hotel, Jakarta

the Santika Hotel in the centre of the city. Among the ITC alumni who attended this function was Professor Suratman Woro, dean of the Faculty of Geography, Gadjah Mada University, who expressed the hopes of all present for a lasting connection with the ITC network.

During both gatherings, people shared memories, discussed current connections and interactions with ITC, and expressed ideas and hopes for future collaboration. Professor Molenaar thanked the alumni for their attendance and for recounting their stories and hopes. He also described the road map that ITC is following to integrate the Institute with the University of Twente. As of 1 January 2010 ITC will be a faculty of the University. As far as ITC alumni are concerned, the integration will have no impact: ITC as they know it will always be there.

The gatherings were characterised by memories of the past as well as thoughts on the future. Laughs and smiles coloured both evenings, especially when it came to personal stories of funny experiences at ITC. However, "business" commitments and plans were also discussed, including a plan to organise a series of executive seminars on urgent topics for local society that are related to geo-information science.

Professor Molenaar was presented with a traditional gift by Professor Suratman Woro, dean of the Faculty of Geography, Gadjah Mada University

Alumni Dinner Tbilisi, Georgia

Sabine Maresch maresch@itc.nl

ITC, together with the Georgian environmental non-governmental organisation CENN, has recently embarked on a 2.5-year project in Georgia, targeted at building staff capacity at the Ministry of Environment in the field of disaster risk reduction and the use of geo-information tools. The project is funded through the Dutch MATRA (= societal transformation) programme.

To kick off the project, ITC colleagues Cees van Westen and Sabine Maresch travelled to Tbilisi last May, where they were warmly welcomed by Georgian ITC alumni. Five alumni organised a get-together in a traditional Georgian restaurant, where everyone enjoyed an excellent meal accompanied by fine Georgian wines.

The alumni shared their positive memories of ITC and emphasised over and over again how happy they were that ITC staff were visiting their beautiful country. We were asked to pass on many regards to our colleagues at home. The idea is that some of the ITC alumni could provide support in the case studies to be developed within the Matra project, so we hope to keep in close contact.


Alumni dinner Georgia

ITC Alumni to Meet during AfricaGIS Conference

Yazidhi Bamutaze

bamutaze@arts.mak.ac.ug

Owing to its theme and the enormous regional and international interest, the AfricaGIS2009 conference, which is due to be held in Kampala, Uganda, from 26 to 30 October, is promising to be a wonderful experience from the scientific perspective.

With many prominent international scientists, GIS practitioners, reputable geospatial training institutions, and key players in geo-information technology development committed to participating in the conference, there is do doubt that participants and delegates will be brought up to speed on the novel technological developments in geospatial science and rapidly emerging scientific applications.

As at previous geospatial conferences, workshops and meetings in Africa, ITC as an institution, with its alumni and services, will be an immense presence at the AfricaGIS conference. This is underpinned by the planned pre-conference and conference activities, which include (1) a refresher course on designing and utilising geo-information infrastructure for effective electronic governance; (2) a pre-conference GEOSS workshop on disaster management and humanitarian assistance; (3) a pre-conference workshop on GEONETCast for natural and water resources management; and (4) the plenary presentations by eminent ITC staff and alumni scientists. Based on the above initiatives coupled with previous experience, it is envisaged that ITC will have the highest number of alumni at the conference.

Day schedules, with their tight and compact programmes, allow little room for discussion on issues beyond the scope of the conference. Recognising this, and in the interests of networking,

the ITC alumni office and the ITC Alumni Association of Uganda are planning an informal get-together on the evening of Tuesday, 27 October 2009.

This will give alumni the opportunity to wine and dine with ITC staff in a friendly and relaxed atmosphere, touch base with colleagues in the region, renew old acquaintances, reflect on career and professional developments and challenges, improve networking, and explore ideas for potential projects.
The venue has not yet been chosen but will be communicated in due course. So if you are going to be at the AfricaGIS conference or in Kampala at the time and would like to attend the alumni get-together, please contact me at yazidhibamu-taze@gmail.com or bamu-taze@arts.mak.ac.ug both to confirm and to facilitate proper planning on our part. Alternatively, you can sign up for the party at the ITC exhibition booth during the conference.

See you in Kampala!

Two workshops will be run (22-24 October 2009) prior to the AfricaGIS conference in Kampala:

GEONETCAST for Natural and Water Resources Management
Presenters: T. Woldai and B. Maathuis, Department of Water Resources and Earth Systems Analysis, ITC, the Netherlands
For more information:
www.itc.nl/education/courses/course_descriptions/_pdf/C09-WRS-TM-02.pdf

GEOSS for Disaster Management and Humanitarian Assistance
This is one of the series of successful GEOSS workshops organised by IEEE, ISPRS and OGC.
For more information and application:
http://www.itc.nl/education/courses/course_descriptions/C09-ESA-TM-06.aspx

@ Letter to the editor

News from a participant

I had studied in ITC twice. I learned Study Photogrammetric in 1980 and Land Information System in 1987. Because of the multinational study-environment, I enjoyed my time there. Coming back from ITC, I worked in National Land Agency until I retired in December 2007.
The last time I went to ITC was in May 2007 with the purpose of discussing about future students from National Land Agency's employees. At that time, I met my Photogrammetric lecturer: Prof. Molenaar (now ITC Rector) and Mr. Chris Paresi (now Head Department of Urban and Regional Planning and Geo-information Management, ITC [succeeded by Professor Martin van Maarseveen, red]).
With this letter, I would like to try to find my old friend from Photogrammetric class year 1980: J. Muyargas, Thein Lwin, Ye Myint, Man Wing Kan, M.D. Antao (Portugal), C.K. Msemakweli, Ghassan Awda, W.F Fretz, Yuen See Wah (Singapore), and Khin Maung Maung (Myanmar).
I am also looking for my friend from Land Information System class year 1987: Rajandra Singh Tanwar, Lin Peng De, E.M. Murage, P.J.W. Sadiki, Lozano Arevalo, Muhammed Zaki (Nigeria), and Zhan Fei Bing (China).
I wish for their healthy and that we could meet someday.

Best Regards,
Rizal Anshari
(email: rizalanshari@yahoo.com)