

DEVELOPMENTS IN GEOMATICS EDUCATION (8)

ITC and UNU

In 2005 ITC (International Institute for Geo-Information Science and Earth Observation) Enschede, the Netherlands, became an associated institution of the United Nations University (UNU) in a co-operation focused on disaster management and land administration. Described here are the role of UNU and the ITC contribution.

For 32 years now the United Nations University (UNU) has been delivering research and capacity building to resolve global problems of concern to the United Nations (UN), its peoples and member states. UNU, an autonomous UN organ with as rector a UN under-secretary, fosters intellectual co-operation among scholars, scientists and practitioners, especially in the developing world. It functions as an international community of scholars, a bridge between the UN and the academic world, a think-tank for the UN, a builder of capacity and a platform for dialogue and ideas. Since its inception UNU has matured into a worldwide 'network of networks' comprising the UNU Centre in Tokyo, fifteen UNU institutes and many associated institutions. The UNU Press publishes numerous books annually, and co-operates in the production of five journals. The newsletter UNU Update provides a channel for communication. UNU 'OnLine Learning' supports educational projects and operates a media studio.

Associated Institution

The objectives of the UNU bear a great similarity to those of ITC. It is therefore remarkable that it took until 2005 for the two to become associates; agreement was signed on 4th April 2005. Earlier discussions had identified what contribution ITC might most appropriately make to the role of UNU towards the UN. Up until then the UNU had focused on two main programmes relating to its strategic goals: firstly peace and governance, and secondly the environment and development. But it became clear that there remained gaps, identified as geo-information management for both disaster management and land administration, and that ITC as associated institution should focus on these two academic fields.

ITC Today

ITC's existing portfolio fits very well here as it already has a 57-year tradition in delivering education, research and advice, and has also arrived at a stage at which it might capitalise on its successful restructuring of educational and research activities. Full accreditation has been recently acquired for the Master's and Master of Science (MSc) degree programmes in Geo-information Science and Earth Observation, comprising seven academic courses:

- Applied Earth Science
- Geo-informatics
- Land Administration
- Governance and Spatial Information Management
- Natural Resource Management
- Urban Planning and Management
- Water Resources and Environmental Management.

Education is offered in a variety of (short) courses leading to the award of a degree, diploma or certificate, some in co-operation with universities in developing countries and within Europe through, for example, the European Union (EU) 'Erasmus Mundus' programme. As a result, about six hundred students annually visit ITC, and about a hundred PhD candidates carry out research within a co-ordinated framework of research plans per academic field. Research should keep the academic education up to world standard.

Contribution

According to the agreement outlined above, ITC is committed to delivering various 'products and services'; a mix of short and long courses, a series of symposia and expert group meetings, relevant research, and creating networks of scientists. The focus will be on disaster management and land administration, in which ITC has an interesting track record that provides good starting points for meeting the UNU requirements. To further safeguard dedicated managerial attention ITC decided to streamline its performance for UNU into two schools, each allocated separate staff and budget resources whilst remaining part of the existing

scientific departmental structure. After discussions with the UNU authorities these schools were designated the ITC-UNU School for Disaster Geo-information Management and the ITC-UNU School for Land Administration Studies, directed respectively by Dr Cees van Westen and Prof. Paul van der Molen. Both schools have a board linking them administratively with the remaining organisational and management structure.

The ITC has great experience in training foreign students, and one of the main problems it identifies in working with groups of foreign students is their differing level of basic knowledge. At Riga Technical University (RTU) we encounter similar problems when exchanging our students with those from other countries. Inadequate foreign (English) language skills and lack of internationally recognised course textbooks and other study materials in Geodesy, Surveying and Cartography are some of the issues. (Development of such a course-book in Cartography was proposed at FIG Congress). What is more, institutes of higher education do not provide the necessary courses in English, and there is insufficient co-operation between universities implementing exchange programmes.

International Exchange at RTU (Insert box)

In 1994 the first foreign students, they were from Lebanon, followed courses in Geodesy at RTU; their basic field of study, however, was Civil Engineering. In 1995 RTU students went to Finland and Sweden, and in later years also to Denmark, Germany and Spain, mostly for one semester. Three to six students went abroad annually. From 1998 to 2004 four students from Lebanon completed the master's study programme in Geodesy and Cartography at RTU and defended their engineering projects. In 2006/07 four RTU students went to Finland, one to Germany and one to Spain. Four students from Spain and two from Germany and France came to Latvia to study Geomatics at RTU. The number of foreign students studying in Latvia, and also at RTU, has recently increased: in 2006/07 1,425 students from 57 countries, of whom 76 from thirty countries, studied at RTU. Today a total of 829 students from 25 Latvian institutes are studying abroad, of these 67 RTU students distributed over twenty countries.

Solutions

The problems could be tackled by

- obliging students to pass a foreign-language test proving their ability to master courses in their speciality in that language
- proper communication between the relevant universities concerning previously acquired knowledge and required subjects, prior to implementing an exchange programme (this was already pointed out by FIG Commission 2 and should be dealt with immediately)
- a seminar at international level to discuss the issues.

We closely co-operate with our Finnish colleagues in exchanging information, and this works. The above problems should be addressed by the creation of a working group and expanding co-operation, and by enhancing requirements for students participating in exchange programmes. The Department of Geomatics at RTU is ready to participate in finding solutions.

Prof. Strauhmanis is author of the second in our series on [Developments in Geomatics Education, GIM International March 2007, page 23. \(end box\)](#)

Disaster Management

Regarding disaster management, the new school builds on earlier activities. This means that now, soon after its opening, it already holds a full portfolio and participates in several renowned international university networks like UN-EDRA (Africa), CASITA (E-Asia), and UNESCO-RAPCA (Latin America). In 2006 workshops and short courses were held in for example Uganda, Kenya, South Africa, Senegal, Ghana, Nigeria, Burkina Faso, Guatemala, Colombia, Mexico, Cuba, Vietnam, Sri Lanka, Nepal, India, and Thailand. Long-term education takes place on the academic course for Applied Earth Sciences, with specialisation in geo-hazards, disaster geo-information processing, natural hazard and risk assessment, and land degradation. Specific short courses focus on multi-hazard risk assessment and natural hazard and disaster management. Co-operation with, for example, Gadjah Mada University (Indonesia), the University of Mexico UNAM (Mexico), Makerere University (Uganda) and University College for Land and Architectural Studies UCLAS (Tanzania) take place through joint educational programmes. About thirty PhD candidates are conducting research in various fields of disaster management.

Land Administration

Land administration is no new subject for ITC, as its geo-information management (GIM) academic programme has historically offered specialisation in Cadastre. The current GIM programme has a broader scope, comprising all activities where huge amounts of geographic data are captured, processed and disseminated. Target organisations are therefore not only cadastres but also geological survey, soil survey, municipal information systems and national mapping agencies. Since land administration is increasingly recognised as a prerequisite for poverty reduction and economic growth, ITC decided in early 2007 to create a land-administration academic programme as one of the seven courses within the accredited geo-information management and earth observation degree programme. The existing GIM programme will be terminated and its content included in all other academic courses. Strong contacts with organisations such as Habitat, FAO, UNDP, the World Bank and bilateral donors justified this shift towards a specific land administration course. The new programme will begin as per September 2007, offering preparation towards MSc and Master's degrees, postgraduate diplomas and various short courses in land policy and land management, and land information systems leading to certification. About thirty to forty students are expected to participate. Up until now the school has organised expert group meetings for high-level decision-makers in Namibia and Japan. Short courses and refresher courses have been delivered in Indonesia, Ghana, Vietnam and Rwanda; more are planned for Guatemala. A symposium in Uzbekistan is planned for this autumn. The school has developed a research plan that has currently resulted in four PhD candidates working on their qualifier in land administration systems for pastoral land rights, land privatisation, digital

cadastre, and dynamic customary tenure.

Dutch Cadastre

It was recognised that land administration is not a scientific field in itself. At the end of the day, scientific models, concepts and methodologies, and also business aspects are required to make land administration work. Co-operation between ITC and the Dutch Cadastre, Land Registry and Mapping Agency (Kadaster) was envisaged as being most desirable, and therefore negotiations took place on how they might work together. Kadaster, aware of its responsibility to share knowledge and expertise with other countries needing it, entered into an agreement with ITC to contribute in cash and kind to the performance of the new school. As a result Kadaster now participates in both education and research, giving the activities of the school a unique selling point. UNU also welcomes such co-operation with 'industry'.

Database

To support access to information on land administration, Kadaster operates for the International Federation of Surveyors (FIG) an electronic library containing about seven thousand papers and articles on land administration. These can be downloaded free of charge (www.oicrf.org). The library is a much-appreciated source of information for students, PhD candidates and practitioners all over the world, especially those from countries where academic libraries suffer shortage of funds. Thousands of hits are recorded every day.

Concluding Remarks

This co-operation provides an opportunity to strongly link ITC activities on disaster management and land administration to global UN goals. Newly opened options are showcases in New York and Washington, biennial reports through UNU to UN General Assembly, and involvement in the renowned series of publications from the UNU Press. These two UNU Schools have allowed ITC in addition to its other academic courses and research to establish a strong managerial structure, enhancing geo-information management and earth observation for both disaster management and land administration in the interests of meeting global needs.

<https://www.gim-international.com/content/article/itc-and-unu>
