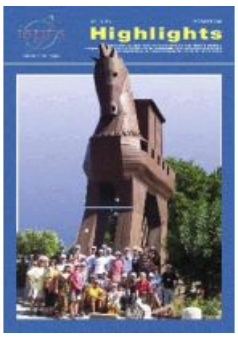
AN ISPRS PERSPECTIVE

Series on Capacity Building 1



What are the key capacity-building issues facing organisations such as ISPRS, and how are they being handled? Is ISPRS coming up with capacity-building initiatives, and how to ensure success? What are the bottlenecks and challenges facing geospatial-information societies? In this, the first feature in GIM's new Capacity Building series, three key ISPRS specialists address the big questions.

Education and capacity building in geomatics are strongly influenced by globalisation: the worldwide delivery chains for products and services. Partners in these chains must have a common understanding of specifications and conditions for product and service delivery. This should be developed through global involvement in research and technology and service development.

Investment
The time horizon for investment in hardware is three to five years, while concepts for information products and services require adjustment every five to eight years. Providers of Geo-information (GI) technology and users must thus continually adjust their Geo-ICT architectures, and this has important technological, organisational and institutional consequences. Organisations have to anticipate new technologies and geo-data infrastructure (GDI). So what is required is the permanent capacity development of entire organisations; 'lifelong learning' applies not only to professionals, but also to their organisations. Capacity Development programmes should help organisations understand developments, formulate strategies and create awareness of the changing business environment resulting from new government roles, economic and market conditions.

ISPRS Forums
ISPRS is concerned with all aspects of photogrammetry and remote sensing, including education and capacity building. ISPRS Commission VI on Education and Outreach is run by Martien Molenaar from the International Institute for Geo-information Science and Earth Observation (ITC) in the Netherlands, where education and capacity building are primary activities. The Working Groups (WG) illustrate the topics being addressed (Table 1). Developing software for e-learning is the task of WG VI/2, which is also responsible for CATCON, a contest for new computer-assisted teaching software packages.

The Youth Forum established at the beginning of the millennium has evolved into the Student Consortium. Funded by ISPRS, this is an independent body run by young scientists. Its fourth summer school was held in Warsaw, Poland, in July 2009, and the fifth is planned to take place in Vietnam.

WG	Topic
VI1	Web-based education
VI2	E-delivery of Education Services
VI3	Framework for Cross-border Education
VI4	Joint Educational Programmes
VI5	Promotion of the Profession to Young People
VI6	Special Interest Group 'Technology Transfer Caravan'

Table 1: ISPRS Commission VI Working Groups and their topics

Partnerships
Partnerships for higher education are developing fast and can be up-scaled into multilateral regional or even global networks in which each partner has its own competences and fields of expertise. These can be combined into educational programmes or courses wherein students visit several institutes as they work their way though modules. Indeed, today universities are entering into partnerships and forming consortia which offer programmes based on collective expertise. In addition, a modern ICT opens up new scenarios. For example, supported by ISPRS, three universities, the Siberia State Academy for Geodesy and Cartography, Novosibirsk (formerly NIIGAiK) the Moscow State University for Geodesy and Cartography (MIIGAiK), and Wuhan University in China, have signed a Memorandum of Understanding under the terms of which the first programme 3S (Student Summer Seminar) will start at Novosibirsk in September 2010, move to Wuhan for summer 2011 and then to Moscow in 2012. Some joint ISPRS workshops are also planned for the same venues. Such seminars will be held too in Latin America in partnership with SELPER, ISPRS Regional member and well connected to a chain of universities throughout Latin America. The workshops will later move on to Africa. The seminars are run for both students and mid-career professionals.

Snags and Challenges
Mid-career professionals aiming to upgrade their knowledge may have a clear idea of what they need, and this might not necessarily be a complete educational programme. They may rather be looking for special courses or educational modules, (e-)shopping to find these and following different distance courses as they design their own programme. They may ultimately collect enough credit points to qualify for a degree. But then which authority should be responsible for issuing it, and what should be the approach here? This poses a challenge for all organisations and professionals.

ISPRS works with the Joint Board of Geospatial Information Societies (JBGIS), where an ad hoc committee co-ordinates the capacity-building activities of members and advises on policy issues, all relating to education in Africa. Projects such as AFRef and Mapping Africa for Africa need more resources and government recognition. Co-operation with OGC and IEEE focuses on organising ‘GEOSS Workshops' aimed at a broad range of users and regional issues, educating users about the Global Earth Observation System of Systems (GEOSS). Interaction with users provides feedback on their needs for data, information and infrastructure (website 1). GEOSS workshops provide insight into problems faced by any organisation seeking to develop capacity building in Africa. Basic requirements include more finance and better understanding of the problems, which means first identifying and then getting user groups to participate, and then improving communication.

Problems for Africa include lack of:

- basic technology equipment (training is no use without it)
- spatial literacy and education in use of GI in schools
- political will.

There is also poor infrastructure, particularly low internet bandwidth and poor communications among governments in Africa. Good communication between scientists, disciplines and policy makers is also crucial. Activities must be made more regionally relevant. The key requirement here is better availability of information concerning resources and how to access them. Some steps towards overcoming the obstacles could include more interaction through user groups, disseminating research reports, and promoting open-source software. Another great help would be provision of SDI, at both national and continental scale, and of distance-learning packages.
Capacity building involves more than educating people to practice Geomatics. Vitally important too s educating decision makers in national and regional government, training practitioners, and outreach to professionals in other areas. Scientists in Africa frequently leave the continent when qualified: 30% of Africa's university-trained professionals are no longer resident there, up to 50,000 doctorate Africans are working abroad, and university Departments of Geomatics are closing down or losing staff.

New Strategic Plan
ISPRS is working to address fundamental problems of education, training and awareness-raising so that geospatial information can be more optimally employed to benefit society.

Capacity-building strategies involved in a new strategic plan to be announced in July 2010 include:

- use of core disciplines in applications such as disaster management, health, cultural heritage and maintaining a sustainable environment
- developing interest in key international issues such as climate change and working towards the Millennium Development Goals
- engaging with developing countries, especially in capacity building and student activities
- improving electronic and printed forms of communication.

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