GIS&T Innovation in Latin America

The AAG has been involved over the past four years in discussions with colleagues at the Inter-American Development Bank (IDB), the Knowledge Partnership Korea Fund, and the National Secretariat of Science, Technology and Innovation in Panama (SENACYT), on the feasibility and potential benefits of creating a network of GIS&T Innovation Centers in Latin America for economic development, environmental protection, and other needs. These organizations have provided support to the AAG to help explore this idea and to develop a feasibility study and proposed plan for addressing this concept.

Recognizing the potential roles of science, technology and innovation for improving the social and economic development of the Latin American and Caribbean regions, the AAG recently gathered leading representatives of universities, government agencies, research centers, international geography organizations, mapping agencies, and others from Latin America, the U.S. and Korea for a consultation and planning meeting in Panama, focused on how best to enhance GIS&T research and educational capacity in Latin America.

The attendees represented the leadership of many international geography-related organizations, including Santiago Borrero of the Panamanian Institute of Geography and History (PAIGH), Ronald Ahler of the International Geographical Union, Graciela Metternicht of the United Nations Environment Programme (UNEP), Rubén Berrocal of SENACYT, Michael Goodchild of the U.S. National Center for Geographic Information and Analysis (NCGIA), and dozens of other senior GIScience and government officials from local stake-holder institutions such as the Panamanian National Geographic Institute, the Technological University of Panama, the Authority for Land Management of Panama, the University of Panama, the Panama Canal Authority, and many others.

Discussion and Endorsement of Priority Needs

In the course of the meeting, special presentations addressed the current status of GIScience and technology activities and expertise at national, regional, and international organizations throughout Latin America. Attendees shared insights into several GIS&T research and educational programs that might serve as useful examples or models for the region. Participants identified gaps and needs in both the education and research areas for GIScience in Panama and Latin America, and also discussed employment opportunities for young researchers and scientists in the region.

Dr. Rubén Berrocal, the Director of SENACYT, also shared his strong support for national and Latin American wide efforts for the development of a network of interactive and mutually supportive GIS&T research and educational centers to support social and economic development needs ranging from public health and agriculture to transportation and tourism. Dr. Berrocal, a medical doctor and researcher, also discussed Panama’s just released national strategic plan for science, technology and innovation, which provides a national science policy framework and context for the development of GIS&T in Panama.

The assessment and analysis by the meeting participants emphasized the following special needs, among others, for enhancing GIS&T capacity:

- The need to achieve continuity in university programs regarding capacity and knowledge in GIS&T, and to enhance individual as well as institutional capacity in public and academic sectors. This implies finding ways to sustain developed capacity and to ensure that it is not lost when administrations change or new personnel replace existing skilled staff.
- The need to engage policymakers in understanding the key roles of geography and GIScience in addressing environment-related challenges.
New NSF Program Director, Geography and Spatial Sciences

David L. McGinnis was recently named as a Program Director for Geography and Spatial Sciences (GSS) at the National Science Foundation. He holds a PhD in geography from the Pennsylvania State University (1994) and is a former AAG Nystrom Award winner. Most recently, McGinnis has been a university research administrator for Montana State University-Bozeman. He is a climatologist with interests in complexity theory, coupled natural-human systems, and ecosystem-climate interactions. In addition to Geography and Spatial Sciences, McGinnis will be working with NSF interdisciplinary programs related to the environment.

At the National Science Foundation, McGinnis will work closely with colleagues Antoinette WinklerPrins and Ezekiel Kalipeni, GSS Program Directors, and Thomas Baerwald, also GSS Program Director and Senior Science Advisor in the Division of Behavioral and Cognitive Sciences.

UCGIS GIS&T Body of Knowledge (AAG, 2006) offers one starting point for these efforts.

Establishing a Network of Centers

Participants discussed several ideas, potential organizational models, and locations for centers that might address regional needs, as defined by the region itself. There was consensus about the importance of engaging all sectors, including public, private, academic, and non-governmental in the creation and support of the center. Adapting the “multi-university center” concept employed by the US National Center for Geographic Information and Analysis (NCGIA) emerged as a potentially relevant model for successfully structuring the involvement of a diverse suite of universities and public research institutions in Panama and throughout Latin America.

After extensive discussion, the group recommended unanimously that the AAG work together with SENACYT to develop a plan for a $1 million prototype center to enhance Latin American GIS&T capacity for innovation and economic development, with Panama as an initial host for the prototype center. The Panama GIS&T Center would then expand linkages to other universities in the region, as well as to research centers, government agencies, and other institutions such as national mapping agencies, the Panama Canal Administration, and existing private sector GIS&T institutions. There was consensus that initial funding of $1 million be developed and administered by SENACYT for the establishment of the center in Panama, and also to fund research grants on a competitive basis to address strategic national and regional priorities; approximately 10% would be reserved for administrative and standards development activities.

This initial funding would then be supplemented by longer term sustainable support in the form of additional grants, matching funds, and in-kind resources (human and infrastructure), as well as private sector support through grants of funds, GIS&T equipment, or GIS software.

The AAG intends to complete the feasibility phase of this project and deliver a proposed plan to SENACYT for moving forward by the end of March 2011. The plan would also address mechanisms for achieving long term financial sustainability of the initial center and for its interactions with other universities and centers throughout the Americas.

Doug Richardson, Patricia Solís, and Candida Mannozzi
drichardson@aag.org