

# GIS Law

VOLUME 3, NUMBER 4  
WINTER 1997

## International GIS Legal Context Changing Rapidly

by Steven E. Hendrix\*

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**T**he future of GIS from the technology side seems wide open. New developments in remote sensing, global positioning systems, desktop mapping and other innovations are driving a major industry. Today, the World Bank spends about \$1 billion dollars on geographic information projects in Latin America and the Caribbean. The Inter-American Development Bank spends a similar amount. These numbers are a bit fuzzy to be sure, given that projects are usually cast not in terms of GIS, but rather in other outputs, such as highway and transportation policy or resource management, for example. But they do show a dramatic international investment in the sector.

Yet legal developments are also driving GIS change internationally. In the Americas, the Miami Summit in December 1994 dedicated the countries of the hemisphere to integrate their economies by the year 2005, with full implementation by the year 2015. In this context, regional groups are already informally appearing. In the Caribbean, the Commissioners of Lands and Surveys of various countries have talked openly about creation of a Caribbean-wide geographic system, such that each country's national system would be linked to all the others. With the use of WGS84 instead of national grids, this is already becoming a reality. Other proposals would link Central America together as a single system.

Countries are as much motivated by competition as increased efficiencies. Vendors and GIS proponents often seek to market their wares in terms of applications and benefits. Yet many countries worry what will happen if they do not adopt GIS quickly. In the Caribbean, for example, geographic system modernization is under way or being planned in Guyana, Belize, the Dominican Republic, Cayman Islands, Trinidad and Tobago, and elsewhere. Countries without a current plan, such as Haiti, will be left further behind.

New certification requirements emerging from the global economy are further underscoring the need for GIS. The International Standards Organization has set voluntary standards for the production of many products. Customers often demand ISO certification for purchasing products. In some cases, as in Europe, customs programs may actually require such certification as a condition for entry. This has a dramatic impact on GIS. For example, a small producer of organic coffee in El Salvador needs ISO certification to get his product to market. To get such a certification, the grower must demonstrate the methodology used for the production

  

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GIS Law is a quarterly publication that analyzes the legal and policy issues related to the development of land title registration systems and geographic information systems.

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of that coffee. Production management and monitoring then becomes an important application of GIS. Small growers might even join together in a cooperative to have a joint production plan, with a single GIS covering several or many plots.

In the U.S., control of geographic data within GIS is in theory subject to the program of the Federal Geographic Data Committee (FGDC). Currently, given the importance of the ISO program, the International Standards Organization is looking at the FGDC quality standards, and may make them the new global standards for data management. In that case, GIS will not only be a tool for getting ISO certification on production, but the GIS itself may become subject to ISO certification requirements.

Another field where GIS is having an important global impact in the legal field is in the area of indigenous rights. Many groups such as the Nature Conservancy, Cultural Survival, the Land Tenure Center, and others, are using GIS as a way to get indigenous people to map their own properties. Participation in the process gives the methodology legitimacy in the eyes of the indigenous groups themselves. Indeed, where GIS is implemented directly, the legal system stands the most to gain. This has brought a level of transparency and participation that has not existed before. On the down side, however, is making sure that the legal system backs up indigenous claims. Mapping of indigenous lands without feeding into a registration system or other mechanism for backing up claims may in the end just produce pretty pictures. Non-governmental organizations are trying to make sure that is not the case.

Yet another area where GIS is making a splash is in the land tax area. Across the developing world, governments are cutting budgets and trying to make due with less. They are also cutting customs duties as part of broader programs aimed at market integration. These programs have historically contributed important sums to central government which it could then allocate for important social programs such as child and maternal health, education, and so on. With cuts in customs duties, these revenues are shrinking. Parallel to this change, governments are also decentralizing, giving authority, and hence responsibility, to local government for many programs formerly funded by central government. Local communities scramble for options on how to pay for these programs. One major option on the table is land taxation. Major locally-based tax programs are now getting started in Bolivia, Venezuela, Guatemala, El Salvador, Colombia and other countries. Land taxation, of course, infers available information on land ownership, value and location. This in turn generates demand for some sort of GIS.

Counter-narcotics is yet another area where GIS is booming internationally. The Drug Enforcement Agency uses GIS to try and monitor transport shipments. The Medellin Cartel in Colombia has a reputation for being a major GIS user itself to support and monitor production.

Many developing countries have yet to change their law on the books to reflect the new realities of the information age. Until June 1996, surveys in the Dominican Republic were not accepted if produced with new technologies. In Guyana, the legal validity of GPS surveying has not been challenged, but the law is far from clear. In few countries is there even any discussion of the need to establish quality



control or standards for GIS. Worse, various government ministries in the same country often collect the same information, with varying degrees of reliability, without ever asking the question whether anyone else might already have the information. Sloppy project design goes on wasting much development assistance.

Substantive property law is also in a state of flux in the Americas. Mexico, Peru, Nicaragua, Honduras, Ecuador and Guatemala have all made important changes to their agrarian reform or colonization programs, often eliminating many of the restrictions on buying, selling, mortgaging, inheriting, or renting of property. The tendency is to make property more marketable. This in turn reinforces the documentary needs, and consequently GIS demand. For example, the biggest land regularization and mapping effort in the hemisphere is now taking place in Mexico as a result of the changes to Article 27 of the Mexican Constitution, the provision that established the agrarian reform.

Finally, there are legal problems internationally very similar to those we find in the United States. For example, with the explosion of information, secrecy and privacy concerns emerge. Further, there are important issues over data ownership. International enforcement of intellectual property rights has advances with major trade initiatives, but is still somewhat problematic.

*\*Steven E. Hendrix is employed by USAID.*

