Assessing an SDI Readiness Index

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SUMMARY

Recent studies have been carried out to assess the development of national spatial data infrastructure (SDI) worldwide (Crompvoets et al., 2004; Kok and van Loenen, 2004; Hyman et. al. 2003). These studies have focused on countries that are implementing various components of SDI. A survey of national spatial data clearinghouses worldwide in 2003 (Crompvoets et al., 2004) depicted that 67 countries had a published version of a clearinghouse on the Web, 13 had clearinghouses in the process of being published, and 113 countries had yet to implement a national geospatial data clearinghouse. With the majority of countries yet to initiate clearinghouse activities, one is inclined to ask what the obstacles are that are impeding efforts. The goal of this work is to develop a model for assessing the obstacles for SDI development, particularly in developing countries, and to prioritize strategies for surmounting these obstacles.

Over the past decade, a range of best practices has evolved for spatial data infrastructure development, but these best practices cannot be equally applied in all countries due to organizational, technological, and financial differences inherent to the countries. Some countries demonstrate a "clonation" of NSDI from another country, but these do not necessarily have self-sustaining capacity. In a sense, the NSDI is a fictitious implementation, with the country not yet 'ready' to embrace SDI development.

The model proposed in this paper for determining an SDI readiness index integrates factors from several points of view: *organizational* (politicians vision-commitment-motivation, institutional leadership, national legal (umbrella) agreements); *information* (providers' motivation, digital cartography availability, knowledge of standards); *access network* (web connectivity; technological infrastructure, geospatial software availability/in-house development); *people* (educational level, SDI culture, individual leadership) and *financial resources* (government sources, private sources, national geospatial initiatives). The model is based on fuzzy logic, given the qualitative nature of the majority of factors.

The model was applied to the assessment of the SDI readiness index in Cuba in two time periods: in 1999, when the concept of SDI first arose in Cuba; and in 2005, when Cuba launched its National Geospatial Portal. The same methodology could be used to assess SDI readiness between countries within the same time period. This comparison of Cuba over time demonstrates an increase in SDI readiness. Although Cuba has made significant progress, the country still faces many challenges towards an effective implementation of a National SDI.