

**Decision Support Systems
for Sustainability:
Beyond the State of the Art**

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ABSTRACT

The Earth Summit, which will take place in Johannesburg, South Africa in 2002, will be a time for the nations of the world to reflect on our accomplishments or shortcomings since the first Earth Summit in Rio de Janeiro, Brazil in 1992. At that time Agenda 21 was adopted as a guide to improving the lot of mankind, the environment, and economies of all nations. Much has happened then. The population has grown by 13 percent, the use of the Internet has expanded from 376 thousand hosts to 109 million hosts, the World Wide Web became a major method for exchanging information, computer power grew by more than twenty times, the average annual temperature of the world increased, many ecological systems became fragmented, the Global Mapping project was born, and the Global Spatial Data Infrastructure got its start. Decision support systems (DSS) grew from self-contained systems to enterprise wide and beyond. The historic approach to environmental DSS is being supplanted by a distributed web based approach. Many steps have been taken toward decision support systems that are accessible by all. However, to overcome the digital divide and better meet the goals of Agenda 21, a number of additional steps must be taken. The progress we have made must be made clear to policy makers. The directions we still need to go must be clearly articulated. Some of the advances must be made in the technical arena. Other, probably more important advances must be made in the scientific, social, economic, and political sectors.

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