



Chapter IV

Participatory GIS and Community Planning: Restructuring Technologies, Social Processes, and Future Research in PPGIS

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Abstract

This chapter examines participatory approaches to GIS (PPGIS) in community planning. The discussion examines current and emerging trends in PPGIS practices, issues of access and participation that have shaped PPGIS development in the past decade, and new developments in technologies and participatory planning processes that will shape its future trajectory. The chapter concludes by suggesting practical strategies for addressing some of the challenges of facilitating and sustaining PPGIS in community planning, and identifying key areas of current GIScience research that may inform and enhance PPGIS in the future.

Introduction

Participatory geographic information systems (GIS) applications in community planning bridge at least two important developments for geography, planning, and geographic information science. A growing number of voluntary and nongovernment organizations and local residents are engaged in community planning efforts, identifying local needs and priorities and implementing strategies addressing them (Bright, 2003). At the same time, more and more grassroots groups are using GIS, decision support systems, and other types of spatial analysis technologies in these collaborative decision making activities (Sawicki & Peterman, 2002). Through these developments, community planning and collaborative approaches to GIS are closely linked. Efforts to better understand and facilitate GIS use by institutions that do community planning are connected to geographic information science (GIScience) research investigating the social implications of technology. GIScience focuses on the technological and human practices that comprise geographic information systems, encompassing questions ranging from how spatial knowledge might be represented and analyzed in digital form to how different types of GIS users interact with and apply the technology (Schuurman 2004).

GIS adoption and implementation by organizations has long been part of GIScience research, focusing primarily on academic, government, and private sector settings (Campbell & Masser, 1995). The growing adoption of GIS by nongovernmental organizations, nonprofit agencies, and other grassroots groups has presented new questions and fostered new kinds of GIS practices. From the outset, it has been clear that grassroots groups experience unique barriers in trying to foster citizen access to and use of GIS. The spatial information they wish to represent in a GIS for community planning may include qualitative local knowledge, narrative accounts, images and sketches, and other forms of spatial knowledge that are difficult to include. Their strategies for gaining access to and sustaining use of GIS are quite different from other kinds of institutions, as are the collaborative decision-making processes in which they apply GIS. Research investigating these characteristics, conditions, and impacts of GIS use by grassroots groups in collaborative public decision making has come to be known as public participation GIS (PPGIS).

Research on PPGIS and community planning is an important part of efforts to better understand collaborative GIS. Of course, many kinds of GIS applications involve collaborative activities, from cooperation between institutions to obtain GIS resources (Harvey, 2001) to the development of national data standards that facilitate data sharing and interoperability (Crompvoets & Bregt, 2003). But in the case of PPGIS in community planning, collaborative approaches are pervasive. Grassroots groups that use GIS rely extensively on collaborative strategies

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