



Chapter 37

Participatory Mapping, E-Participation, and E-Governance: Applications in Environmental Policy

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ABSTRACT

This chapter focuses on participatory mapping as an e-governance tool to facilitate public participation. Public participation is a key component of democratic governance, and there is a growing reliance on digital government tools such as the internet and social networking sites and geographic information systems (GIS). This chapter focuses on public engagement using information and communication technology, namely participatory mapping, known by a variety of terms such as participatory GIS (PGIS), public participation GIS (PPGIS), and voluntary GIS. While the analysis involves use of participatory mapping related to environmental issues, the chapter brings together seminal work from various fields of citizen engagement and participatory mapping. The idea is to create one common narrative for scholars and practitioners, bringing together various terminologies, practices, and studies in participatory mapping in the environmental arena that offers a beginner's frame of reference.

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INTRODUCTION

Governments at all levels are increasingly adopting citizen engagement in governing decisions (UN, 2014). Environmental issues are among the issues that have been considered too technical to be understood by the average person, but there continues to be support for public participation in environmental decision making (Crow & Stevens, 2012). While different approaches have been used for citizen engagement in environmental issues, participatory mapping has gained popularity. The purpose of this chapter is to locate and organize participatory mapping in the broader field of public participation and e-government, and discuss the various participatory mapping approaches using information and communication technology (ICT), organizing them under the umbrella term e-participatory mapping.

The literature on participatory mapping and public participation is vast and spans multiple policy areas such as environmental policy, urban planning, sustainable development, e-government, and geographical information systems (GIS), in addition to encompassing multiple techniques, approaches, and technologies used. This chapter presents a structured review by synthesizing the literature, with the aim of developing an understanding of e-participatory mapping as an e-governance tool for public participation. The idea is to create one common narrative for scholars and practitioners by compiling various terminologies, practices, and studies that offers a beginner's frame of reference. The focus is on e-participatory mapping, since ICT is becoming an inevitable part of the public participation process in both developed and developing countries.

ENVIRONMENTAL ISSUES AND PARTICIPATION

Environmental issues are concerned with human actions that affect the biosphere, including species, habitats, or landscapes. Environmental policy is aimed at governing the relationship between humans and their natural environment. Decisions regarding technical issues such as the environment are generally thought to be best left in the hands of experts and scientists (Rowe & Frewer, 2000). Environmental policy is the definitive example of technocratic policymaking (Fischer, 2000), as the technical nature of environmental policy makes it difficult for the average citizen to comprehend (Crow & Stevens, 2012). Yet, growth in citizen science suggests that citizens are interested in science and complex topics (Crow & Stevens, 2012; Dickinson et al. 2012; Brown & Donovan, 2014).

Environmental problems are complex and dynamic, leading the policy field to embrace diverse sources of knowledge and values, and embed participation in environmental decision making (Reed, 2008). For example, the United Nations Framework Convention on Climate Change (UNFCCC) calls on member countries to implement educational and public awareness programs, provide public access to information, and seek public participation in addressing climate change and its effects (1992). ICTs, including GIS technologies, are widely used to support public participation in environmental issues (Al-Kodmany, 2002; Bojórquez -Tapia, Diaz- Mondragón, & Ezcurra, 2001; Gonzalez et al., 2008; Jordan & Shreshtha, 2000; Kingston, Carver, Evans, & Turton, 2000).

Public Participation

Public participation refers to the involvement of the public in policy making activities on a regular and ongoing basis (Lukensmeyer & Torres, 2006). It involves a range of activities such as public sharing of

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