

Combating Climate Change with Geospatial Data Infrastructure: a Platform for Facilitating Community Adaptive Capacity

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Abstract

Community-Based Adaptation (CBA) is a concept seeking to enhance a community's adaptive capacity in the face of changing climatological conditions, where adaptive capacity is understood as a community's ability to adjust to changes in both climate and resource availability; in order to reduce vulnerability. In this regard, adaptive capacity is an important element in the design and implementation of a CBA intervention. Adaptive capacity can be described by generic indicators such as education and income; and specific indicators such as susceptibility to drought and flood. Technology plays significant role in CBA. Engineering solutions including water desalination, seasonal forecasting, and adoption of cooling and heating systems provide examples: they can improve community resilience to climate change impacts. However, many technological responses are associated only with a specific place such as coastal areas and/or the type of climate change impact – such as less rainfall. This paper explores whether the concept of a Geospatial Data Infrastructure (GDI) – a platform consisting of an integrated network of geospatial data, geo-information tools, access network, and policies from different stakeholders – can help to promote community adaptive capacity. GI tools are often argued to offer the potential for collecting, integrating and disseminating heterogeneous spatial and non-spatial data. An access network creates an interactive environment facilitating climate policy, negotiation, and cooperation among different climate change stakeholders. In this work, two case studies are presented to determine if a GDI facilitate the sharing and access to use of geospatial data, and is thus able to provide information to enhance adaptive capacity. Further research is needed to identify how a GDI facilitates design and implementation of a CBA - which is essential in community adaptive capacity.

Key words: climate change, Community-Based Adaptation, community adaptive capacity, Geospatial Data Infrastructure, Geo-Information tools.