Geographic Information Systems as a Tool to Support the Sustainable Development Goals

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Abstract : Geographic Information Systems (GIS) is a multipurpose computer-based tool that provides a sophisticated ability to map and analyze data on different spatial layers. However, GIS is far more easily applied in some policy areas than others. This paper seeks to determine the areas of sustainable development, including environmental, economic, and social dimensions, where GIS has been used to date to support efforts to implement the United Nations Sustainable Development Goals (SDGs), and to discuss potential areas where it might be used more. Based on an extensive analysis of published literature, we ranked the SDGs according to how frequently GIS has been used to study related policy. We found that SDG#15 “Life on Land” is most often addressed with GIS, following by SDG#11 “Sustainable Cities and Communities”, and SDG#13 “Climate Action”. On the other hand, we determined that SDG#2 “Zero Hunger”, SDG#8 “Decent Work and Economic Growth”, and SDG#16 “Peace, Justice, and Strong Institutions” are least addressed with GIS. The paper outlines some specific ways that GIS might be applied to the SDGs least linked to this tool currently.

Keywords : GIS, GIS application, sustainable community development, sustainable development goals

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