

## **PARTICIPATORY THREE DIMENSIONAL GEOGRAPHIC INFORMATION SYSTEM APPROACHES TO ENVIRONMENTAL DECISION-MAKING PROCESS**

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Representing complex geographic information in an easily-understood and promptly accessible format has been identified as an important part of the participatory environmental decision-making process. In the extensive use of tables, used in matrices, figures, networks, and maps in environmental decision-making represents examples of expertise systems of representation generated and understood by trained professionals, but often leaving the community participants confused and excluded. Participatory three-dimensional GIS takes the representation of data as the central issue and attempts to make such systems more understandable and accessible to the local and wider community members. Certain user friendly projects have addressed this issue by using physical terrain models as a part of community-based mapping efforts. These physical models provide a base for exploring participatory resource mapping and especially to bring spatial information into scaled physical models. Such physical models enable local communities to clearly visualize complex information in an intuitive, everyday form. Such models have been valuable in the Philippines and Vietnam for community-based participatory planning and natural resource management. Recent advances in computer-based three dimensional GIS offer a significant opportunity to replicate and enhance the visual experience of complex spatial information. Therefore, the move toward three-dimensional GIS together with spatial multimedia within an internet GIS environment promises a significant contribution in enhancing democratic environmental decision-making process.

**Keyword:** Three dimensional GIS, Participation, environmental decision-making