MBA11

Analytics for Good: Developing a Business Analytics Framework for Carbon Farming

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Abstract

Carbon sequestration, or the process of capturing and storing CO2 from the atmosphere, is crucial for mitigating global warming. *Carbon farming*, a modern approach that transfers atmospheric carbon into soil through modified farming practices and specific crops, plays a key role in this effort. While carbon farming offers significant environmental benefits, such as improved soil quality, biodiversity, and water management, its adoption remains low due to short-term costs for farmers and the complexity policymakers face in creating effective incentives. To address these challenges, we propose a decision support system using a comprehensive business analytics framework, integrating descriptive, diagnostic, predictive, and prescriptive analytics. This system evaluates various carbon farming practices, considering their impact on productivity, climate benefits, and socioeconomic outcomes. In an illustrative study in San Diego County, we apply the decision support system to support local climate-resilient agriculture initiatives.

Conference Track

MIS and Business Analytics