# Data-Intensive Approaches for Sustainability - A Review and An Analysis of Web Data Portals in Monsoon Asia

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### Abstract

The exponential increase in types and volume of data provides the potential for sustainability transitions. With the growth of data, data-intensive approaches for sustainability are widespread and endorsed by varied stakeholders. Data-intensive approaches for sustainability are explored by conducting an extensive review. The current data-intensive approaches are defined as an amalgamation of traditional datacollection methods like surveys and data from monitoring networks with new datacollection methods with new information communication technology. Based on a comprehensive review of current data-intensive approaches of sustainability, key challenges are identified: the lack of data availability, diverse indicators developed from a narrowly viewed base, diverse definitions and values, skewed global representation, and the lack of social and economic information collected especially among the business indicators. Further, nine web data portals in Cambodia, India and Thailand are analyzed. Majority of the web data portals are found to be merely providing information to the broad knowledge users. In addressing the difficulties of the existing approaches, the author proposes two new approaches - knowledge user-managed bottom-up approaches based on need and knowledge intermediary-managed lateral approaches based on interest - which allow for coordination and leadership. Incorporating local knowledge on users' needs regarding natural hazard mitigation will play a crucial role in transforming knowledge into action. A scale-based picture, focusing on landscapes, institutions and practices is proposed which can be used to align diverse fields by acting as "bridge" for improved science-policy interface and decision making, facilitated through cognitive proximity, matching, and coordination. A case study on a business association from South India is used to demonstrate the scales based approach in practice.

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## **Speaker Profile**

Vivek Anand Asokan's has an interdisciplinary research background with a Bachelor in technology from SASTRA University, two masters in interdisciplinary sustainability-related programs - Tata Institute of Social Science and the University of Tokyo- and a PhD in sustainability science from the University of Tokyo. His research interests are cross-disciplinary, and he applies an interdisciplinary lens with interest in sustainable development; CSR and environmental sustainability; science-policy (science-business; science-society) interface for decision making; footprint analysis; natural hazard and resilience; and philosophy of interdisciplinary research.