

Exploring Geospatial Methods of Detecting Rural Vitality, Vulnerability and Versatility in Rural Regions in Bavaria

Walter Timo de Vries, Pamela Durán-Díaz, Vineet Chaturvedi (Germany), Chandran Remi (Japan) and Ampelman Luc (Poland)

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SUMMARY

Rural regions in Bavaria are under stress in emerging global crises and, in the face of rapid changes and uncertainties, they require strategies to enhance their resilience. With the aim to develop such strategies, 3VRUT was formed as a consortium of partners from Germany, Japan, Poland and Spain in charge of developing a methodology to evaluate, quantify, and classify the vulnerability, versatility and vitality (the 3Vs) in selected eight rural towns. Two of the selected case studies, Bayerisch Eisenstein and Obermichelbach-Tuchenbach, are located in the German federal state of Bavaria, and represent a shrinking village and a resilient village respectively. To this stage, the methodology is being traced and calibrated with a pilot case study. Thus, the aim of this paper is to: 1) describe the development of a set of indicators for the 3Vs assessment, and 2) show the results of the first stages of the research, including the first impressions of the field visits to the two Bavarian case studies.

The 3VRUT indicators to assess the vulnerability, versatility and vitality of the selected rural towns comprise the dimensions of the natural environment (29 indicators), infrastructure and the built environment (27 indicators), institutional framework (16 indicators), social relationships (14 indicators), and economic structure (26 indicators). With the purpose to observe and detect variations in the 3Vs, the set of indicators was developed through an interdisciplinary approach that connects the socio-economic and geospatial dimensions of remote sensing data, geostatistics, field observations and surveys for data collection, analysis and interpretation. With this in mind, the combination of remote sensing technologies with machine learning and Artificial Intelligence technologies, we will be able to spot and predict changes in socio-economic behavior and opportunities in the rural setting.

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