

Assessing food security and environmental sustainability in the Mediterranean region: a vulnerability participatory approach for a multidimensional framework

Paolo Prosperi^{1,3,4}, Thomas Allen², Iuri Peri³, Martine Padilla¹

¹Mediterranean Agronomic Institute of Montpellier (CIHEAM), ²Bioversity International, ³University of Catania, ⁴Montpellier SupAgro

Introduction

Recurring food crises and climate change, along with environment depletion and the increasing incidence of foodborne diseases, keep food security and environmental sustainability at the top of the political agenda.

Food and nutrition security and environmental sustainability, presenting several interrelated factors of change, need to be jointly evaluated.

Multidimensional approaches and modeling tools are key for capturing crucial and iterative dynamics in a sustainable food system perspective.

The Mediterranean region is a geographically entwined and heterogeneous area presenting several concerns of vulnerability inducing food insecurity and environmental unsustainability.

Inadequacy in consumption and dietary transition, leading to the double burden of malnutrition (over- and under-nutrition), are narrowly related to interactive socioeconomics and environmental drivers affecting the food system.

Policy-makers need evidence-based information for sustainability-oriented public policies and indicators are key in informing action. Metrics need conceptual contextualization and methodological organization to be identified.



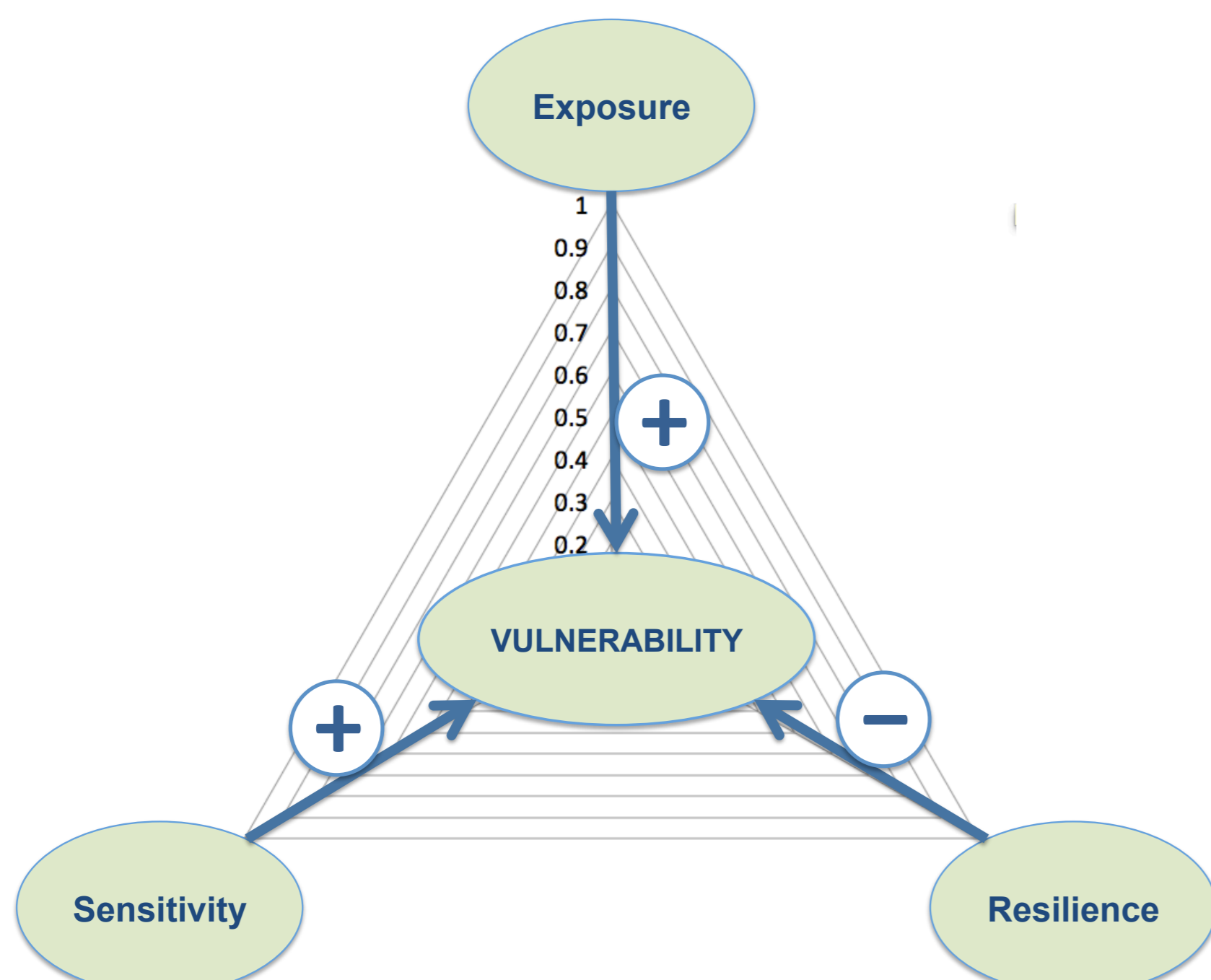
Aims

Identifying a framework to link concepts, methods and metrics, for a multidimensional joint analysis of food and nutrition security and environmental sustainability in the Mediterranean region.

Reaching evidence-based scientific information for the decision-making process, responding to major changes at national and regional scale through sustainability-based interventions.

Methods

- A coupled drivers-vulnerability approach, derived from sustainability sciences, is applied to the analysis of sustainable food security and diets.
- A causal factors-approach analyzes the vulnerability issues and the complex dynamics of phenomena, instead of directly targeting the final outcomes.
- Exposure, Sensitivity and Resilience are components for vulnerability assessment.
- A DELPHI selection technique is applied to select appropriate metrics.

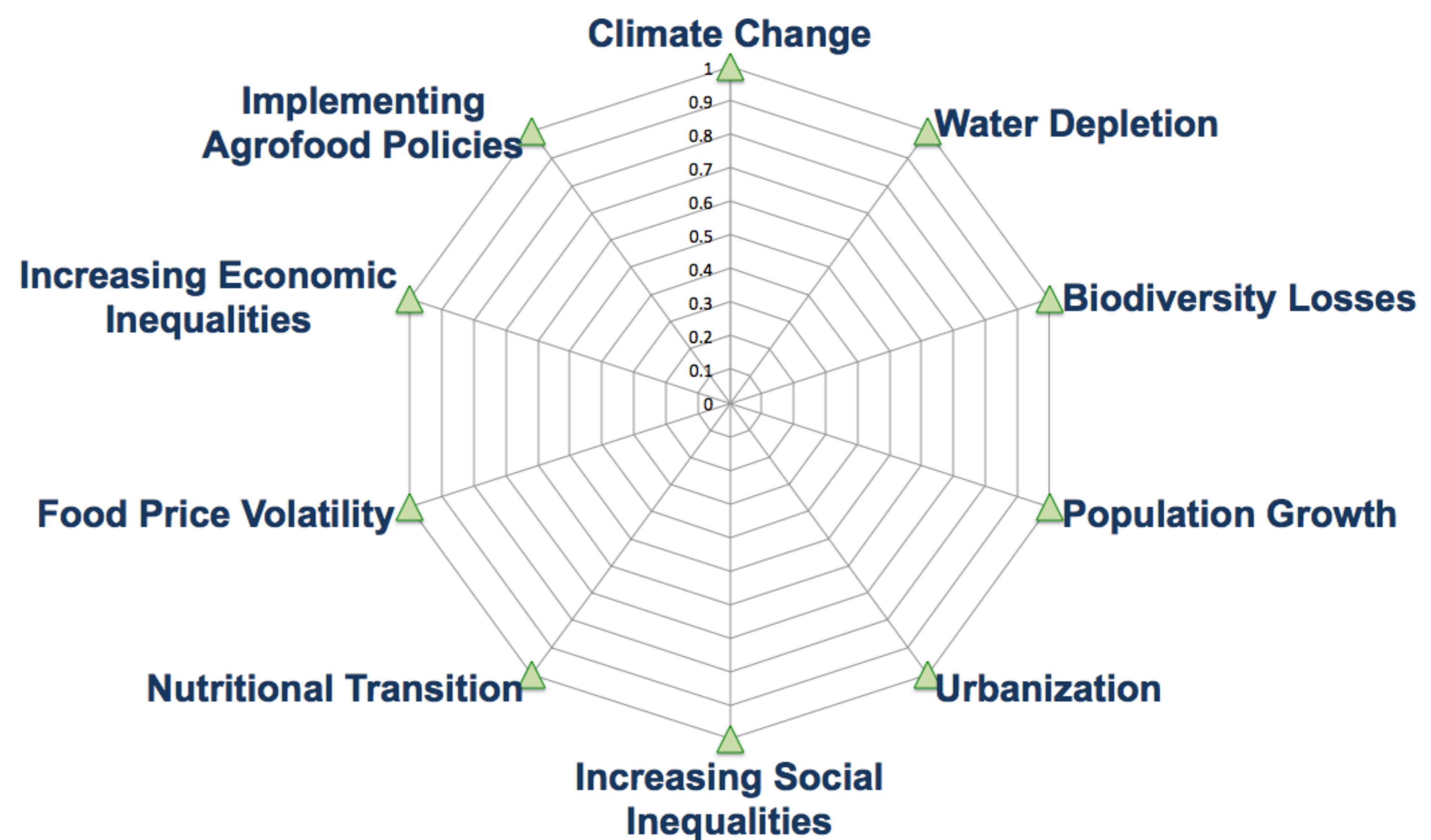


Findings

An innovative conceptual assessment framework is identified to measure sustainability in the agrofood system.

The vulnerability framework enriches the scientific and evidence-based information system, through causal factor analysis, and intensifies the understanding of phenomena for decision-making and response solutions.

Participatory and multidisciplinary vulnerability-based methods indicate direction for assessing environmental, economic, social and health impacts and factors of change affecting food and nutrition security and environmental sustainability in a sensitive geographic region.



Conclusions

The Mediterranean region presents several drivers of vulnerability, linked to food insecurity and environmental unsustainability.

The vulnerability approach enables investigating causal factors as sequential dynamics of the food system.

Issues and challenges for food security and environmental sustainability have to be defined before choosing assessment methods.

Use of a participatory and consensus-based approach through a DELPHI technique, allows implementing assessments beyond subjective solutions, reaching consensus.

Vulnerability approach and analysis are necessary for sustainability research, providing conceptual and methodological understanding of food security, and global change knowledge connecting science and decision-making.

The identification of the key drivers of change in the Mediterranean food system promotes regional decision-making solutions and cutting-edge questions for food security.

Research activities:

We are applying this methodology at a national level to study several critical food-related issues in Mediterranean countries, recognizing the role of experts through the Delphi method.

Contacts: Paolo Prosperi
prosperi@iamm.fr

PhD Student at:
IAMM/CIHEAM
Montpellier Supagro
Università di Catania



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