Food and Water Insecurity: Issues of Identification and Scale

The Problem

Food and Water Insecurity manifest at the household and individual levels, but data tends to be aggregated to match politicallydefined geographic boundaries. Often, these aggregated statistics mask the severity of food and water insecurity issues, particularly for marginalized communities in upper-middle- to high-income countries, like the U.S.

Objective

0 10 20 30 40 50 60 70 80 90 100 Nodata

Identify tradeoffs between political relevance and accuracy in existing literature based on the chosen scale of analysis.

Methods

A snowballing approach was used to identify the most popularly cited and relevant papers in the food and water insecurity fields.



Distributional disparities across countries

Generalizable results facilitate cross-sectoral, cross-cultural, analyses Data relevant to global food and water systems

Data accuracy **Distributional inequities** Inclusion of local knowledge

60,000 50,000

40.000

20,000

Results

Global- and national-scale studies provide broadly representative results, which aid in policymaking processes but often obscure nuance. Meanwhile, community- and individual-scale studies contribute localized knowledge and specificity, but lack the scope necessary to inform sweeping policy changes.

Global/National

Low risk of doublecounting

Overlap

Intuitive and actionable results Aggregation methods obscure nuance, create uncertainty in results Supply-side focus

San Joaquin Employment by Crop Type



System interdependencies Policy relevance Global significance

Sub-national

Distributional disparities within-country

Focus on subpopulations

Insight into domestic systems, interconnections across sectors

Domestic policy development applications Local

Fine resolution experiential data

Heterogeneity between subpopulations

Demand-side focus

Bottom-up approach

Limited policy relevance

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Conclusions

- 1) A lack of fine resolution food and water insecurity data may explain the issues' persistence, particularly among historically marginalized populations.
- 2) Experiential data is essential for knowledge generation and equitable representation, but quantitative analyses aid in policy development.
- 3) Water insecurity literature is lacking generally, particularly for the developed world.

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