



A Flexible Approach for Quality Assurance in Geospatial Data

Mapping European Union Agricultural Census Data 2020

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Source: [What's Really at Stake in Europe's Farmers Protests | WPR \(worldpoliticsreview.com\)](https://www.worldpoliticsreview.com)

European survey on the structure of farms

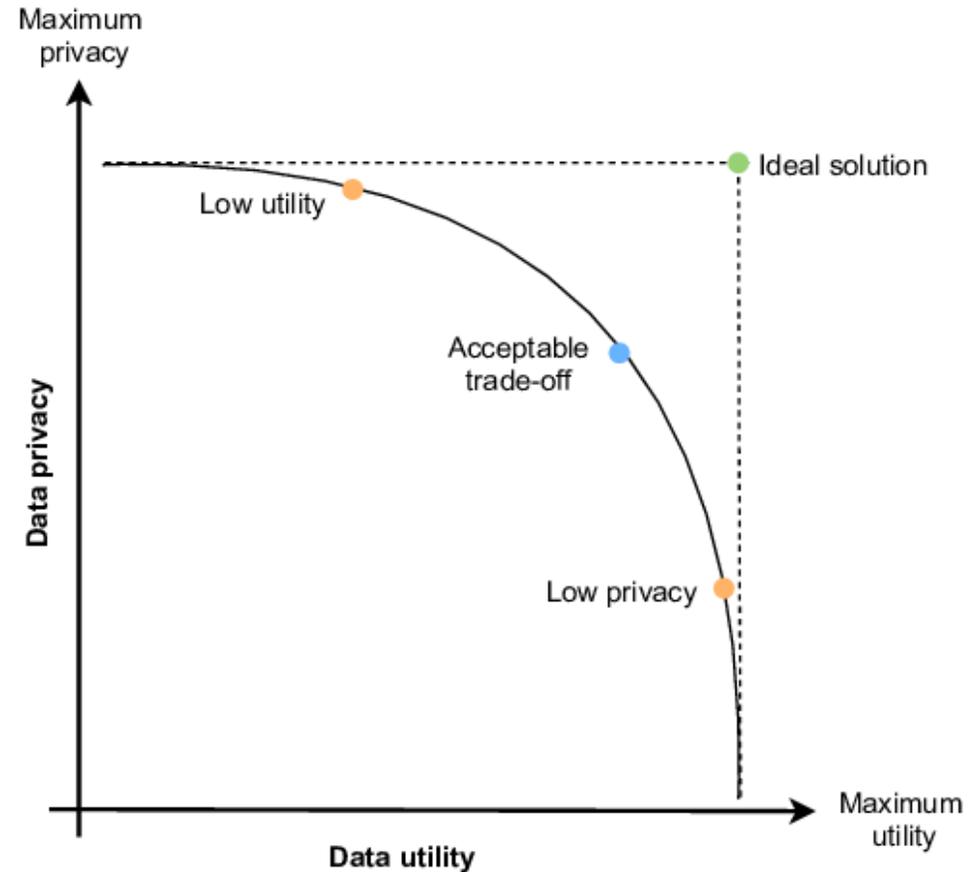
- Since 1966 to examine trends in the structure
- Statistical knowledge base to monitor policies
- Harmonised, coherent and comparable statistics
- **C**ensus in a decade and **S**urvey every 3-4y
- Collecting geographical *location* of the farm *at 1km* since 2010
- Disseminated in tabular form at NUTS2

	1999/2000	2003	2005	2007	2009/10	2013	2016	2020
Belgium	C	C	C	C	C	S	C	C
Bulgaria		S	S	S	C	S	S	C
Czechia		S	S	S	C	S	S	C
Denmark	C	S	S	S	C	S	S	C
Germany	C (1999)	S	S	S	C	S	S	C
Estonia		S	S	S	C	S	S	C
Ireland	C	S	S	S	C	S	S	C
Greece	C (1999)	S	S	S	C (2009)	S	S	C
Spain	C (1999)	S	S	S	C (2009)	S	S	C
France	C	S	S	S	C	S	S	C
Croatia				S	S	S	S	C
Italy	C	S	S	S	C	S	S	C
Cyprus		C	S	S	C	S	S	C
Latvia	C (2001)	S	S	S	C	S	S	C
Lithuania		C	S	S	C	S	S	C
Luxembourg	C (1999)	C	C	C	C	C	C	C
Hungary	C	S	S	S	C	S	S	C
Malta		S	S	S	C	S	S	C
Netherlands	C (1999)	C	C	C	C	C	C	C
Austria	C (1999)	S	S	S	C	S	S	C
Poland		C (2002)	S	S	C	S	S	C
Portugal	C (1999)	S	S	S	C (2009)	S	S	C
Romania		C (2002)	S	S	C	S	S	C
Slovenia	C	S	S	S	C	S	S	C
Slovakia	C (2001)	S	S	S	C	S	S	C
Finland	C	C	C	C	C	S	S	C
Sweden	C (1999)	C	C	C	C	S	S	C
United Kingdom	C	C	C	C	C	S	S	C
Iceland					C	S	S	C
Norway	C (1999)	C	C	C	C	S	S	C
Switzerland			C	C	C	S	S	C
Montenegro					C		S	
North Macedonia						S	S	
Albania					C (2012)			
Serbia					C (2012)		S (2018)	
Kosovo*					C (2014)			

Source: [Glossary: Farm structure survey \(FSS\) - Statistics Explained \(europa.eu\)](https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&plugin=1)

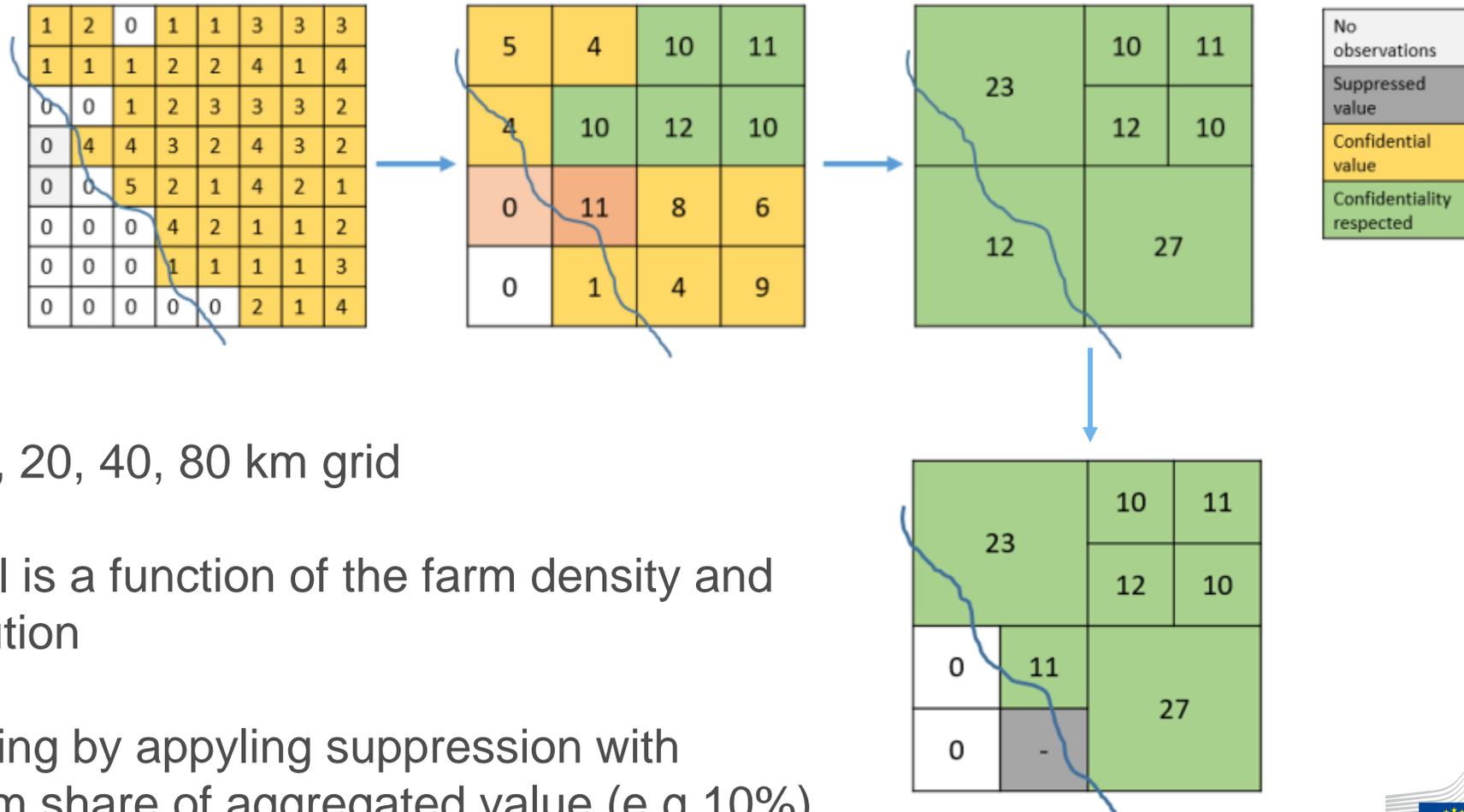
Statistical disclosure control

- Threshold rule:
Less than 10 farms (legal obligation)
- Dominance rule:
One or two farms represent more than 85% of cell value in the grid
- Reliability assessment:
The coefficient of variation is greater or equal than 35%



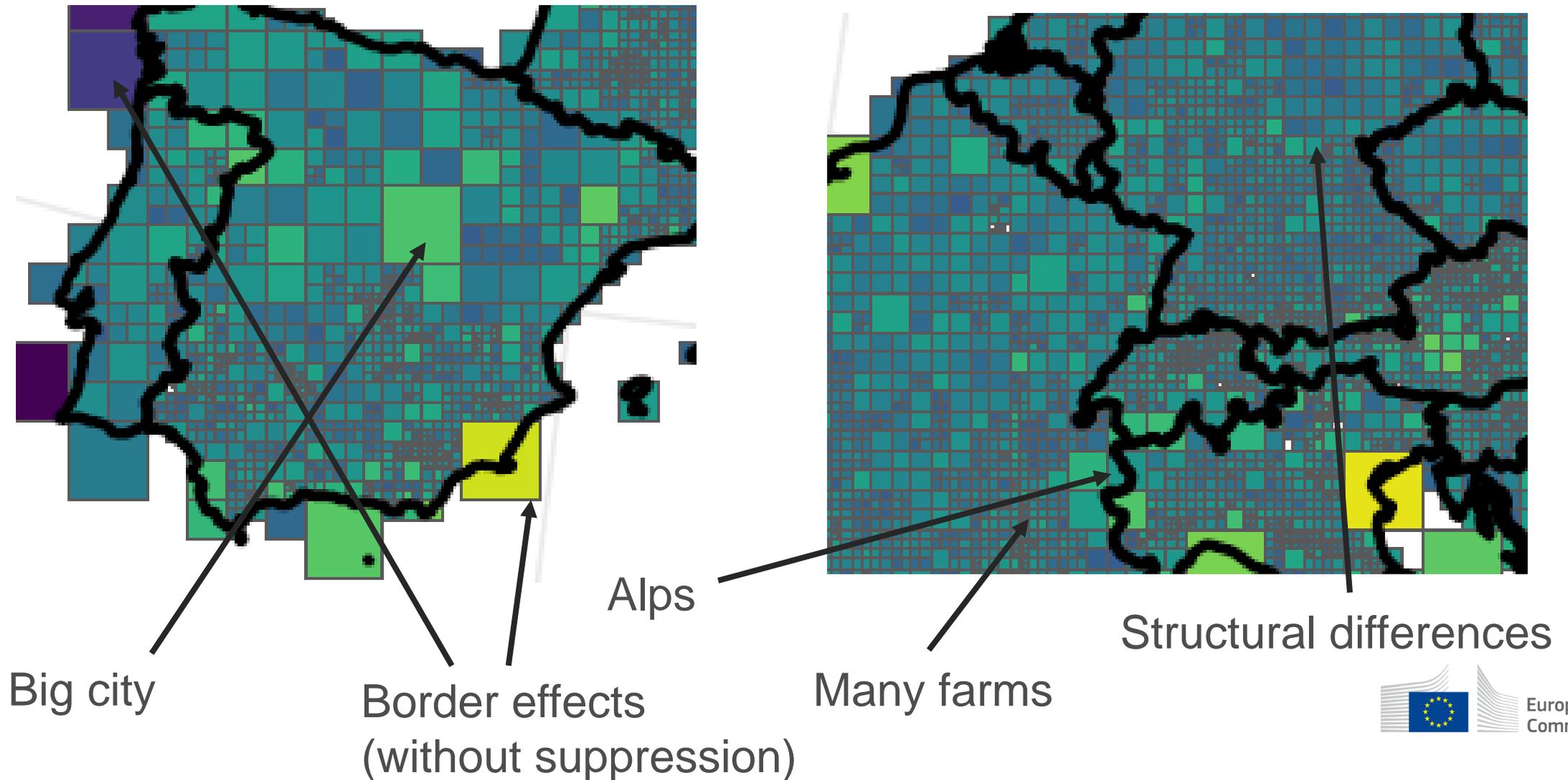
Source: [Carvahlo and Moniz \(2022\)](#)

Multi-resolution grid

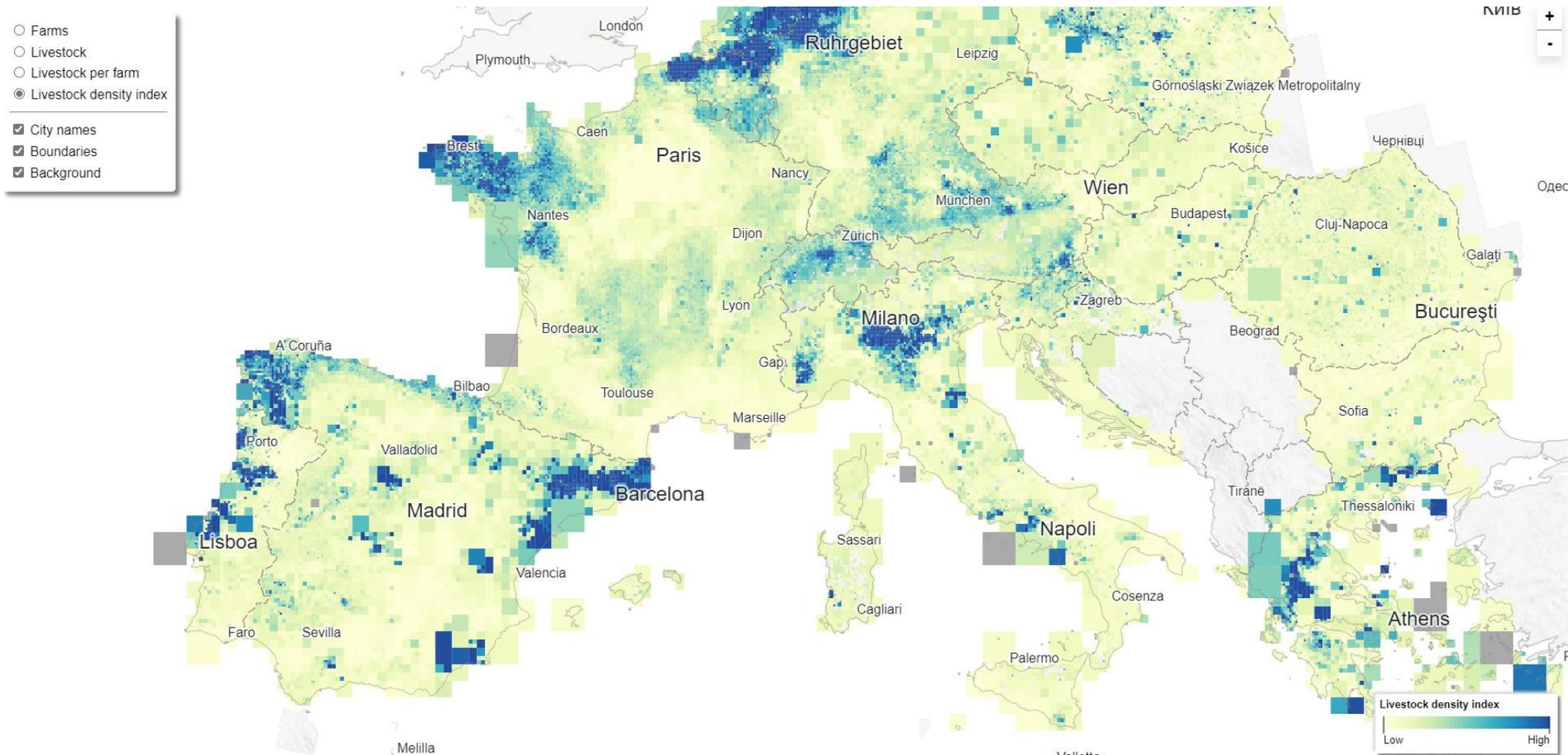


- 1, 5, 10, 20, 40, 80 km grid
- Grid cell is a function of the farm density and contribution
- Optimising by applying suppression with minimum share of aggregated value (e.g 10%)

Spatial patterns in 2020 agricultural census



Gridviz tool by GISCO (Livestock)



Source: <https://www.acceptance.ec.europa.eu/assets/estat/E/E4/gisco/IFS/index.html>

Take away & next steps

- Promising method for gridding survey data with flexible implementation
- Further development needed to map simultaneously several survey years
- Release of R package (open source), statistical atlas of agriculture and scientific articles
- JRC applications: Crop diversity index, CAPRI model, Gini Index (inequality in terms of ownership, land and income)

Thank you

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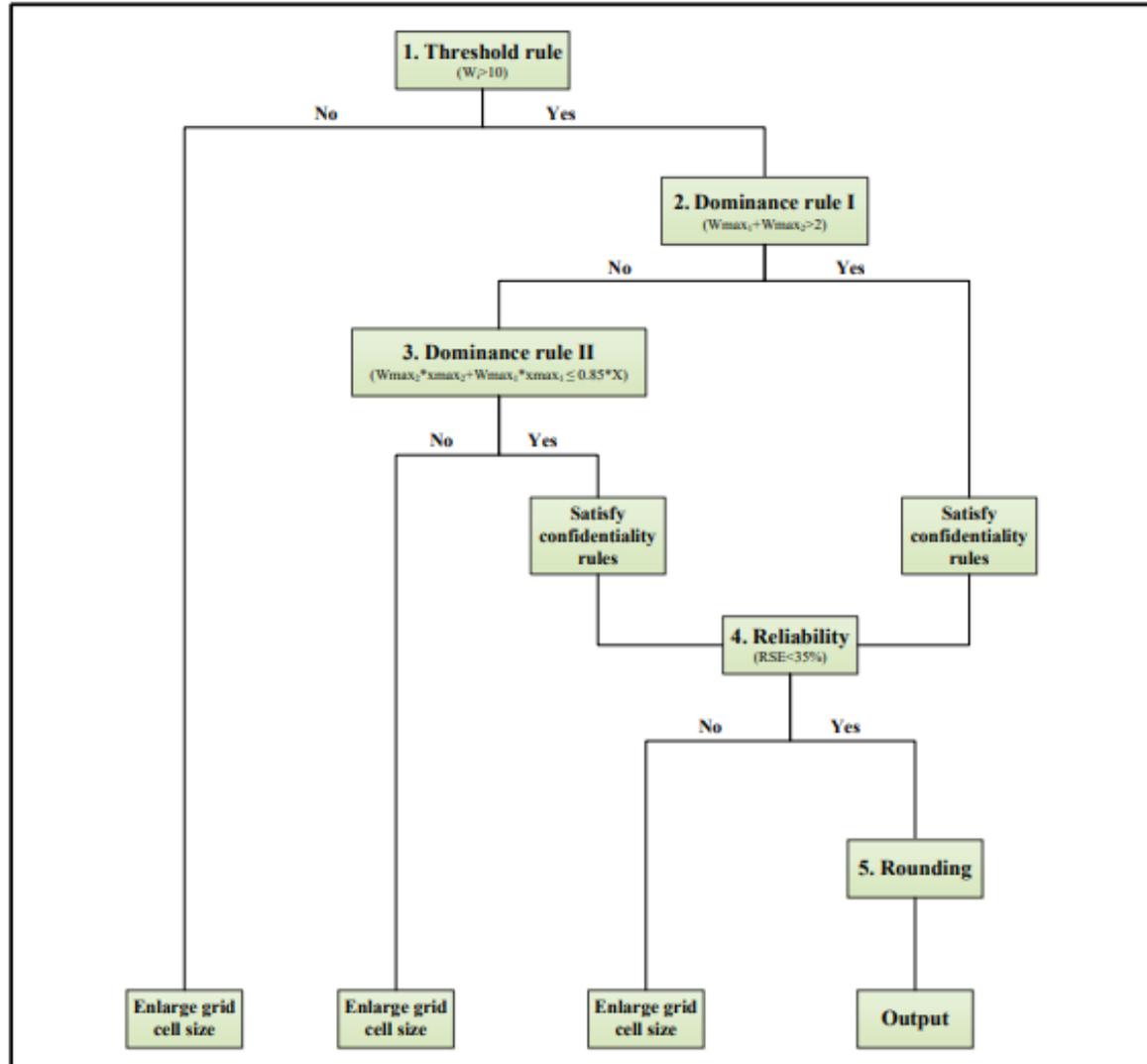


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Additional slide for explanations



Additional slide for explanations

