A Flexible Approach for Quality Assurance in Geospatial Data

Mapping European Union Agricultural Census Data 2020

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European Commission

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

Source: Glossary:Farm structure survey (FSS) - Statistics Explained (europa.eu)
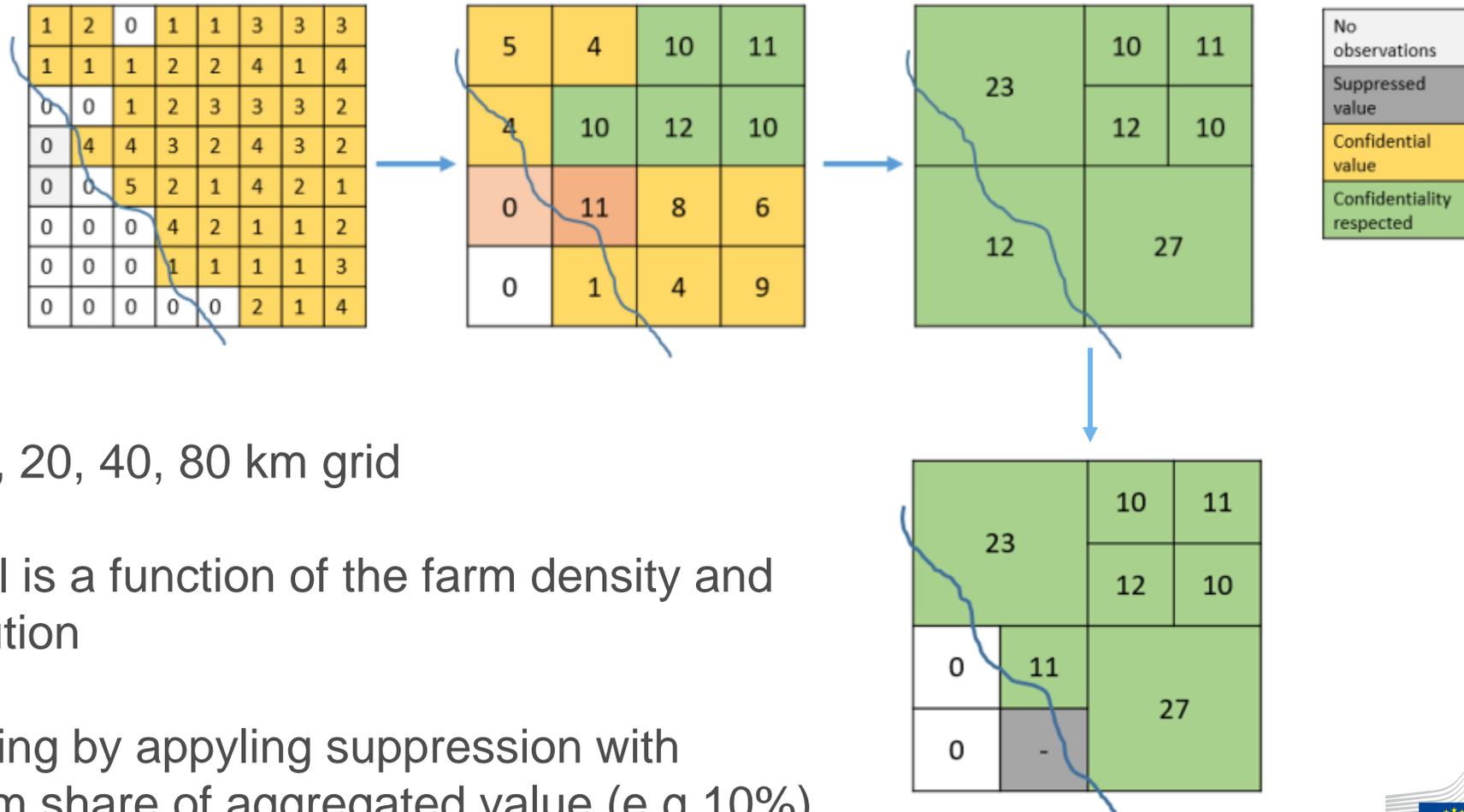
Statistical disclosure control

- **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%
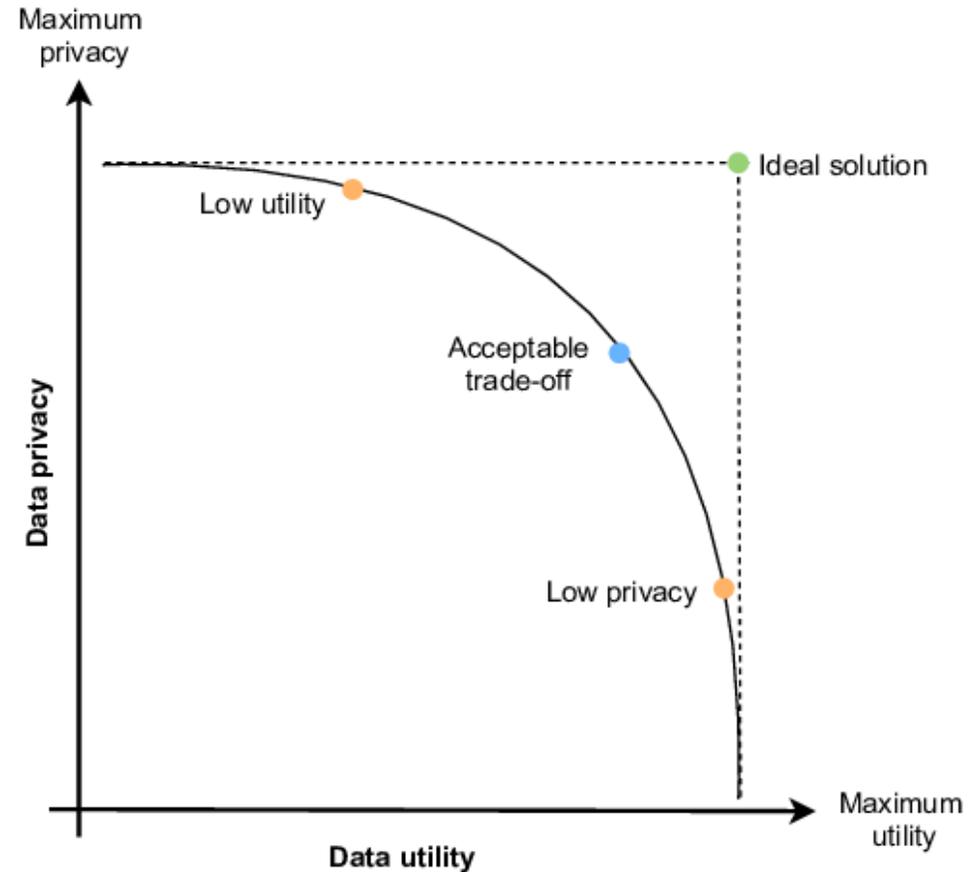
Source: Carvahlo and Moniz (2022)
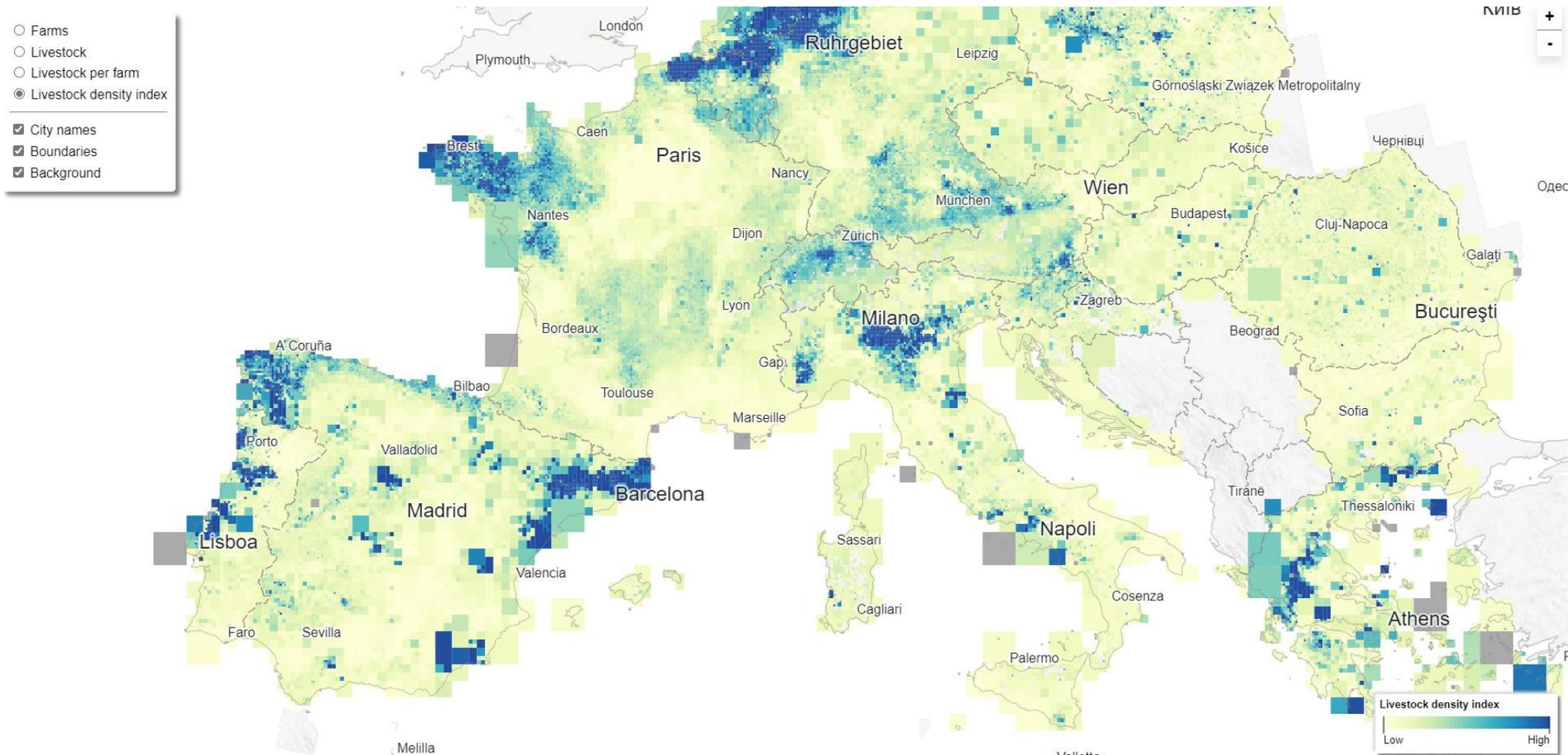
Multi-resolution grid

- 1, 5, 10, 20, 40, 80 km grid

- Grid cell is a function of the farm density and contribution

- Optimising by appyling suppression with minimum share of aggregated value (e.g 10%)

Spatial patterns in 2020 agricultural census

Big city

Border effects
(without suppression)

Alps

Many farms

Structural differences
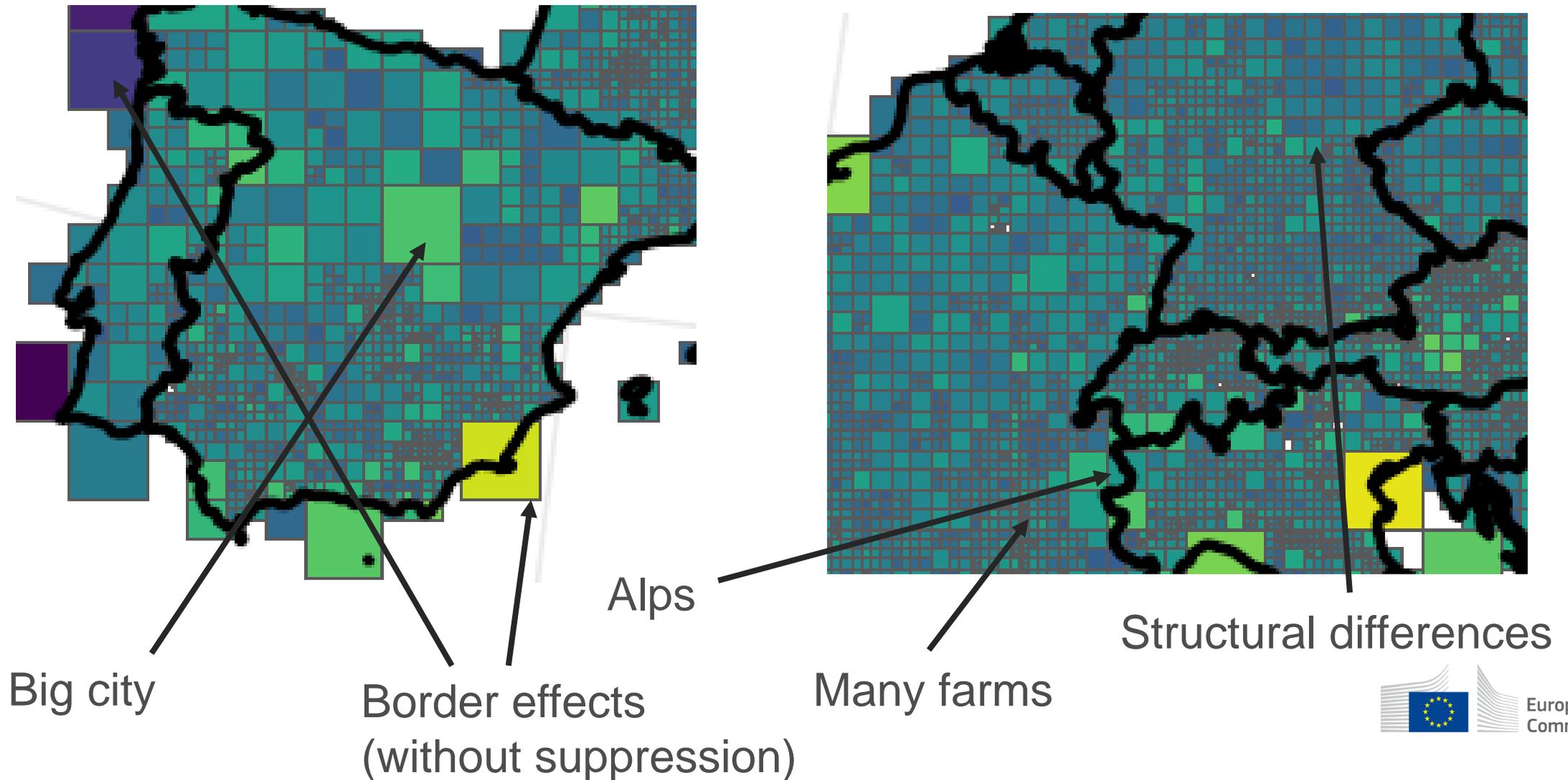
Gridviz tool by GISCO (Livestock)

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)

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Thank you

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Additional slide for explanations

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