Developing a definition of Functional Rural Areas

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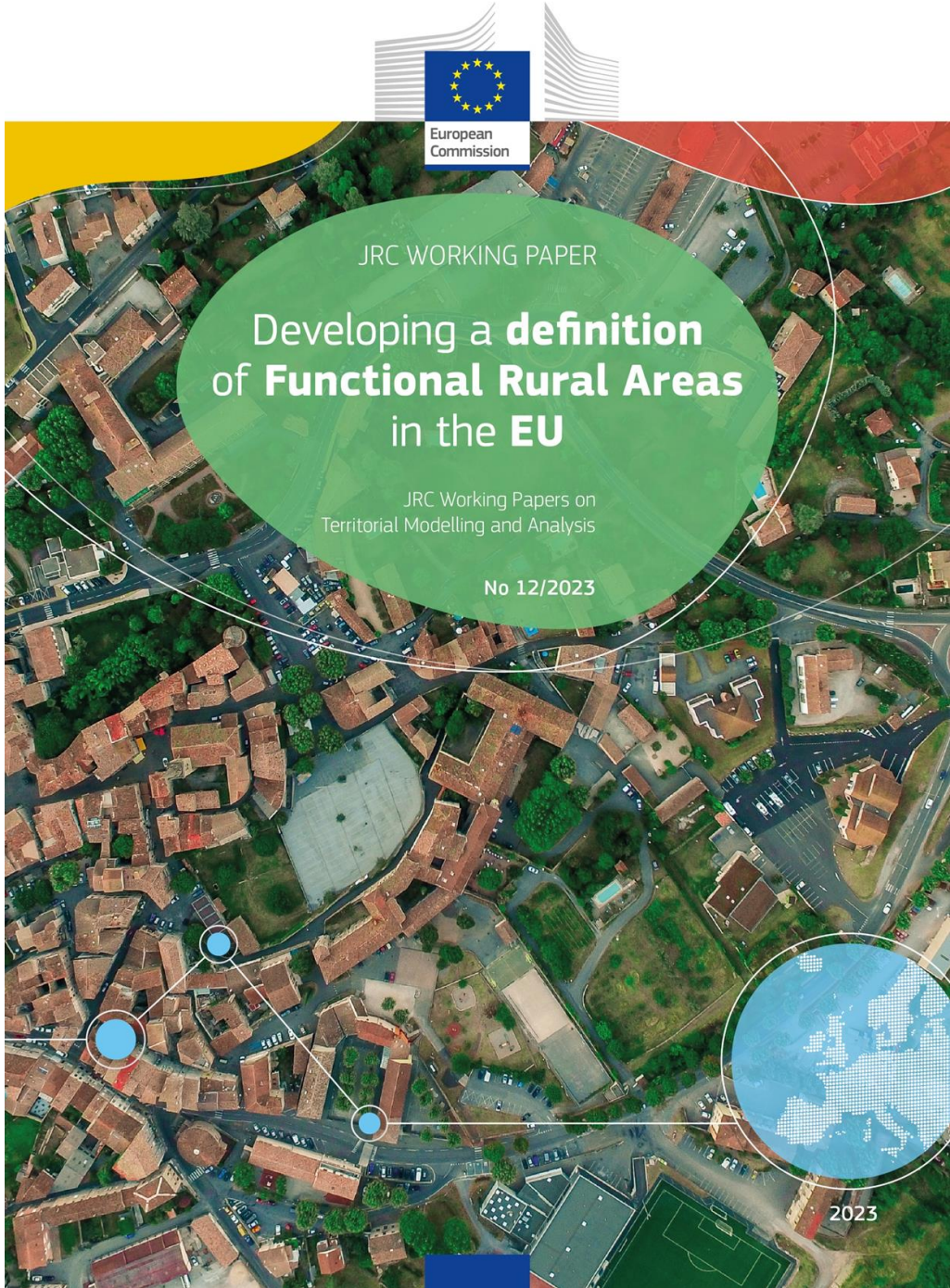
Inspired by market towns

- Market towns offer public and private services to a wider area: a post office, a grocery store, a bank, a school and a doctor,
- They serve as a community centre: weekly market, café, restaurant, cultural centre
- They contain some jobs, but are not a major employment centre or commuting destination



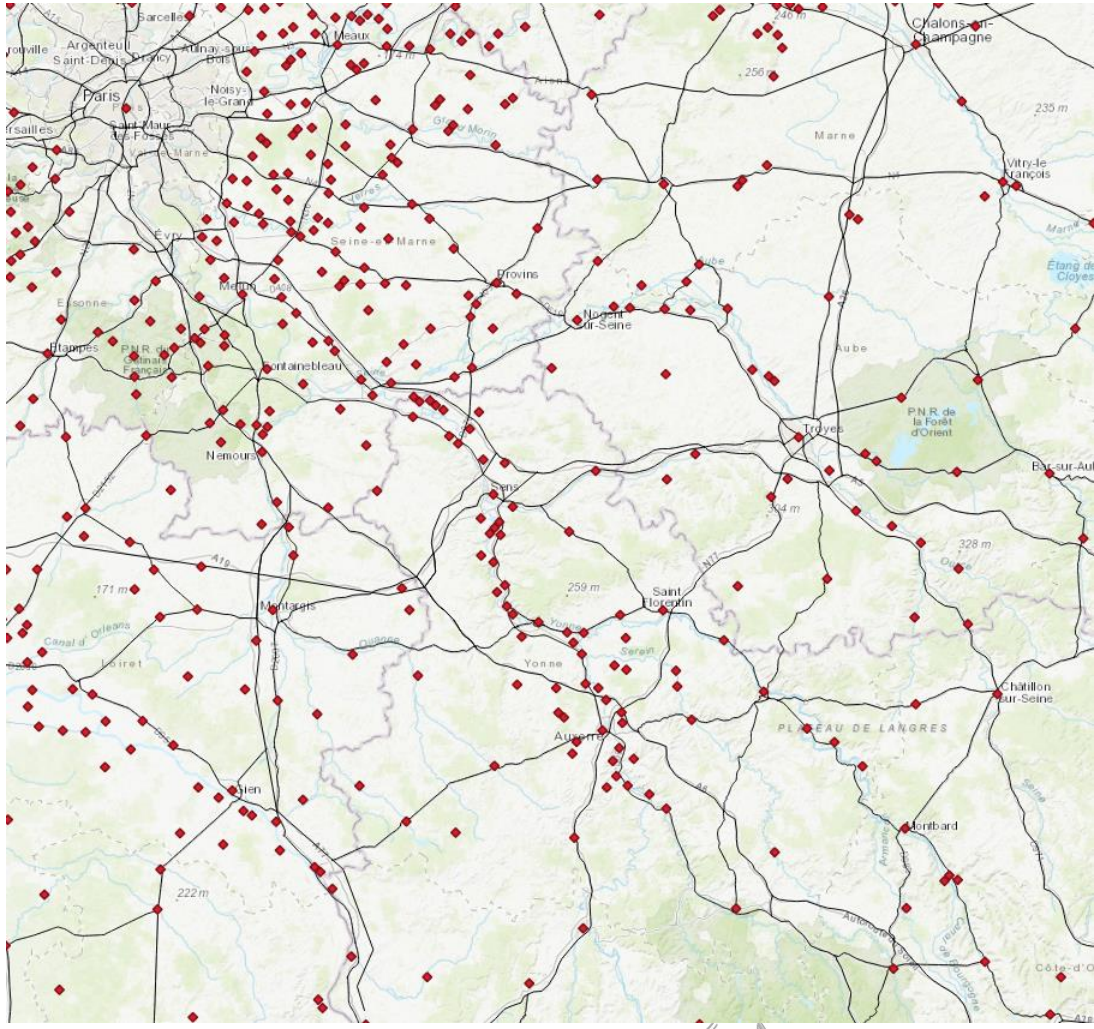
Functional rural areas: Five simple rules in Four steps

1. Contains at least one village or town
2. Contains at least 25,000 inhabitants, except if the closest town or village is more than an hour away
3. FRAs more than 60 min. apart cannot be combined
4. FRAs less than 30 min. apart are combined.
5. Functional rural areas cover all territory outside functional urban areas

1. Select all rural centres: biggest town or village in a 10-minute drive (outside FUAs)
2. Create a catchment area around each centre
3. Combine catchment areas that are too small or nearby
4. Translate grid level FRAs (FRAGs) into LAUs (FRAUs)

Local centre catchment areas

Take all settlements (cities, towns and villages)



Local centres methodology: Jacobs-Crisioni, C., Kompil, M., & Dijkstra, L. (2023). Big in the neighbourhood: Identifying local and regional centres through their network position. *Papers in Regional Science*, 102(2), 421–457

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Local centre catchment areas

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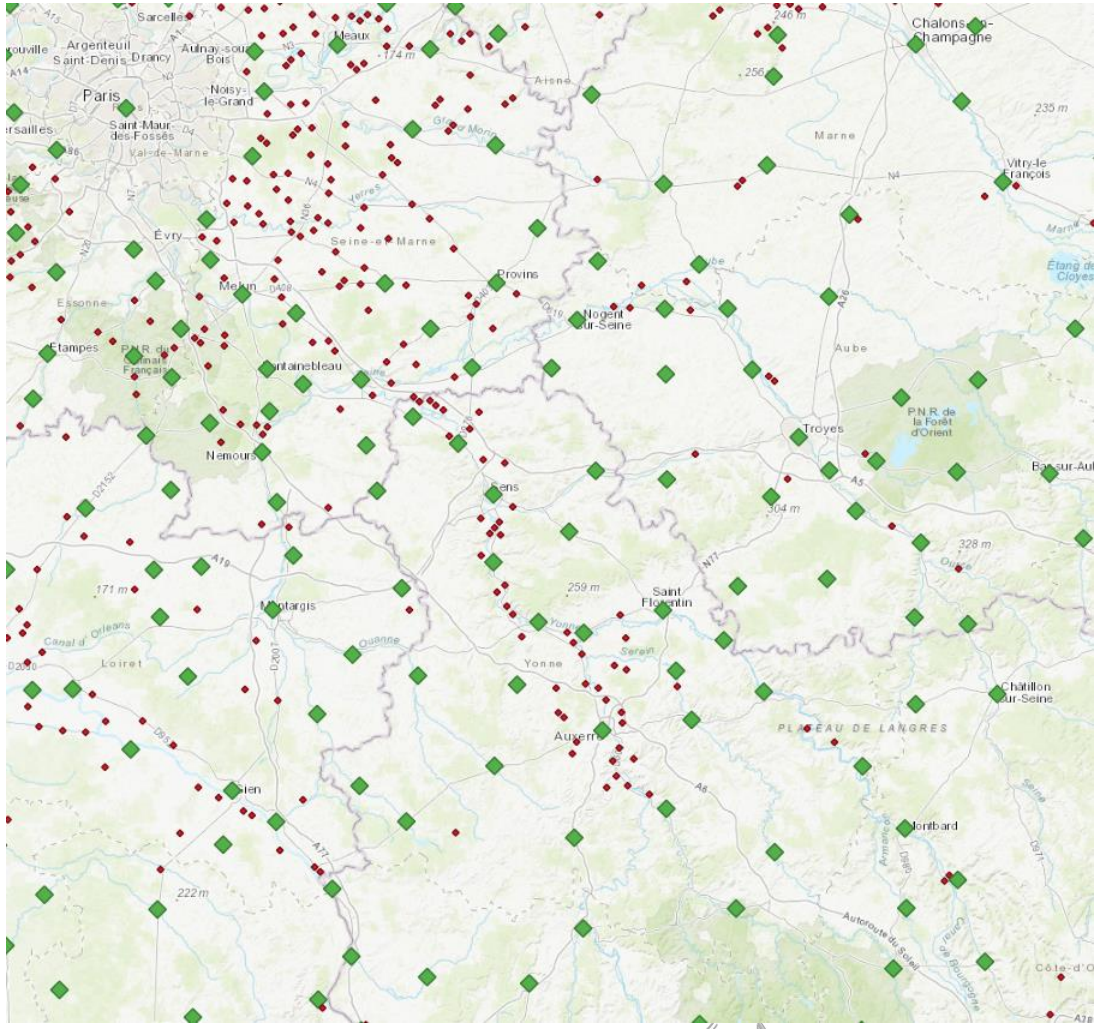
Select local centres i.e. ‘the biggest settlement in 10 minutes driving’



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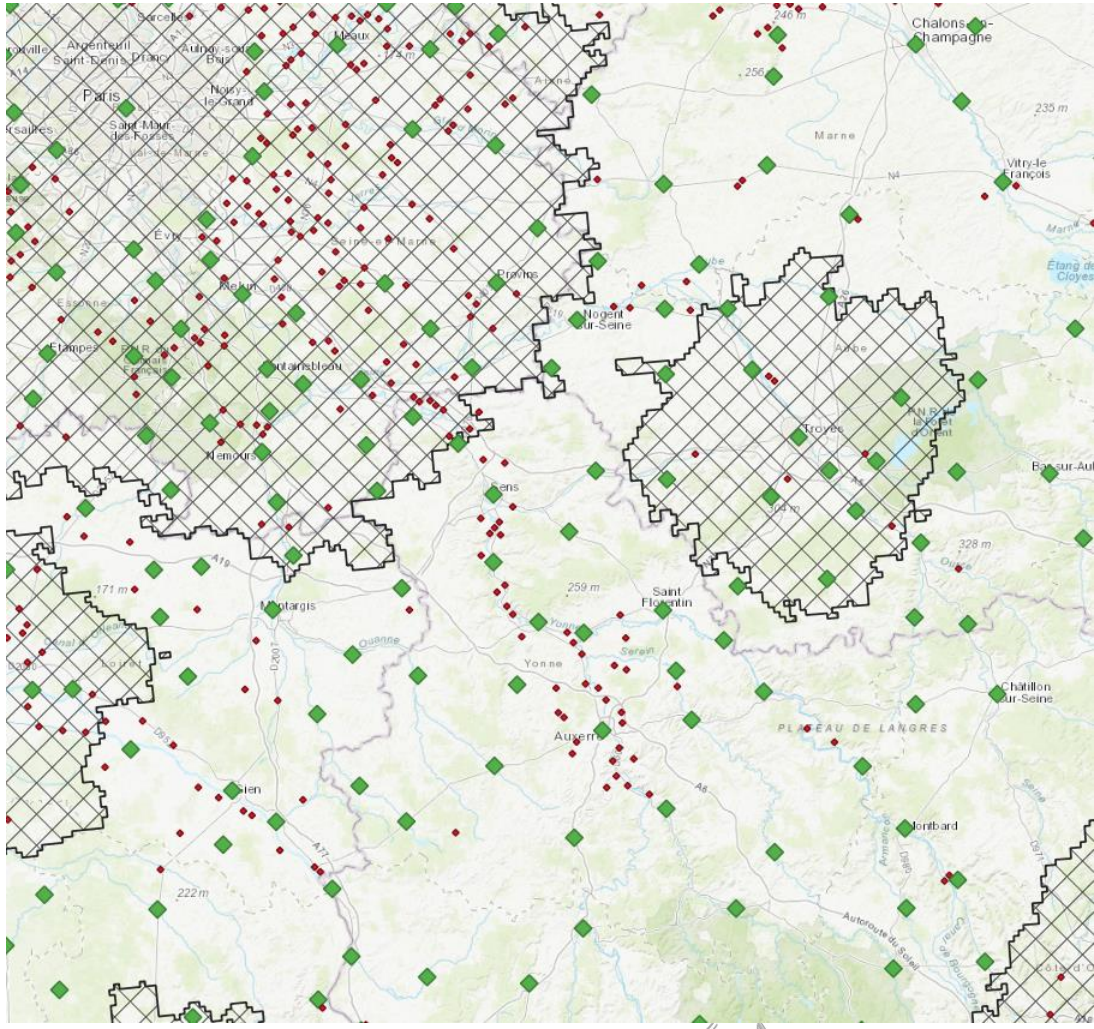
Exclude the Functional urban areas or FUAs



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Local centre catchment area

Take all settlements (cities, towns and villages)

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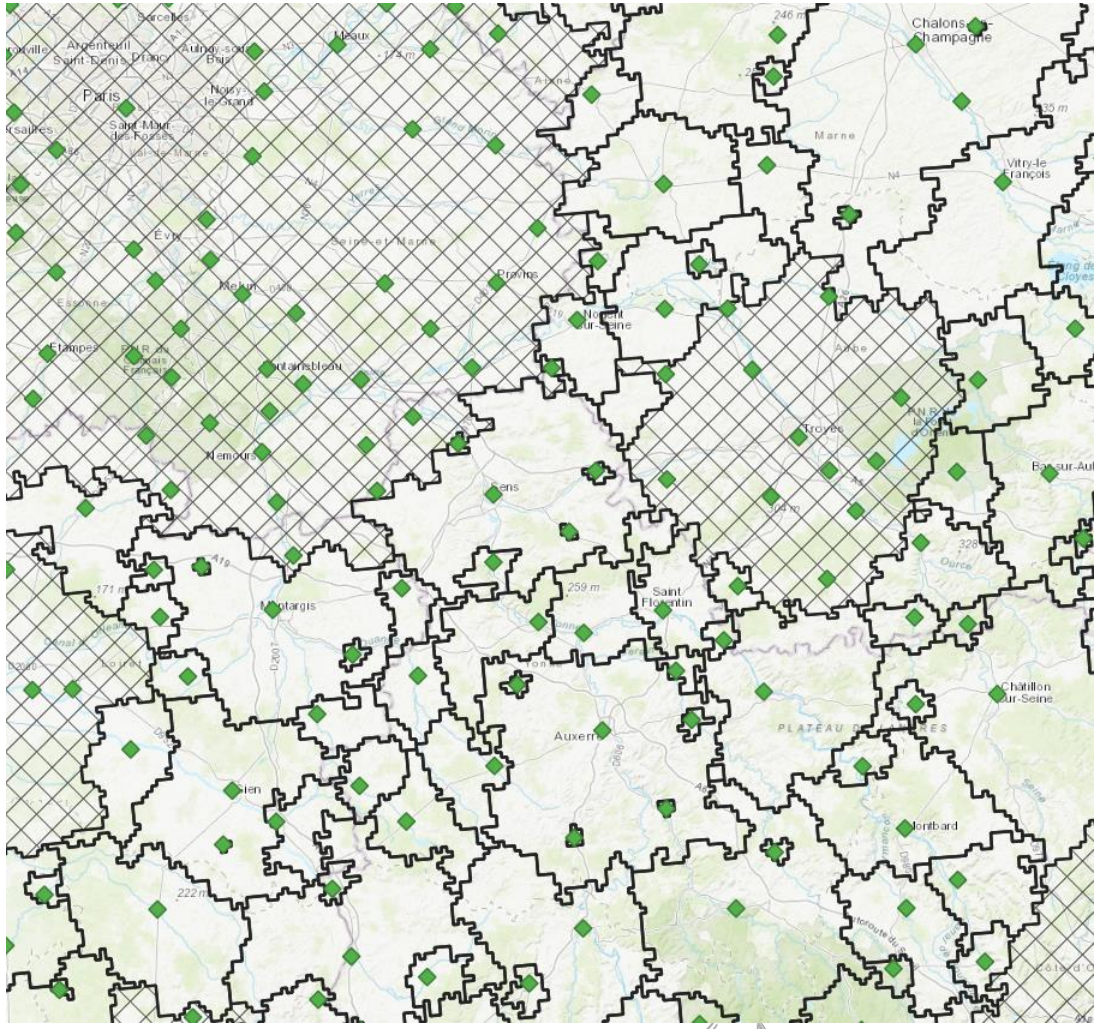
Exclude the Functional urban areas or FUAs

Create local centre catchment areas based on the pull from each local centre



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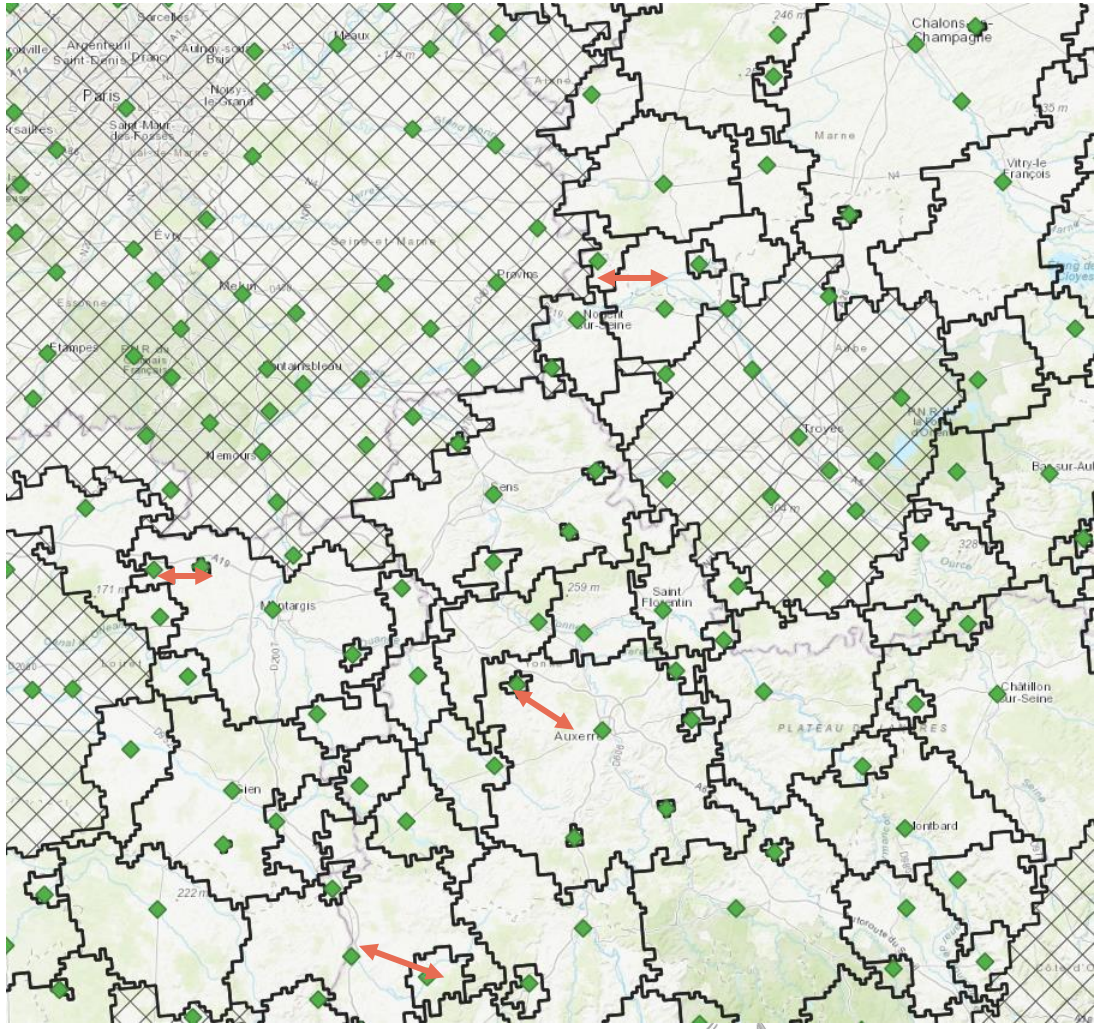
Creating Functional Rural Areas

Iterative process

Find pairs of contiguous catchments that:

- ✓ Are very close (<30 minutes) or
- ✓ Are not too far apart (less than 60 minutes) and one or both have a population of less than 25,000

! Travel times are between local centres



Picture shows local centre catchments

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Creating Functional Rural Areas

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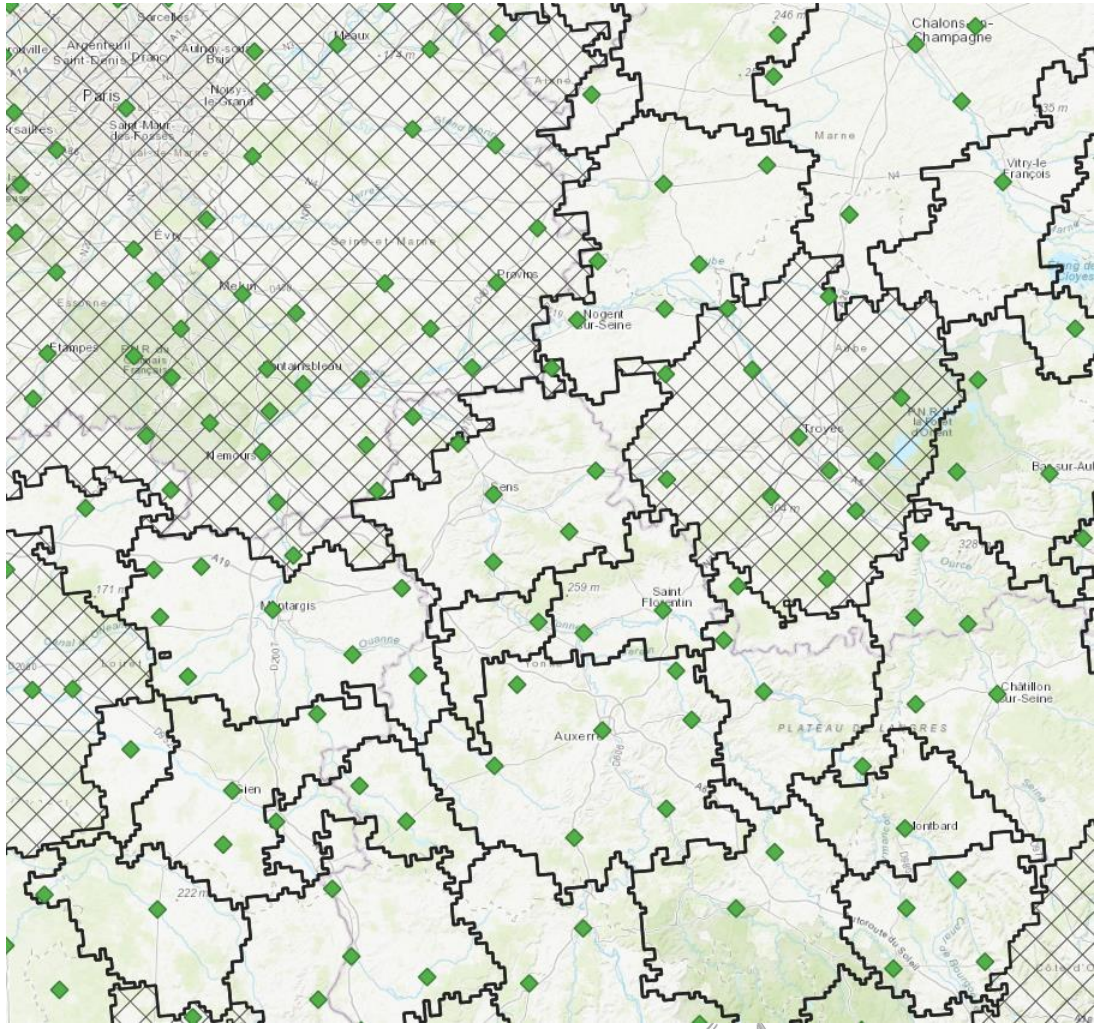
Then combine these pairs and recalculate population and travel times



Picture includes multiple iterations

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Creating Functional Rural Areas

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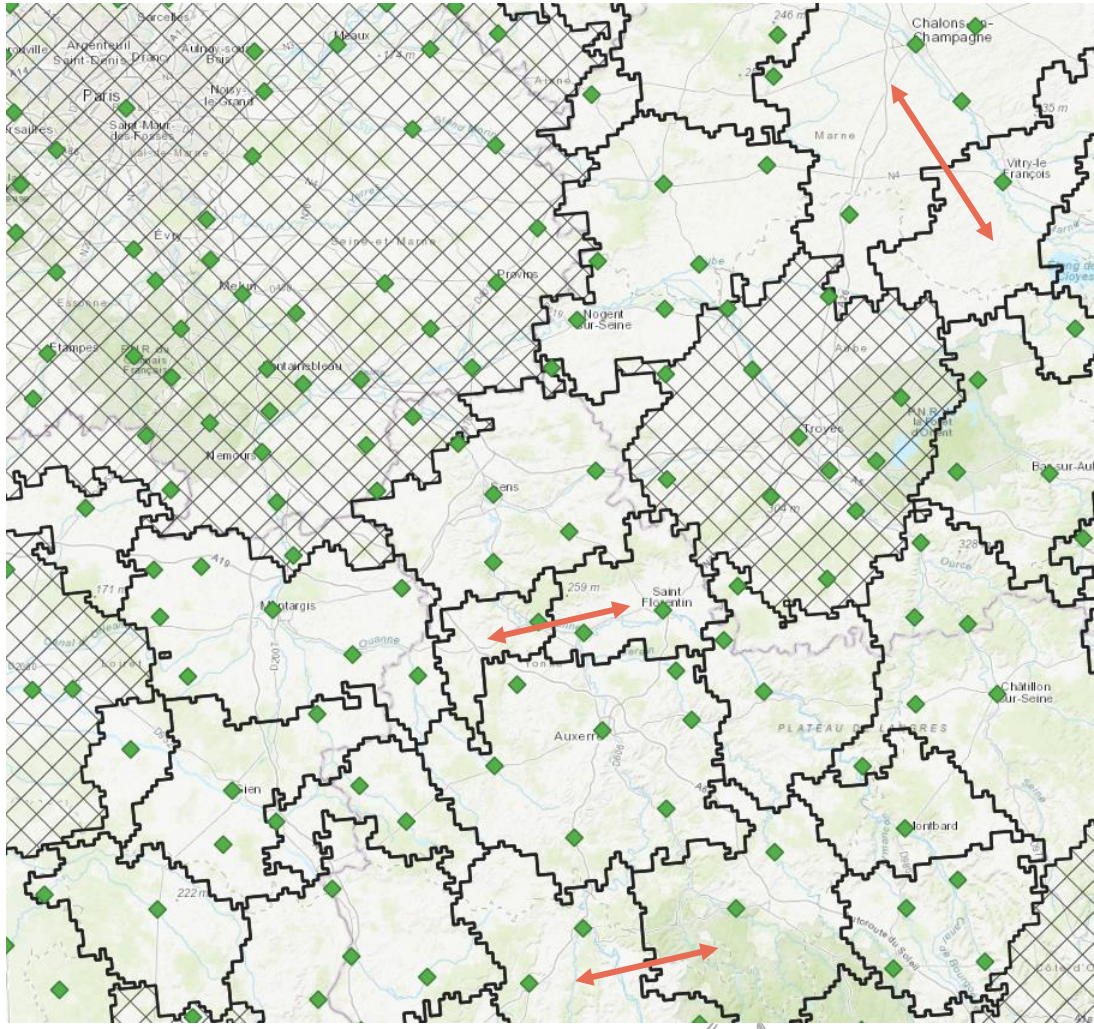

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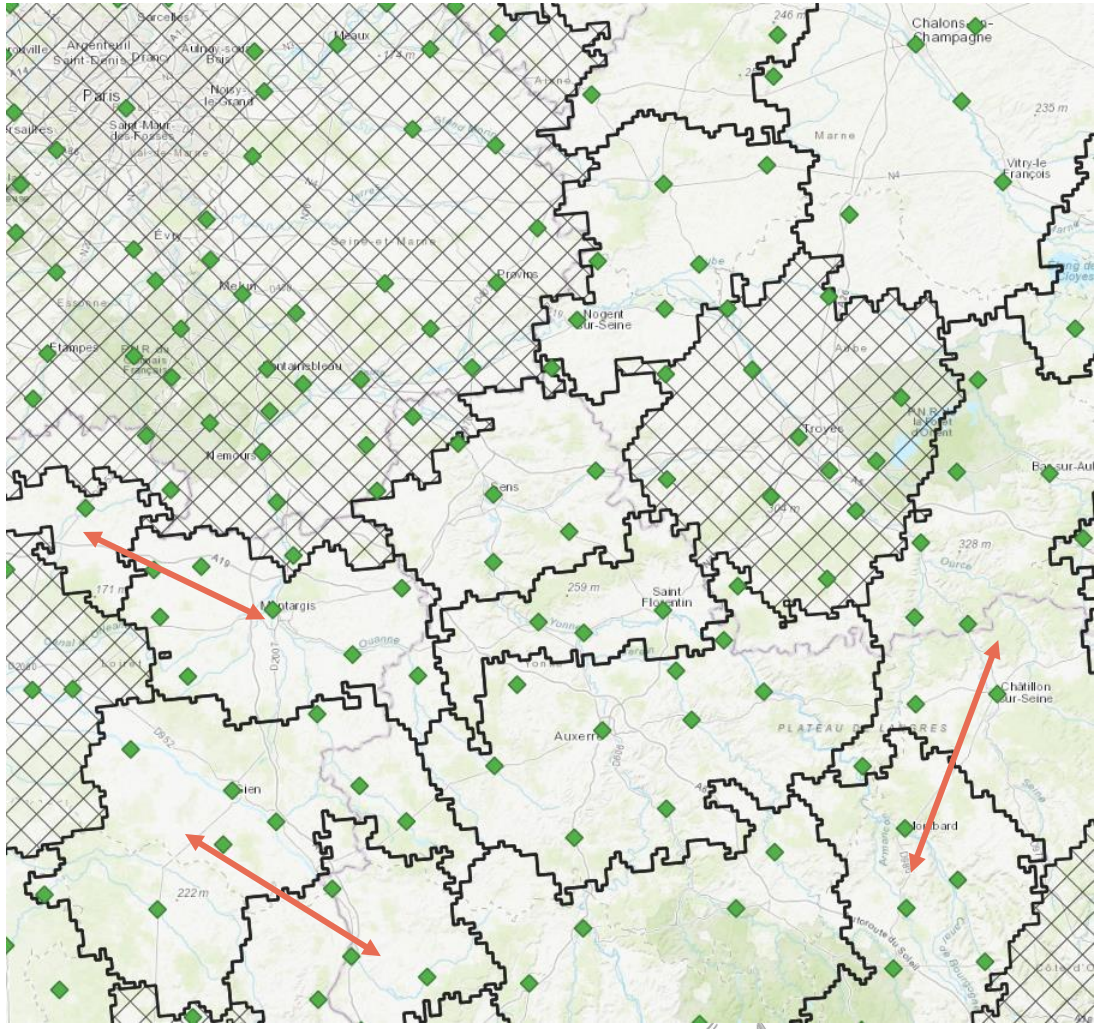

Picture includes multiple iterations

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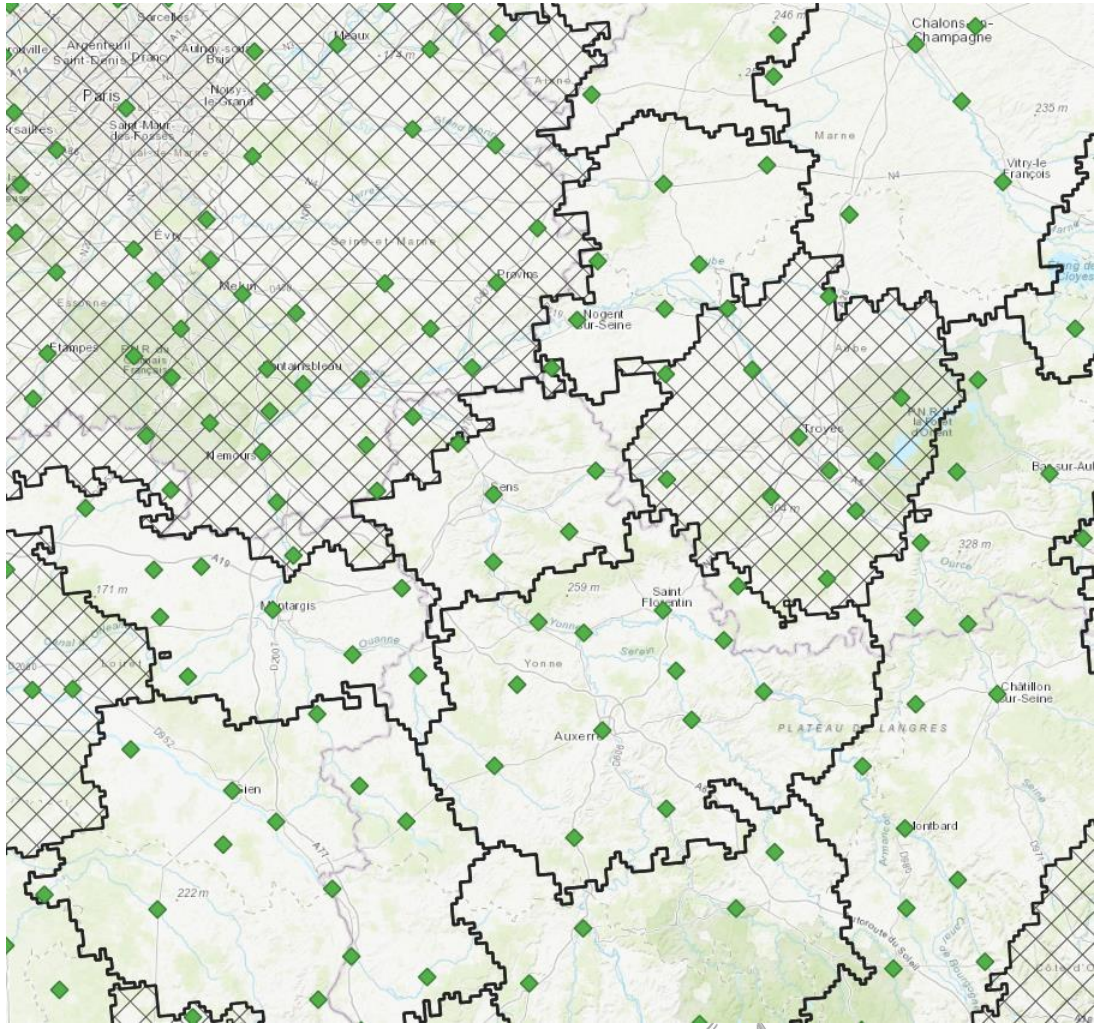
Creating Functional Rural Areas

Repeat until there are no more:

- ✓ Contiguous pairs within 30 minutes
- ✓ Contiguous pairs within 60 minutes where one has a population of less than 25,000



Picture shows definitive result

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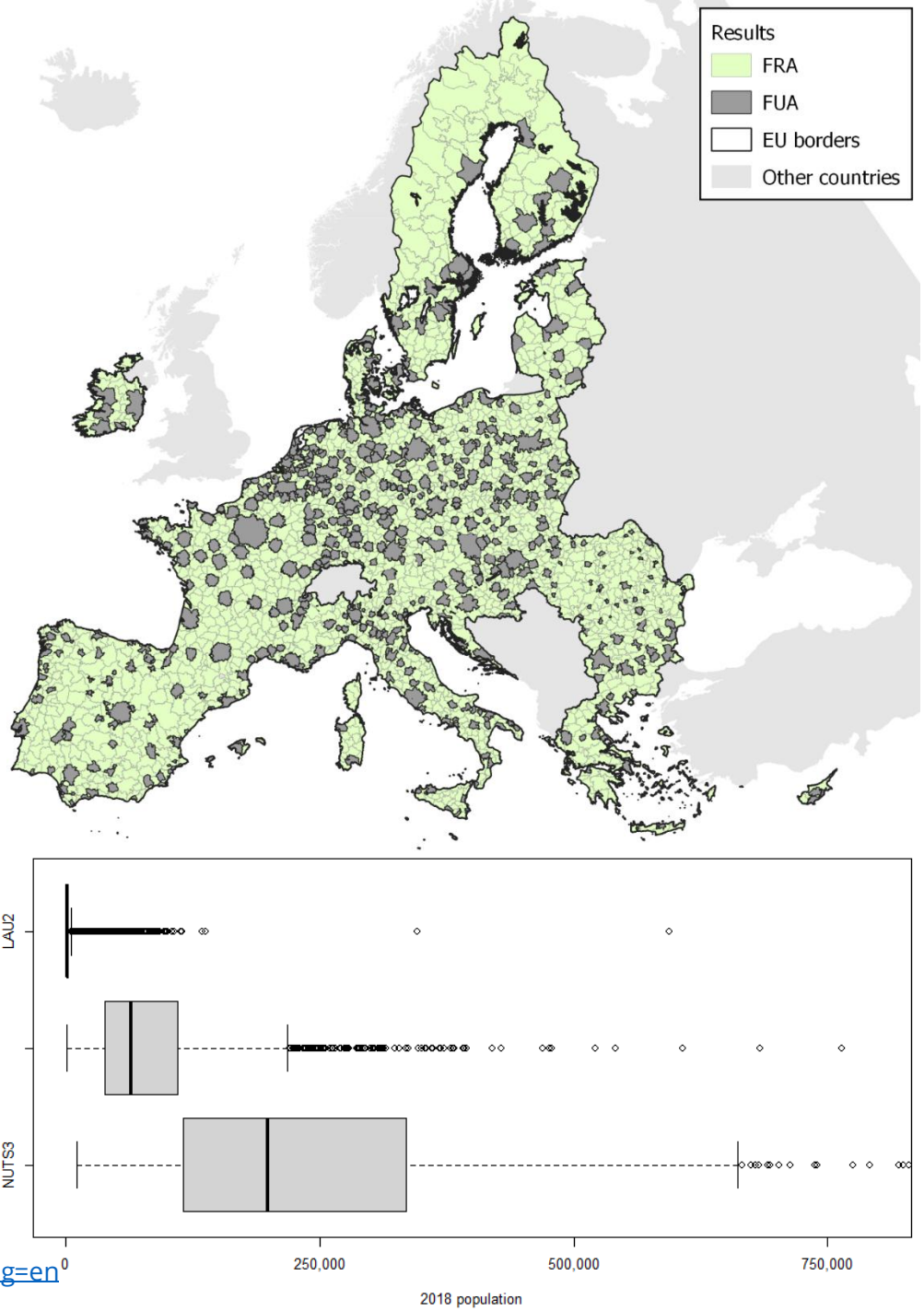
FRAs = FRAGs and FRAUs

Grid-based FRAs = FRAGs

Local administrative unit or LAU based FRAs = FRAUs

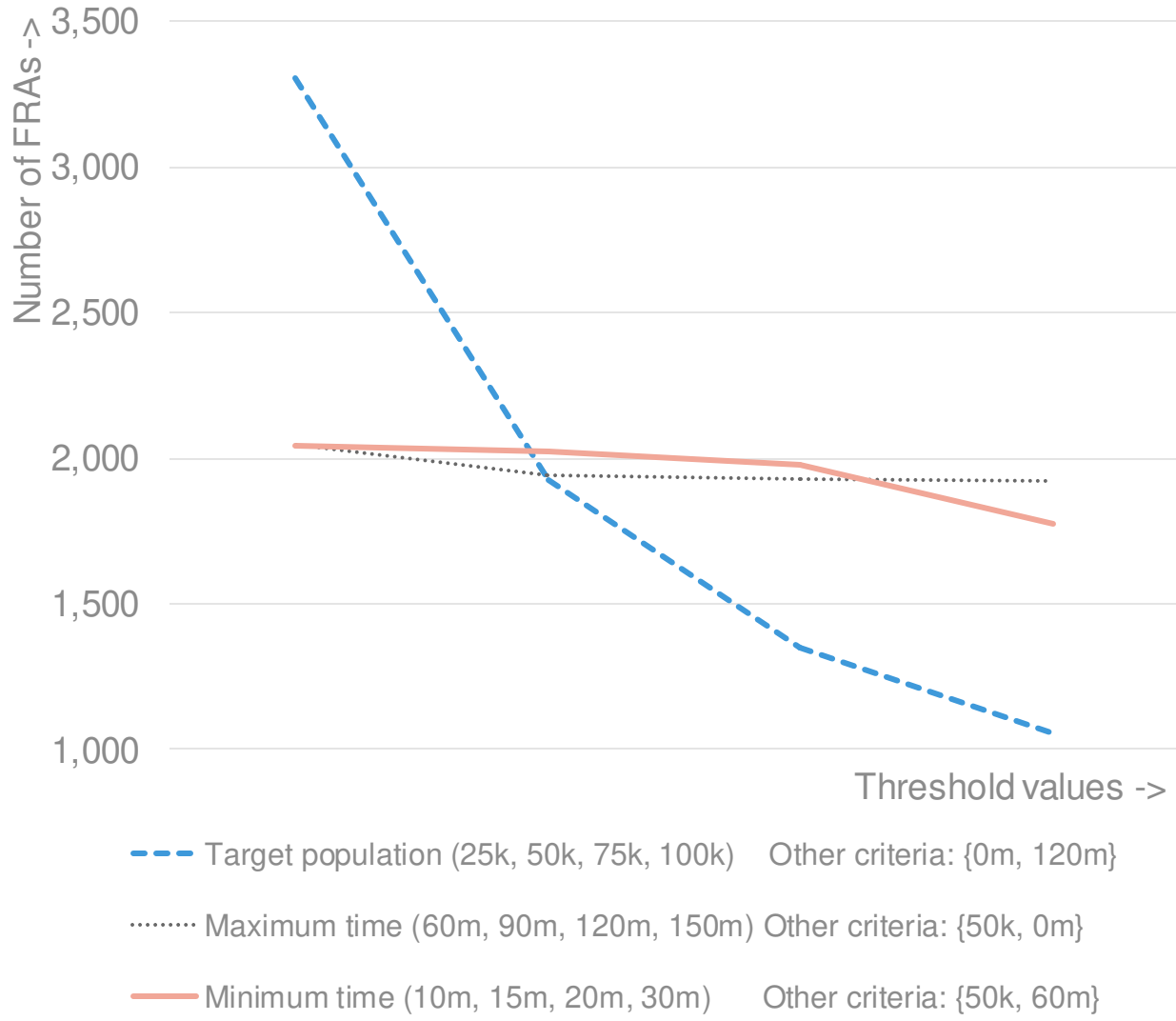
FRAUs are far more harmonised in terms of population and area than LAUs outside FUAs and NUTS-3 regions outside metro-regions



See all experimental results on https://observatory.rural-vision.europa.eu/thematic-analyses?lng=en

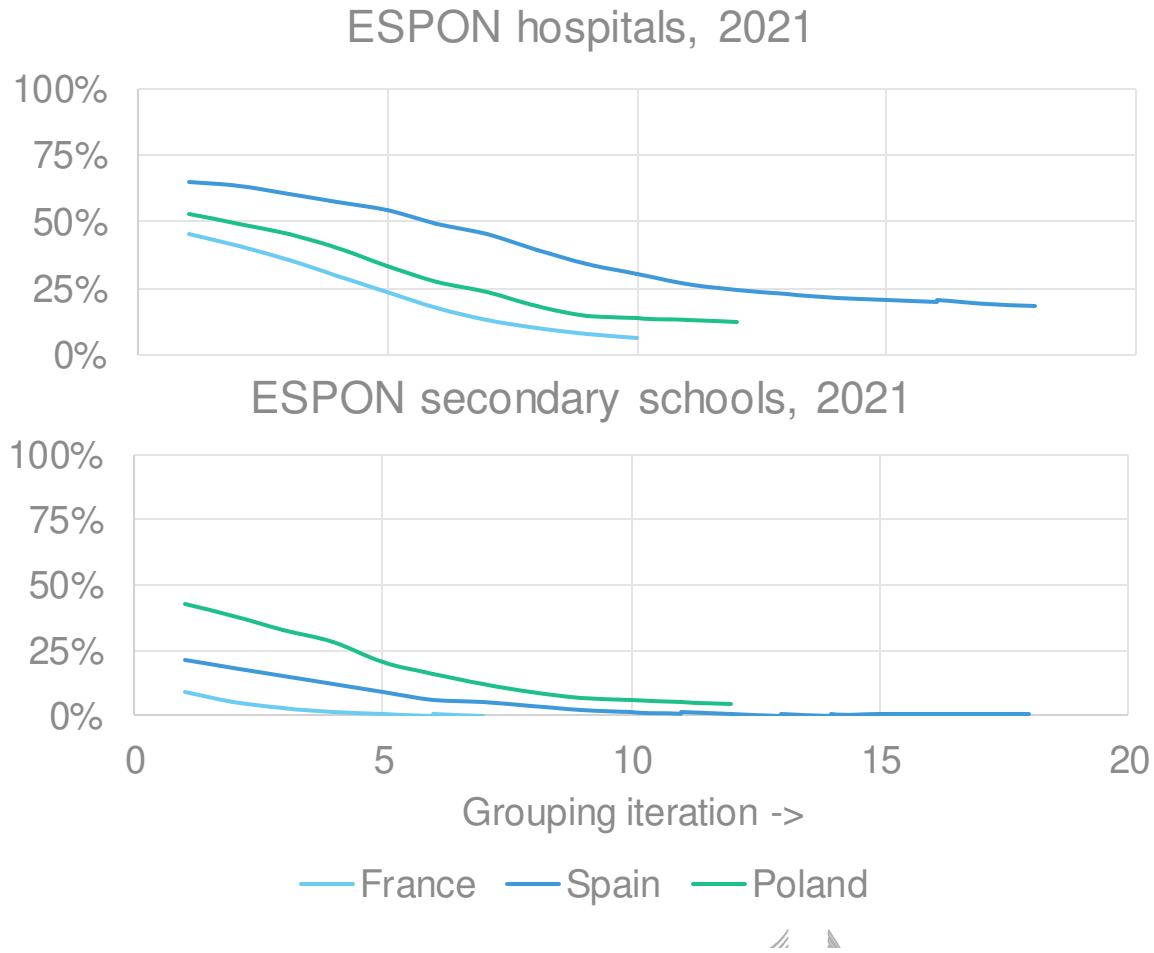
Testing threshold parameters

- Target population has the most impact (higher target -> less FRAs)
- Maximum time has very limited impact (higher maximum time -> slightly less FRAs)
- Minimum time has some impact (higher minimum time -> less FRAs in some member states)



Do FRAs have service autonomy?

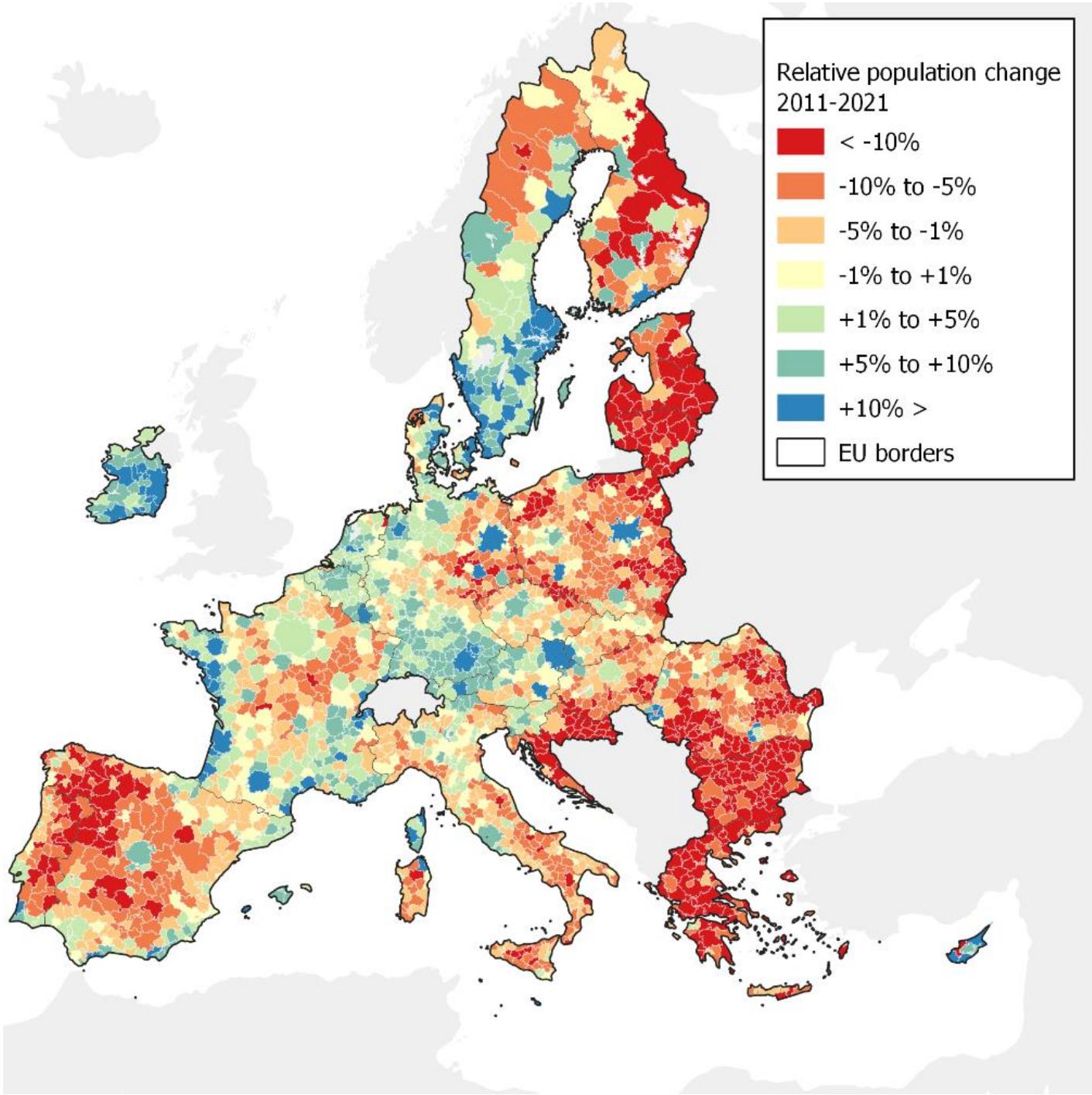
- Aggregating smaller catchment areas increases the number of FRAs with essential services
- Spain needed many more iterations than France or Poland.
- Some FRAs still lack a hospital or secondary school, which may be due to missing data or a highly spatially concentrated service provision



Percentage population without service in their allocated area, while grouping local centre catchment areas.

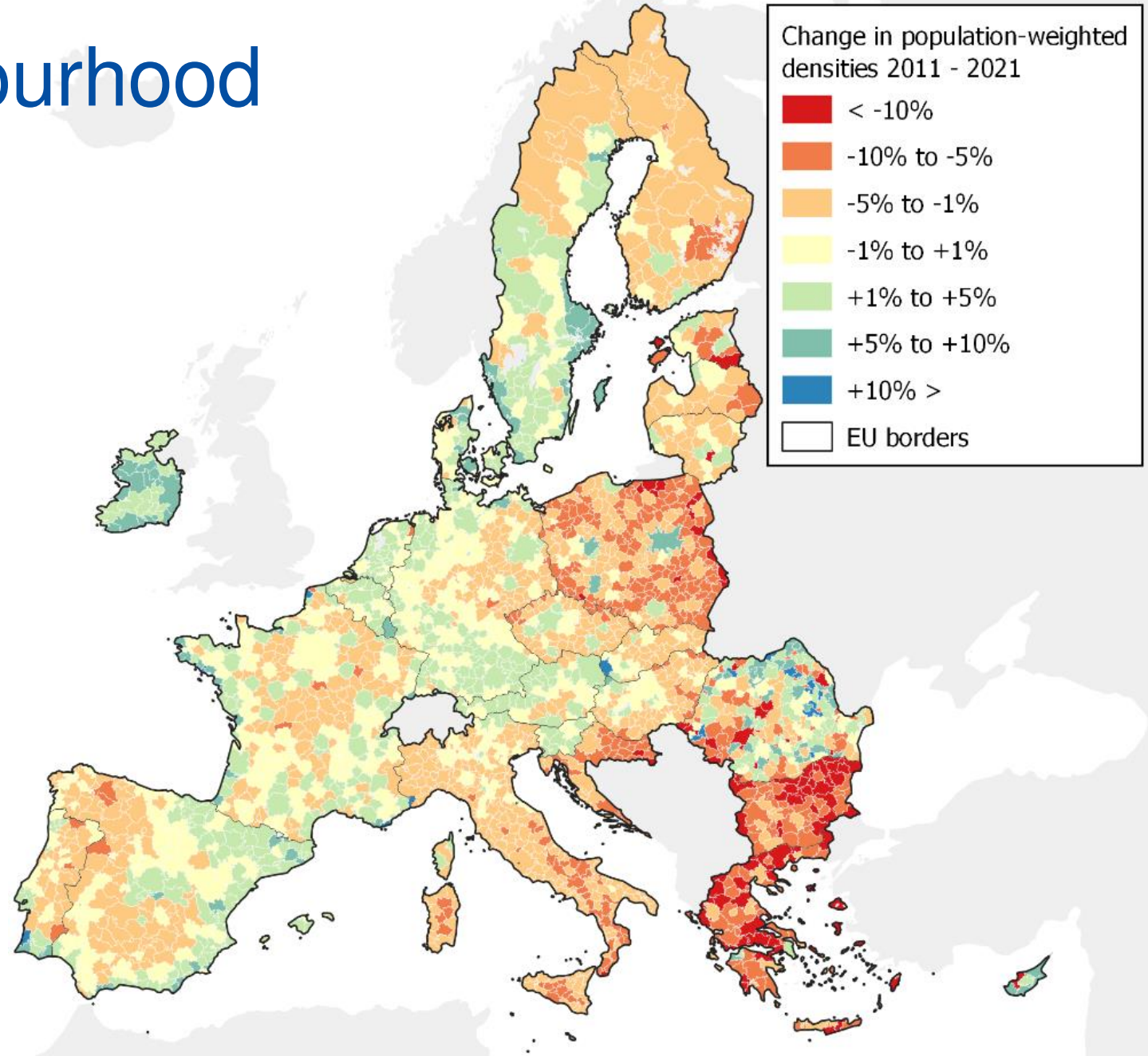
Population changes

- Population change is more negative in FRAs than in FUAs
- In some MS, all functional areas lost population (BG, EL, HR, LV)

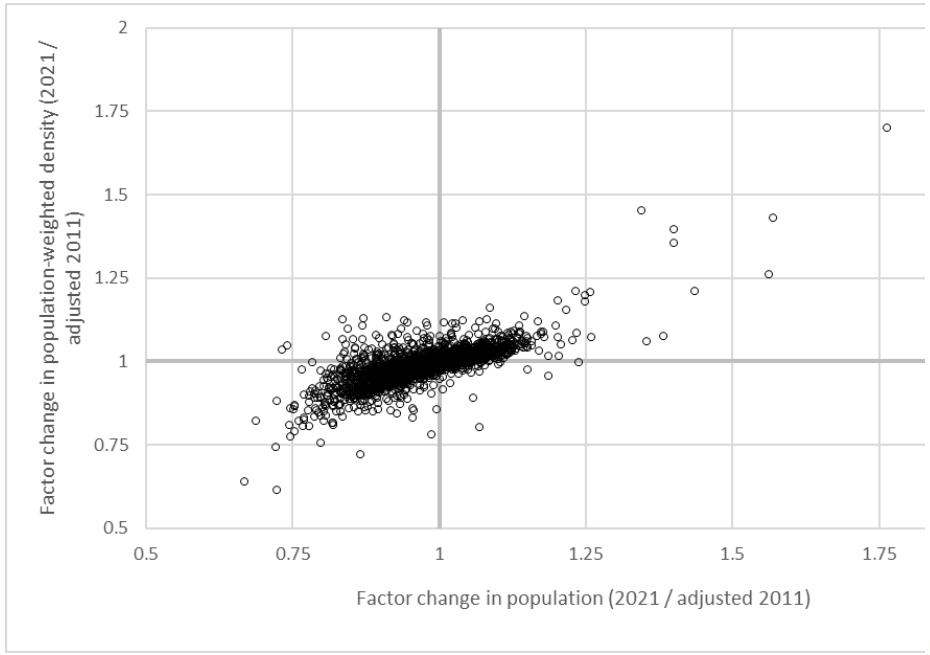


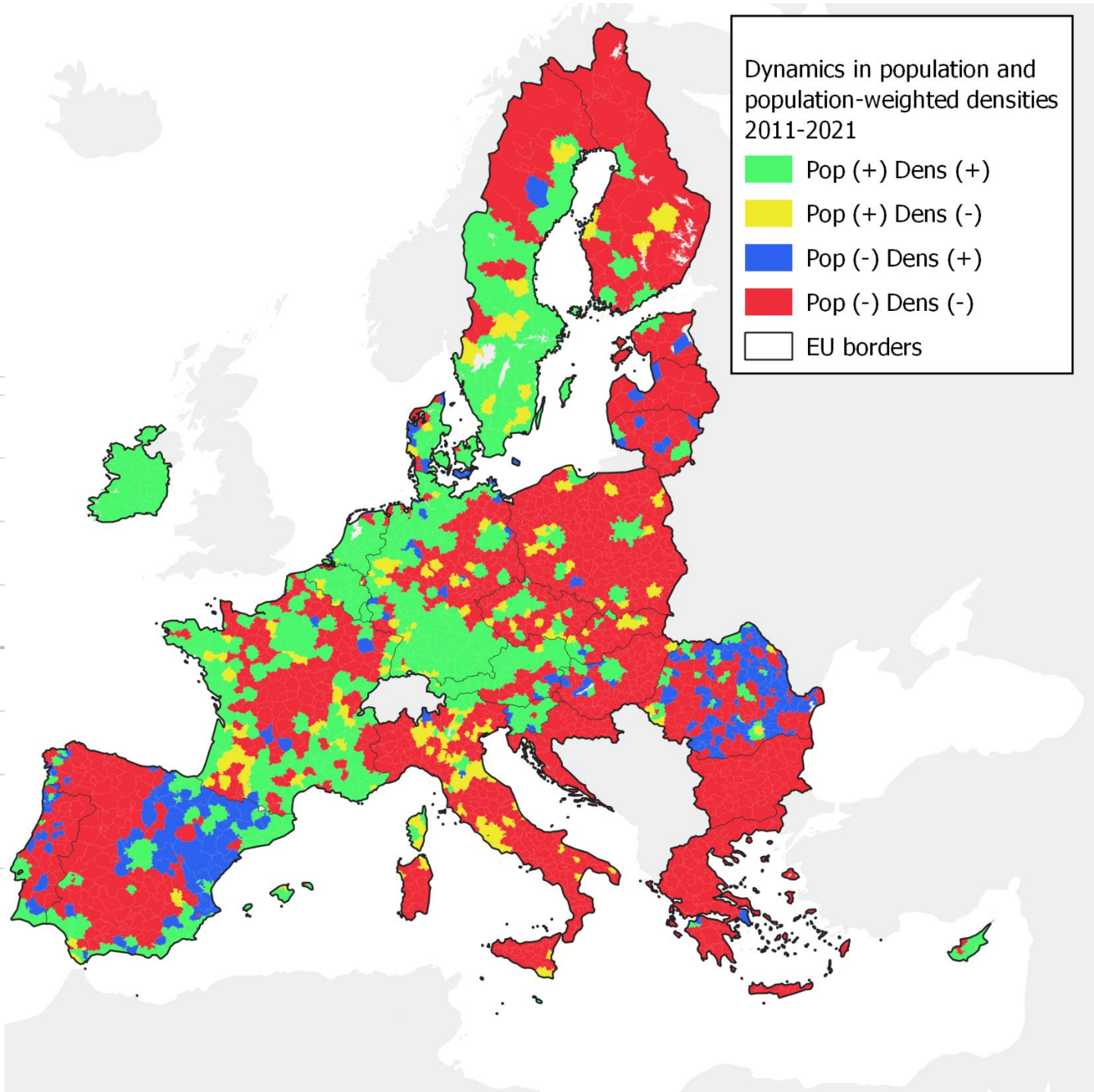
Changes in neighbourhood densities

- Densification occurs alongside de-densification
- Population reductions tend to lead to dedensification
- Population growth usually leads to densification



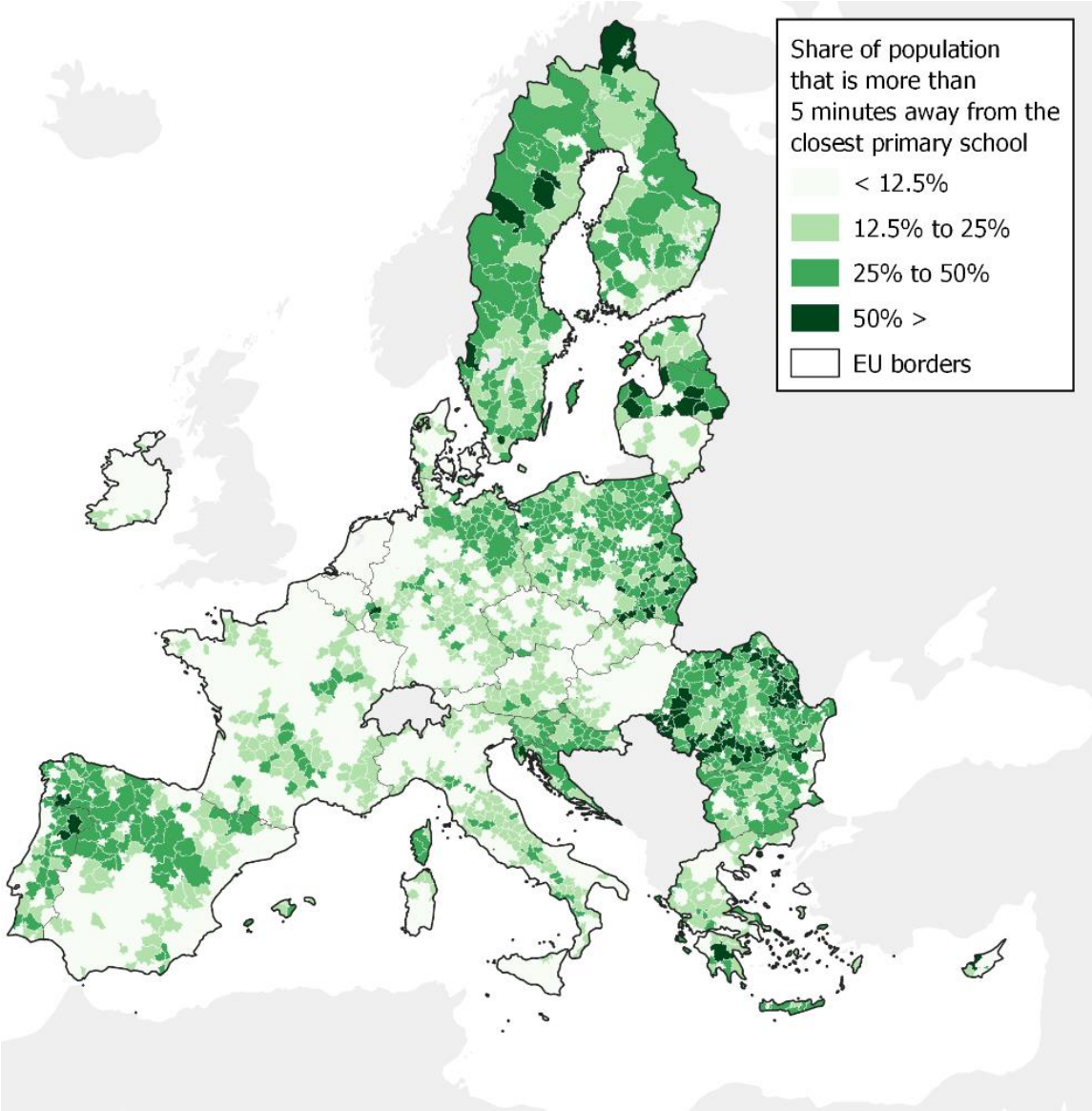
(De-)densification





Share of population that is more than 5 minutes from a primary school

- Functional areas are large enough to have most daily services
- They may still be missing or faraway in some (very small ones or on some islands)
- Population reductions will lead to more services to close



Conclusions

For current results, visit https://observatory.rural-vision.europa.eu/thematic-analyses?lng=en

Functional rural areas were created to mimic autonomous service areas for local and regional services.

Draft results are promising

Review is ongoing: comments are welcome

Current results are EU only, but are being extended to the OECD and the world

Validation:

- Do FRAs have (most) private and public services?
- Do most daily trips start and stop in the same functional area?
- How much employment is concentrated in towns?

Thank you

Download the paper here:
https://publications.jrc.ec.europa.eu/repository/handle/JRC135599