Who owns and who uses farmland? Learning from the intersection of French Land Taxation data and Common Agricultural Policy data

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UMR Territoires

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Pour et Sur le Développement Régional 4

USUS Auvergne

irstea → INRA SCIENCE & IMPACT

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The crucial issue of ownership in agriculture

- Non-transferability of agricultural holdings, new entrants in agriculture

Investment strategies of beginning farmers (Katchova and Ahearn, 2016; Baker, Lobley and Whitehead, 2016)

- Financial renewed interest for land, land grabbing

Land grabbing and financialization (Visser et al. 2012; Magnan, 2015; Knuth, 2015; Larder et al. 2015; Visser, 2015; Desmarais et al. 2016; Magnan and Sunley, 2017)

- Vulnerability of agricultural areas facing land sprawl

Land speculation on agricultural areas (Geniaux, Ay and Napoléone, 2011); role of interest groups (Chanel, Delattre and Napoléone, 2014)

- Closure of land market and access-to-land issues for new entrants

Attachment to land (Quinn & Halfacre, 2014), farms successions (Fischer & Burton, 2014), heritage family strategies to keep land (Baker, Lobley and Whitehead, 2016)

- An increasing social control over agricultural land use, sometimes through ownership

Environmental practices from owner-operators and tenants (Soule et al. 2000, Myyra, 2005; Yeboah, Lupiz and Klapowitz, 2015, Scklenickaiand et al. 2015, Ranjan et al. 2019), community land tenure and alternative county farms (Morran, Scott and Price, 2014; Wittman, Dennis and Pritchard, 2017)

- A necessary disconnection between use and ownership

$\Rightarrow$ what economic, contractual, power relations between use and ownership ?

Landlord-tenant relationship (Ilbery et al. 2010)

- A property-use relationship documented by social sciences

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Quantitative approach to objectify phenomenon: what does exist ?

- United Kingdom: incomplete registration of land property (under 50%); surveys (Munton, 2009)
- European Union: data on land transactions differ across member states (Ciaian et al. 2012)
- Norway: data on farms tenure through the agricultural census every ten years (Forbord et al. 2014)
- France: idem (Courleux, 2010)
- USA: federal data through the agricultural census and specially followed up in 2012 by the Tenure, Ownership, and Transition of Agricultural Land Survey (TOTAL, 2014) (Bigelow et al. 2016) and states data through surveys (ex: Iowa; Kuethe and Bigelow, 2017)
- Canada: annual statistics through the agricultural census

⇒ **Except UK data which are incomplete, all are declarative data (survey)**

⇒ **Problems of frequency, reliability, homogeneity in the understanding of questions..**

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What about administrative data ?

In France :

Common Agriculture Policy => Graphic Parcel Reference Frame of the ASP (for Services and Payments Agency in French)

Land Taxation Data => Data from the MAJIC application (for Updating Cadastral Information in French) of the General Directorate of Public Finance

Sensitive (to use according to Data Protection Act)

⇒ Difficult to access

⇒ Anonymized

Recent and imperfect

⇒ Variables not always stable

⇒ Some areas not yet covered by located data, not covered by administration (ex: gardening)

Complex to use

⇒ Needs PostGreSQL, Python, geopandas…

⇒ Perfect for analysis at large scales (administrative regions, state…)

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The intersection of use and property administrative data

A method to make them corresponding on the basis of their location between:

- freehand drawing on aerial photo (Use data)
- adaptation of the paper cadaster (Property data)

$\Rightarrow$ generates Property-Use Units

A polygon which corresponds to one use vs one property

$\Rightarrow$ One property-use relationship

Mixture of individual and collective forms, for ownership and use

$\Rightarrow$ A difficulty to precisely identify owner-operator cases through “owner” name

$\Rightarrow$ How exactly defining “owner-operator cases”?

For example: the operator is a company, one of the two partners owns 60% of the shares in the land group that owns the land: is this a case of owner-operator?

Another example is undivided ownership with family members more or less distant from each other.

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The created datasets

Farms' Use structure :

- Crops, land cover => farming system
- Crops diversity
- Farm size
- Spatial configuration (parcels size, parcels dispersion)

Farms' Ownership structure :

- Fragmentation of the farm and agricultural parcels into cadastral plots
  => ownership structure type of the area
- Number of different owners
  => number of property-use relationships to manage (by substracting 3 or 4 owners which could correspond to owner-operating)
- Average date of last cadastral plot transfer => ownership stability
- Type of owner (public, private, joint ownership, moral persons)
  => elements on the ownership strategy type and the ownership management
  => excludes for some cases the possibility of an owner-operating
- Total number of PCs owned by the given owner and type of land
  => elements on the ownership strategy type and the ownership management
- Distance from the owner

=> elements on the ownership strategy type and the ownership management
⇒excludes for some cases the possibility of an owner-operating

⇒ Farm data transformed in communal means, department means, regional means…

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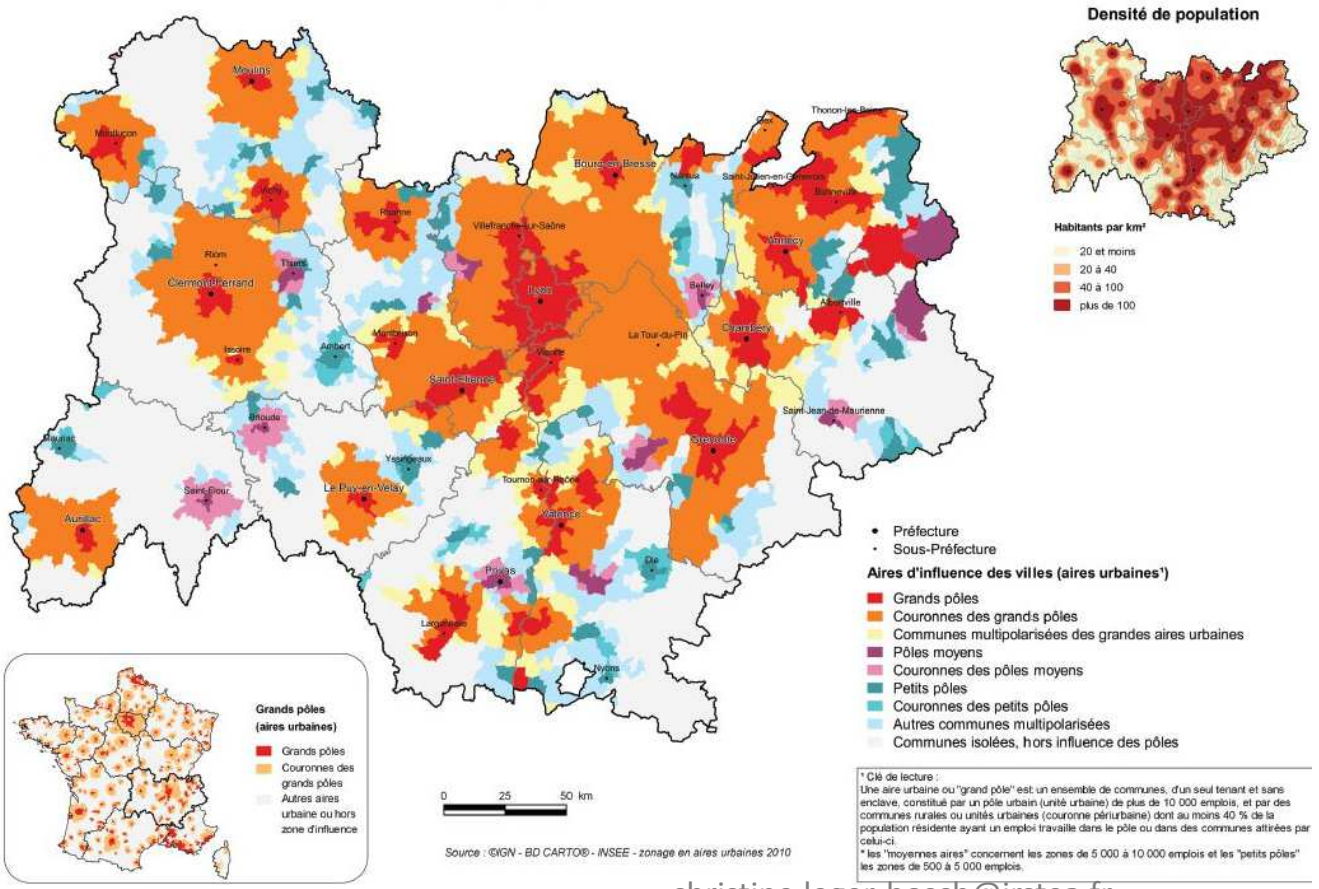
A test on the Auvergne-Rhône-Alpes Region in 2015



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Use data

A preliminar analysis through graphic visualizations

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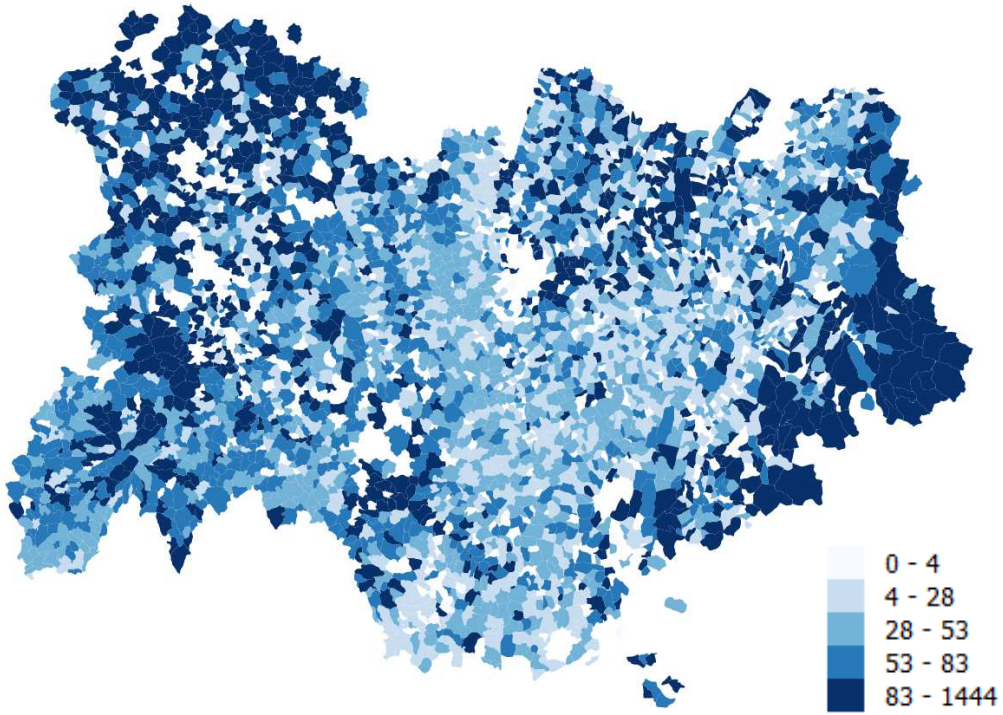
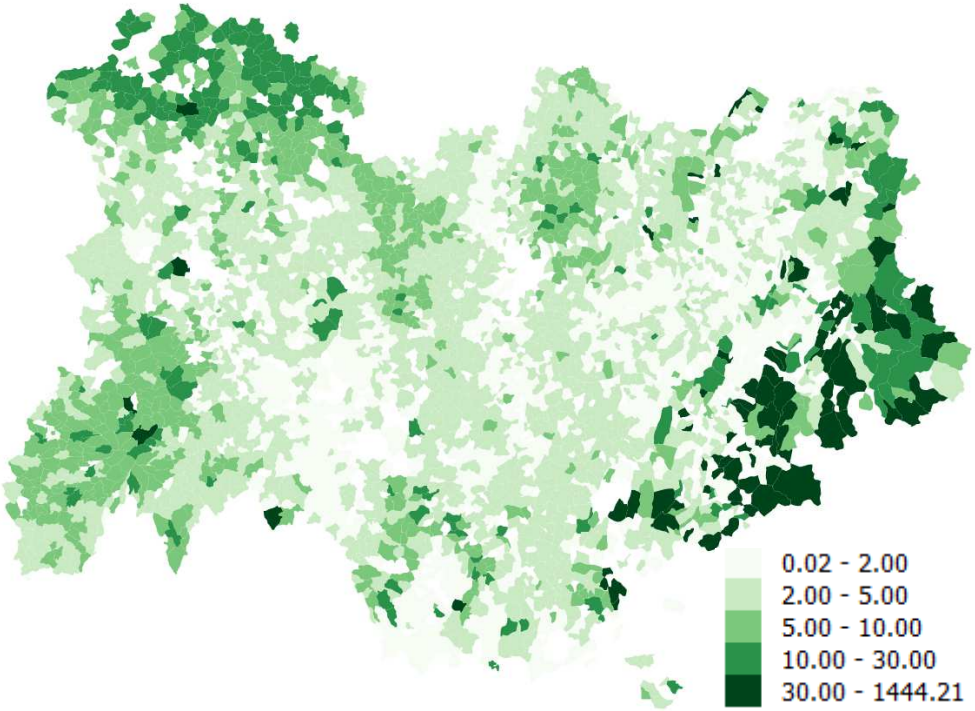
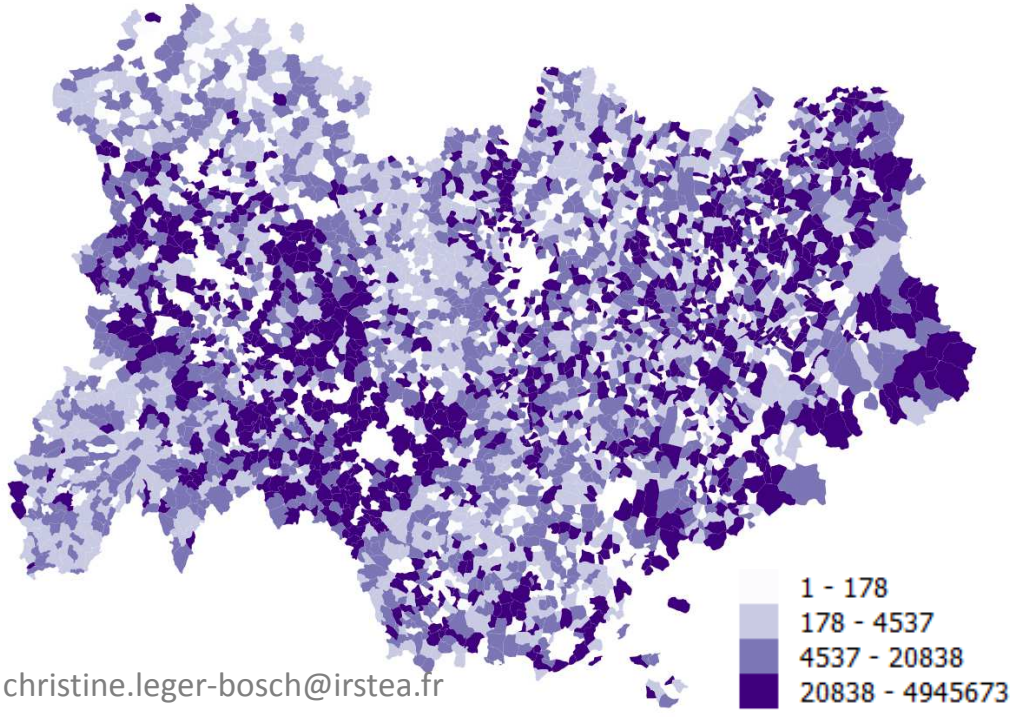
Farms sizes (ha) – local means



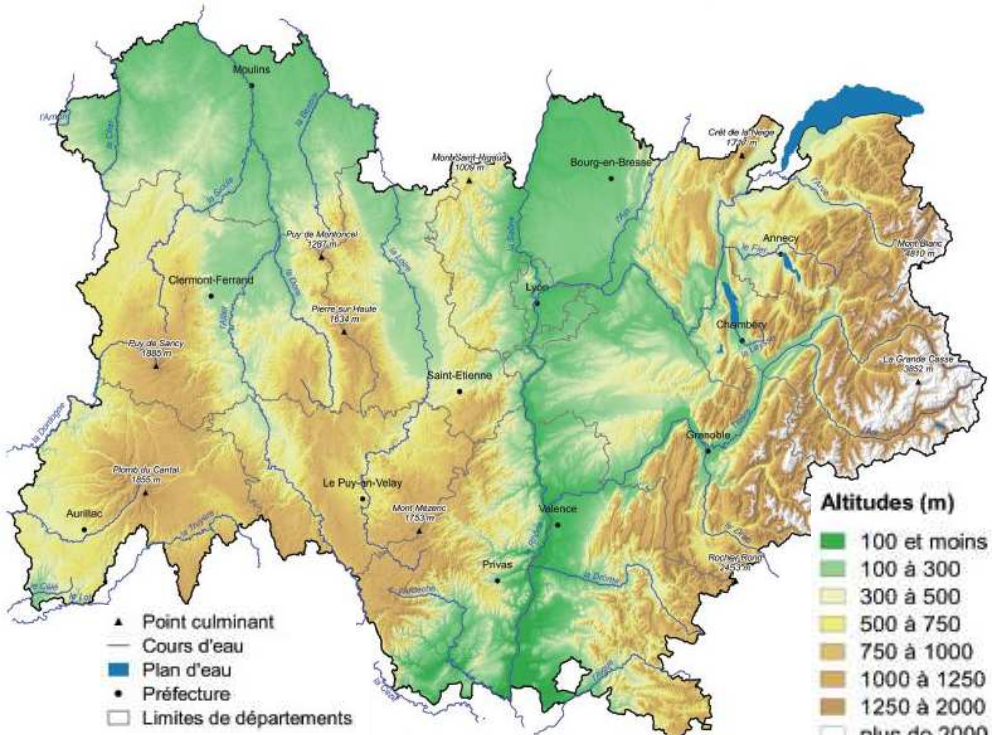
Farms parcels size mean (ha) – local means



Farms parcels dispersion index - local means



Reliefs



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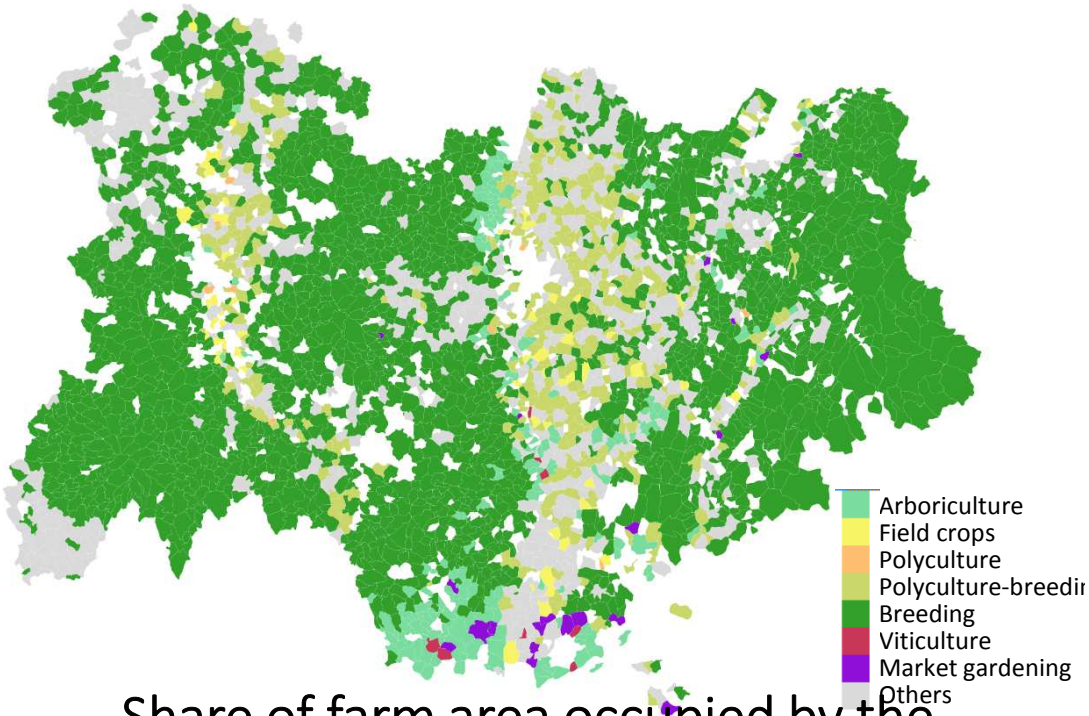
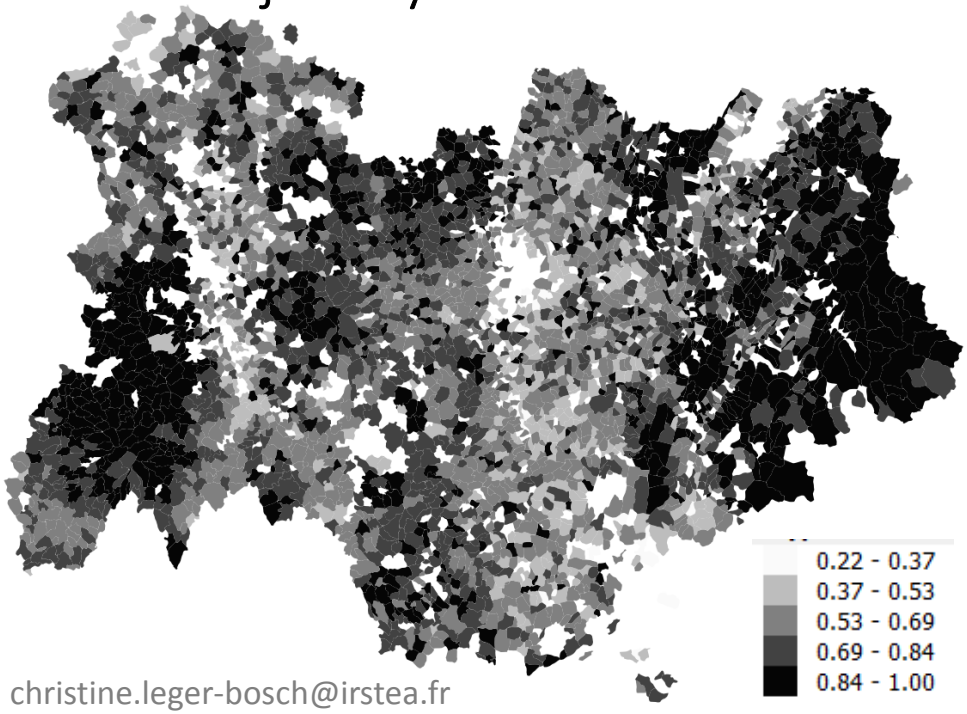
Farming system – local major system

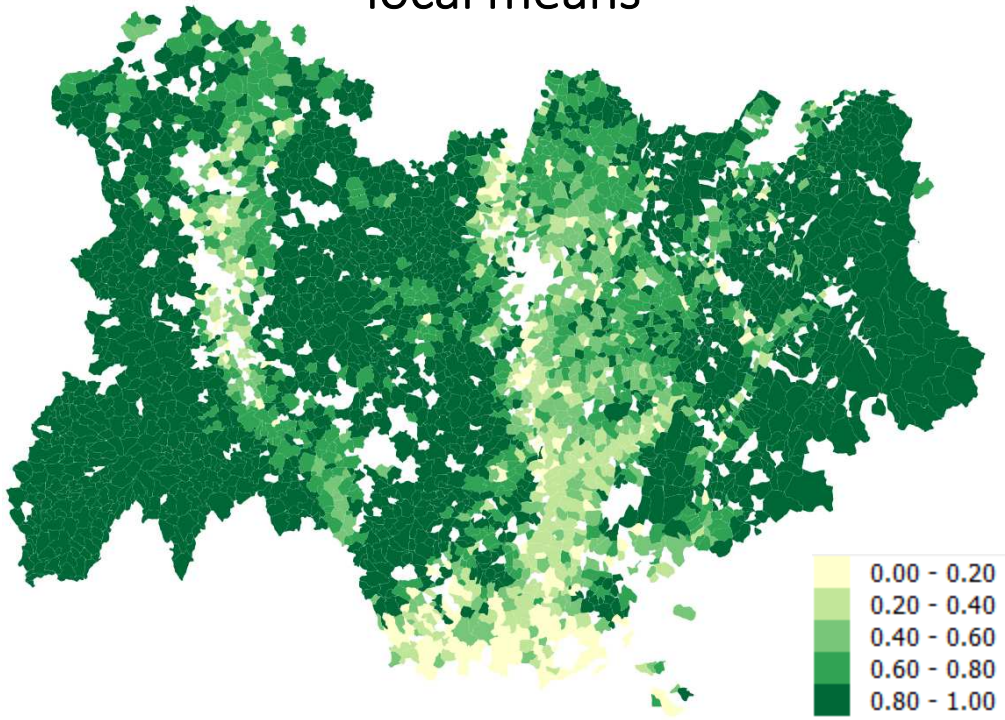


Number of different crops – local means

Share of farm area occupied by the majoritary cover - local means



Share of farms occupied by grassland – local means



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Property data (1)

Some regional figures

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In the AURA Region, an agricultural holding presents on average

89 cadastral parcels for 21 crop parcels

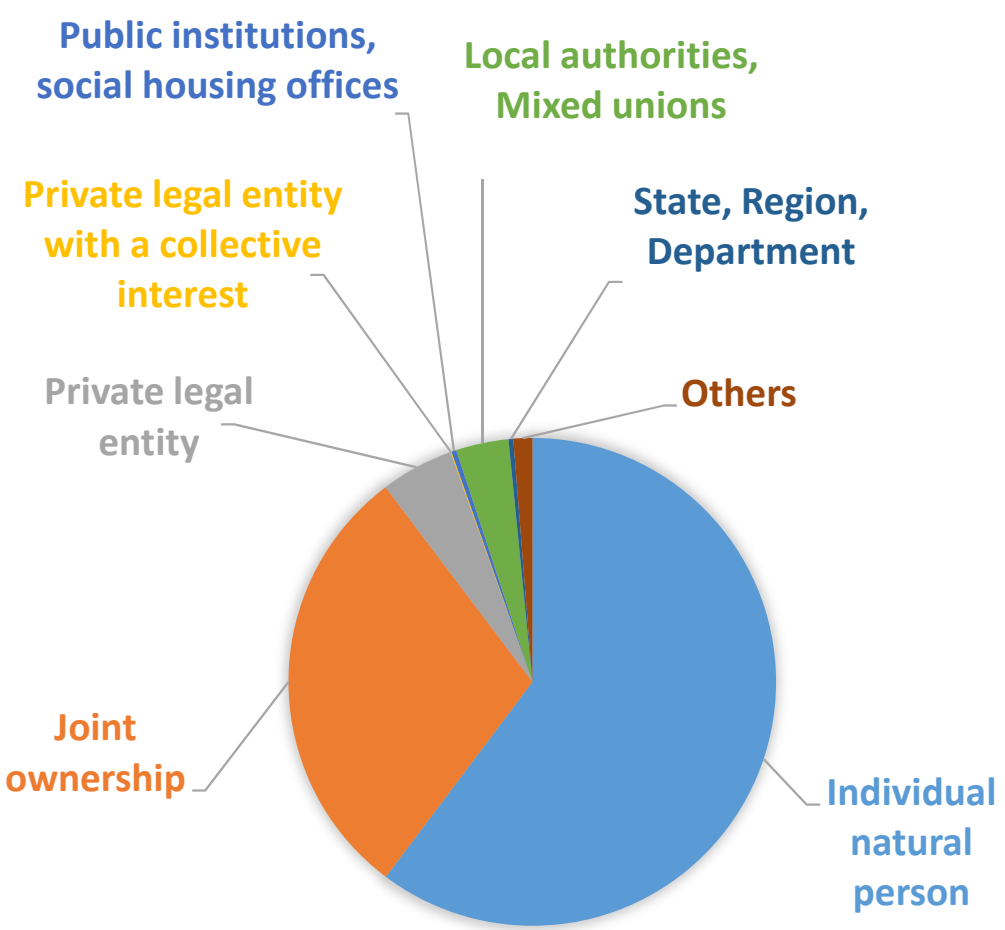
27 "owner accounts"

each account controlling 3 parcels of the EA

38 "property rights"

of which 20 in undivided ownership

- Owner types



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Property data (2)

A preliminar analysis through graphic visualizations

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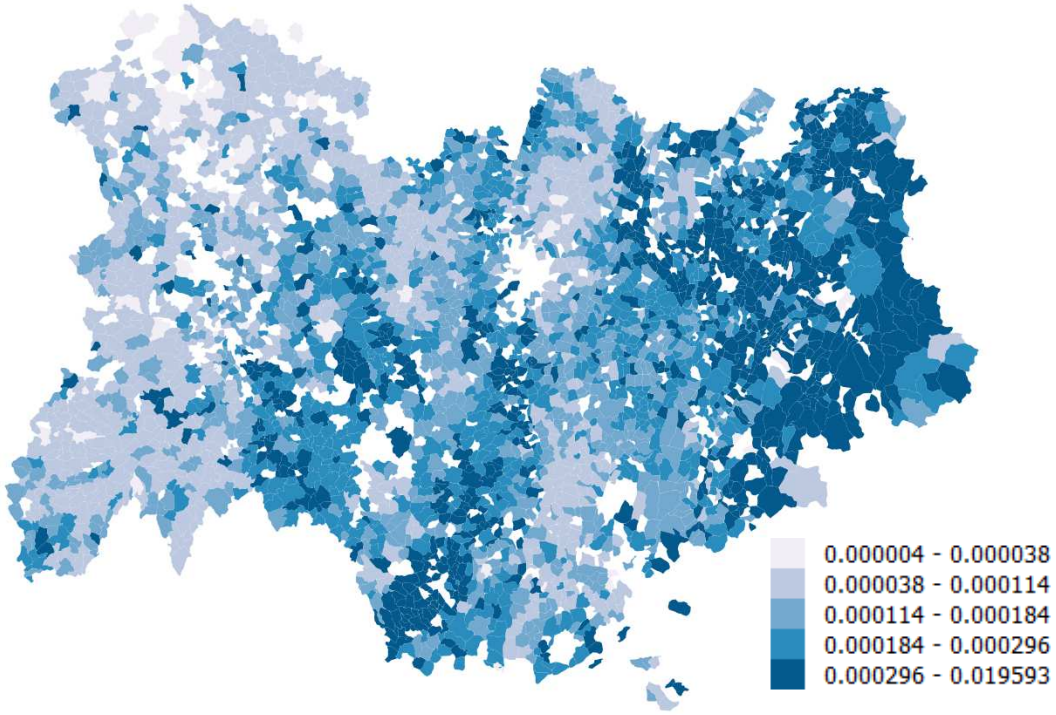
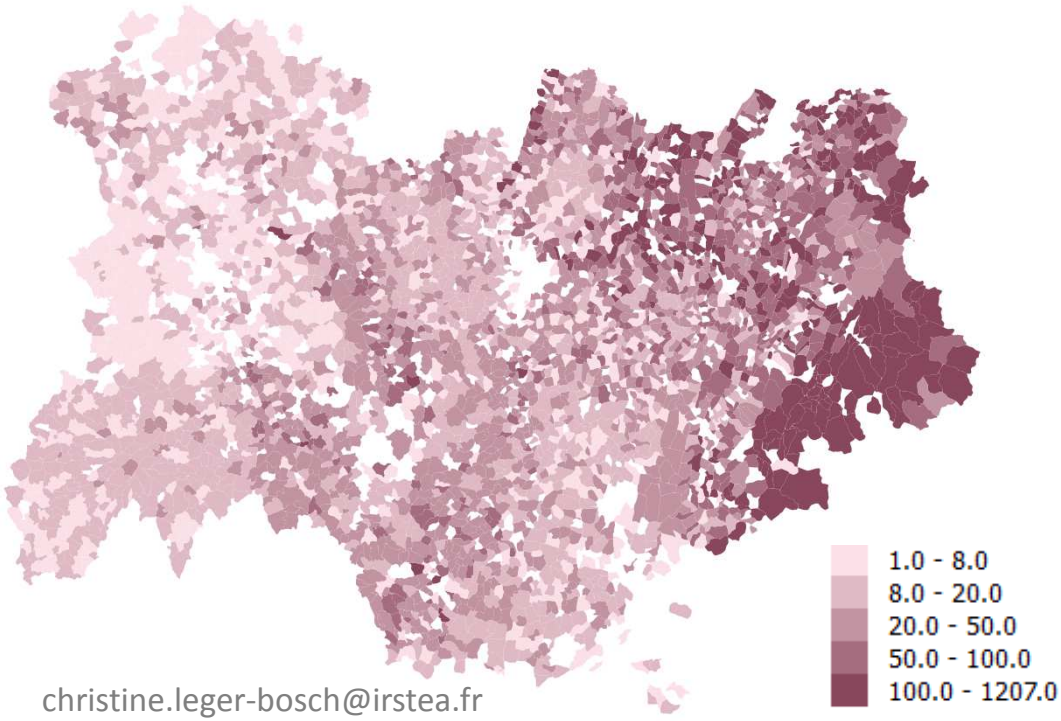
Cadastral parcel density – local means

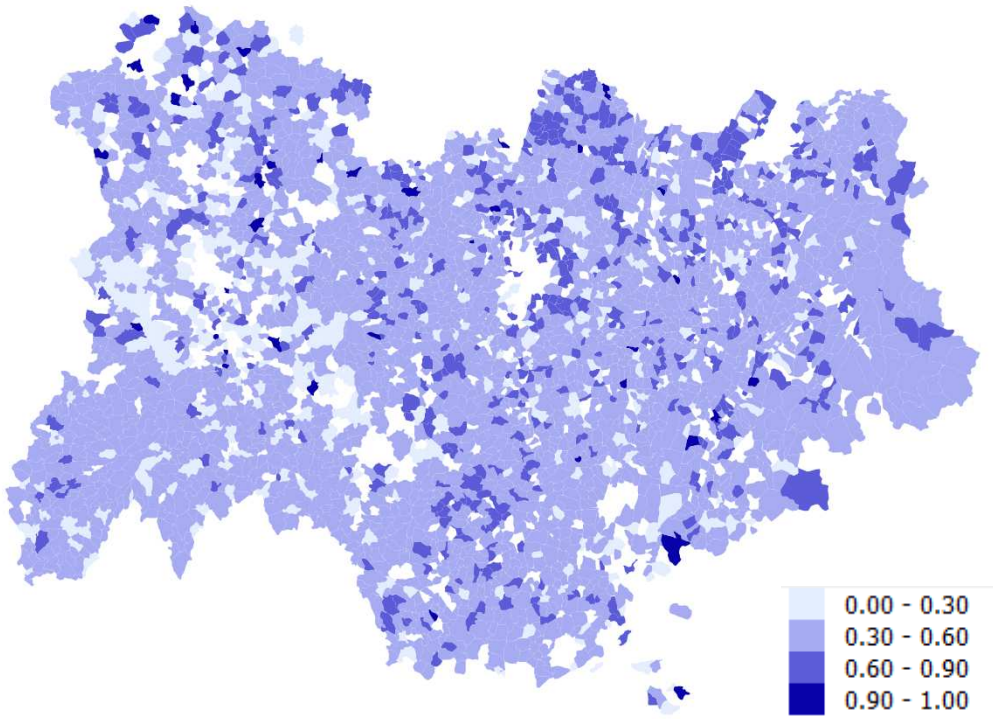


Number of ownership counts – local means

Number of abusus rights – local means



Undivided ownership share – local means



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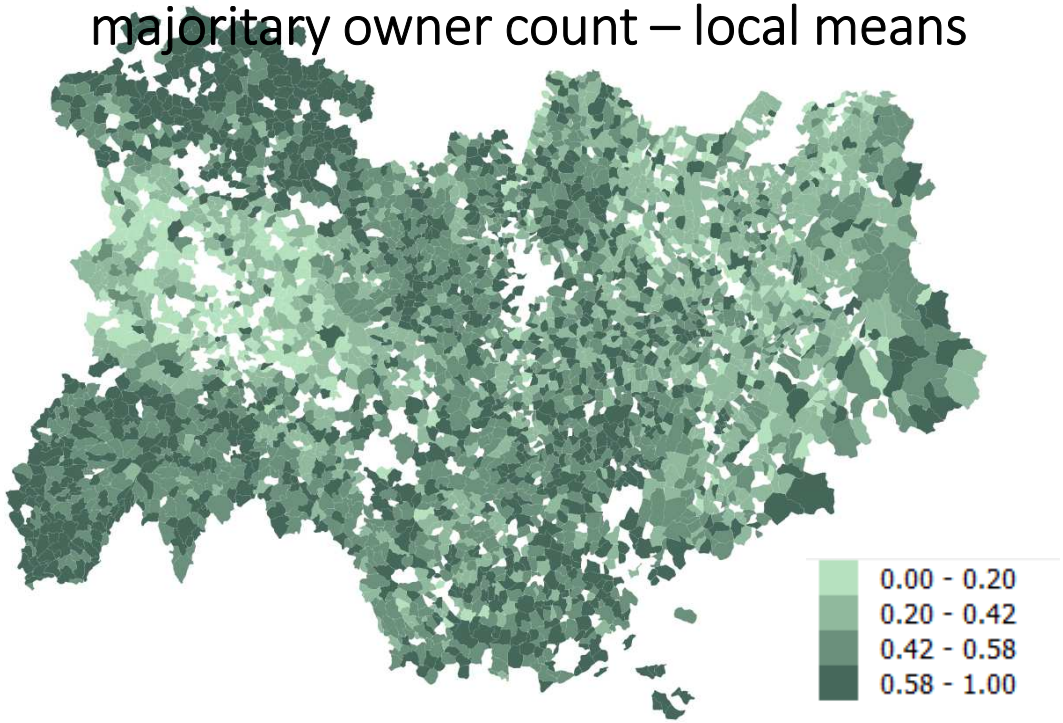
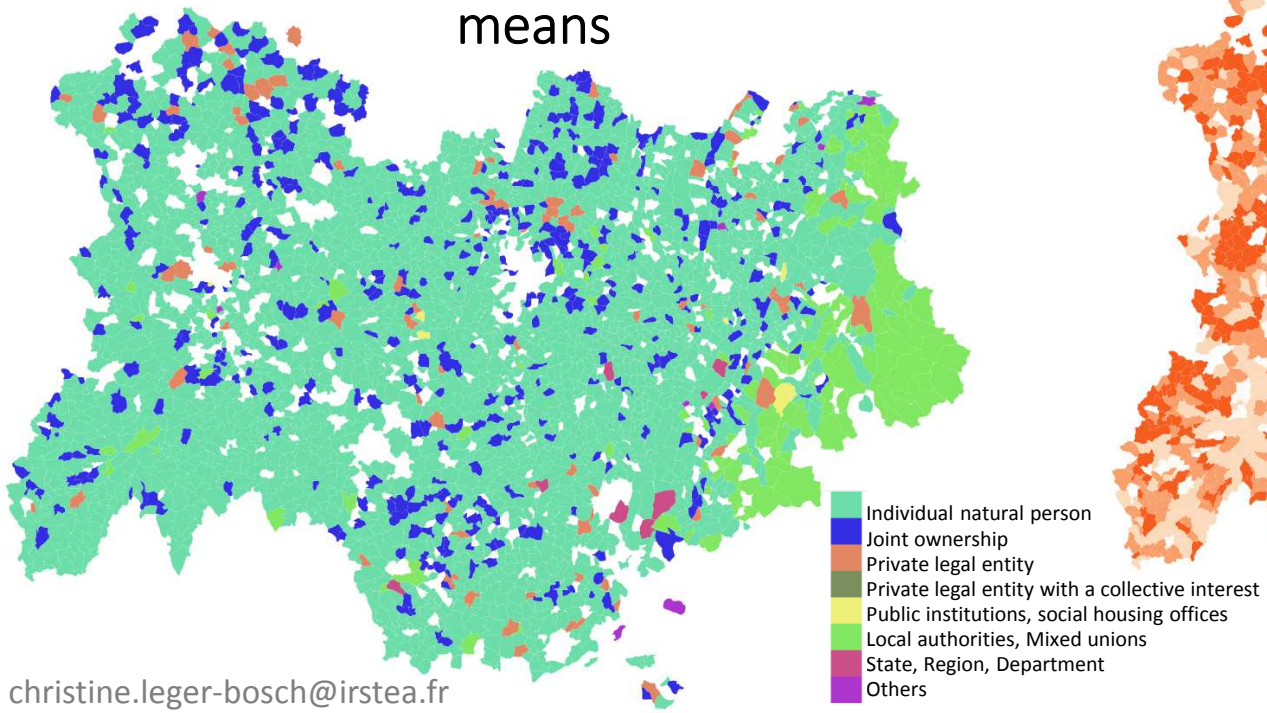
Share of farm surface owned by the majoritary owner count – local means

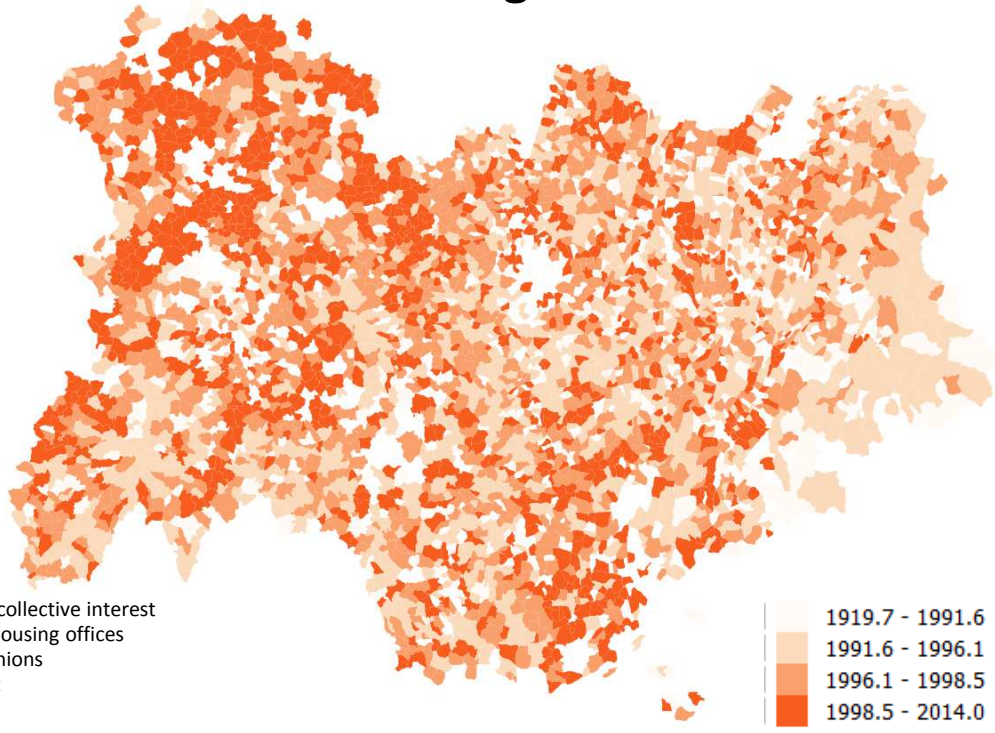


Majoritary owner count location – local means

Majoritary owner type in surface – local means



Last owner change – local means



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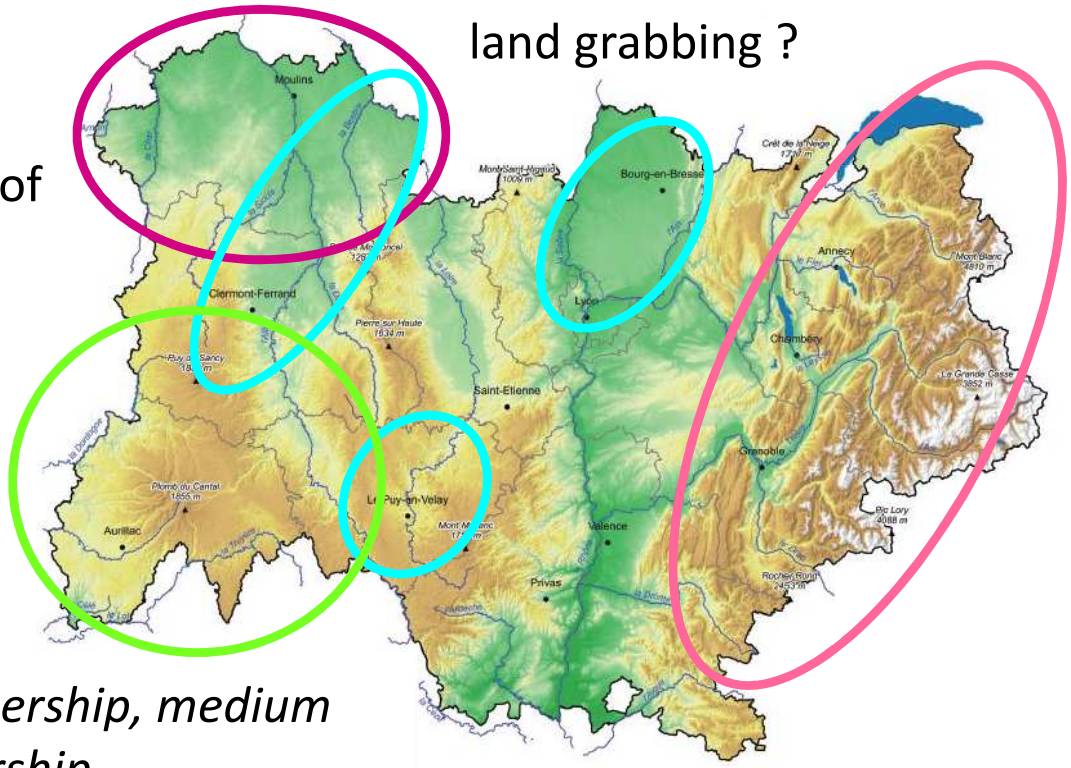
Some hypothesis

Large farms, big parcels, agribusiness, concentrated ownership

⇒ **Non-transferability** of agricultural holdings, new entrants in agriculture ?

Active land market, absentee ownership, private legal entities owners

⇒ Financial renewed **interest for land**, land grabbing ?



Summer grasslands, public property, environmental protected areas

⇒ **Social control** over agricultural land use, sometimes through ownership ?

Concentrated ownership, medium farms, local ownership, concentrated parcels

⇒ Closure of land market and **access-to-land** issues for new entrants ?

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Perspectives

Data that partly meet the need for information on the issues raised by ownership in agriculture

To illustrate some vulnerability of agricultural areas facing land sprawl
$\Rightarrow$ analysis of longitudinal data
$\Rightarrow$ other years not yet accessed

Behind this simple visual analysis, can we really address research questions and prove these phenomena from these data?

- Inferential statistics?
- Correlation analyses?

Can we recognize systematic correspondences between ownership and use structures?

- Clustering ? K-means ? => correlation analysis ?

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Conclusion

- A rich material
- Can help inform many research questions
- An international counterpart?

  => inequality of ownership and use data

  => inequalities in data protection laws and practices
- Prospects for cross-referencing with survey data (censuses), but implementation difficulties to be anticipated

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