Does the diversity of the French territories impact farms keeping equines?

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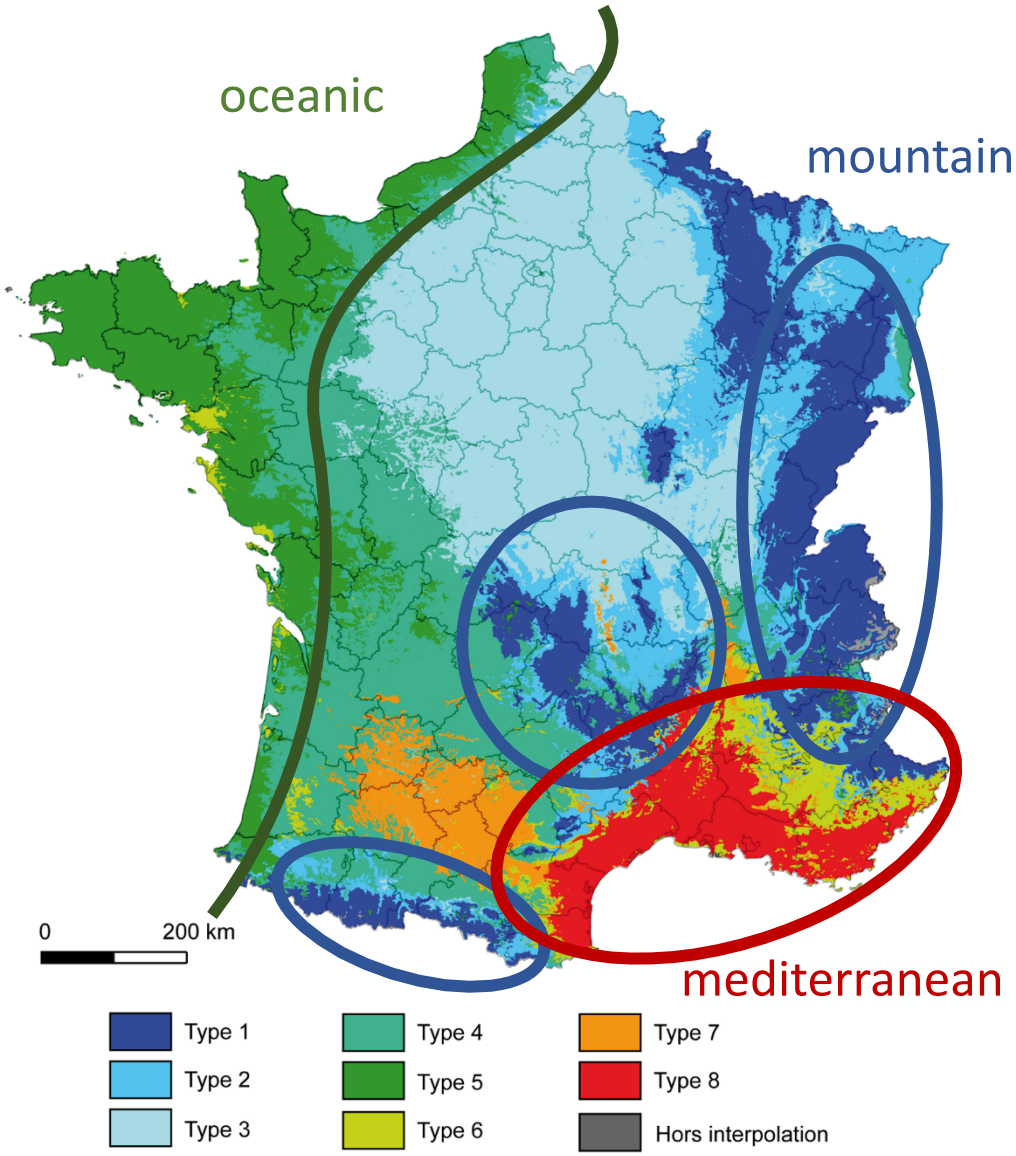
Context

With more than 1M equines in 2022 (ECUS 2022)
and a large diversity of breeds,
the French horse industry in the top 3 in Europe

A diversity of geo-climatic and agricultural conditions:
- grassland areas under oceanic influence in the west
- grassland areas in highlands and mountains
- lowlands with cultivated areas
- mediterranean climate in the south-east

How the diversity of equines reflects the diversity of French territories?
→ Important because agricultural support policies, notably for the equine sector, are regionalised, and suppose a good knowledge of the local diversity



Typology of French climates (Joly, 2010)

Introduction

A classification of French departments (French districts equiv. to NUTS-3 European small regions) based on the diversity of equine herds kept in French farms

Based on the 2010 French agricultural census database (AC-2010)

→ a significant sample of the French equine industry (about 50% of the national herd)
433,000 equines in AC-2010 vs 900,000 recorded equines in 2009 (Source : IFCE-OESC)

→ but with some limitations, notably no distinction between saddle and race breeds

This work is based on previous results:

- A classification of equine herds in French farms (*Bigot & al*, 2020)
- An analysis of farms with small equine herds (*Bigot & al*, EAAP 2022)

Outline:

- Previous works
- Methodology
- Results

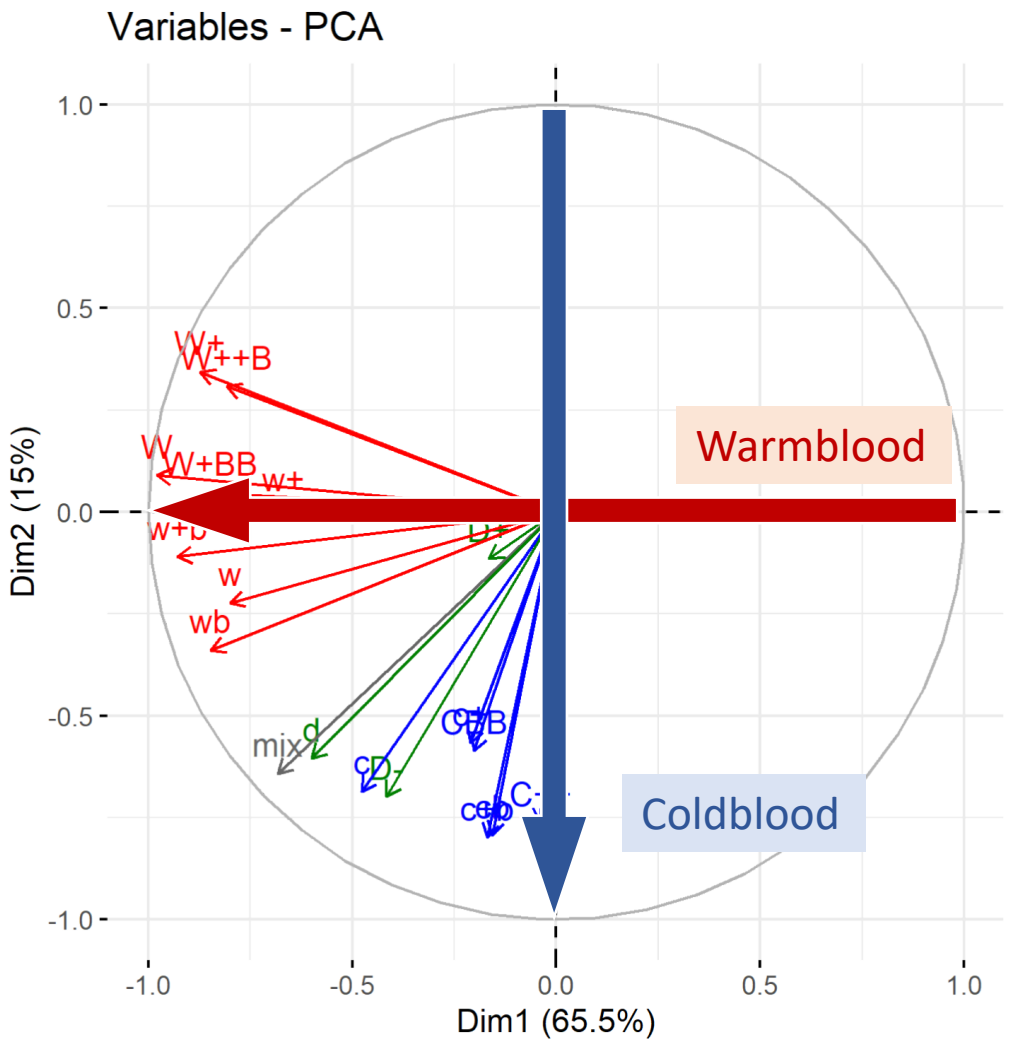
Farms with equines

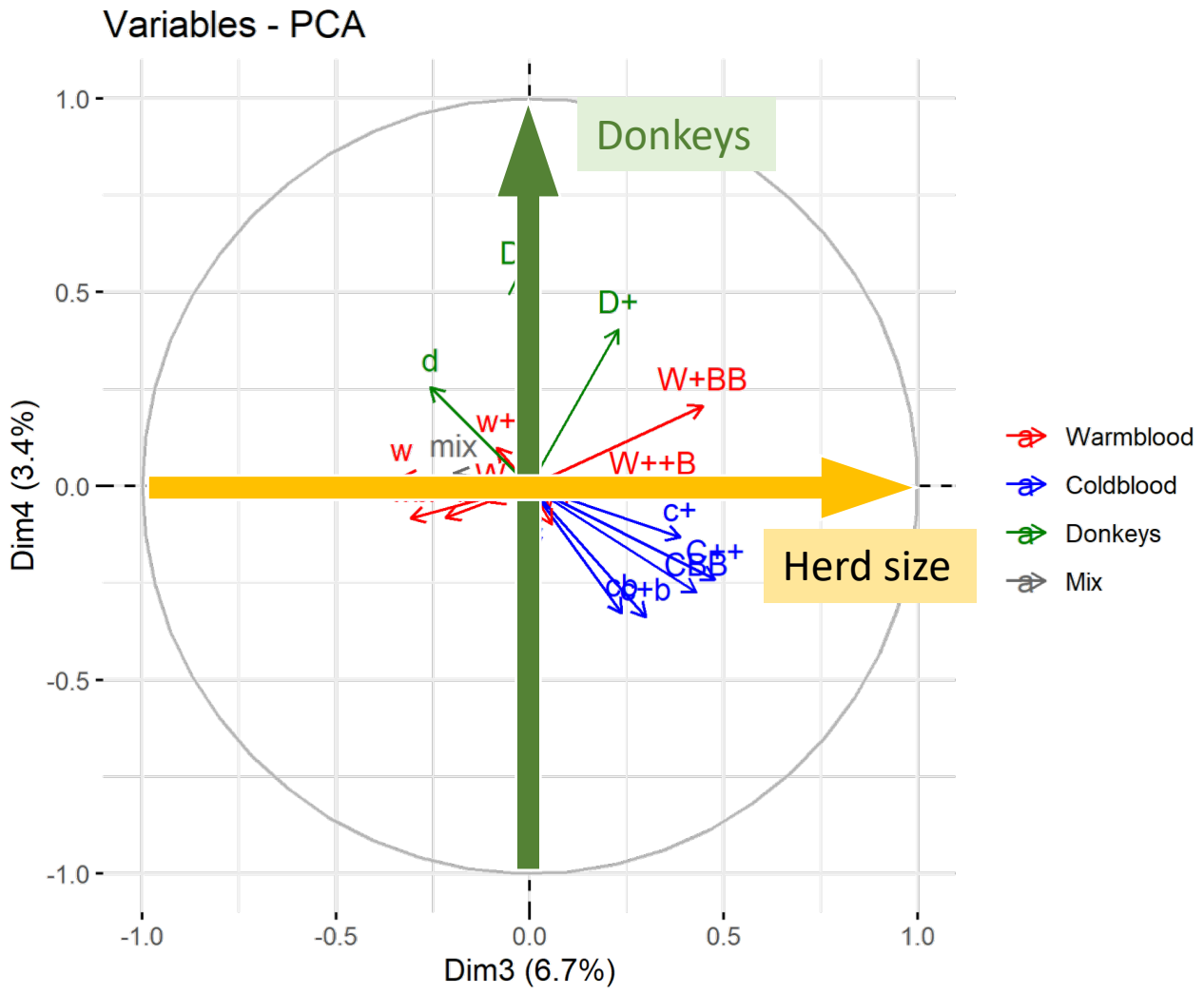
54 372 farms with equines

Methodology

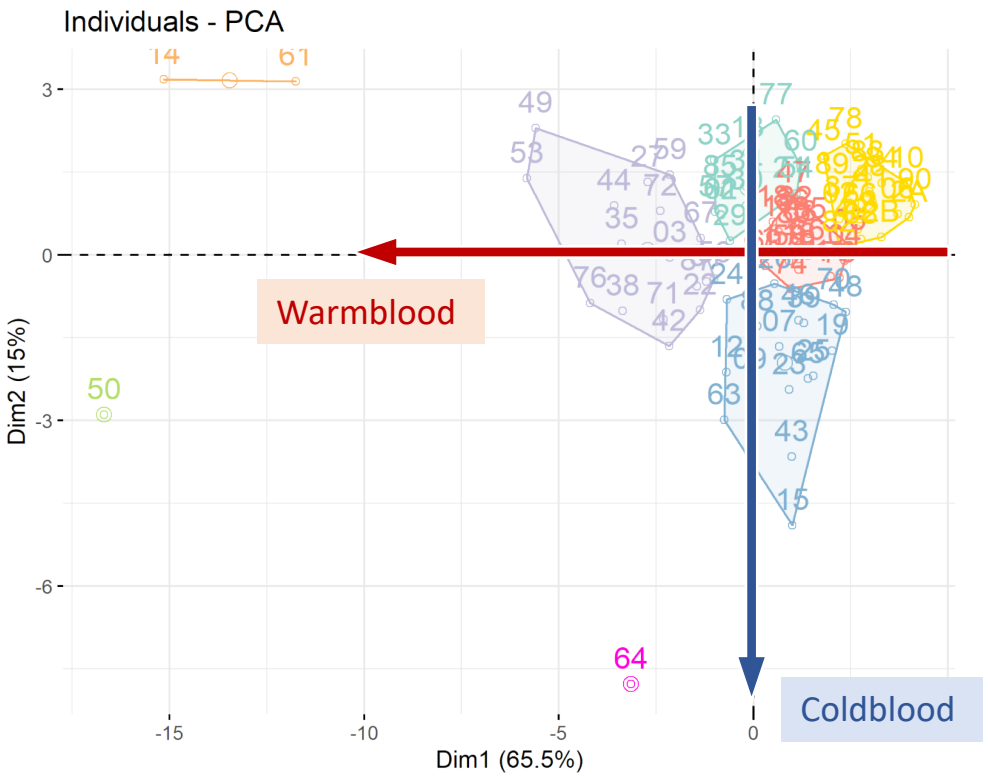
- From the previous works, 18 groups of equine herds were identified:
  → 8 groups with significant herds + 10 groups with small herds
- The 54,372 farms with equines in AC-2010 were disaggregated
  by type of herd (the 18 groups) and by department (French districts)
- Principal component analysis (PCA) of the resulting table
- Hierarchical classification (HAC) of French departments based on the PCA scores

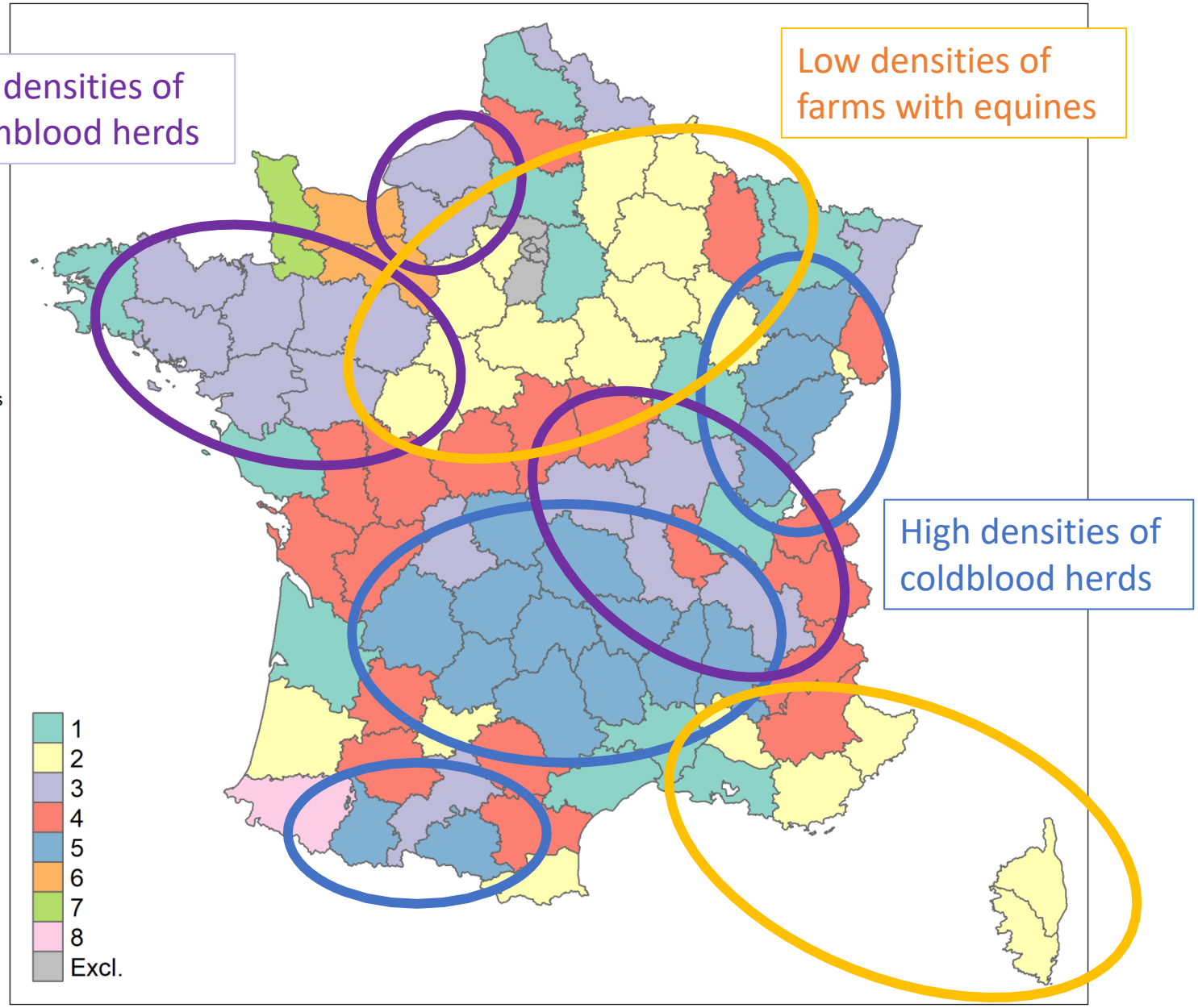
PCA components



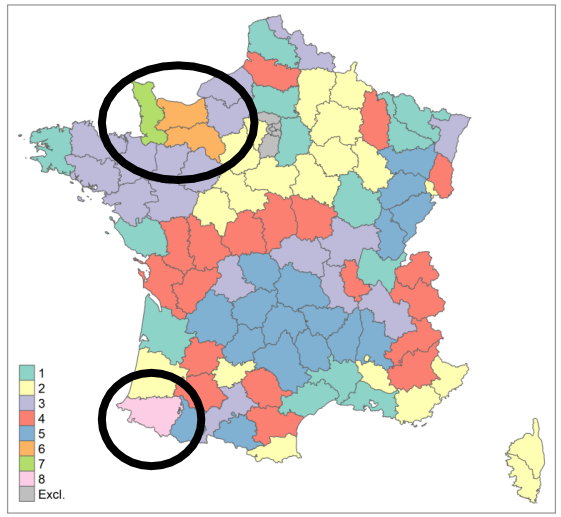


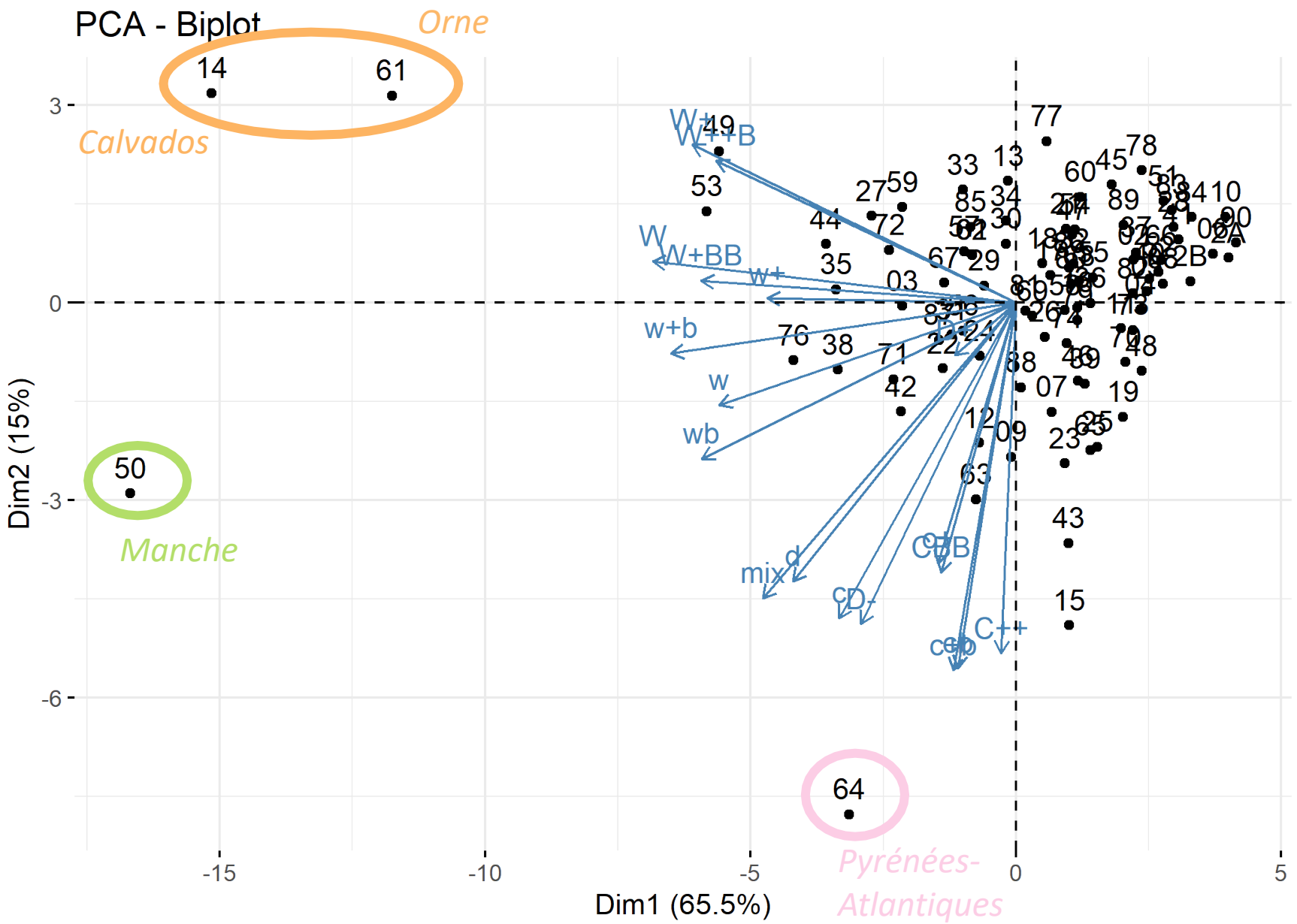
Classification





Focus on departments with very high densities





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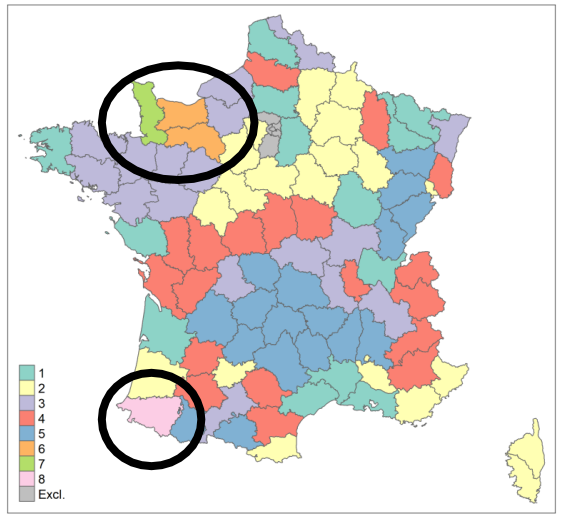

PCA - Biplot

Dim4 (3.4%)

Dim3 (6.7%)

Calvados

Orne

Manche

Pyrénées-Atlantiques

Larger herds

Conclusion

This classification highlights:

- Territories with similar geographical and agricultural features tend to have similar density and types of equine herds
- The density of farms with equine is more significant in grassland areas, particularly under oceanic climate (Normandy and Pyrénées-Atlantiques)
- Coldblood herds are mainly raised in highlands,
  warmblood herds mainly in lowlands, but with a diversity of contexts

The proposed approach provides a classification of French territories based on the significance and the local structure of the equine sector

→ This characterization of departments could be useful notably for guiding the selection of territories for other studies, or for surveys

Despite new census conditions that have reduced the sample of farms (farms with only equines), the data from the 2020 agricultural census provides additional information
with new saddle, trot, and gallop breed categories (not distinguished in 2010)

→ could allow for a better differentiation of types of equine herds kept in French farms

Thank you for your attention