

People's perceptions, knowledge and practices in social-ecological systems



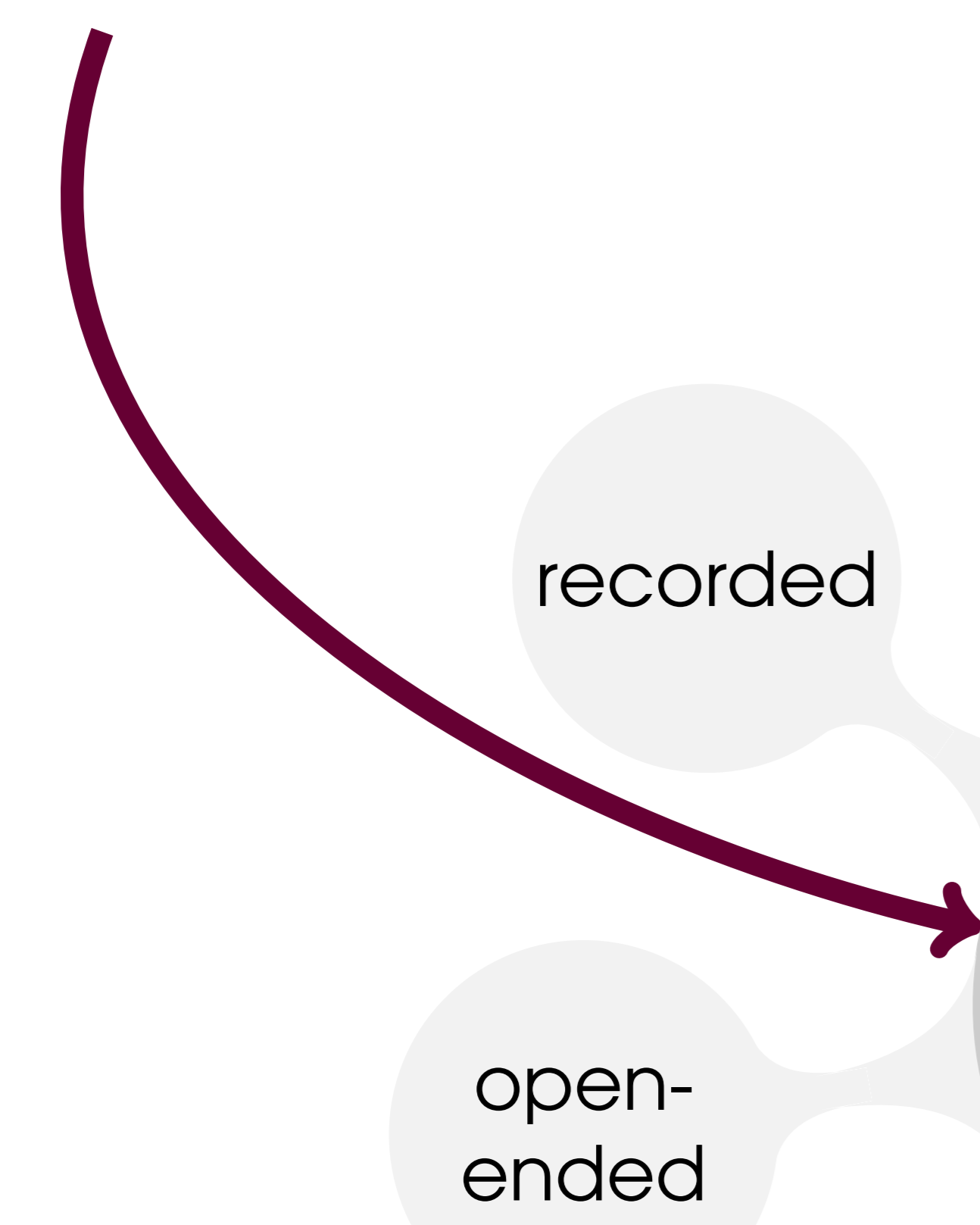
F.M. Vanwindekens¹ — D. Stilmant¹ — P.V. Baret²

¹Walloon agricultural research centre (CRA-W) – Agriculture and natural environment Department – Farming Systems, Territory and Information Technologies Unit, Gembloux & Libramont – Belgium

²Earth and Life Institute, ELIA, University of Louvain (UCL), Louvain-la-Neuve – Belgium



Methodological path



Farmer Alphonse
For me, the first cut of grass, it depends ... I do a part in silage, another part in bales of dry hay or in bales wrap. In depends of the weather, that, if it is raining after the cut, I will wrap them. But I always need a part in dry hay for my calves. The silaging, it is often around mi-June and the hay, end of July. But the cutting date will also depends of the weather.

Farmer Alfred
For the milking cows, I try to have a forage of high quality, rich in proteins. To this end, I will try to early mow the first cut, around end of May. At this date, as if is young grass, it is ensiled automatically ...

First cut → Silage
First cut → Bale wrap
First cut → Dry hay

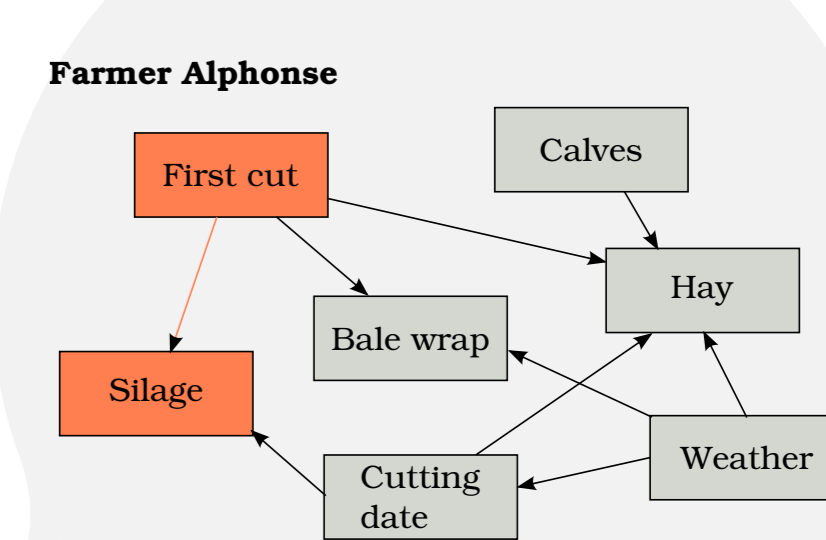
Weather → Dry hay
Weather → Bale wrap
...

Weather → Cutting date

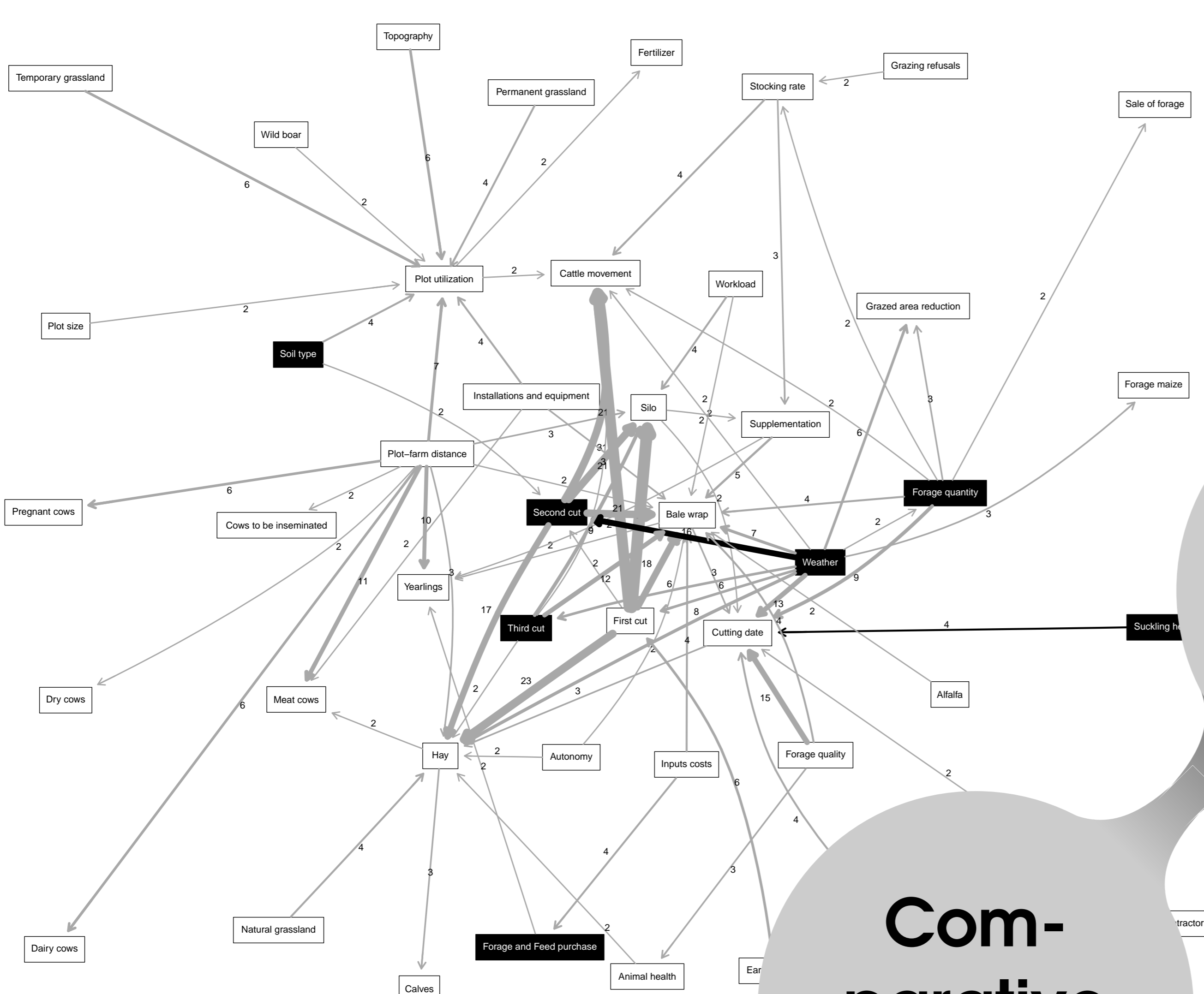
Milking herd → Quality forage
Quality forage → Cutting date
Cutting date → Silage
First cut → Silage

R Packages

RQDA
RSQLite
network
sna
RGraphviz
ggplot2



| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 |
| 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Descriptive approach
1

Individual cognitive maps

Σ

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

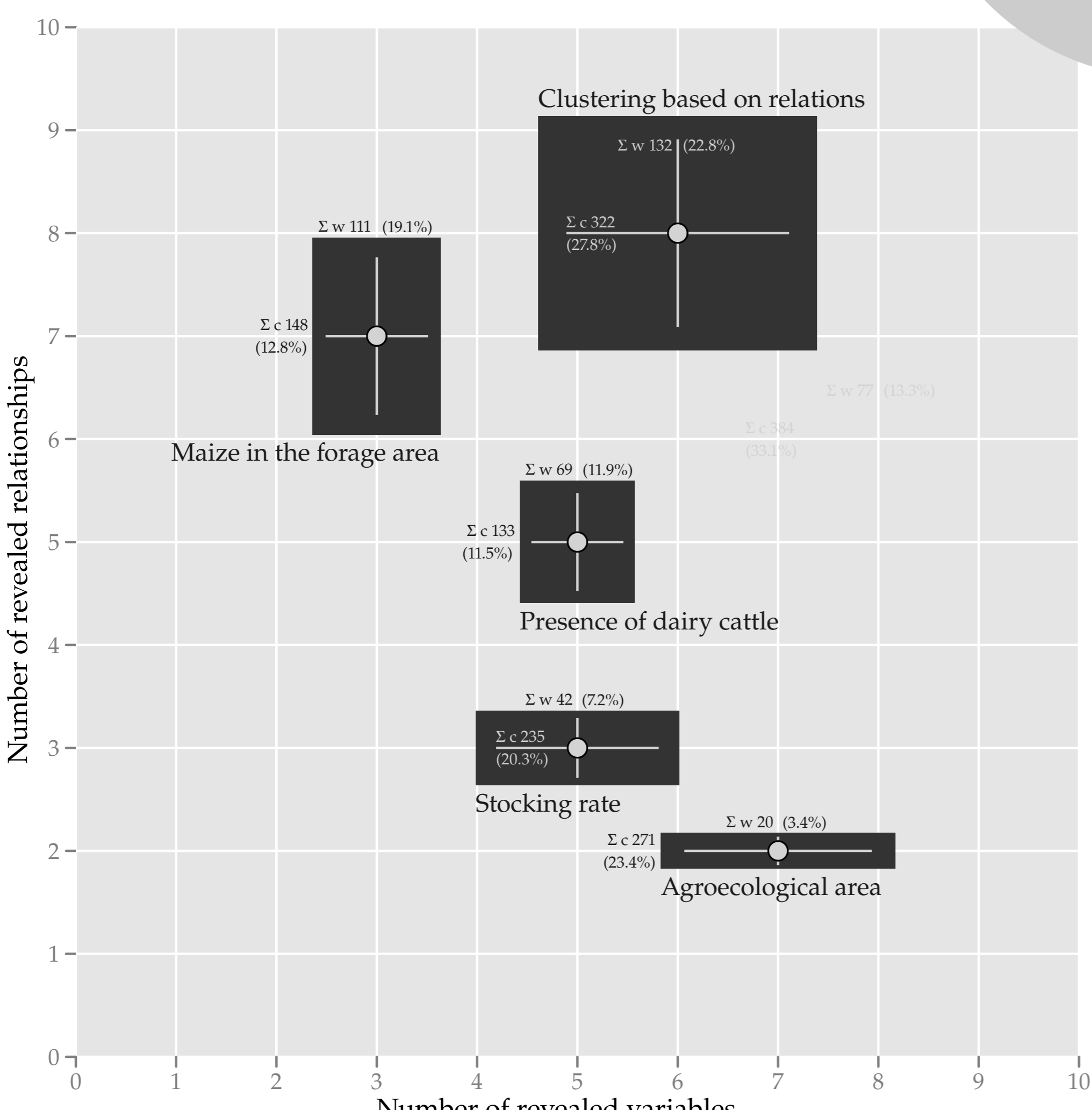
| Relationship | Weight |
|--------------|--------|
| A → E | ... |
| A → F | ... |
| E → B | ... |
| C → A | ... |
| ... | ... |

| Variable | Centrality |
|----------|------------|
| E | Σ Weight |
| A | ... |
| B | ... |
| F | ... |
| ... | ... |

Tools

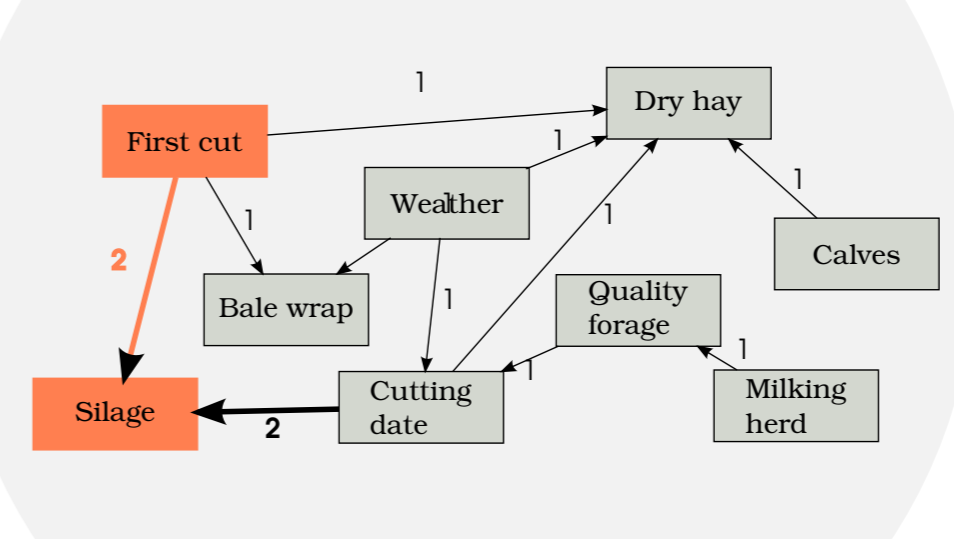
| Relationship | Quote(s) |
|--------------|-------------------------|
| A → E | Farmer X : "...", "..." |
| | Farmer Y : "..." |
| ... | ... |

Significant differences



Comparative study

Analytical approach
2



Clustering & Typology

Case studies

Grassland management in livestock farming systems of Belgium
+ Beekeeping practices (Chartreuse, F) @Wageningen University
+ Viticulture farmers (Trentin, I) @Wageningen University

References

1 – Vanwindekens F.M., Stilmant D., Baret P.V., 2013. Ecol. Model., 250, 352-362
2 – Vanwindekens F.M., Baret P.V., Stilmant D., 2014. Ecol. Model., 274, 1-11

