

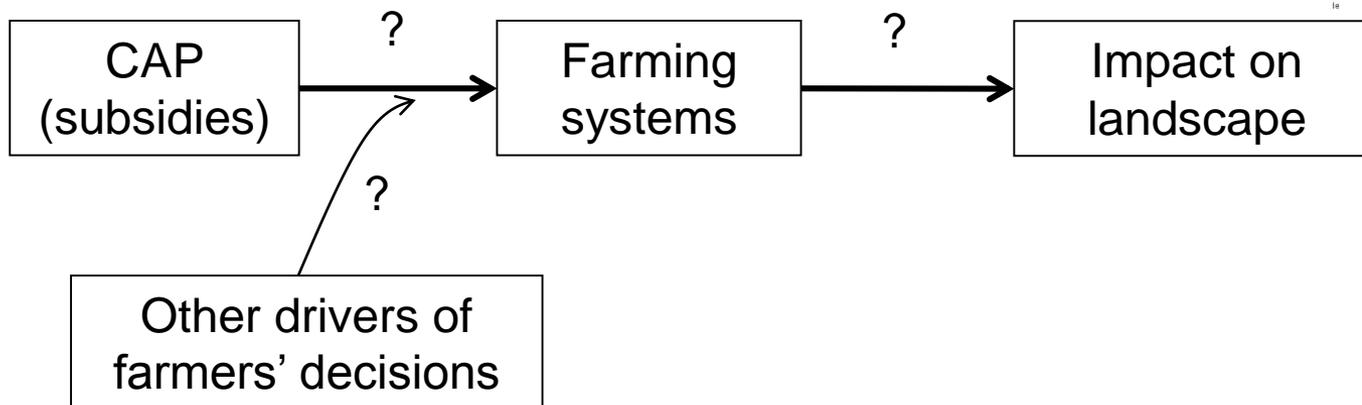
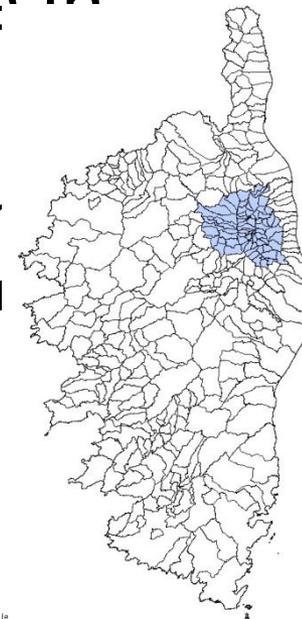
Drivers of changes in Mediterranean extensive livestock systems: a micro- econometric analysis of a Corsican area.

Delattre L, Gueniot F, Moulery M, Napoleone C, Paoli JC, Santucci PM,
 INRA



Does the CAP favors rangeland landscape in Mediterranean area?

- Relationships between the farming systems favor by the CAP subsidies and the evolution of natural pastures toward scrublands and forest?

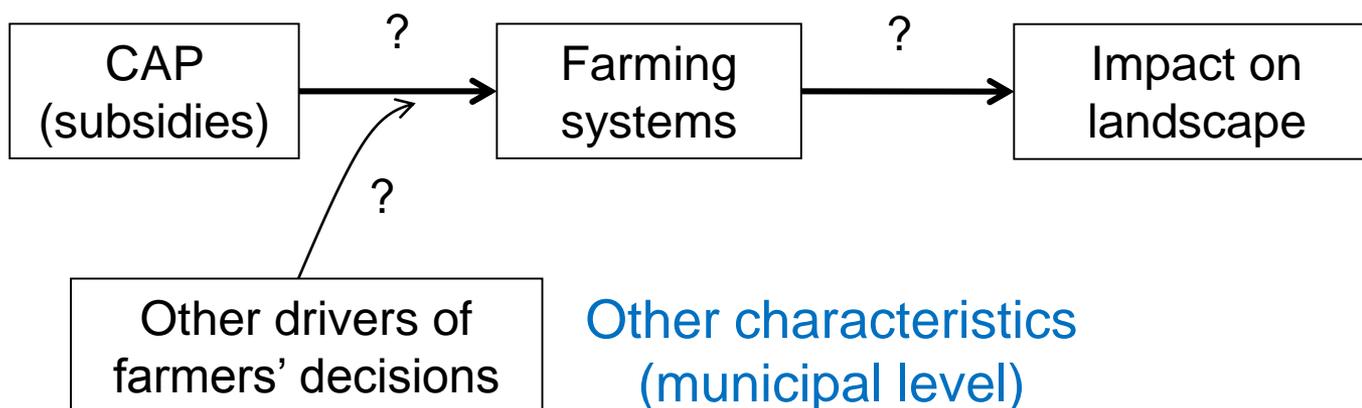


Material and methods

CAP subsidies

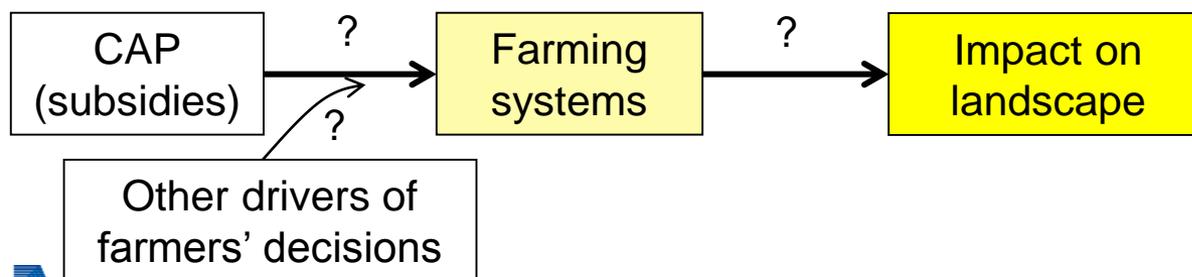
Agricultural
 holdings and
 farming systems:
 field survey,
 current and former
 holdings

Land use :
 remote sensing
 on SPOT
 satellite images
 of 1994 and
 2012 with 20m
 resolution



Use of remote sensing to evaluate the vegetation changes

- Necessity to get an accurate vegetation cover
- Available data not accurate (IGN Forest DB, Corin Land Cover).
- Use of remote sensing from SPOT satellite images of 1994 and 2012 with 20m resolution.

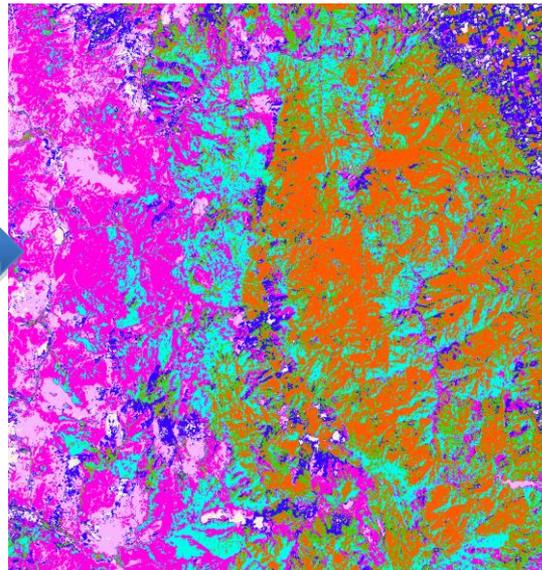


Vegetation analysis: method

- Check the reference points on field with a GPS
- The reference points are added in the remote sensing software Multispec
- Execution of a supervised classification using Minimum Euclidian Distance method for the 2 images (1994 et 2012)
- Extraction of 7 classes of vegetation



Supervised
 classification

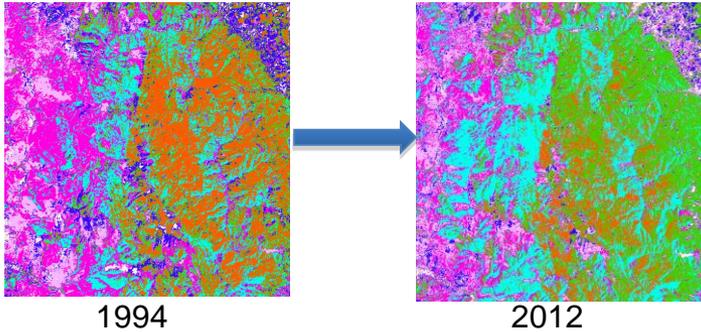


7 classes of
 vegetation :

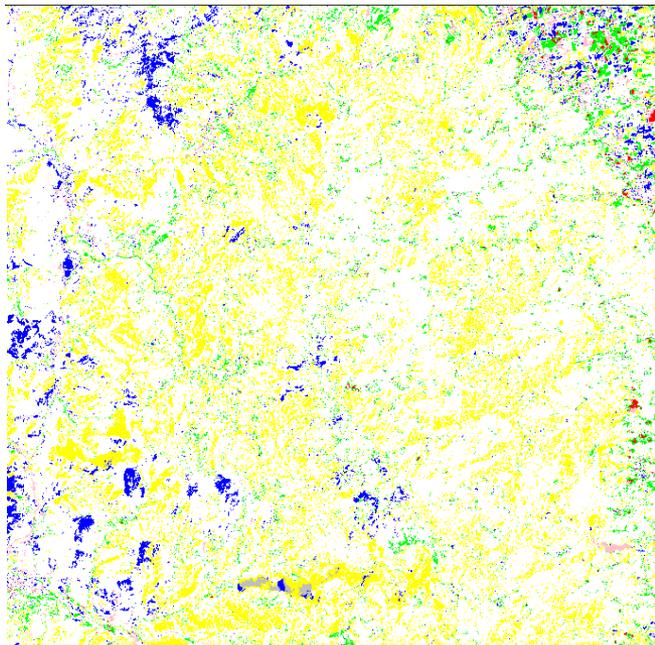
-  Bare soil / built
-  Grass
-  Cistus
-  Heather
-  Forest (beech, holm)
-  Chestnut trees
-  Pines

SPOT image 1994. Channels 3,2,1.

Vegetation analysis : results



- The 2 SPOT images are combined with the statistical software R to study the changes of 3 vegetation subclasses :
 - Bare soil / built
 - Low vegetation
 - Forest



Matrix of transition :

-  No change
-  Low vegetation to bare soil
-  Low vegetation to forest
-  Bare soil to low vegetation
-  Bare soil to forest
-  Forest to low vegetation
-  Forest to bare soil

Use of field survey to assess the Farming location

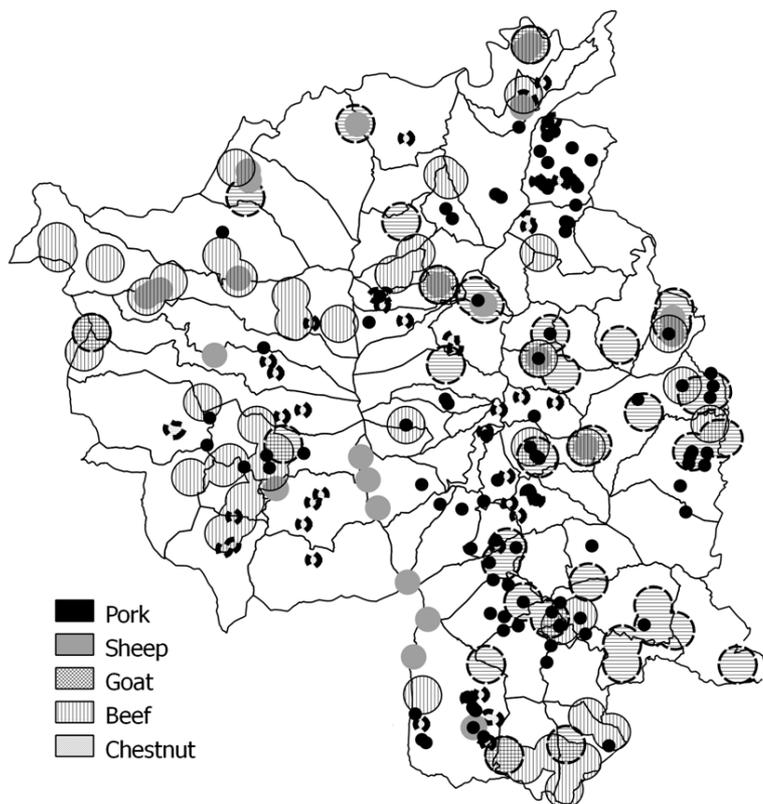
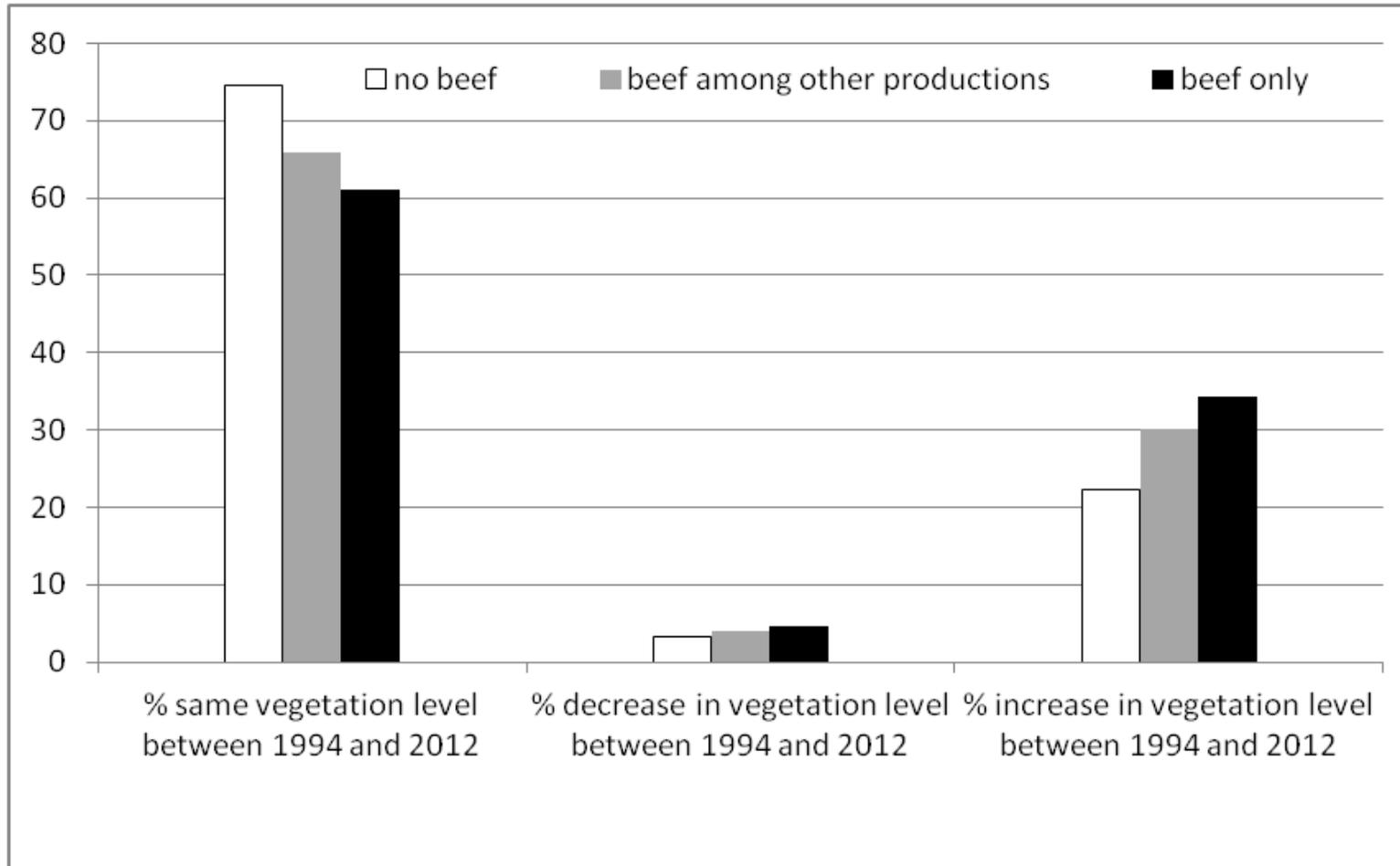


Figure 4 Farming production sites and their surrounding buffer zones (2012)

Evolution of vegetation growth by farm type



Link between CAP and farming systems?

Original approach: extensification vs intensification vs abandonment.

We estimate a multinomial dependent variable (*Ranch*) describing the production types of each holding with respect to beef cattle production

Estimation results

Coefficients	Intercept	varDexp	vardpop	past1994	Olds
Beef among other productions	-1.276	-0.549	0.200	-0.016	0.547
Beef only	-1.655	-0.967	1.326	0.406	0.734
Std, Errors					
Beef among other productions	0.218	0.2767889	0.3767932	0.221	0.397
Beef only	0.284	0.3117535	0.4384853	0.230	0.435
> p					
Beef among other productions	5.496 e-09	0.047	0.595	0.940	0.169
Beef only	5.626 e-09	0.001	0.002	0.077	0.091
Residual Deviance	274.881				
AIC	294.881				

conclusions

The results of the remote sensing data analysis show a rapid process of vegetation growth, from pastures (generally rangelands) to scrublands and scrublands to forest in the Castagniccia region over the last 20 years.

Conclusions 2

results show the Mediterranean ranching systems to be opportunistic, using agricultural land abandonment to maximize personal income together with CAP premiums (despite low agricultural profit).

Conclusions 3

in these Mediterranean areas with low farm density, livestock pressure is too low to control biomass growth. Our results indicate that the current way of distributing premiums without conditions on biomass growth control is questionable.

suggestions

- *CAP applications designed in a way as to maintain small systems and make them more attractive for young farmers.
- *encouraging the techniques and skills required to maintain and exploit this kind of landscape (generally non-mechanized), instead of merely granting subsidies.

Thank you for your attention

CSA 3 – Castagniccia, France

Lead: INRA LRDE Corte

Name: Pastoral and mountain agriculture

Extent: 45016 Hectare

Location: from 300 to 2700 m uls , steep slopes,
shales

Population : 7050

Climate: Mediterranen

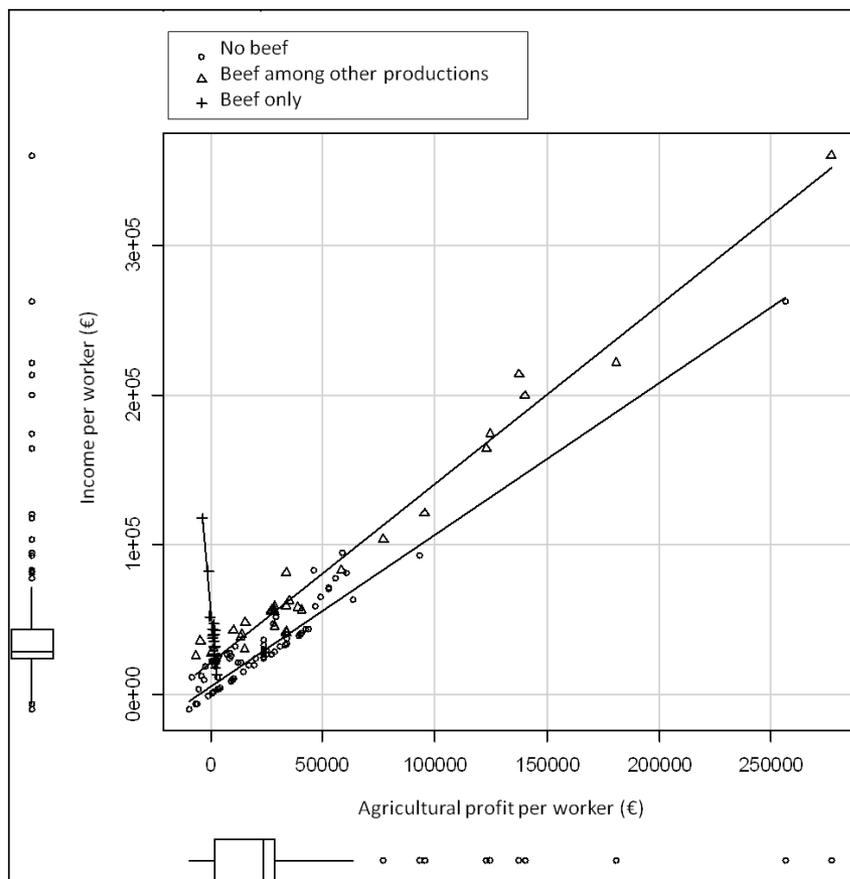


Figure 9: agricultural profit vs personal income per worker