

# URBAN REGION OF PISA

Authors: R. Filippini<sup>1</sup>, E. Marraccini<sup>2</sup>, S. Gennai-Schott<sup>3</sup>, E. Bonari<sup>3</sup>, S. Lardon<sup>4</sup>

(1) Agroparistech & SSSA, UMR Métafort ([rosalia.filippini@agroparistech.fr](mailto:rosalia.filippini@agroparistech.fr))

(2) UP 1012-10-103 PICART, Institut Polytechnique LaSalle Beauvais (France)

(3) Scuola Superiore Sant'Anna, ISV, Pisa (Italy)

(4) INRA & AgroParisTech, UMR Métafort, Clermont-Ferrand (France)

## Territorial context



Fig. 1 Case study: Urban Region of Pisa (Tuscany, Italy)



### Population:

200.000 inhabitants

### Surface:

500km<sup>2</sup>

### Utilized agricultural area:

17.622 ha

This area follows the European urban demographic trend for the last decade: in the last national census (ISTAT, 2011) while the number of citizens has decreased in the city (- 4%), the nearby urban centers have increased their population on average by 8%

## Spatial Planning/history phenomenon

### Piano Strutturale dell'Area Pisana

Work in progress, beginning in 2008

- 6 Municipalities involved:

- Public services in common (education, health, transports)  
- Common future territorial management

### Protected Area: Parco Regionale

Instituted in 1979; Territorial Plan of the Park in 1989

- It includes: Natural Park under Regional management + buffer zone where private farms work  
- Barrier to urban expansion  
- Land conflicts

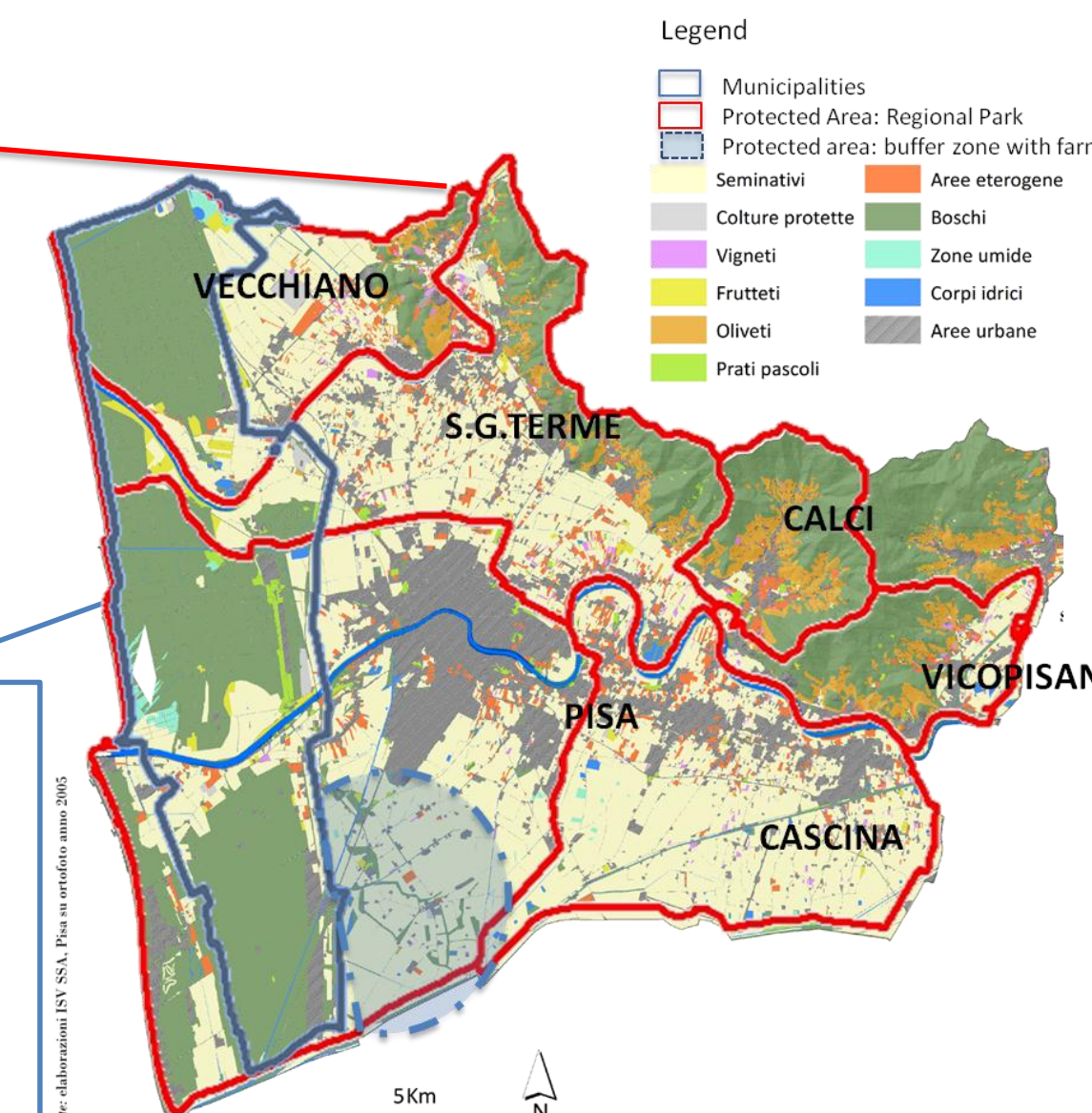


Fig. 2 Land use

## Urban Agriculture Types

### Local Food Farms

26 Farmers, grouped considering the % of production in Alternative Local Food Chains (ALFCs) → 3 strategies of local commercialisation:

**Active Strategy:** 100% ALFCs (5 farms) → Constraints: costs linked to **regulations**; farming system's **adaptation**; search of new partners; new skills

**Opportunistic Strategy:** different % in ALFCs (17 farms) → Constraints: **no local market** for some products; costs linked to regulations

**Passive Strategy:** < 10% ALFCs (marginal sale in ALFCs) → 4 farms → there's no **profitability** in AFLC (not interested, too many constraints), personal bonds and spatial proximity drive participation in ALFCs

### Leisure farms: hobby Farms

Interviews to 35 farmers working in the municipality of Calci

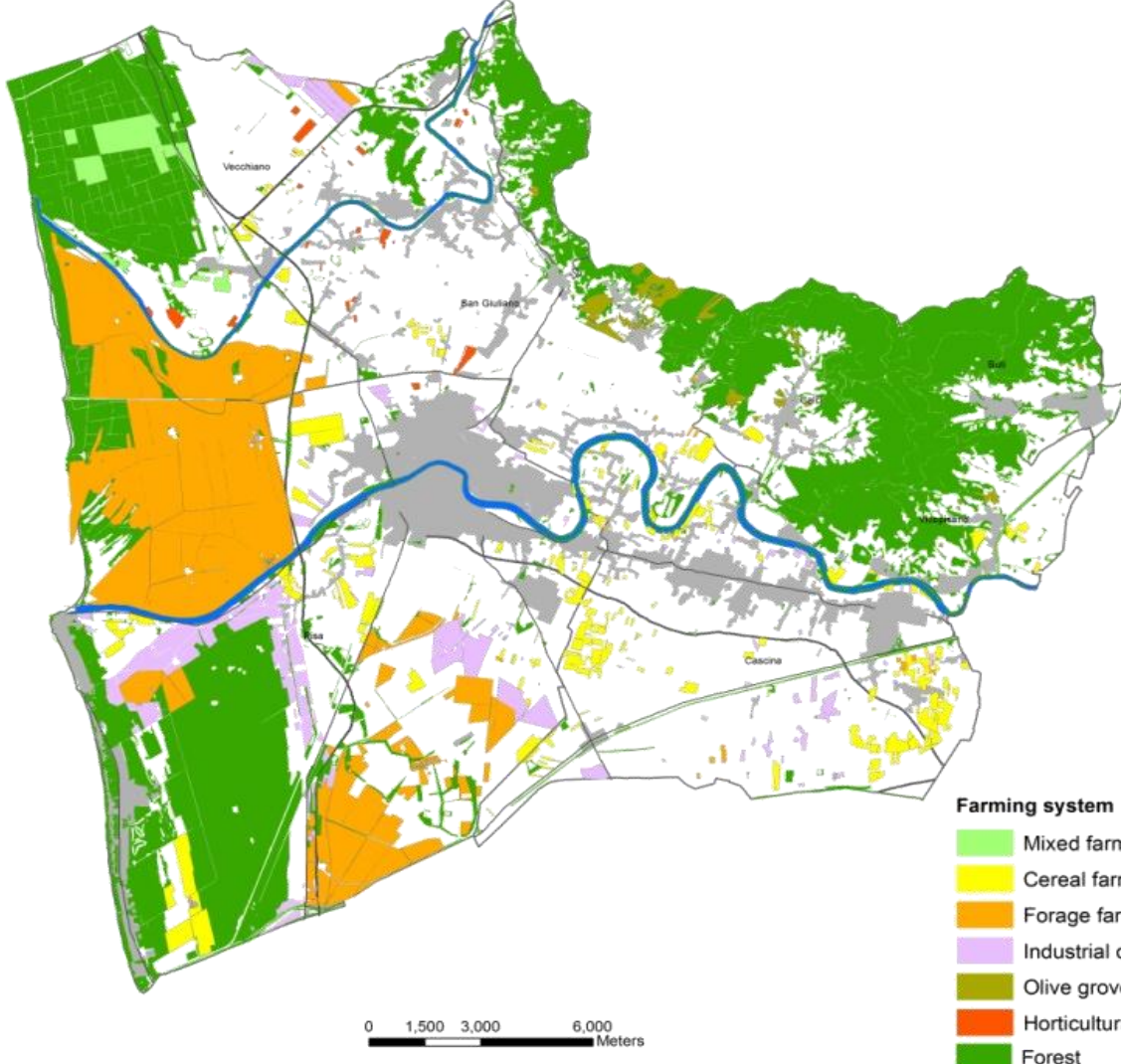


Fig. 3 Principal farming system of the farms interviewed (56 farms)

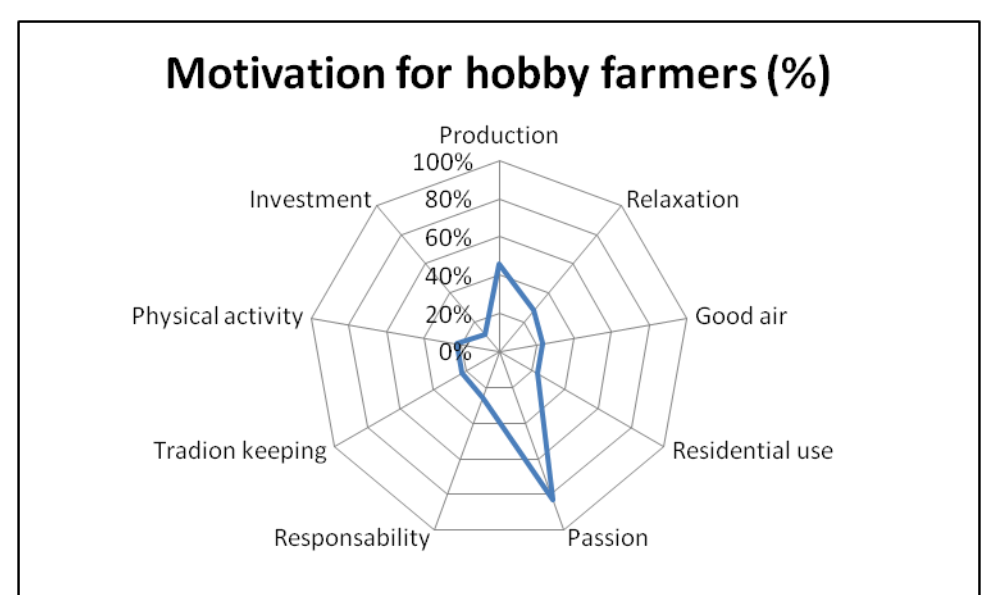


Fig. 5 Principal motivation of hobby farmers in approaching olive production

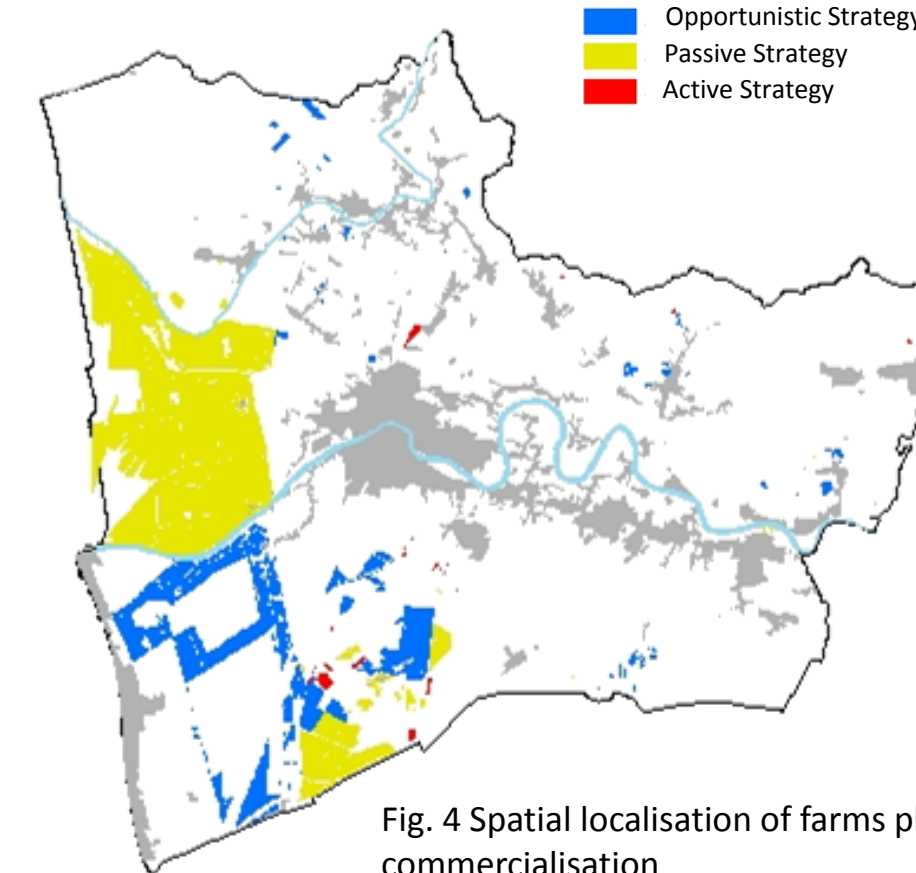


Fig. 4 Spatial localisation of farms plot which have local commercialisation

### Local Food Farm: Active Strategy

F1

Main production: vegetables + fodder  
UAA: 14 ha.  
Market: 100% on-farm direct sale (fodder to neighbours, vegetables with internet)



"Direct sales enable me to produce more sustainable production for the city than the big farms"

### Local Food Farm: Opportunistic Strategy

F2

Main production: vegetables  
UAA: 11 ha.  
Market: 50% wholesale market, 50% on farm direct sale + farmers market  
Territorial scale of wholesale market: Regional



"I'd like to do more and more direct selling. The profit is higher, but with the wholesale market I'm sure to sell everything."

### Local Food Farm: Passive Strategy

F3

Main production: dairy farm  
UAA: 250 ha.  
Commercialisation: 2% cheese factory (neighbour) 98% milk firm  
Territorial scale of main market: Regional



"I sell milk to the local cheese factory in case they lack sheep's milk."

### Hobby farm 1

H1

Retired hobby farmer (65 years), residence on the grove,  
0,3 ha olive grove with 170 trees  
Average oil production 130 l/year



"I enjoy myself with the work in the olive grove. It is a healthy activity, as far as I am able to do it. I want to leave something to my children."

### Hobby farm 2

H2

Hobby farmer (41 years) since 6 years, residing on the grove, university degree,  
0,9 ha olive grove with 400 trees  
Average oil production : 370 l/y



"I like living in the countryside, my job allows me to work also from home. We would need more help with the maintenance of the terraces."

## Actors and Public Policies

### Agro-urban project in the area

Table 1 Crossing between types of agri-urban projects and issues mentioned by the surveyed local actors

Projets	Enjeux environnementaux				Enjeux économiques				Enjeux sociaux				Enjeux transversaux				Total
	E	i	b	p	prf	t	pr	dt	s	f	q	ot	pt	g	br	vp	16
Piano del Parco																	7
Piano Strutturale d'Area																	2
Piano Regolatore Generale																	2
Piano Locale di Sviluppo Rurale																	14
Strada dell'Olio del Monte pisano																	10
Mercato dei Produttori Locali																	3
Carne Bovinadi Pisa																	3
Orti Urbano																	4
Pianodi Cibo																	4
Fattorie Didattiche																	5
Mercato Contadino																	3
Iniziativa di Promozione dei Prodotti del Parco																	7
Fattorie Didattiche																	7
Mercato di Campagna Amica																	2
Iniziativa di Promozione dei Prodotti Locali																	3
Gruppi d'Acquisto Solidali																	4
Total	2	2	4	4	10	8	4	4	6	7	8	6	6	7	4	2	4

En vert, les enjeux portés par les projets.  
Enjeux environnementaux : a = eau ; i = incendies ; b = biodiversité ; p = paysage.  
Enjeux économiques : prf = production alimentaire ; t = tourisme ; pr = production non agricole ; dt = développement filières.  
Enjeux sociaux : s = services ; f = formation ; q = qualité des produits ; ot = opportunités de travail.  
Enjeux transversaux : pt = protection des terres agricoles ; g = gouvernance ; br = bureau rural ; vp = valorisation du patrimoine.  
a = projets institutionnels ; b = projets portés par des acteurs institutionnels en lien avec d'autres acteurs ; c = projets portés par des acteurs locaux mais appuyés par des acteurs institutionnels ; d = projets d'acteurs locaux.

Marraccini et al, 2013

Several agri-urban projects have been activated in the area (Tab.1); the projects were activated by institutions (a), institutions and other actors (b), local actors supported by institutions (c) or alone (d). The overall purpose is to address special stakes of the area especially linked to **food production** (prf), **landscape** (p), **biodiversity** (b), **governance** (g).

## Urban Agriculture Metabolism

### Food Capacity for Livestock productions

Filippini et al., 2014. It J Agron 19: 63-70

### Food capacity: rate between supply and demand of food

14 farmers (80% of farms) 3 index of food capacity:

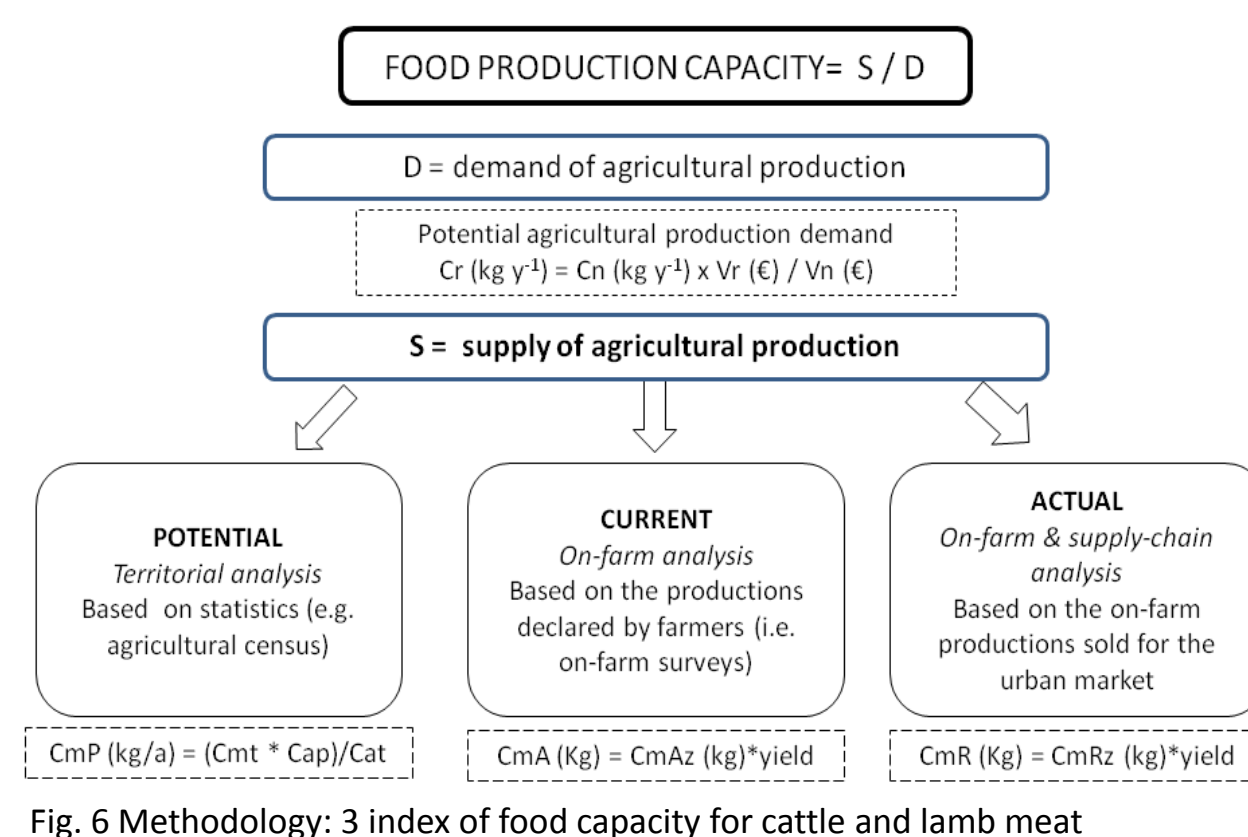


Fig. 6 Methodology: 3 index of food capacity for cattle and lamb meat

### Results:

- Different dynamics between cattle and lamb meat
- Differences between potential, current and actual

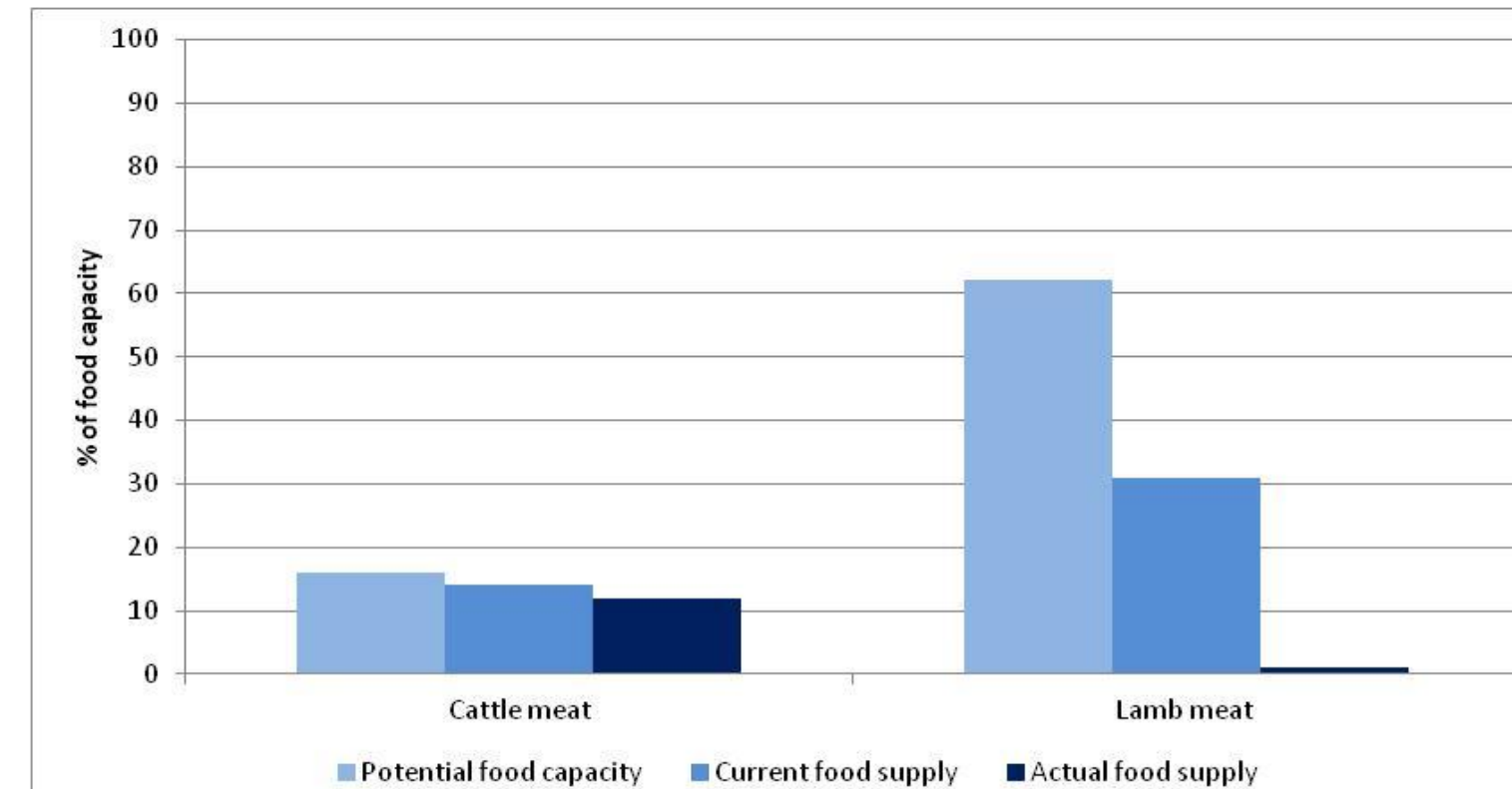


Fig. 7 Results: differences among lamb and cattle meat in food capacity's index

Importance of specific actions of **valorisation** for the local commercialisation of periurban products

## Spatial effects

Relation of Agriculture and Urban Areas at territorial level: actors implication through **Territorial Game**

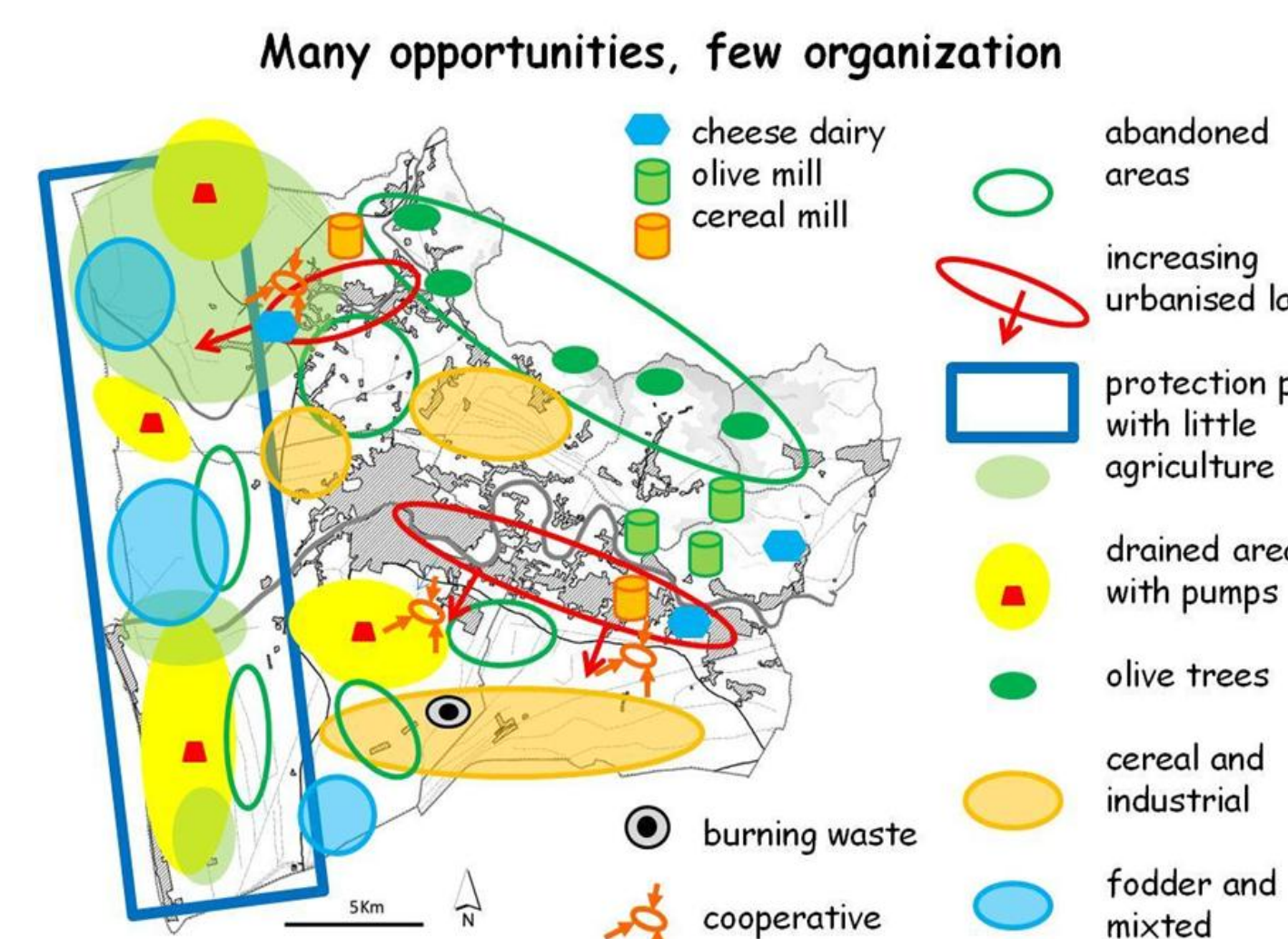


Fig.8 Diagnosis of Territorial Game done with researchers

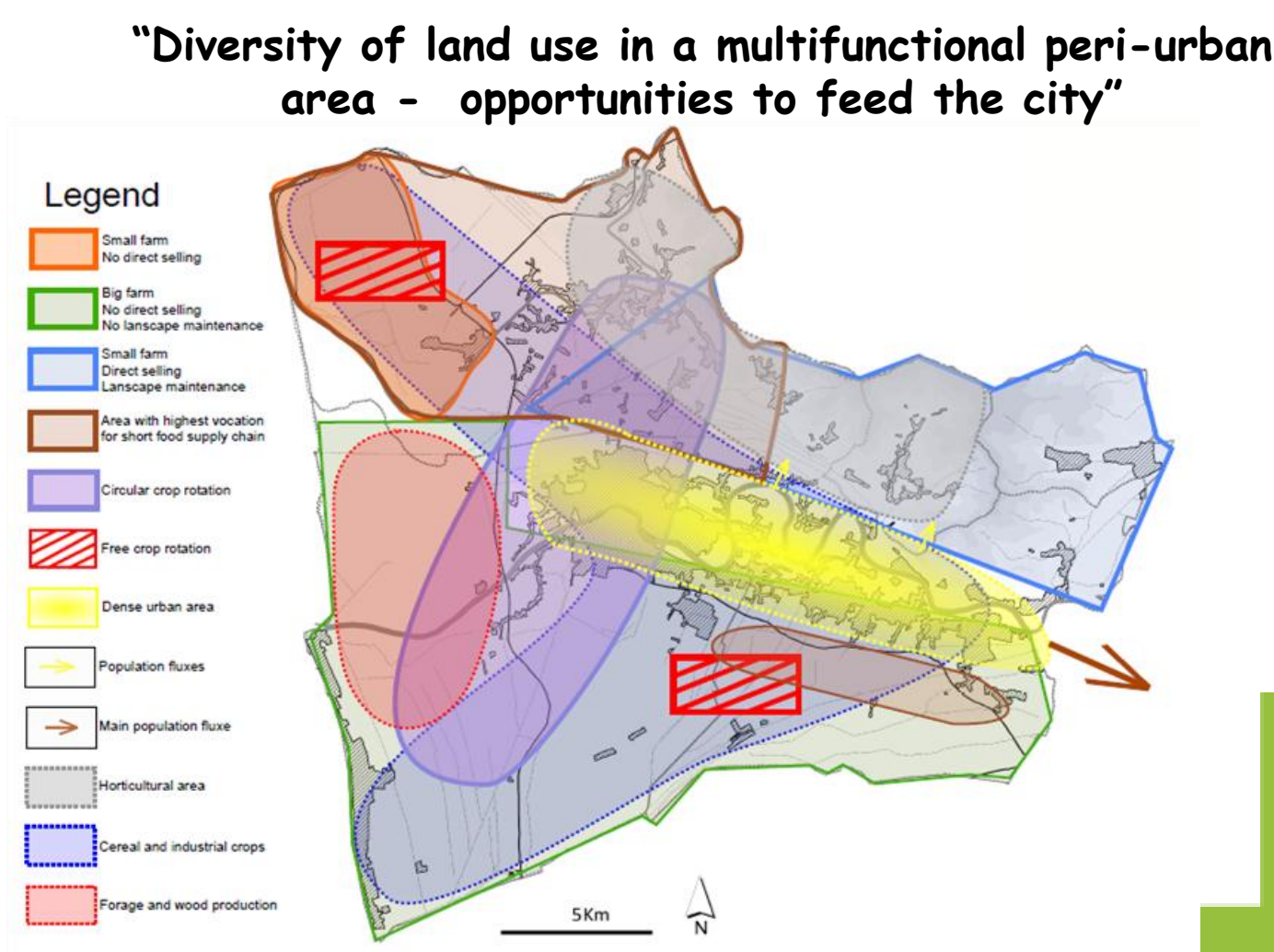


Fig.9 Diagnosis of Territorial Game done with farmers and students

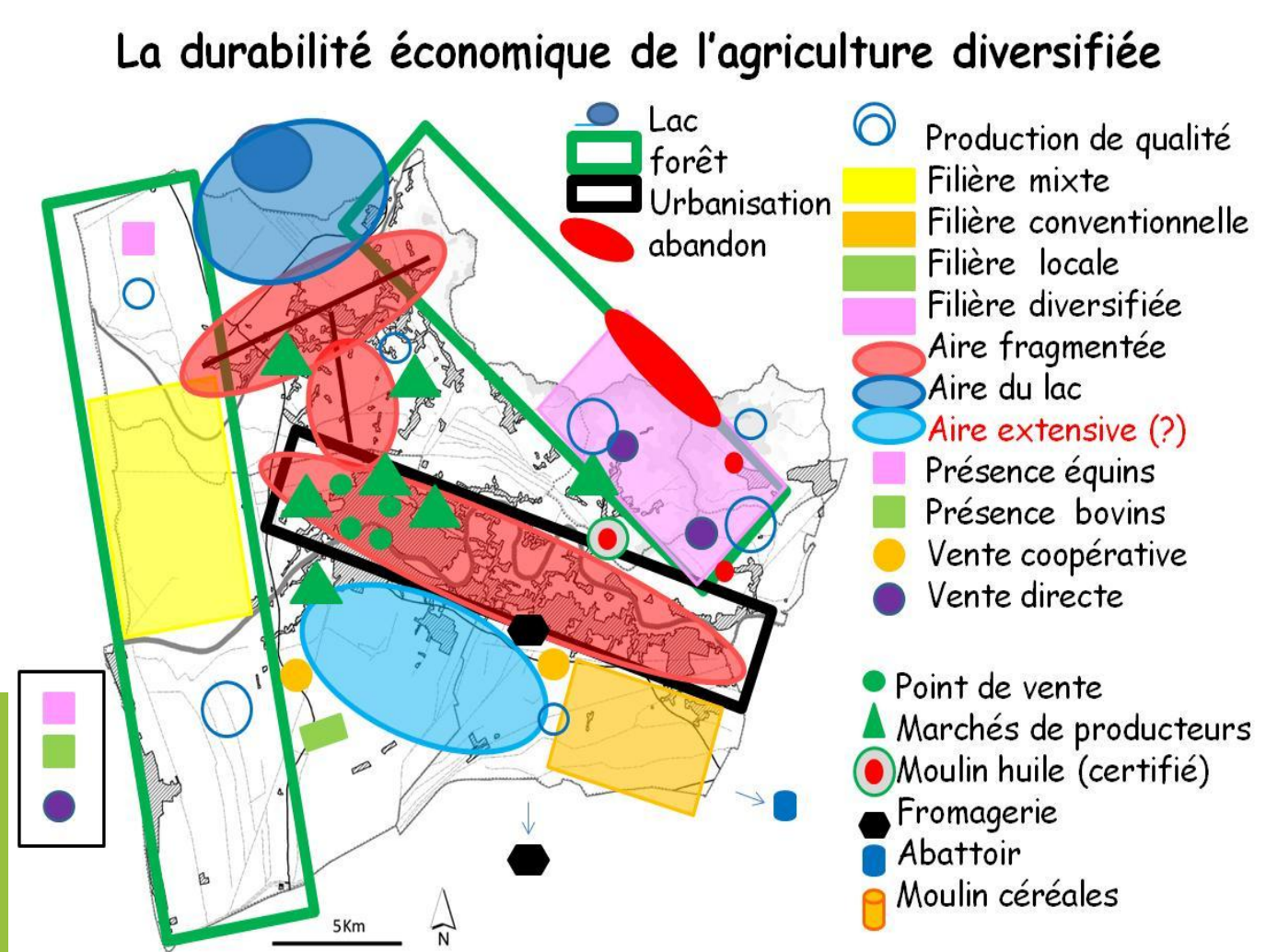


Fig.10 Diagnosis of Territorial Game done with farmers and researchers

The **Territorial Games** were performed in June and July 2014 with researchers (Fig. 8), farmers and students (Fig. 9), farmers (Fig. 10) and local stakeholders (figure not shown). The purpose was to bring actors to reflect about the topic: **"Which production's system for local food system?"**

According to the actors, the area is characterised by:

- **Urbanisation process against agriculture**
- **Agriculture diversification and zoning:** horticulture for local market in the north; cereal for conventional food chains in the south; abandonment and olive oil's hobby farming in the Monte Pisano
- The area is reach of food production, food quality, local initiatives linked to local food chains, but there's need for **coordination to have future sustainability**.