

Causes and consequences of a persistent sprawl: the Belgian case

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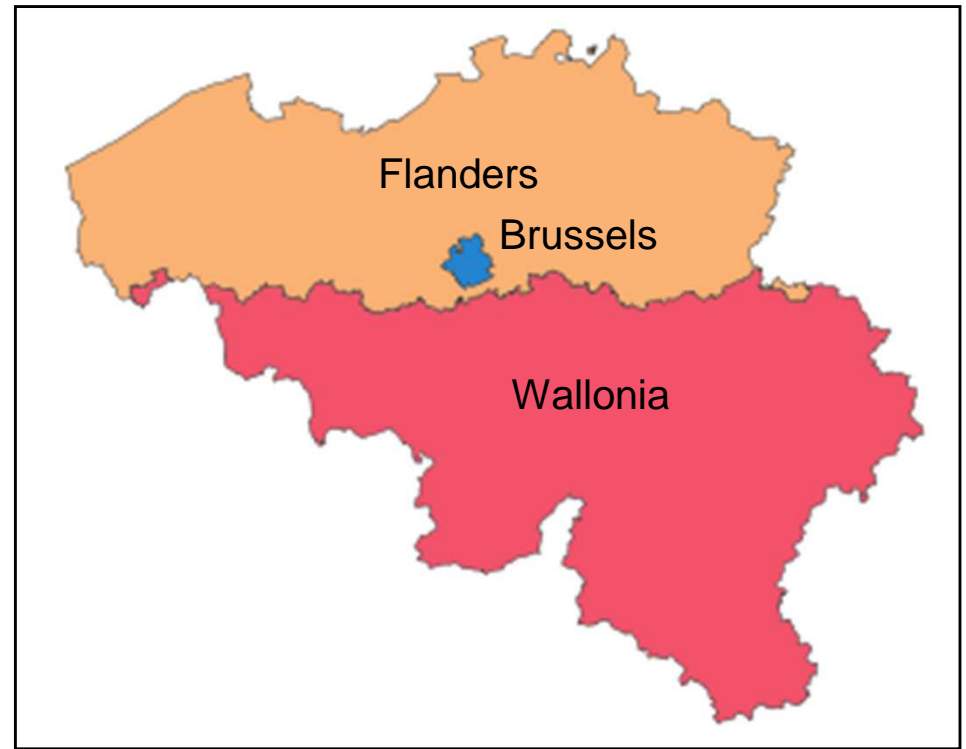
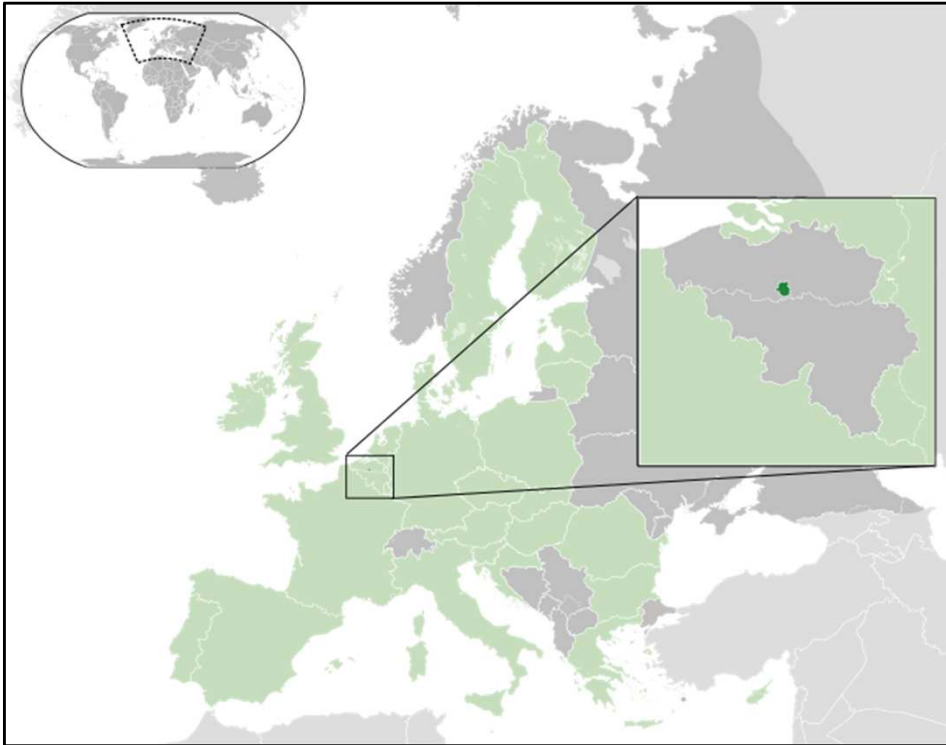
« Growing compact » – Venice – 25th-26th of September 2013



Introduction

What are we going to talk about?

Urban sprawl in a confetti

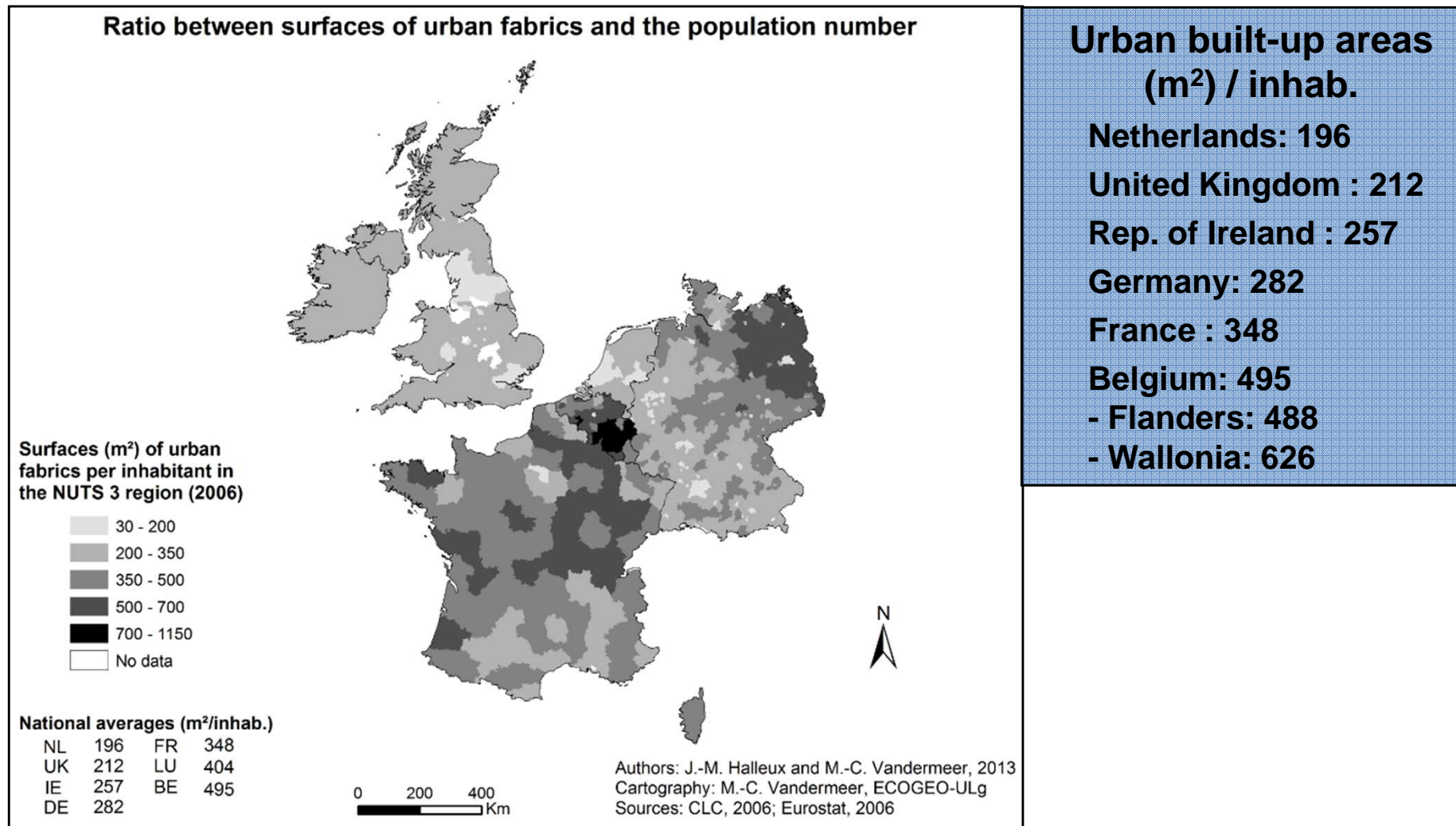


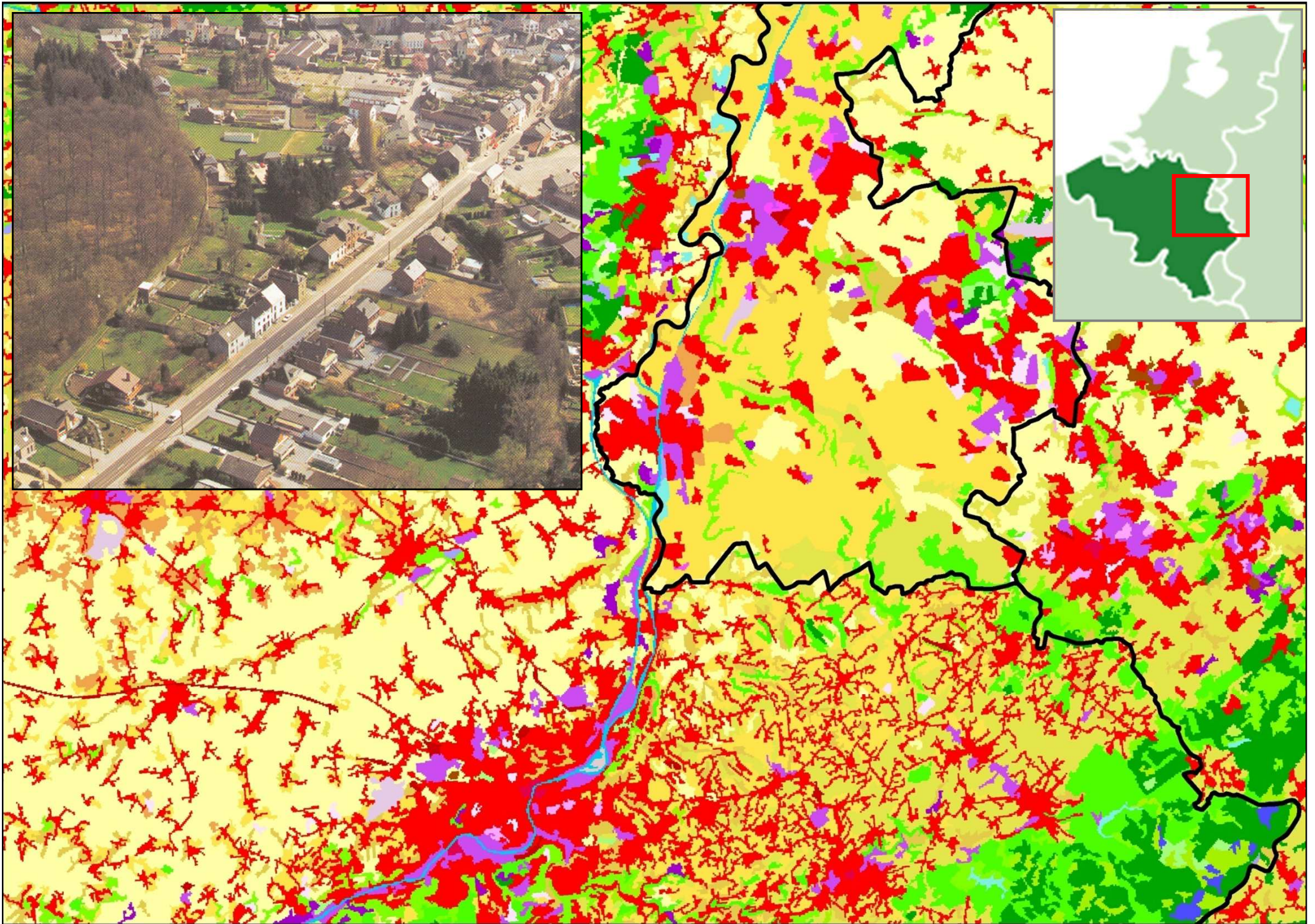
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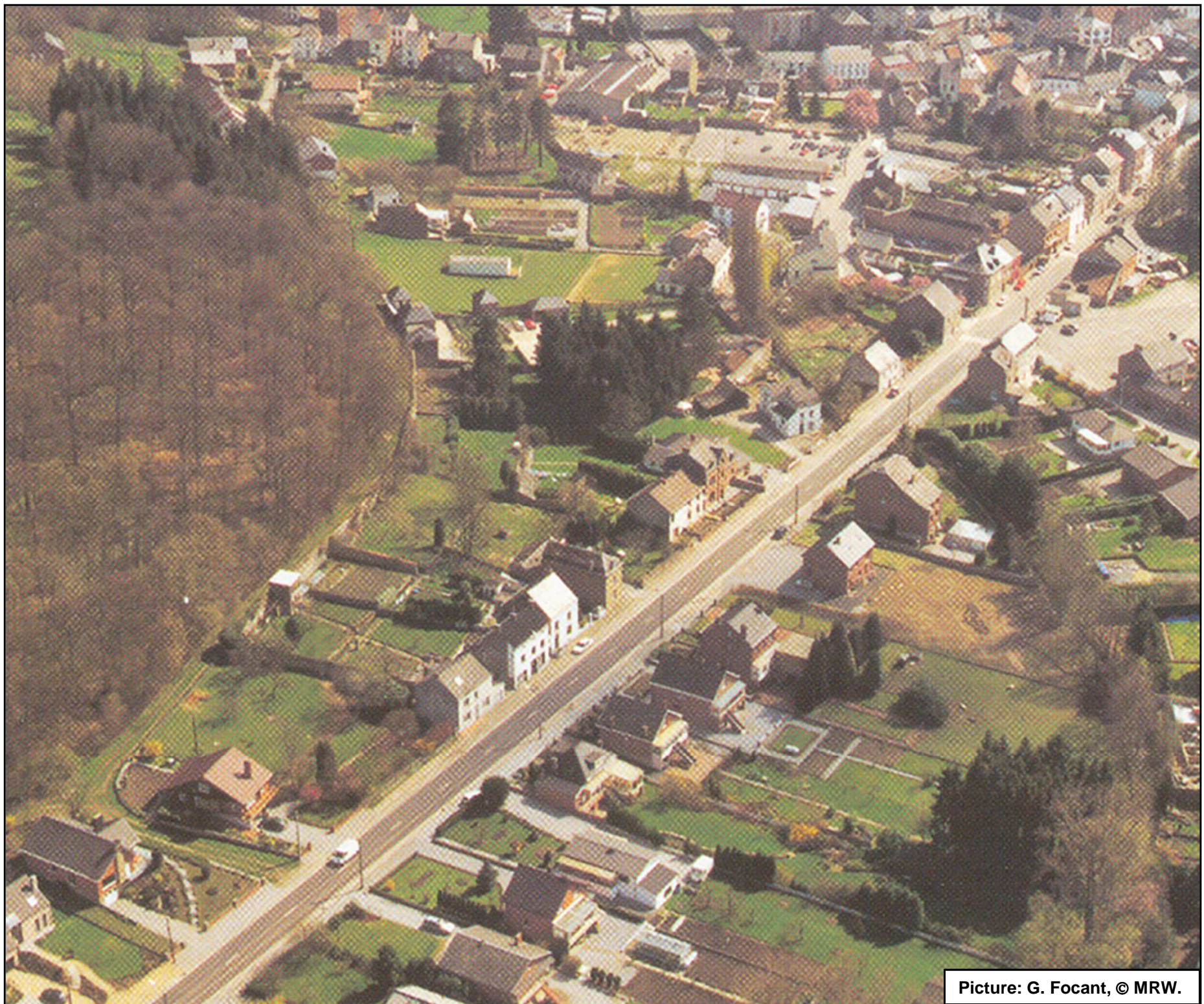
Urban sprawl in a confetti

A very important land consumption





Source: CORINE Land Cover (2000)

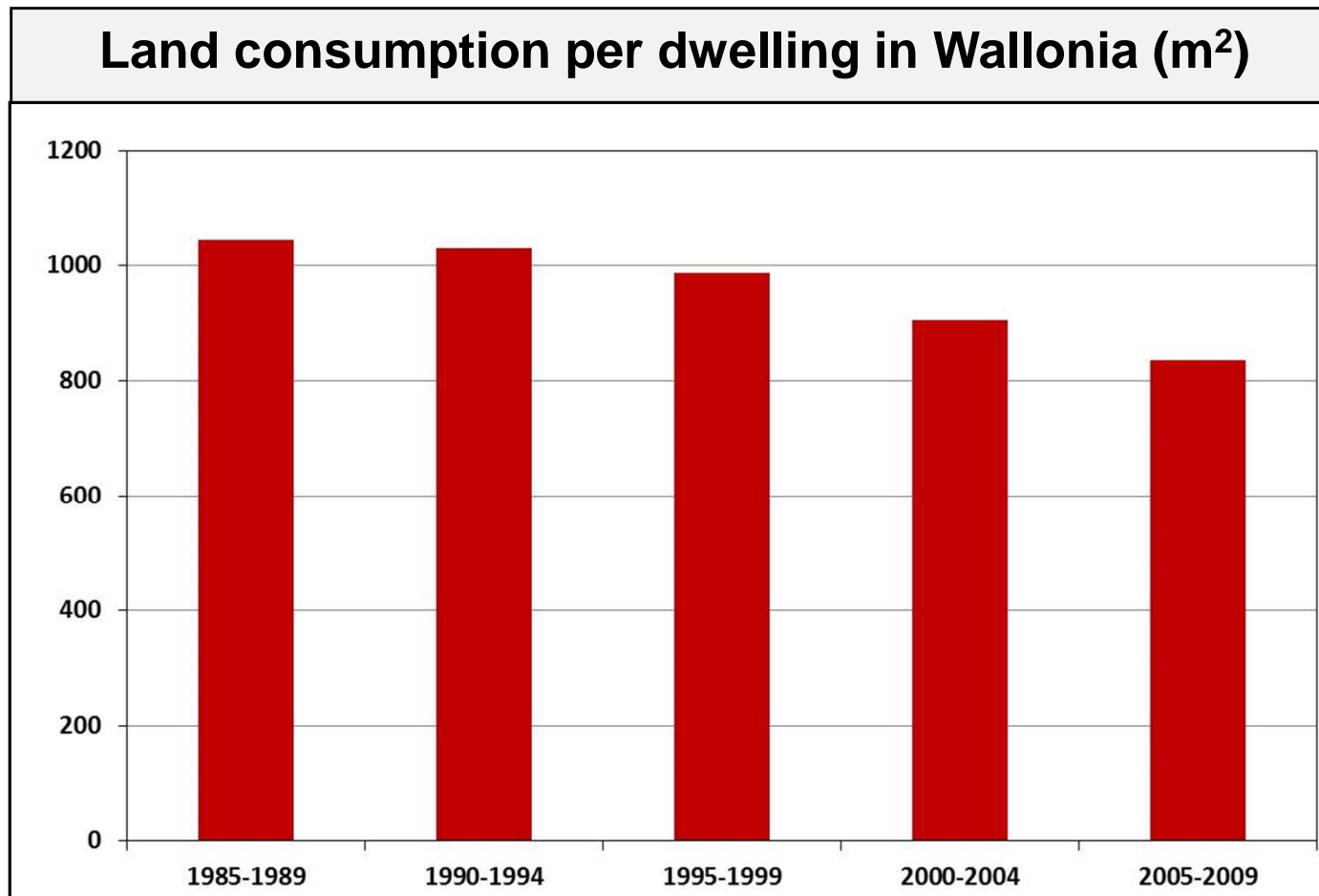


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A very important land consumption, but in reduction



Source: Cadmap

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Our main questions

Why such an important land consumption?

Why this current reduction in land consumption?

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Why such an important land consumption?

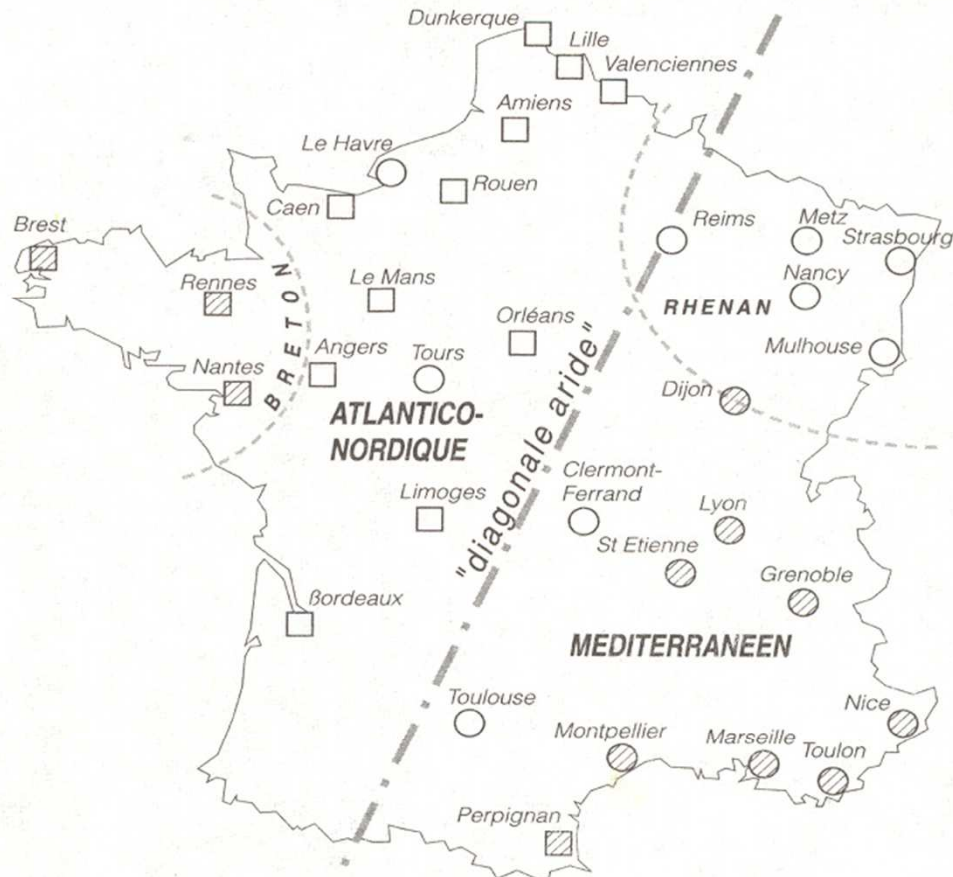
Residential preferences

Strong preferences for the one-family house and for low-density

European comparison of housing supply (around 1990)		
	Single-family house	Owners- occupiers
« Northern-Atlantic » Model		
Great Britain	79 %	67 %
Belgium	73 %	65 %
Netherlands	71 %	49 %
Denmark	61 %	53 %
« Mediterranean » Model		
Spain	36 %	85 %
Italy	32 %	70 %
« Rhineland » Model		
Switzerland	21 %	31 %
Germany	46 %	39 %

Source: de la Morvonnais P., 1998, « Comparaisons internationales », *Logement et habitat l'état des savoirs* (sous la direction de Segaud M., Bonvalet C. et Brun J.), La Découverte, Paris, pp. 147-157.

**Les types de structure du parc de logement
des agglomérations françaises de province**



- Ils prolongent les dominantes des pays européens limitrophes
- Ils suggèrent que la diagonale "aride" de désertification du peuplement recoupe une limite culturelle

- - de 58% de maisons individuelles dans la zone d'emploi (moyenne française)
- + de 58% de maisons individuelles dans la zone d'emploi (moyenne française)
- ▨ + de 24% de propriétaires parmi les ménages en appartement (moyenne française)

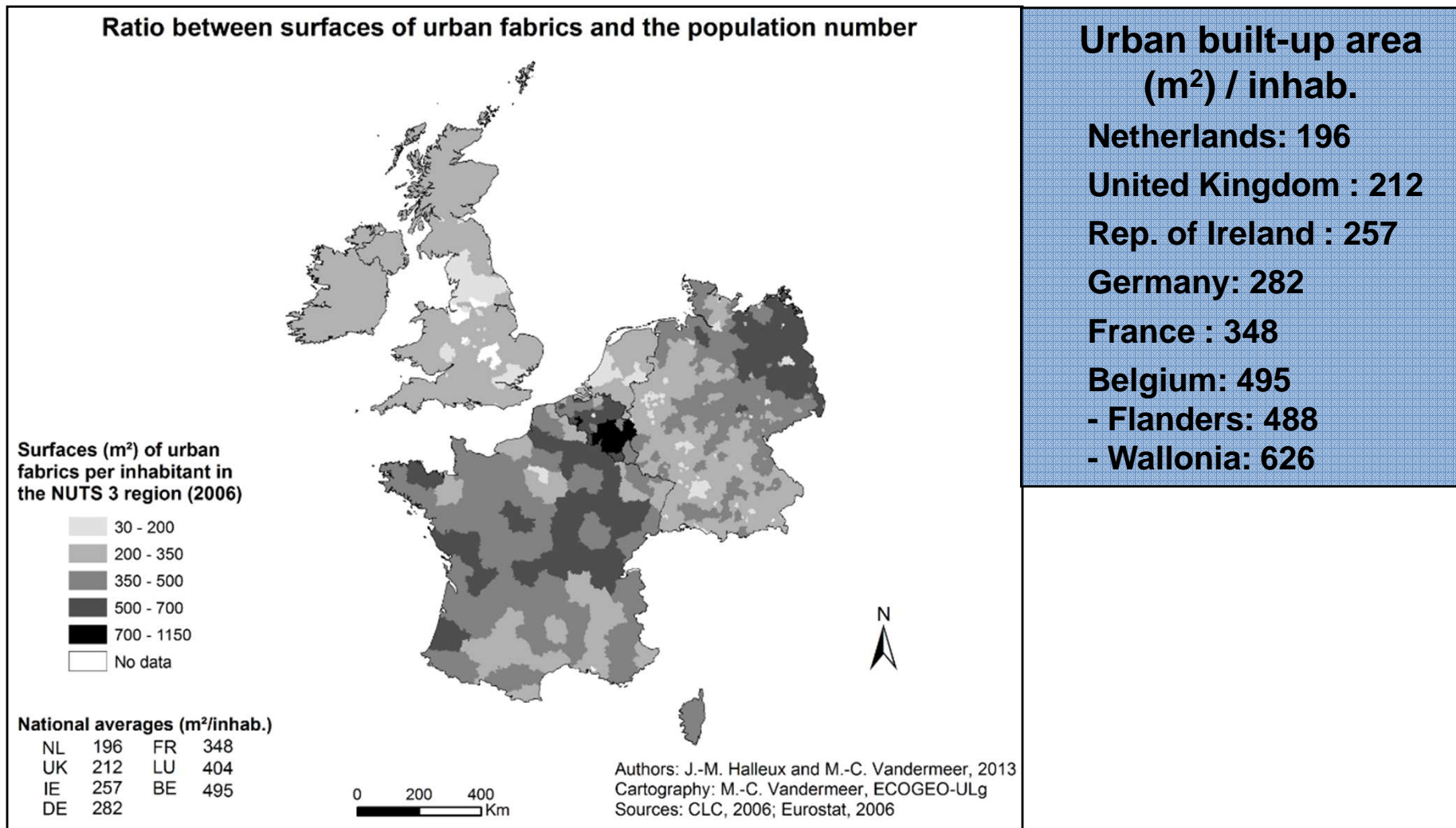
Less than 58% of one-family house in the urban region

More than 58% of one-family house in the urban region

Source : M. Wiel, 1999, p. 35.

Why such an important land consumption?

Weak planning



Why such an important land consumption?

Weak planning

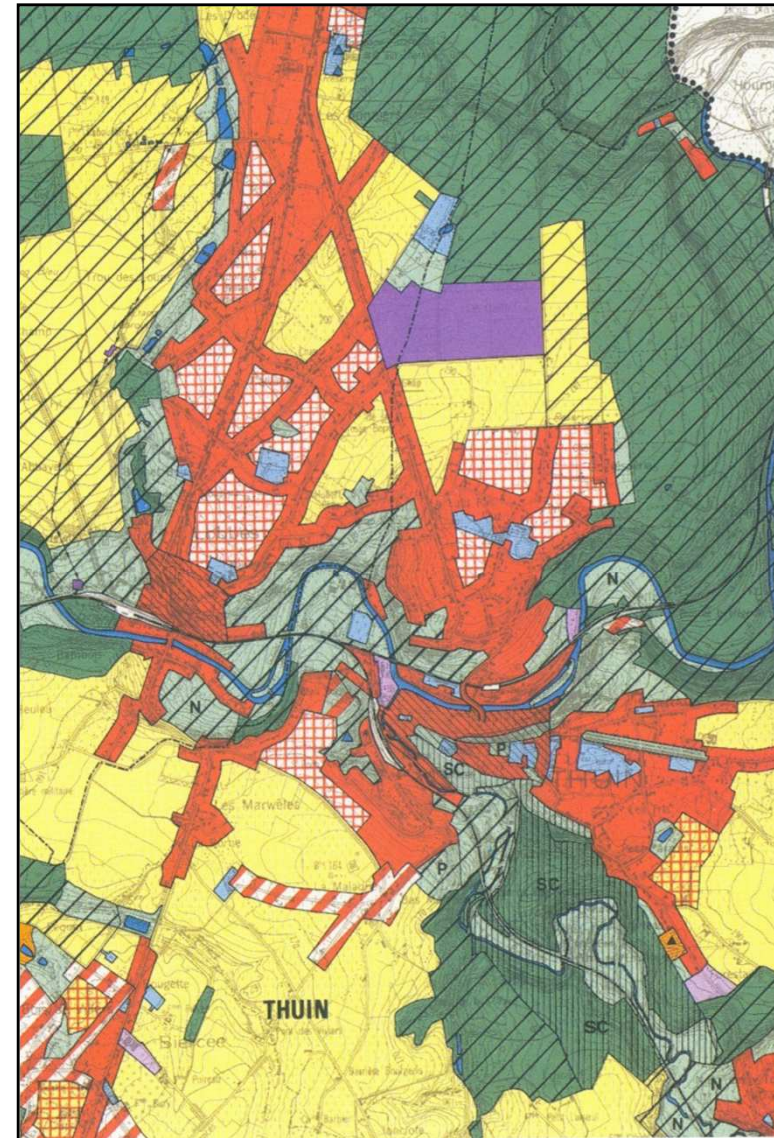
Abundance of land supply for housing

No systematic zoning before the 1962 Planning Law (NL: 1901 – UK: 1909)

Before 1962: developments along any road as long as they were serviced

1962 Planning Law: sector plans but a clause on land value compensation

The 1962 Planning law and the sector plans



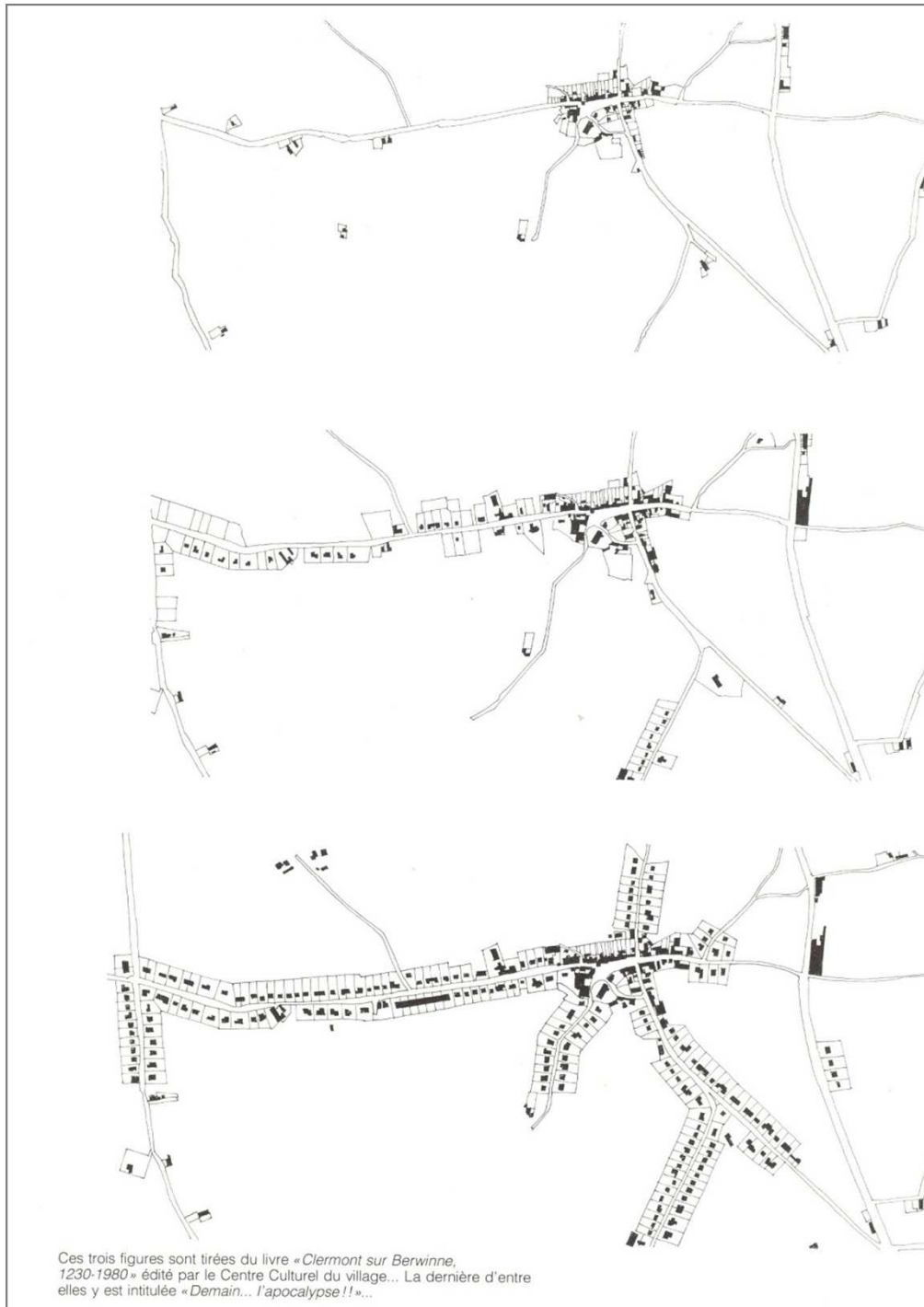
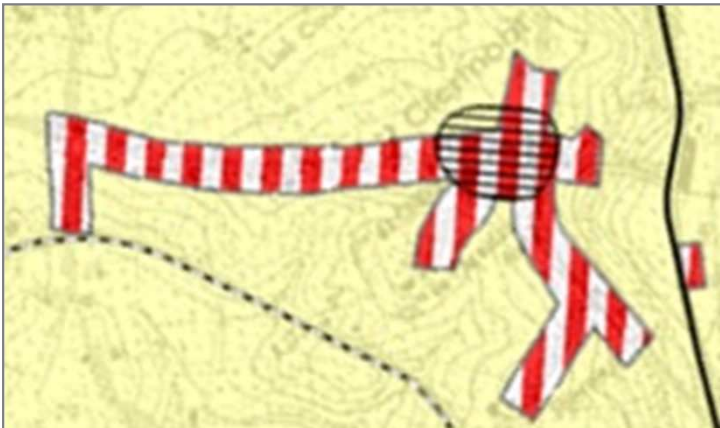
48 Sector plans
Realized from 1964 to 1987
Juridical potential supply in
the “residential zones”

Jurisprudence: three conditions are necessary to define building land as regular use:

- being connected to road infrastructure ;
- being adjacent to other housing or building-plots ;
- meeting technical requirements.

Planners afraid to compensate

- ⇒ **Linear residential zones**
- ⇒ **Over-abundance of land supply**

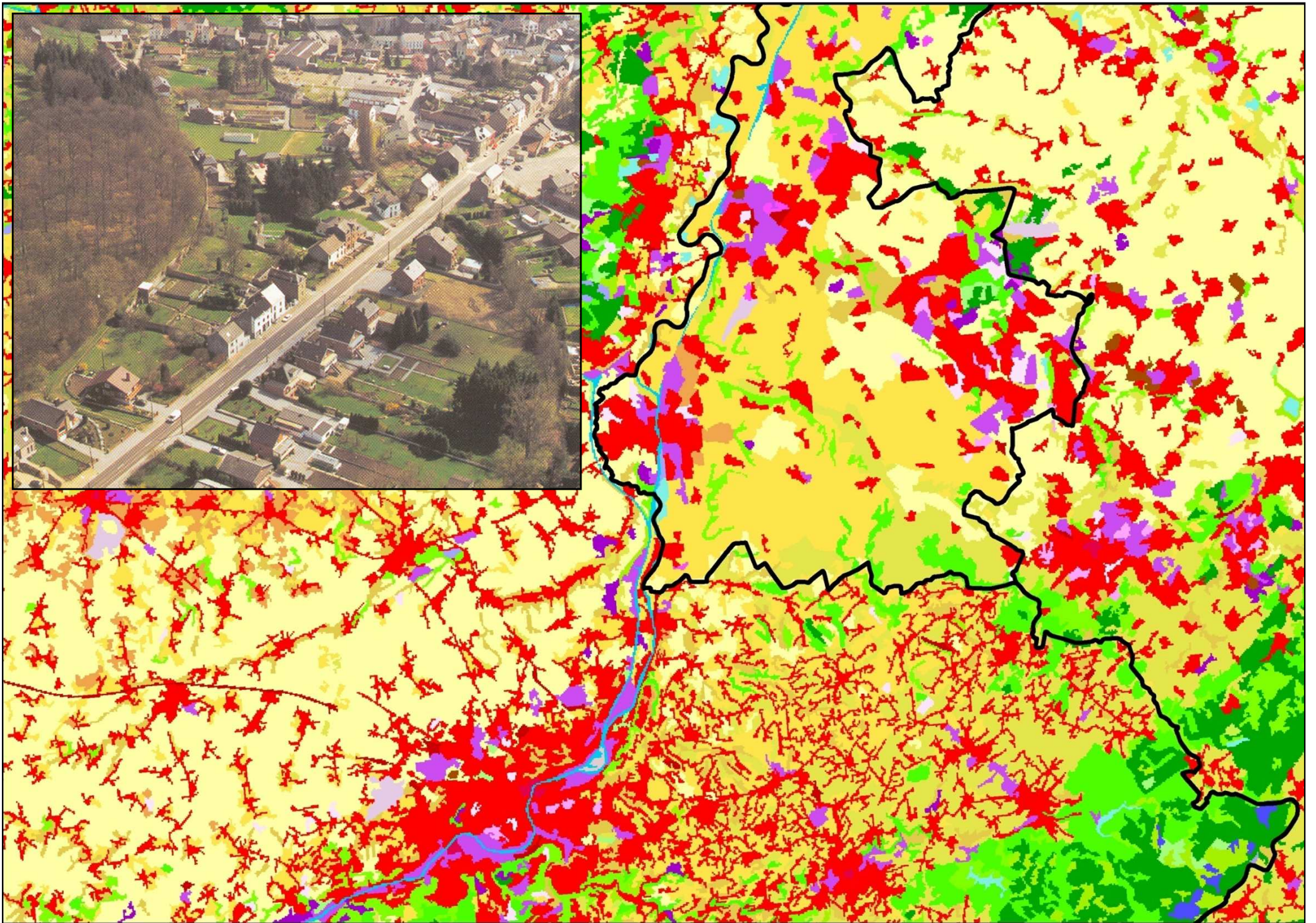


Ces trois figures sont tirées du livre « Clermont sur Berwinne, 1230-1980 » édité par le Centre Culturel du village... La dernière d'entre elles y est intitulée « Demain... l'apocalypse !! »...

Traditional settlement

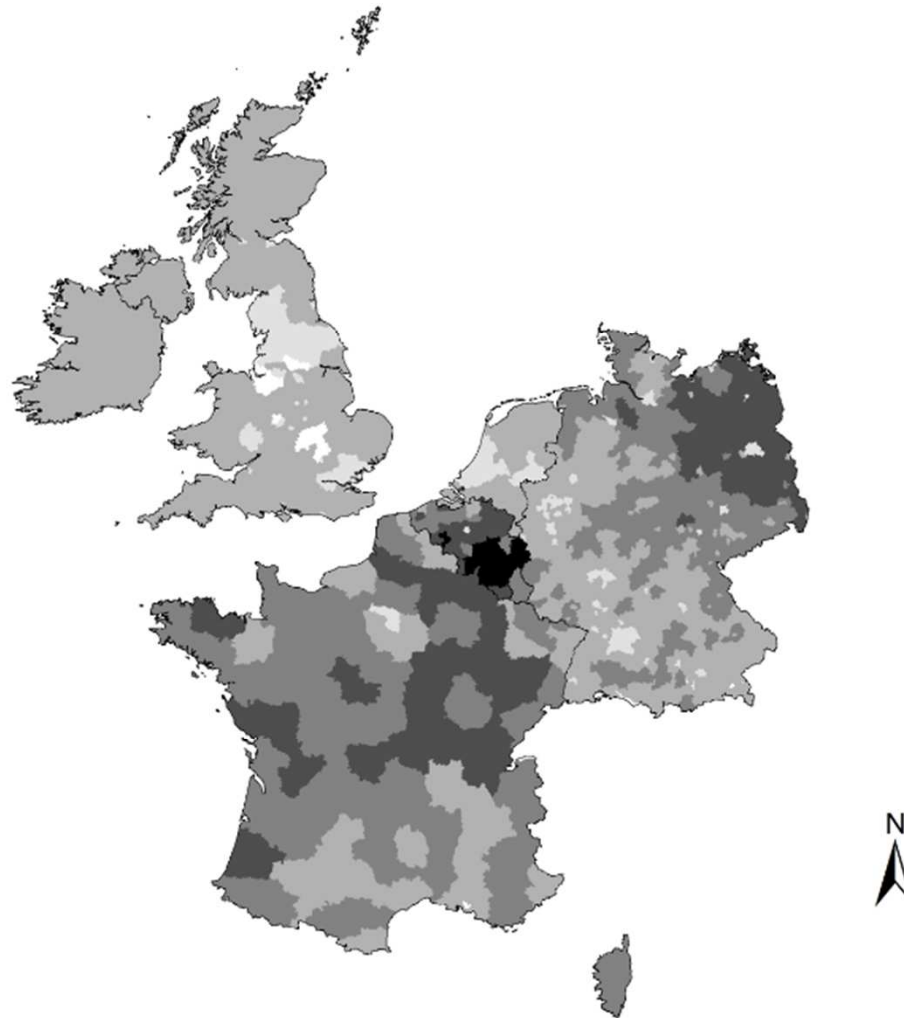
In 1980

As allowed by the sector plans

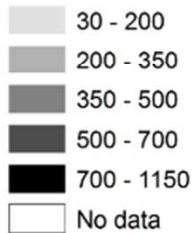


Source: CORINE Land Cover (2000)

Ratio between surfaces of urban fabrics and the population number



Surfaces (m²) of urban fabrics per inhabitant in the NUTS 3 region (2006)



National averages (m²/inhab.)

NL	196	FR	348
UK	212	LU	404
IE	257	BE	495
DE	282		

0 200 400 Km

Authors: J.-M. Halleux and M.-C. Vandermeer, 2013
 Cartography: M.-C. Vandermeer, ECOGEO-ULg
 Sources: CLC, 2006; Eurostat, 2006

Urban built-up area (m²) / inhab.

Netherlands: 196

United Kingdom : 212

Rep. of Ireland : 257

Germany: 282

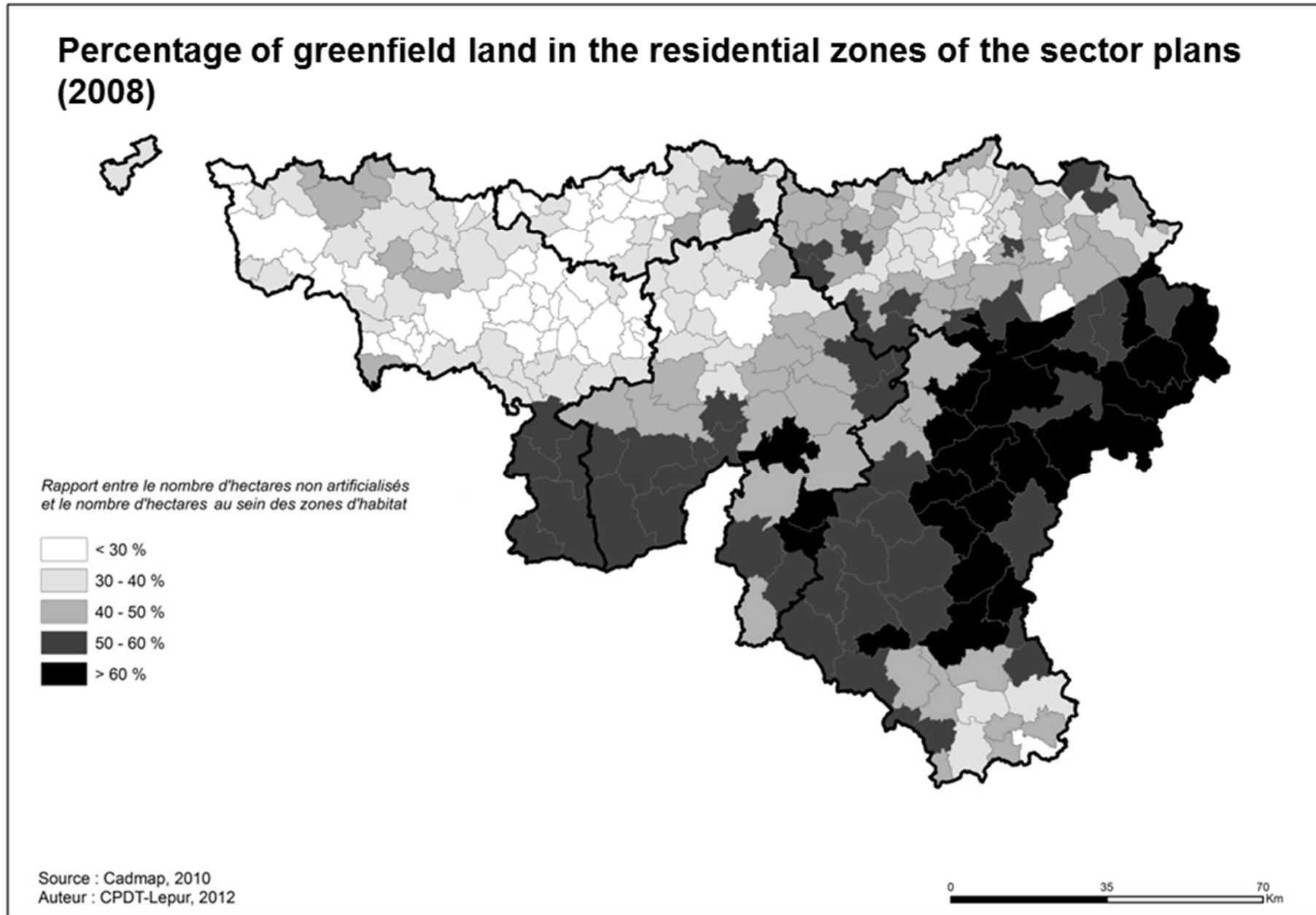
France : 348

Belgium: 495

- Flanders: 488

- Wallonia: 626

Spatial disparities in the over-abundance of land supply



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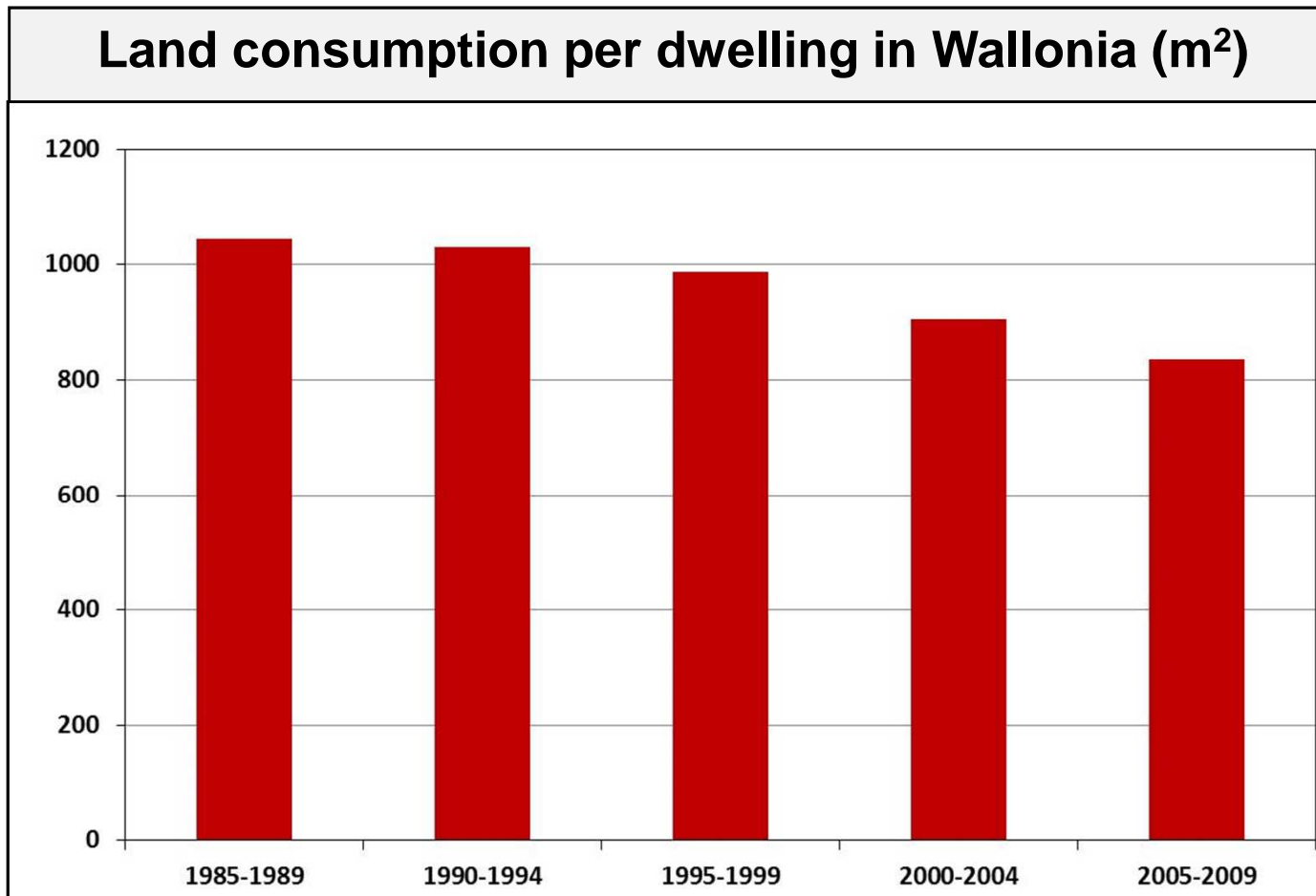
Our main questions

Why such an important land consumption?

Why this current reduction in land consumption?

Why this reduction in land consumption?

Recent analyses on Wallonia to understand the limitation in land consumption



Source: Cadmap

Why this reduction in land consumption?

Analyses based on the housing development models

- **Self-provided developments (isolated houses)**
- **Commercial developments of houses (terrace houses)**
- **Commercial developments of apartments**

① Self-provided developments: usually isolated single-family houses



Rather low densities
Important
consumption of land

Average on Wallonia
in 2009:
1372 m² per house



- ① **Self-provided developments: usually isolated single-family houses**
- ② **Commercial developments of houses: usually terrace houses**



**Intermediate densities
Intermediate consumption of land**

**Average on Wallonia in 2009:
491 m²**

- ① **Self-provided developments: usually isolated single-family houses**
- ② **Commercial developments of houses: usually terrace houses**
- ③ **Commercial developments of apartments**



**Rather high densities
Lower consumption of
land**

**Average on Wallonia in
2009:
235 m² / apartment**

Why this reduction in land consumption?

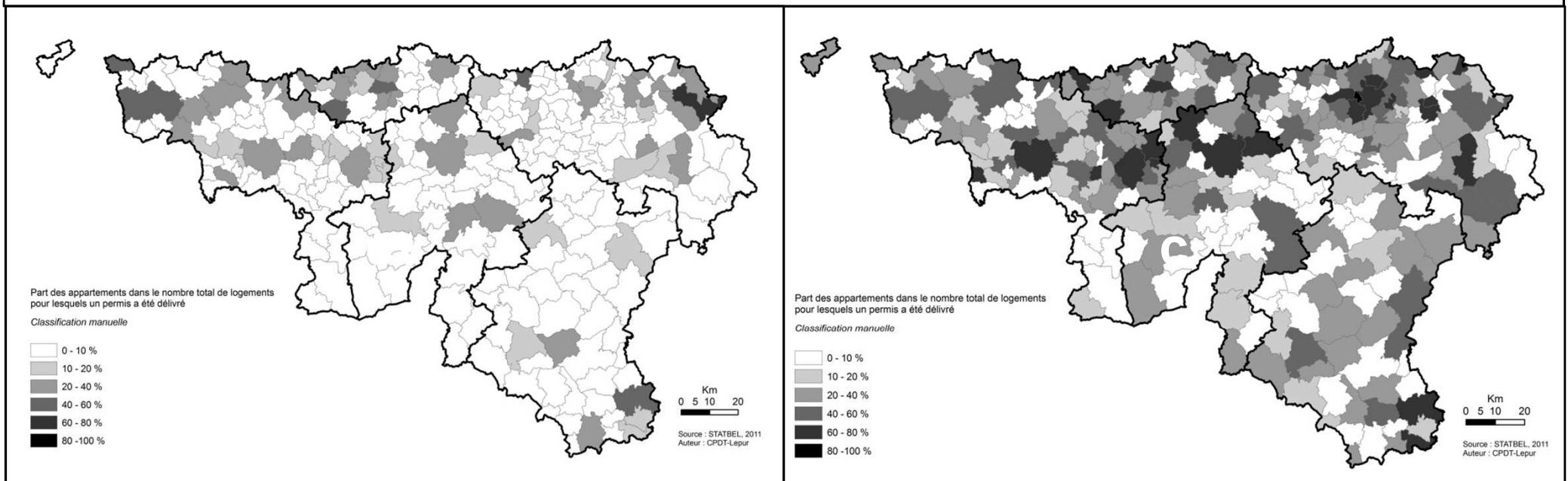
Wallonia: two major evolutions

Development and spatial diffusion of apartment construction

Percentage of apartments in the production of new housing

In the 1990's : 26 %

In the 2000's : 34 %

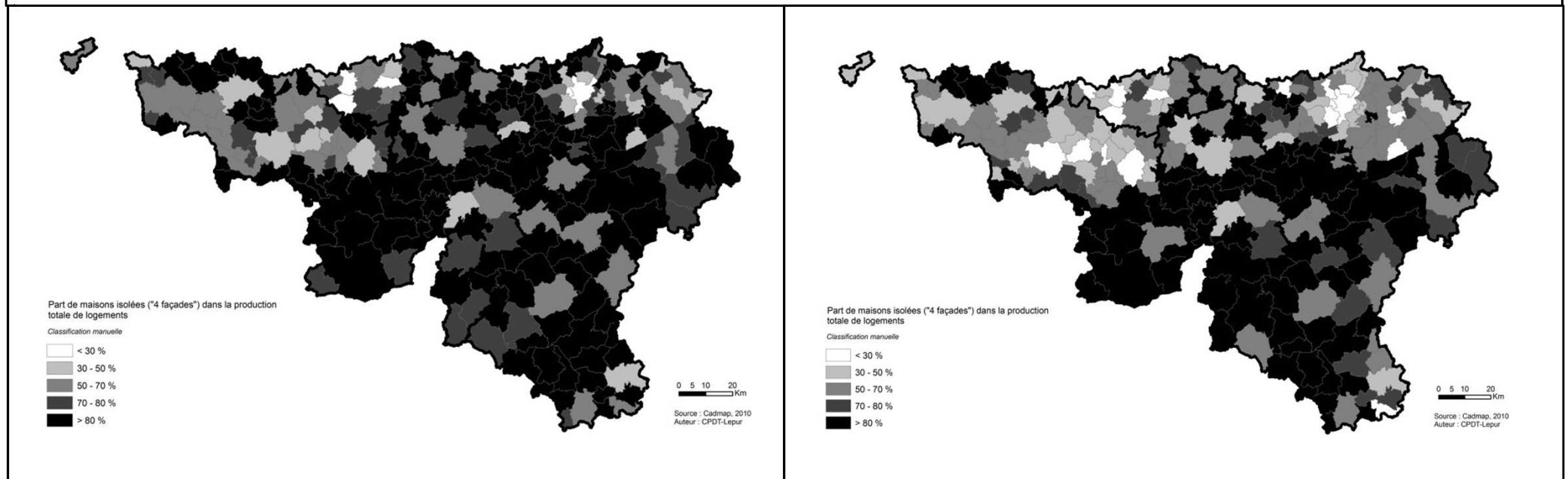


Why this reduction in land consumption?

Wallonia: two major evolutions

Decrease of self-provided developments (isolated houses)

Percentage of isolated houses in the production of new housing
In the 1990's : 63 % In the 2000's : 51%



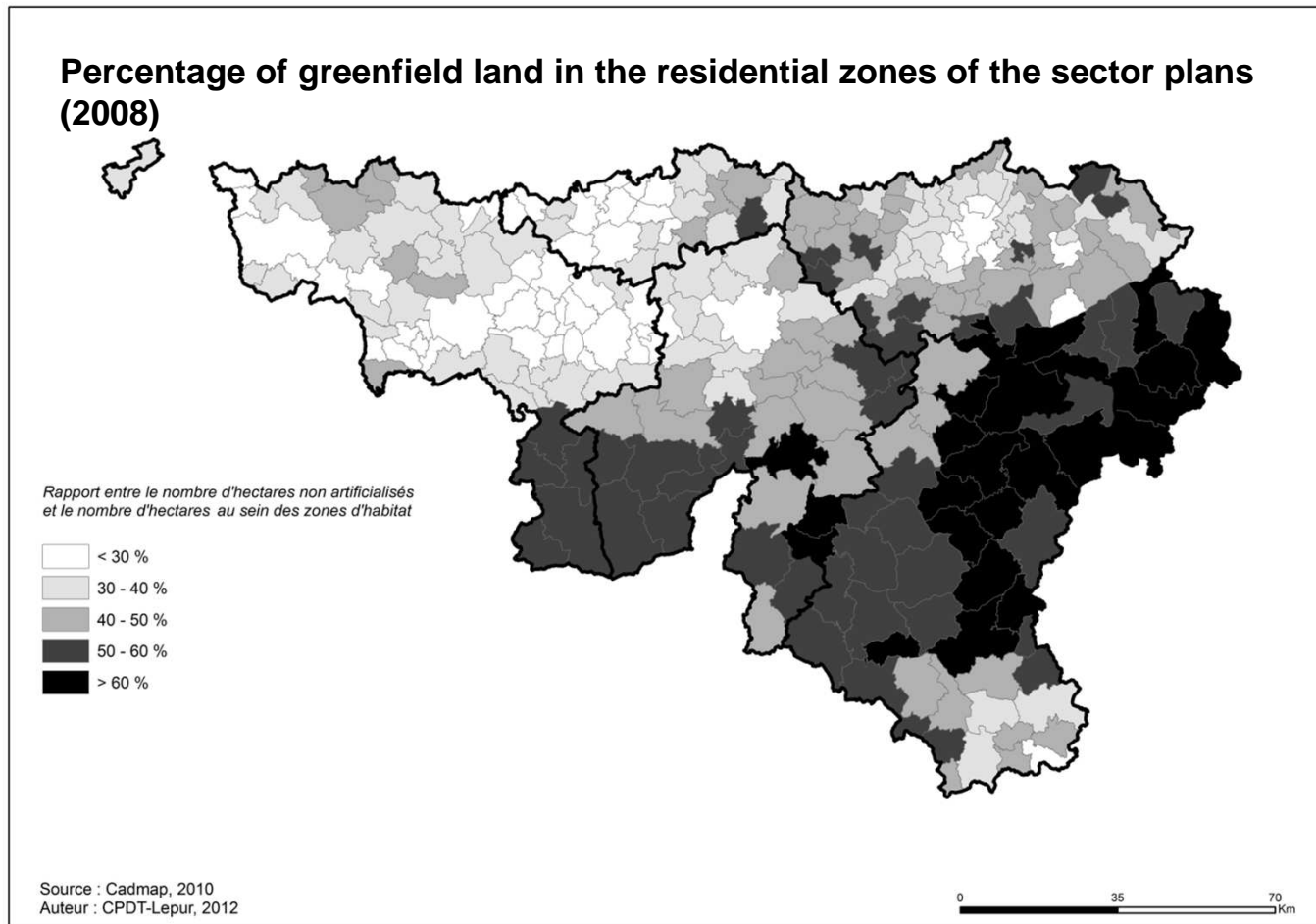
Why this reduction in land consumption?

How to explain these changes?

Result: the effect of land availability (legal land supply)

Scarcity effects in the western parts ⇒ Higher prices and higher densities

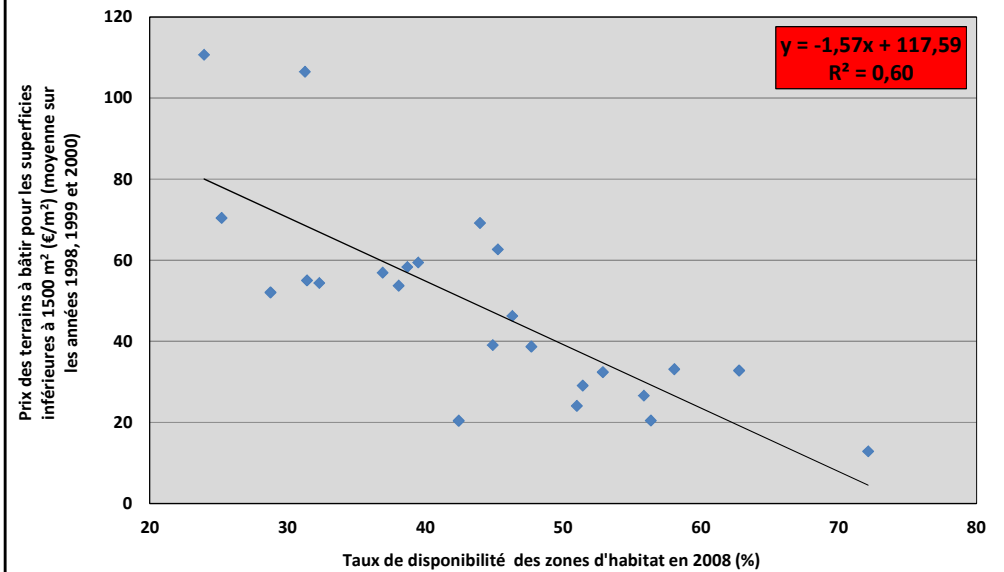
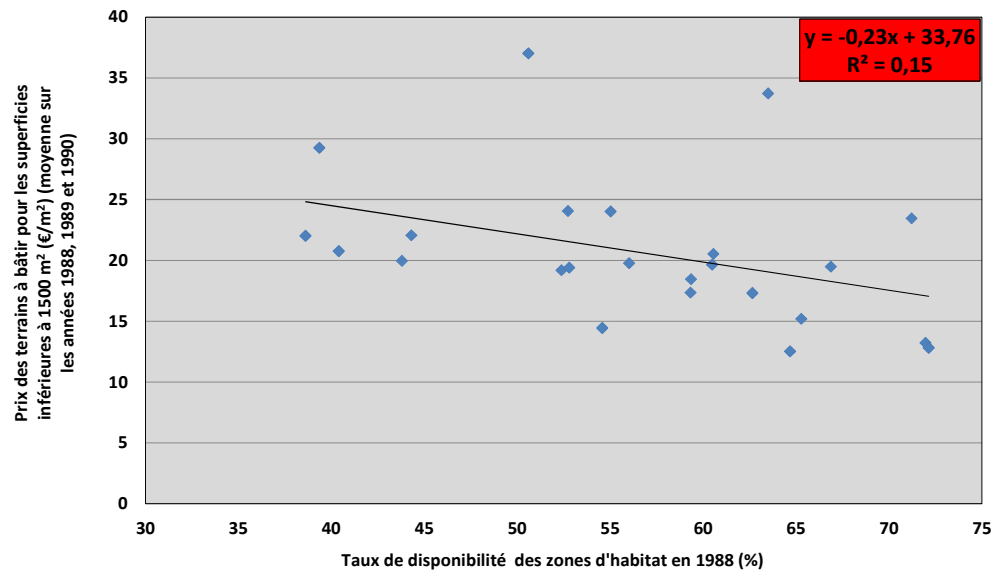
Empirical findings + Theoretical framework



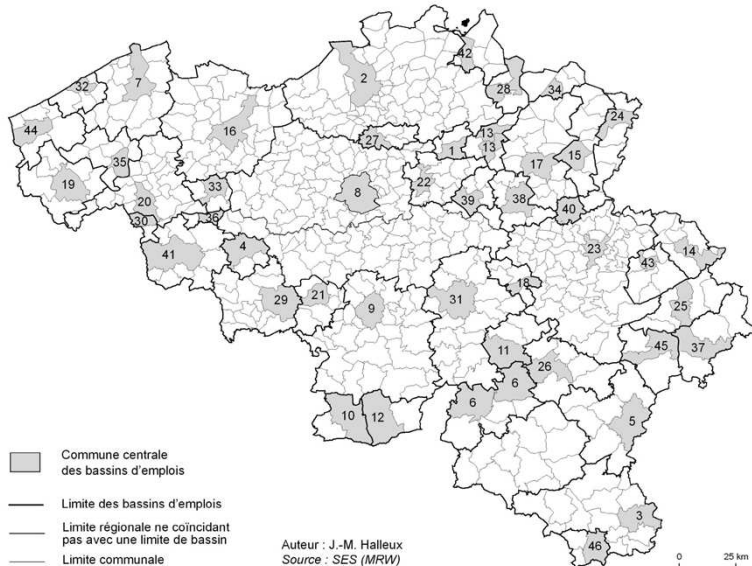
Relationship between land availability and land prices

In the 1980's : $R^2 = 15\%$

In the 2000's : $R^2 = 60\%$



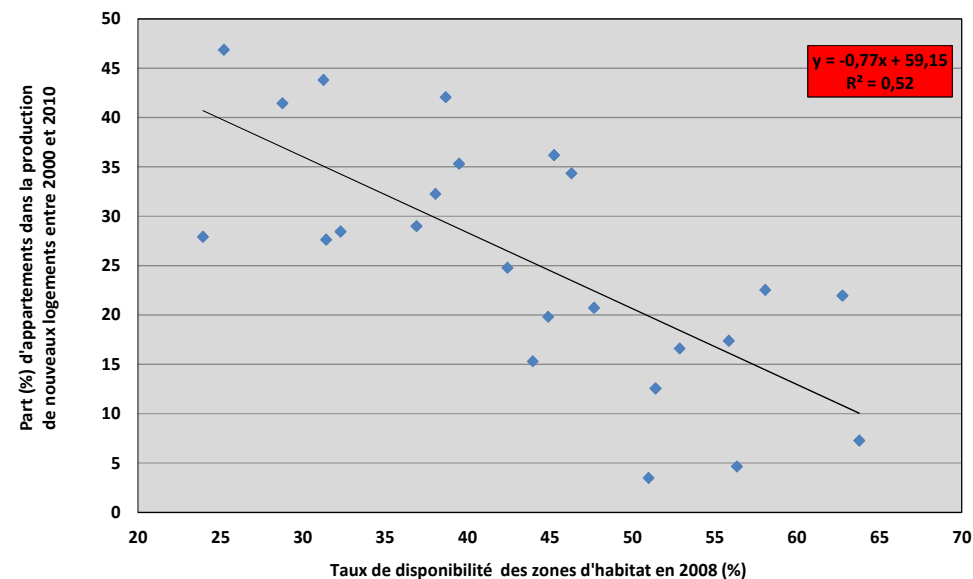
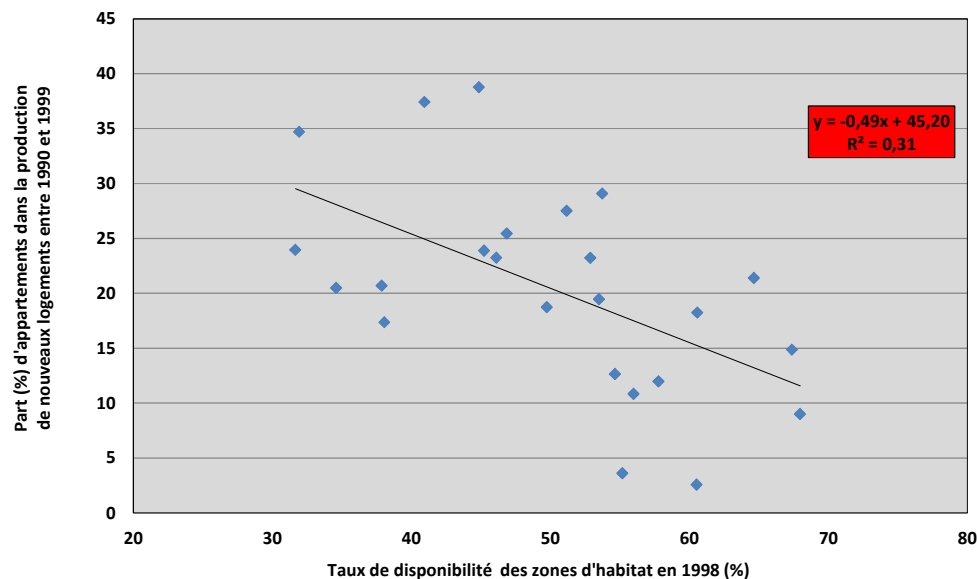
Travel to work areas



Relationship between land availability and the percentage of apartments

In the 1990s : $R^2 = 31\%$

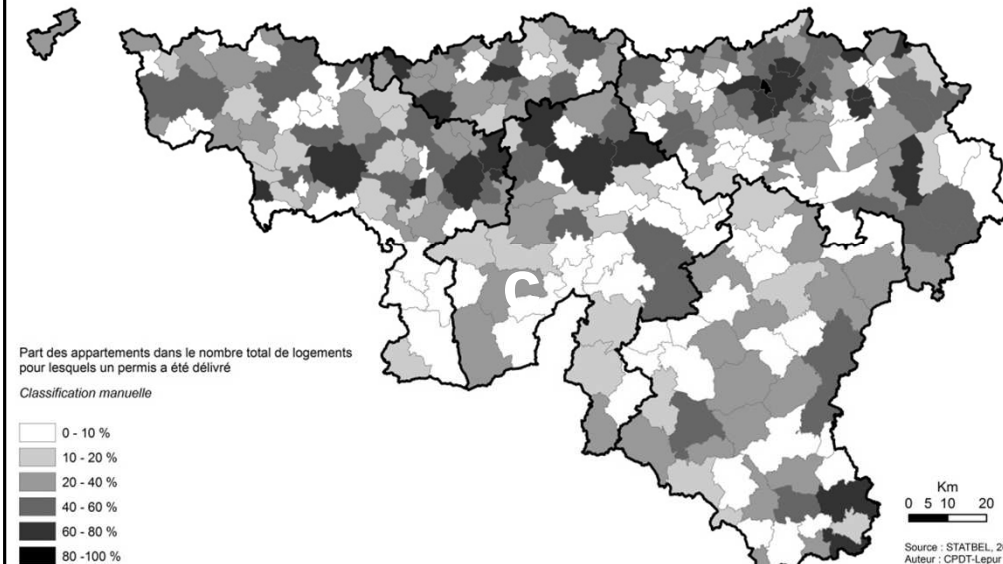
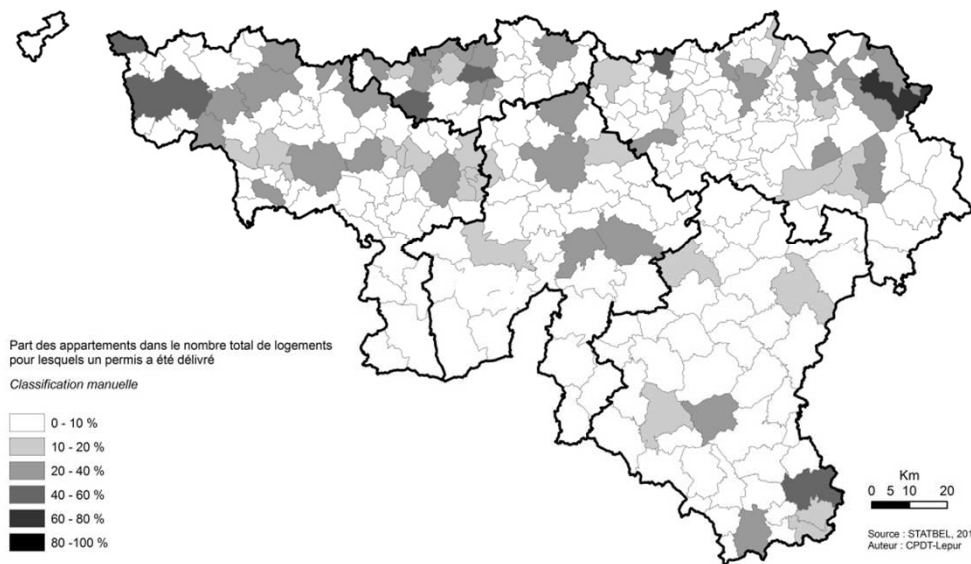
In the 2000's : $R^2 = 52\%$



Percentage of apartments in the production of new housing

In the 1990's : 26 %

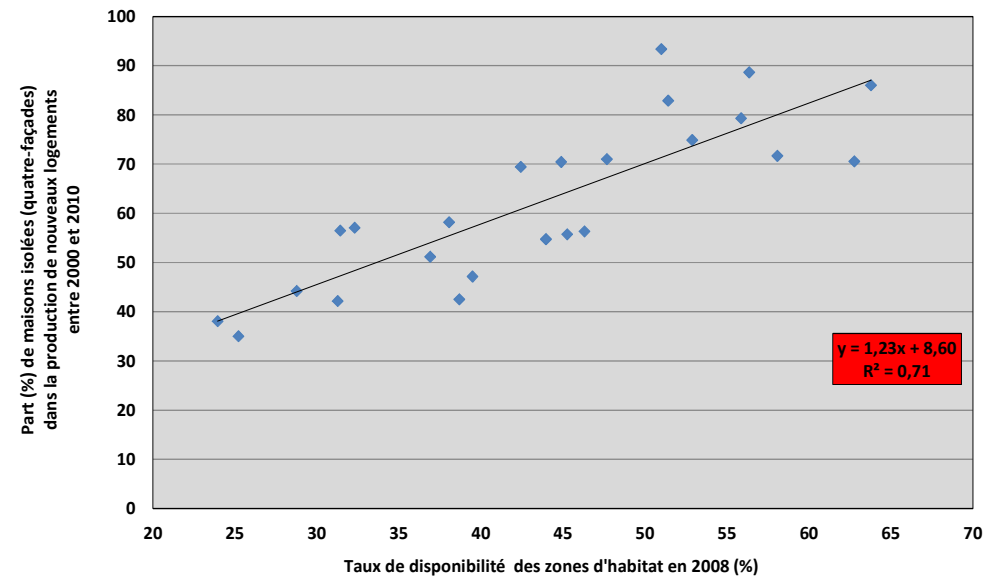
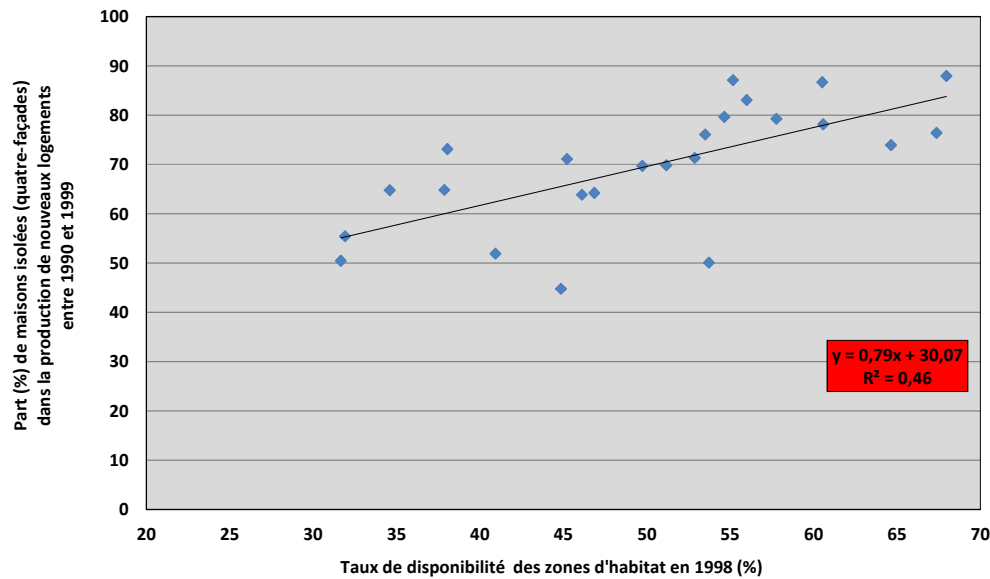
In the 2000's : 34 %



Relationship between land availability and the percentage of isolated houses

In the 1990s : $R^2 = 46 \%$

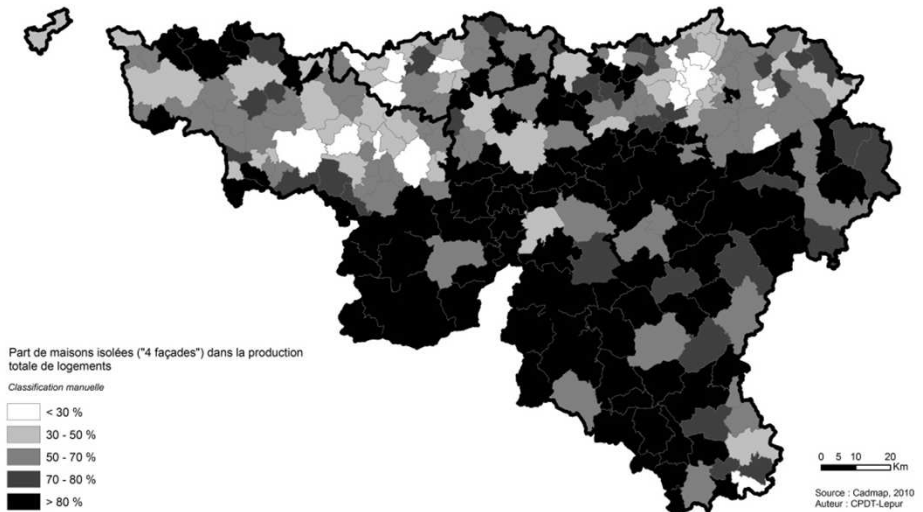
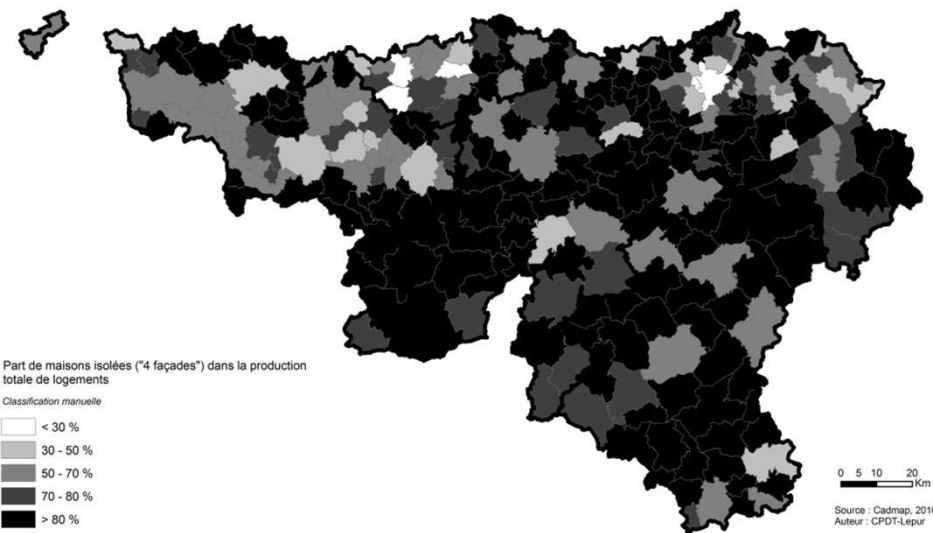
In the 2000s : $R^2 = 71 \%$



Percentage of isolated houses in the production of new housing

In the 1990's : 63 %

In the 2000's : 51%



Why this reduction in land consumption?

How to explain that terrace houses may outbid isolated self-provided houses?



Why this reduction in land consumption?

How to explain that terrace houses may outbid isolated self-provided houses?

Their commercial values are lower (estimation: $\pm 18\%$) ☹

Situation de référence	Situation 2
<p>Une maison neuve est à vendre. C'est une maison 4 façades construite sur un terrain de 700 m². La maison a une surface habitable de 200 m² avec quatre chambres. Elle se situe à 20 minutes en voiture du centre de Liège dans un quartier neuf. Dans la rue, il y a peu de trafic routier et l'accessibilité en transport en commun n'est pas bonne. Cette maison coûte, tout frais compris, 250.000 €.</p>	<p>La maison, indiquée par la flèche rouge, est identique à la maison de référence. La différence est qu'elle est devenue une maison 2 façades. De plus, elle est construite sur un terrain de 300 m² et non plus de 700 m².</p>
<p>Prix : 250.000 €</p> 	 <p>2 façades 300 m² de terrain</p>

Source: P. Dethier, 2012.



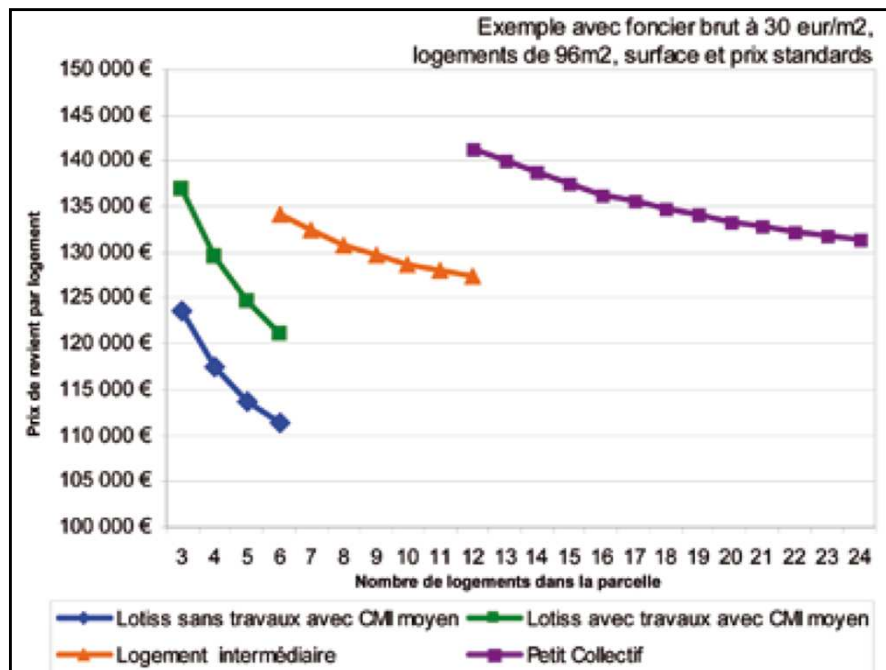
**Loss in value of
 $\pm 45'000$ € ($\pm 18\%$)**

Why this reduction in land consumption?

How to explain that terrace houses may outbid isolated self-provided houses?

Their commercial values are lower (estimation: $\pm 18\%$) ☹

Counterintuitive but their production costs are higher (estimation: 10-15%): the developer has to be paid ! ☹



Source: Castel J.-C. & Jardinier L., 2011, p.13.

Production cost

- Self-provided isolated house: $\pm 125'000$ €
- Commercial development of terrace houses : $\pm 135'000$ €

Why this reduction in land consumption?

How to explain that terrace houses may outbid isolated self-provided houses?

Their commercial values are lower (estimation: $\pm 18\%$) ☹

Counterintuitive but their production costs are higher (estimation: 10-15%): the developer has to be paid ! ☹

Lower consumption of land \Rightarrow Land costs are lower ☺

Why this reduction in land consumption?

How to explain that terrace houses may outbid isolated self-provided houses?

Their commercial values are lower (estimation: $\pm 18\%$) ☹

Counterintuitive but their production costs are higher (estimation: 10-15%): the developer has to be paid ! ☹

Lower consumption of land \Rightarrow Land costs are lower ☺

The cost and value of real estates has to be divided into two components: land and building

Land scarcity \Rightarrow Higher land prices and higher impact of the land component in the price of housing

Higher impact of the land component \Rightarrow Developments that limit land consumption are progressively able to outbid lower forms of density

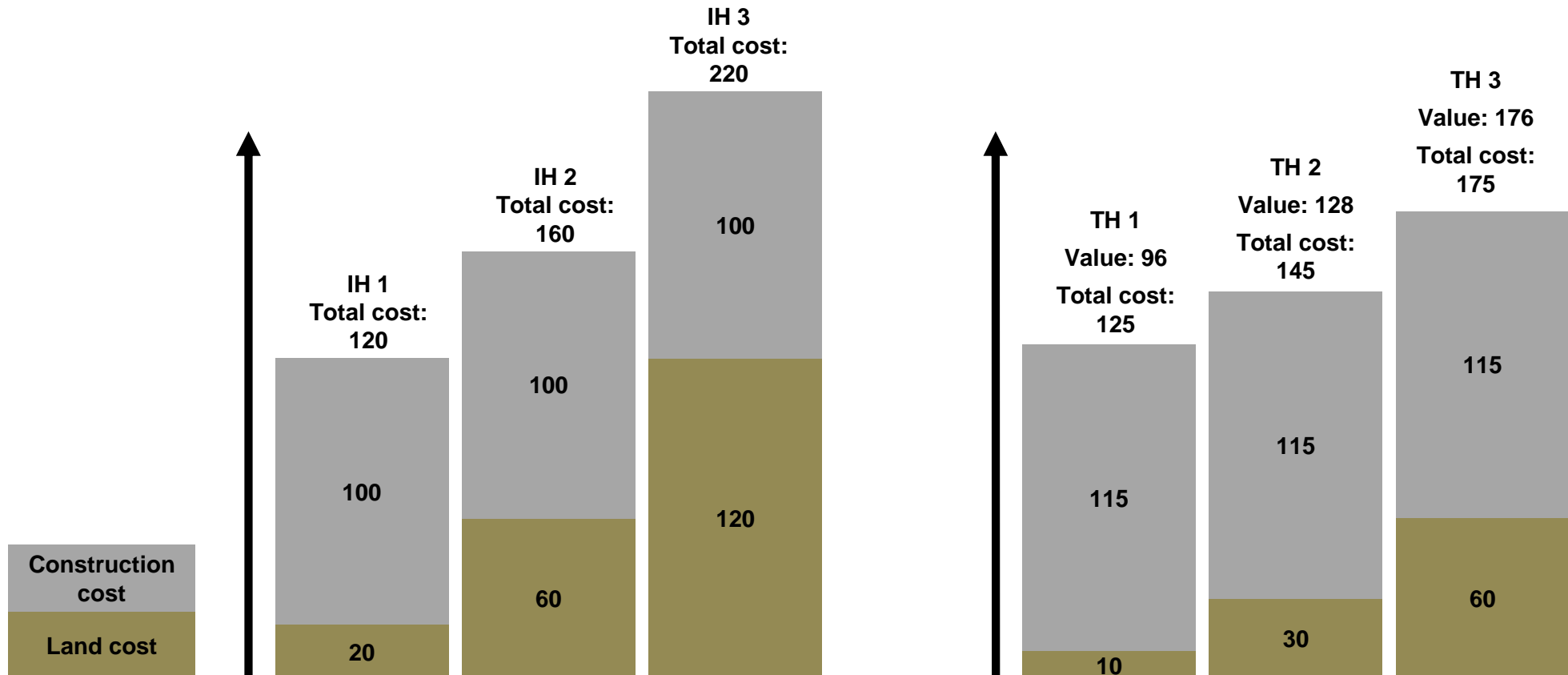
**Self-provided development: isolated house,
200 m² of living floor space and 700 m² of surface area**



**Commercial developments: terrace houses,
200 m² of living floor space and 350 m² of surface area**



Hypothesis :
 - Loss in value : 20 %
 - Higher construction costs : 15%



Conclusions

Our main questions

Why such an important land consumption?

Why the current reduction in land consumption?

Why such an important land consumption?

1. Strong « Atlantic » preferences for dispersion and single-family houses
2. Maladapted land planning

Implication for other contexts: how to avoid this conjunction where the population have an easier access to the single-family house?

Why the current reduction in land consumption?

Land scarcity ⇒ Higher land prices and higher impact of the land component in the price of housing ⇒ Developments that limit land consumption are progressively able to outbid lower forms of density

Some references

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Thank you for your attention...