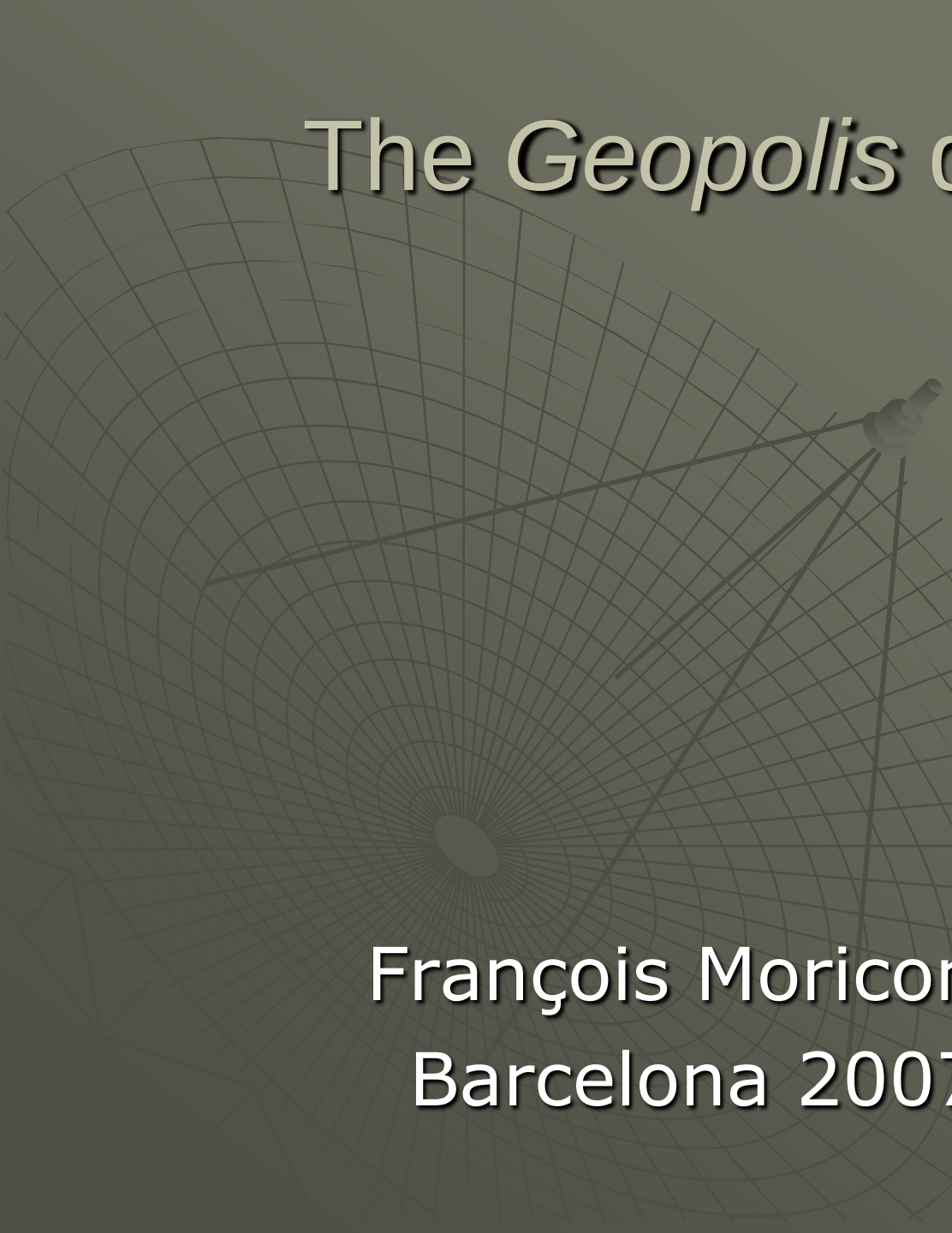
The *Geopolis* database



François Moriconi-Ebrard

Barcelona 2007/11/30

Three types of legal definitions

	City	Agglomeration	Metropolitan area

Three types of legal definitions

	City	**Agglomeration**	**Metropolitan area**
Morphology	Politics (polis)	Land occupation (urbs)	Networks, links (“metro”)

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	City	Agglomeration	Metropolitan area
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Discontinuity	City/ countryside	Urban/ Rural	Metropolitan/ non metropolitan

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Institution of reference	Religious	State	Private financial capitalism

Geopolis

	City	Agglomeration	
Morphology	Politics (polis)	Land occupation (urbs)	
Inhabitant	Citizen	Urban	
Origin	Juridical (chart, rights)	Accumulation of goods, capital, activities	
Discontinuity	City/ countryside	Urban/ Rural	
Institution of reference	Religious	State	

2. Measuring urbanization

Definition & methods used for construction the *Geopolis* database

2.1. Définition

- An agglomeration is defined as a continuous built-up area
- An agglomeration is the collection of contiguous built areas with no more than **200 mètres** of space in between them.
- An agglomeration is considered urban if its total population is 10,000 or greater.

2.2. Méthodologie normale

The agglomerations make up the *Geopolis* database*:*

Identification and calculation of the population

Step 1

Legal limits of local units (“cities”).

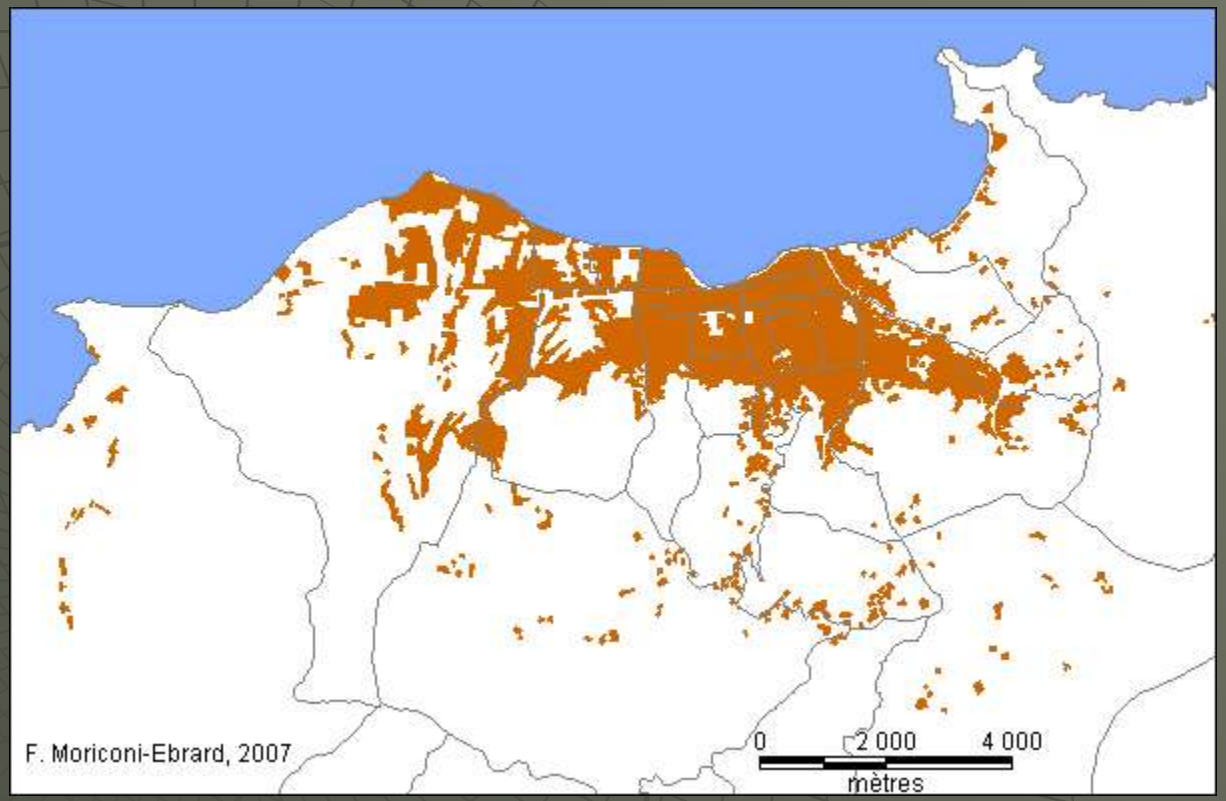
It’s at this level that we collect population statistics (censuses, enumerations, civil registers

Step 2

Satellite images or topographical maps

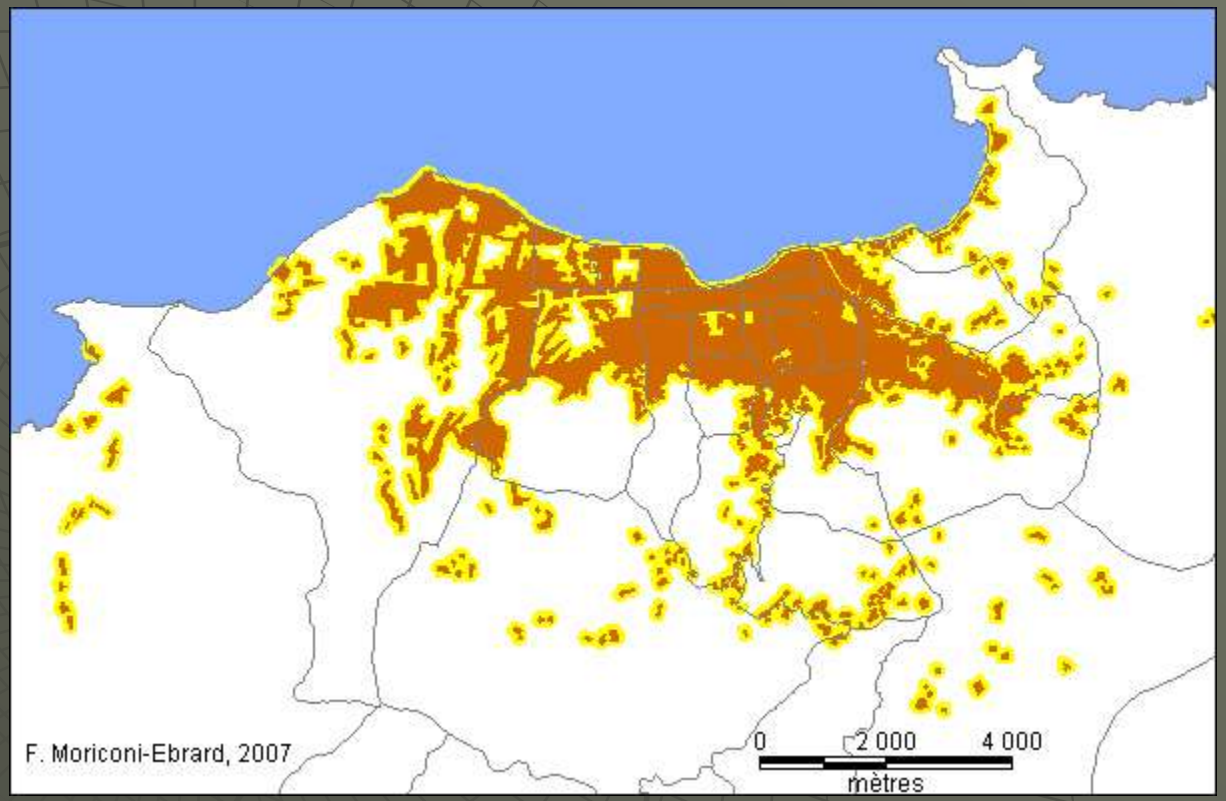
Step 3

Identification of built-up zones(“agglomerations”)



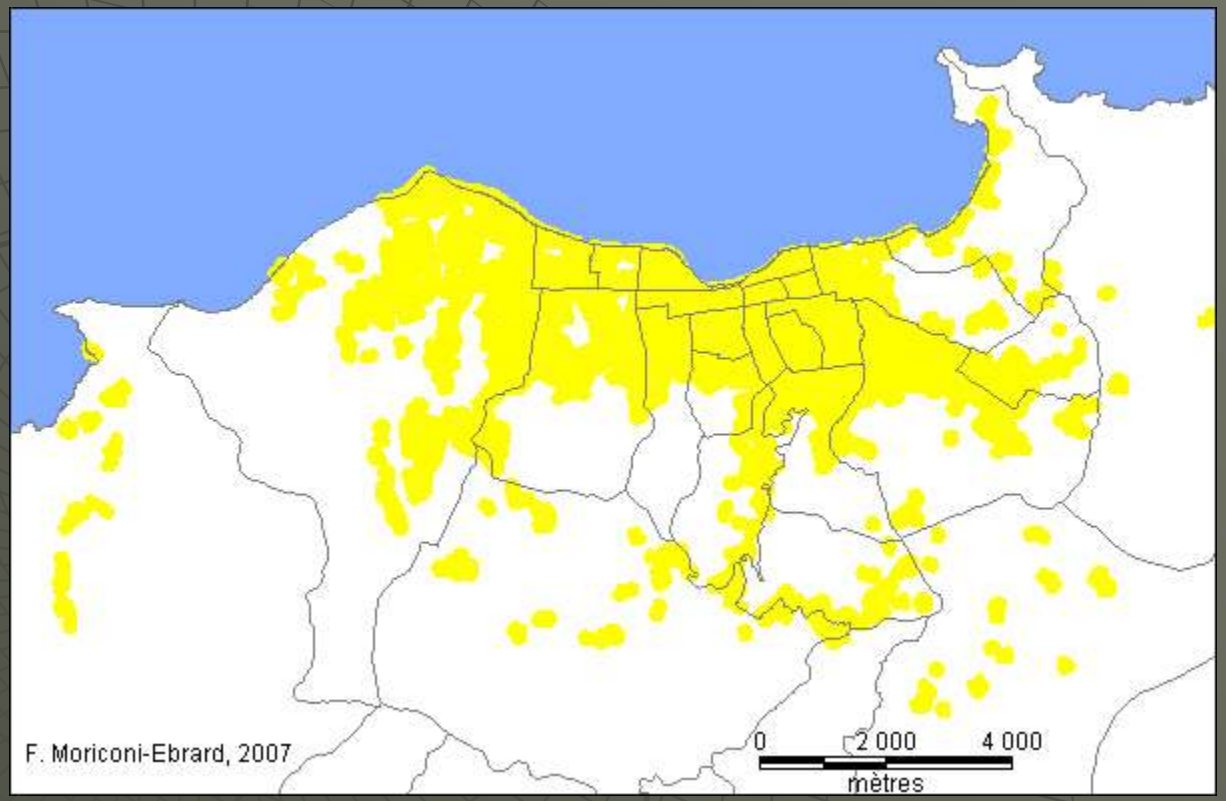
Step 4

Creation of zones within 100 meters of one another



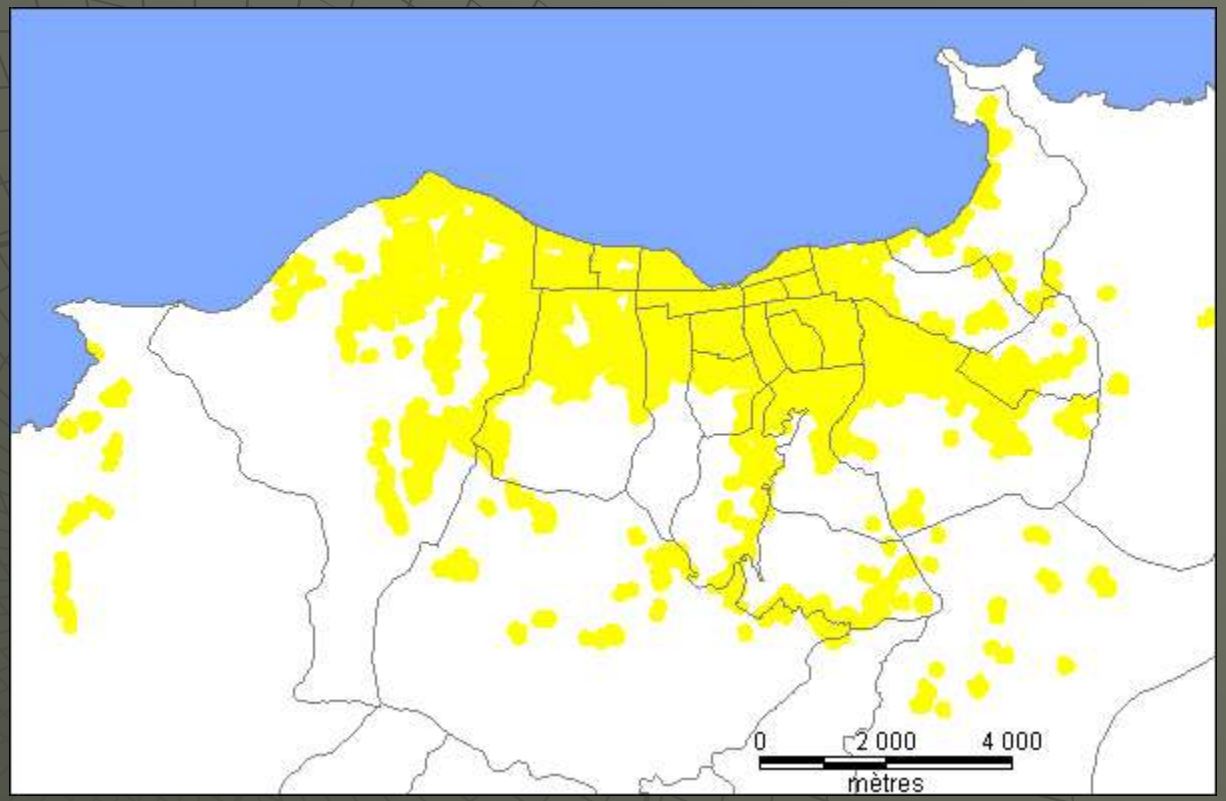
Step 5

Assembling the contiguous and overlapping zones



Etape 6

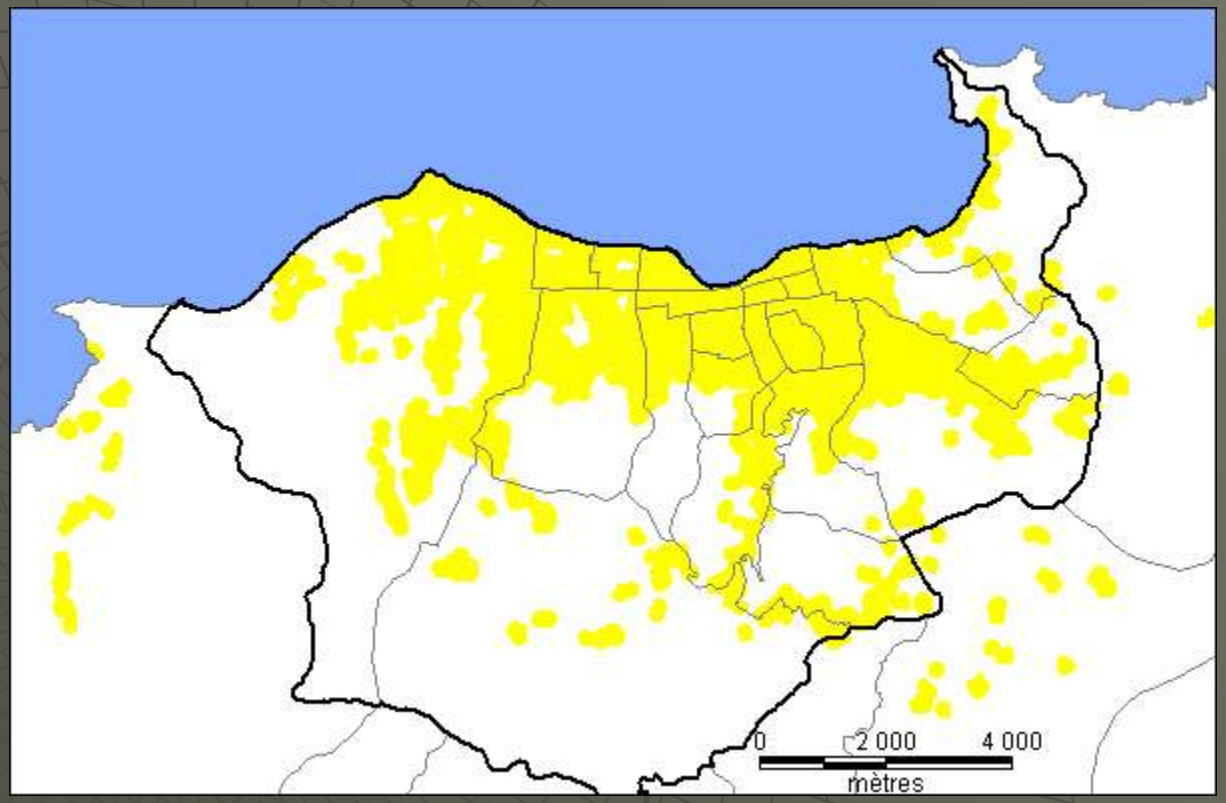
Ajustement des contours des agglomérations aux bords de l'écoumène



Step 7

Generalizing the contours of the agglomeration on the whole of the local units

a minimum of 50% of the population of each local must be agglomerated



2.3. Summary

- 32 000 agglomerations identified in 1990
- 60 000 in 2000 (of which25 000 are in Chine et India)
- Historical Data

- In the first version of *Geopolis*

  . from 1950 for the whole world

- In the current version(to be completed in 2009 : project *e-Geopolis*)

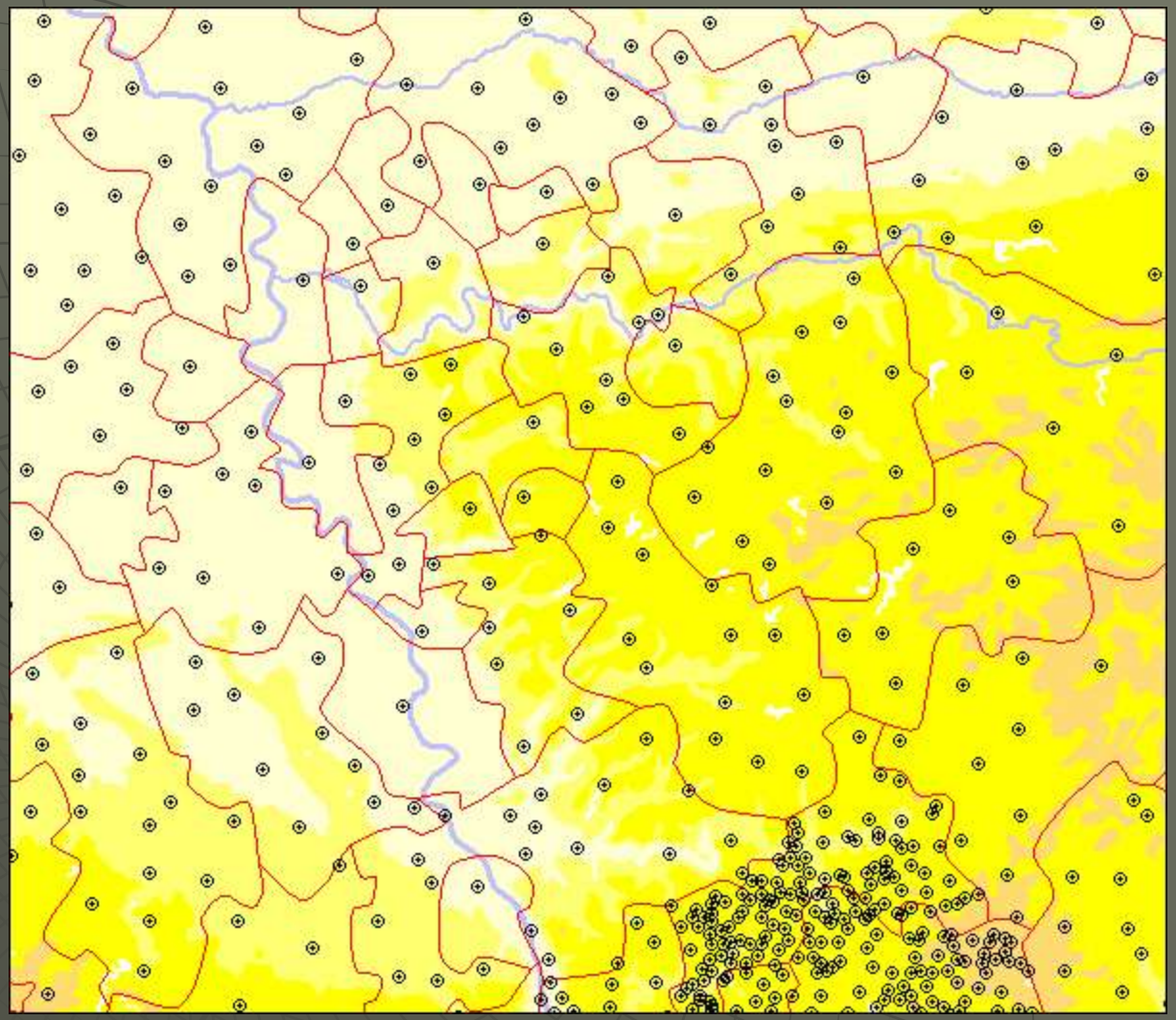
  . from 1800 for Europe and North America

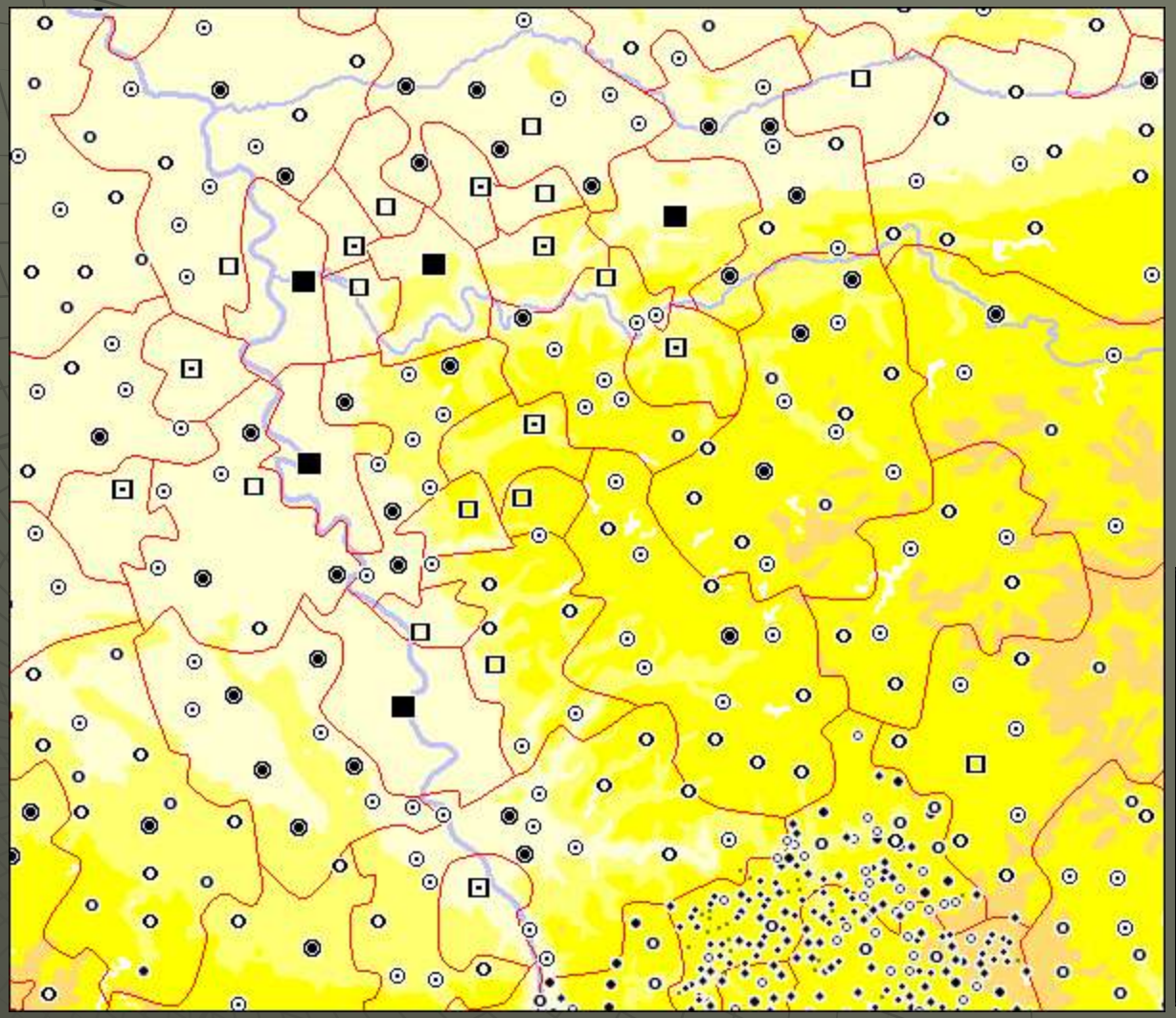
  . from1900 or earlier depending on the available data for the rest of the world

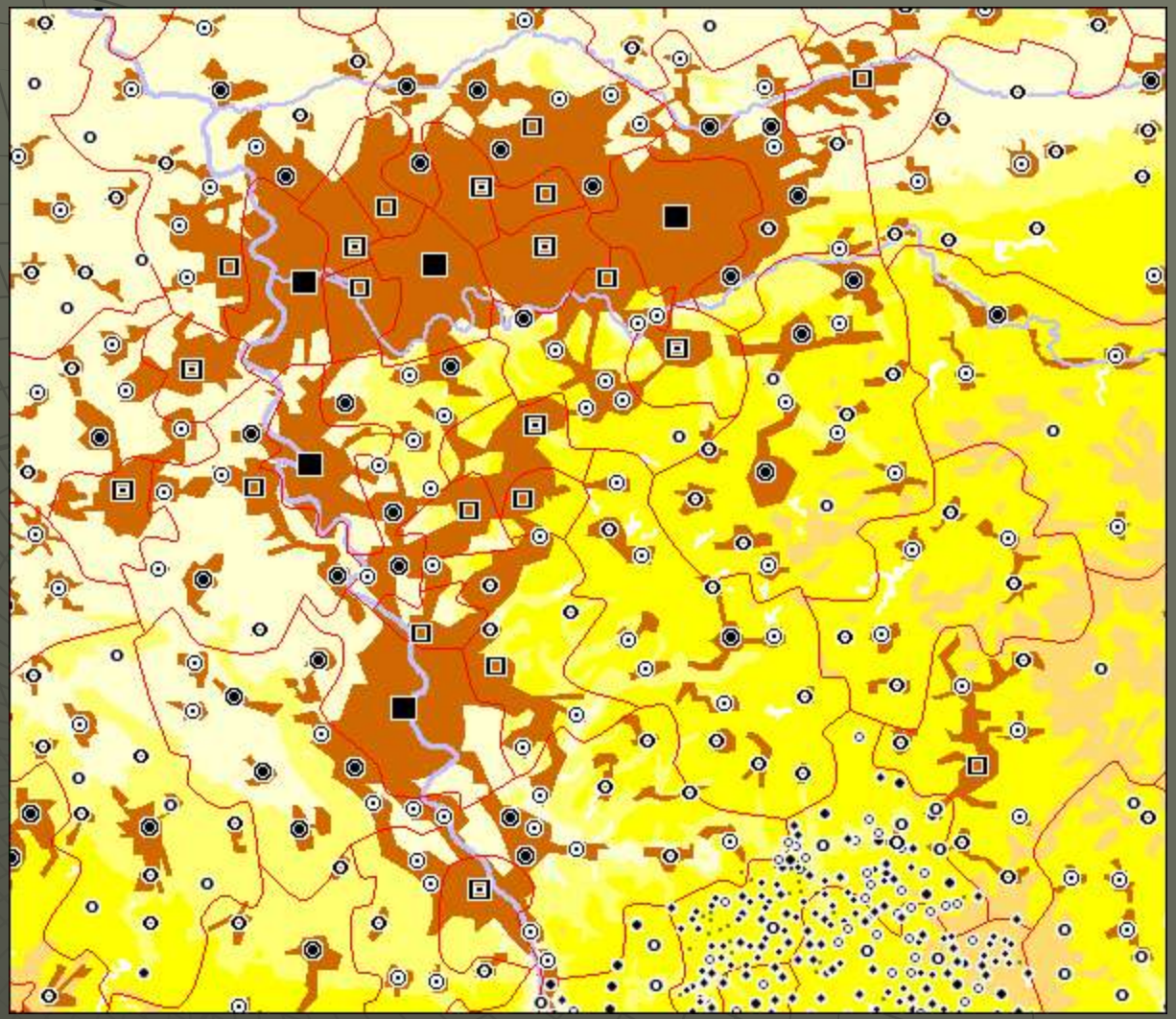
3. Quick facts

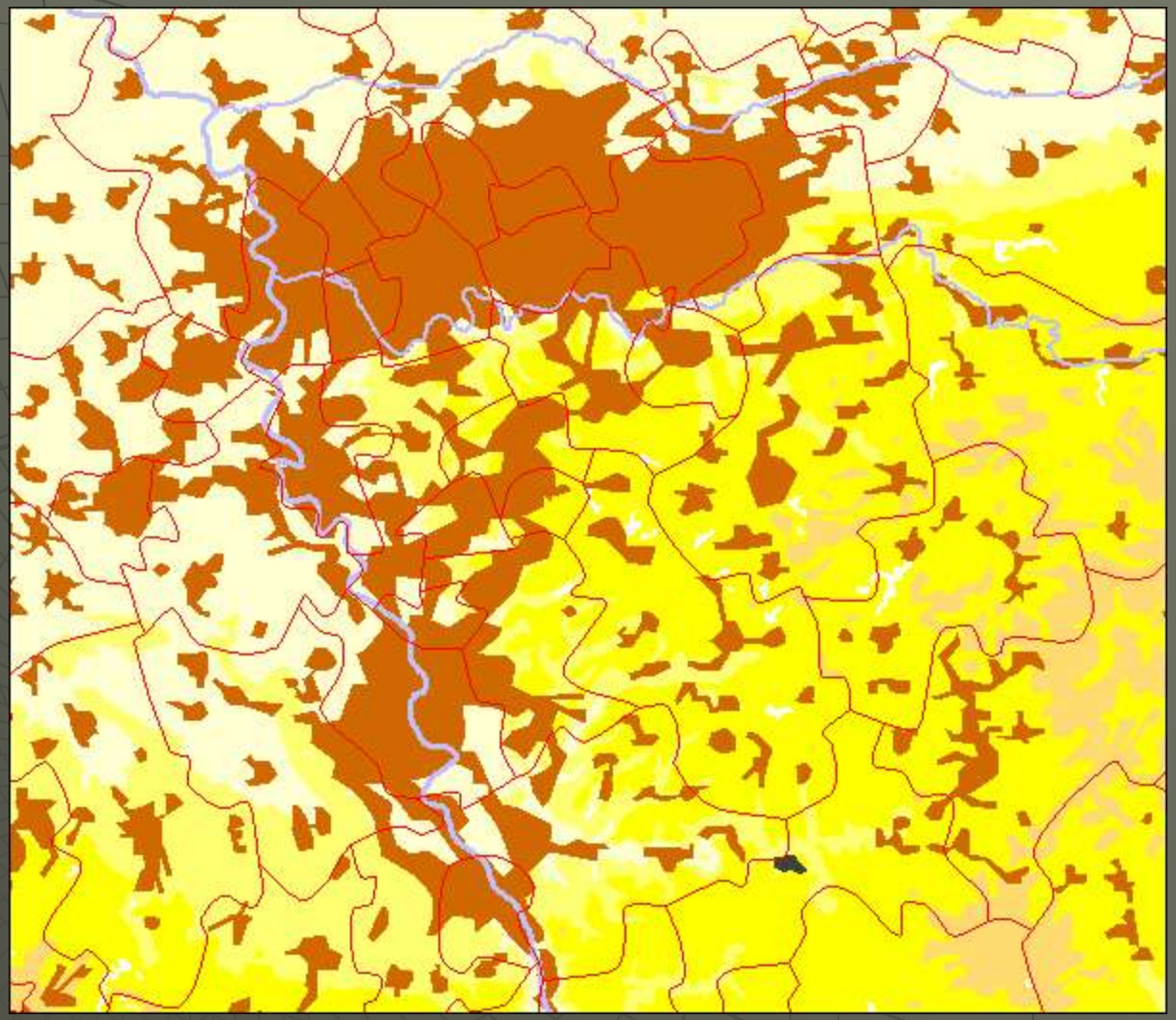
- Optimize comparisons
- Reveal non-verifiable morophologies»
- An opening-up of possibilities

- Germany

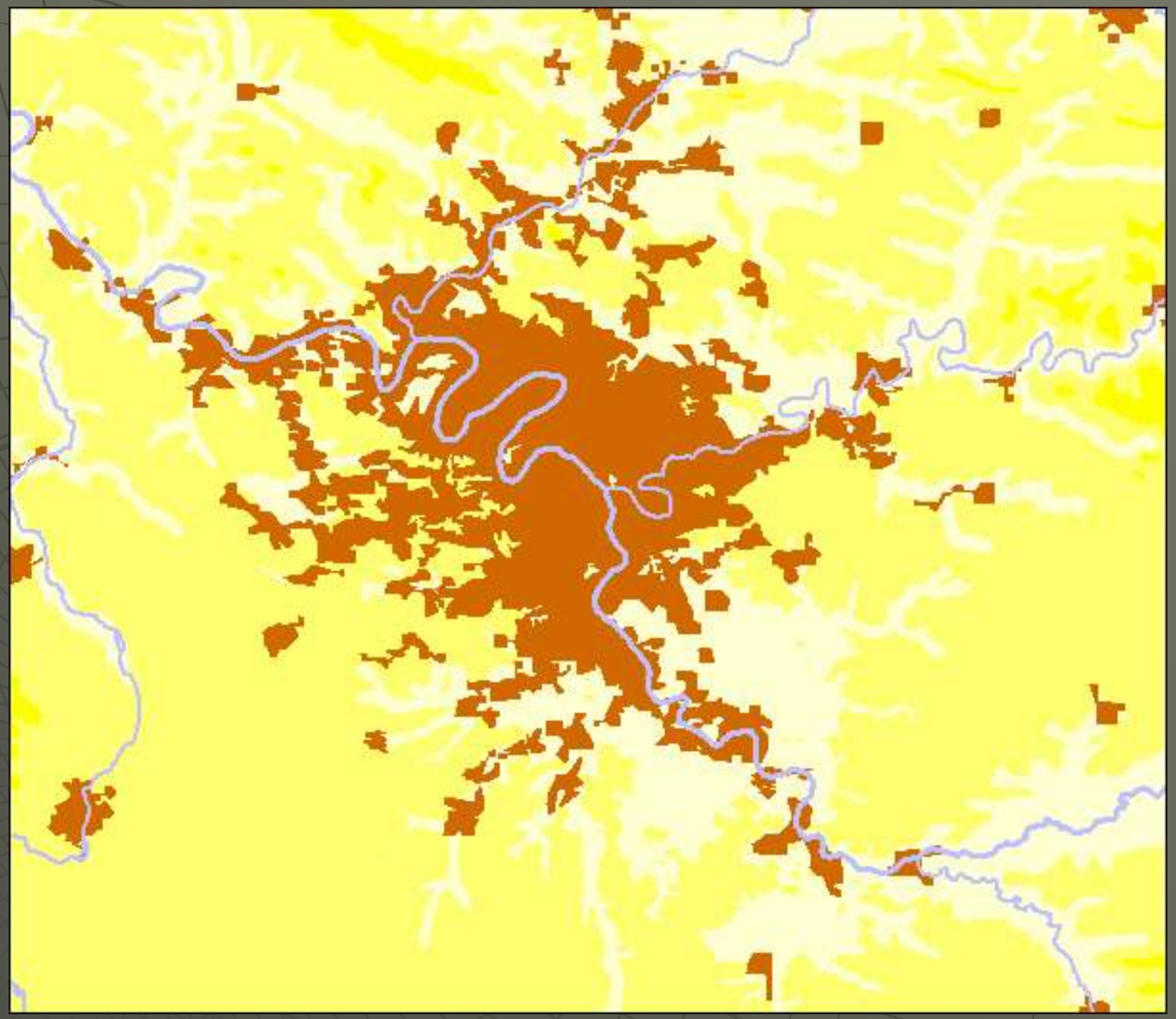



Population (2000)
0 - 200
200 - 500
500 - 1 000
1 000 - 2 000
2 000 - 5 000
5 000 - 10 000
10 000 - 20 000
20 000 - 50 000
50 000 - 100 000
100 000 - 200 000
200 000 - 500 000
500 000 - 1 000 000


Population (2000)
0 - 200
200 - 500
500 - 1 000
1 000 - 2 000
2 000 - 5 000
5 000 - 10 000
10 000 - 20 000
20 000 - 50 000
50 000 - 100 000
100 000 - 200 000
200 000 - 500 000
500 000 - 1 000 000

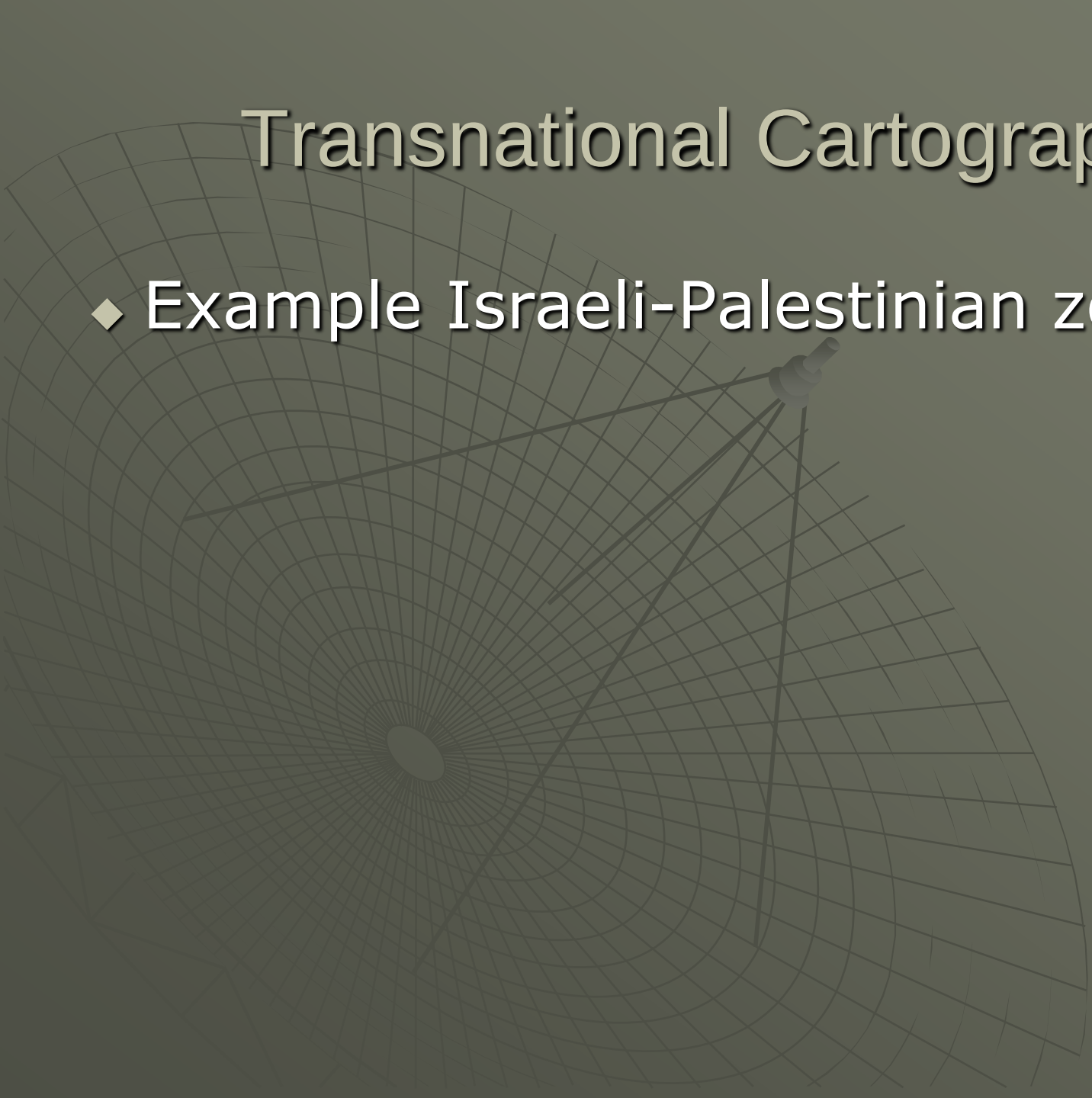


Agglomeration of Paris : same scale



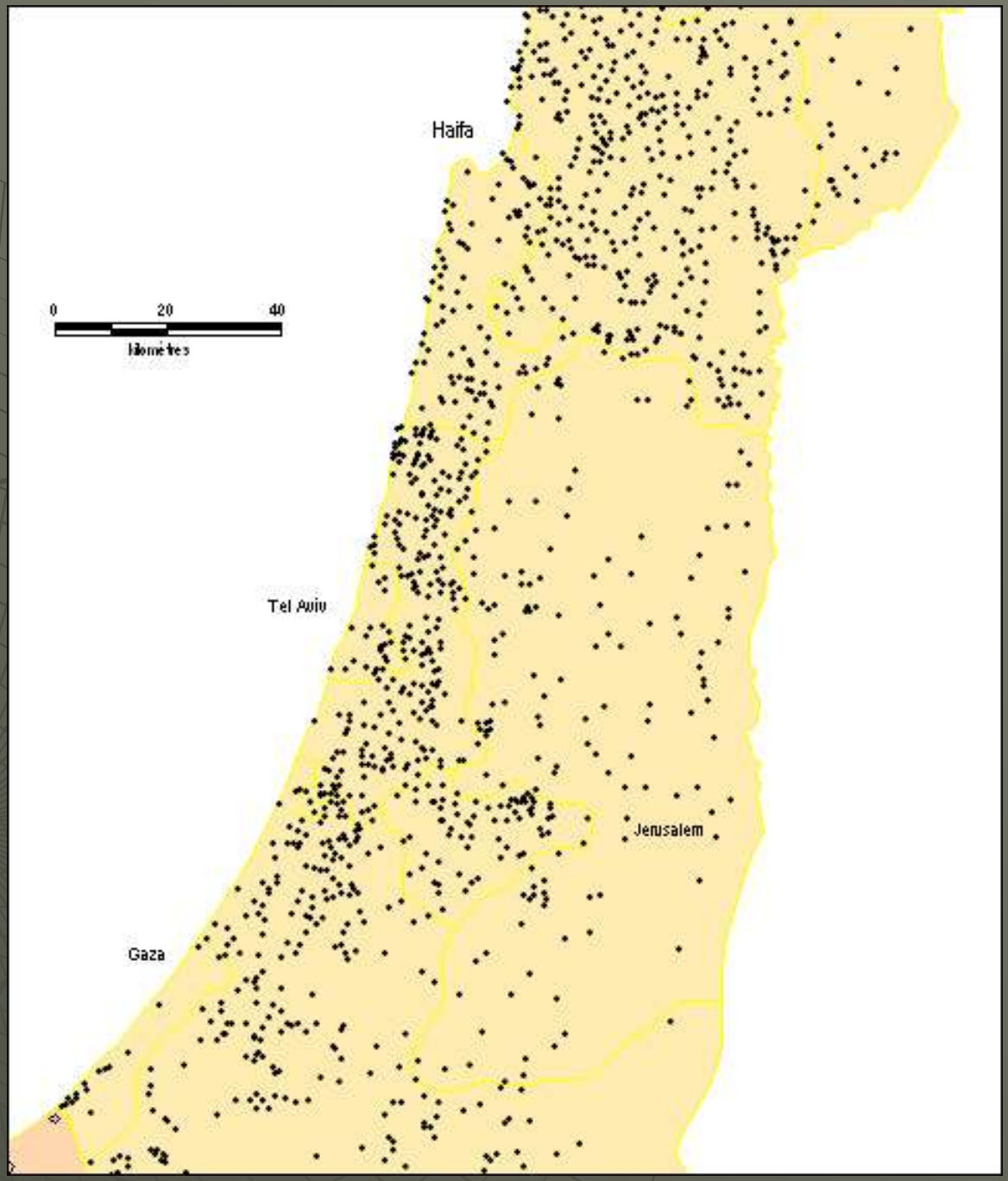
Transnational Cartographie

- Example Israeli-Palestinian zone

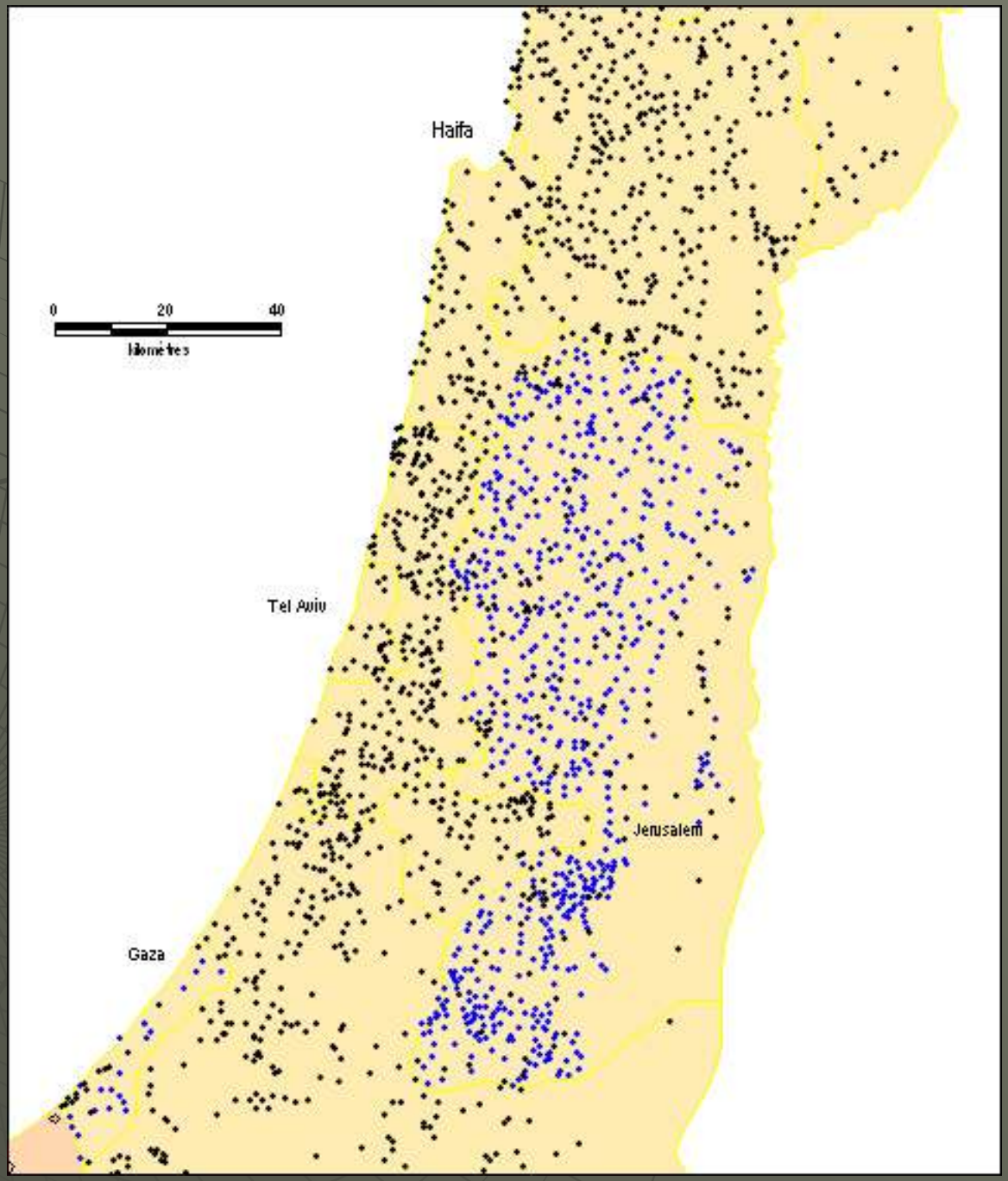


Geography of villages according to the *Central Bureau of Statistics of Israel*

(CBS)



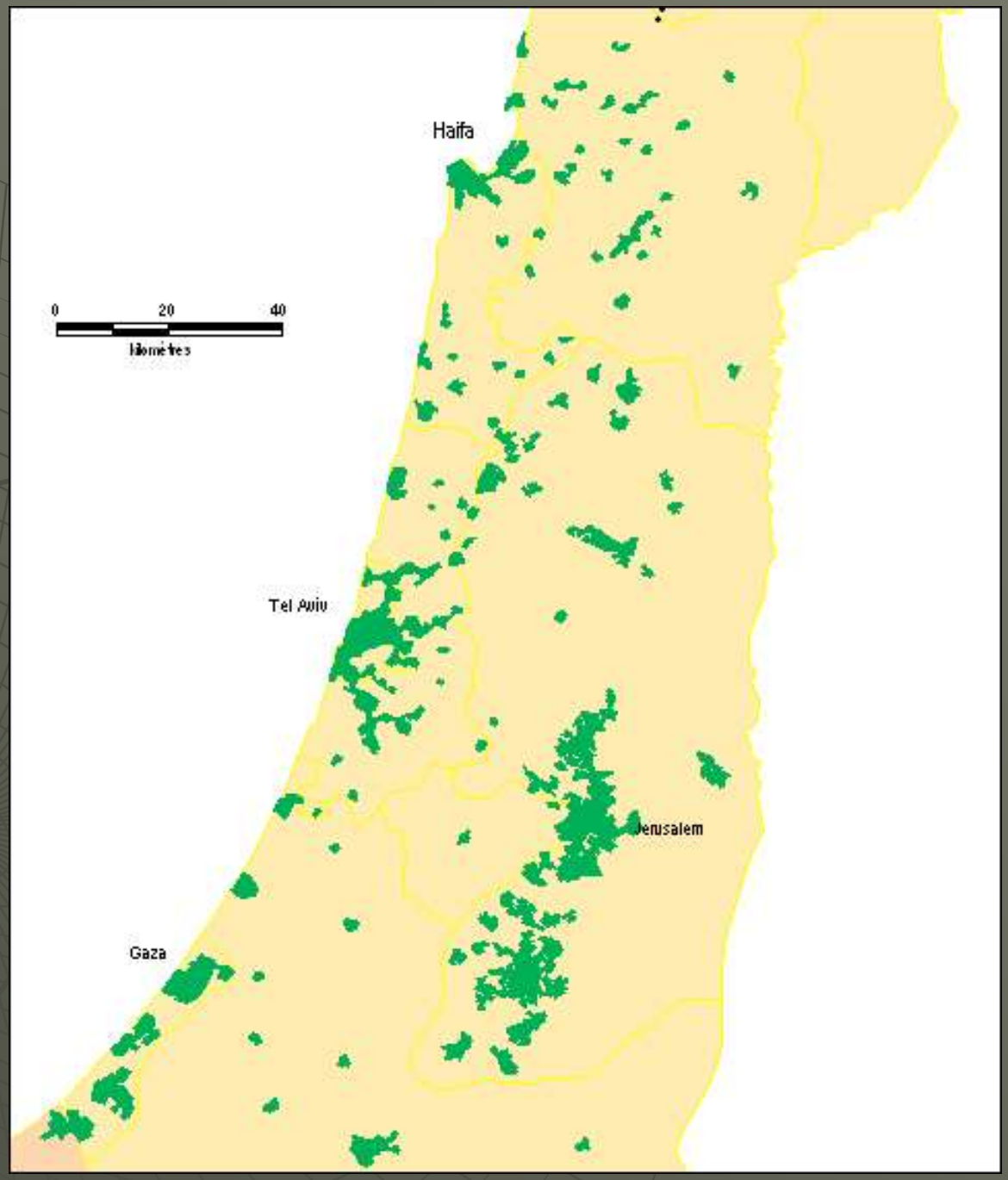
Position géographique des villages selon le *Central Bureau of Statistics* israélien (CBS) et villages Palestiniens recensés par le *Palestinian Central Bureau of Statistics* (PCBS)

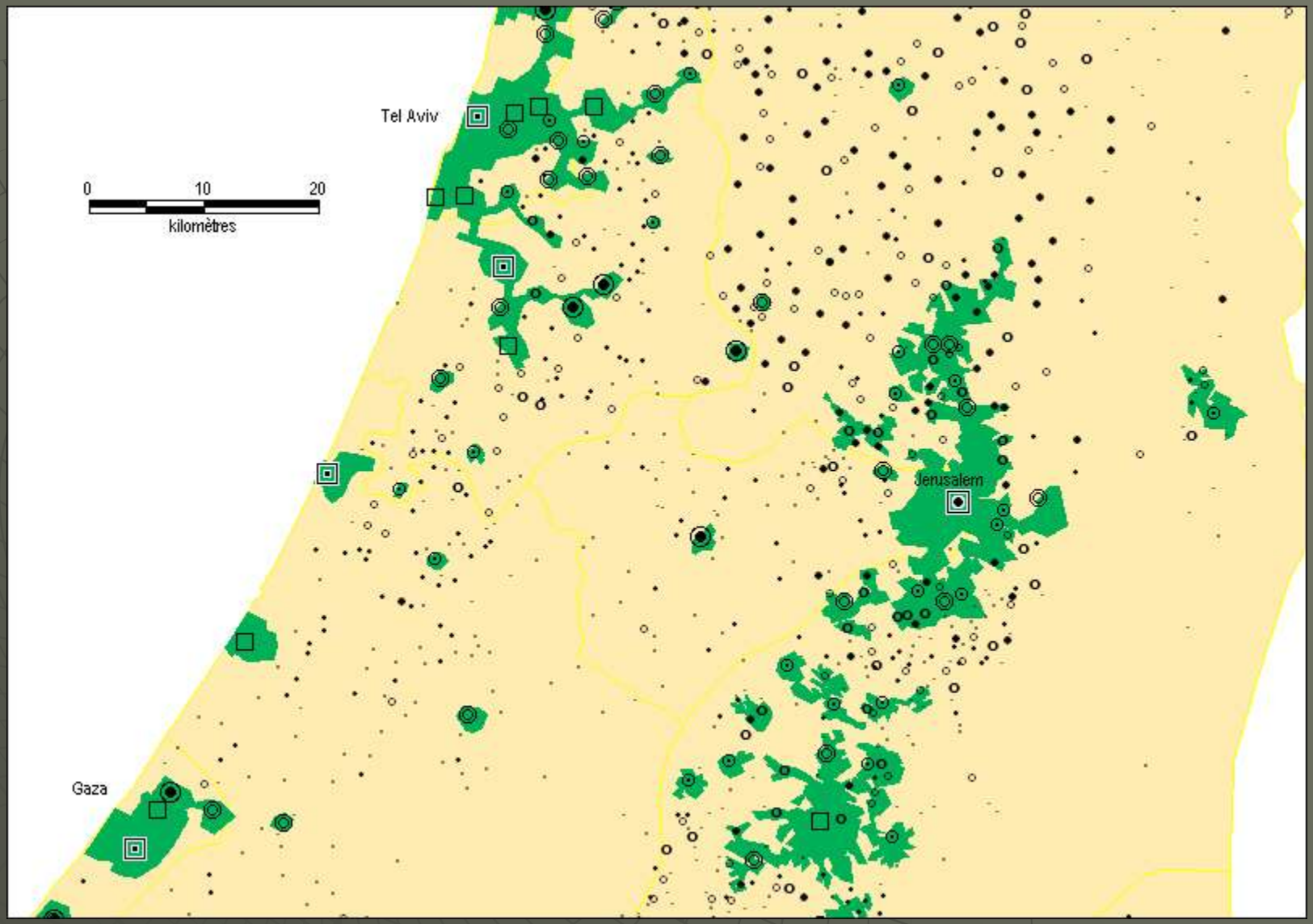


Approche morphologique

Agglomérations de plus de 10 000 habitants

(définition *Geopolis*)




Tel Aviv
0
10
20
kilomètres
Jerusalem
Gaza

- Top 25 agglomerations of the world

Population of 25 the most population agglomerations on earth According to the *Geopolis* database and aggregate urban population in 2005

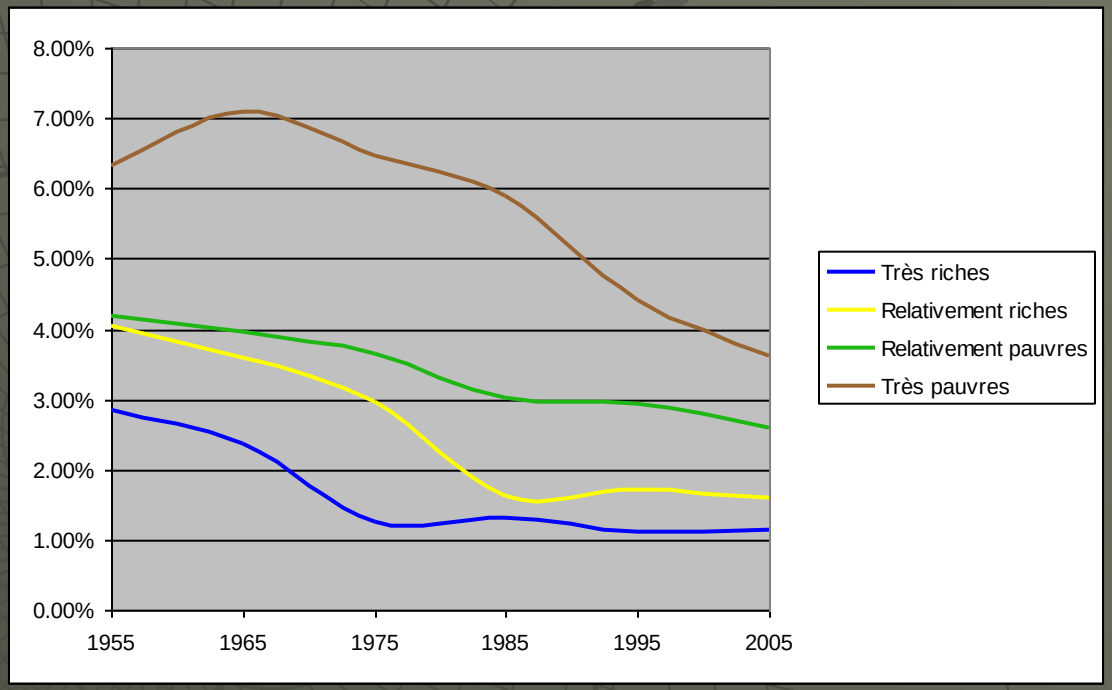
Rang	Superficie km2	Agglomération	Etat	Population 1/7/2005	Source*	TVAM 2000-2005
1	7 394	Tokyo	JPN	31 112	r2000	0.17%
2	18 193	New York	USA	27 860	r2000	1.02%
3	5 606	Seoul	KOR	22 447	e2001	1.25%
4	5 790	Mexico	MEX	20 861	r2000	1.61%
5	3 322	Djakarta	IDN	20 087	r2000	2.89%
6	3 469	Manille	PHL	18 861	r2000	2.72%
7	7 775	São Paulo	BRA	18 240	r2000	1.34%
8	843	Delhi	IND	18 215	r2001	3.77%
9	690	Bombay	IND	18 066	r2001	2.37%
10	2 926	Hong Kong/Shenzhen	CHN	17 731	e2000	5.38%
11	4 127	Osaka	JPN	15 067	r2000	0.04%
12	6 001	Los Angeles	USA	14 446	r2000	0.60%
13	2 720	Shanghai	CHN	14 345	r2000	2.07%
14	569	Calcutta	IND	14 223	r2001	1.75%
15	482	Le Caire	EGY	12 525	r1996	1.48%
16	2 000	Moscou	RUS	12 257	r2002	0.96%
17	2 723	Istanbul	TUR	11 619	r2000	2.89%
18	6 344	Rio de Janeiro	BRA	11 580	r2000	1.04%
19	2 353	Buenos Aires	ARG	11 575	r2001	0.25%
20	580	Dacca	BGD	11 343	r2001	3.61%
21	1 500	Karachi	PAK	11 087	r1998	2.75%
22	3 158	Paris	FRA	10 561	r1999	1.40%
23	1 000	Téhéran	IRN	10 387	r1996	2.43%
24	6 763	Essen	DEU	10 048	e2001	0.07%
25	2 277	Beijing	CHN	9 816	e2000	2.21%

Produit urbain brut :

Très riche	Relativement riche	Relativement pauvre	Très pauvre
> 10 000 $	de 5 000 à 10 000 $	de 1 500 à 5 000 £	< 1 500 £

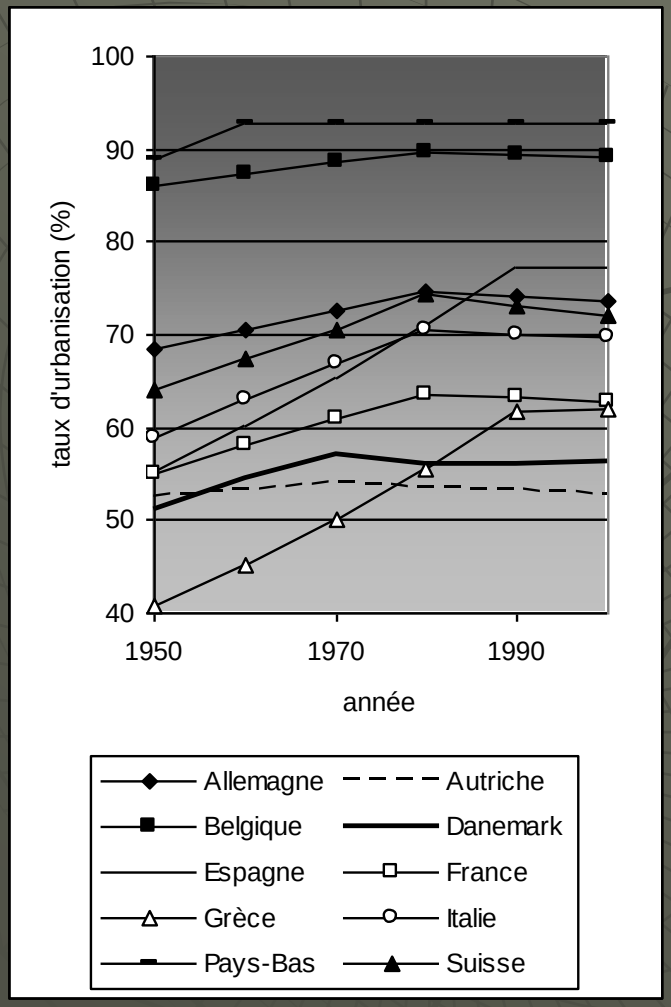
Evolution du taux de variation annuel moyen de la population des 25 agglomérations les plus peuplées de la Planète en 2005

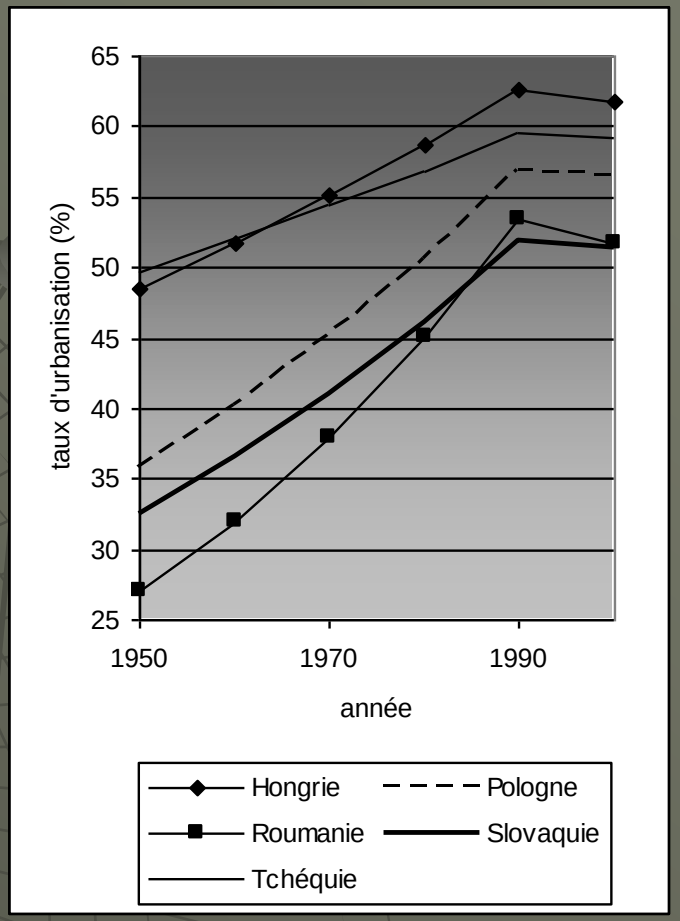
(extension spatiale à délimitation constante « actuelle »)



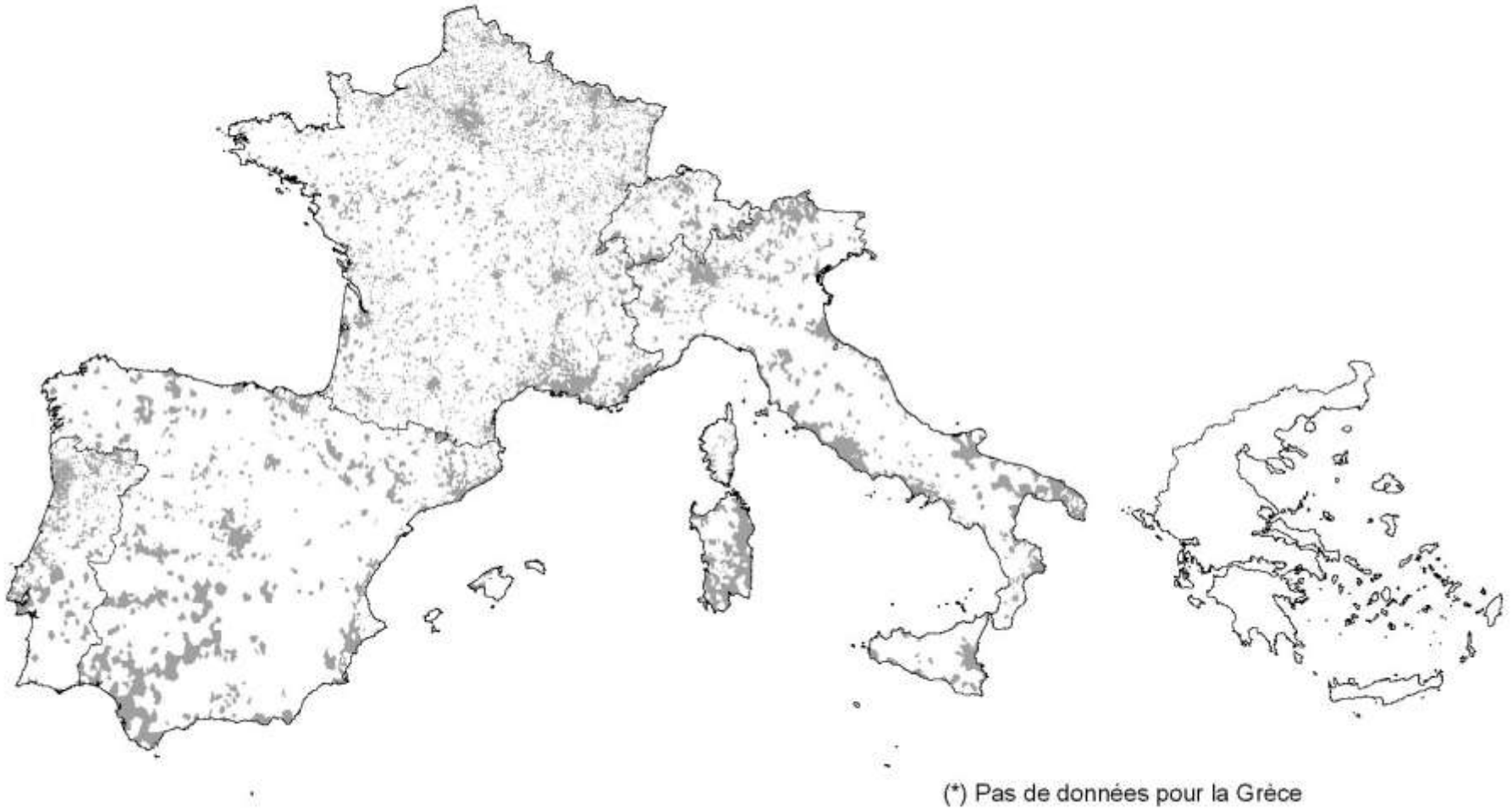
Europe : peri-urbanization

Rate of urbanization





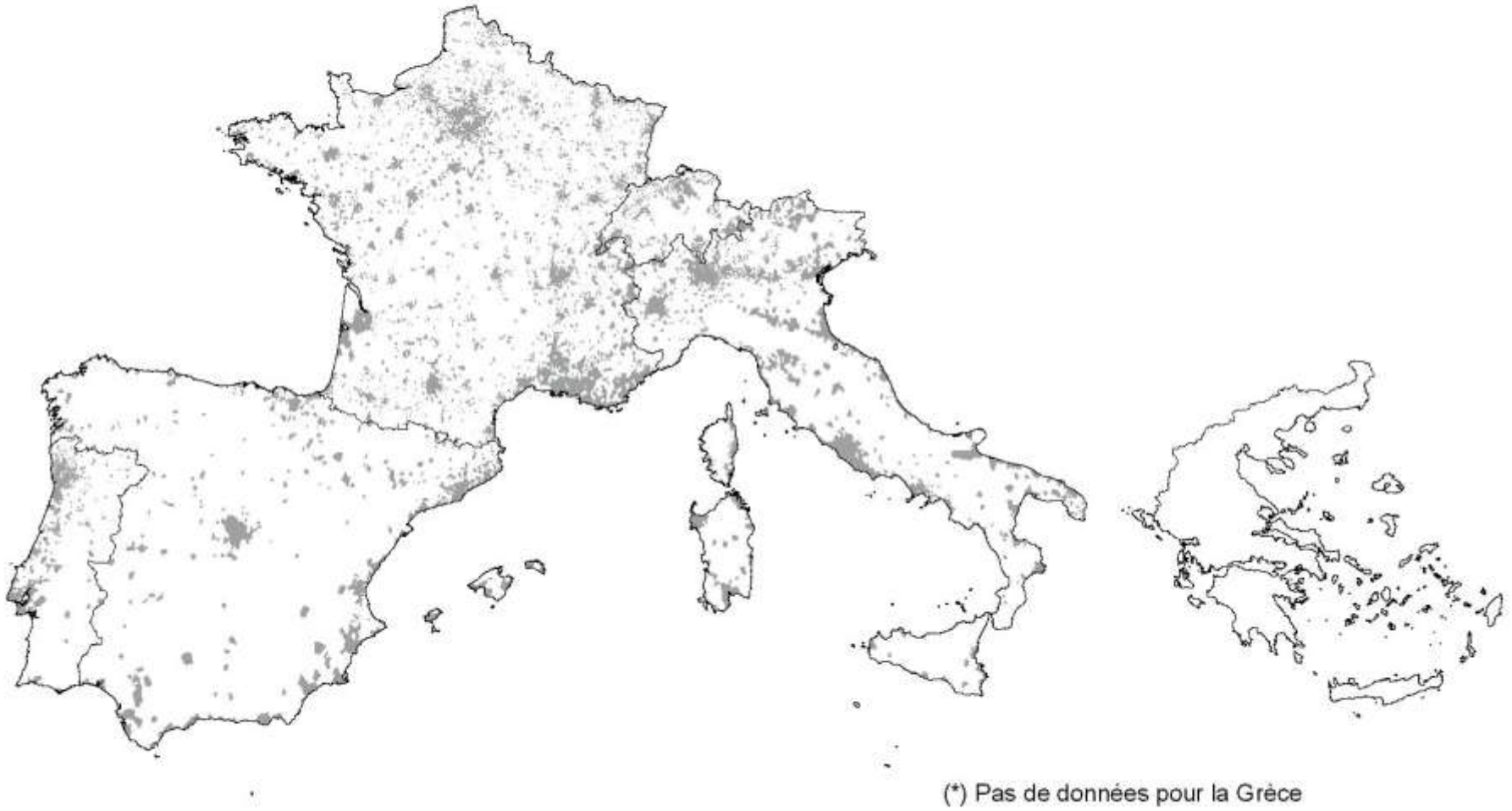
Europe Méditerranéenne : zones de croissance supérieure à la moyenne nationale 1950-1960



(*) Pas de données pour la Grèce

Sources : RGP nationaux, 1940-2000 ; Archives Terrae Statiscae, 2001.

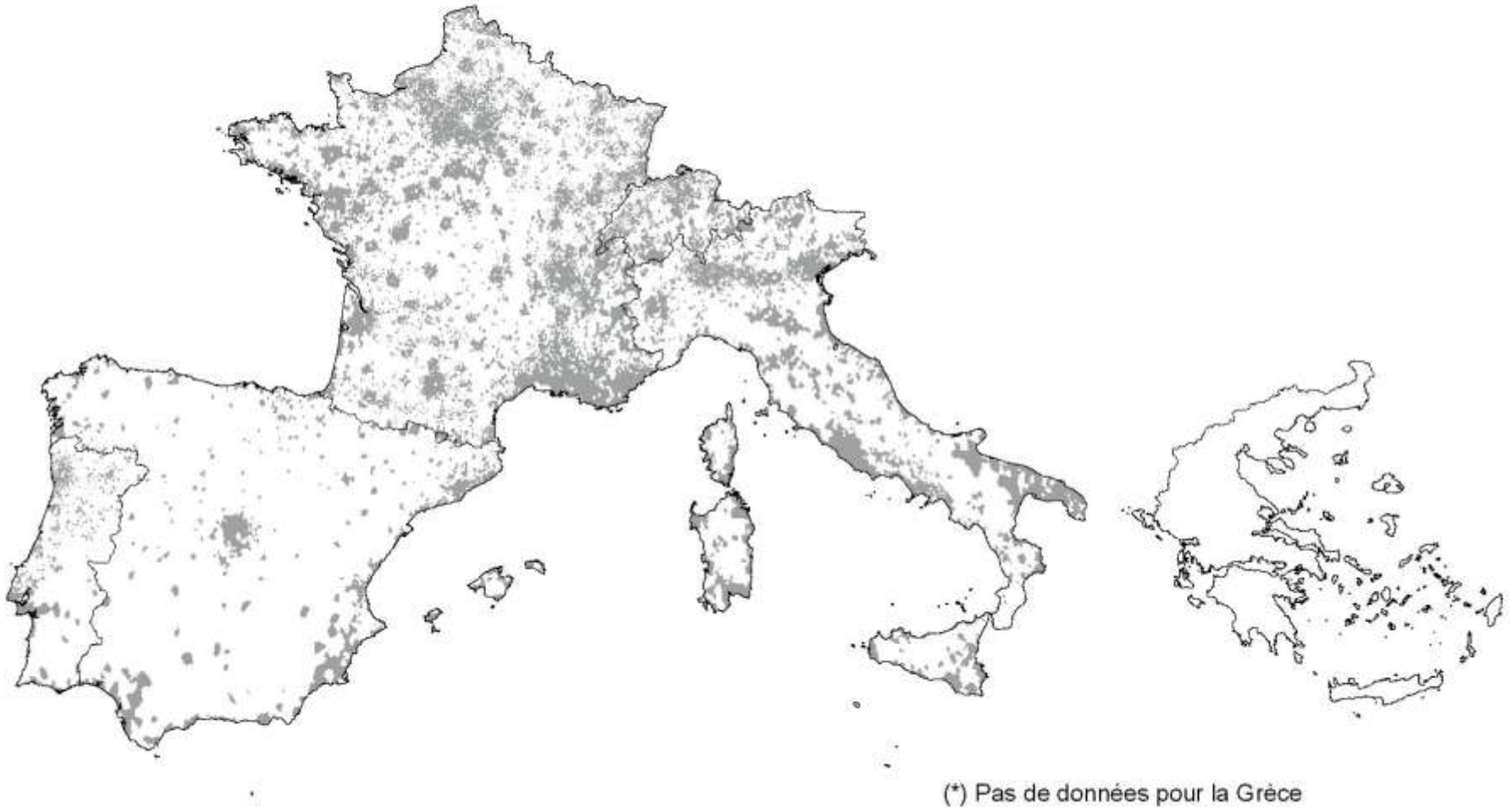
Europe Méditerranéenne : zones de croissance supérieure à la moyenne nationale 1960-1970



(*) Pas de données pour la Grèce

Sources : RGP nationaux, 1940-2000 ; Archives Terrae Statiscae, 2001.

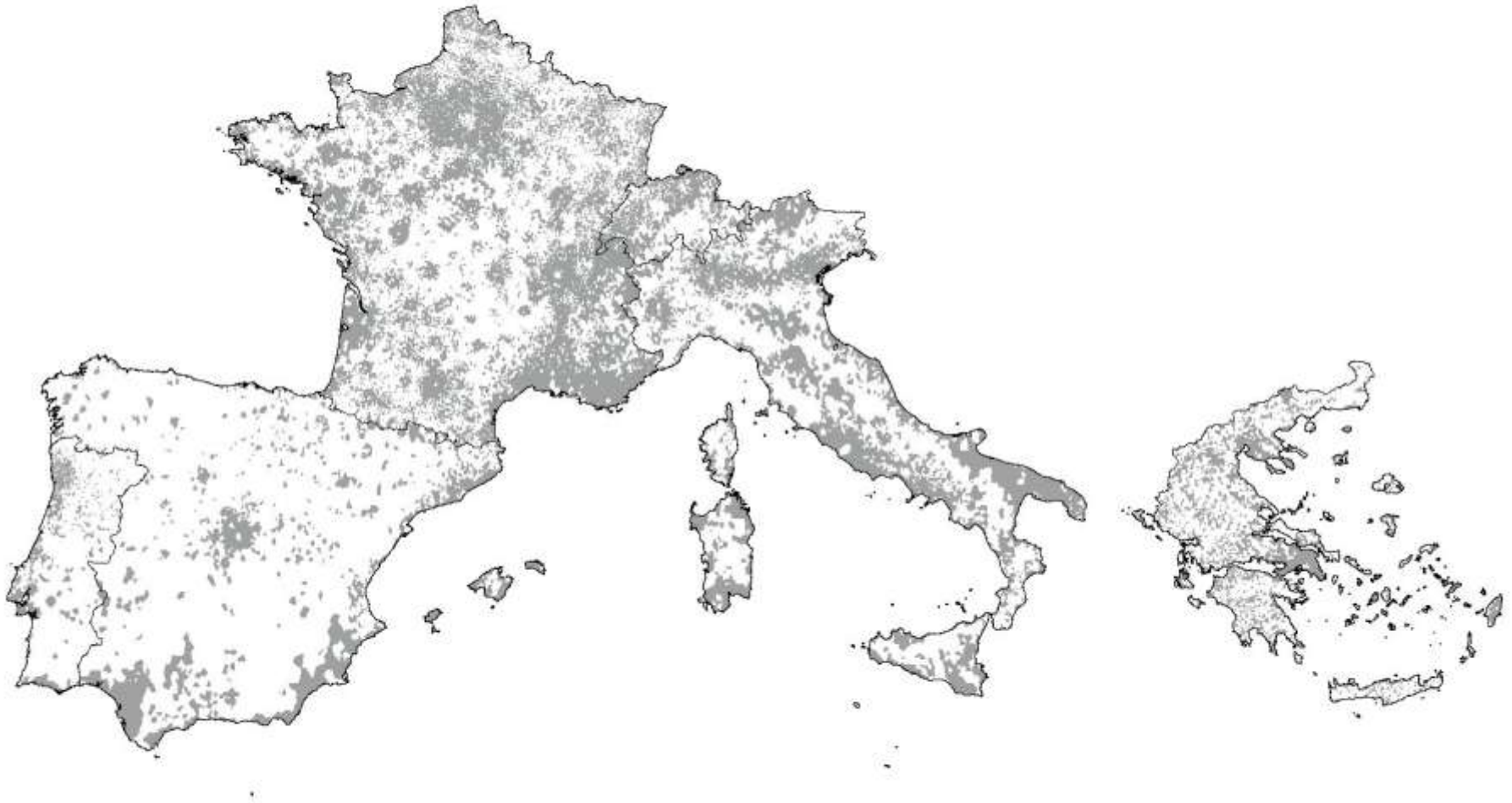
Europe Méditerranéenne : zones de croissance supérieure à la moyenne nationale 1970-1980



(*) Pas de données pour la Grèce

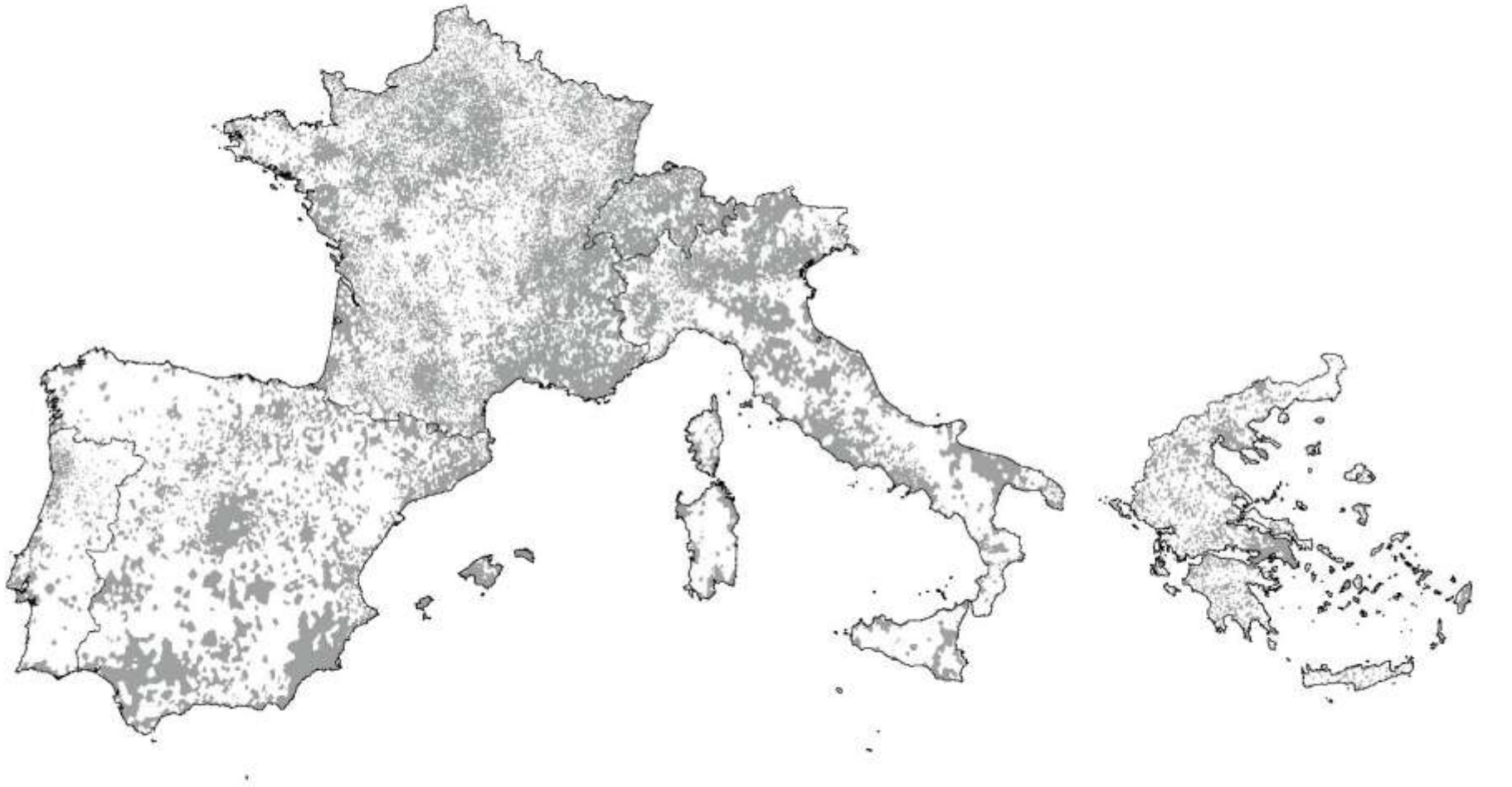
Sources : RGP nationaux, 1940-2000 ; Archives Terrae Statiscae, 2001.

Europe Méditerranéenne : zones de croissance supérieure à la moyenne nationale 1980-1990

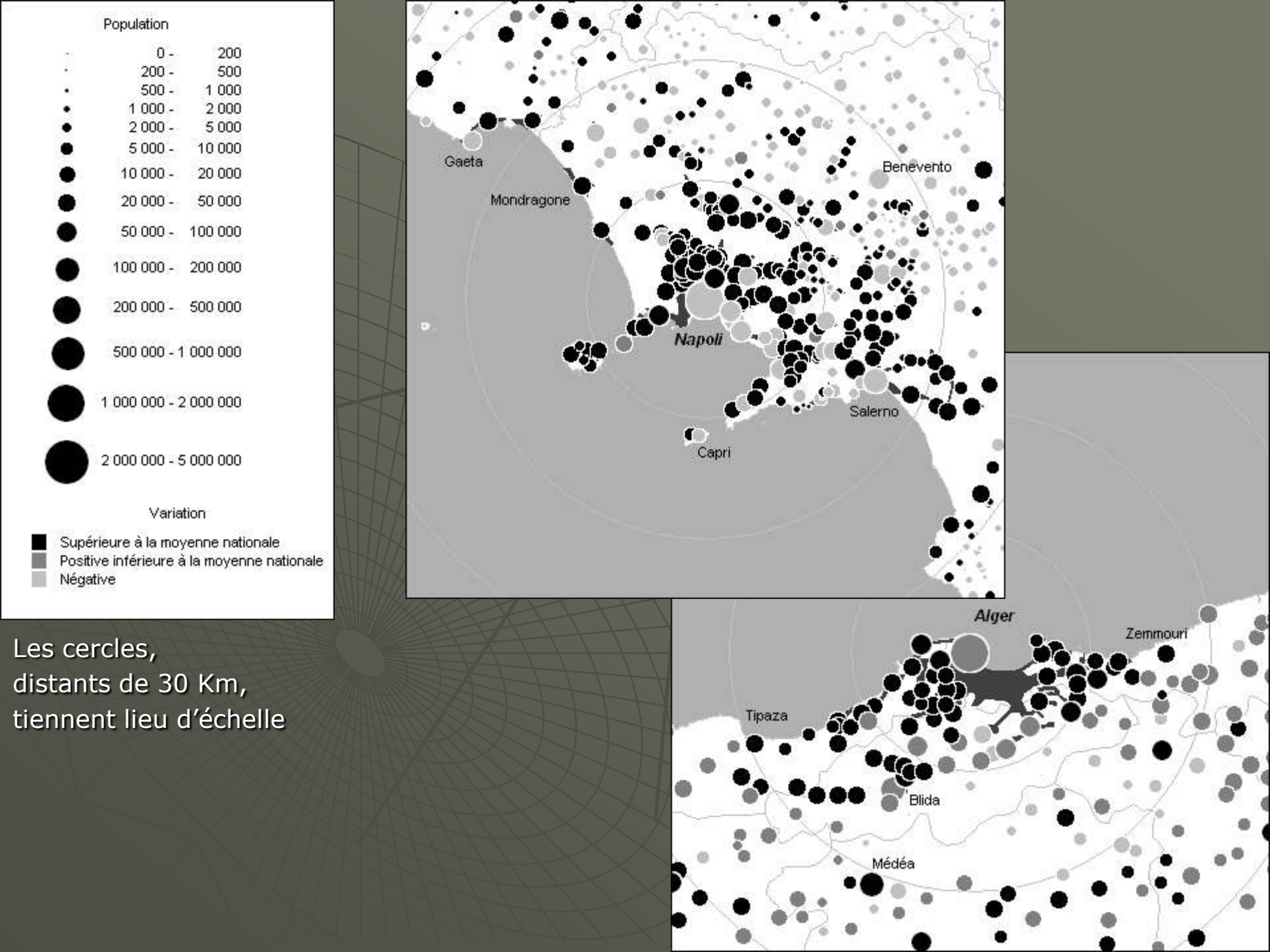


Sources : RGP nationaux, 1940-2000 ; Archives Terrae Statiscae, 2001.

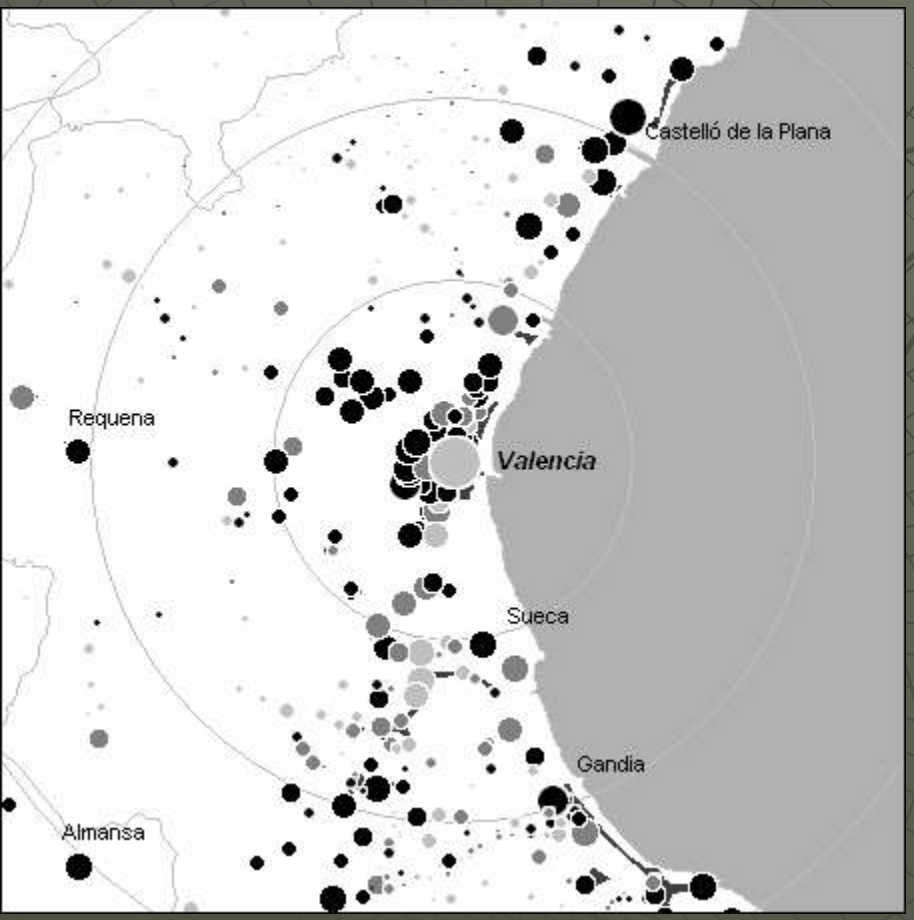
Europe Méditerranéenne : zones de croissance supérieure à la moyenne nationale 1990-2000



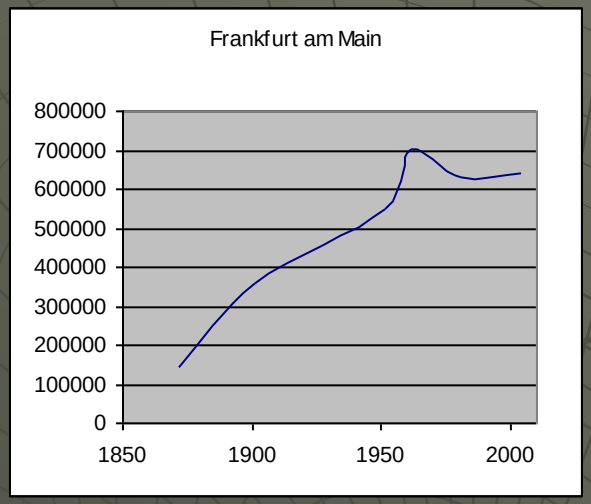
Sources : RGP nationaux, 1940-2000 ; Archives Terrae Statiscae, 2001.

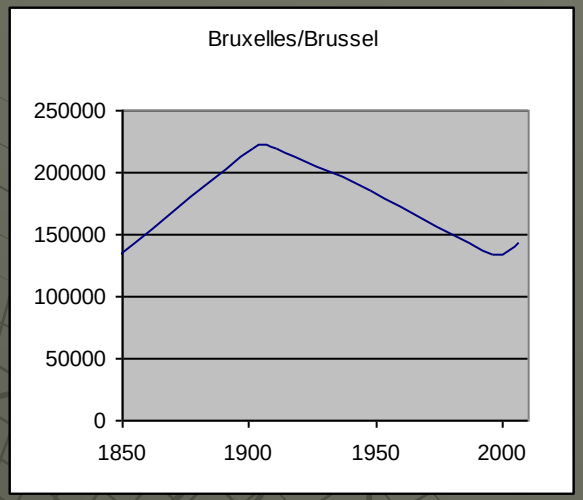


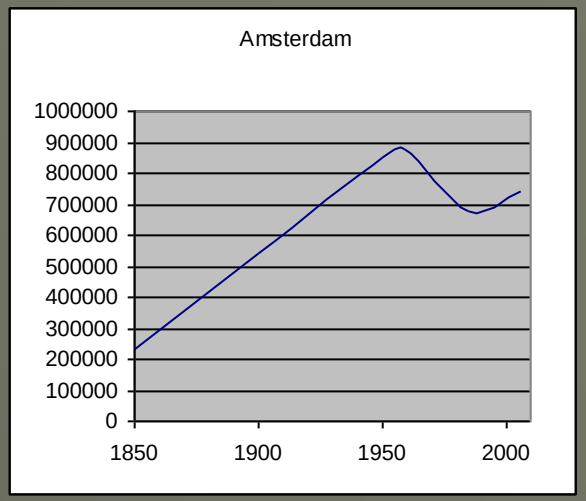
Les cercles,
distants de 30 Km,
tiennent lieu d'échelle

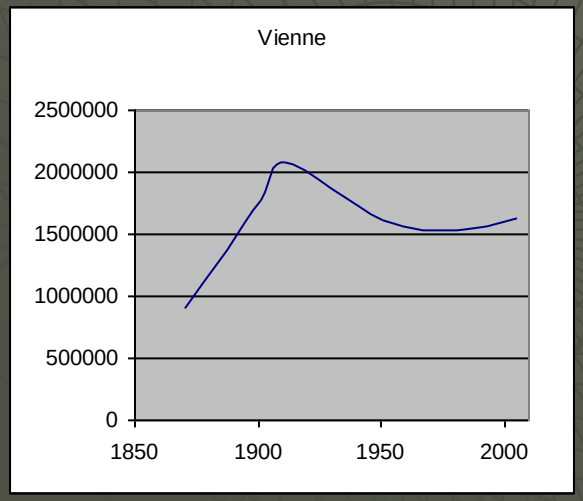

Castelló de la Plana
Requena
Valencia
Sueca
Gandia
Almansa

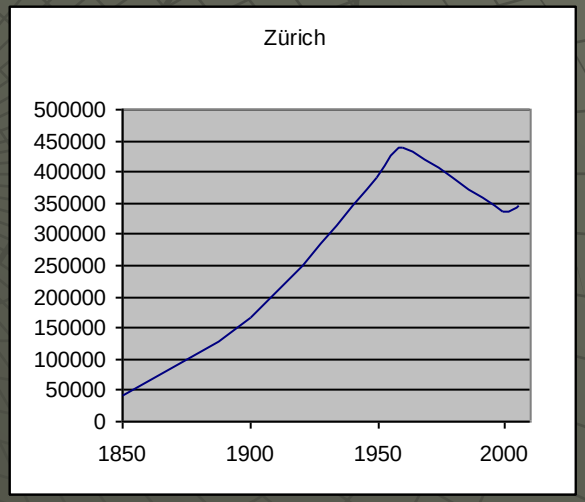
Manosque
Arles
Marseille
Toulon

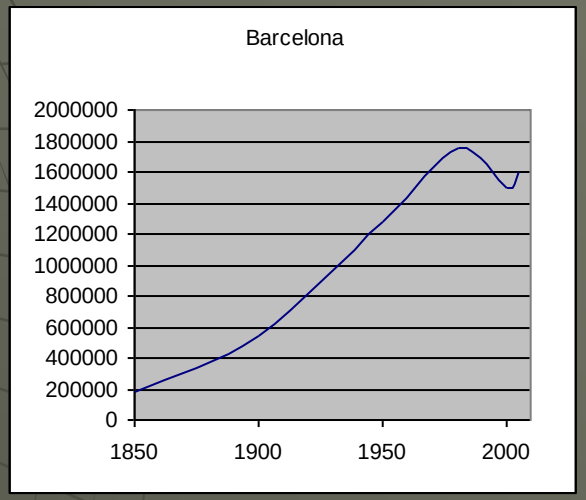

Frankfurt am Main
800000
700000
600000
500000
400000
300000
200000
100000
0
1850
1900
1950
2000


Bruxelles/Brussel
250000
200000
150000
100000
50000
0
1850
1900
1950
2000

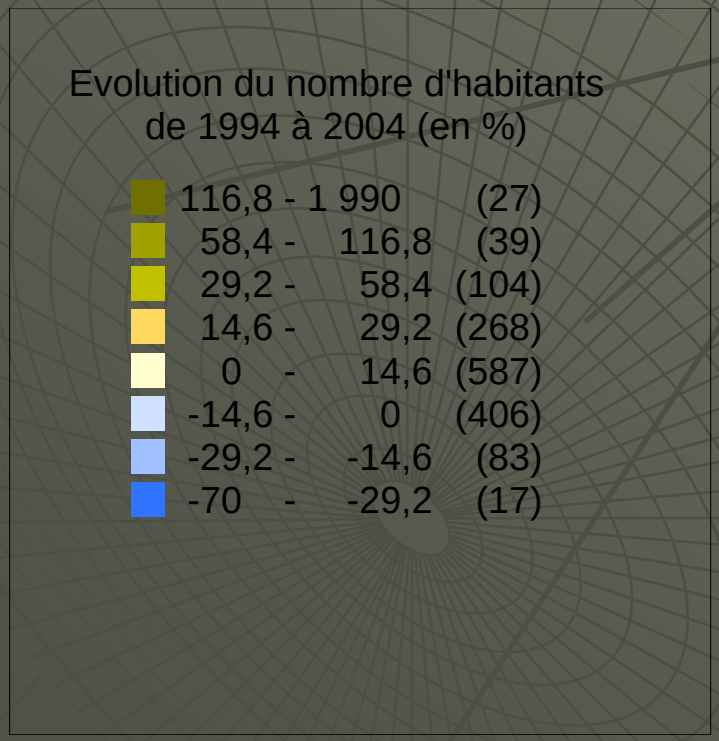

Amsterdam
1000000
900000
800000
700000
600000
500000
400000
300000
200000
100000
0
1850
1900
1950
2000

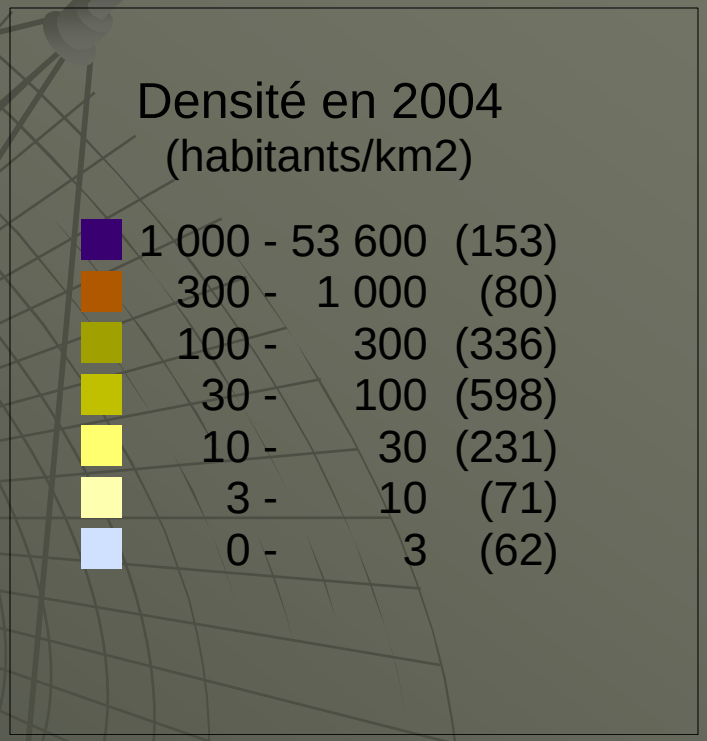

Vienne
2500000
2000000
1500000
1000000
500000
0
1850
1900
1950
2000

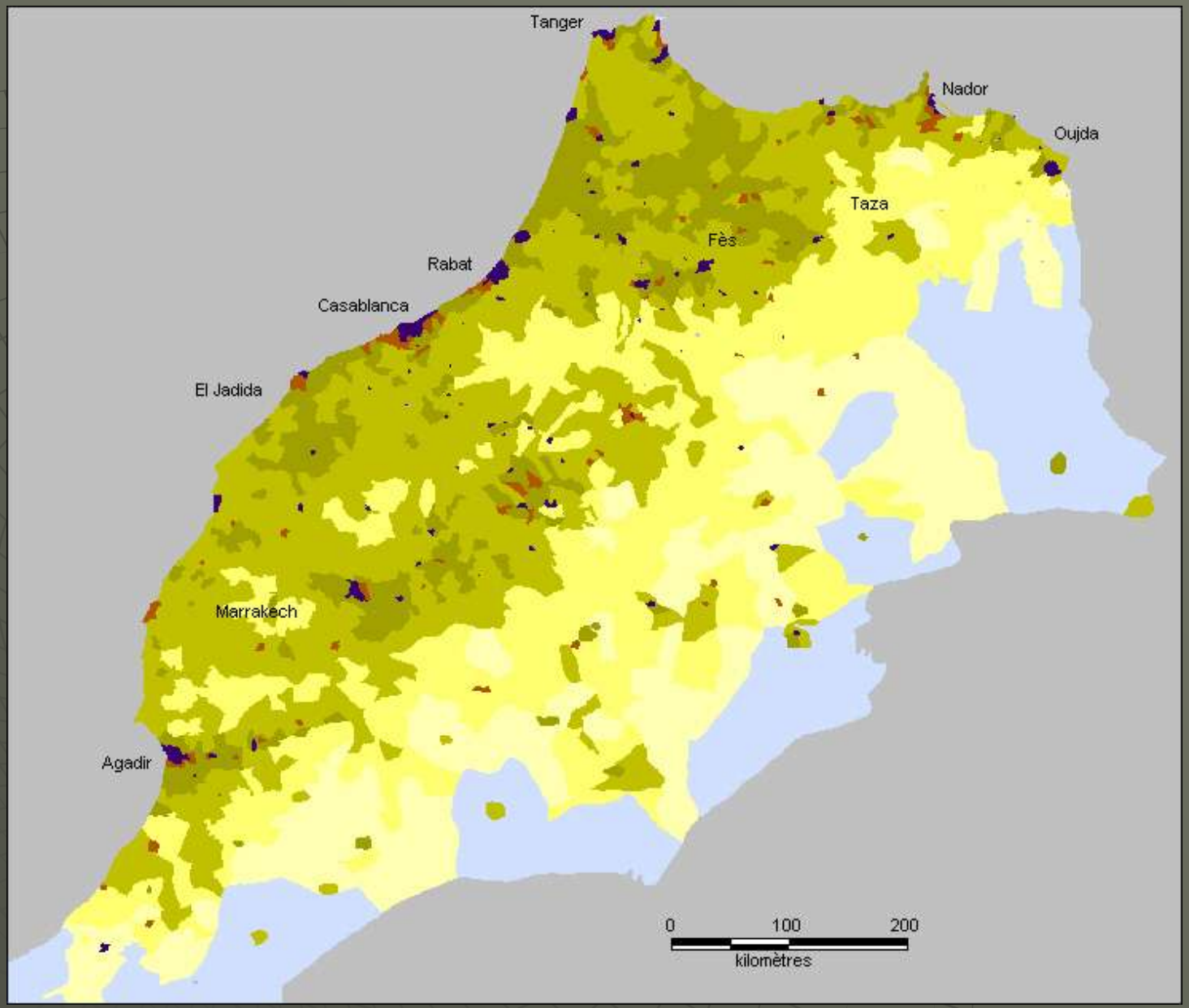

Zürich
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
1850
1900
1950
2000

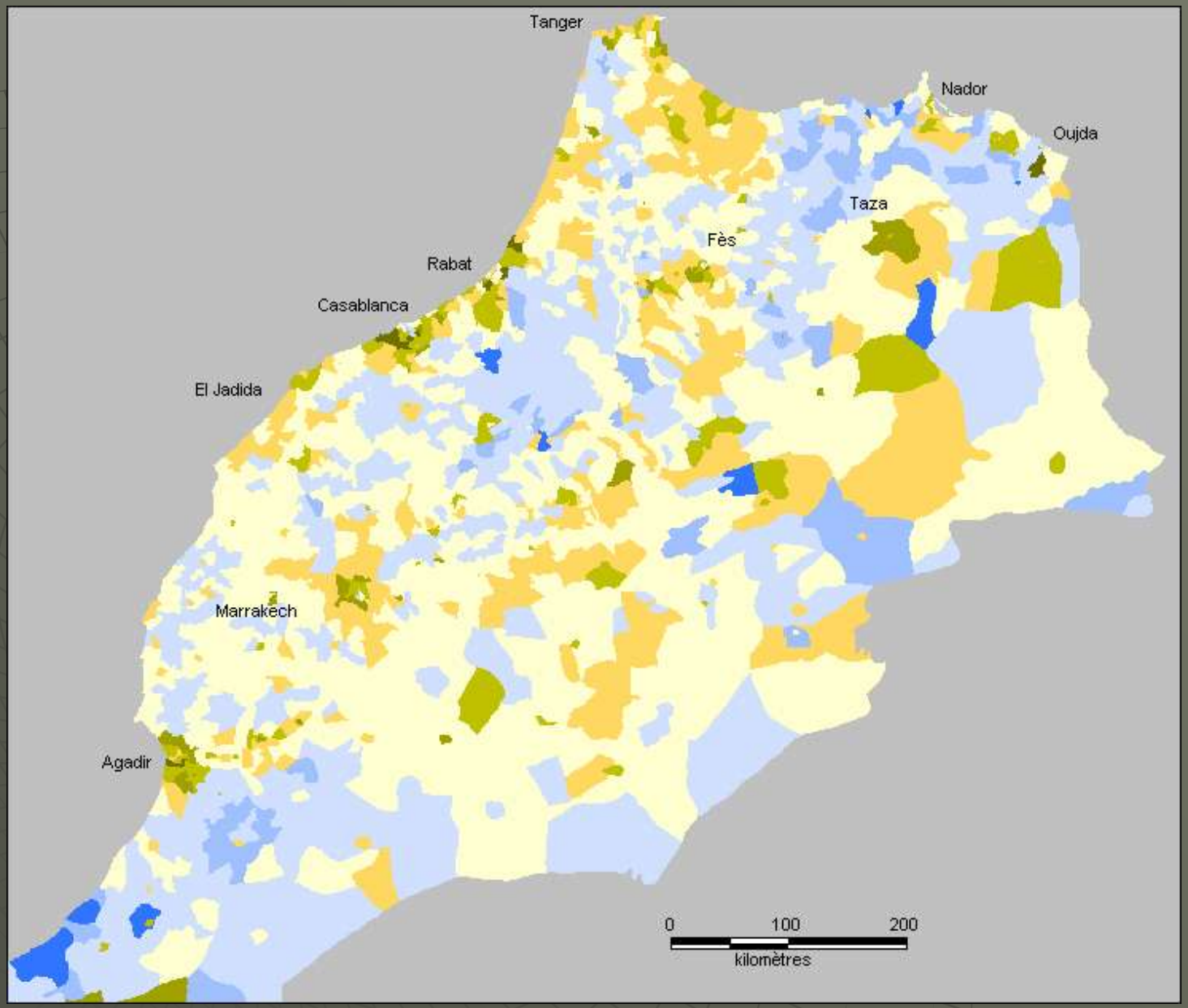

Barcelona
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
1850
1900
1950
2000

Légendes


Evolution du nombre d'habitants
de 1994 à 2004 (en %)
116,8 - 1 990 (27)
58,4 - 116,8 (39)
29,2 - 58,4 (104)
14,6 - 29,2 (268)
0 - 14,6 (587)
-14,6 - 0 (406)
-29,2 - -14,6 (83)
-70 - -29,2 (17)


Densité en 2004
(habitants/km2)
1 000 - 53 600 (153)
300 - 1 000 (80)
100 - 300 (336)
30 - 100 (598)
10 - 30 (231)
3 - 10 (71)
0 - 3 (62)


Tanger
Nador
Oujda
Taza
Fès
Rabat
Casablanca
El Jadida
Marrakech
Agadir
0
100
200
kilomètres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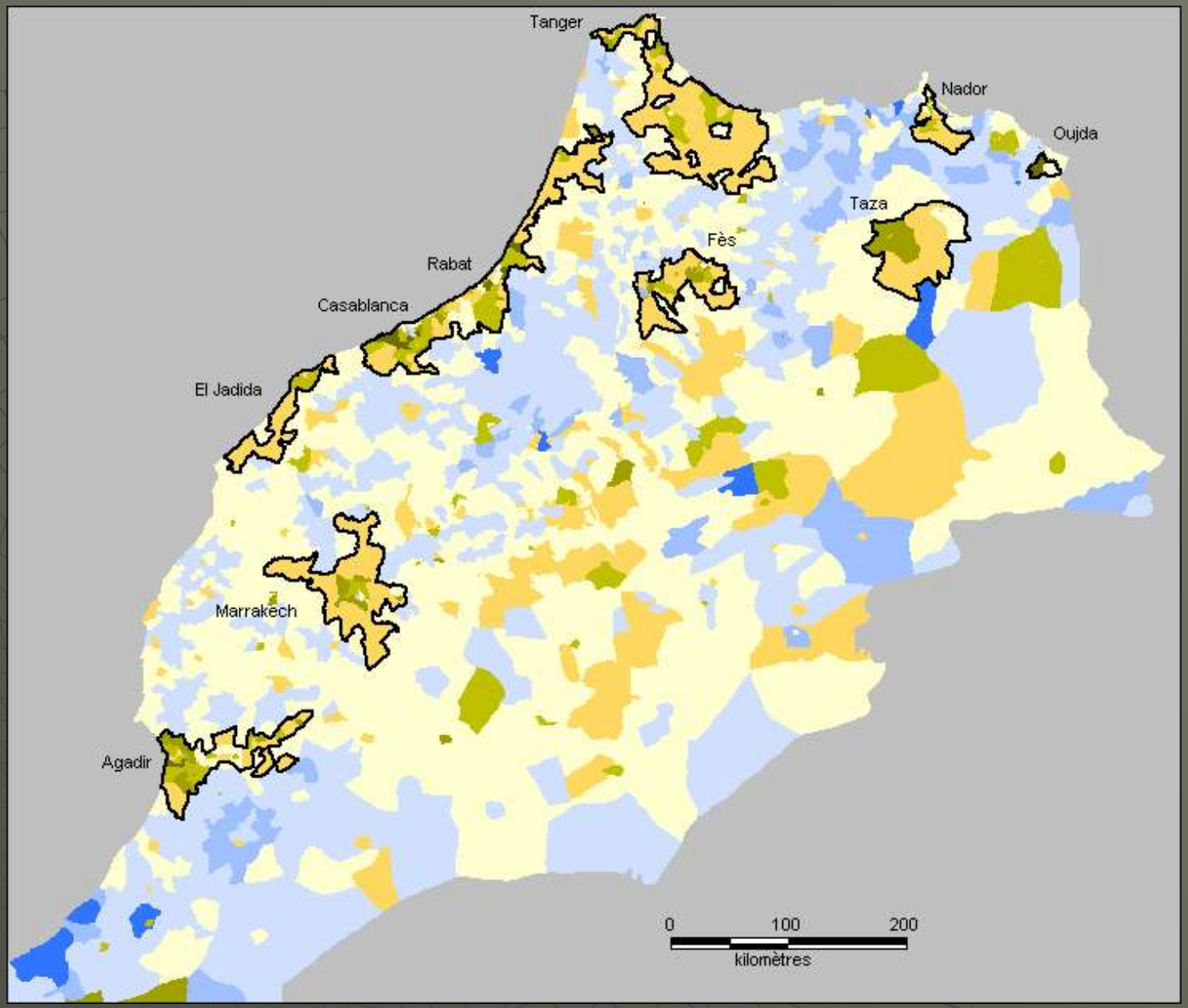
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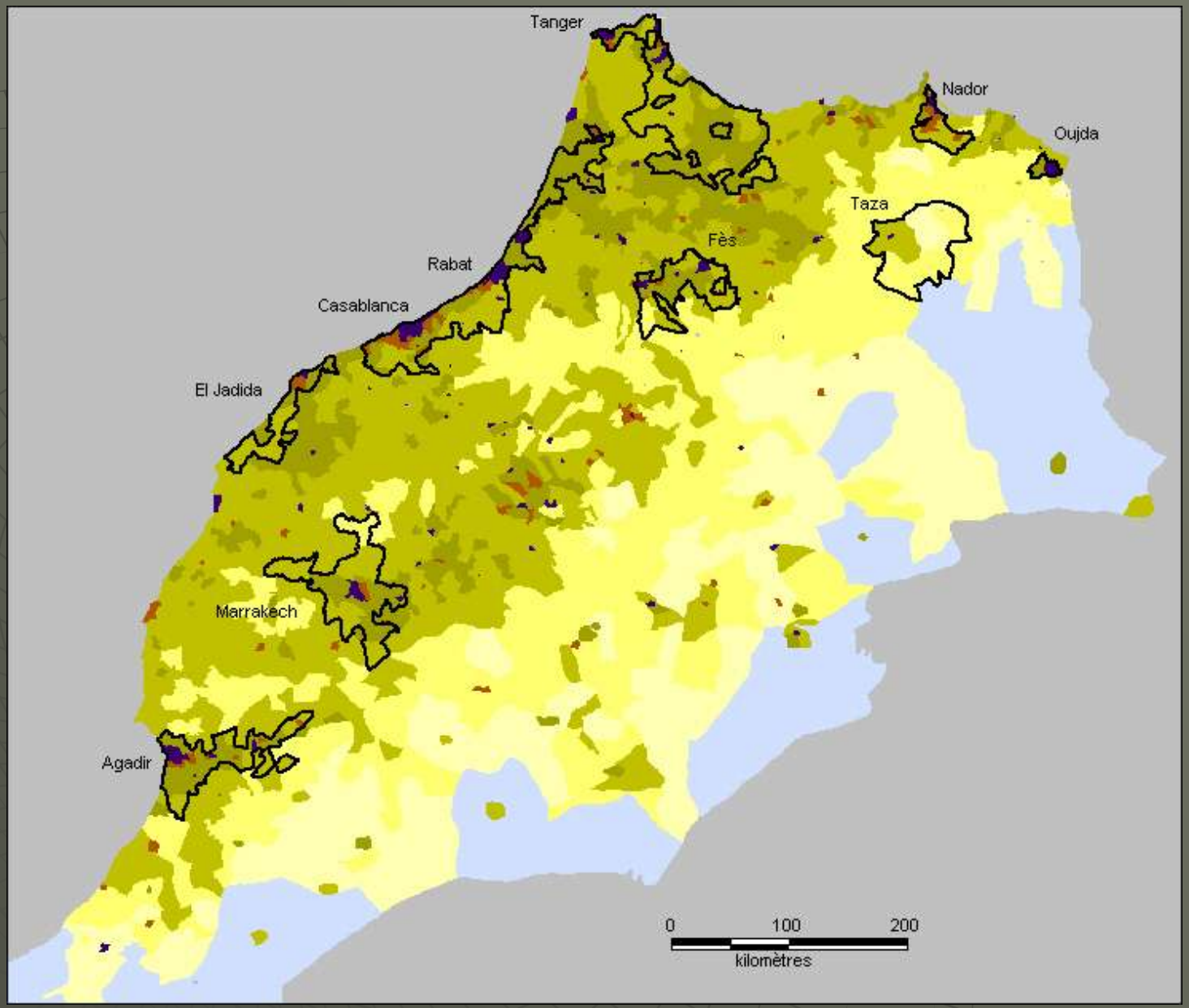
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