

DISCOVERING SPANISH LANDSCAPES

Topic 0: overview

Landscape

i. The word combines

- land
- *schaffen* (German) meaning literally, 'shaped lands'.

II. Alexander von Humboldt (1769 – 1859) advanced the idea of a natural landscape separated from a cultural landscape.

III. Otto Schlüter (geographer, 1908)

- Defined Geography as a Landschaftskunde (landscape science).
- Distinguish two forms of landscape:
 - ✓ Urlandschaft → landscape that existed before major human induced changes
 - ✓ Kulturlandschaft → landscape created by human culture.

Landscape

- i. Physical elements (abiotic):**
 - Landforms: mountains, hills
 - Water bodies: rivers, lakes, ponds and sea...
 - Transitory elements eg. weather conditions

- ii. Living elements (biotic), eg. vegetation and fauna.**

- iii. Human elements (anthropic), including different forms of**
 - Land uses
 - Buildings and structures.

*"... una parte del territorio tal como es percibida por la población, cuyo carácter resulta de la acción de factores naturales y/o humanos y de sus interrelaciones"
(Convenio Europeo del Paisaje, 2004)*

INTRODUCTION

**Spanish landscapes:
Singularity and diversity**

ESPAÑA: SITUACIÓN GEOGRÁFICA. UNIDAD Y DIVERSIDAD

ESPAÑA COMO UNIDAD GEOGRÁFICA

presenta gran

singularidad geográfica

viene dada por

***su carácter peninsular
*situación y posición geográficas de la P.Ibérica
*configuración del relieve**

**I.E.S. Gran Capitán (Córdoba)
I.E.S. Colonial (Fuente Palmera)**

POSICIÓN DE ESPAÑA EN EL PLANETA

es de

encrucijada

condiciones naturales: flora, fauna,...

plano humano: país de encuentro. posición geoestratégica

CONSECUENCIAS

contrastes

naturales

litológicos

geomorfológicos

climáticos

biogeográficos

contrastes

humanos

paisajes agrarios

asentamientos

ATLAS DE LOS PAISAJES DE ESPAÑA





Legenda

- Paisajes de patrimonio
- Paisajes, lagos y lagunas
- Red de canales
- Red forestal
- Límites provinciales

ASOCIACIONES DE TIPOS DE PAISAJE

Península Ibérica

- Paisajes montañosos y montañosos
- Paisajes montañosos del interior ibérico
- Paisajes montañosos de los cordilleros ibéricos
- Paisajes y montañas atlánticas y mediterráneas
- Paisajes montañosos
- Paisajes y montañas mediterráneas y atlánticas
- Paisajes, prados y cultivos extensivos, de secano y regadío
- Paisajes y cultivos extensivos y de secano
- Paisajes, bosques y lagos del norte de Iberia (pirineos y cordillera cantábrica)
- Paisajes, bosques y dehesanos
- Cultivos
- Paisajes y pastizales
- Paisajes de costa
- Paisajes de interior
- Paisajes de montaña
- Paisajes de montaña peninsular
- Paisajes
- Paisajes y costas
- Paisajes y paisajes ibéricos
- Paisajes, agricultura y bosques
- Paisajes, costas y cultivos extensivos atlánticos
- Paisajes, costas y paisajes mediterráneos y atlánticos
- Paisajes de interior
- Paisajes montañosos y de interior montañosos
- Paisajes montañosos

Islas Baleares

- Paisajes y costas
- Paisajes, costas y agricultura
- Paisajes, costas, bosques y bosques

Islas Canarias

- Paisajes de costa
- Paisajes, costas, bosques y agricultura
- Paisajes, costas y cultivos extensivos
- Paisajes, costas y cultivos
- Paisajes y cultivos de interior
- Paisajes de interior y de interior

Representación elaborada por el IAGLR (1996) y el IAGLR (2000)

0 50 100 150 km

Natural factors

1. Mainland Iberia:

- A peninsula
- Small extension.
- Behaves like an island, isolated from Africa (Gibraltar Strait) and Europe (Pyrenees)

1. Archipelagos

- Balearic Islands → similar to mainland Spain.
- Canary Islands → flora and fauna quite different → isolation: Macaronesian Kingdom



List of European cities by elevation

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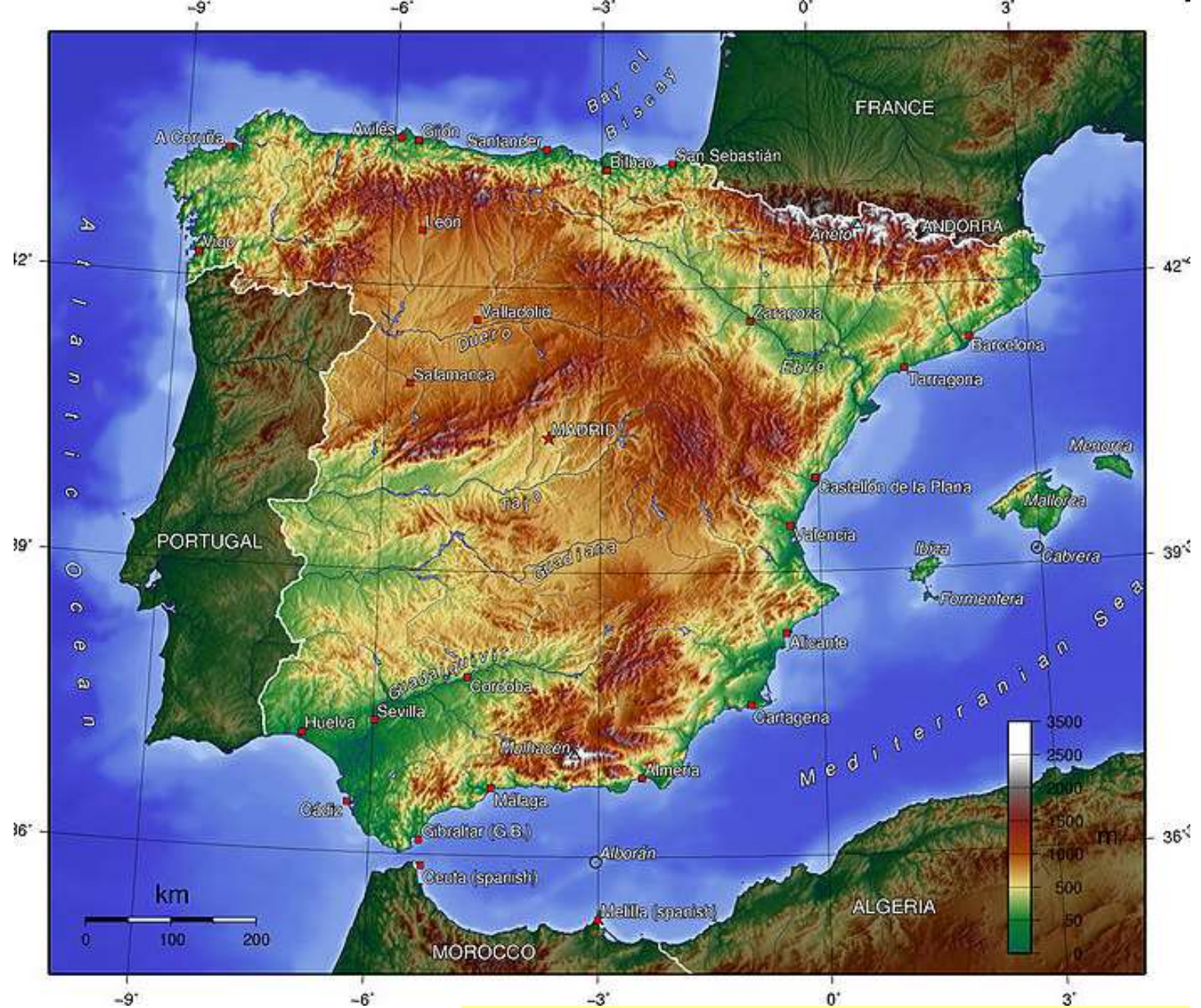
Find sources: "List of European cities by elevation" – news · newspapers · books · scholar · JSTOR (June 2008) *(Learn how and when to remove this template message)*

This is a **list of European cities by elevation**, located above 500 m (1,600 ft)—divided by cities with over 10,000 people, and those with 100,000 or more. The list of those with more than 10,000 people is further divided by elevation above sea level.

Cities over 100,000 inhabitants [edit]

- [Burgos](#) 865 m (2,838 ft)
- [León](#) 837 m (2,746 ft)
- [Kislovodsk](#) 810 m (2,660 ft)
- [Salamanca](#) 802 m (2,631 ft)
- [Alcorcón](#) 718 m (2,356 ft)
- [Valladolid](#) 698 m (2,290 ft)
- [Alcobendas](#) 695 m (2,280 ft)
- [Vladikavkaz](#) 692 m (2,270 ft)
- [Albacete](#) 686 m (2,251 ft)
- [Granada](#) 683 m (2,241 ft)
- [Madrid](#) 667 m (2,188 ft)
- [Leganés](#) 665 m (2,182 ft)
- [Fuenlabrada](#) 664 m (2,178 ft)
- [Móstoles](#) 660 m (2,170 ft)
- [Pristina](#) 652 m (2,139 ft)
- [Parla](#) 649 m (2,129 ft)
- [Getafe](#) 623 m (2,044 ft)
- [Braşov](#) 600 m (2,000 ft)
- [Alcalá de Henares](#) 594 m (1,949 ft)
- [Sofia](#) 580 m (1,900 ft)
- [Innsbruck](#) 574 m (1,883 ft)
- [Torrejón de Ardoz](#) 568 m (1,864 ft)
- [Bern](#) 540 m (1,770 ft)
- [Munich](#) 525 m (1,722 ft)
- [Vitoria-Gasteiz](#) 519 m (1,703 ft)
- [Sarajevo](#) 518 m (1,699 ft)
- [Saint-Étienne](#) 516 m (1,693 ft)

Natural factors



- High mountains
- Plains and plateaus
- Coast

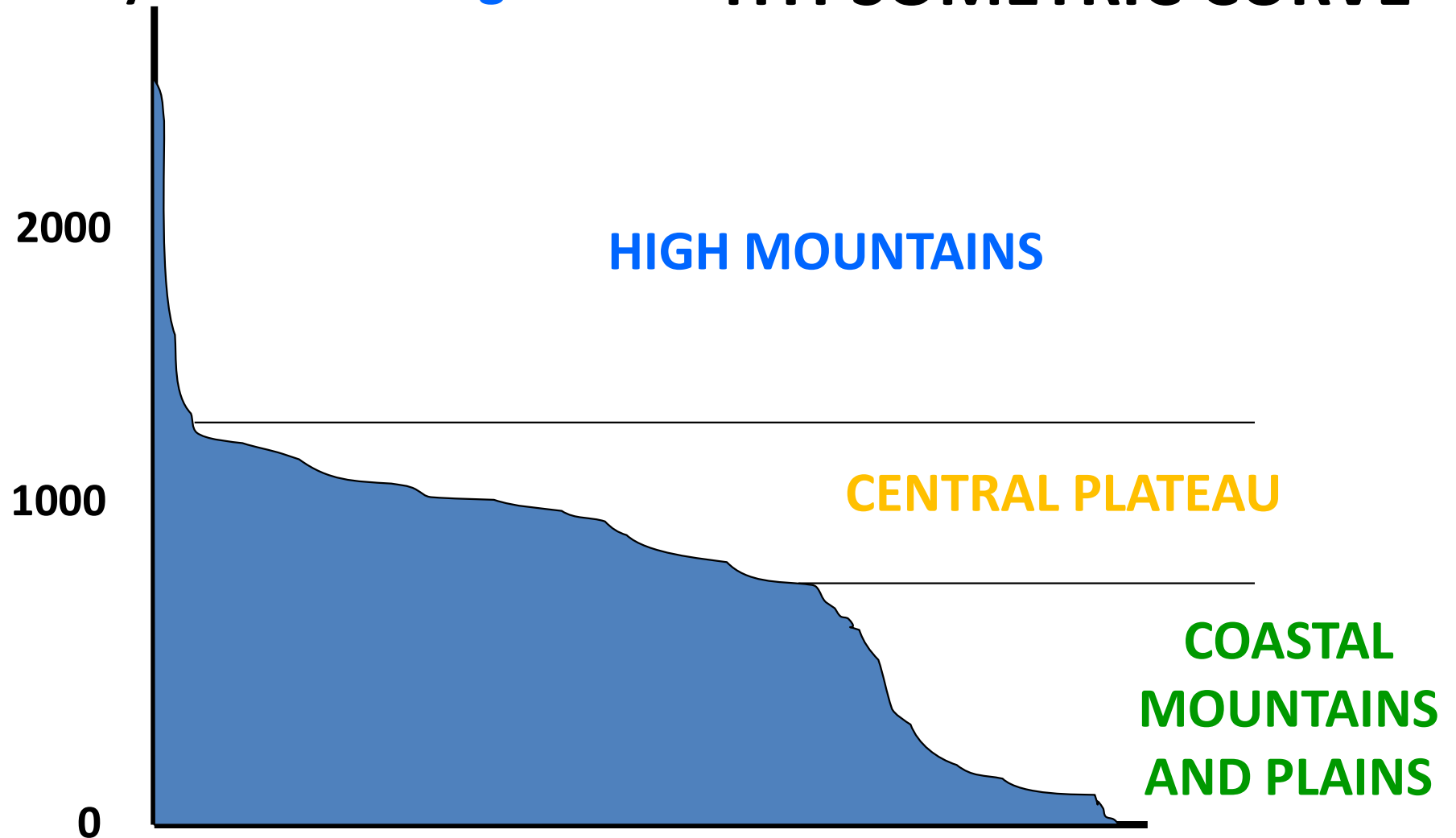
Topographic diversity

PERFILES TOPOGRÁFICOS DE LA ESPAÑA PENINSULAR: CORTE N-S Y O-E.



Most of mainland Spain consists of the **Meseta Central**, a high plateau surrounded by **mountain ranges**.

HYPSONOMETRIC CURVE



Other landforms include narrow **coastal plains and some lowland river valleys**, the most prominent of which is the Andalusian Plain in the SW.

EL RELIEVE ESPAÑOL

CARACTERÍSTICAS

elevada altitud
media

forma compacta
y maciza

disposición periférica
del relieve

EVOLUCIÓN GEOLÓGICA

PALEOZOICO:
surge Macizo Hespérico

MESOZOICO:
erosión y sedimentación,
transgresiones y regresiones
marinas

TERCIARIO:
orogenia alpina, formación
del relieve español

CUATERNARIO:
erosión, modelado sobre
la orogenia, vulcanismo,
glaciarismo

LITOLOGÍA

Iberia Caliza

Iberia Silíceea

Iberia Arcillosa

Mesozoic materials: Secondary (200-30 ma)

LITOLOGÍA

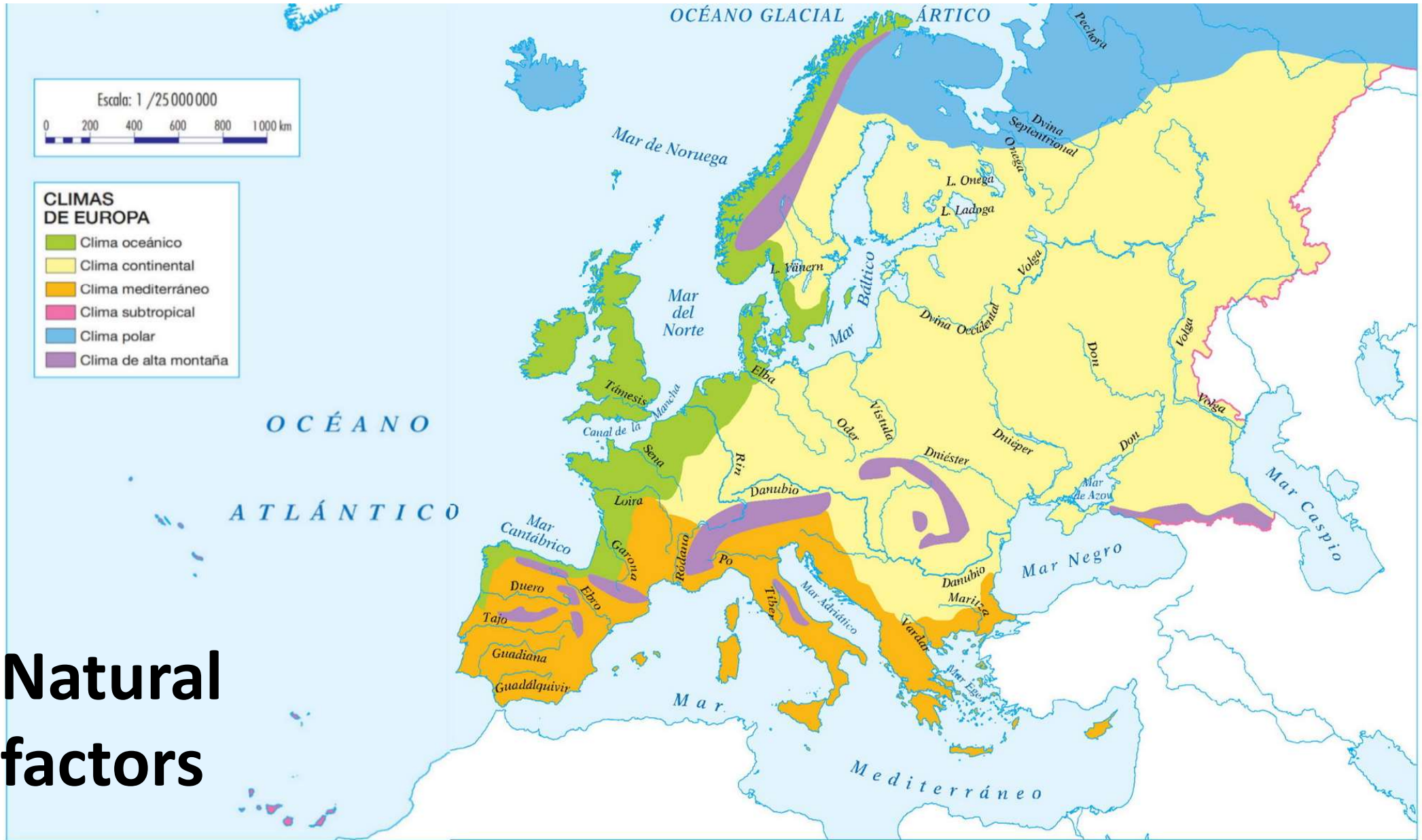
Old materials:
Primary
(older than
300 ma)



Younger
materials:
Tertiary (30
ma)

Two principal European climates

Climatic diversity

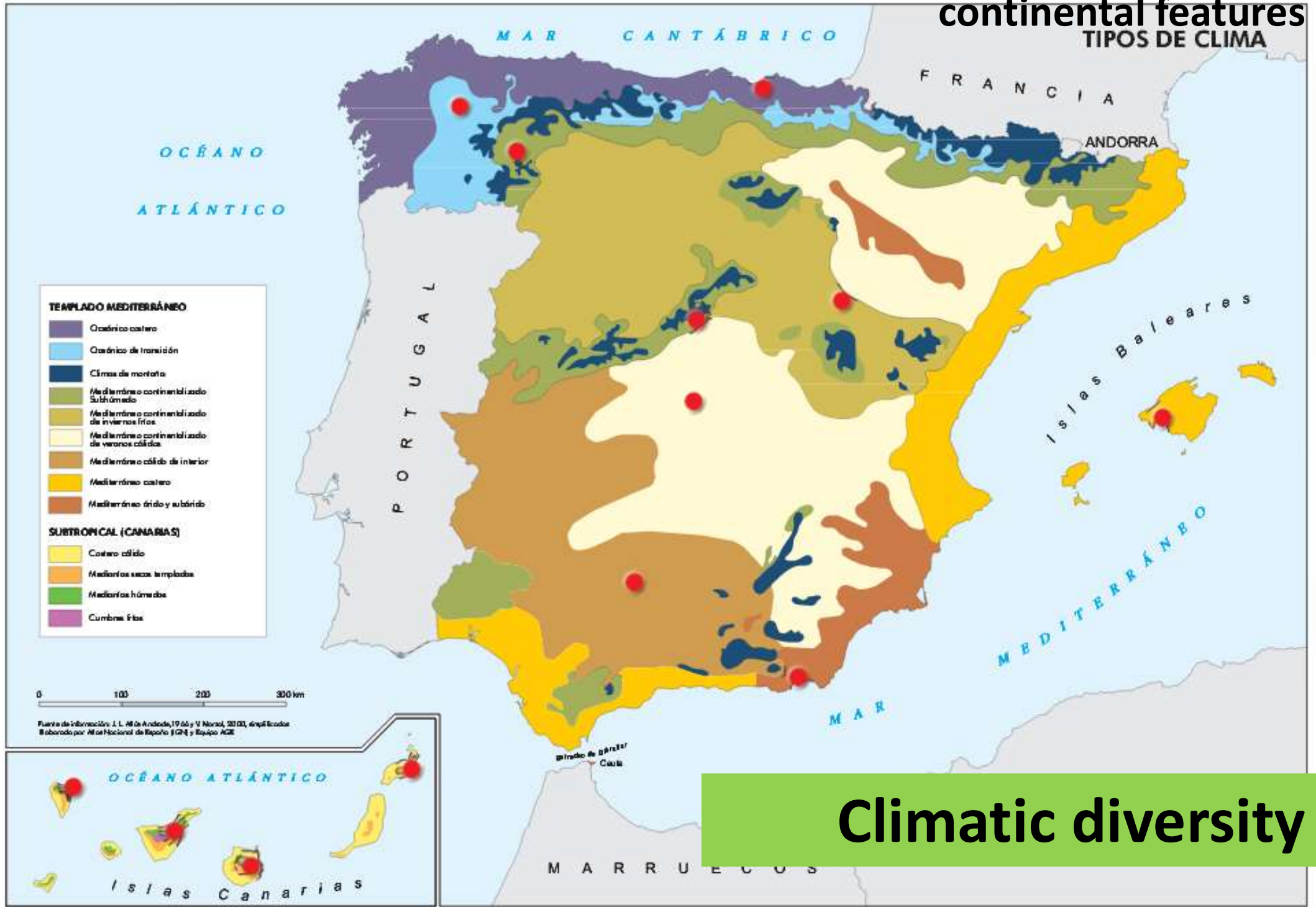


Natural factors

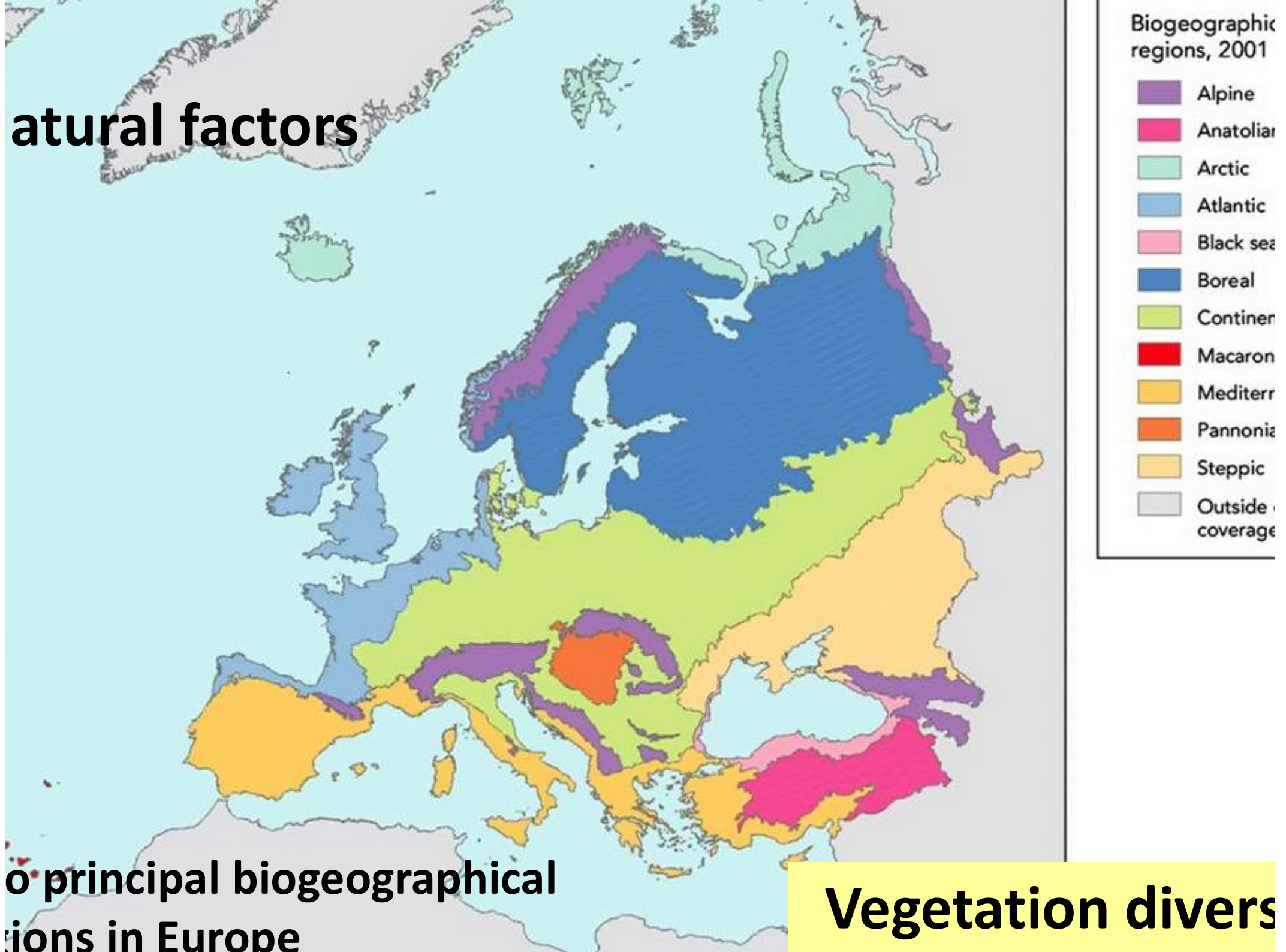
Natural factors

Altitude and configuration provide

continental features

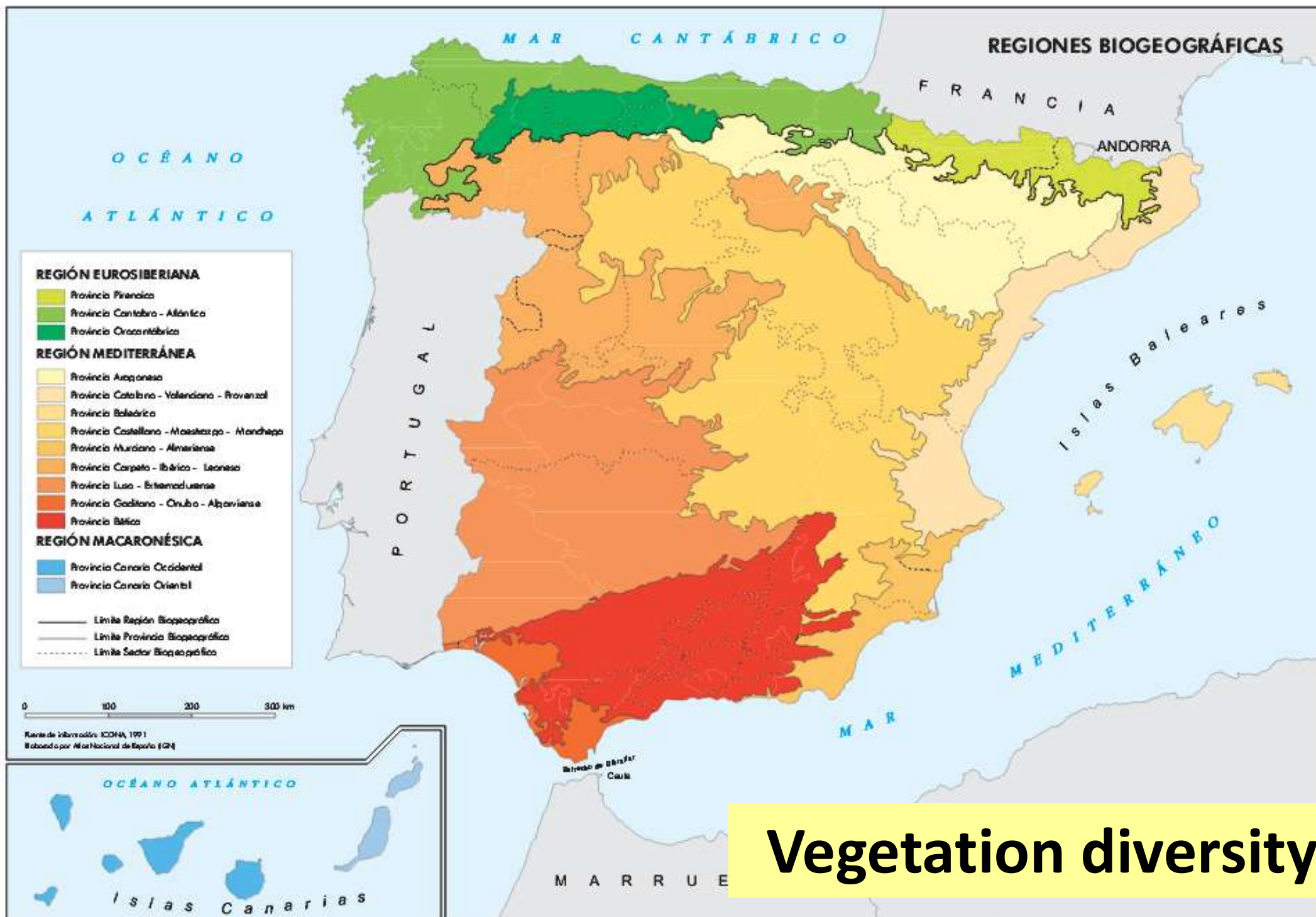


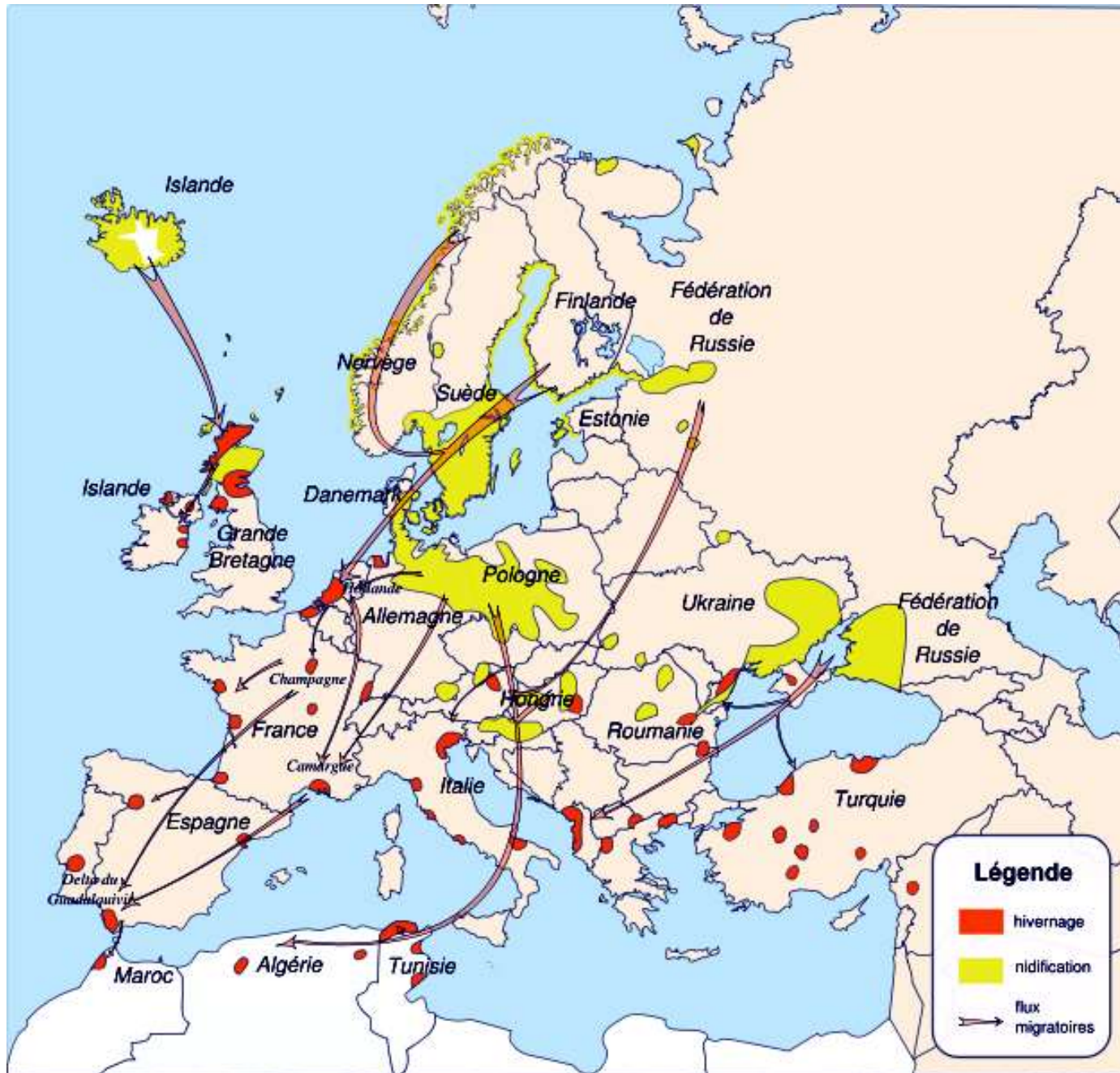
natural factors



10 principal biogeographical regions in Europe

Vegetation diversity





- 1. Location:**
 - Migration route of many species (mostly birds) between N. Europe and Africa.



- **Several times in the last million of years behaved as a “refugium”:** some populations maintained a remanent of a former widespread activity (Last Glacial Maximum, Neanderthal populations).



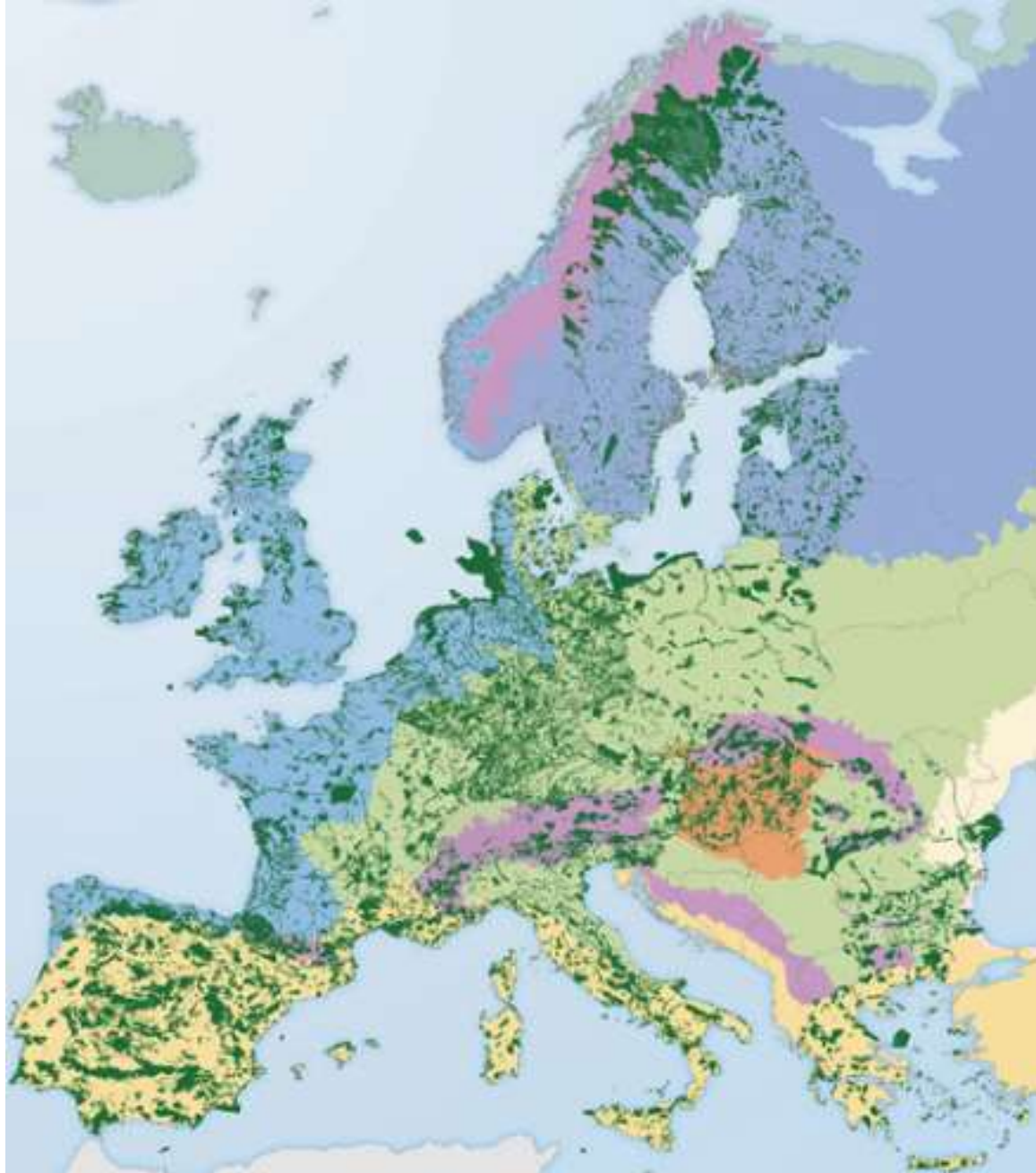
Abies pinsapo fir -European silver fir or silver fir-

- **Some refugia become permanent, thereby having many endemic species, not found elsewhere, which survive as relict populations.**



Western capercaillie (Tetrao urogallus), also known as the wood grouse, heather cock or capercaillie

- **Some refugia become permanent, thereby having many endemic species, not found elsewhere, which survive as relict populations.**



A hot spot of biodiversity

- Biologic (wild and domestic) ?**
- High diversity of habitats:**
- From 226 types of “high interest habitats” (European Union, Directive Habitats), 54% are located in Spain.
 - More than 80% of the total of species of vascular plants and more than 50% of the animal species.
 - 3rd position in diversity of amphibians and fishes.
 - 10.000 different plant species, 6500 autochtonous and 1500 endemic.
 - 50.000-60.000 different animal species, some of them (imperial eagle, Iberian lynx) only live in Spain.

HUMAN FACTORS

1. A long story of human occupation

- Neolithic (6th millennium BC) → 1st agriculture societies (Andalusia) → fire → Cattle raising → urbanization
- Colonization by several people in historical times: Phoenicians (vineyard, olive trees), Greeks, Romans, Arabs (rice, cotton, oranges).
- Relationship with America → potato, maize, tomato, cocoa.
- Delayed industrialization, → conservation of “natural areas” and traditional land uses and practices associated to non intensive agrarian and forest systems.

2. Paradox: today the highest levels in biodiversity are in humanized landscapes, as meadows.

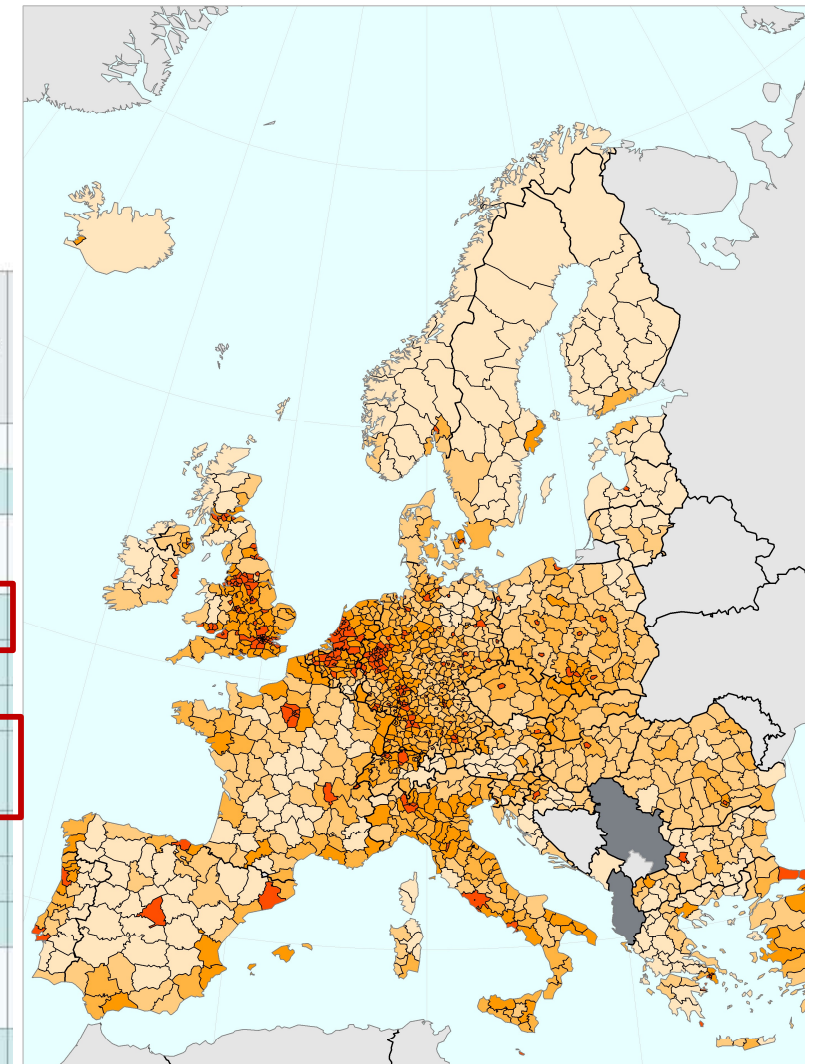
HUMAN FACTORS



Agricultural landscapes

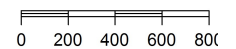
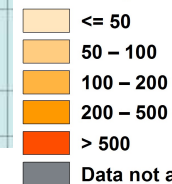
HUMAN FACTORS

Metropolitan area name	Country	OECD Metropolitan areas (2020) ^[1]	City Population Urban Agglomeration (2022) ^[2]	Eurostat Metropolitan region (2019) ^[3]	Eurostat Metropolitan region (2018) ^[3]
Istanbul ^[9]	Turkey	13,719,061	16,500,000	—	—
Paris metropolitan area	France	12,997,058	11,400,000	12,244,807	12,183,893
London metropolitan area	United Kingdom	12,451,423	14,800,000	14,372,596	14,257,962
Madrid metropolitan area	Spain	7,005,286	6,800,000	6,641,649	6,549,520
Berlin	Germany	5,342,958	4,750,000	5,303,846	5,259,363
Ruhr	Germany	5,115,617	5,650,000	5,111,530	5,113,487
Barcelona metropolitan area	Spain	5,105,991	4,900,000	5,575,204	5,514,881
Milan metropolitan area	Italy	4,985,668	6,150,000	4,354,448	4,336,121
Rome metropolitan area	Italy	4,325,591	3,450,000	4,342,212	4,355,725
Athens	Greece	3,526,887	3,500,000	3,561,750	3,576,590
Greater Manchester	United Kingdom	3,399,018	3,100,000	3,712,997	3,695,071
Naples metropolitan area	Italy	3,349,233	4,125,000	3,084,890	3,101,002
Hamburg Metropolitan Region	Germany	3,328,679	2,875,000	3,327,940	3,309,215
Warsaw metropolitan area	Poland	3,209,784	2,375,000	3,053,104	3,025,034
Lisbon metropolitan area	Portugal	3,035,487	2,475,000	2,846,332	2,833,679



Administrative Boundaries
Cartography: Eurostat — I

Inhabitants per square km

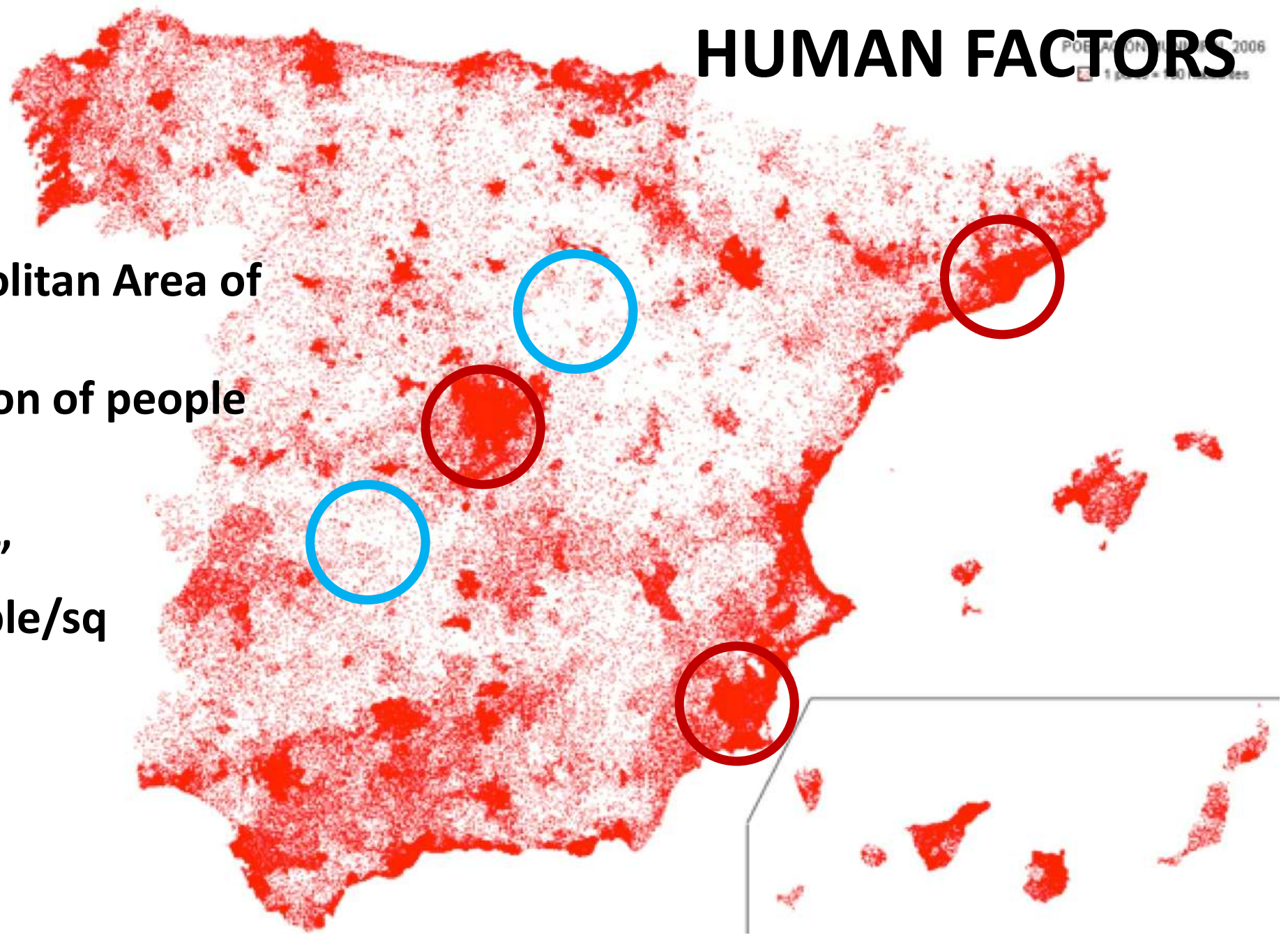


TOTAL POPULATION: 47,42 millones (2021)
7 + 5 = 12 / 47 ~ 25 % of the population (1/4)

HUMAN FACTORS

Metropolitan Area of Madrid
> 7 million of people

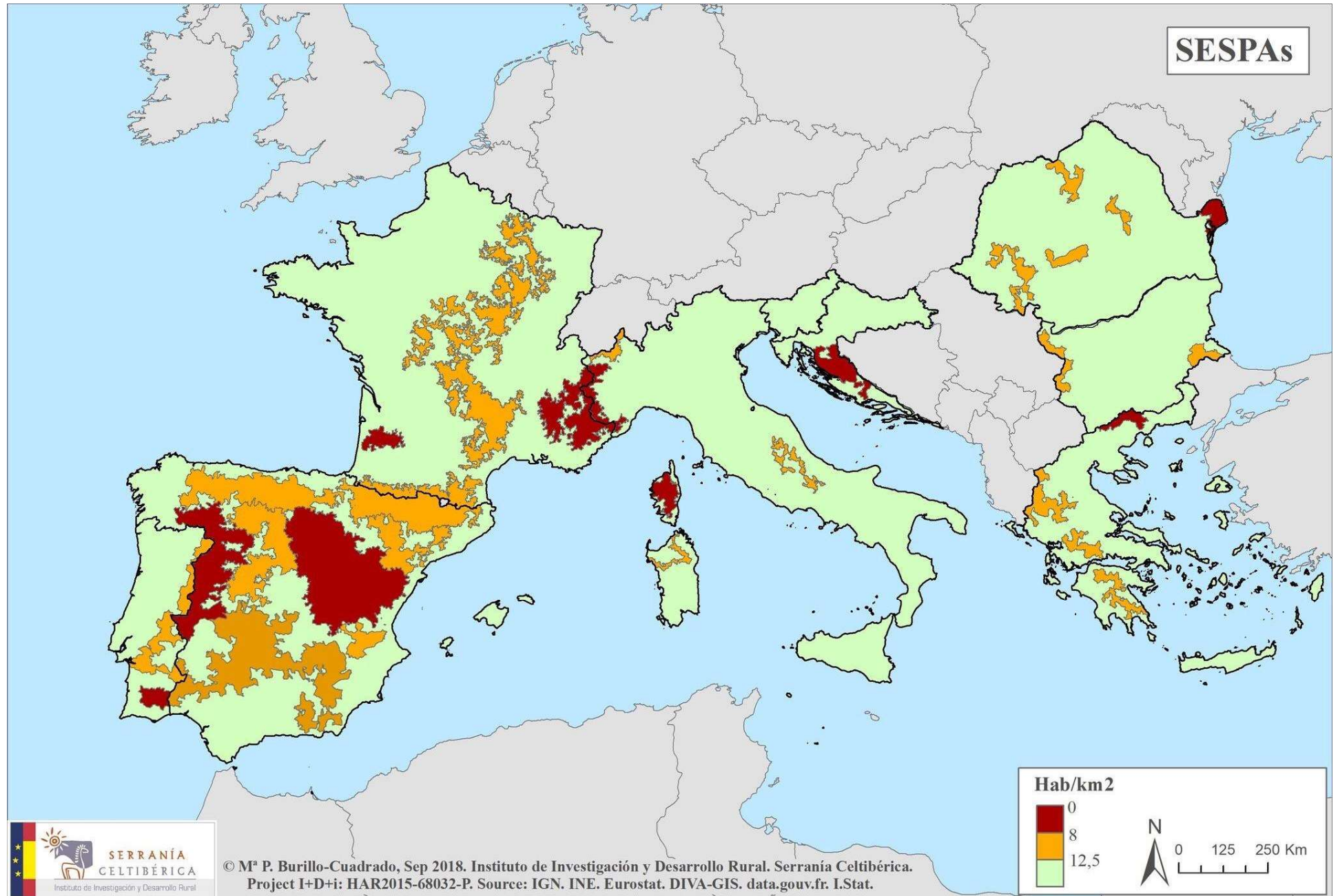
Spanish
“Siberia”
< 2 people/sq
km



High level of urbanization

A contrasted spatial distribution

HUMAN FACTORS



“La España vaciada”

SINGULAR LANDSCAPES



Hornillo Palace

SINGULAR LANDSCAPES



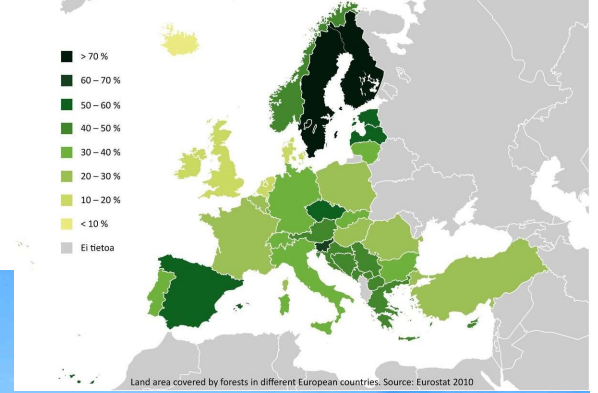
Vixia Herbeira: one of the highest cliffs of continental europe

SINGULAR LANDSCAPES



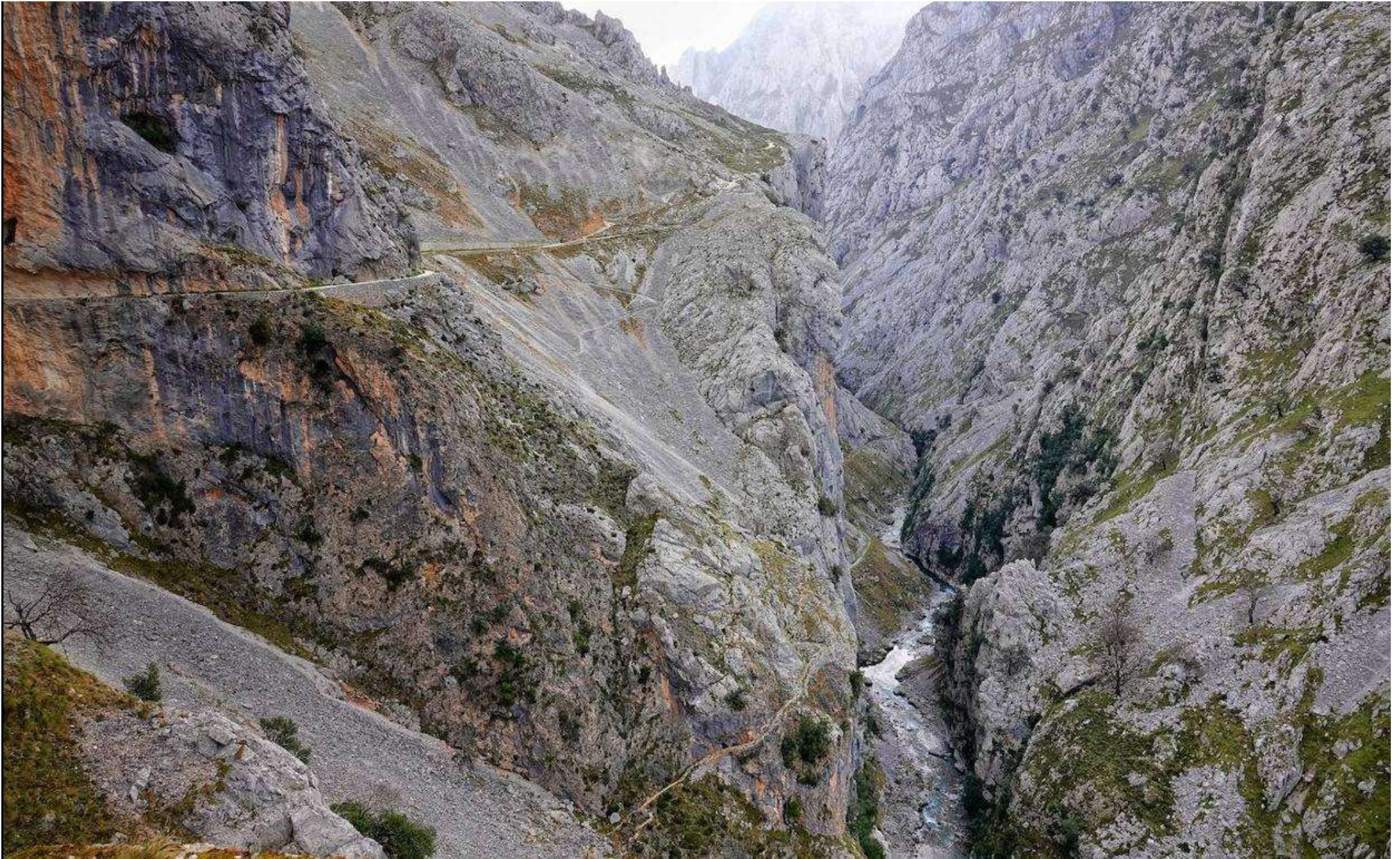
TABERNAS, THE UNIQUE DESERT IN EUROPE

SINGULAR LANDSCAPES



IRATI, THE SECOND LARGEST BEECH FOREST OF EUROPE

SINGULAR LANDSCAPES



CARES GORGE: one of the deepest gorges

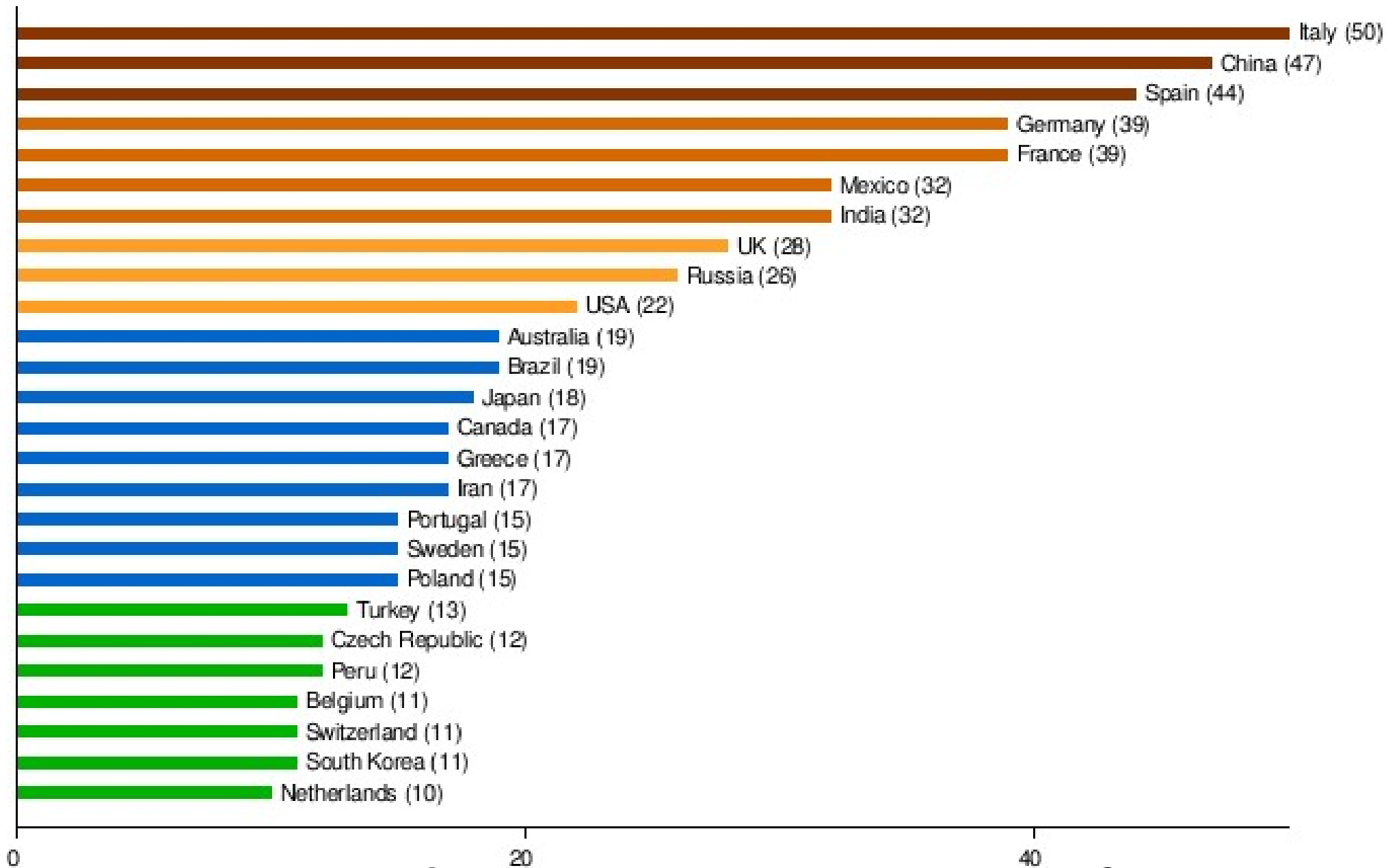
SINGULAR LANDSCAPES



LAS MÉDULAS: an ancient roman mine

Strengths

- I. A huge Natural and Cultural Patrimony.
- II. An *¿acceptable?* level of "artificialization" of the territory
- III. Still possessing many functional ("alive") cultural landscapes, with their agents.
- IV. The biodiversity contributes substantially to our economy and rural development: *hunting, extensive cattle raising, rural tourism,...*

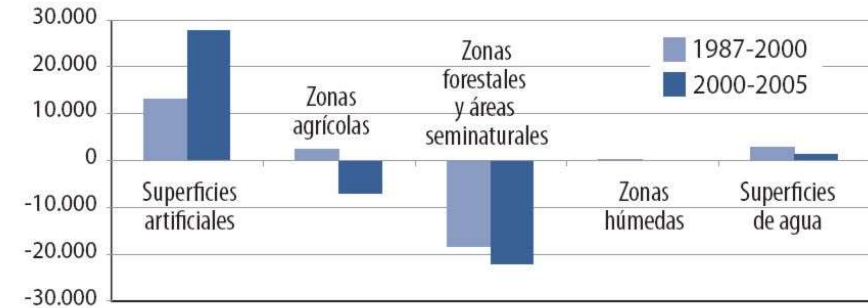


Countries with major concentrations of World Heritage Sites

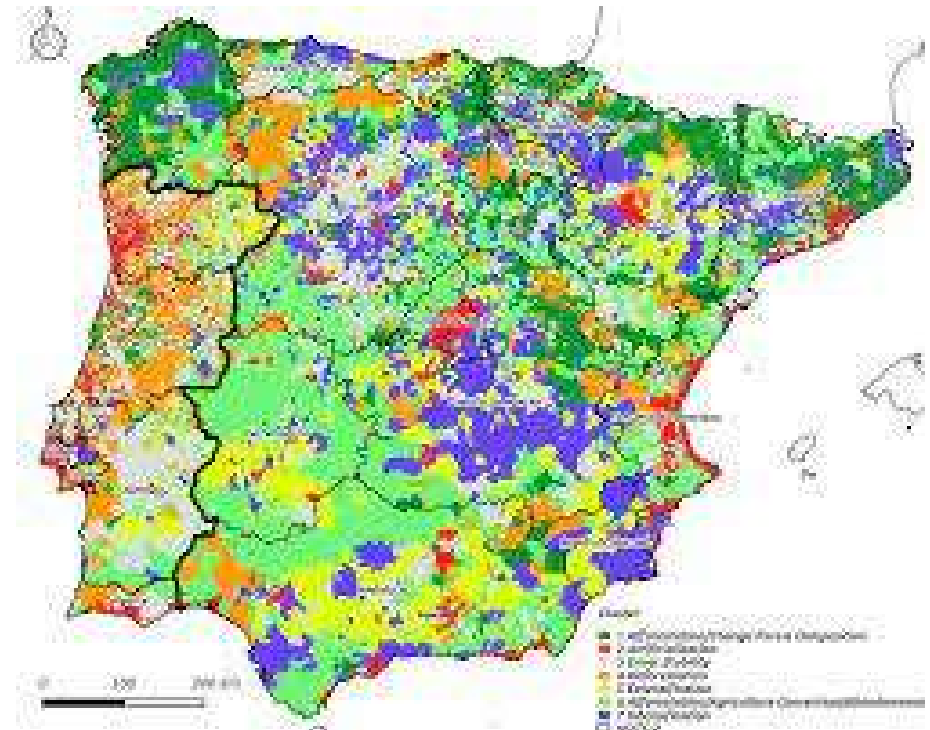
Problems

- I. Insufficient level of knowledge
- II. Strong ecological footprint of some activities.
- III. Artificialization: Wild urbanization
 - <https://youtu.be/0ptvR13hXj4>
- IV. "Too much" to conserve: priorities.

FIGURA 1: MEDIA ANUAL DE HECTÁREAS TRANSFORMADAS EN LOS DOS PERIODOS (en hectáreas)



Fuente: elaboración propia a partir de datos de la referencia [6]



Risks

- I. Change of land uses (administration models).
- II. Reduction of good habitats (*) and/or fragmentation (connectivity loss).
- III. Over-exploitation.
- IV. Fires.
- V. Climate change.
- VI. Alien species.
- VII. Others.



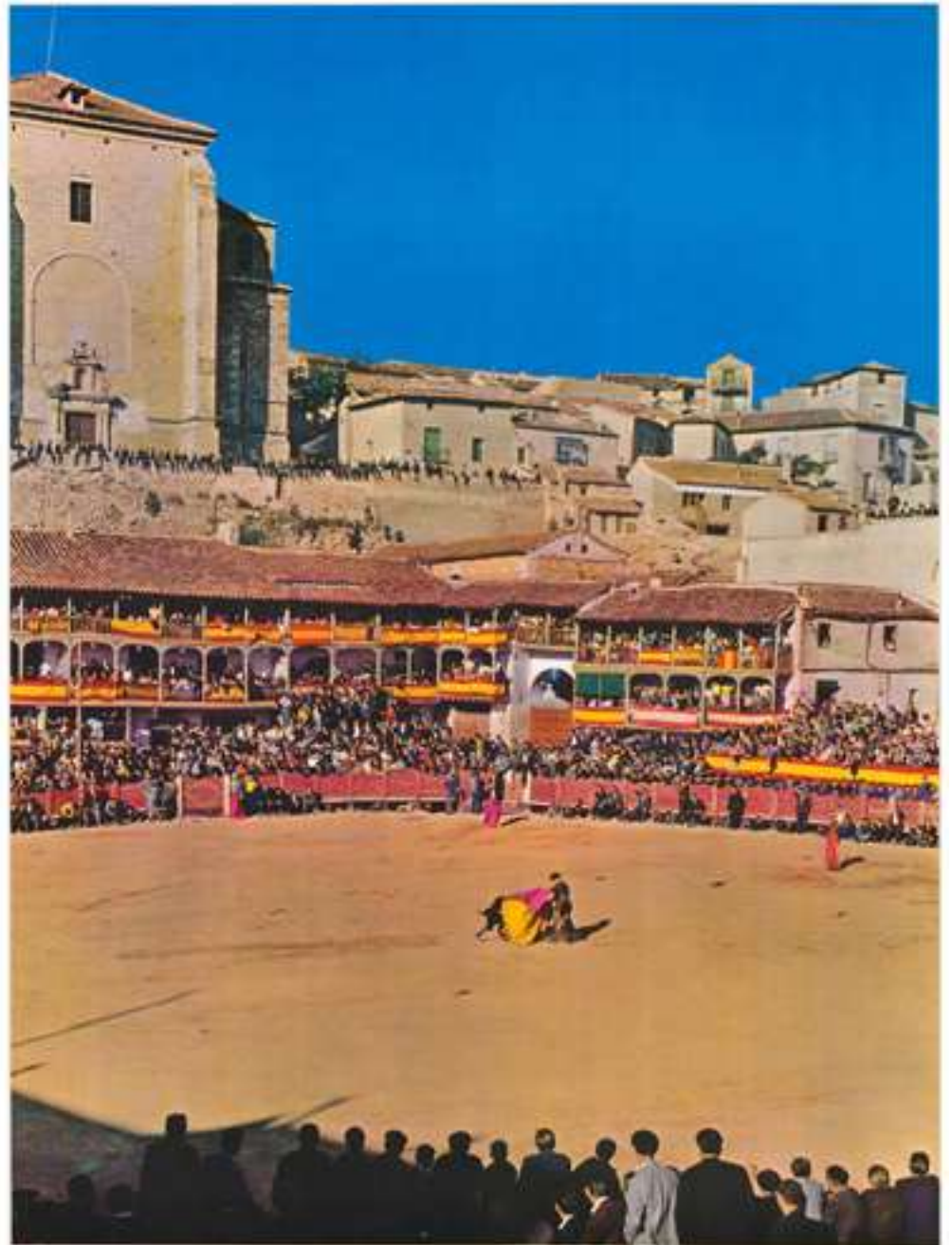


REVUE PHOTO

SPAIN IS "DIFFERENT"
 VISIT SPAIN

Instituto de Estudios
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COPIES OF THE ORIGINAL PRINTED BY TORRES



REVUE PHOTO

Spain is different

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CHANGES IN TIME

- Landscapes might be considered as an **archive**: records the footprint of the relationships between humans and nature, allowing
 - ✓ To know the main **natural features** of a location
 - ✓ To deduce the **prevailing economic model** at each stage
 - ✓ The **territorial culture** supporting the transformation of the environment by each society.
- Since all those aspects vary over time, landscapes do too → spanish landscapes have undergone profound transformations throughout the 20th century.

Gómez-Limón, J. & J.V. de Lucio Fernánde, 1999. Changes in use and landscape preferences on the agricultural-livestock landscapes of the central Iberian Peninsula (Madrid, Spain). *Landscape & Urban Plg.*, 44:4, 165 – 175.

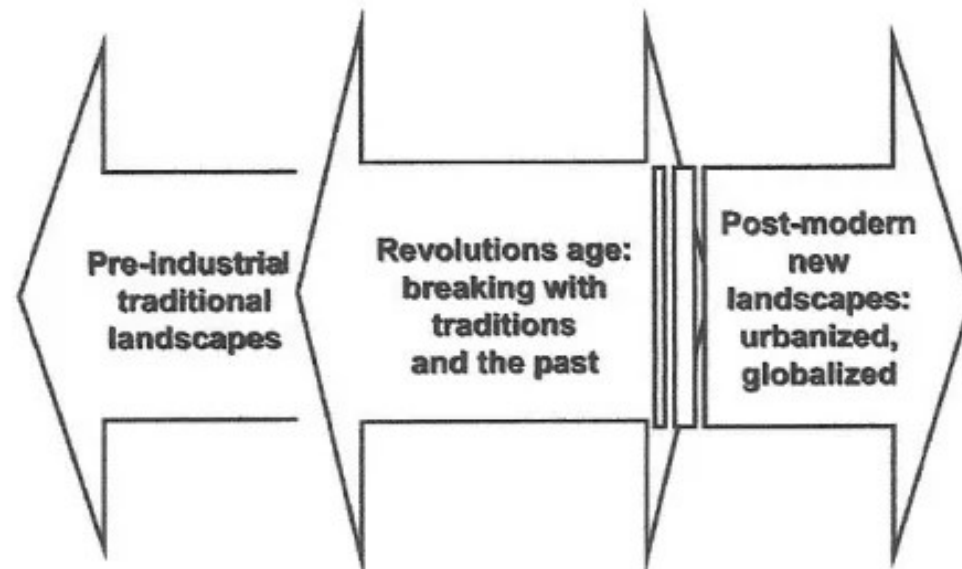
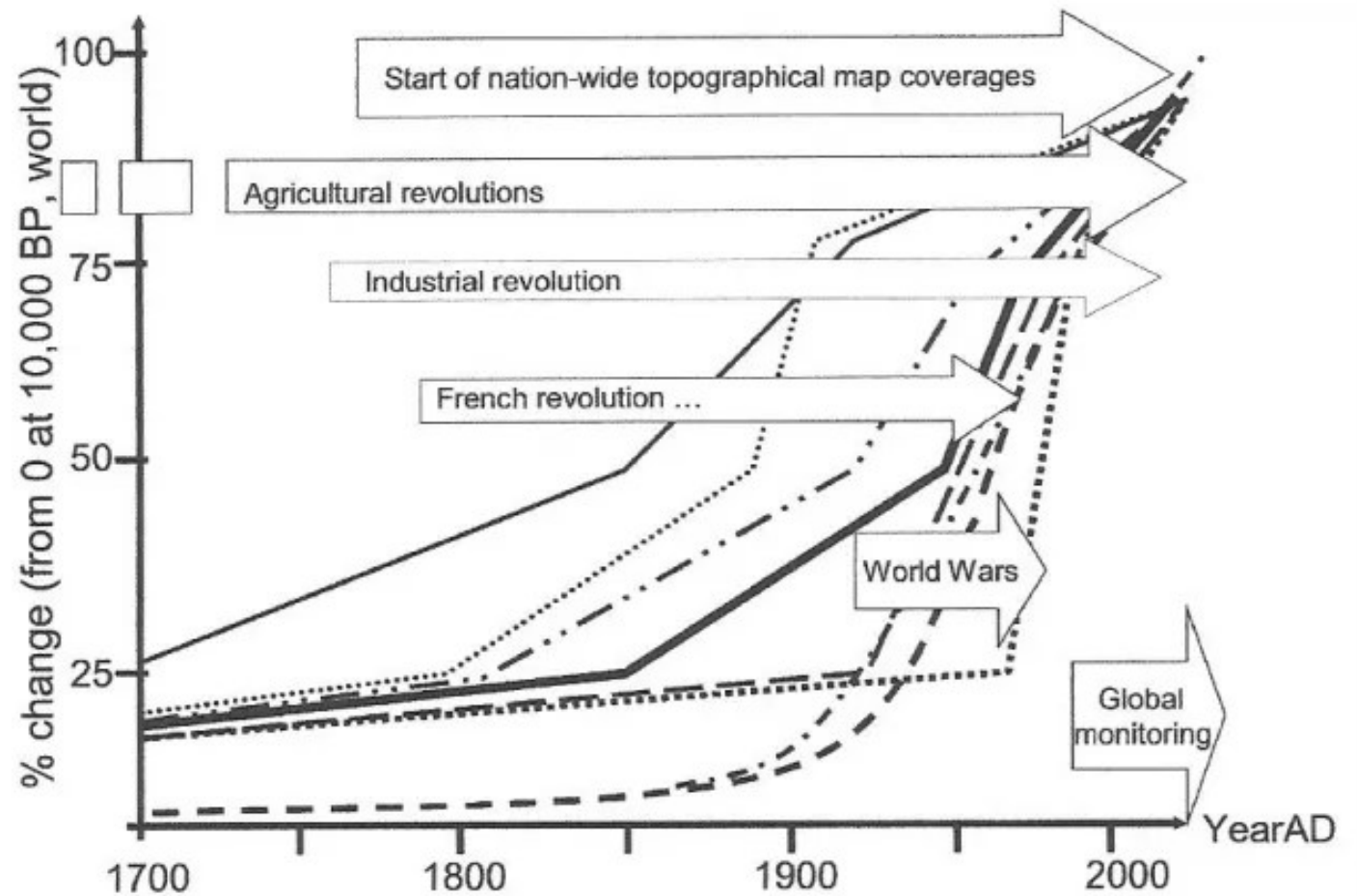


1930



1995

Global periods of landscape change



THESIS

- Spanish landscapes have undergone **deep transformations** throughout the 20th century.
- Which is the **cause?**: the transition from an economic model based on the **Primary sector (agriculture)** to one in which the **Tertiary sector** predominates, based on **services**.

THESIS

- Both the evolution of the urban population and the employed population by sectors illustrate this process of change.
- ✓ At the beginning of the 20th century, almost 70% of the Spanish population lived in rural areas.
- ✓ In 2006 practically 80% lived in towns with more than 10,000 inhabitants.

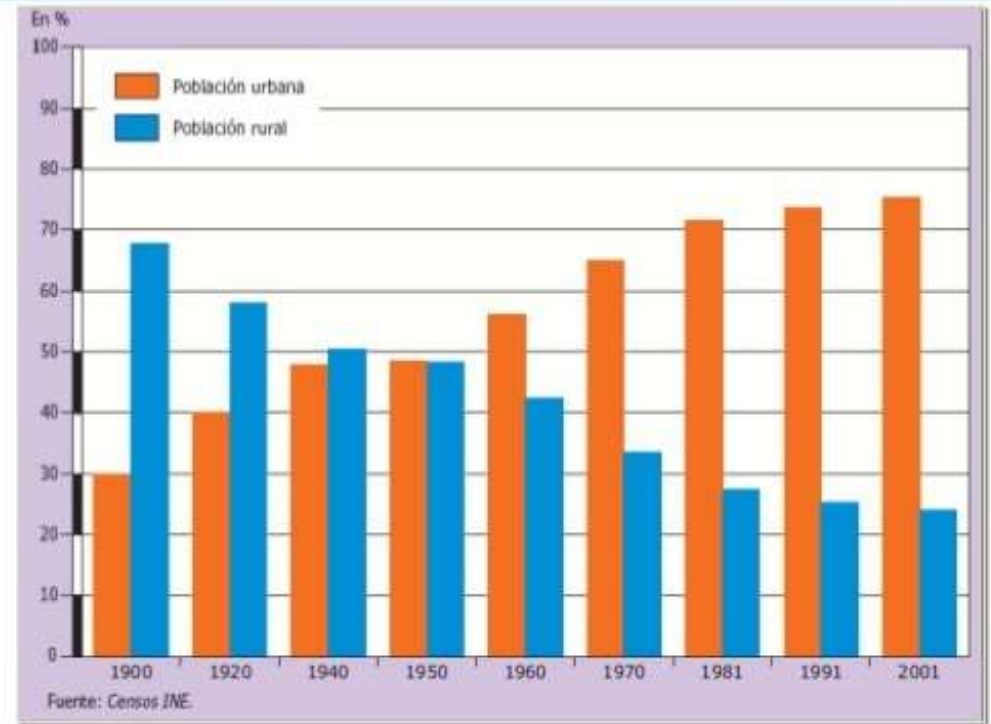
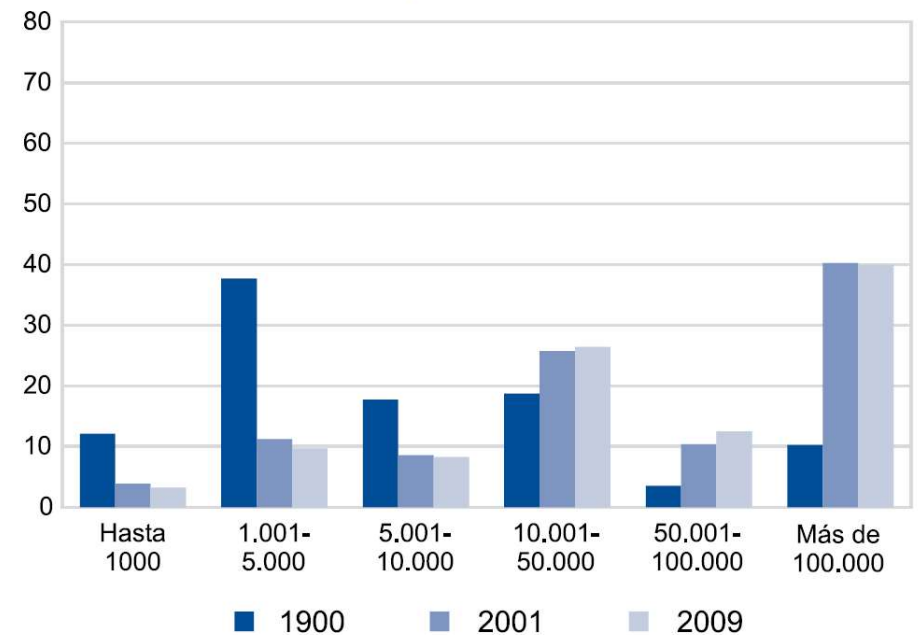


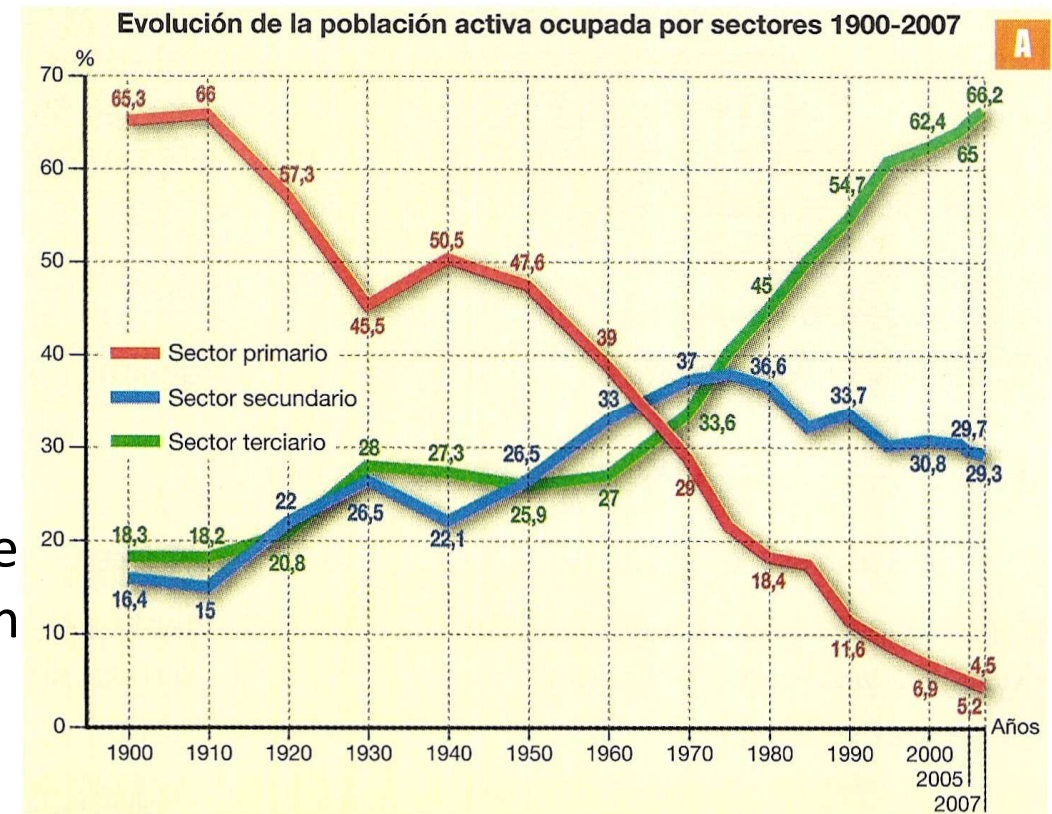
Gráfico 4. Habitantes por tamaño municipal. España. 1900, 2001 y 2009. Porcentaje



THESIS

Working population:

- At the beginning of the twentieth century, 2/3 of employed workers worked in the **primary** sector (agriculture, livestock, fishing and logging).
- By 1970, the predominant sector was the **secondary**: almost 40% of the population was employed in industry.
- From the 80s to the present, 65% of employment and the wealth produced are obtained from the **tertiary** sector (services, tourism).



CONSEQUENCES

- The recent territorial transformations derived from this change of economic model, have Spain **different spatial characteristics**.
- **URBAN AREAS**
 - ✓ **Concentration** of the population.
 - ✓ **Transformation** of the urban peripheries.
 - Growth of **new residential areas** (Suburs).
 - Development of **new infrastructures** (highways, railways etc.).
 - **New leisure facilities**.



CONSEQUENCES

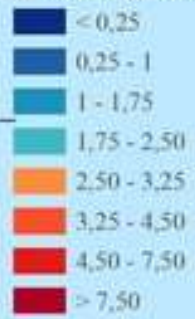
- The recent territorial transformations derived from this change of economic model, have different **spatial characteristics**
- **RURAL AREAS**
 - ✓ **Abandonment of agricultural or livestock activities...**
 - Replaced by new forest landscapes (reforestation policies).
 - Protected some natural landscapes → the current natural and cultural heritage.
 - ✓ **Substitution of traditional polycultures by monocultures**
(pastures for dairy or meat production, eg. Northern Spain).
 - Expansion of **irrigation**.
 - Emergence of **intensive crops based on new technologies**
(e.g. greenhouses).

CONSEQUENCES

- An indicator of these transformations: **land artificialization**:
 - ✓ **Replacement of natural/agricultural land uses** (almost 70% of the new artificial surfaces replaced former agricultural terrains).
 - ✓ **Rapid progression** - short time interval.
 - ✓ **Generalized throughout the whole country**, but especially on the Mediterranean coast and around the metropolitan area of Madrid.

1987-2000

Evolución superficie artificial (% anual)



Media estatal (1,74)

Evolución población 1987-2000 (% anual)



Población municipal (2000)

(Madrid) 2.882.860
(Valencia) 739.014
(Cuenca) 45.707
(Alfarràs) 3.139



CONSEQUENCES

- All those processes:
 - ✓ **Do not induced by demographic** reasons → number of inhabitants have remained stable.
 - ✓ rather by **strong economic development** of the **building industry** (creation of new urban developments, many of them dispersed), as well as by the **tourism**.
- The current territorial model is characterized by the **dispersion of activities and population**, which implies
 - ✓ High **consumption of natural resources** (soil, energy, water).
 - ✓ **Environmental problems**.