Systemic Design Method :

delivering Circular Business Models for regions

RETRACE Interreg Europe Project

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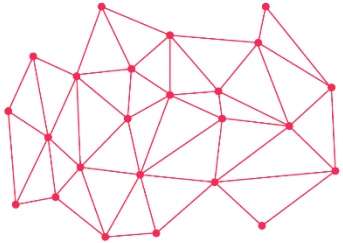
POLITECNICO
DI TORINO

Dipartimento di
Architettura e Design

Circular business models
Policy Learning Platform - Webinar
27th November 2018

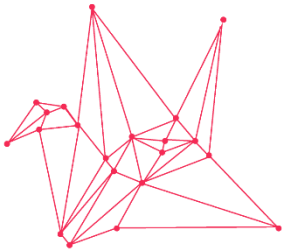
+ Anticipatory Actions for Regions

+ context



+ complexity

Retrace
Interreg Europe



+ implementation

Systemic Design

+ Provides a proper methodology to address the complexity in decision making

+ RETRACE project 2016-2020

European Union
European Regional
Development Fund

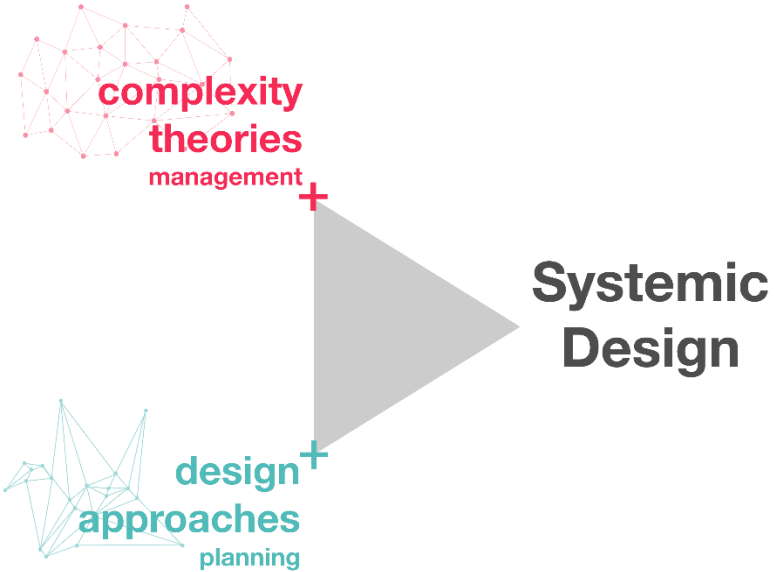
Retrace
Interreg Europe

A Systemic Approach for REgions TRAnsitioning towards a Circular Economy

+ Goal

*Aims at promoting **systemic design** as a method allowing local and regional **policies** move towards a **circular economy** when waste from one productive process becomes input in another, preventing waste being released into the environment.*

+ Background Methodology



output > input
The outputs (wastes) of a system become the inputs (resources) of another one.

Relationships
The relationships developed within the system generate the open system itself.

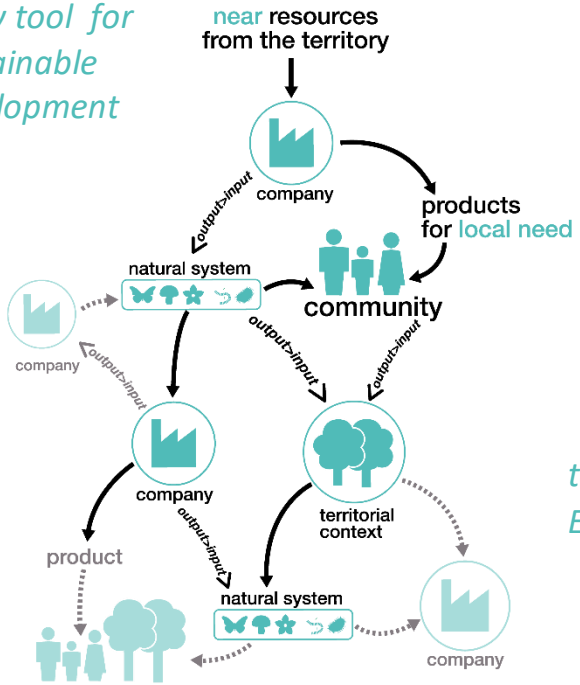
Autopoiesis
The autopoietic open systems are self-supported and reproduced, and they evolve together.

Act locally
The operational context is prioritised.

Man at the center
The relationship between man and context is the heart of the project.

+ Systemic Design towards Circular Economy

A key tool for Sustainable development

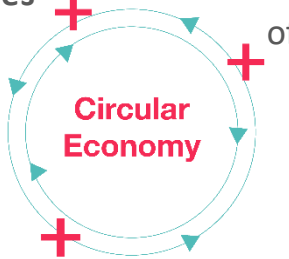


tend to Zero Emissions

*The **Systemic Design** approach provides a **holistic overview** which supports the creation of strategies to enhance future productive systems on transitioning towards a **Circular Economy** .*

Waste are **resources**

Balanced involvement of all **stakeholders**



Local networks

+ RETRACE project methodology

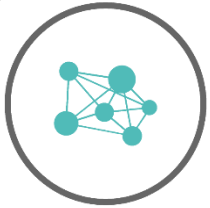
1

Holistic Diagnosis
Qualitative-quantitative analysis

2

Potentialities and Criticalities

3



System Design

4

Analysis of possible results

5

Implementation

6

Results analysis and feedback

+ Holistic diagnosis

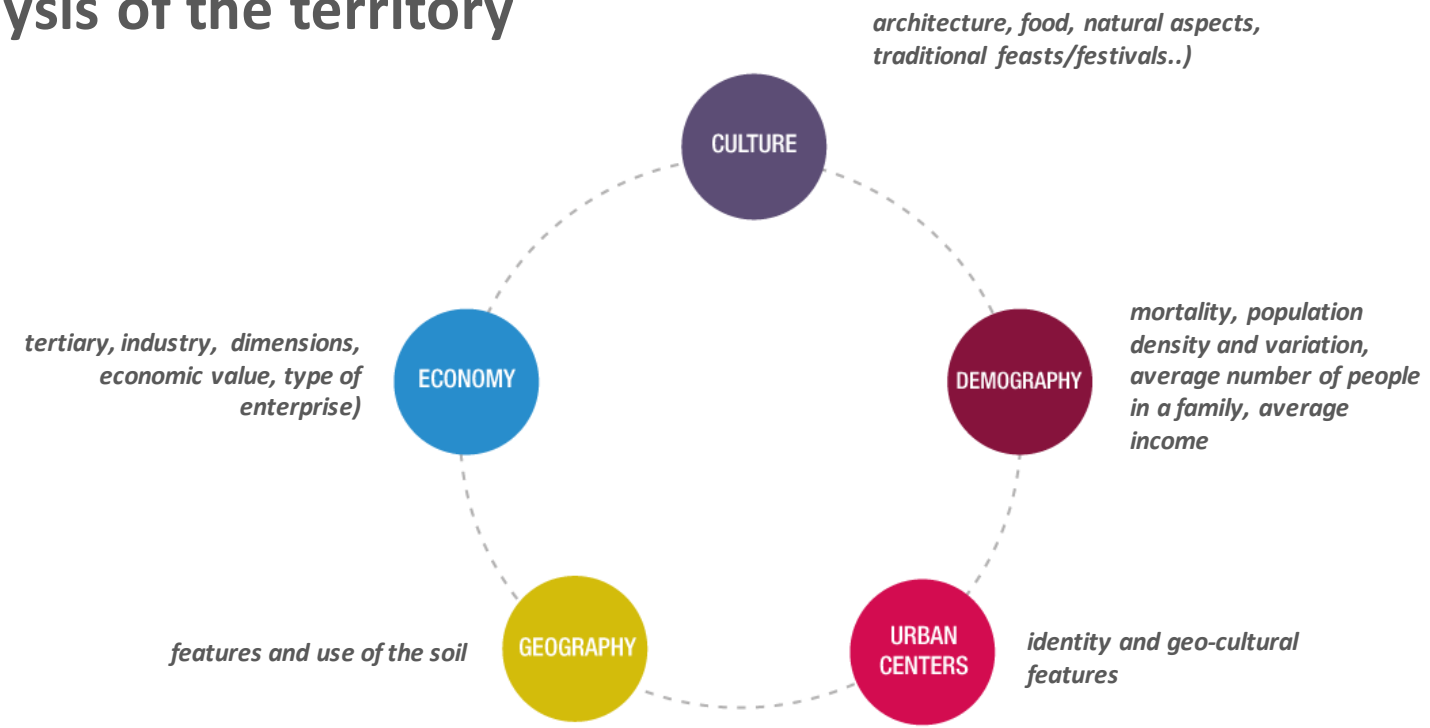
The aim of the Holistic Diagnosis is to **assess the regional framework conditions** in order to **identify policy gaps and potential opportunities** upon which to build supportive policies.

Potential connections will be assessed at two different levels:

- **Territory:** water management, urban waste, energy and environment
- **Economy/Industrial sectors:** each region will select 3 sectors to assess the potential synergies at the systemic level with other sectors or processes at regional/interregional level.

The Holistic Diagnosis should allow each region to better target the **nature and scope of good practices of interest to the region.**

+ Analysis of the territory



Italy

PIEDMONT

TOTAL AREA: **2.538.699 ha**

Mountains
43,3%

Hills
30,3%

Flat area
26,4%

Italy

PIEDMONT

geography

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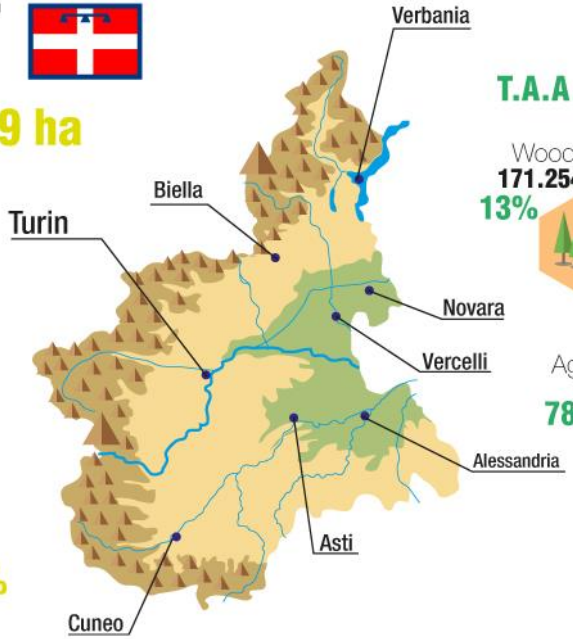


T.A.A (Total Agricultural Area): **1.299.007 ha** **51%**

Woods area **171.254,74 ha** **13%**

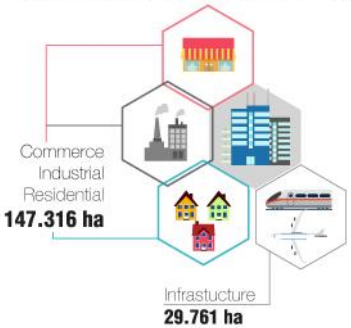
Not used area **62.894,77 ha** **5%**

Fallowed land **15.099,21 ha** **1%**

Agriculture area (U.A.A.) **1.010.779,67 ha** **78%**

Area for pasture **371.350,11 ha**

Artificial area: **183.082 ha** **7%**



Italy

PIEDMONT

TOTAL AREA: **2.538.699 ha**

geography

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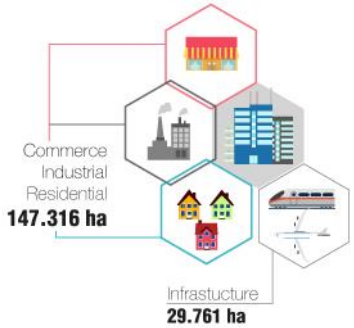
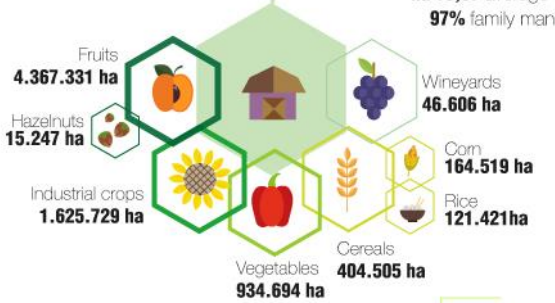


n° 67.148 Crop Farms
ha 19,37 average (SAT)
97% family managed



n° 19.724 Breeding Farms
n° 52 head average
97% family managed

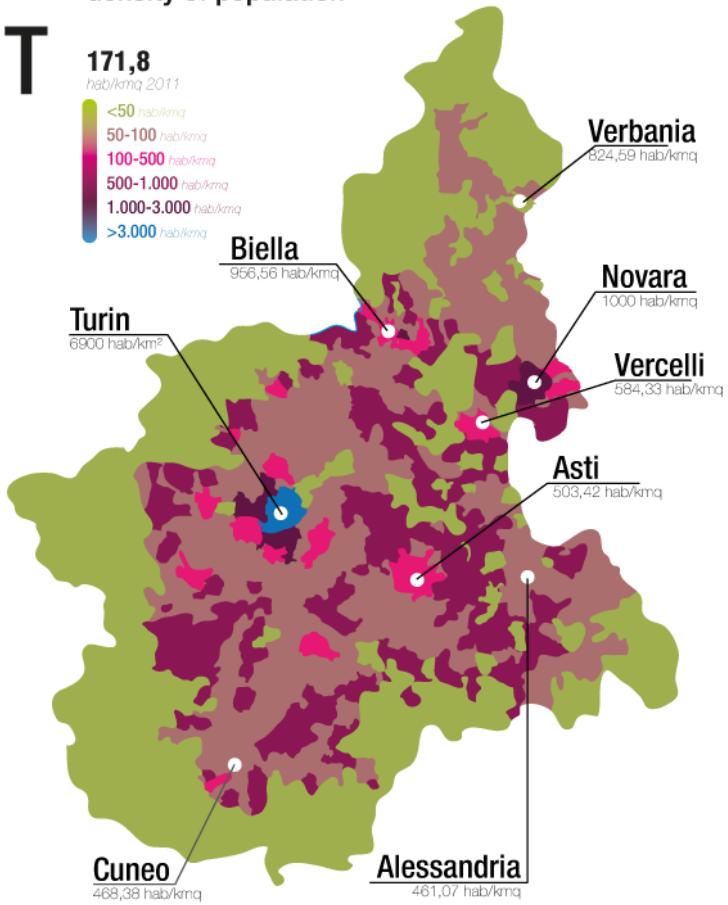
Italy

PIEDMONT

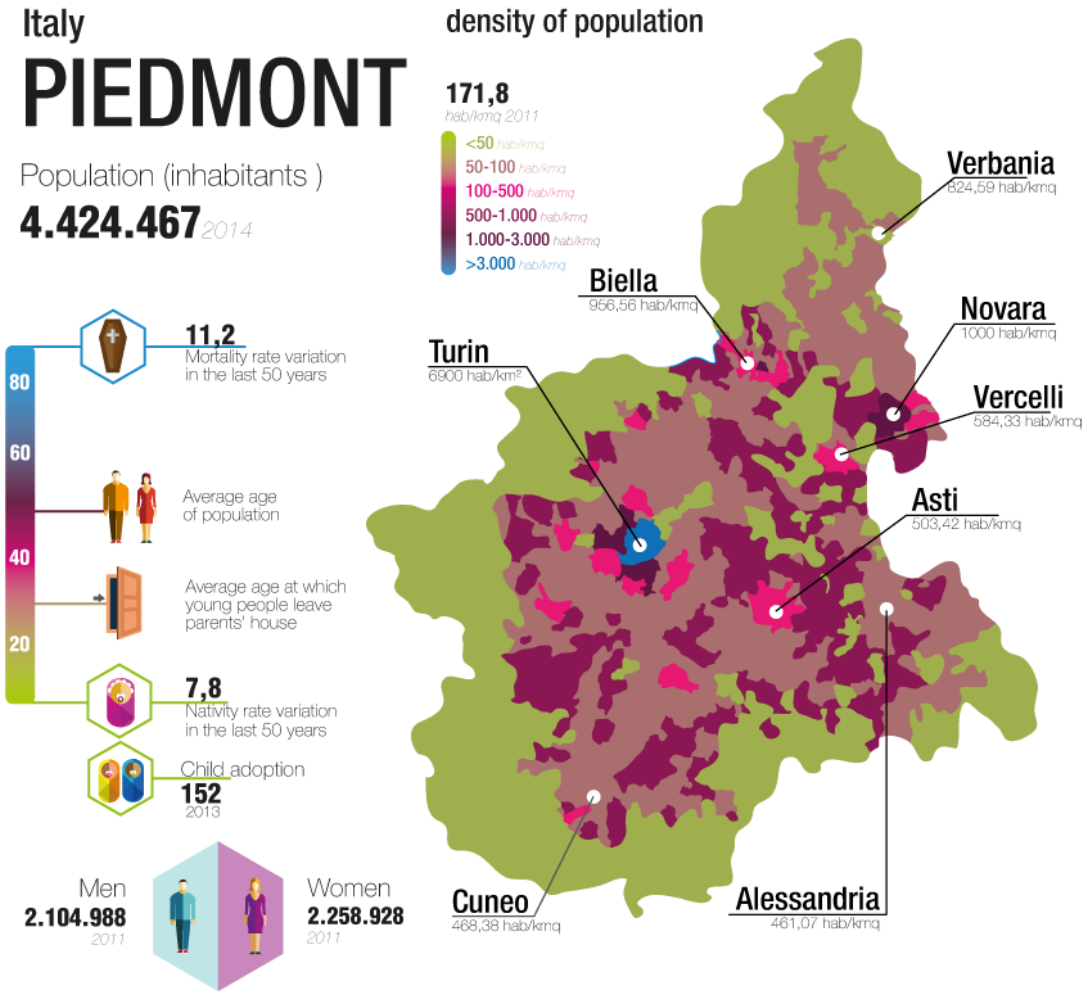
Population (inhabitants)

4.424.467 *2014*

density of population



demography


Italy
PIEDMONT
Population (inhabitants)
4.424.467 2014
density of population
171,8
hab/kmq 2011
<50 hab/kmq
50-100 hab/kmq
100-500 hab/kmq
500-1.000 hab/kmq
1.000-3.000 hab/kmq
>3.000 hab/kmq
Verbania
824,59 hab/kmq
Biella
956,56 hab/kmq
Novara
1000 hab/kmq
Turin
6900 hab/km²
Vercelli
584,33 hab/kmq
Asti
503,42 hab/kmq
Alessandria
461,07 hab/kmq
Cuneo
468,38 hab/kmq
80
60
40
20
11,2
Mortality rate variation in the last 50 years
Average age of population
Average age at which young people leave parents' house
7,8
Nativity rate variation in the last 50 years
Child adoption
152
2013
Men
2.104.988
2011
Women
2.258.928
2011

Italy

PIEDMONT

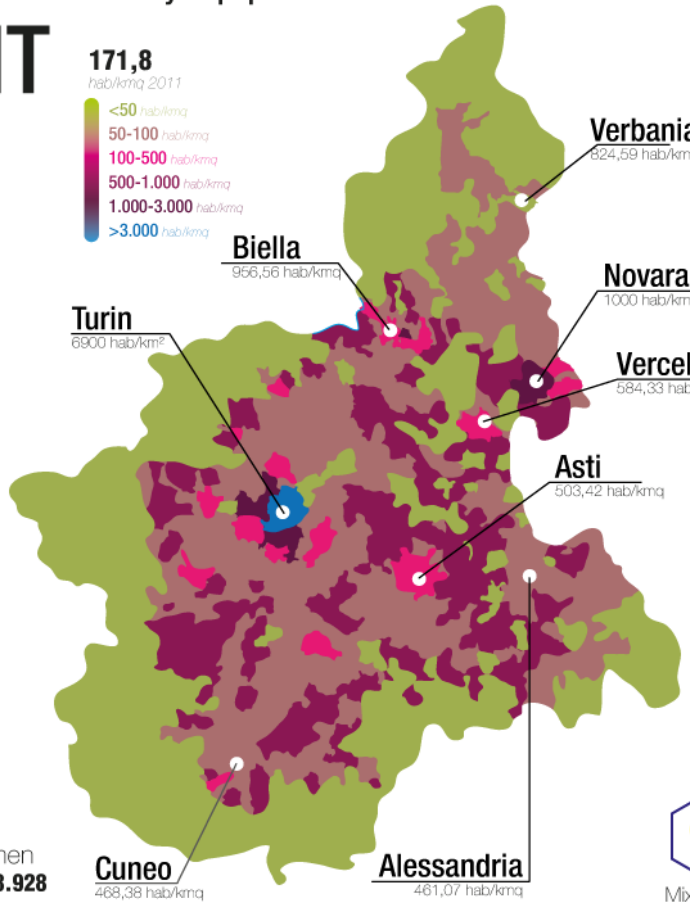
Population (inhabitants)

4.424.467 2014

density of population

171,8
hab/kmq 2011

- <50 hab/kmq
- 50-100 hab/kmq
- 100-500 hab/kmq
- 500-1.000 hab/kmq
- 1.000-3.000 hab/kmq
- >3.000 hab/kmq



demography

11,2
Mortality rate variation in the last 50 years

80 60 40 20

Average age of population

Average age at which young people leave parents' house

7,8
Nativity rate variation in the last 50 years

Child adoption
152
2013

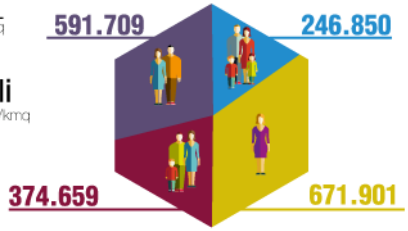
Men
2.104.988
2011

Women
2.258.928
2011

family composition

2,2 Average number of people in a family

TOTAL FAMILY UNITS **1.885.119**



Marrige

Marriages
12.599
2013

Divorces
6864
2014

Mixed
2200
Different Nationalities
2013

Civil
6807
2013

Religious
752
2013

Italy

PIEDMONT

geography

TOTAL AREA: 2.538.700 ha
2010

Mountains **43,3%**

Hills **30,3%**

Flat area **26,4%**

T.A.A (Total Agricultural Area): **1.299.007 ha** 51%
2010

Woods area **181.850 ha** 14%

Not used area **78.000 ha** 6%

Arboriculture **26.000 ha** 2%

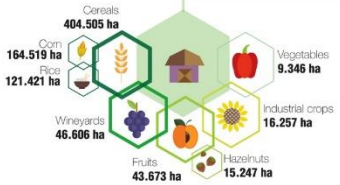
Agriculture area (U.A.A.) **1.013.157 ha** 78%

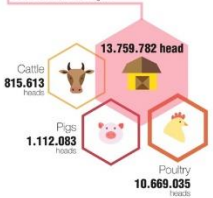
Area for pasture **371.350 ha**

n° 67.148 Crop Farms
15,14 ha average (U.A.A)
97% family managed

n° 19.724 Breeding Farms
n° 52 head average
97% family managed

Artificial area: **183.082 ha** 7%

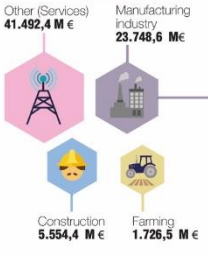




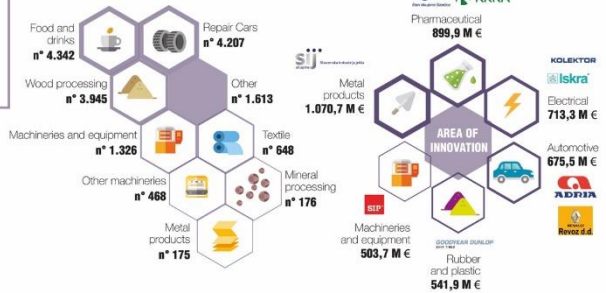
SLOVENIA

economy

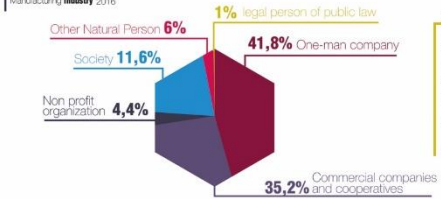
MAIN ECONOMIC / INDUSTRIAL SECTORS



MANUFACTURING INDUSTRY **36.534 UNIT** 2014

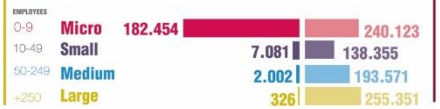


INTERNAL ORGANIZATION OF INDUSTRY
Manufacturing **industry** 2016



NUMBER OF INDUSTRIES
Manufacturing **industry** 2014

NUMBER OF EMPLOYEES
Manufacturing **industry** 2014



Romania

NORTH-EAST

Population (inhabitants)

3.302.217

2011

80 / 60 / 40 / 20

+21% Mortality rate variation *1990-2015*

74 Life expectancy *2012*

40 Average age of population *2016*

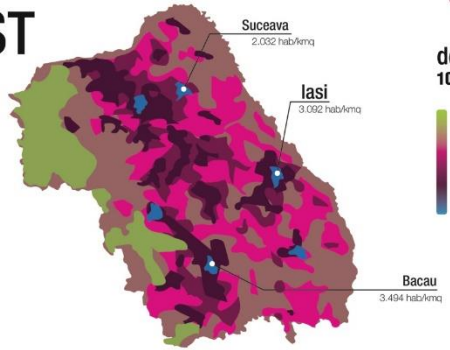
27 Average age at which young people leave parents' house

-47% Nativity rate variation *1990-2015*

Child adoption **-75,37%**

Men **1.622.817**

Women **1.679.400**



demography

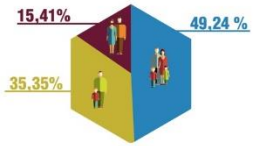
density of population

100,5 *hab/kmq*

- <25 *hab/kmq*
- 25-50 *hab/kmq*
- 50-75 *hab/kmq*
- 75-100 *hab/kmq*
- 100-1.000 *hab/kmq*
- >1.000 *hab/kmq*

family composition

3,61 Average number of people in a family *2008-2015*



marriage

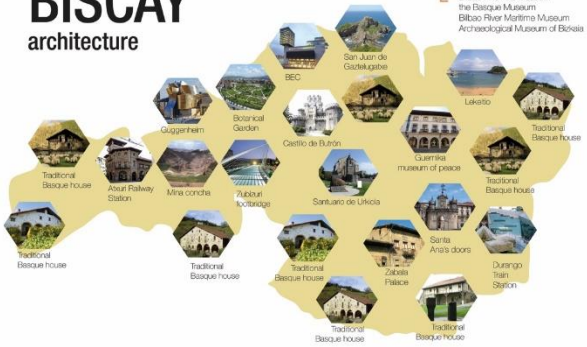
Marriages **20.754** *2015*

Divorces **5.215** *2015*

Spain - Basque Country

BISCAY

architecture



museums

Guggenheim Museum Bilbao
Bilbao Fine Arts Museum
the Basque Museum
Bilbao River Maritime Museum
Archaeological Museum of Bizkaia

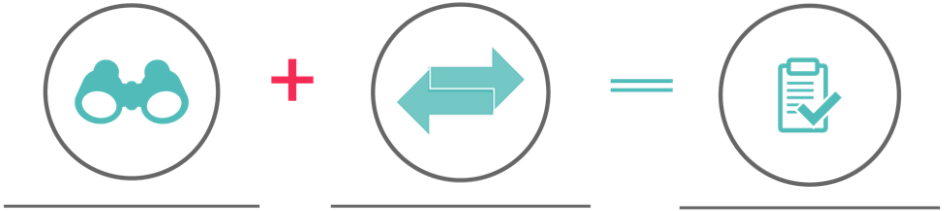
styles/ urban patterns

culture

crafts

craft districts

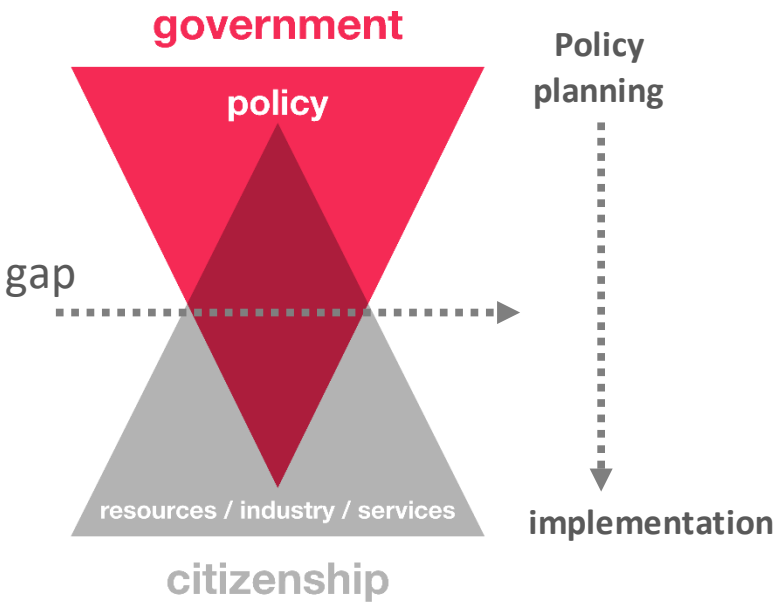
+ Success factors



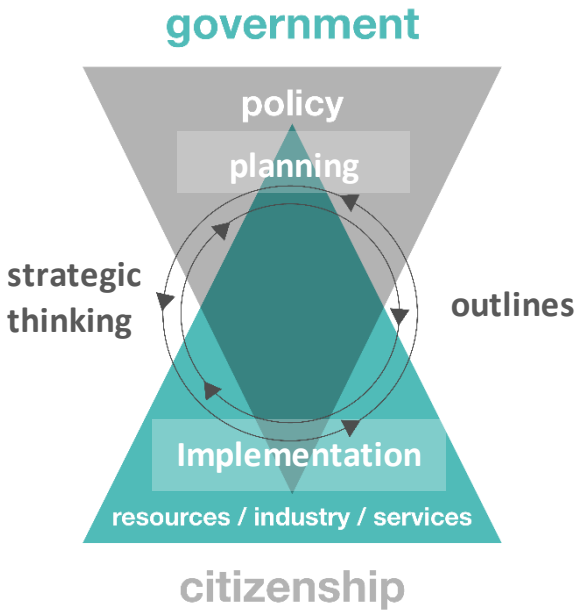
- Accelerates the realization of Systemic Design projects towards an Circular Economy in Europe
- Increases the exchange of Good Practices
- Encourages theoretical and practical debate on Systemic Design and Circular Economy between universities, businesses and public bodies

+ Success Factors

+ Classic top-down approach



+ Policy Design Bottom-up approach



+ Limitations of the Approach

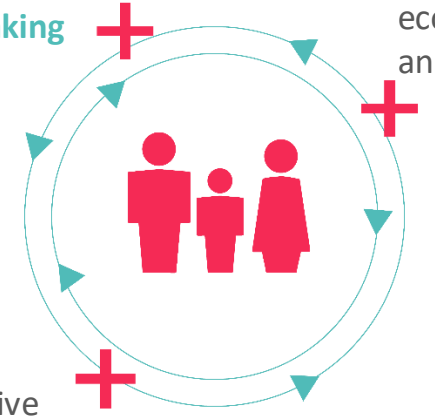
1. *Cultural / Lenguage barriers (english vs native lenguage)*
2. *Data accesability*
3. *Policy Barriers*
4. *Vertical Governance approach*
5. *Traditional business structure*
6. *Lack Knowledge concerning Circular Economy*

+ Advantages for main actors

+ For Policymakers

Delivers a tool for better **decision making**

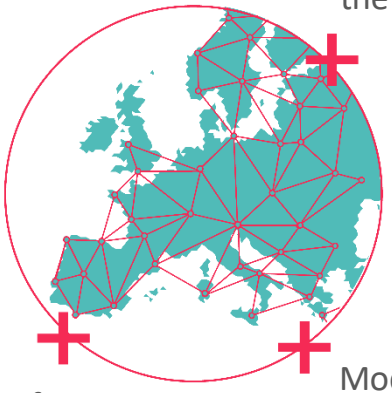
New scenarios of economic profit and cooperation.



Effective **sustainable** development.

+ EU level

Supporting key policy instruments for the EU Commision such as the **Cohesion Policy**.



Territorial thinking part of pan-European policy towards **circular regions.**

Model for policymakers in other regions with common **Policy Gaps** towards a CE.

Thank you!

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