IRPET Istituto Regionale Programmazione Economica della Toscana

AIEAA ASSOCIAZIONE ITALIANA DI ECONOMIA AGRARIA E APPLICATA

# In Search of New Development Models for Inner Areas in the Era of Structural Transitions

*Sabrina IOMMI*

14th AIEAA Conference, PISA 18-20 June 2025
UNIVERSITY OF PISA, DAFE, Polo Piagge

# STRUCTURAL DYNAMICS AND NEW OPPORTUNITIES

- Inner Areas, typically hilly and mountainous regions, **remained on the margins of development processes both during the post-war industrialization** - which took place in major cities and district areas of Central and Northern Italy - **and during the strong tertiarization of the economy in the 1990s**, which exacerbated territorial polarization in favour of major metropolitan areas.
- In both phases of development, peripheral areas experienced **significant depopulation**: intensely during the transition from an agricultural to an industrial economy, and more gradually, though persistently, during the era of tertiarization.
- **This study seeks to address the following question**: **are there new opportunities for Inner Areas in the current phase of development?** Since it is characterised by new constraints - such as an ageing population and environmental sustainability challenges - and by new opportunities arising from technological advances. These innovations are reshaping the delivery of many services and could help mitigate the disadvantages associated with peripheral locations. Furthermore, the natural and energy resources of many Inner Areas could give these them a new strategic role.

# TWO DIFFERENT TYPES OF ANALYSIS, GENERALIZABLE RESULTS

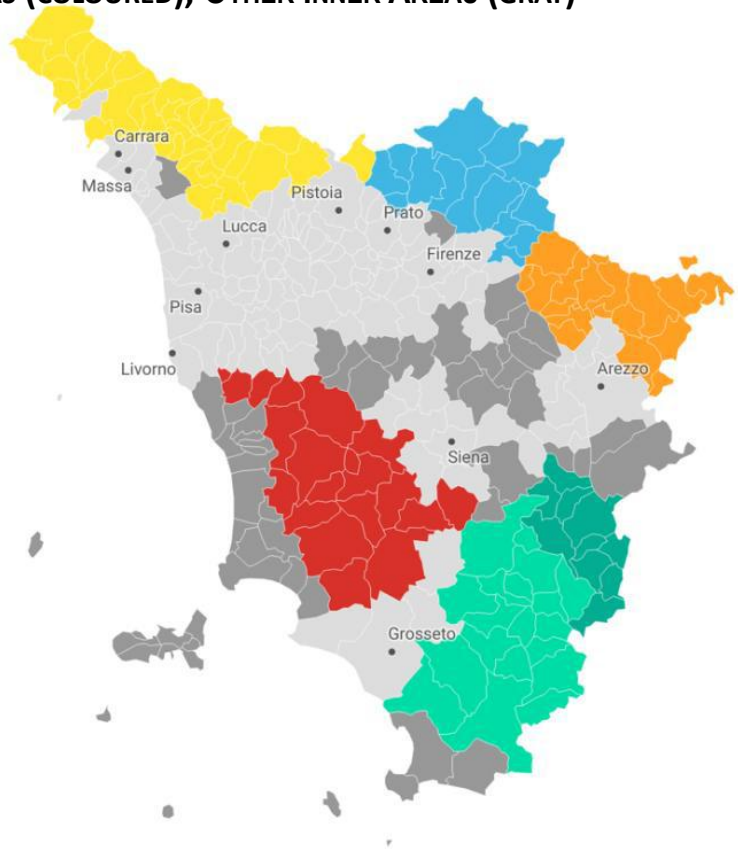
WITH REFERENCE TO THE TUSCAN CASE, WE APPLIED TWO DIFFERENT TYPES OF ANALYSIS:

- a **more traditional one**, that looks at the morphological-settlement characteristics and at the production specializations, that highlights some local strengths and weaknesses;
- a **more innovative one**, carried out through the IRPET input-output model, which looks at supply chains and commuter relations between territories, in the belief that the network of economic relations has a crucial role in promoting locale development.
- The exploration of some **new phenomena** as "**digital nomads**"
- We believe that **the type of analysis** developed and the **considerations** that follow **can be extended to other territories**, outside of Tuscany.

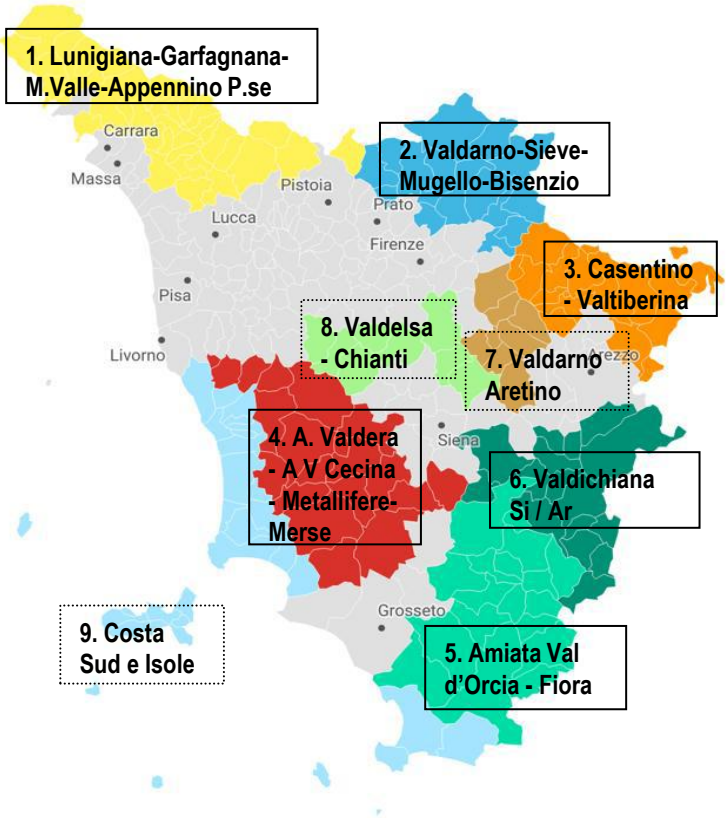
IT IS IMPORTANT TO PAY ATTENTION NOT SO MUCH TO THE INDICATORS OBTAINED FOR TUSCANY, BUT TO THE REASONING THAT FOLLOWS IN TERMS OF DEVELOPMENT POLICIES

# INNER AREAS AND AREAS IN POLICY (SNAI) IN TUSCANY 2021-2027

## SNAI AREAS (COLOURED), OTHER INNER AREAS (GRAY)




## AREAS UNDER ANALYSIS (COLOURED)



# MORPHOLOGY AND SETTLEMENT STRUCTURE

| Macro- areas | Areas under analysis | % Mountain Surf. | % Wood Surf. | % Agricult. Surf. | Inhab. per $Km^2$ | % Pop. in villages | % Pop. landslid risk | % Pop. hydraulics risk | % Pop. earthquakes risk |
|---|---|---|---|---|---|---|---|---|---|
| Northern Areas | LUNIGIANA - GARFAGNANA MEDIAVALLE- APP. P.SE | **100%** | **85%** | 9% | 49 | **64%** | **17%** | **11%** | **100%** |
| | VALDARNO - SIEVE - MUGELLO - BISENZIO | **99%** | **76%** | 18% | **61** | 33% | 5% | **12%** | **100%** |
| | CASENTINO - VALTIBERINA | **100%** | **72%** | 23% | 46 | 38% | 4% | 8% | **100%** |
| Southern Areas | A. VALDERA - A. V. CECINA C. METALL. VALDIMERSE | **64%** | **61%** | 35% | 24 | **47%** | **9%** | 3% | 0% |
| | AMIATA V. ORCIA AMIATA GR. COLLINE DEL FIORA | **68%** | 44% | **52%** | 23 | 34% | **15%** | 2% | 24% |
| | VALDICHIANA SENESE E ARETINA | 25% | 32% | **60%** | **71** | **43%** | 5% | 10% | **39%** |
| Intermediate Areas | VALDARNO ARETINO | 29% | 57% | 32% | **168** | 39% | 4% | **18%** | 0% |
| | VALDELSA – CHIANTI | 23% | 54% | **36%** | **67** | 38% | 3% | 7% | 0% |
| | COSTA SUD E ISOLE | 19% | 46% | **41%** | **122** | 37% | 4% | **12%** | 0% |
| | **TOTAL IA 2020** | **63%** | **59%** | **35%** | **58** | **42%** | **7%** | **10%** | **36%** |
| | TUSCANY | 56% | 52% | 37% | 160 | 25% | 4% | 26% | 16% |

***In red the values above the AI 2020 average***

3 GROUPS EMERGE WITH DIFFERENT CHARACTERISTICS

# PRODUCTION SPECIALIZATIONS AND THE ROLE OF MANUFACTURING

| Macro-areas | Areas under analysis | % Surf. | % Pop. | % GDP |
|---|---|---|---|---|
| North | 1) LUN. GARF. M.VALLE APP. PT | 10% | 3% | 1,7% |
| | 2) ARNO SIEVE MUGEL BISENZ | 7% | 3% | 2,0% |
| | 3) CASENTINO VALTIBERINA | 6% | 2% | 1,3% |
| South | 4) ERA CECINA MET. MERSE | 11% | 2% | 1,1% |
| | 5) AMIATA ORCIA E GR. FIORA | 11% | 2% | 1,1% |
| | 6) VALDICHIANA SENESE E AR. | 7% | 3% | 2,1% |
| Interm. | 7) VALDARNO ARETINO | 3% | 3% | 2,3% |
| | 8) VALDELSA CHIANTI | 4% | 2% | 1,5% |
| | 9) COSTA SUD E ISOLE | 8% | 6% | 4,3% |
| | **TOTAL IA 2020** | **67%** | **24%** | **17,2%** |
| | Rest of Tuscany | 33% | 76% | 82,8% |

**MANUFACTURING ADVANTAGES:**

- more stable and non-seasonal full-time employment contracts;
- higher wages (+20% in the inner areas for the same enterprise size)
- higher demand for services and specialized skills

| *Specialization index (Red > regional average)* | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | Tuscany |
|---|---|---|---|---|---|---|---|---|---|---|
| **Macrosectors** | | | | | | | | | | |
| Agriculture | 1,46 | 1,14 | 3,51 | 4,78 | 7,26 | 3,19 | 1,06 | 3,92 | 1,71 | 1,00 |
| Industry in the strict sense | 1,18 | 1,49 | 1,49 | 0,78 | 0,83 | 0,80 | 1,74 | 1,51 | 0,62 | 1,00 |
| Construction | 1,53 | 1,41 | 1,17 | 1,36 | 0,97 | 1,42 | 1,41 | 1,08 | 1,12 | 1,00 |
| Commerce | 1,01 | 0,94 | 0,92 | 0,75 | 0,77 | 1,11 | 0,87 | 0,91 | 1,06 | 1,00 |
| Hotels and Restaurant | 1,19 | 0,83 | 0,75 | 1,44 | 1,50 | 1,35 | 0,63 | 1,60 | 1,97 | 1,00 |
| PA, Education, Health and Social Care | 1,01 | 0,83 | 0,74 | 1,10 | 0,74 | 0,73 | 0,74 | 0,42 | 0,88 | 1,00 |
| High knowledge Services | 0,65 | 0,63 | 0,69 | 0,64 | 0,51 | 0,81 | 0,77 | 0,62 | 0,72 | 1,00 |
| Other Services | 0,69 | 0,84 | 0,65 | 0,65 | 0,68 | 0,87 | 0,75 | 0,58 | 1,05 | 1,00 |
| **Detailed industrial sectors** | | | | | | | | | | |
| Mining and quarrying | 9,34 | 0,91 | 0,85 | 3,48 | 1,01 | 1,20 | 0,37 | 0,76 | 1,08 | 1,00 |
| Food, beverage and tobacco industries | 1,13 | 2,09 | 2,43 | 1,36 | 2,38 | 1,42 | 1,04 | 2,82 | 1,23 | 1,00 |
| Textile industries | 0,07 | 3,50 | 0,61 | 0,05 | 0,01 | 0,28 | 0,21 | 0,29 | 0,03 | 1,00 |
| Clothing | 0,16 | 0,62 | 1,48 | 0,06 | 0,06 | 0,59 | 0,68 | 0,15 | 0,03 | 1,00 |
| Leather goods | 0,00 | 1,11 | 0,07 | 0,00 | 3,54 | 0,18 | 3,55 | 1,43 | 0,01 | 1,00 |
| Footwear | 0,15 | 0,08 | 0,39 | 0,00 | 0,00 | 0,44 | 5,47 | 1,53 | 0,02 | 1,00 |
| Woodworking | 2,11 | 1,13 | 4,39 | 1,10 | 1,71 | 1,89 | 1,54 | 4,51 | 0,72 | 1,00 |
| Paper, printing and recording | 6,15 | 0,88 | 1,06 | 0,23 | 0,11 | 0,40 | 0,66 | 0,70 | 0,11 | 1,00 |
| Coke and petroleum products | 0,05 | 0,00 | 0,27 | 0,00 | 0,00 | 0,86 | 0,00 | 0,00 | 0,52 | 1,00 |
| Chemical industry | 0,01 | 1,39 | 2,02 | 2,80 | 0,28 | 0,19 | 1,85 | 2,18 | 3,72 | 1,00 |
| Pharmaceutical industry | 6,36 | 0,68 | 0,00 | 0,00 | 0,00 | 0,00 | 1,60 | 0,12 | 0,00 | 1,00 |
| Rubber and plastics manufacturing | 1,93 | 1,30 | 0,99 | 0,70 | 0,06 | 1,28 | 0,71 | 2,49 | 0,80 | 1,00 |
| Non-metallic mineral processing | 1,95 | 0,93 | 3,53 | 2,03 | 0,85 | 1,47 | 1,28 | 1,58 | 0,67 | 1,00 |
| Metal working | 3,96 | 0,19 | 4,28 | 1,17 | 0,27 | 0,24 | 1,18 | 1,03 | 6,01 | 1,00 |
| Metal products | 1,41 | 3,37 | 2,03 | 0,44 | 0,66 | 0,85 | 3,44 | 2,08 | 0,81 | 1,00 |
| Electronics and optics | 0,24 | 2,13 | 0,94 | 0,00 | 0,86 | 1,14 | 6,45 | 0,77 | 0,08 | 1,00 |
| Electrical appliances | 0,08 | 0,68 | 8,02 | 4,27 | 0,00 | 0,19 | 1,51 | 4,30 | 0,04 | 1,00 |
| Machinery and other appliances | 1,95 | 2,69 | 1,89 | 1,32 | 0,20 | 1,51 | 1,31 | 2,76 | 0,26 | 1,00 |
| Means of Transport | 0,13 | 0,46 | 0,32 | 0,04 | 0,00 | 1,25 | 0,14 | 3,86 | 0,38 | 1,00 |
| Furniture manufacture | 0,14 | 1,59 | 2,27 | 0,27 | 2,24 | 0,98 | 1,69 | 3,42 | 0,09 | 1,00 |
| Goldsmith industry | 0,02 | 0,23 | 1,89 | 0,11 | 0,01 | 2,38 | 0,26 | 0,31 | 0,05 | 1,00 |
| Other manufacturing | 0,87 | 2,70 | 0,80 | 0,28 | 0,10 | 0,47 | 1,12 | 0,43 | 0,47 | 1,00 |
| Machinery and equipment repair | 1,05 | 0,58 | 0,63 | 0,96 | 0,20 | 0,64 | 1,11 | 0,55 | 1,87 | 1,00 |
| Electricity, gas, steam | 1,17 | 0,52 | 0,51 | 11,66 | 0,97 | 0,34 | 0,97 | 0,11 | 1,10 | 1,00 |
| Water, sewerage, waste treatment | 0,97 | 1,79 | 0,64 | 0,98 | 0,61 | 0,79 | 1,15 | 0,15 | 1,34 | 1,00 |

# TOURISM

| | Tourists 2019 | Tourists per Kmq2 | Tourists per inhab. | % Tourists |
|---|---|---|---|---|
| 1 Lunigiana-Garf.-M.Valle-.P.se | 558,365 | 247 | 5.0 | 1% |
| 2 Valdarno-Sieve-Mug-Bisenzio | 494,569 | 312 | 5.1 | 1% |
| 3 Casentino-Valtiberina | 286,185 | 208 | 4.5 | 1% |
| 4 Valdera-VCecina-Met.-Merse | 1,057,391 | 403 | 16.9 | 2% |
| 5 Amiata-Valdorcia-Fiora | 950,663 | 363 | 15.5 | 2% |
| 6 Valdichiana Si-Ar | 1,869,605 | 1,144 | 16.0 | 4% |
| 7 Valdarno Aretino | 536,060 | 864 | 5.1 | 1% |
| 8 Valdelsa-Chianti | 1,724,564 | 1,909 | 28.3 | 4% |
| 9 Costa Sud e Isole | 11,021,533 | 6,102 | 49.8 | 23% |
| TOTAL MACROAREEAS | 18,498,935 | 1,199 | 20.5 | 38% |
| OTHER AREAS | 29,917,209 | 3,882 | 10.7 | 62% |
| **TUSCANY** | **48,403,072** | **2,106** | **13.1** | **100%** |

| Types of hospitality Inner areas vs others | Inner Areas | | | |
|---|---|---|---|---|
| | 2009 | 2014 | 2019 | 2022 |
| Farmhouses (agriturismo) | **1.86** | **1.83** | **1.90** | **1.96** |
| 1 and 2 stars Hotels | 0.76 | 0.82 | 0.91 | 0.99 |
| 3 stars Hotels | 0.78 | 0.76 | 0.78 | 0.81 |
| 4 stars Hotels | 0.34 | 0.33 | 0.33 | 0.38 |
| 5 stars Hotels | 0.42 | 0.44 | 0.47 | 0.43 |
| Touristic Residences | **1.28** | **1.39** | **1.43** | **1.45** |
| Camping | **1.26** | **1.20** | **1.16** | **1.17** |
| Residences and Villages | **1.97** | **2.74** | **2.58** | **2.93** |
| Other | 1.00 | 0.93 | 0.90 | 0.84 |
| **Total** | **1.00** | **1.00** | **1.00** | **1.00** |

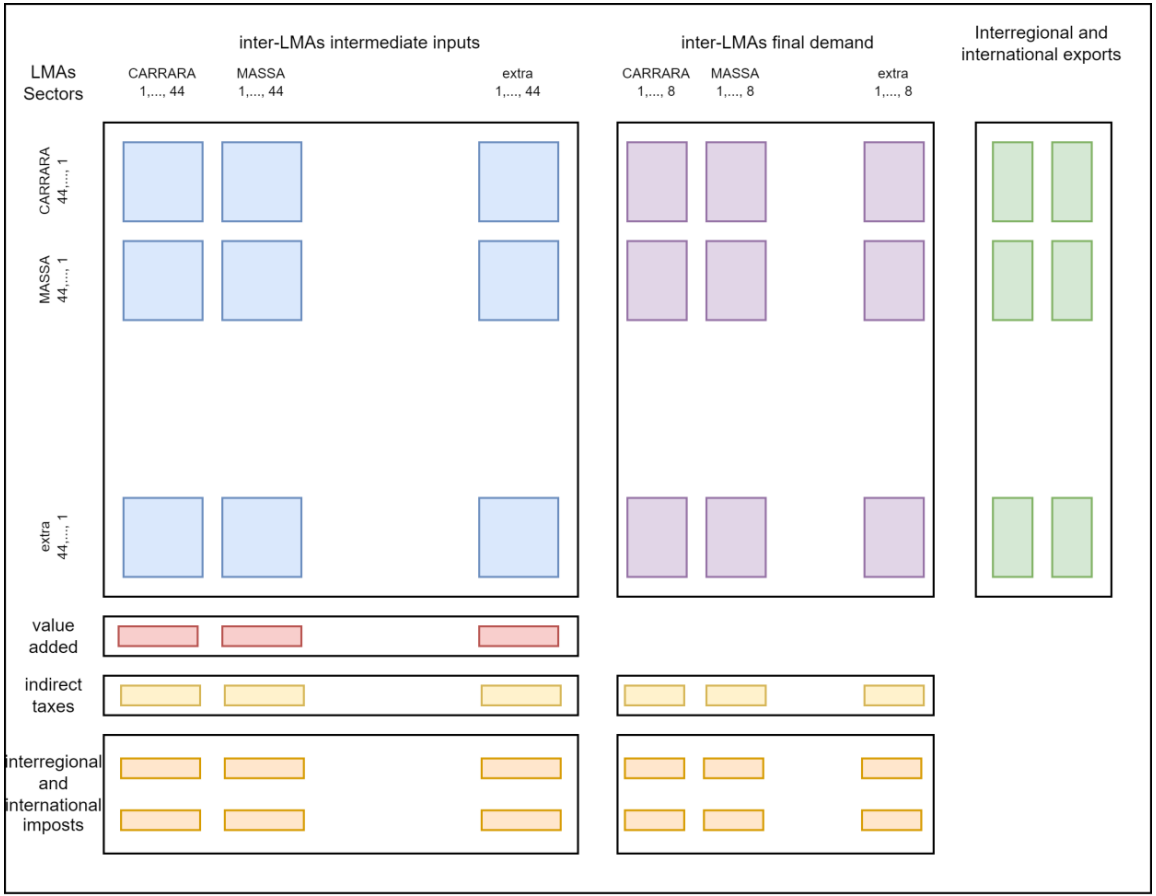
**ORIGINE E DESTINAZIONE DEI TURISTI CHE CAMBIANO AMBITO DI PERNOTTO**

| O/D | Mountain | City of Art | Countryside | Seaside | Total |
|---|---|---|---|---|---|
| Mountain | 4,229 | 392,635 | 224,669 | 181,084 | 802,617 |
| **City of art** | **563,542** | **3,848,555** | **3,634,480** | **1,313,785** | **9,360,362** |
| Countryside | 127,445 | 1,529,612 | 862,135 | 720,090 | 3,239,282 |
| Seaside | 239,385 | 1,469.174 | 949,969 | 595,089 | 3,253,617 |
| Not available | - | 1,678 | 2,479 | - | 4,158 |
| **Total** | **934,602** | **7,241,654** | **5,673,732** | **2,810,048** | **16,660,036** |

**EXPECTED EVOLUTION:**

- development of forms of tourism more attentive to the quality of experiences (landscape, food and wine, culture, health);
- need for investments to improve the physical and digital accessibility;
- need for modernization of accommodation facilities and services offered;
- need for targeted marketing campaigns, recognizable products,
- connection with the main "gateways" of the territory (cities of art)

# INPUT-OUTPUT INTER-LMA IN TUSCANY




- An inter-LMA (Local Market Areas) input-output table is an example of an interregional table in which the region is represented by commuting basins
- The rows track regional sectoral production in terms of its destination (intermediate vs. final demand)
- The columns track regional sectoral production in terms of external (intermediate) vs. internal (value added) contributions.

# TERRITORIAL RELATIONS: DISPERSION OF DEMAND SHOCKS

## DEGREE OF TERRITORIAL CONCENTRATION OF DIFFERENT DEMAND SHOCKS

(*The higher the value, the greater the territorial concentration*)

| | Rapporto 90p/10p di reddito | | | |
|---|---|---|---|---|
| | Shock (Direct Activation) | Value chain (Indirect activation: intermediate exchanges) | Commuting (income distribution) | Value chain+ Commuting |
| Consumi interni | 1.87 | 1.75 | 1.50 | 1.49 |
| Export | 14.10 | 4.97 | 8.17 | 3.75 |
| Low-tech Sectors | 23.07 | 5.72 | 14.46 | 4.85 |
| High-tech Sectors | 44.66 | 7.99 | 9.96 | 5.42 |

*Source: IRPET estimates*

A DEMAND SHOCK TARGETING HIGH-TECH SECTORS, WHICH GENERATE HIGH VALUE ADDED, IS INITIALLY HIGHLY CONCENTRATED GEOGRAPHICALLY (SINCE HIGH-TECH FIRMS ARE FEW AND CLUSTERED IN MAJOR CITIES). HOWEVER, THROUGH SUPPLY CHAIN LINKAGES AND WORKER COMMUTING, ITS POSITIVE IMPACT SPREADS ACROSS MANY TERRITORIES.

# TERRITORIAL RELATIONS: COMPOSITION OF INHABITANTS' INCOME

## COMPOSITION % OF THE INCOME OF INHABITANTS IN INNER AREAS.
## Areas near to cities vs far away areas

| | TOTAL INCOME OF INHABITANTS (EARNED INSIDE AND OUTSIDE) | | PARTIAL INCOME OF INHABITANTS (EARNED OUTSIDE) | |
|---|---|---|---|---|
| | NEAR AREAS | FAR AWAY AREAS | NEAR AREAS | FAR AWAY AREAS |
| From other inner areas | 61.6% | 78.4% | 1.4% | 7.0% |
| From intermediate areas | 4.1% | 8.8% | 10.6% | 37.9% |
| From urban areas | 34.3% | 12.8% | 88.1% | 55.1% |

*Source: IRPET estimates*

INNER AREAS CLOSEST TO CITIES DERIVE MORA THAN A THIRD OF THE TOTAL INCOME OF THEIR INHABITANTS FROM THE LATTER THANKS TO COMMUTING

# EXPLORING NEW OPPORTUNITIES: DIGITAL NOMADS AS NEW INHABITANTS

Based on the indications obtained from the first existing literature, **6 relevant dimensions** have been identified in making a territory attractive for these new workers-travellers:

1) **Digitalization** (a good internet connection is a real essential requirement);
2) **Economic accessibility** (estimated on housing prices) (this can be the real advantage of peripheral areas);
3) **Cultural vibrancy** (measured through the presence of museums, live performances and events, restaurants);
4) **Accessibility to the main transport infrastructures** (airport, train station);
5) **Availability of accommodation facilities** (currently only official ones have been considered in the index);
6) **Scenic and environmental quality** (estimated through the presence of protected areas, agritourism and distance from the coast, as the sea is a strong attraction factor)

The 6 dimensions have then been combined in a **synthetic index of potential municipal attractiveness**.

AMONG THE MOST ATTRACTIVE AREAS WE FIND THE MAIN CITIES (FLORENCE, PISA), BUT ALSO SOME COASTAL AREAS (VERSILIA, GROSSETO COAST) AND SOME VALUABLE COUNTRYSIDE AREAS (CHIANTI, VALDORCIA). DIGITAL NOMADS CAN HELP REVIVE SOME INNER AREAS.

# MAIN FINDINGS

- a **strong heterogeneity** among inner areas, with difficulties in accessing services that do not always correspond to demographic and economic weakness. These areas collectively produce 17% of the regional GDP
- 3 different groups: 1) **in the North**, more mountainous areas, but in some case closer to urban hubs. These are marked by significant residential and industrial settlements and commuter flows to major cities. Manufacturing remains important here, while agriculture and tourism play complementary roles; 2) **in the South**, more hilly areas, less populated, and farther from cities, where agriculture, the agri-food chain, and tourism play a more central role; 3) **intermediated areas**, less disadvantaged, rather populated, with important manufacturing settlements or specialised in tourism, with some service deficit.
- The future of these areas depends on **two main factors**: the availability of **natural capital and skills**, and their **proximity to major urban centers**. In more remote areas, development must come from enhancing local resources; in areas closer to cities, it also involves strengthening commuter exchanges.
- This opens the way for **a broad range of development policies**: improvements to physical and digital infrastructure, investment in skills, support for new production chains (energy, agri-food, new manufacturing, cultural and experiential tourism), and innovation in service delivery models. However, it is crucial to foster the creation of new job opportunities - not just residential settlements - and to **support the formation of small local clusters**, avoiding scattered and isolated interventions.

# WHAT POLICIES FOR INNER AREAS?

**ELEMENTS TO TAKE IN ACCOUNT ARE:**

1) the **morphology of the territory** (mountain areas need more safety interventions than hilly ones and suffer from objectively more difficult mobility conditions, which require investments in infrastructure and technology);

2) the **position with respect to the major urban areas**, because the development of the most decentralised territories with less accessibility to urban centres must rely only on endogenous resources, as opposed to those with easy access to cities;

3) the **levels of settlement**, because places with very low population and very isolated have extremely critical conditions for the supply of public services, which are not found in "intermediate" places, populous enough to justify the adaptation of services;

4) the **local production specialisations**, because they imply different degrees of solidity of the production base. The strongest territories are those that host manufacturing settlements, but they need to guarantee adequate levels of generational turnover, both among employees and entrepreneurs. Many territories have mixed specialisations and could develop useful synergies, for example between agriculture, the agri-food industry and tourism. Finally, in some places, there is potential for development of the energy sector;

5) Finally, depending on the specificities of the individual places, **it is possible to choose between actions aimed at encouraging the location choices of new businesses, enhancing intersectoral exchanges or facilitating the mobility of workers or even a mix of actions**.