

URRUC - Urban-Rural Connectivity in Non-Metropolitan Regions. Annex VI: Case study report. Province of Imperia – Valle Arroscia, Italy

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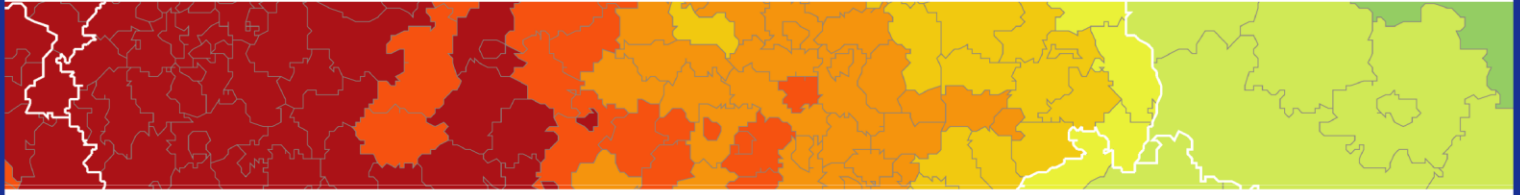
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**Inspire policy making by territorial evidence**



# **Urban-Rural Connectivity in Non-Metropolitan Regions (URRUC)**

Case study report

**Province of Imperia – Valle Arroscia, Italy**

07/06/2019

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## Abbreviations

ALCOTRA	Latin Alps Transboundary Cooperation
DICOTER	Department for the coordination of spatial development
DPR	Decree by the President of the Republic
DRT	Demand Responsive Transport
EC	European Commission
EGTC	European Grouping on Territorial Cooperation
ERDF	European Regional Development Fund
ESPON	European Territorial Observatory Network
EU	European Union
GDP	Gross Domestic Product
GVA	Gross Value Added
ICT	Information Computing Technology
ITI	Integrated Territorial Investment
ISTAT	Italian National Institute of Statistics
LAU	Local Administrative Unit
NMR	Non Metropolitan Region
NUTS	Nomenclature of Territorial Units for Statistics
PACA	Provence-Alpes-Côte-d'Azur
PGT	General Transport Plan
PIITEM	Integrated Thematic Plan
PIITER	Integrated Territorial Plan
PRT	Regional Transport Plan
PTCP	Provincial Territorial Coordination Plan
PTR	Regional Territorial Plan
PUT	Traffic Urban Plan
RT	Riviera Trasporti
SMS	Short Message Service
SNAI	National Strategy for Inner Areas
SNIT	National Integrate System of Transport Infrastructure
SUMP	Sustainable Urban Mobility
URRUC	Urban-rural Connectivity in Non-metropolitan Regions



## Blue Box: Province of Imperia – Valle Arroscia

### CHALLENGES

- Valle Arroscia is mountainous, with very low density and scattered urbanisation, which are typical features of inner areas of Liguria; demand for transport is weak and scattered.
- Old-age index and mortality rate are higher than in the Province and in the Region, also due to a massive depopulation process occurred since the '70s, as people moved from the inland to the main urban poles along the coast.
- The road network is shaped with a comb structure, and most of the sub-valleys are served by a single-road axis, that in case of floods or landslides raises serious accessibility issues.
- Traditional public transport services are inefficient and scarcely competitive, with decreasing public investment. Some services were cancelled and schedules are not coordinated.
- Some user groups are strongly dependent on urban poles, and the ones that are using public transport are those who have no alternatives.
- The territory is being covered with broadband, but innovative transport solutions would encounter some skepticism, as local people are not accustomed to digitalisation.
- Public transport provider does not show concrete intention to introduce alternative services.
- The SNAI is offering the opportunity to implement a place-based approach, but capacity for dialogue of local stakeholders to assert their needs with upper-tier institutions is still weak.
- The Region, the Province and Valle Arroscia have different powers and priorities for transport, and vertical coordination is poor; the key link of the Province is missing.
- Public transport law gives some room for change, but the attitude of decision makers is rigid and resistant to change.

### RECOMMENDATIONS

- Some possible alternatives to traditional public transport and to the private car are recommended: feeder; bus on demand; car clubs and ride sharing; service delivery.
- Some non-material cross-cutting actions and structural intervention would make the system more efficient: smart ticketing and digital platforms; territorial mobility management; dematerialisation of services; intermodal passenger transport; intermodal parking facilities.
- Policies should not focus on high degrees of flexibility, as there is not such demand, and they would be targeted to various users and not only to the current market niche.
- Tourism is more a goal than a priority, but dedicated services for tourism, in summer time or in the occasion of events can be implemented incrementally.
- A valley's transport consortium joining forces and resources would ease service provision and give a stronger voice to isolated claims.
- Crossing legislative barriers with more flexibility in applying legal rules and principles is key to allow for a structural change and for the provision of alternative transport solutions.
- A permanent working table fostering interaction among local, supralocal and regional authorities is crucial, to prevent missing links, incoherence and inefficiencies.
- The unique occasion to launch a long-lasting process of improvement provided by the SNAI must not be missed.
- The digital divide must be bridged, in terms of coverage and in terms of competence.

## **Introduction**

This case study forms part of the URRUC project and relates to the territory of Province of Imperia – Valle Arroscia, a non-metropolitan district located in the Liguria Region, Italy. The case study is split into five sections. Firstly, a contextual background of Province of Imperia and Valle Arroscia is presented which contains details of the territorial, economic and social characteristics. This section also provides an overview of the institutional framework for transport and key policies before assessing the current situation surrounding transport provision. Secondly, the case study presents an overview of the urban-rural linkages in Province of Imperia and Valle Arroscia with a specific consideration of access to services and travel-to-work patterns. Thirdly, the key transport challenges for Valle Arroscia are identified as inland-coast connectivity, territorial assignment, deep-rooted marginalisation process, weak vertical coordination and missing link between regional and local authorities. Fourthly, operational, specific and general recommendations are outlined based on the analysis of best practices and of the operational, specific and general conditions and challenges. The case concludes with an analysis of flexible transport solutions.

# 1. Contextualisation

## 1.1 Territorial characteristics

The Italian territory is characterised by an historical network of cities and villages spread over the country. In many of the small towns and villages, people's quality of life is affected by their distance from the main cities. They can be labelled with the term 'inner areas', that defines territories characterised by small, sparsely populated municipalities that do not have adequate offers of, or access to, essential services (mostly education, health, and mobility) and are characterised by important environmental (water, agricultural systems, forests, natural and anthropic landscape) and cultural (archaeological and historical settlements, abbeys, museums, etc.) resources. According to Census data, the 53% of Italian Municipalities (4,261) belong to this category, accounting for as much as the 23% of the Italian population (13.54 million inhabitants) and occupying the 60% of the national surface.

Valle Arroscia is located on the Alpi Marittime Mountains, in the northern part of the Province of Imperia, bordering with the Province of Savona on east and with the Piedmont Region on north. It is 245 sq.km wide, and it includes 11 municipalities: Armo; Aquila d'Arroscia; Borghetto d'Arroscia; Cosio d'Arroscia; Mendatica; Montegrosso Pian Latte; Pieve di Teco; Pornassio; Ranzo; Rezzo; Vessalico (Figure 1). All of them are classified by the Italian census as scarcely populated internal mountain areas. Due to its remoteness, Valle Arroscia has been selected by Liguria Region as one of the four Inner Areas to be targeted by the National Strategy for Inner Areas (SNAI), a territorial development strategy introduced by the Italian Government in 2013 (for further details, see section 1.4). Due to this reason, and under the input of Liguria Region, Valle Arroscia has been selected as a case study area in which to investigate challenges and opportunities for improving urban-rural connectivity in non-metropolitan regions.

The Province of Imperia (NUTS 3) is part of the Liguria Region (NUTS2). Liguria Region is a coastal region of Italy that features seaside towns located near hilly and mountainous areas (Table 1). The Region is 5,416 sq.km wide and host 1,565,307 inhabitants, located in 234 municipalities (Figure 2). It is administratively divided into 4 provinces (NUTS3): Metropolitan City of Genoa (67 municipalities, 850,071 inhabitants, 1,833 sq.km); Province of Savona (69 municipalities, 279.408 inhabitants, 1.546 sq.km); Province of Imperia (66 municipalities, 215.130 inhabitants, 1.154 sq.km); Province of La Spezia (32 municipalities, 220.698 inhabitants, 881 sq.km).

Although Valle Arroscia covers about a quarter of the Province of Imperia, only 2% of the provincial population live there; the population density is particularly low (17 inh/sqm), while at NUTS3 level (Imperia) it is 186 inh/sqm.

Figure 1 - Valle Arroscia and its municipalities



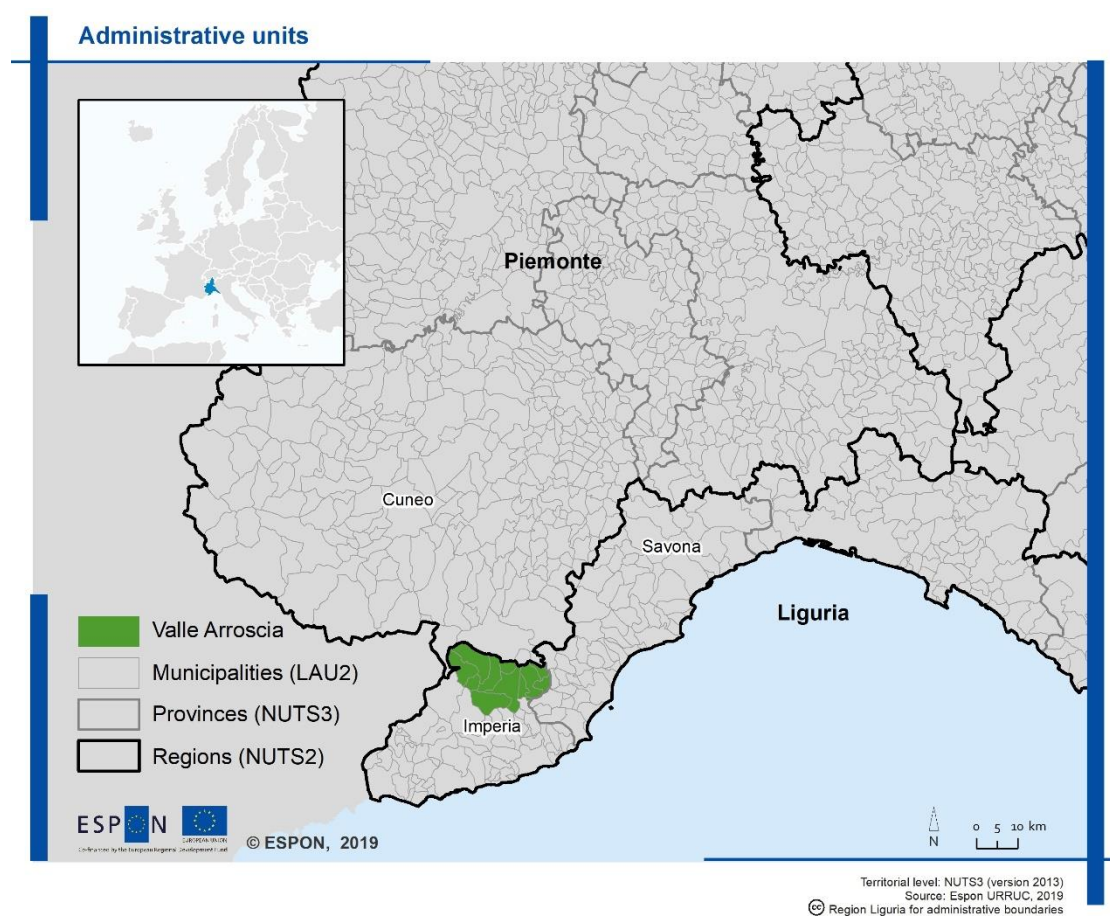
**Source:** Regione Liguria, 2018a

Table 1 - Terrain characteristics of the Province of Imperia and Valle Arroscia

Area	Plain	Hills	Mountain
Valle Arroscia	-	-	100%
NUTS3-Imperia	0%	55%	45%

**Source:** 2011, census data

Map 1 - Administrative units



**Source:** Nordregio elaboration on ISTAT data

## 1.2 Social Characteristics

The mortality rate is 18.4 deaths per thousand inhabitants, higher than the values at the provincial (12.9), regional (14.2) and national (10.7) levels (Table 2). This is mainly due to the high old-age index, with 29.6% of the population over 65, compared to 26.6% at the provincial level and 22.3% at the national level. There is also a scarcity of healthcare services in the inland areas, which also impacts upon the mortality rate.

Table 2 - Health

Area	Mortality rate (deaths per 1000 inh.)
Valle Arroscia	18.4
NUTS3-Imperia	12.9
NUTS2-Liguria	14.2
Italy	10.7

**Source:** ISTAT, 2016

Educational attainment is much lower in Valle Arroscia than at the provincial level (66% of population did not benefit from an upper secondary education, 28% left before tertiary education and only 6% of the population has a tertiary qualification). At the provincial level, the values are respectively 61%, 30% and 9%.

Employment by sector indicates that the primary sector in Valle Arroscia shows higher rates than at the Provincial and national level (Table 3). The secondary sector is higher than that of the provincial level but lower than the national one, and the tertiary sector is lower than at the NUTS3 and national level. The unemployment rate (calculated at the NUTS3 level) is higher than the national value (14.4% Imperia; 11.2% Italy) (Table 4).

*Table 3 - Employment by sector (% on total)*

Sector	Valle Arroscia	NUTS3-Imperia	Italy
Primary	12.2%	5.2%	3.8%
Secondary	22.5%	16.9%	26.0%
Tertiary	65.3%	77.9%	70.2%

**Source:** ISTAT, 2017

*Table 4 - Unemployment rate*

	Imperia	Italy
Male	13.7 %	10.3%
Female	15.5%	12.4%
Total	14.4%	11.2%

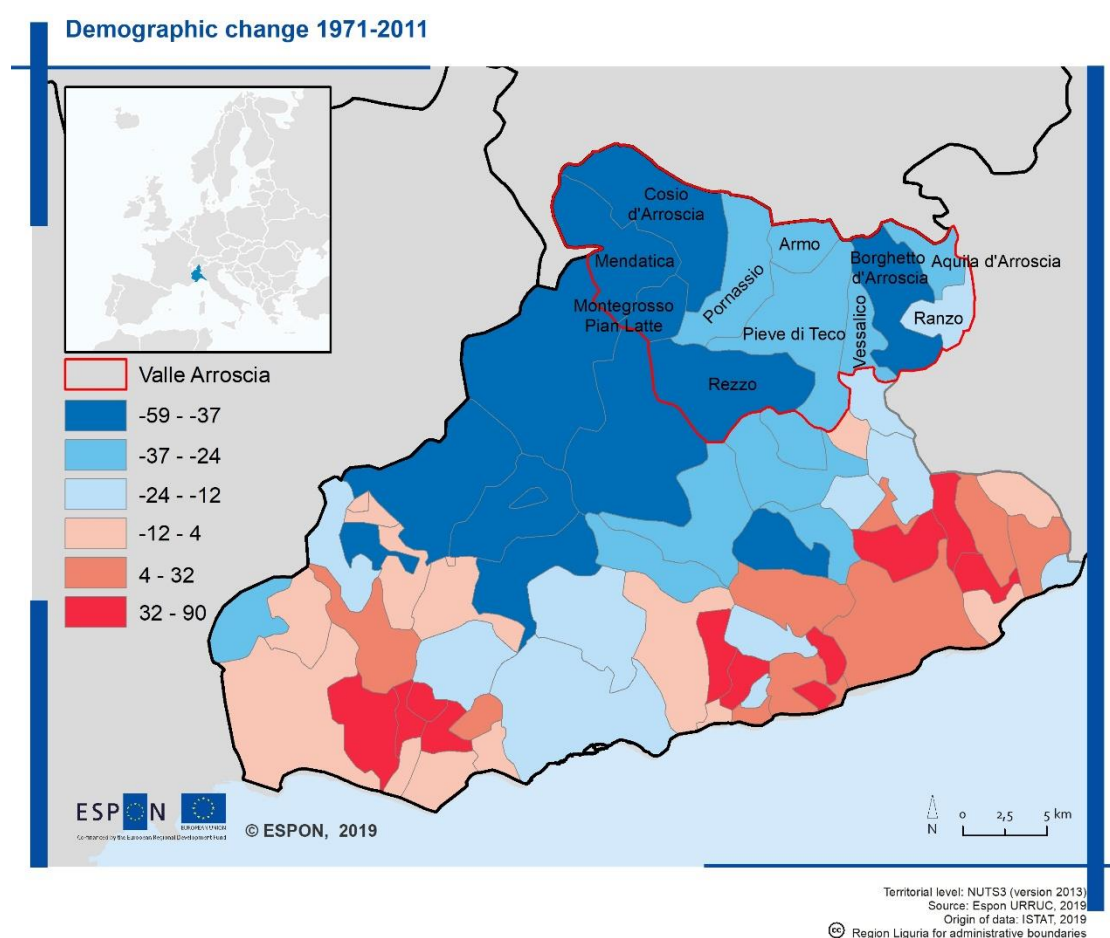
**Source:** ISTAT, 2017

Valle Arroscia is losing population, as people are moving from the inland to the main urban poles along the coast (Table 5). Demographic change is -9.8% from 2001 to 2017, while on average in the whole province it is +1.3%. The migration from the inland to the coast (and in general from minor rural villages to urban areas) has been very consistent during the last few decades (1971-2011; Map 1). Vehicle ownership is lower in the Province of Imperia than the national average (0.58 Imperia, 0.62 national).

*Table 5 - Demographic change*

Demographic change	01-17
Valle Arroscia	-9.8%
NUTS3 – Province of Imperia	+1.3%

**Source:** ISTAT, 2017



**Source:** Nordregio elaboration of ISTAT 2017 data

### 1.3 Economic Characteristics

The Province of Imperia is poorer than the upper levels (Table 6). Furthermore, GDP change in the last decade has been far worse in the Province of Imperia (-12%) than at the NUTS2 (Liguria, -0.5%), NUTS1 (Northwestern Italy, +6.6%) and national level (+4.4%).

*Table 6 - GDP per capita in Valle Arrosia in comparison to the upper levels*

Area	GDP 2007 (M€)	GDP 2016 (M€)	Δ 2007-2016 (%)	GDP 2016 per capita (€)
Valle Arrosia	n.a.	n.a.	n.a.	n.a.
NUTS3 – Imperia	5.713	5.024*	-12.0%	23.341
NUTS2 – Liguria	48.203	47.958	-0.5%	30.638
NUTS 1 – Northwest	514.405	548.585	+6,6%	34.050
NUTS 0 - Italy	1.609.551	1.680.523	+4,4%	27.701

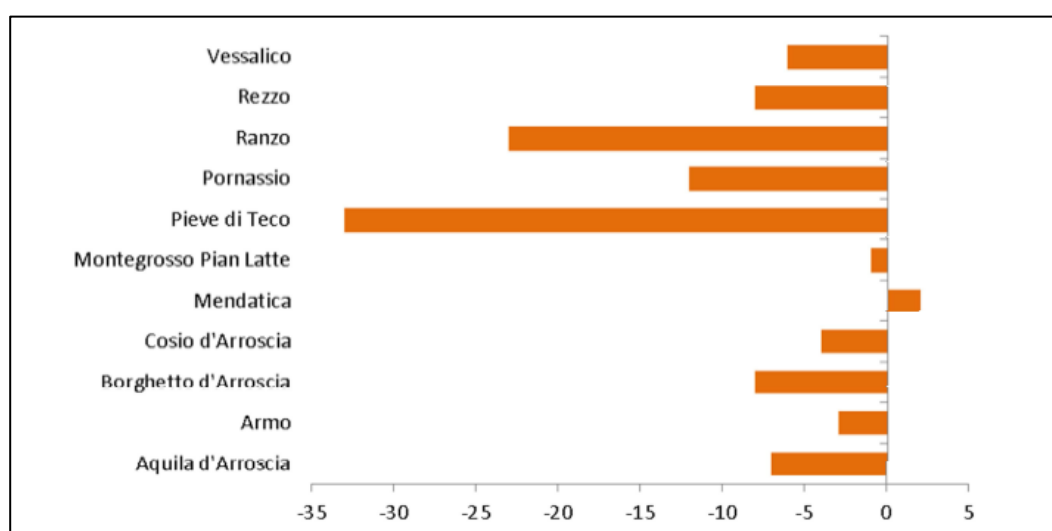


\*2015 last available data

**Source:** Eurostat, 2019

The local productive fabric is mainly composed of agricultural enterprises (37.2%), followed by construction (22.1%) and trade (17.4%) (Table 7 and Table 8). Of the 506 companies surveyed, the majority is concentrated in Pieve di Teco (32%), followed by Pornassio (16%) and Ranzo (14%). In the last ten years, there has been a significant decrease in the number of companies operating in the area, which has affected almost all sectors and especially those most represented (see Figure 2).

*Figure 2 - Active enterprises change 2010-2016 (n.)*



**Source:** Regione Liguria, 2018a

*Table 7 - Industrial mix – Valle Arroscia*

Specialisation index (2009)	Valle Arroscia
Manufacturing activities	0,9
Energy, gas and water	/
Construction sector	2,4
Business	1,0
Other services	0,7

**Source:** Technical Committee for Inner Areas, 2014



Table 8 - Activities by sector (2016) – Valle Arroscia

Sector	Activities	%
Primary	188	37.1%
Secondary	153	30.2%
Tertiary	165	32.6%
Total	506	100%

**Source:** Technical Committee for Inner Areas, 2014

GVA per capita is much lower in Imperia than at the upper territorial levels (Table 9). The average of taxpayers with low income (lower than €15,000/year) is 52% in Valle Arroscia, 48% in Province of Imperia, 40% in Liguria, while for high incomes (higher than €55,000/year) the averages are respectively 0.83%; 3.39% and 4.88%. With respect to regional and national values, GVA is polarised in the Province of Imperia in the primary and tertiary sectors (Table 10). Especially in the primary sector the value is much higher than at the upper territorial levels (6.6%, where for Liguria it's 1%, north-west 1.2%, Italy 2.1%), but also in the tertiary sector the value is higher than at the upper levels.

Table 9 - GVA

Area	GVA 2016 (M€)	GVA per capita (€)
Valle Arroscia	n.a.	n.a.
NUTS3 – Imperia	4.516	20.909
NUTS2 – Liguria	43.348	27.642
NUTS 1 – Northwest	492485	30.575
NUTS 0 - Italia	1.508.666	24.884

**Source:** ISTAT, 2015

Table 10 - GVA by sector

Area	Primary	Secondary	Tertiary
NUTS 3 - Imperia	6.6%	10.2%	83.2%
NUTS 2 - Liguria	1.0%	19.1%	79.9%
NUTS 1 – Northwest	1.2%	27.0%	71.2%
NUTS 0 - Italy	2.1%	23.9%	74%

**Source:** Census data, 2016

## 1.4 Institutional Framework and Policy Environment

The main institutional levels of spatial and transport planning and development in Italy are detailed below and illustrated in Table 11 and Figure 3.

1) *The national level*

In terms of town and regional planning, the national Law DPR 616/1977 requires the State to identify the basic lines of spatial planning for a coherent development of its human settlements, but these lines have never been adopted.

From a transport point of view, the State has the task of adopting the General Transport Plan (PGT, *Piano Generale dei Trasporti*), which identifies the national integrated system of transport infrastructures (SNIT, *Sistema Nazionale Integrato dei Trasporti*). The latest plan was adopted in 2001.

2) *The regional level*

In terms of spatial planning, Italian Regions have to adopt a Territorial Regional Plan (PTR, *Piano Territoriale Regionale*), which defines the objectives and the strategies for regional development. In the transport sector, the Transport regional plan (PRT, *Piano Regionale dei Trasporti*) proposes projects and measures to develop the regional network of transport infrastructure (in particular railways) and to integrate it in the SNIT.

3) *The provincial level*

The Provincial Territorial Coordination Plan (PTCP, *Piano Territoriale di Coordinamento Provinciale*) is used by the Provinces to establish mandatory parameters and standards. Municipalities are also required to comply with it in their land use plans, and to define the localisation of metropolitan or provincial functions and activities. A section of the PTCP is generally devoted to plan the network of provincial roads and the suburban services of public transport on road.

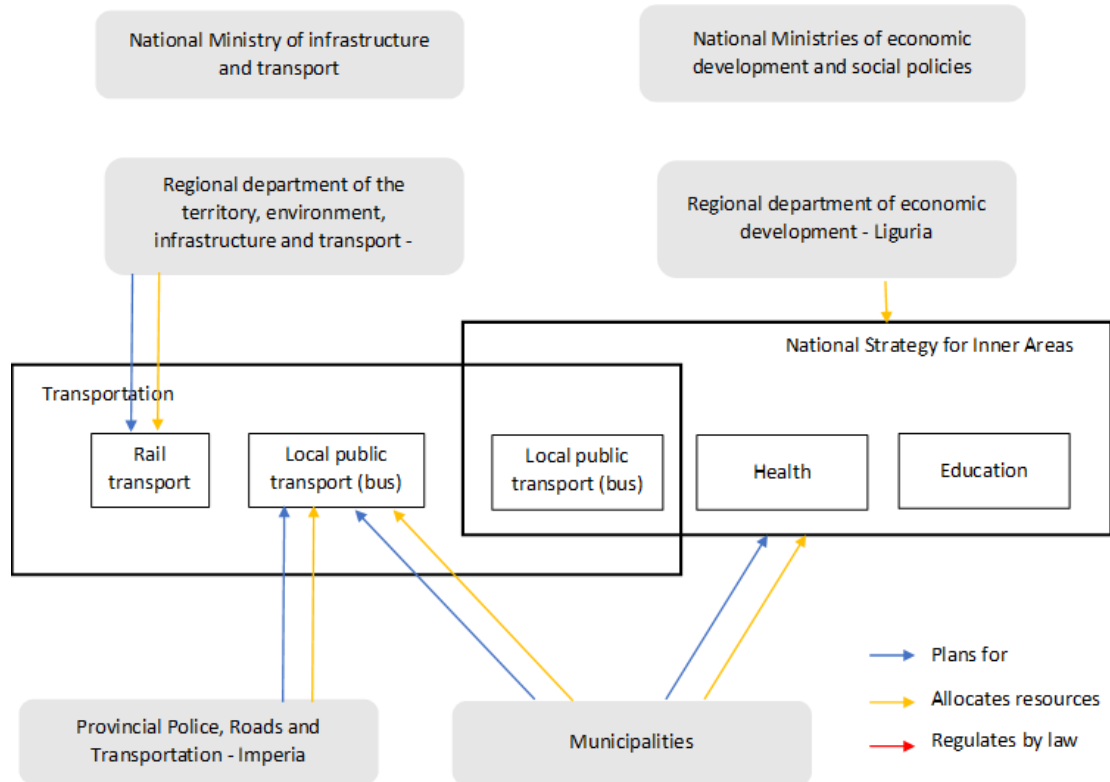
4) *The municipal level*

Municipalities have the task of adopting the PRGC (Piano Regolatore Generale Comunale), a physical development plan that assigns rights for both land use and spatial development. From a transport perspective, they have to develop a Sustainable urban mobility plan (SUMP – in Italian PUMS, *Piano Urbano di Mobilità Sostenibile*), in the instance where they have more than 100,000 inhabitants, and a Traffic urban plan (PUT, *Piano Urbano del Traffico*) if their population is over 30,000 residents.

The difficulties in horizontal and vertical cooperation of the spatial planning tools are particularly important at the inter-municipal level, since municipalities tend to develop their own spatial and transport plans without coordinating on a wider scale such as, for example, the functional metropolitan or non-metropolitan area of commuting flows. According to the national law 135/2012, Municipalities having less than 5,000 residents (3,000 in the mountains) should join with other Municipalities in “Municipal Unions” in order to fulfil most of

their functions in an associate way (e.g. spatial planning and the organisation of local public transport services). However, most Municipalities still carry out planning tasks on their own.

*Figure 3 - Key actors involved in deploying transport provision and developing infrastructure in Valle Arroscia.*



**Source:** Politico di Torino, 2018

*Table 11 - Detailed breakdown of institutions and competences*

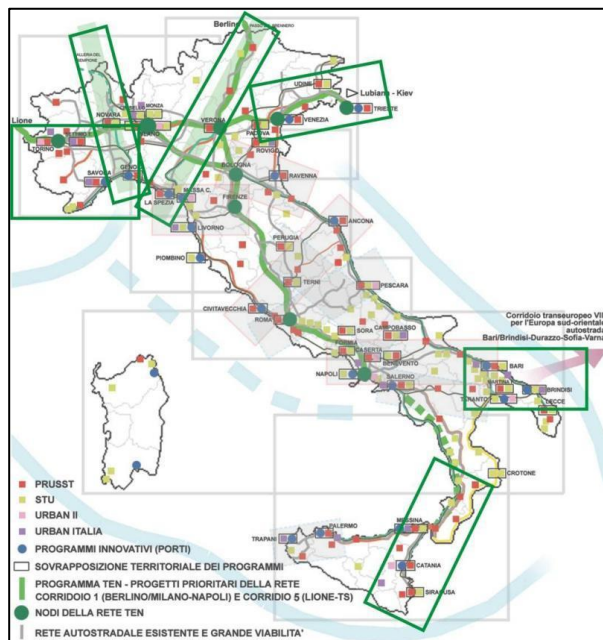
	Well-Being	Economic Development	Transport and transport policy
<b>Local</b>	<ul style="list-style-type: none"> <li>Local government: Alta Valle Arroscia municipalities</li> </ul>	<ul style="list-style-type: none"> <li>Local government: Alta Valle Arroscia municipalities</li> <li>Unione di Comuni Alta Valle Arroscia</li> </ul>	<ul style="list-style-type: none"> <li>Local government: Alta Valle Arroscia municipalities</li> <li>Unione di Comuni Alta Valle Arroscia</li> </ul>
<b>Regional</b>	<ul style="list-style-type: none"> <li>Department of Health and Social Services (Liguria Region)</li> </ul>	<ul style="list-style-type: none"> <li>Financial administration - Human resources (NUTS3)</li> <li>Department of economic development (NUTS2)</li> <li>Parco delle Alpi Liguri (potential stakeholders)</li> <li>GAL Riviera dei Fiori (potential stakeholders)</li> </ul>	<ul style="list-style-type: none"> <li>Provincial Police - Roads - Transportation (NUTS3)</li> <li>Department of the territory, environment, infrastructure and transport (NUTS2)</li> <li>GAL Riviera dei Fiori (potential stakeholders)</li> </ul>
<b>National</b>	<ul style="list-style-type: none"> <li>Ministry of Health</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Economic Development and Social Policies</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Infrastructure and transport</li> </ul>

**Source:** Politico di Torino, 2018

A major attempt to increase vertical and horizontal coordination was first promoted by the Minister of Infrastructure and Transport, and in particular by its Department for the Coordination of Spatial Development (Dicoter, *Dipartimento per il Coordinamento dello Sviluppo del Territorio*), with a view to the national strategic framework for the European structural funds 2007-13. Dicoter identified 16 “territorial strategic platforms”, i.e. Italian areas (not corresponding to any administrative partition) where European funds had to finance projects for the integrated development of transport infrastructure (in particular, European corridors) and spatial developments. These platforms were identified at transnational, national and interregional levels (Figure 4): the province of Imperia was included in the transnational platform focussing on the Western Italian portion of the Corridor V.

In 2008-11, Dicoter proposed a new program on a smaller scale, to operationalise these platforms: the so-called “Territorial hubs” (*Territori-snodo*), which were aimed at developing spatial and infrastructural assets in key portions of the platforms. For example, in the transnational platform focused on the Western Italian portion of the Corridor V, a territorial-hub project was proposed to enhance the interrelationship between the province of Cuneo in Piedmont and the provinces of Savona and Imperia in Liguria, as well as their logistic role in the platform (Figure 5a). One of the measures of this program was to improve the road connection between Imperia and Valle Arroscia (Figure 5b).

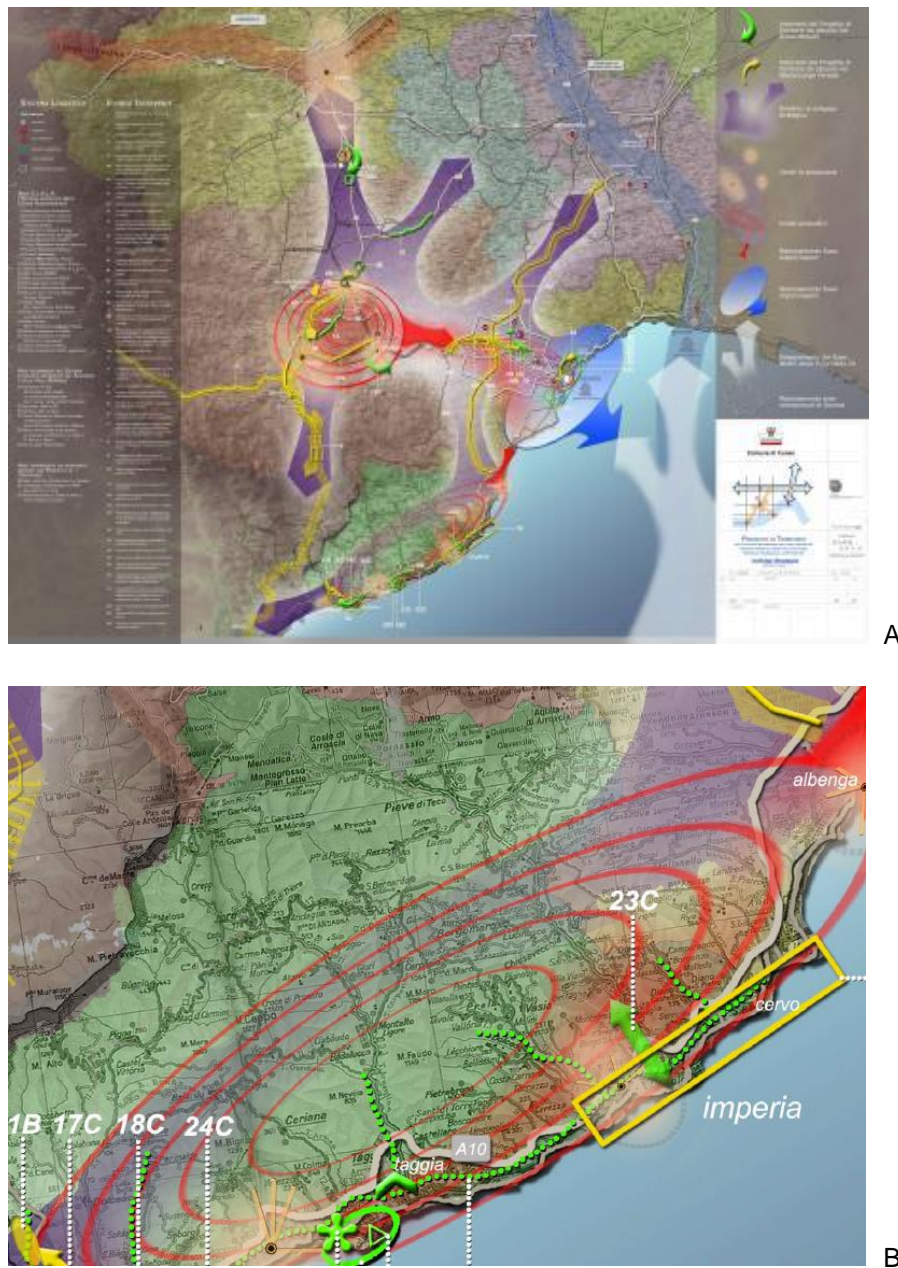
Figure 4 - Territorial strategic platforms



**Source:** Comune di Cuneo (2009)

As far as the regional level is concerned, Liguria Region reformed the legislative framework regulating the provision of regional and local public transport with the Regional Law 33/2013. The public transport service is organised by the Region (NUTS 2), that carries out the functions of planning and administration of local and regional public transport services requiring a unitary operation at the regional level. Provinces (NUTS3) are in charge of “provincial basin plans”. Furthermore, they enter into programme agreements with the Region to define the minimum quantity and quality standards of local public transport services and for additional services (DGR 1147/17 approved the draft of the programme agreement 2018-2027 for the Province of Imperia); and they authorise additional services in supra-municipal areas. Municipalities (LAU2) organise municipal public transport services (this applies to main towns, not to small rural municipalities as those that composes Valle Arroscia). Although the Regional Transport Plan should be the main reference document, it is currently under development and it is not known when the planning process will be completed. Due to this reason, the current main reference for transport planning in the area is the regional law 33/2013 on public transport, described above. As far as territorial reference frameworks are concerned, no document can be considered of pivotal guidance: the Regional territorial plan has not yet been approved, and the Provincial Territorial Plan of 2009 (which had also a section on transport and mobility) was introduced a decade ago.

Figure 5 - The territorial-hub between Cuneo, Savona and Imperia



**Source:** Properzi, 2008

The Regional Transport Plan (NUTS2 level) is under development, so currently the reference is the regional law 33/2013 on public transport. At the NUTS3 level there is no transport plan, but instead there is a 10-year transport programme agreement. This defines the implementation of interventions that require the coordinated and integrated action of Municipalities, the quality standards for public transport at the provincial level, and the determination of resources for minimum and additional services and the related payment commitments by local and regional authorities.

The Regional law 33/2013 (art. 4, comma 5) states that, in weak demand areas, necessary minimum transport services (which are defined by the law, i.e. a pair of routes for municipalities with more than 50 inhabitants, connecting them to main administrative, socio-sanitary, cultural, sports and religious services) may be provided through alternative transport means. Furthermore, art. 12, comma 3 states that the quantity and quality of public transport services have to be determined according to two criteria:

- use of the most appropriate methods and techniques to meet the transport needs considered, with particular reference to territories and persons with reduced mobility;
- choice, among the solutions that can guarantee, under similar conditions, sufficient transport services, of the one that, with the least environmental impact, entails the best service for the community, also through intermodality.

However, the regional law does not specify what it is meant by “alternative transport means” nor by “appropriate methods and techniques”, or what the “best service for the community” is. Therefore, what can or cannot be allowed is not entirely evident, and in order to avoid criticalities and possible appeals by public transport operators, there seems to be a great deal of caution on the part of the public administration with regard to alternative modes of transport. The basic rule for assessing the eligibility of alternative transport services is competition with public transport.

At the local level (Valle Arroscia), the SNAI establishes interventions and policies that will affect urban-rural linkages. The Integrated Territorial Investment (ITI) defined by Liguria Region within the framework of this strategy provides for an integrated set of actions that will have an impact on accessibility and urban-rural linkages, acting both on improving connections and on reducing rural dependence on urban areas (improving local services and strengthening the socio-economic system). As for mobility *per se*, the action that is envisaged is: “creation of infrastructure and interchange nodes aimed at increasing collective mobility and the environmentally friendly distribution of goods and related transport systems”. This action will be developed by three activities, which at this stage of development of the strategy are still quite general: 1. Transport for students, other travellers (residents/tourists), disabled people; 2. Social and cultural transport, DRT services; 3. Acquisition of innovative means of transport for multiple use and with low environmental impact.

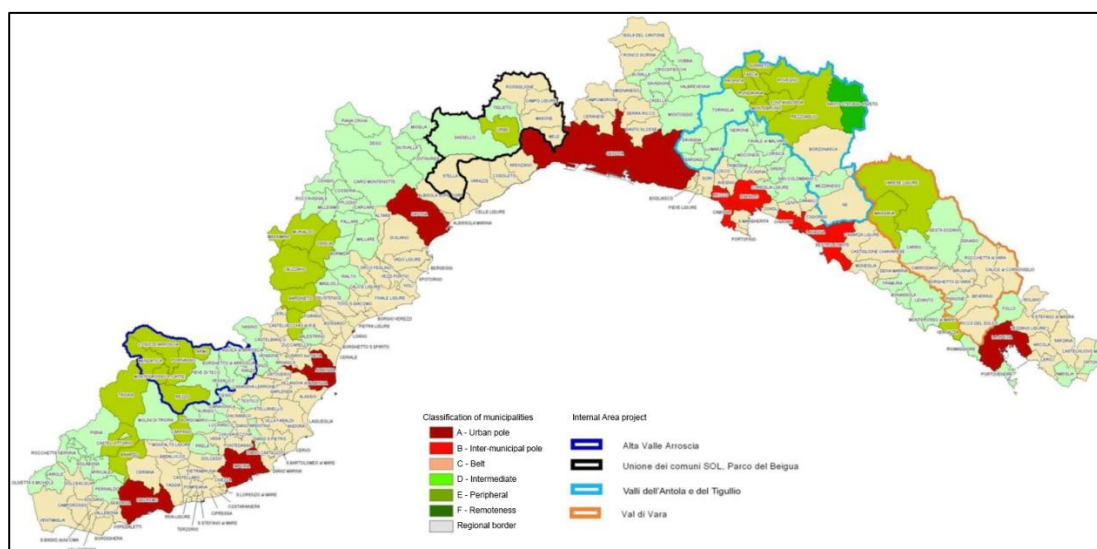
In 2013, the former Minister of territorial cohesion, Fabrizio Barca, commissioned the National Strategy for Inner Areas (SNAI), coordinated by the state agency for Territorial Cohesion, in order to overcome this situation and reverse the trend of marginalisation. The SNAI promotes the collaboration of Central State, Regions and Municipalities in an associated form. Currently, 72 project areas have been selected, involving 16% of the national territory and 3.46% of the national population (about 2 million inhabitants). The 52% of the inhabitants of



the project areas lives in municipalities classified as "peripheral" or "ultra-peripheral", as they are at least 40 minutes away from their main urban centre.

Located within the Province of Imperia, Valle Arroscia is one of the 72 project areas selected by the SNAI, and is characterised by an elevated level of marginalisation. A total of four inner areas were selected in Liguria Region according to the parameters set by the SNAI (together with Valle Arroscia: Unione dei comuni SOL e Parco del Beigua – Province of Savona, Valli dell'Antola e del Tigullio – Province of Genova, Val di Vara – Province of La Spezia. Figure 6).

*Figure 6 - The Municipalities of Liguria Region according to SNAI classification*



**Source:** Regione Liguria, 2018b

Since Valle Arroscia is one of the selected areas for the implementation of the SNAI, policies that affect transport and accessibility in this area are those developed within the implementation of this strategy: the Integrated Territorial Investment for Inner Areas of Liguria Region (ITI)<sup>1</sup>, and the local strategy for Valle Arroscia.

In addition to national policy, the EU is also affecting accessibility and mobility conditions through different funds and programmes:

<sup>1</sup> An Integrated Territorial Investment (ITI) is a tool to implement territorial strategies in an integrated way. It is not an operation, nor a subpriority of an Operational Programme. Instead, ITI allows Member States to implement Operational Programmes in a cross-cutting way and to draw on funding from several priority axes of one or more Operational Programmes to ensure the implementation of an integrated strategy for a specific territory. As such, the existence of ITI will both provide flexibility for Member States regarding the design of Operational Programmes, and enable the efficient implementation of integrated actions through simplified financing. It is important to underline that ITIs can only be effectively used if the specific geographical area concerned has an integrated, cross-sectoral territorial strategy. The key elements of an ITI are: • a designated territory and an integrated territorial development strategy; • a package of actions to be implemented; and • governance arrangements to manage the ITI.



- The National Strategy for Inner Areas, which also finances bottom-up initiatives through European Regional Development Fund, European Social Fund and European Agriculture Fund for Rural Development.
- European Territorial Cooperation, especially through INTERREG transnational and transboundary programmes (INTERREG Maritime, INTERREG Alcotra). Four projects, which have been presented with Region PACA (France) have been approved and financed in 2018:
  - Alcotra PITEM CLIP, project e-Trasporti, which provides the realisation of a bus-on demand platform for weak demand areas and the study of a common electronic ticketing system (within a wider regional project for the electronic ticketing system, budget €22M, also co-financed by ERDF funds). Budget: €990,000.
  - Alcotra PITER Mobilità Val Roya, which analysis of flows on the Nice/Ventimiglia/Cuneo railway line, actions for sustainable mobility on the cross-border territory, and communication and education activities to stimulate behavioural change. Budget: €1,7M.
  - Maritime TRENO - Promotion of tourist railway lines and historic trains (for the Province of Imperia historic the line is Nice/Ventimiglia/Cuneo) Budget: €1M;
  - Maritime MOBIMART - Mobilità Intelligente Mare Terra (Intelligent mobility sea-land). Implementation of an integrated platform with intelligent services for the interoperability of multimodal links (ship, bus, train, air) in the cooperation area (Liguria-PACA), with particular attention to cross-border links. Budget: €6M.

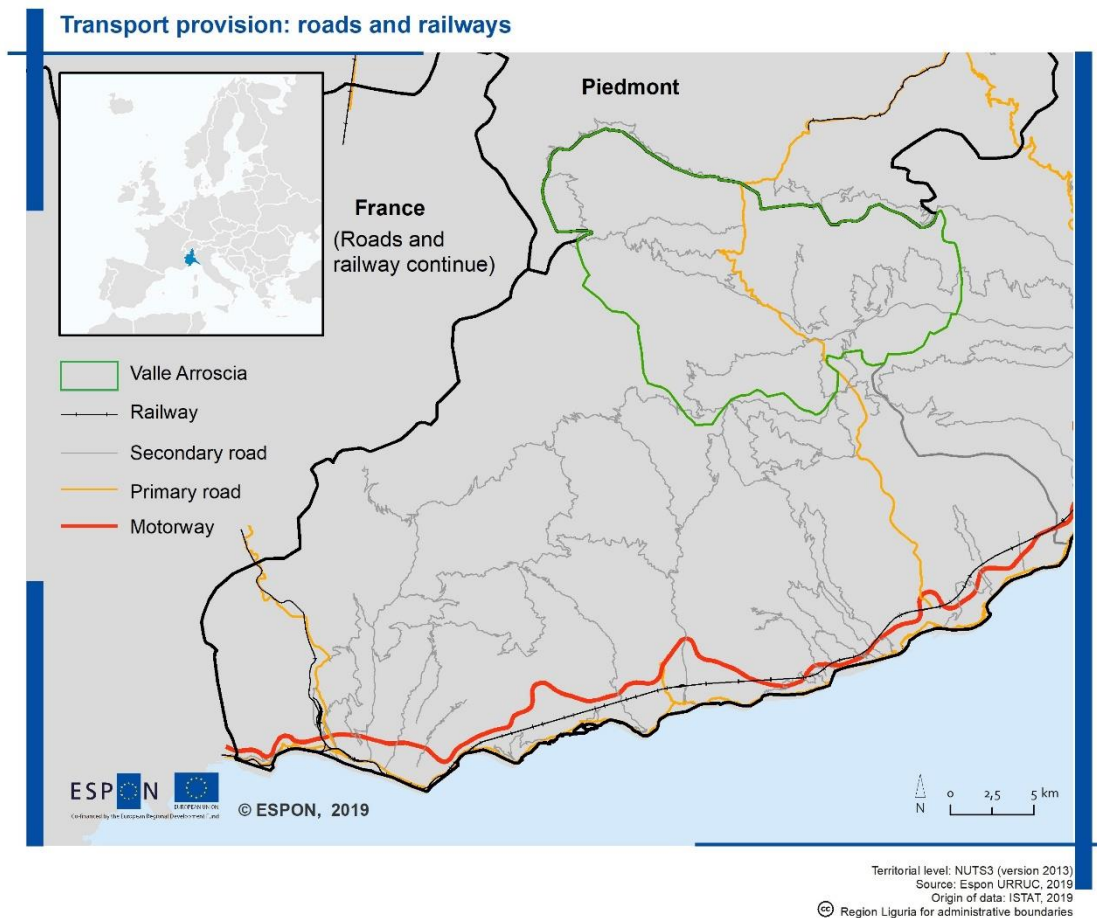
The above-mentioned projects have yet to finish, therefore it is not possible to assess their impact. However, one could already notice that, in general terms, they are contributing to processes of territorial innovation and empowerment. This concerns not only the actual provision of services, but also the strengthening of multilevel horizontal and vertical coordination among institutions and stakeholders.

## 1.5 Transport Provision

The strong cross-border and cross-regional dimension of Liguria Region is supported by the ports of Genoa and Savona, and on land by highways and railways located longitudinally along the coast (E80) and transversally attested on Genoa (A7, E25), Savona (E17) and Ventimiglia (SS21), connecting the region with surrounding areas and with France. Besides the main infrastructure, that supports significant traffic volumes, the inner areas, and especially those that are not located on a transversal corridor (such as the inlands of Savona and Genoa) suffer from a strong coast-inland divide. As for the public transport system, it is

shaped with a comb-like structure, with the railway line along the coast and road transport adductions in the valleys. In addition, the road network has the same structure, following the morphology of the valleys, with main roads along the coast and second order adductions in the valleys (except for some transversal junctions attested on the main urban nodes). Most of the adduction roads are dead-ends; the main road that serves Valle Arroscia (SS28) connects Liguria with Piedmont, but it is not among the main connections offered by highways, which are transversally located on Genoa and Savona (Map 3).

*Map 3 - Transport provision: roads and railways*



**Source:** Nordregio elaboration on Openstreetmap data

Transport service are almost totally provided by the public sector (by bus in the inland and bus and rail along the coast). In Valle Arroscia public transport is provided only on weekdays by the public transport concessionaire for the whole province (Riviera Trasporti spa), whereas two local cooperatives manage bus school, social and tourism transport. Looking at in detail, Cooperativa dalle Alpi al Mare provides for school bus transport and social transport, and Cooperativa di Comunità Brigi offers, in collaboration with a mountain hut, a shuttle service for

transporting hikers (e.g. transporting cyclists to the top of the mountain, from which they descend by bike).

Alternative services are being tested in other areas of Liguria Region, and the Local strategy of Valle Arroscia within the National Strategy for Inner Areas is supposed to explore and provide the conditions to offer alternative public transport provision.

## 2 Urban-rural Linkages

### 2.1 Employment, Education and Healthcare in Province of Imperia – Valle Arroscia

The major employment, educational, and healthcare services are generally centralised within the urban areas along the coast. Main industrial and tertiary activities are concentrated in Albenga and Imperia, while the Valley's productive fabric is mainly composed of agricultural enterprises, which are declining (see Section 1.3). The inland areas are highly dependent on main urban nodes along the coast both for main public services and for commercial and leisure offers. This is evident when one observes the localisation of the main health services (Table 12) and third level education opportunities (Table 13). None of them is located in the inland area and only a sub-office of the University of Genova is located in Imperia, and a third level institution (Academy of Fine Arts) in Sanremo.

*Table 12 - Health services*

Area	Structure/Unit	Municipality	Province	Emergency room
Local	Clinic (imperia Health district)	Pieve di Teco	Imperia	No
Regional	Clinic (imperia Health district)	Pontedassio	Imperia	No
Regional	Clinic (imperia Health district)	Diano Marina	Imperia	No
Regional	Clinic (imperia Health district)	Imperia	Imperia	No
Regional	Hospital	Imperia	Imperia	Yes
Regional	Hospital	Sanremo	Imperia	Yes
Regional	Hospital	Bordighera	Imperia	Yes

**Source:** ASL Liguria

*Table 13 - Education opportunities (3rd level)*

Area	Name	Structure	Municipality	Province
Regional	University of Genova	University	Imperia (sub-office)	Imperia
Regional	Sanremo	3rd level	Sanremo	Imperia

	Academy of Fine Arts	institutions		
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**Source:** <https://unige.it> ; <https://www.accademiabelleartisanremo.it/web/>

When it comes to lower education opportunities (up to second level), the situation is equally disproportionate (Table 14). Valle Arroscia municipalities hosts mostly nurseries and primary schools, with the only exceptions being one Junior and one Senior high school located in Pieve di Teco. The rest of senior high schools are located in the main coastal poles, with a predominant concentration in Imperia and Sanremo.

*Table 14 - Education opportunities (up to 2nd level)*

Area	Name	Structure	Municipality	Province	Students 2016/17
Local	n.d.	Nursery school	Pieve di Teco	Imperia	n.d.
Local	n.d.	Nursery school	Pieve di Teco	Imperia	n.d.
Local	n.d.	Nursery school	Pornasso	Imperia	n.d.
Local	Pieve di Teco	Primary School	Pieve di Teco	Imperia	95
Local	Pornassio	Primary School	Pornassio	Imperia	30
Local	Ranzo	Primary School	Ranzo	Imperia	8
Local	Pieve di teco "G. Gabrielli"	Junior high school	Pieve di Teco	Imperia	85
Local	Pieve di teco "G. Ruffini"	Senior High school (Sub-office G. Ruffini Imperia)	Pieve di Teco	Imperia	49
NUTS3 - Imperia	Polo Tecnologico Imperiese	Senior High school	Imperia	Imperia	n.d.
NUTS3 - Imperia	Liceo Statale "Vieusseux - De Amicis"	Senior High school	Imperia	Imperia	n.d.
NUTS3 - Imperia	G. Ruffini	Senior High school	Imperia	Imperia	n.d.
NUTS3 - Imperia	I.I.S. "Ruffini-Aicardi"	Senior High school	Imperia	Imperia	n.d.
NUTS3 - Imperia	IPSC Istituto Professionale "Calvi"	Senior High school	Imperia	Imperia	n.d.
NUTS3 - Imperia	Liceo Artistico	Senior High school	Imperia	Imperia	n.d.
NUTS3 - Imperia	ITT Istituto Tecnico Turistico "Thomas Hanbury"	Senior High school	Imperia	Imperia	n.d.
NUTS3 - Imperia	ITN Istituto Nautico "A.Doria"	Senior High school	Imperia	Imperia	n.d.
NUTS3 - Imperia	ITIS "GALILEO GALILEI"	Senior High school	Imperia	Imperia	n.d.
NUTS3	G. Marconi	Senior High school	Imperia,	Imperia	n.d.

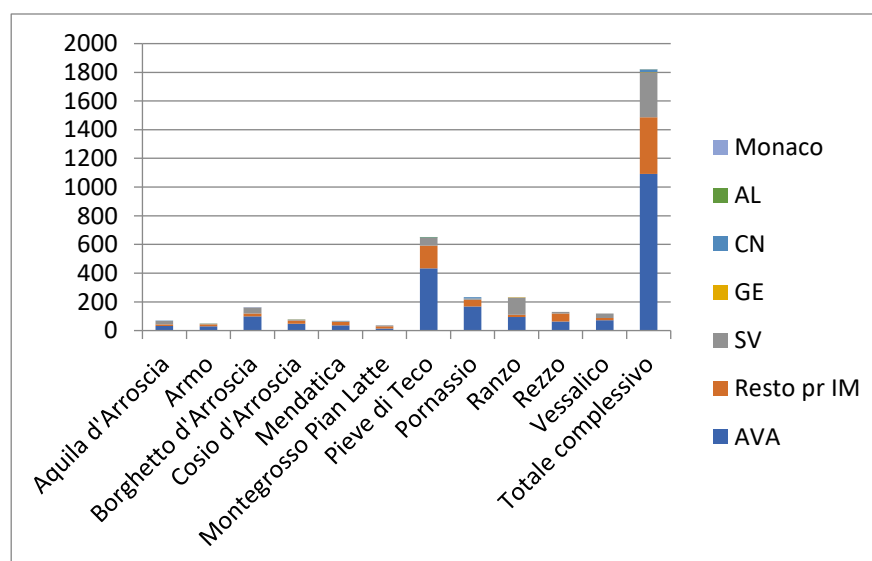
- Imperia			Sanremo		
NUTS3 - Imperia	Liceo Statale "C. Amoretti"	Senior High school	Imperia, Sanremo	Imperia	n.d.
NUTS3 - Imperia	C. Colombo	Senior High school	Sanremo	Imperia	n.d.
NUTS3 - Imperia	Liceo Statale "G.D. Cassini"	Senior High school	Sanremo, Arma di Taggia	Imperia	n.d.
NUTS3 - Imperia	Fermi-Polo-Montale	Senior High school	Bordighera, Ventimiglia	Imperia	n.d.
NUTS3 - Imperia	Liceo Statale "Aprosio"	Senior High school	Ventimiglia	Imperia	n.d.

**Source:** <http://trasparenza.provincia.imperia.it/offerta-formativa/istituti-superiori>

## 2.2 Travel to Work Patterns

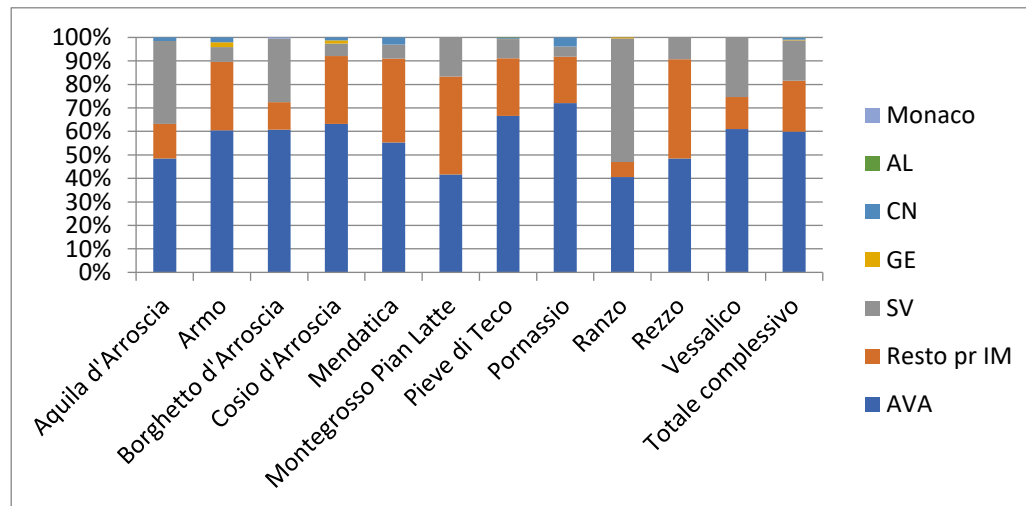
About 60% of total trips that are generated by the municipalities of Valle Arroscia are travelling to the Valley (Figure 7, Figure 8). As for the destinations outside the Valley, the main one is Imperia, followed by some municipalities of the Province of Savona (Albenga and Alassio are the closest to Valle Arroscia). Some trips are also destined to the Province of Genova, Alessandria and Cuneo (the latter are located in the Piedmont Region), but they are a very small part of the total trips (Figure 7, Figure 8, Map 4, Map 5).

*Figure 7 - Destinations of trips started in the Municipalities of Valle Arroscia*



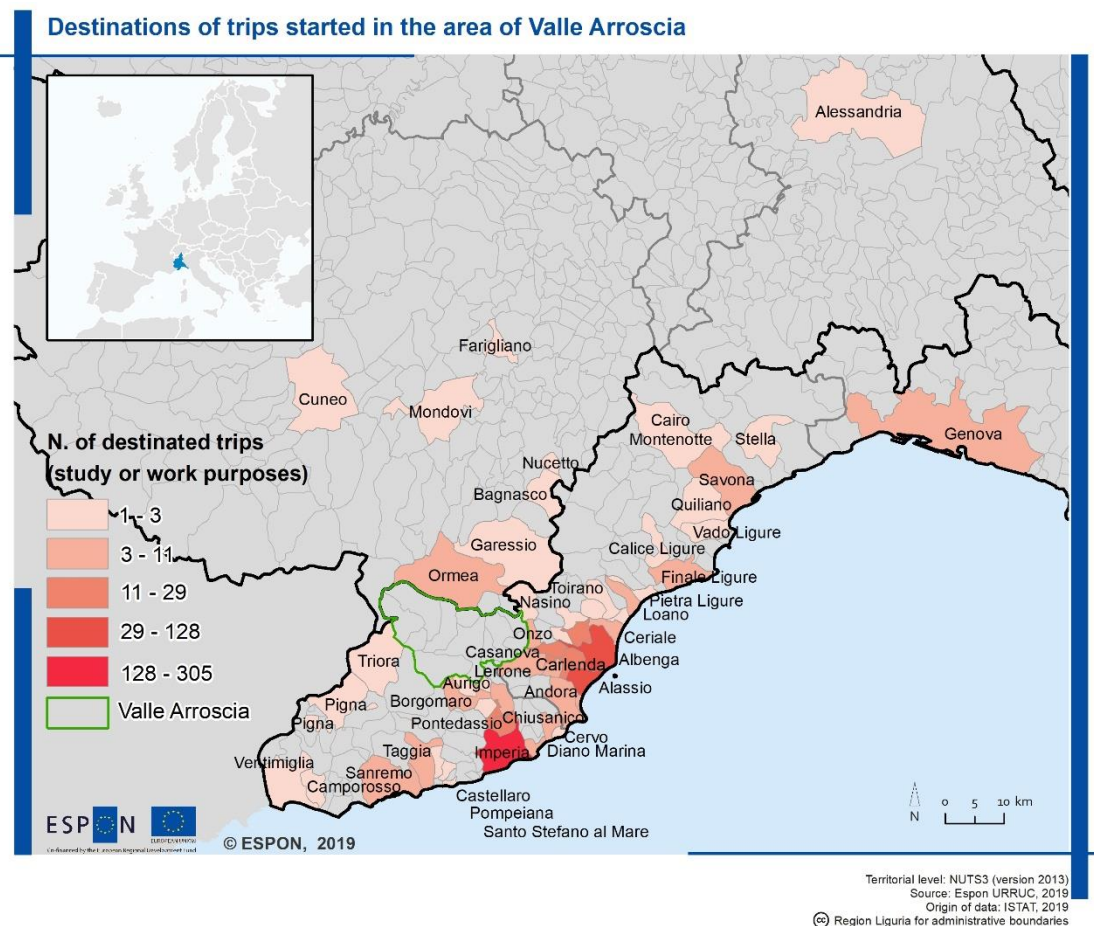
**Source:** authors' elaboration on census data, 2011

Figure 8 - Destinations of trips started in the Municipalities of Valle Arroscia (100% stacked bar chart)



Source: authors' elaboration on census data, 2011

Map 4 - Destinations of trips started in the area of Valle Arroscia

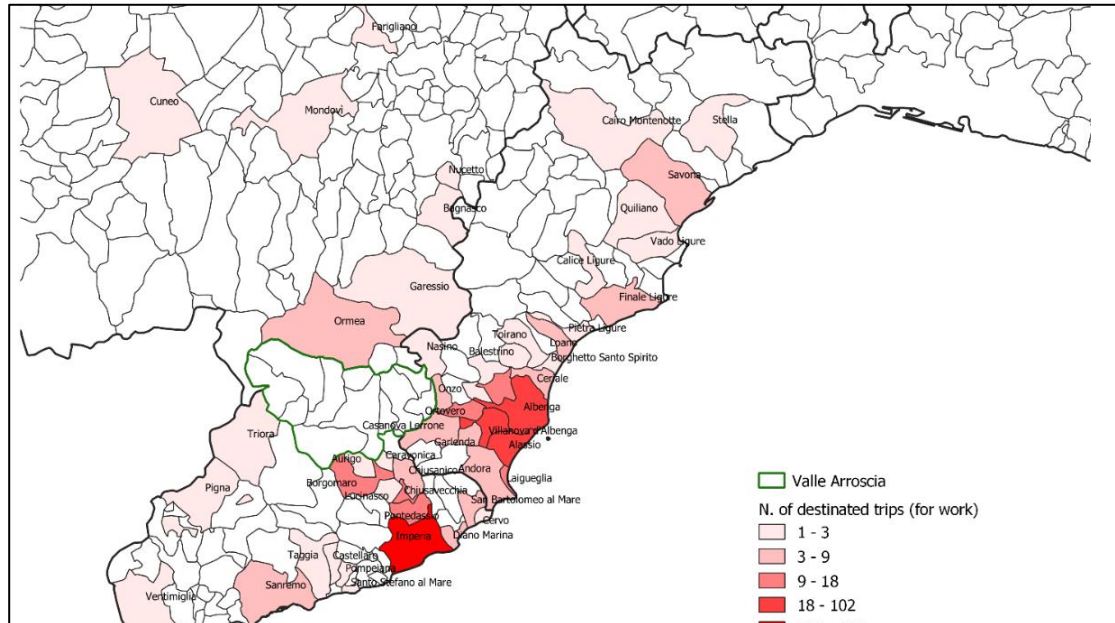


Source: **Nordregio elaboration on census data, 2011**

Commuting for work purposes (Figure 13) has a greater number of municipalities, including in the Piedmont region, than travel for educational reasons (Figure 14). However, commuting for work purposes takes place over smaller radius. Travel for educational purposes is almost totally concentrated in Liguria (except for Ormea which is right across the border), but reaches Genoa due to the presence of a University.

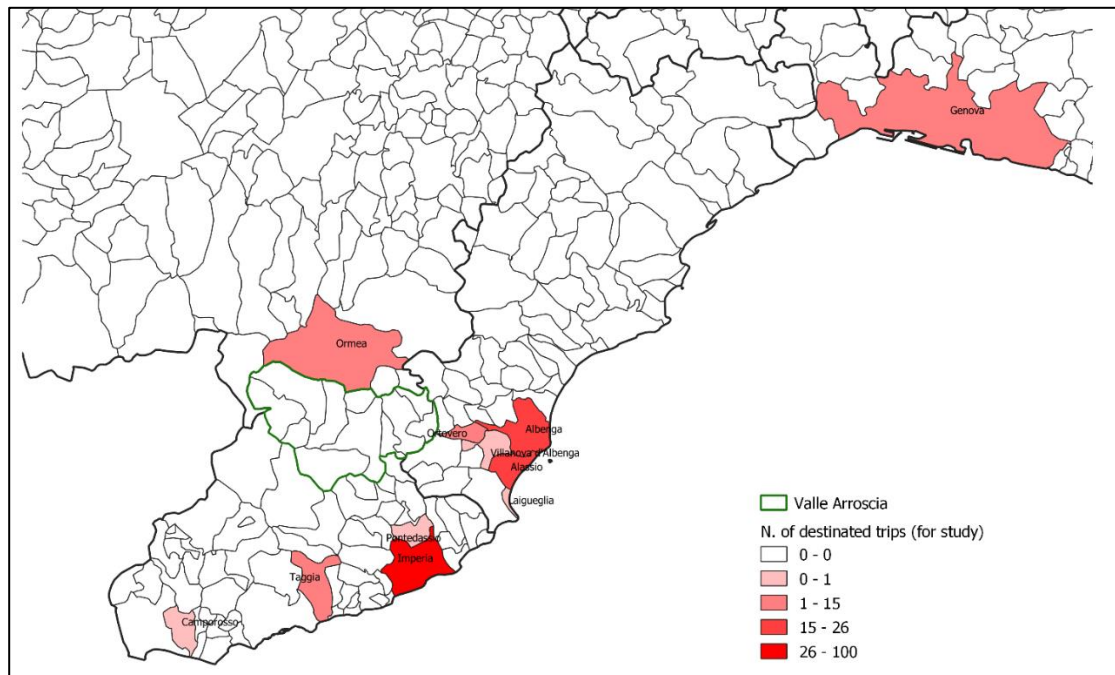


*Map 5 - Destinations of trips started in the area of Valle Arroscia – detail of trips for work purposes*



**Source:** authors' elaboration on census data, 2011

*Map 6 - Destinations of trips started in the area of Valle Arroscia – detail of trips for study purposes*



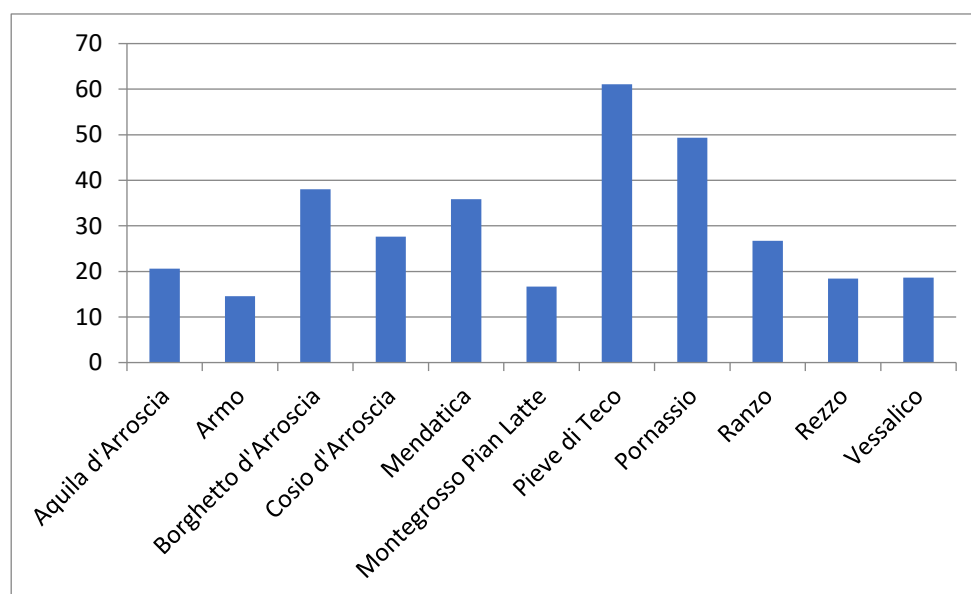
**Source:** authors' elaboration on census data, 2011



The detailed self-containment index (percentage of the trips started in a municipality that are destined to the same municipality for each municipality is shown in Figure 9). As mentioned above, the vast majority of trips directed to the Municipalities of Valle Arroscia are generated within the valley (74%, Figures 10 and 11). A minority of trips comes from the rest of the Province of Imperia, and from the provinces of Savona and Cuneo (especially from the municipalities that are closer to Valle Arroscia). A small number of trips is recorded from the Province of Genoa to Rezzo. Taking into account the considerable distance from Genova (around 2 hours by car), the lack of jobs and education opportunities offered by Rezzo, and the fact that very close to Genova there is a municipality called “Recco”, it is reasonable to assume that this is a statistical error. Pieve di Teco is the main node, both for trips generated within and outside the valley (Figure 12).

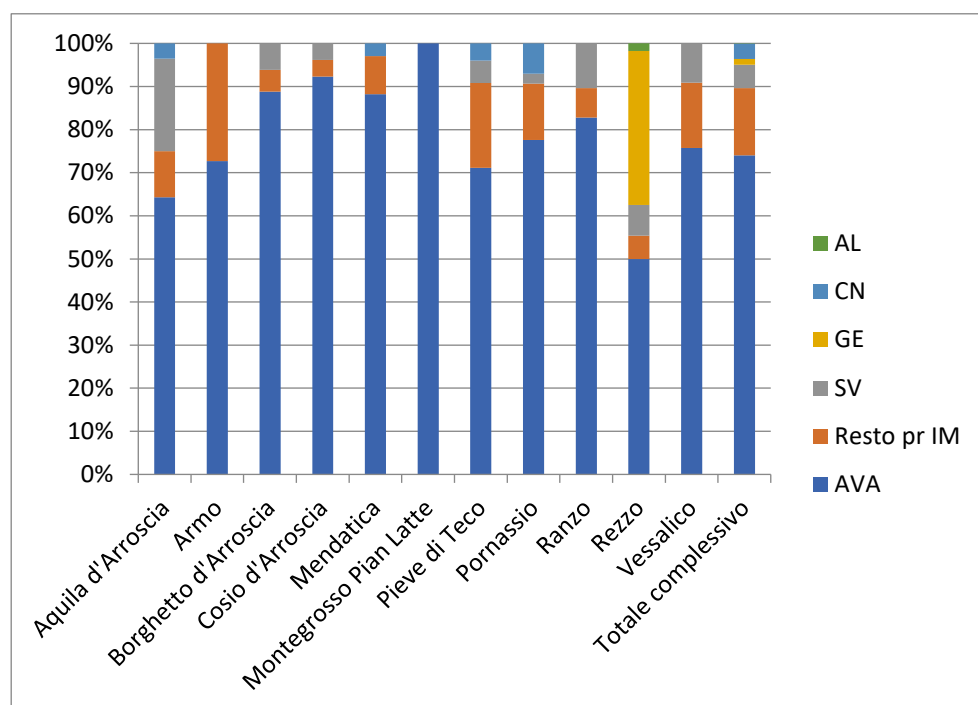
The index of attractiveness (ratio between generated and attracted trips, shown in Figure 12) is 0.8 for Valle Arroscia as a whole, and it is higher than one only in Pieve di Teco (1.35).

*Figure 9 - Self-containment index*



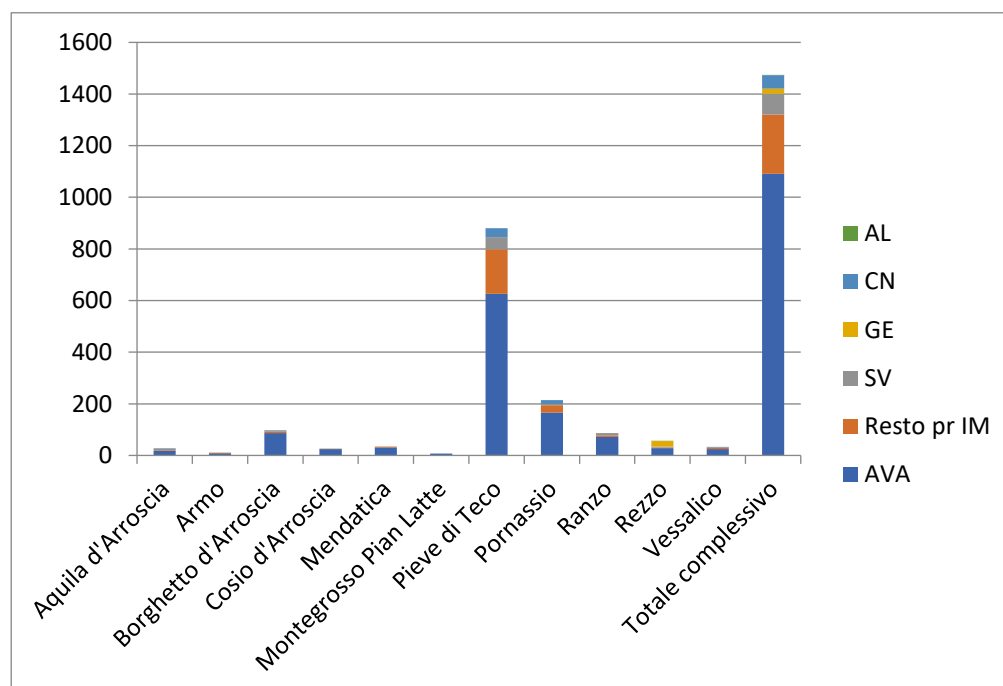
**Source:** authors' elaboration on census data, 2011

Figure 10 - Origins of trips destined to the Municipalities of Valle Arroscia (100% stacked bar chart)



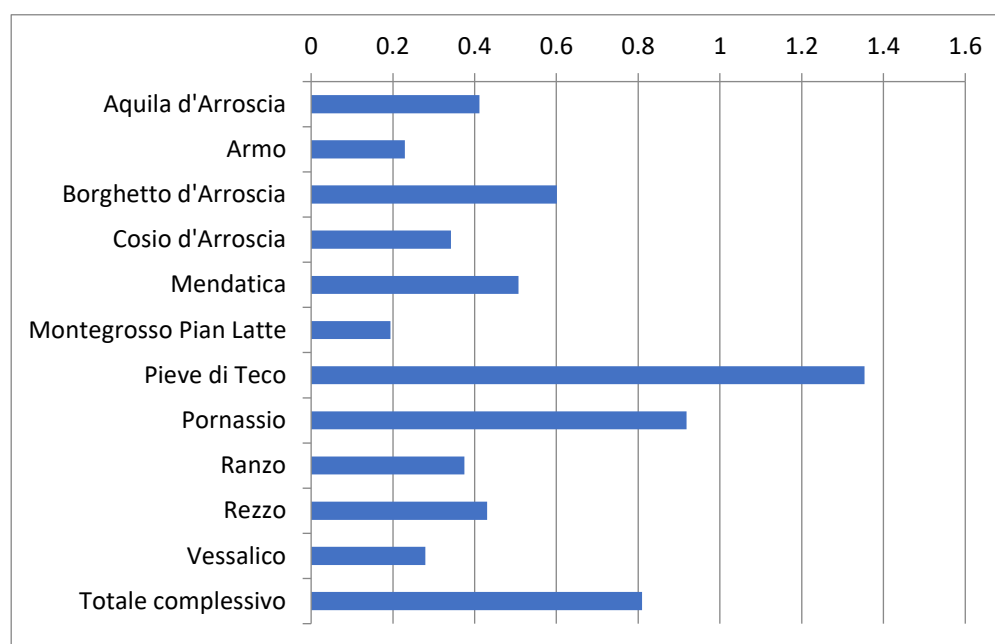
Source: authors' elaboration on census data, 2011

Figure 11 - Origins of trips destined to the Municipalities of Valle Arroscia



Source: authors' elaboration on census data, 2011

Figure 12 - Index of attractiveness of the Municipalities of Valle Arroschia



**Source:** authors' elaboration on census data, 2011

### **3 Present Accessibility Challenges**

Valle Arroscia suffers from marginalisation, and transport inequalities that are typical of rural and mountain valleys in the Liguria Region. The inland area suffers from poor accessibility due to infrastructural, geomorphologic and spatial development features. In many cases, the valleys are served by a single road axis, which in cases of floods, avalanches or accidents creates serious problems in terms of accessibility. Furthermore, the territory is characterised by considerable space and time dispersion, so demand for transport is weak and scattered.

In such conditions, the traditional public transport services become very expensive, inefficient and scarcely competitive when compared to private car due to scarce and dispersed demand. This results in increasingly demanding and unsatisfied responses in relation to the public transport service. Furthermore, because of the economic downturn, public investment in services is decreasing. In the last decade, local public transport has been progressively subjected to efficiency savings. In weak demand areas, these savings have been more pronounced, limiting services to the minimum required by law. The concessionary company for local public transport (Riviera Trasporti) has further reduced bus services in Valle Arroscia in the last five years. These cuts particularly affect commuters and students due to cancelled services. Cancellations include bus lines that serve the inner valleys and the main line that links Imperia and Ceva. Hence, the challenge is not only to provide more services but also to better organise the schedules.

#### **3.1 Specific challenges directly related to transport provision in Valle Arroscia**

Bus transport is provided only in schooldays (weekdays, excluding school holidays), and there is no public service during weekends. Therefore, tourism in the area is also impacted by the lack of public transport services. Bus school transport for schools that are within Valle Arroscia is provided autonomously by municipalities. Due to the wide surface and high dispersion of population, it is particularly expensive: it costs about €165,000 per annum, partly subsidised by families (€40,000) with the remainder funded by municipalities.

Also in terms of health services, the marginality of Valle Arroscia has worsened in the last decades; patient and emergency transport is lacking, and there are only two ambulances' posts on the territory. Even for those who wish to keep living in Valle Arroscia, and who might not be as dependent on the main urban poles, the need to get better connections and accessibility is acknowledged. This is even more apparent with groups that are strongly dependent on urban poles. In this respect, an efficient transport service, especially for territorial assigned persons, is essential.

The general interest for alternatives to private car is not very high in Valle Arroscia, as those who have access to a car tend not to explore alternative transport choices. Therefore, the

current market niche for alternatives to traditional public transport is mostly composed of people, who for age, physical, social or economic reasons do not have access to car. Whereas investment in cost-efficient, innovative and flexible transport services should be targeted at disadvantaged groups, to implement policies and transport solutions exclusively targeted to those groups would mitigate current criticalities in the short term. This might produce negative effects in the longer term, reinforcing the separation between car and non-car users and marginalising the latter. This implies the need for unconventional, versatile and innovative transport modes and services, in order to enhance accessibility, foster multimodality and support a rebalancing of the modal split.

Technological advances for flexible transport systems and alternatives to private car are offering new potential solutions that can be adopted in Valle Arroscia. Liguria Region is highly interested in and active in projects to introduce smart solutions for transport services. Still, innovative transport solutions would encounter physical and social barriers. To date, the territory is not covered by broadband, and about 40% of population is not connected at all to the internet. The sociocultural context is accustomed to traditional/analogue media and devices. As such, the population is currently not very confident about the effectiveness of the digitalisation of services. This situation is being improved, as Valle Arroscia is one of the inner areas that will be extensively covered by ultrabroadband in the very near future, since inner areas have been given priority by Liguria Region to this respect. Still, it will need some time for locals (especially the older residents) to get confidence with digital services.

Another set of challenges is related to stakeholders who directly and indirectly operate on the territory. The context in which the operational measures will be implemented features several criticalities that must be carefully taken into account since they strongly affect the feasibility of such measures. As far as political will and competences are concerned, the three main stakeholders (Liguria Region, Province of Imperia and Unione Montana Valle Arroscia) have different roles and priorities. Liguria Region aims to improve accessibility and foster transport equity, but its action is focused on regional transport services, while local ones are entrusted to the Province. Province of Imperia is the best territorial level to improve urban-rural connectivity, but it is not very active in this respect, also due to the lack of staff and resources. Valle Arroscia has the improvement of urban-rural connectivity as one of its main goals, but its decision-making power for public transport is very weak.

Since vertical coordination among actors is quite poor due to the lack of engagement of the Province, there is a missing link between the local and the regional level. This is one of the main challenges that must be addressed. It undermines the feasibility of most of the measures that can be implemented to improve accessibility and urban-rural connectivity.

Transport services are almost entirely provided by the public sector, operated by Riviera Trasporti, the public transport concessionaire who serves the whole province. The LPT service is traditional, with its inadequateness and inefficiencies in rural areas with poor

demand. However, the service provider does not show an intention to introduce alternative services, and until 2022 (the duration of the contract), slight changes can be made to the actual offer. Furthermore, due to the lack of staff and resources, know-how that is needed to introduce flexible and innovative transport services is weak at the provincial and local level. Despite the fact that the National Strategy for Inner Areas (SNAI) is offering the opportunity to implement a place-based approach, Valle Arroscia has limited power in asserting and advocating its needs to the upper-tier levels (and especially to the Province and the public transport concessionaire).

### **3.2 General challenges that influence transport and mobility in Valle Arroscia**

From a more general perspective, the territorial structure is polycentric-hierarchical, with very low density; the containment of sprawl and the promotion of spatial development patterns that can be functional to improve accessibility and reduce car dependence are left to the sensitiveness of local administration. Therefore, it is expected that the development pattern will inevitably follow the current structure, with dispersed settlements and minor centres gravitating towards major ones. About 40 isolated settlements belonging to one of the 11 municipalities of Valle Arroscia are dispersed on a wide mountain area and they are often far away from the main urban centres. Most of these hamlets are not served by public transport, so their inhabitants are reliant on having access to a car, and those who do not have a car face serious challenges in accessing services and opportunities. As a result, the private car dominates transport choices, but this is also influenced by a poor sustainable mobility culture. Since income levels are lower in Valle Arroscia than average values of the Province of Imperia, which in turn features lower levels than the regional ones, the car is arguably be less affordable in Valle Arroscia than in provincial and regional areas. Therefore, social equality issues are significant in this area. Furthermore, the economic downturn is supposed to enlarge the gap between urban and rural areas in terms of transport equality.

The proposed solutions to improve accessibility and urban-rural connectivity must cope with this condition and provide services and facilities that are at the same time flexible, reliable and financially viable. However, at the same time flexible and innovative transport solutions have to deal with a rigid legislative system. The Province and the Region may authorise additional services in supra-municipal areas, as long as they comply with the regulations in force and do not compete with local public transport. The traditional policy and legislative framework are weak with respect to accessibility policies for poor demand areas. Since the Regional Transport Plan, that should be the main reference, is currently under development and it is not exactly known when the planning process will be completed, currently the main reference is the regional law 33/2013 on public transport, which is quite vague as regards transport provision in weak demand areas.

A multi-layered, multi-faceted governance structure applies to transport planning. Local, provincial and regional authorities are involved in various ways in the planning process, with resources and planning being deployed mainly from the top-down. The multiplicity of actors and competences might imply missing links, incoherence and inefficiencies. The innovative and virtuous governance process that is being carried out within the framework of the SNAI has the potential to introduce structural changes in the governance approach, but this must not be taken for granted, as it may also constitute an isolated experience if it is not properly exploited.

Due to the economic downturn, public investment in services is decreasing, not only in Valle Arroscia but also in the whole Region. The most affected by decreased investment in local public transport are already vulnerable groups, i.e. those who do not have access to a car, due to physical, age or economic reasons. Moreover, Valle Arroscia is losing population (-9.8% from 2001 to 2017), as people are moving from the inland to the main urban poles along the coast. Depopulation decreases public transport usage and can make traditional public transport inefficient and ineffective. To depopulation and rural-urban migration, and to face the abandonment of small rural centres, it is essential to offer better opportunities and services to inhabitants. Territorial shrinkage and marginalisation are expected to worsen the criticalities that public transport provision has to face.

### **3.3 Stakeholder Concerns**

The concerns of Liguria Region with respect to urban-rural connectivity are clearly expressed in the local strategy for Valle Arroscia, developed as part of the National Strategy for Inner Areas. Through the URRUC project, Liguria Region wants on the one hand to enhance the effectiveness of the SNAI in Valle Arroscia, and on the other hand to get some policy recommendations, guidelines and tools so as to ease policy transfer in other inner areas featuring similar conditions.

The aim of the local strategy for Valle Arroscia is to implement a long-term development project, focused on the improvement of quality of life of local communities and on the increase of touristic flows, by enhancing local SGI and promoting territorial specificities.

The strategy is grounded on integration, and implies the sharing of goals, means and investments. This is linked to, and supported by, some innovation factors that have been developed during the last decades, such as: a new conception of rural territories as not only productive environments but also cultural and relational ones; a high perception of qualitative and identity values of local productions; an evolution of tourism, from “easy tourism” (sea, beach, entertainment) towards a “cultural tourism and adventure tourism” (culture, landscape, sport, etc.); a re-evaluation of villages and hamlets, both for the architectural features and with regard to the rural way of life (tranquillity, nature, etc.).

As far as mobility in particular is concerned, the main expected result is the reorganisation of the public transport system with flexible transport solutions, in order to enhance accessibility conditions especially for those who do not have access to a car. The local administrations, which are represented by the Unione Montana Alta Valle Arroscia (a consortium of the 11 municipalities), wish to completely reorganise the local public transport service, providing this autonomously within their territory. In this scenario, the Unione Montana would directly receive the share of regional funding for local public transport that corresponds to its municipalities (the subsidy is calculated based on km travelled by bus routes) and would operate its own internal public transport. As mentioned above, the current public transport service is not responding to the needs of the territory, especially because of the limited number of routes and non-coordinated schedules. Since the Unione Montana is already operating school transport services (up to primary schools, operated by a local cooperative company), the idea would be to extend the service to the whole population. Another cooperative offers a transport service for hikers, and this service could be extended and coordinated with other services.

Removing the local public transport of Valle Arroscia from the Provincial basin plan could be an option, but its feasibility must be carefully analysed, as well as the relationships with main lines linking Valle Arroscia to the coast and with Piedmont. Furthermore, this option would require a high cooperation between relevant stakeholders as local, regional and provincial administrations, as well as the concessionary company for local public transport (Riviera Trasporti) and the cooperatives that are already providing school and tourist transport services. In synthesis, the specific transport services that the Unione Montana Valle Arroscia would like to see implemented are:

- School transport, for students of primary and secondary schools of the territory; possibly opened to other users (provided that it does not compete with the local public service);
- Transport of disabled people, that in some cases imply the need to be accompanied by qualified staff and use suitable vehicles;
- Social transport, an on-demand service to grant access to public offices, day-care services, gathering places, etc.
- generic on-demand service for internal mobility outside the schedule of Riviera Trasporti;
- Services for tourists, especially in the occasion of shows and events.

As far as EU funding is concerned more concrete actions should be taken. Wherever preliminary research is financed to study what solutions fit a given territory, once such solutions are determined they should be financed as well. When this does not happen, in the majority of cases, the institutions involved find themselves provided with relevant knowledge



concerning what actions would be best to implement, but without the financial means and the institutional capacity to put them into practice.

Furthermore, there is often a disconnection between the needs of local institutions, which would need resources to implement actions (in a reasonably short time), and the goals and timeframes of EU programmes.

As for cross-border cooperation programmes, they should be rethought and reviewed. Due to the important role they cover in the EU agenda, they have been running now for as many as 5 programming periods, in most of the cases operating on the same territories, with the same institutions and focusing on almost the same topics. In this light, a further diversification of projects should be envisaged, in order to trigger innovation episodes from bottom-up also because of the involvement of local actors in the process.

Different barriers occur if we refer to cross-border programmes such as Interreg Alcotra, or to other EU programmes. Interreg Alcotra is managed locally by a cross-border committee, which creates a number of pros and cons. Whereas it is easier to apply to this programme in terms of bureaucracy and cross-agency barriers, it is being confirmed one programming period after the other for more than 20 years. As a result, it could benefit from a comprehensive revision aiming at making it less repetitive and more effective. Moreover, in the case of Liguria, the impact of Alcotra is rather limited, since only the Province of Imperia (about 40.000 inh. in Imperia and 200.000 in the whole Province) can apply, while neighbouring provinces are excluded (this is true since the present programming period 2014-2020, as until 2013 they were allowed to participate).

When it comes to the other EU programmes, such as Horizon2020, Interreg Central Europe, Creative Europe, etc., the high amount of bureaucracy makes participation too exhausting in terms of application and management, most often preventing any real engagement from small institutions.

## 4 Potential Solutions and Recommendations

Based on the review of projects and best practices, as illustrated in Annex 1, stakeholder concerns, analysis of operational conditions, and understanding the general and specific context of Valle Arroscia (see Annex II for methodology), the following recommendations are brought forward, aimed at improving the accessibility and urban rural connectivity of the area.

### 4.1 Best Practice Recommendations

Some of the conditions and challenges that feature the accessibility and urban-rural connectivity of Valle Arroscia are typical of rural and mountain areas. Hence, some good practices can be useful to provide hints and support the definition of recommendations. The EU-funded research projects reviewed in the first phase of development of the URRUC project offer a wide set of good practices and approaches to urban-rural connectivity and accessibility in mountain areas.

Among the EU projects that are most relevant to the conditions and challenges of Valle Arroscia there are:

- Interreg IVC [MOVE ON GREEN](#) – Improving sustainable transport in rural areas (2012-2014), aimed to improve the design and effectiveness of regional policies on sustainable transport in rural and mountain areas; it provides a set of policy guidelines and a collection of good practices.
- Interreg Central Europe [PERIPHERAL ACCESS](#) - Transnational cooperation and partnership for better public transport in peripheral and cross-border regions (2017-2020), aimed to analyse mobility issues in rural, remotely located or border regions and to derive concrete action plans and implement innovative pilot actions in three fields: multimodality and integrated transport; enhanced use of intelligent communication technology and intelligent technology system; and better cooperation through transport associations and cross-border marketing.
- Interreg IVC [FLIPPER](#) - Flexible Transport Services and ICT platform for Eco-Mobility in urban and rural European areas (2008-2011), aimed to transfer experience, knowledge and good practices about Flexible Transport Services (FTS) among different EU Regions, to increase the social inclusion of disadvantaged areas encouraging sustainable growth.
- MED [LIMIT4WEDA](#) - Light Mobility and Information Technology for Weak Demand Areas (2010-2013), aimed to enhance mobility between rural and urban areas, through research, analysis and test of the possible technologies and their application for innovative transport solutions.
- Intelligent Energy Europe [SMARTMOVE](#) – promoting public transport use in rural areas (2014-2016). The project analysed and tested the effectiveness of active mobility consultancy campaigns (AMC), as a means of collecting passenger feedback

and attracting new users to rural public transport services. It also gave public transport operators an insight into the demands of current passengers and the views of those who do not use public transport.

- South East Europe [ACCESS2MOUNTAIN](#) - Sustainable Mobility and Tourism in Sensitive Areas of the Alps and the Carpathians (2011-2014), aimed to achieve durable, environmentally friendly tourism, as well as to ensure accessibility and connection to, between and in sensitive regions of the Alps and the Carpathians.
- Intelligent Energy Europe [STARTER](#) - Sustainable Transport for Areas with Tourism through Energy Reduction, aimed to promote energy efficient and sustainable mobility through the cooperation of local parties. Develops and applies the concept of '*Local Travel Plan Networks (LTPN)*', meant to engage stakeholders in the adoption of a common strategy, providing residents and tourists with alternative solutions for transport.
- Interreg Central Europe [RUMOBIL](#) (2016-2019): supports transnational cooperation between public authorities and their transport entities confronted with the challenge to respond to pressures on regional public transport systems in peripheral areas. The main outputs: pilot actions, strategy and policy-decisions to implement this strategy through an improvement transport plans. Testing a number of innovative applications during a period of 12 to 18 months: how sparsely populated peripheral areas can be better linked to a primary, secondary or tertiary transport node (access to European and national passenger transport networks).
- Interreg North Sea Region [GPATRA](#) - Green Passenger Transport in Rural Areas (2017-2021), aimed to promote green transport and mobility by enhancing the capacity of authorities to reduce CO2 from personal transport in remote, rural and island areas. It will embed more zero emission vehicles in rural transport systems and improve available passenger transport resources.
- Interreg Europe [OPTITRANS](#) - Optimisation of Public Transport Policies for Green Mobility (2017-2021). This project seeks to improve public transport policies in order to reduce the carbon footprint of mobility in peripheral and rural areas. It includes new trends and developments such as better integration of low-carbon modes, ticketing and timetables, use of ICT, higher passenger comfort and better image of public transport.

These projects offer a wide set of good practices, providing examples of realised solutions, which bridge the theory-practice implementation gap. The operational, specific and general recommendations that are reported in the following paragraphs take stock of such good practices.

## 4.2 Suitable Alternatives to Private Car: Operational Level

A number of suitable alternatives to private car and traditional public transport has been identified, that may contribute to solve existing accessibility challenges at least partially. The definition of each of the following alternatives to private car is reported in Annex VIII.

Feeder: replacing some of the current bus lines with a feeder service, linking the internal valleys with the main nodes of the routes that connect Valle Arroscia with Albenga, Imperia and Ormea seems to be the most suitable option, but the low level of demand of Valle Arroscia may affect its financial viability. Efforts must be made to make it a viable alternative not only to territorial assigned persons and students but also to commuters. Otherwise there will be the risk both of further marginalisation of territorial assigned persons (from a social perspective), and of insufficient patronage, undermining the long-term sustainability of the service.

Bus on demand: turning the current bus lines (or parts of them, i.e. from the last main node onwards) in BoD may be a viable option, but to avoid financial criticalities its routing pattern should be kept as much fixed as possible, and much efforts should be made to increase public transport patronage. Otherwise its financial sustainability, hence its feasibility, would not be granted.

Car clubs and ride sharing: these solutions can prove particularly effective in addressing the issue of dispersed and flexible demand, and in reducing territorial assignment. Furthermore, they can rely on a strong sense of community of the inhabitants of Valle Arroscia. In Valle Arroscia, it would be possible to introduce car clubs in the densest settlements, and to organise ride sharing in the whole territory through a common platform. Still, these measures do not solve the issue of car-dependency; they are not suitable for collective use and imply openness to change and digitalisation. Hence, it is recommended to push forward these options as complementary measures for an efficient and equitable accessibility system.

Service delivery: the itinerant delivery of public services (mobile post office, medical prescriptions at pharmacies, mobile library, etc...) is recommendable to reduce the need to travel of territorial assigned persons. Still, this must be considered as a complementary measure, as it does not solve *per se* territorial assignment and on the contrary it would even worsen it by making people stay home even more and hinder their social life. A possibility is to provide service delivery only for those services that currently have to face criticalities due to scarce demand (such as traditional post offices). Another possibility is to provide services that have a relevant sociocultural value and to link them with social events gathering scattered demand. An example could be a mobile library associated to reading club events in the libraries of the Valley.

Preconditions viable for all the above-mentioned solutions: all these solutions rely on certain essential preconditions pertaining to the specific and general context, described in paragraphs

4.2 and 4.3. These include; improvement of horizontal and vertical coordination; flexible rules and procedures; openness to change (of both institutions and users); digitalisation (provision and competences).

### **Non-Material and Digital Solutions**

In addition to the solutions presented above, the following crosscutting actions may contribute to improve accessibility in the area (see also Appendix II):

Integrated smart ticketing and digital platforms: they can help users in each phase of their trip and ease data collection and analysis.

Thanks to EU funds provided by European Territorial Cooperation programmes, especially through INTERREG transnational and transboundary programmes (INTERREG Maritime, INTERREG Alcotra) and ERDF funds, Liguria Region and Province of Imperia are developing:

- an electronic ticketing system that will allow citizens to use a single device (smartcard, smartphone) to access all regional public transport services, enabling users to travel on the entire railway and road network of Liguria with a single travel document, valid for all means of public transport. It will make it easier for the user to find, pay and validate their ticket. Digitalised validation will also make it possible to collect and analyse demand, so to plan the service in the best possible way.
- an integrated DRT platform for weak demand areas;
- an integrated platform with intelligent services for the interoperability of multimodal links (ship, bus, train, air), with particular attention to cross-border connections

These projects have not been completed, so it is not possible to evaluate their success nor to get detailed information on their operational and business model. Still, together with the SNAI they can establish the foundations to develop effective and long-term solutions. Key to the success of these actions is to bridge the digital divide of Valle Arroscia and to enhance the know-how of both of providers and users. In this respect, Liguria Region is placing much emphasis and inner areas are the first pilot areas in which ultrabroadband will be installed. It is very important to integrate all these initiatives, to build synergies and to accompany the local population in this digital transition.

Territorial mobility management: to date mobility management is not considered as an option by the territory, neither at the local level nor at the provincial one. Still, the introduction of a territorial mobility manager could prove very effective in improving mobility and accessibility of inner areas. The introduction of such measures would be more effective at the provincial level than at the local one, since it is at that level that local transport planning is managed, and it is the proper level to address urban-rural connectivity. Furthermore, it would be very helpful not only for Valle Arroscia but also for the other valleys. Since know-how and resources are

lacking, it is recommended to take advantage and make synergies with any funding opportunity, such as those related to the SNAI, EU projects, etc.

While it is recommended to implement this action at the provincial level, it is at the same time essential to improve capacity for dialogue of the Unione Montana Valle Arroscia. Otherwise, the measure would fail to address the specific needs of Valle Arroscia.

Dematerialisation of services: it would reduce the need to travel and marginalisation, and it can be done at different territorial levels, from the local to the regional. The dematerialisation of public services has several economic, environmental and social benefits. As regards mobility and accessibility, the dematerialisation of public services allows the reduction of the need to travel, making services virtually accessible everywhere. Considering the marginality of the territory of Valle Arroscia, particularly in winter months when snow removal services are not always guaranteed and timely, it is essential to strengthen such services. As far as health is concerned, the telemedicine service would prove particularly helpful to solve the problems generated by the distance from the hospitals. To complement telemedicine also telecare services (i.e. SMS reminders at times when medicines must be taken) should be activated, also through collaboration with local pharmacies that can provide support to more fragile user groups.

For education, e-learning can be of help to reduce the risk of marginalisation connected to putting children from different year groups together in one class, that is typical in Italian small communities in inner areas, whose schools have very few pupils. Such provision would also be beneficial in the case of isolation of the most remote hamlets, i.e. for winter snowfalls, landslides and avalanches. Bridging the digital divide is essential to the dematerialisation of services. Liguria Region has identified inner areas as priority areas to provide ultrabroadband, and it is currently providing this coverage in some municipalities of Valle Arroscia (the others will follow in the near future). Nevertheless, the divide is also due to the lack of digital skills. Measures to bridge the digital divide are described in paragraph 4.3 (recommendations for the general context).

### **Structural Interventions and Intermodality**

As far as the road network is concerned, a large part of the internal provincial network would require considerable maintenance, and the Valley is already pushing the Province to improve road maintenance. Besides, the promotion of intermodality is considered a relevant issue, to be pursued through the following measures:

#### Intermodal passenger transport

Although to date bikes are not seen as a suitable alternative for the mobility of local inhabitants of Valle Arroscia, for some user groups, and where the slope allows it, it would be a viable solution to ride the first and last miles by bike. To foster multimodality and active mobility, and to face the issue of dispersed origins and destinations, buses and vans may be provided with bike racks, so as to make it possible to ride the first and last mile(s) by bikes

(possibly electric). This action would be very helpful also for tourism purposes, as among the main assets of Valle Arroscia are its cycle trails.

### **4.3 Recommendations for the Specific Context**

Based on the analysis of conditions, opportunities and challenges that are specifically related to transport and mobility in Valle Arroscia, the following actions and measures are recommended:

#### Market-demand

In order to avoid the risk of further marginalisation of some user groups and to grant the permanency of the service, it is recommended to draw up policies that are both directed to respond to the needs of disadvantaged groups and have some appeal for those who are currently not searching for alternatives to their preferred transport. If policies are only targeted to user groups that have no alternatives, on one hand they would “stigmatise” such users, and on the other hand they would strive to reach a sufficient demand. Moreover, as happened in other territories with similar accessibility challenges, such services would fail to secure adequate levels of demand. As regards tourists, although actual flows would not justify the introduction of dedicated transport solutions some flexible services can prove useful, especially on the occasion of local events and/or in the form of shuttle (i.e. from Imperia or from Ceva).

Due to high average age and isolation that is typical in non-tourist mountain valleys, time-space geographies of people living in Valle Arroscia are rather traditional. Here the 24-hour society (with its consequences in terms of service provision and mobility) does not seem to have spread yet. Hence, the needs that alternatives to traditional public transport services should meet in Valle Arroscia are not characterised by high degrees of flexibility in terms of time and space distribution of trips. Policies should not focus on high degrees of flexibility.

#### Customer perceptions

The introduction of alternatives to traditional public transport and innovative solutions grounded on ICT will encounter some scepticism due on the one hand to the bad reputation of alternatives to private car and to the other hand to the poor digitalisation of the territory (broadband coverage but also digital skills). It is recommended to carry out extensive communication, information and training campaigns on innovation grounded in participation (such as living labs), targeted to all user groups.

#### Stakeholders

As public transport provision is monopolised by a single company, which is not very keen on introducing alternative services, it is recommended to support dialogue between inner areas in asserting and advocating their needs with upper-tier institutions. Furthermore, this discussion can be used as a mechanism to explore alternative services that do not involve the

concessionary company (e.g. car clubs, car-pooling, etc.). In addition, a valley's transportation and mobility consortium may be of benefit in this respect, if its technical and economic feasibility are verified.

#### **4.4 Recommendations for the General Context**

Finally, building on the analysis of conditions, opportunities and challenges of the general policy, economic, sociocultural and technologic context that surround transport and mobility in Valle Arroscia, the following actions and measures are recommended:

##### Policy and government

A more flexible legislative framework, and/or more flexibility in applying legal rules and principles are crucial, as well as more coordination between the Region and the Province. Interaction among levels and sectors is crucial in order to fulfil the potential of the multi-layered, multi-faceted governance structure and to prevent missing links, incoherence and inefficiencies.

The SNAI provides both economic resources, know-how and a governance approach which should be fully exploited to build and launch long-term processes of improvement of the accessibility of rural areas. Since the three main stakeholders (Liguria Region, Province of Imperia and Unione Montana Valle Arroscia) have different priorities and vertical coordination is weak, the unique opportunity provided by the SNAI in terms of the governance process must not be missed. Furthermore, the financial resources provided by the SNAI could be also devoted to the improvement of know-how of local public officers as regards mobility management and alternative transport services.

##### Economic context

In a context of economic downturn and decline of public investment in services, flexible transport services and alternatives to public transport may prove particularly effective and offer a good solution. In fact, such services can make public transport services more efficient from the economic point of view, and they can be responsive to the needs of user groups who do not have access to a car.

Territorial shrinkage and marginalisation are expected to worsen the criticalities that public transport provision has to face. Still, the economic pressure could also provide opportunities, at least in two ways: increasing public transport patronage, and breaking down some barriers, especially in terms of resistance to change and cooperation among sectors and layers of governance. It is recommendable to provide the preconditions to face and reverse the processes of depopulation and marginalisation, as the SNAI is doing in Valle Arroscia with reference to health, education, mobility and local development capabilities. However, policies for accessibility and urban-rural connectivity should be fully aware of the potential for



economic downturn (i.e. increase in public transport patronage, enhanced horizontal cooperation and openness to change).

#### Sociocultural context

Valle Arroscia is an unspoilt territory with very low density and traffic flows. In addition, tourism flows are limited and are currently not perceived as factors of pollution. Hence, environmental concerns with respect to the impacts of car use are not of particular relevance in Valle Arroscia. Policies to rebalance the modal split in favour of public transport and to promote alternatives to the single-user private car would face resistance if they wanted to leverage environmental aspects. Other elements, such as social or economic aspects should be prioritised for justifying and communicating such policies.

#### Technological context

Technological advances for flexible transport systems and alternatives to private car are offering new potential solutions that can be adopted in Valle Arroscia. Liguria Region is highly interested in and active in projects to introduce smart solutions for transport services. So there is the potential to introduce alternatives to traditional public transport grounded on ITS and innovative digital solutions. However, since, as mentioned above, innovative transport solutions would encounter physical and social barriers, accompanying measures are recommended, both in terms of digital provision and for communication and information actions.

## **4.5 Delivery Plan**

Table 15 provides a framework of the priority, complexity, time frame, expected provider and most relevant actions and outcomes for each of the above-mentioned operational, general and specific recommendations. These have been worked out in consultation with the stakeholders in an attempt to facilitate the reading and understanding of the suggested measures.

Each of the recommendations has a different deliverability rate; in fact, their deliverability results from the combination of their priority and their complexity (see Annex I for Methodology). To show the deliverability rate of each recommendation, the following colour code is used:

<b>Deliverability</b>	High	Medium-high	Medium-low	Low
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Table 15 – Synthesis of operational, specific and general recommendations

Recommendation	Priority (1=Highest Priority, 4 = Lowest Priority)	Complexity (1=Least Complexity, 4 = Most Complexity)	Time Frame (Short, Medium, Long-term)	Provider (Public, Private or Third Sector)	Actions (Steps which need to be followed to put solution into place)	Outcomes (Who benefits and impacts)
<b>OPERATIONAL RECOMMENDATIONS</b>						
<b>Feeder</b> Replacing the current bus lines in internally valleys with a feeder	1 Would make the service much more efficient and to improve accessibility and connections	3 Know-how, operators and resources are available, but legislative and administrative barriers are strong (dialogue with Province and RT)	Short-term	Public Sector /Third Sector	Viability assessment Proactive dialogue with Region, Province and RT Secure funding Implement service	Territorial assigned persons Improved connections and accessibility Cost savings
<b>Bus on demand</b> Turning some of the current lines in BoD (on demand, or on demand at fixed times)	2 Would reduce the number of rides with no passengers and consent	4 It would need a complex viability assessment. The operator should be RT, that currently is not interested in turning the traditional service in BoD	Medium-term	Public Sector	Viability assessment Proactive dialogue with Region, Province and RT The operator must be confirmed Secure funding Implement service	Territorial assigned persons and commuters Improved connections and accessibility Cost savings
<b>Car clubs and ride sharing</b> Car clubs in the densest areas; ride sharing in the whole territory through a common platform	3 Ride sharing is already organised in an informal way. A more structured implementation increases benefits	2 There exist digital platforms, provided by both the public and private sector, which can be referred to. Information campaigns are needed.	Short-term	Private Sector (possibly Public)	Identify existing services and best practices Organise the platform Information/training	Territorial assigned persons and commuters Improved connections and accessibility
<b>Service delivery</b> Itinerant delivery of public services (mobile post office, prescriptions at pharmacies, mobile library, etc...)	4 Improve quality of life and accessibility to services but does not solve territorial assignment, which is a priority	1 Can be implemented incrementally and does not rely on a complex organisation. Can be accompanied by social events to avoid isolation	Medium-term	Public Sector /Third Sector	Analyse demand Dialogue with stakeholders Test a first set Monitor Widen the services	Territorial assigned persons Improved accessibility to services Social life could be hindered
<b>Smart ticketing / digital platforms</b>	2 Digitalisation is a priority,	2 Synergies with ongoing Alcotra	Medium-term	Public Sector	Dialogue with reference persons of ongoing	Local population (all user groups) and

E-ticketing; integrated DRT platform; integrated multimodal platform	but such measures needs to be coordinated with wider initiatives carried out at upper levels	and Maritime projects can make implementation easier and cheaper. Broadband is provided but digital skills must be improved			projects Implement service Information and training campaigns	tourists User helped in each phase of the trip Data collection and analysis eased
<b>Territorial mobility management</b> Introduction of a territorial mobility manager to improve mobility on the territory through the collaboration and coordination of local institutions	1 Could prove very effective in improving mobility and accessibility of inner areas; would be very helpful also for other valleys of the Province	3 Know-how and resources are lacking, synergies are needed with any funding opportunity. Should be implemented at the provincial level, but the Province is currently not collaborative	Medium-term	Public Sector	Analise best practices Proactive dialogue with Region, Province and RT Secure funding Train staff Implement service	Local population (all users groups); public and private operators; other valleys Better accessibility and mobility System more efficient
<b>Dematerialisation of services</b> Telemedicine, telecare, e-learning and e-government	1 Reduce the need to travel and improve quality of life, especially in winter months	2 Can be implemented incrementally and at different territorial levels. Broadband is provided but digital skills must be improved	Medium-term	Public Sector	Identify ongoing initiatives Secure funding Implement service Information and training campaigns	Local population, especially territorial assigned persons Reduced need to travel Better quality of life
<b>Intermodal passenger transport</b> Provide buses and vans with bike-racks.	4 To date bikes are not seen as a viable alternative, but where the slopes allow it, would ease first/last mile	1 It is an easy and not very expensive action, provided that RT, or the cooperatives which would operate the feeder service agree with it.	Short-term	Public Sector/Third Sector	Dialogue with service operators Secure funding Install bike racks Information campaign	Local population (especially young and commuters); tourists Wider catchment area of public transport
<b>SPECIFIC RECOMMENDATIONS</b>						
<b>Degree of flexibility</b> Do not focus on high flexibility, as there is not such demand in V.A. (space and time distribution of trips)	1 Providing a service which does not meet the demand would undermine the financial and operational success of the service	2 A least flexible service would not necessarily mean an easier one. Demand and the timing of services must be carefully analysed. The SNAI will provide resources for it.	Short-term	Public Sector	Analise demand Dialogue with stakeholders Define the degree of flexibility Monitor Adjust (if needed)	Local population; tourists; local administrations; providers Service more efficient and effective
<b>Target policies to various users</b>	2 To focus only on	2 To satisfy different needs is not	Short-term	Public Sector	Analise demand Dialogue with	Local population (all users groups); tourists

Focus on disadvantaged groups (market niche) but also on latent demand	disadvantaged groups could imply insufficient demand and social marginalisation	easy, and complex viability studies are needed. The SNAI will provide resources for it.			stakeholders Communication and information campaigns	Increased viability of the service Better social inclusion
<b>Transport services for tourism</b> Shuttles from Ceva or Imperia in summer and in the occasion of events	4 Tourism is more a goal than a reality; hence, to provide services for tourists is not a high priority	1 Can be organised and operated by the local cooperatives. Can be implemented incrementally.	Medium -term	All Sectors	Define core events Test the service Advertisement Increase	Tourists; local enterprises; local population Increased tourist flows
<b>Transport consortium</b> To develop a valley's consortium, so to join forces and resources	1 The consortium would ease service provision and give a stronger voice to isolated claims	2 The Unione Montana already represents the local administrations and dialogues with the cooperatives. But capacity for dialogue in advoking their need to upper-tier institutions is limited	Medium term	All Sectors	Dialogue between stakeholders (local administrations, cooperatives, RT) Viability study Consortium	Local population; local administrations Increase capacity for dialogue of local administrations More efficient provision and management
<b>GENERAL RECOMMENDATIONS</b>						
<b>Legislative framework</b> More flexible legislative framework, and/or more flexibility in applying legal rules and principles	1 Legislative barriers and a rigid attitude are among the main obstacles to the provision of alternative transport solutions	3 Resistance to change of regional and provincial authorities, and limited room for local stakeholders in policy development and service programming, undermine a structural change	Medium-term	Public Sector	Proactive dialogue among levels of governance Room for change of the legislative framework Laws and attitudes changed	Local administrations, population and enterprises Openness to change Possibility to introduce innovative alternatives
<b>Interaction among layers and sectors</b> More coordination between sectors and between local, supralocal and regional authorities.	1 This is a crucial action, to prevent missing links (i.e. the Province), incoherence and inefficiencies.	3 The current attitude of the Province and of RT is far from collaborative. And they have the upper hand, hence it is not an easy task.	Medium-term	Public Sector	Inter-actor trust and proactive dialogue Permanent working table	Local administrations and population Long-lasting process of improvement of the governance approach
<b>Reverse marginalisation processes</b> Provide the	1 Any measure to improve accessibility will fall short if it is not accompanied by	3 Local population is struggling to keep living in the valley, with profound attachment and	Long-term	All Sectors	Strategic vision of local development Set strategic keystones Identify and program	Local administrations, population and enterprises Long-lasting process of

preconditions to face and reverse the processes of depopulation and impoverishment	concrete actions to reverse marginalisation. The SNAI offers a unique occasion to build and launch long-term process of improvement, which must not be missed	dedication. SNAI offers a unique opportunity. The support provided by CTAI, the Region and ANCI and the will of local authorities set a good ground. To turn seeds into roots for development is not a trivial step, as marginalisation is deep-rooted			actions (cfr. SNAI) Implement actions Keep supporting local development initiatives	improvement of quality of life Repopulation
<b>Bridge the digital divide</b> Provide adequate digital coverage and train local administrations and population	1 Most of the operational recommendations rely on adequate digital provision and skills	2 The Region is currently providing broadband coverage in the whole valley. There is some scepticism about digital services (aged/unaccustomed users)	Short-term	All Sectors	Broadband coverage (ongoing) Information and training campaigns	Local administrations, population and enterprises Reduced marginalization, increased access to opportunities

**Source:** Politecnico di Torino, 2019

## 5 Potential Impacts of Flexible Transport Connections

Internal and external accessibility is one of the most important preconditions for the stability and growth of a socioeconomic system. As reported in the previous paragraphs, Valle Arroscia suffers from inefficient and inadequate public transport services, affecting those who, for several reasons, do not have access to a car. This is one of the reasons why many people, in recent decades, moved from the inaccessible inland areas to the coast where the main urban poles are located.

The provision of flexible transport connections should contribute to improving accessibility to services and opportunities both within the valley and to main urban poles. Initially the main user groups of new services such as flexible public transport, sharing and pooling solutions and intermodality will be those who currently do not have access to the car and greatly suffer from poor accessibility conditions. However, if the newly introduced services will prove effective, in the medium-term a larger group of users may decide to use them, widening their positive impacts and at the same time fostering their stability over time and commercial viability. Once these alternatives are well established, the modal split could be rebalanced. Whilst single-occupant private cars will still dominate, in the long-term these alternatives will make the system more accessible and functioning.

Still, higher accessibility should result not only from improved transport connections. Together with the provision of the latter, it is important to intervene in order to reduce the need for mobility. In fact, improved transport connections could generate positive impacts on the access to public services, on economic development, and on demographic processes. However, at the same time, they could also have potential negative impacts due to easier and faster connections (e.g. magnet effect of main urban nodes), and result in exacerbating the process of social impoverishment of the inland area. In this respect, the introduction of multi-level governance logics and integrated planning processes are a key element. The Strategy for Valle Arroscia fully recognises the potential impacts and spill-over effects of an integrated approach, which combines the provision of basic services (education, health and mobility) and transversal actions to reinforce local socioeconomic development (strengthening of administrative capacity and of local entrepreneurship). Such an integrated approach will set the cornerstones for a long-term structural reinforcement of the socioeconomic system of Valle Arroscia.

Finally, since some of the suggested measures should be implemented at the provincial and at the regional level, also other inland territories with similar challenges to Valle Arroscia will potentially benefit from a more flexible system targeted to such territorial specificities.

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## List of Interviewees

Respondent	Date
Stakeholder representative – Transport Expert	October 2018
Stakeholder representative – Strategic Development Expert	October 2018
National Strategy for Inner Areas – Valle Arroscia – multi-stakeholder working table on transport and mobility (skype call). 5 participants	October 2018
National Strategy for Inner Areas – Valle Arroscia – multi-stakeholder working table on transport and mobility. 20 participants	November 2018
Local stakeholder of Valle Arroscia	November 2018
Officer of the National Committee for Inner Areas – Transport Expert	November 2018
Local stakeholder of Valle Arroscia	March 2019

## APPENDIX I: Specific and general contexts in Province of Imperia – Valle Arroscia

### Specific context in which the action/service will be developed

#### Province of Imperia – Valle Arroscia

	Category/topic	Current condition	Implications and recommendations
<b>Market – demand</b> <i>Market niches relying on / interested in alternatives to private car</i>	Commuters	The general interest for alternatives to private car is not very high; those who have access to car are not in search for alternatives.	<p>The current market niche for alternatives to traditional public transport is mostly composed of people who for age, physical, social or economic reasons do not have access to car.</p> <p>To implement policies and transport solutions exclusively targeted to those groups would mitigate current criticalities in the short term but might produce negative effects in the long term, reinforcing the separation between car and non-car users and marginalizing the latter.</p> <p>It is recommendable to draw up policies that are both directed to respond to the needs of disadvantaged groups and have some appeal for those who are currently not searching for alternatives to their mean of transport.</p> <p>As regards tourists, despite the actual flows would not justify the introduction of dedicated transport solutions some flexible services can prove useful, especially in the occasion of local events and/or in the form of shuttle (i.e. from Imperia or from Ceva).</p>
	Territorial assigned	Due to high rates of aged people and low income levels, there is a proportionally relevant niche of people who do not have access to car due to age or economic reasons. A social transport service is currently provided by a local agency.	
	Tourists	The touristic flows are currently low but the aim is to enhance the touristic attractiveness, especially for slow-tourism that is usually more interested in public transport than mass-tourism.	
	Students	School transport is currently provided only for primary schools; students are relying on public transport services that are currently strongly inadequate to their needs.	
<b>Customer perceptions</b> <i>Attitudes of people who are supposed to use the service</i>	Public transport	Due to its inadequateness, public transport is seen as a “last resort”; users who rely on it are strongly dissatisfied and badly disposed towards it.	<p>Despite the general feeling of those who resisted and keep living in Valle Arroscia might be not to be very dependent on the main urban poles, the need to get better connections and accessibility is deeply acknowledged and some groups are strongly dependent on urban poles.</p> <p>The introduction of alternatives to traditional public transport and innovative solutions grounded on ICT will encounter some skepticism due on the one hand to the bad reputation of alternatives to private car and to the other hand to the poor digitalisation of the territory (broadband coverage but also digital skills).</p> <p>Communication, information and training campaigns on innovation grounded on participation (such as living labs) are recommended.</p>
	Rural dependency on main urban pole(s)	As regards daily travel, about 60% of total trips that are generated by the municipalities of Valle Arroscia are destined within the Valley. Some users, such as high school students are strongly dependent on urban poles. For unsystematic trips, the dependence on urban poles is higher, since they host the main services.	
	Digitalisation of services	The territory is not covered by broadband, and about 40% of population is not connected at all to the web. The sociocultural context is quite accustomed to traditional/analog media and devices. So the population can't be very confident about the effectiveness of the digitalisation of services.	
<b>Stakeholder</b> <i>Stakeholder concerns, political environment, know-how</i>	Political will	Liguria Region aims to improve accessibility and foster transport equity, but its action is focused on regional transport services, while local ones are entrusted to the Province. Province of Imperia is the best territorial level to improve urban-rural connectivity, but it is not very active to this respect, also due to the lack of staff and resources. Valle Arroscia has the improvement of urban-rural connectivity as one of its main goals, but its decision-making power for public transport is very weak.	<p>The context in which the operational measures will be implemented features several criticalities that must be carefully taken into account since they strongly affect the feasibility of such measures.</p> <p>Since the three main stakeholders (Liguria Region, Province of Imperia and Unione Montana Valle Arroscia) have different priorities and vertical coordination is weak, it is recommendable to fully exploit the important opportunity provided by the SNAI in terms of governance process.</p> <p>Furthermore, the financial resources provided by the SNAI could be also devoted to the improvement of know-how of local public officers as regards mobility management and alternative transport services.</p> <p>Finally, considering that public transport provision is monopolised by a single company which is not very keen on introducing alternative services, it is recommendable both to put much effort in supporting the capacity for dialogue of inner areas in asserting and advoking their needs, and to explore alternative services that don't suppose to involve that concessionaire (such as car clubs, car pooling, etc.).</p> <p>Also a valley's transportation and mobility consortium may be of help to this respect, provided that its technical and economic feasibility are verified.</p>
	Vertical & horizontal (among sectors and among territorial units) coordination	Vertical coordination among actors is quite poor due to the lack of engagement of the Province, so there is a missing link between the local and the regional level. Horizontal cooperation is high at the local and regional level. The Strategy for Valle Arroscia which is being developed within the framework of the SNAI, is aimed to reinforce vertical and horizontal coordination.	
	Know-how	Due to the lack of staff and resources, know-how that is needed to introduce flexible and innovative transport services is weak at the provincial and local level.	
	Alternative transport providers	Transport service is almost totally provided by the public sector, by the public transport concessionaire who serves the whole province. The LPT service is traditional, with its inadequateness and inefficiencies. But the service provider does not show any intention to introduce alternative services, and until 2022 (duration of the contract), slight changes can be made to the actual offer.	



## General context that influences the specific context and the operational level

### Province of Imperia – Valle Arroscia

		Current condition	Implications and recommendations
<b>Policy and government</b>	Spatial planning tools/strategies (disperse, monocentric, polycentric structures; sprawl; ...)	The territorial structure is polycentric – hierarchical. The containment of sprawl and the promotion of spatial development patterns that can be functional to improve accessibility and reduce car dependence are left to the sensitiveness of local administrations. The provincial spatial plan (NUTS3) was drawn up in 2009 and does not seem to pay particular attention to these issues. The regional territorial plan (NUTS2) was drawn up in 2014 but it has not been approved yet.	It is expected that the development pattern will inertially follow the current structure, with dispersed settlements and minor centres gravitating towards major ones. On the one hand it is recommended to pay more attention to the containment of land consumption and dispersed settlements. On the other hand, the proposed solutions to improve accessibility and urban-rural connectivity must cope with this condition and provide services and facilities addressed to people moving from hamlets to town centres and from towns to main poles.
	Transport regulation and licensing	According the regional law 33/13, the Province of Imperia is in charge of the “provincial basin plan”. Furthermore, it enters into programme agreement with the Region to define the minimum quantity and quality standards of local public transport services and for additional services. The Province and the Region may authorise additional services in supra-municipal areas, as long as they comply with the regulations in force and do not compete with local public transport.	Flexible and innovative transport solutions have to deal with a rigid legislative system and are subject to authorisation by the Province and the Region (as long as they comply with the regulations in force and do not compete with local public transport). A more flexible legislative framework, and/or more flexibility in applying legal rules and principles are crucial, as well as coordination between the Region and the Province.
	Accessibility policies	Despite the Regional Transport Plan should be the main reference, it is currently under development and it is not exactly known when the planning process will be completed. Due to this reason, at the moment the main reference is the regional law 33/2013 on public transport, which is quite vague as regards transport provision in weak demand areas. Since Valle Arroscia is one of the selected areas for the implementation of the National Strategy for Inner Areas, other policies that impacts transport and accessibility in this area are the ones developed within the implementation of this Strategy: the Integrated Territorial Investment for Inner Areas of Liguria Region (ITI), and the local strategy for Valle Arroscia.	The traditional policy and legislative framework are weak with respect to accessibility policies for weak demand areas. Still, an innovative and virtuous governance process is being carried out within the framework of the National Strategy for Inner Areas (SNAI). The SNAI provides both economic resources, know-how and a governance approach which should be fully exploited to build and launch long-term process of improvement of the accessibility of rural areas.
	Governance structure	A multi-layered, multi-faceted governance structure applies to transport planning. Local, provincial and regional authorities are involved in various ways in the planning process, with resources and planning being deployed both from the bottom-up and top-down.	The multiplicity of actors and competences might imply missing links, incoherence and inefficiencies. Interaction among levels and sectors is crucial in order to fulfil the potential of this multi-layered, multi-faceted governance structure. This interaction is being applied especially within the framework of the National Strategy for Inner Areas.
<b>Economic</b>	Public investment in local services	Due to the economic downturn, public investment in services is decreasing. Local Public transport has been progressively subjected to efficiency savings and cut to the bone. As regards public transport in weak demand areas, public investment is almost exclusively limited to the provision of minimum services required by law. Local transport is financed by the public sector, 80% by the region and 20% by municipalities. Municipalities also finance school transport and social transport (for elderly and disabled people).	The most affected by decreased investment in local public transport are already vulnerable groups, i.e. those who don't have access to a car, due to physical, age or economic reasons. In such a context, flexible transport services and alternatives to public transport may prove particularly effective and recommendable.
	Affordability of the car	Income levels are lower in Valle Arroscia than in the Province of Imperia, which in turn features lower levels than the regional ones. The average of taxpayers with low income (lower than 15.000€/year) is 52% in Valle Arroscia, 48% in Province of Imperia, 40% in Liguria, while for high incomes (higher than 55.000€/year) the averages are respectively 0,83%; 3,39%; 4,88%. Private vehicle ownership is lower than average (compared to upper territorial levels and other Provinces of Northwestern Italy).	Due to low income levels, the car is supposed to be less affordable in Valle Arroscia than at the provincial and regional level. Therefore, social equity issues are of significant relevance in this area. Furthermore, the economic downturn is supposed to enlarge the gap between urban and rural areas in terms of transport equity. Investment in cost-efficient, innovative and flexible transport services should be targeted specially to disadvantaged groups.
	Growth / Shrinkage	In addition to the general economic downturn, the socioeconomic system of inner areas of the Province of Imperia is shrinking also due to the process of rural-urban migration of people and activities.	Territorial shrinkage and marginalisation are expected to worsen the criticalities that public transport provision has to face. Still, the economic pressure could also provide opportunities in two ways: on the one hand increasing public transport patronage, and on the other hand breaking down some barriers, especially in terms of resistance to change and cooperation among sectors and layers of governance. On the one hand it is recommendable to provide the preconditions to face and reverse the processes of depopulation and marginalisation, as the SNAI is doing. On the other hand, policies for accessibility and urban-rural connectivity should be fully aware of the potentialities

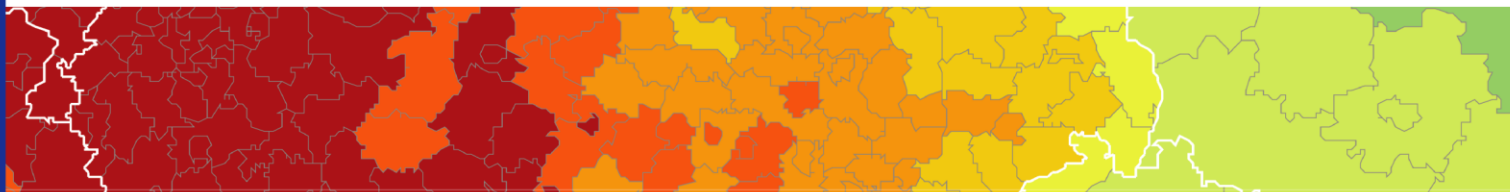
			of the economic downturn and exploit them.
<b>Sociocultural</b>	Demographic trends	Valle Arroscia is losing population, as people are moving from the inland to the main urban poles along the coast. Demographic change is -9,8% from 2001 to 2017, while on average in the whole province is +1,3% and in coastal towns and cities it has grown much more.	Depopulation decreases public transport patronage and contributes to make traditional public transport inefficient and ineffective. In such a context, the provision of flexible and more efficient public transport is crucial, as well as alternative transport solutions (sharing and pooling solutions, intermodality, etc).
	Environmental concerns	Valle Arroscia is an unspoilt territory with very low density and traffic flows. Also touristic flows are limited and are not perceived as factors of pollution. Hence, environmental concerns with respect to the impacts of car use are not of particular relevance in Valle Arroscia.	Policies to rebalance modal split in favour of public transport and to promote alternatives to the single-user private car would face resistance if they wanted to leverage environmental aspects. Other elements, such as social or economic aspects should be prioritised for justifying and communicating such policies.
	Time-space geographies (24-h society, ...)	Due to high average age and isolation that is typical in non-tourist mountain valleys, time-space geographies of people living in Valle Arroscia are rather traditional. Here the 24 hours society (with its consequences in terms of service provision and mobility) does not seem to have spread yet.	The needs that alternatives to traditional public transport services should meet in Valle Arroscia are not characterised by high degrees of flexibility in terms of time and space distribution of trips. Hence, policies should not focus on high degrees of flexibility.
	Social conscience	Mountain valleys are often characterised by high social cohesion and sense of belonging.	
<b>Technological</b>	Technological advances (i.e. in programming and software)	Technological advances for flexible transport systems and alternatives to private car are offering new potential solutions that can be adopted in Valle Arroscia. Liguria Region is highly interested in and active in projects to introduce smart solutions for transport services.	There is the potential to introduce alternatives to traditional public transport grounded on ITS and innovative digital solutions.
	Digitalisation (provision and competences)	To date, the territory is not covered by broadband. About 40% of population is not connected. The local strategy for Valle Arroscia drawn out within the SNAI includes broadband coverage as a strategic action to be implemented in the very next future. Furthermore (and as a consequence), digital skills of the population are quite limited.	Innovative transport solutions would encounter physical and social barriers. Accompanying measures are recommended, both in terms of digital provision and of communication and information actions.

APPENDIX II: Operational level –Non-Material and Digital Solutions. Province of Imperia – Valle Arroscia

Operational level –Non-Material and Digital Solutions. Province of Imperia – Valle Arroscia

		Digital platforms and smart ticketing	Territorial mobility management	Dematerialisation of services
<b>Description</b> <i>General description, not referred to the specific stakeholders' territories</i>		Digital platforms can help users in each phase of their trip. Examples of integrated platforms are: - trip planners, which help the user to choose the best solution for his trip, providing information on the route, cost, journey time, public transport lines and timetables, etc... Trip planners can be multimodal or single-mode; - ticketing platforms, which help the user to get his ticket for single or multiple transport services or modes; - ride-sharing platforms, which bring together supply and demand, and ease their interaction. While the above-mentioned actions are mainly aimed to ease the user, smart ticketing can help both the user and the provider of the transport service. With smart ticketing the purchase operation can be dematerialized, and validation is digitalised so that information on demand can be automatically collected and analysed.	The aim of the territorial mobility manager is to improve mobility on the territory within his competence through the collaboration and coordination of local institutions (municipalities, schools, health services), local transport companies and associations of companies / categories present on the territory. Within the competences of the territorial mobility manager there is also the harmonisation of LPT services with school/work schedules. Plans for home-work and home-school trips can be also developed independently from the establishment of a territorial mobility manager.	The dematerialisation of public services has several economic, environmental and social benefits. As regards mobility and accessibility, the dematerialisation of public services allows to reduce the need to travel, making service virtually accessible everywhere. Examples of dematerialisation of public services are telemedicine, telecare, e-learning and e-government.
<b>Territorial level / competence</b>	Local (LAU2 or equivalent)			
	Provincial (NUTS3)			
	Regional (NUTS2)			
<b>Barriers / criticalities</b>	Lack of resources			
	Digital provision			
	Know-how - providers			
	Know-how - users			
<b>Experiences in the stakeholder territories</b>		Thanks to EU funds provided by European Territorial Cooperation programmes, especially through INTERREG transnational and transboundary programmes (INTERREG Maritime, INTERREG Alcotra) and ERDF funds, Liguria Region and Province of Imperia are developing: - an electronic ticketing system that will allow citizens to use a single device (smartcart, smartphone) to access all regional public transport services, enabling users to travel on the entire railway and road network of Liguria with a single travel document, valid for all means of public transport. It will make it easier for the user to find, pay and validate the ticket. Digitalised validation will also make it possible to collect and analyse demand, so to plan the service in the best possible way. - an integrated bus on demand platform for weak demand areas; - an integrated platform with intelligent services for the interoperability of multimodal links (ship, bus, train, air), with particular attention to cross-border links. These projects don't reach conclusion yet, so it is not possible to evaluate their success nor to get detailed information on their operational and business model.		Within the National Strategy for Inner Areas, Liguria Region aims to implement and strengthen telemedicine, telecare and e-learning services in Valle Arroscia. The Strategy doesn't reach conclusion yet, so it is not possible to evaluate its success nor to get detailed information on their operational and business model.

	Scarcely relevant
	Moderately relevant
	Highly relevant



#### **ESPON 2020 – More information**

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