

Statistical Analysis of the Population of the Vallformosa Territory.

Descriptive Report (Study No.1)

**Vallformosa Foundation Chair of Strategic Territorial
Transformation for Community Welfare**

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Table of Contents

1. ABSTRACT.....	3
2. INTRODUCTION	4
2.1 THE VALLFORMOSA TERRITORY	4
2.2 ABOUT THE VALLFORMOSA FOUNDATION.....	8
2.3 ABOUT THE VALLFORMOSA FOUNDATION CHAIR OF STRATEGIC TERRITORIAL TRANSFORMATION FOR COMMUNITY WELFARE (UPF-BSM).....	9
2.4 ABOUT THE UPF-BARCELONA SCHOOL OF MANAGEMENT.....	9
2.5 WEBSITE OF THE VALLFORMOSA FOUNDATION CHAIR OF STRATEGIC TERRITORIAL TRANSFORMATION FOR COMMUNITY WELFARE	9
2.6 ABOUT THE AUTHORS	10
3 CONTEXT OF THE STUDY	11
4 WORKING HYPOTHESIS	12
5 OBJECTIVES	12
6 WORKING METHODOLOGY	13
7 RESULTS	14
7.1 UPDATED STATISTICAL DATA FOR EACH MUNICIPALITY OF THE VALLFORMOSA TERRITORY	14
<i>Font-rubí.....</i>	14
<i>Les Cabanyes</i>	15
<i>Pacs del Penedès</i>	15
<i>Sant Martí Sarroca</i>	15
<i>Vilafranca del Penedès</i>	16
<i>Vilobí del Penedès.....</i>	16
7.2 POPULATION EVOLUTION (1991–2021)	16
7.3 COMPARATIVE DISTRIBUTION OF THE POPULATION BY AGE GROUPS	21
7.4 COMPARATIVE DISTRIBUTION OF THE POPULATION BY GENDER GROUPS	28
7.5 COMPARATIVE DISTRIBUTION OF THE POPULATION BY ORIGIN	30
7.6 EDUCATIONAL LEVEL AND SCOPE OF EMPLOYMENT OF THE INHABITANTS OF THE VALLFORMOSA TERRITORY	36
7.7 INCOME OF THE PEOPLE IN THE VALLFORMOSA TERRITORY	40
8 CONCLUSIONS	44
9 DISCUSSION AND LIMITATIONS.....	47
10 ACKNOWLEDGEMENTS.....	48
11 DOCUMENTARY AND BIBLIOGRAPHIC REFERENCES.....	49
ANNEX A: LIST OF TABLES AND FIGURES	50

1. Abstract

This study presents and analyses descriptive information of what we call the “Vallformosa Territory”, an area comprised of six municipalities in the province of Barcelona, located in the valley of the same name, in the region of Alt Penedès: Vilafranca del Penedès, Vilobí del Penedès, Sant Martí Sarroca, Pals del Penedès, Les Cabanyes and Font-rubí. Vallformosa has an area of about 2,000 hectares.

The descriptive statistical study of the population of these municipalities, prepared within the framework of the Vallformosa Foundation–UPF Barcelona School of Management Chair of Strategic Territorial Transformation for Community Welfare, constitutes a documented population basis for subsequently elaborating new research, providing extensive knowledge of the area, so that progress can be made in the feasibility of carrying out the Territorial Transformation Project, which is being defined by the Vallformosa Foundation. The Project wants to make the Vallformosa Territory a sustainable space from all points of view, modifying the relations between farmers and land owners, and providing progress and a proud sense of belonging to the people, while making the area central to the progress of the country. The new organization of the Vallformosa Territory needs to be an original model that other areas want to copy.

The statistical analysis shows that the population of the Vallformosa Territory is being rejuvenated and is attractive for people who wish to live there, with these people coming mostly from other parts of the Barcelona province. The level of training of the population of the territory is lower than the average for the province, and the weight of labour activity dedicated to construction is greater. It is especially noteworthy that the activity in the agricultural sector in the small municipalities that make up the territory (Vilobí del Penedès, Sant Martí Sarroca, Pals del Penedès, Les Cabanyes and Font-rubí) is seven times higher than that of Vilafranca del Penedès, the province of Barcelona and overall in the province of Catalonia. The average per capita income of the Vallformosa Territory and the Alt Penedès region is significantly lower than that of the province of Barcelona.

The conclusion is, therefore, that **the Vallformosa Territory is being rejuvenated and is very attractive for those coming from outside. This can lead to a strategic transformation, which would involve a qualitative and quantitative leap in training and knowledge, economic prosperity, social and ecological sustainability, and community well-being.**

2. Introduction

This study, based mainly on the statistical analysis of the population of the municipalities that make up the Vallformosa Territory, is the first to be carried out by the Vallformosa Foundation-UPF Barcelona School of Management Chair of Strategic Territorial Transformation for Community Welfare. It describes and analyses several variables based on objective data, which allow the population of the Vallformosa Territory to be identified and understand how it has evolved over the last thirty years, given that people are the essential element to be able to support the strategic territorial transformation project, led by the Vallformosa Foundation.

This report describes what is known as the Vallformosa Territory, details the main objectives of the Vallformosa Foundation, based on its common values with the Chair of the UPF-Barcelona School of Management and, subsequently, places the context of the study in relation to the project for territorial transformation. We will then formulate a working hypothesis and the objectives we are pursuing, and will report the results we have obtained before giving our conclusions. Finally we will propose other research areas that may be of use in the discussion and limitations section.

2.1. The Vallformosa Territory

The territory is part of the Alt Penedès region, whose capital is Vilafranca. It has an area of 592.41 km². As its name suggests, Vallformosa is a valley that extends between the municipalities of Vilafranca del Penedès, Vilobí del Penedès, Sant Martí Sarroca, Pacs del Penedès, Les Cabanyes and Font-rubí. It has an area of about 2,000 hectares. The backbone of the valley is the waterway of the Llitrà river, and that of the Maïans river. The epicentre of the valley is the church of Santa Maria de Vallformosa.

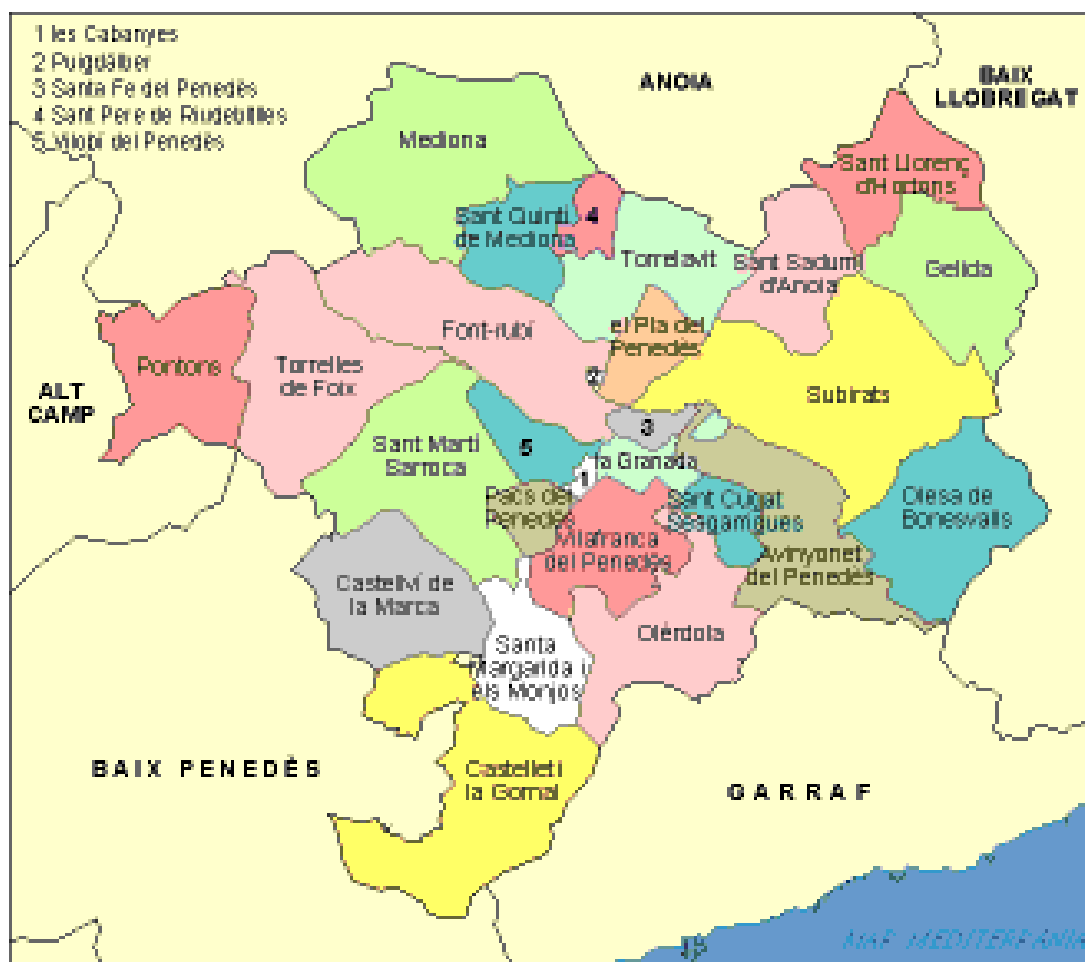
The first documented mention of Vallformosa, according to the historian Montserrat Villaverde¹, then in charge of assessing the natural heritage of the valley, can be found in the Universal Chronicle of Catalonia, which the jurist and humanist of Barcelona, Jeroni Pujades, wrote in the last years of the 16th century, although it was not published until 1829: "In Vallformosa, according to Pujades, around the year 941 there was an armed uprising of the Christian inhabitants against Muslim soldiers who had looted and occupied different parts of the region over the course of a military incursion. That revolt occurred with the support of a counterattack led by the bishop of Barcelona Guitara, who had retaliated against a watchtower

¹ VILLAVERDE, MONTSERRAT (2002) *Vallformosa, historical study*. (Work in progress)

near Granada.” Villaverde adds: “It was in the 10th century that Penedès began to have a presence in historical records. During this period it was a border area between the dominions of the Christian counties to the north, headed by the county of Barcelona, and the extraordinary caliphate of Al-Andalus to the south, with Tarragona being the most advanced city in the territory of what is now Catalonia. Back then, the border was not a well-defined line, but a vast space of confused organization and uncertain authority, the scene of occasional skirmishes between armed people on both sides. It was during the 10th century that the counts of Barcelona began to encourage the repopulation and organization of the entire surroundings of the Penedès, conceived as a mark of protection for the county and the city of Barcelona itself... The means of organizing that space was the arrangement of a network of defined castles, guard towers and defence towers, with an attached territory around them.”

Thus, we see that the Vallformosa Territory acted as a frontier during medieval times. However, it is currently located on the periphery. Vallformosa Foundation aims to transform this territory, so that it goes from being considered peripheral, to occupying a central position.

Historically, Vallformosa has been linked to owners and absentees who profited from the production of cereals, forestry, fruit trees, vegetable gardens and vineyards. The relationship between landowners and farmers has always been very uneven. Counts and nobility in general settled farmers in the Penedès, establishing land there under Emphyteutic lease; that is, property is ceded in exchange for the perpetual provision of a census and the recognition of certain territorial rights. The Mas was the keystone of feudalism. It constituted a unit of family and productive economic exploitation and at the same time fixed the population in a certain territory, where a lord, who imposed taxes and income, exercised authority. The gap between the two has survived to this day.



Map of the Alt Penedès region. Source: IDESCAT

In the words of the president of the Vallformosa Foundation in the foreword to Vallformosa, transforming the territory. El Penedès-Barcelona²:

Farmers and producers are for the Foundation the first pillar of change and transformation in order to reach a new horizon of growth and shared progress. A human capital, the third landscape, which must be involved in all the processes of a transformation based on environmental sustainability and economic, social and cultural prosperity.

The territory, during the last century, **was subjected to an exploitation of resources that has fragmented, deteriorated and polluted it**, with a consequent loss of quality of life for its inhabitants and degradation of the natural heritage and the

² VALLFORMOSA FOUNDATION, 2021

economy for future generations. The origin of this situation can be attributed to vineyard monoculture and the industrialization of its processes and also to other industrial activities, mainly the extraction of various geological materials for the construction sector.

Nowadays, **when all social and economic activity is subject to unprecedented globalization**, there is undoubtedly a need for a general rethink around **the management of territories**, the activities that take place in them, and the means and tools needed today to lay the foundations for the future, where **sustainability is both a challenge and a reality**. Vallformosa Foundation wants to propose a basis for a paradigm shift in the analysis and study of procedures and actions for the management of the territory. With the involvement and direct participation of all the people involved, associative entities and institutions with wide competence, and with the collaboration and academic and scientific support necessary to rigorously formulate actions and excellence in the results.

The Vallformosa territorial transformation project is comprehensive and holistic and is framed within the SDGs of the United Nations 2030 Agenda³:



³ UNITED NATIONS, 2015.

2.2. About Vallformosa Foundation

The Vallformosa Foundation was established in June 2020. Its objective is to **promote global initiatives** to develop and improve, on an economic, social, environmental and cultural scale, the territory that occupies the valley in which the wineries and facilities of Vallformosa are located, as well as the Hermitage of Santa Maria de Vallformosa, so as to **preserve the landscape**, keeping it **free of environmental incursion**.

It also aims to **promote research and development in the primary sector** and, in particular, in **the cultivation and production of organic vineyards**, as well as other products linked to the Vallformosa Territory. At the same time, it aims to **promote and disseminate knowledge of the territory and ecological production**, as a basis for **sustainable development**, as well as enhancing **the legacy of tangible and intangible heritage** linked to the land and people, and integrate small producers in the sector.

In the words of its president, Josep Graells, “the values of the Vallformosa Foundation make up a unique model, which has as its focus the feeling of belonging to a sustainable territory.”



General scope of the landscape of the Vallformosa Territory⁴.

⁴ VALLFORMOSA FOUNDATION, 2021

2.3. About the Vallformosa Foundation Chair of Strategic Territorial Transformation for Community Welfare (UPF-BSM)

In November 2022, the UPF Barcelona School of Management (UPF-BSM) and the Vallformosa Foundation signed a collaboration agreement to promote the [Chair of Strategic Territorial Transformation for Community Welfare](#), with the aim of defining **a new model of relationship between people, companies and the territory which is more just, equitable, inclusive and sustainable.**

The chair aims to incorporate **a feeling of belonging and, at the same time, economic and social prosperity for the future of the younger generations of the Penedès territory.** The chair addresses issues such as the **social and personal identity of the territory, the depopulation and repopulation of the agricultural territory, transformation, innovation and entrepreneurship that has social impact,** among others.

From the creation and transfer of knowledge of academic rigour that characterizes the research of the UPF-BSM, and in harmony with the values of the Vallformosa Foundation, the chair will act as a **social dynamizer and generator of fame and prestige** for the territory.

2.4. About the UPF-Barcelona School of Management

UPF Barcelona School of Management (UPF-BSM) is the management school of Pompeu Fabra University, **the best public university in the country**, according to the *Times Higher Education* 2022 ranking. UPF-BSM is doubly accredited by AMBA and EQUIS, two of the three most prestigious academic recognitions in the higher education sector, which places it among **the best business schools in the world.** The School makes a determined commitment to academic quality and the **development of research** as focal points for **social transformation and bases itself on values such as rigour and ethics**, which allows it to **generate knowledge and economic and social impact**, thanks to an active, personalized and interdisciplinary learning model. It has a network of more than 500 collaborating companies and a community of more than 25,000 *alumni* worldwide.

2.5. Website of the Vallformosa Foundation Chair of Strategic Territorial Transformation for Community Welfare

<https://www.bsm.upf.edu/ca/catedra-transformacio-territorial-benestar-comunitari>

2.6. About the authors

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Her areas of research are: leadership, working modalities in companies, time management, business productivity, personal well-being and health. All with a gender perspective.

She has a degree in Psychology (UB) and a doctorate in Communication (URL). Journalist for the general written press, specialized in Communication. Director and presenter on radio and television. *Coaching* and teaching in Management Skills, Interpersonal Communication and Crisis Communication on the Master's Degree in Human Resources Management at UPF-BSM. She also provides training in Communication to managers in their own companies, to those in charge of Administration at the School of Public Administration of Catalonia (EAPC) and at several universities (University of Barcelona, International University of Catalonia and OBS – Online Business School).

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3. Context of the study

This study is carried out in the context of the Vallformosa Territory Transformation Project, promoted by the Vallformosa Foundation. In the words of its president, Josep Graells⁵, it is the most important project in southern Europe in terms of its relationship with people in the agricultural field. The project of the Strategic Plan for the transformation of the Vallformosa Territory is based on the patrimonial, cultural and social wealth that defines it, after noting that these have been ignored for several generations.

The Vallformosa Foundation therefore contemplates the need, as described by its CEO, Josep M. Pelegrí⁶, to profoundly change these structures, especially in the agricultural sector. It is precisely in this area, where the focus of transformation must be placed. The primary sector represents the key focus and opportunity for transformation based essentially on sustainability, decarbonization, culture, heritage and *rurality*.

Ultimately, it wishes to generate a positive impact on the progress and well-being of the population by creating a more competitive economy in the territory. Technology, research and innovation will be increased. In addition, the project will lead to an ecological and digital transformation and will decarbonize the territory. In this way, the Vallformosa Territory will be able to offer more opportunities, especially to women and young people. With a more competitive and “social” economy, there will also be a greater attraction of talent. More jobs will be created, which are more stable and of a higher quality. The population will wish to settle and stay in the territory, as it will offer more opportunities for the future. Ultimately, the strategic project pursues greater well-being for all people living in the territory and greater economic prosperity.

The transformation contained in the Strategic Transformation Plan proposes a new governance in all sectors, based on territorial, economic, social, agricultural, and technological sustainability. Bearing in mind that the Vallformosa Territory has great potential for transformation, it wishes to be a model for other territorial transformation projects. Finally, it should be noted that the transformation proposal recommends greater cooperation, in all senses, between the Vallformosa Territory and the capital of Catalonia, Barcelona.

⁵ Declarations made by the President of the Vallformosa Foundation, Josep Graells, at the signing ceremony of the constitution of the Vallformosa Foundation-UPF Barcelona School of Management Chair, on 29 November 2022.

⁶ PELLEGRÍ, 2022.

4. Working hypothesis

The preliminary data collected concerning the characteristics of the Vallformosa Territory allow us to develop the following working hypothesis:

The Vallformosa Territory has specific characteristics that make it suitable for strategic territorial transformation, aimed at making it a global attraction due to its ecological, economic, social and environmental sustainability.

5. Objectives

This study seeks the following general objective:

- Describe how people live in the so-called Vallformosa Territory, based on objective data concerning:
 - the evolution of demographic growth
 - by age groups,
 - by gender,
 - according to origin,
 - level of education,
 - the type of work carried out and
 - income per capita.

Such that a snapshot of the population can be taken, which allows the working hypothesis to be confirmed or repudiated.

6. Work method

In this research, (December 2022–March 2023), the following steps were carried out:

1. Documentary and bibliographic review.
2. Design of the following data categories, indicated in the database. Comparison and harmonization of information. Relative comparisons of percentages were chosen whenever possible.
 - 2.1. Population resident in the municipalities that make up the Vallformosa Territory, considering its growth (the difference between the value of two consecutive censuses).
 - 2.2. Distribution by age and gender of the population.
 - 2.3. Origin of the population (effect of emigration and explanation of the cause of the observed demographic change).
 - 2.4. Educational level of the population.
 - 2.5. Active population and economic sector of the labour activity.
 - 2.6. Income per capita.
3. Examine the data available on the website of the INE (National Institute of Statistics, IDESCAT and the Observatory of the Health System of Catalonia. Census data. Explanation of consultations. Detailed municipal and provincial results with a maximum of two categories per intersection. Development of regional data. Data processing. (Vilafranca del Penedès is considered separately from the other five small municipalities due to its population volume).
4. Harmonization of censuses using the common minimum among them.
5. Processing of population-related data using high-level Python programming and its statistical libraries.
6. Preparation of figures.
7. The associated data on the per capita income of the Vallformosa Territory comes from the Tax Agency, relating to those municipalities that have more than 1,000 inhabitants. The authors prepared corresponding data for the province of Barcelona. Due to the higher weighting of the city of Barcelona, relative values divided into three categories: high income, middle income and low income.
8. Data on income per capita was again processed using the Python language and its statistical libraries.
9. The analysis and reporting of the results was carried out.

10. Conclusions were drawn.

11. A discussion section and limitations were added.

7. Results

First, we will have a quick look at updated statistical data (year 2022) according to IDESCAT⁷, for each municipality that makes up the Vallformosa Territory: the global population, births, family housing, new housing, registered unemployment, the part of the population that understands Catalan, the surface area, participation in the last municipal elections of 2019 and municipal waste per capita. Subsequently, we will analyse the evolution over time of the global population, by age groups, by origin, level of education, area of activity and per capita income. In some cases, we will relate the data to the global data for the province of Barcelona and, in others, with the region of Alt Penedès.

⁷ DEPARTMENT OF EDUCATION. EDUCATIONAL SERVICE OF ALT Penedès.

7.1. Updated statistical data for each municipality of the Vallformosa Territory

To interpret the data in these tables, the following two points should be considered:

- The average turnout in the 2019 municipal elections in Catalonia was 64.81%
- Municipal waste per capita, on average in the EU, is 1.45 kg/day. In Spain it is 1.29 kg/day.

Font-rubí	
<u>Population 2022</u>	<u>1,446</u>
<u>Births 2021</u>	<u>12</u>
<u>Family housing 2011</u>	<u>674</u>
<u>New housing 2021</u>	<u>2</u>
<u>Recorded unemployment 2022</u>	<u>44.3</u>
<u>Population that understands Catalan 2011</u>	<u>1,400</u>
<u>Area 2022</u>	<u>37.42</u>
<u>Participation (Municipal Elections) 2019</u>	<u>76.8</u>
<u>Municipal waste per capita 2020</u>	<u>1.55</u>

Table 1. Statistical data for Font-rubí. Source: IDESCAT

Les Cabanyes	
<u>Population 2022</u>	<u>999</u>
<u>Births 2021</u>	<u>7</u>
<u>Family housing 2011</u>	<u>341</u>
<u>New housing 2021</u>	<u>7</u>
<u>Recorded unemployment 2022</u>	<u>29.0</u>
<u>Population that understands Catalan 2011</u>	<u>883</u>
<u>Area 2022</u>	<u>1.15</u>
<u>Participation (Municipal Elections) 2019</u>	<u>77.4</u>
<u>Municipal waste per capita 2020</u>	<u>1.28</u>

Table 2. Statistical data for Les Cabanyes. Source: IDESCAT

Pacs del Penedès	
<u>Population 2022</u>	<u>935</u>
<u>Births 2021</u>	<u>8</u>
<u>Family housing 2011</u>	<u>362</u>
<u>New housing 2021</u>	<u>0</u>
<u>Recorded unemployment 2022</u>	<u>41.7</u>
<u>Population that understands Catalan 2011</u>	<u>795</u>
<u>Area 2022</u>	<u>6.27</u>
<u>Participation (Municipal Elections) 2019</u>	<u>75.6</u>
<u>Municipal waste per capita 2020</u>	<u>1.65</u>

Table 3. Statistical data for Pacs del Penedès. Source: IDESCAT

Sant Martí Sarroca

<u>Population 2022</u>	<u>3,313</u>
<u>Births 2021</u>	<u>32</u>
<u>Family housing 2011</u>	<u>1,280</u>
<u>New housing 2021</u>	<u>1</u>
<u>Recorded unemployment 2022</u>	<u>129.4</u>
<u>Population that understands Catalan 2011</u>	<u>3,053</u>
<u>Area 2022</u>	<u>35.27</u>
<u>Participation (Municipal Elections) 2019</u>	<u>71.6</u>
<u>Municipal waste per capita 2020</u>	<u>1.53</u>

Table 4. Statistical data for Sant Martí Sarroca. Source: IDESCAT

Vilafranca del Penedès

<u>Population 2022</u>	<u>40,056</u>
<u>Births 2021</u>	<u>372</u>
<u>Family housing 2011</u>	<u>19,067</u>
<u>New housing 2021</u>	<u>205</u>
<u>Recorded unemployment 2022</u>	<u>2,008.0</u>
<u>Population that understands Catalan 2011</u>	<u>35,834</u>
<u>Area 2022</u>	<u>19.65</u>
<u>Participation (Municipal Elections) 2019</u>	<u>66.2</u>
<u>Municipal waste per capita 2020</u>	<u>1.44</u>

Table 5. Statistical data for Vilafranca del Penedès. Source: IDESCAT

Vilobí del Penedès

<u>Population 2022</u>	<u>1,130</u>
<u>Births 2021</u>	<u>5</u>
<u>Family housing 2011</u>	<u>455</u>
<u>New housing 2021</u>	<u>4</u>
<u>Recorded unemployment 2022</u>	<u>36.5</u>
<u>Population that understands Catalan 2011</u>	<u>1,068</u>
<u>Area 2022</u>	<u>9.34</u>
<u>Participation (Municipal Elections) 2019</u>	<u>82.5</u>
<u>Municipal waste per capita 2020</u>	<u>1.74</u>

Table 6. Statistical data for Vilobí del Penedès. Source: IDESCA

7.2. Population evolution (1991–2021)

Figure 1 shows the evolution of the population in the six municipalities that make up the Vallformosa Territory according to census information for the years 1991, 2001, 2011 and 2021.

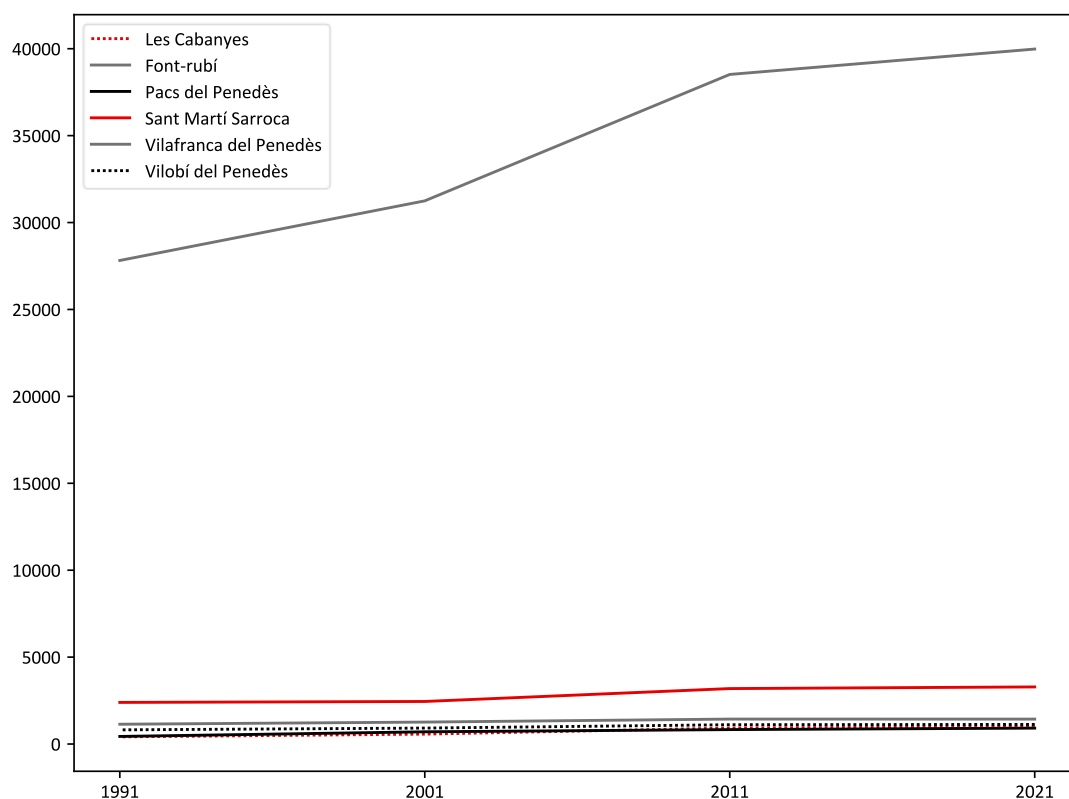


Figure 1. Evolution of the population in the municipalities of the Vallformosa Territory.
Prepared by the authors. Source: INE

As we can see, the population of Vilafranca del Penedès, represented by the grey line that appears at the top of the figure, is significantly higher than that of the rest of the municipalities. This data shows the need for separately studying the five municipalities with smaller populations: Font-rubí, Les Cabanyes, Pacs del Penedès, Sant Martí Sarroca and Vilobí del Penedès, since in no case do any of them exceed 5,000 inhabitants.

Below, we expand the focus and show in Figure 2 the evolution of the same census data for only the five municipalities. We have removed Vilafranca del Penedès from the graph in order to establish a more accurate comparison.

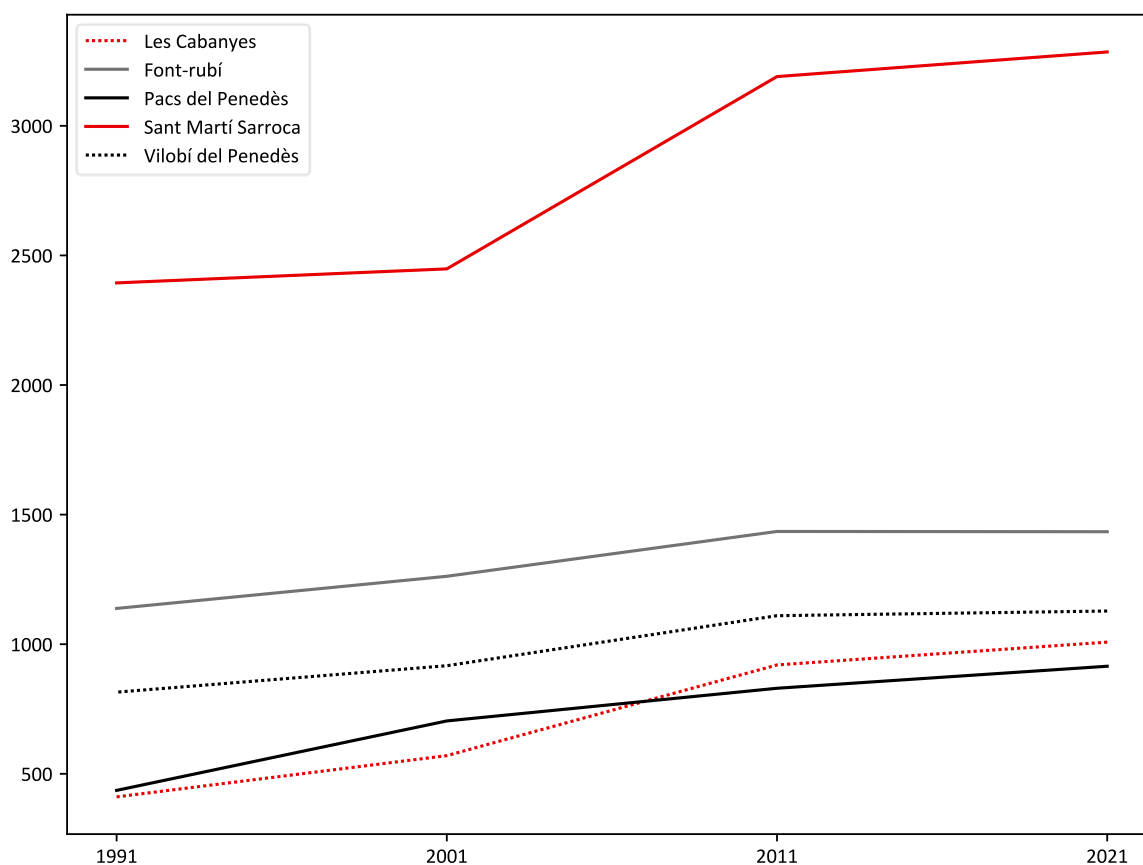


Figure 2. Evolution of the population of the municipalities with smaller populations in the Vallformosa Territory. Prepared by the authors. Source: INE

The data represented in both Figure 1 and Figure 2 shows **a continuous trend of population growth in each of the municipalities**. There are localities that have doubled their population in the last two years, such as Les Cabanyes, represented by the red dotted line in Figure 2, but overall, in a clear way, we can see that all six municipalities have grown steadily over the last thirty years.

It is clear that not only the population of these municipalities, but **also that of the entire province of Barcelona has experienced stable growth in recent years as a result of emigration, as well as an increase in life expectancy**.

According to the Observatory of the Health System of Catalonia⁸, in 2013 life expectancy at birth in Alt Penedès was 83.3 years, and in Catalonia 83.2 years. By gender, men had a life expectancy of 80.9 years in Alt Penedès and 80.3 years in Catalonia. Women at birth, on that

⁸ OBSERVATORY OF THE HEALTH SYSTEM OF CATALONIA, *Life expectancy*.

same date in 2013, had a life expectancy in Alt Penedès of 85.6 years and in Catalonia of 86 years.

Catalonia is one of the territories of the European Union with the longest life expectancy. However, there are no major differences between the European countries of the OECD, except in the case of the countries of Eastern Europe that have a lower life expectancy.

Although the data sequence of this Observatory has not been updated since 2018, IDESCAT indicated in 2020 that life expectancy in Catalonia was 82.38 years (79.67 for men and 85.05 for women). Considering that ten years ago, in 2013, there were practically no differences between Alt Penedès and Catalonia, we might assume that the current situation is similar.

As such, it would be useful to show the growth of the population of the Vallformosa Territory in a relative way and compared to the rest of the province of Barcelona. This comparison will allow an analysis of growth. We will see if it is less than, equal to or greater than the growth of nearby territories.

Figure 3 shows this result. Specifically, it analyses:

- the growth rate of Vilafranca del Penedès,
- the sum of the other five municipalities associated with the territory and
- the entire province of Barcelona.

The value represented is calculated based on the difference between the population of the territorial unit of a census and the population of the same unit in the previous census, divided by the population of the previous census and multiplied by 100.

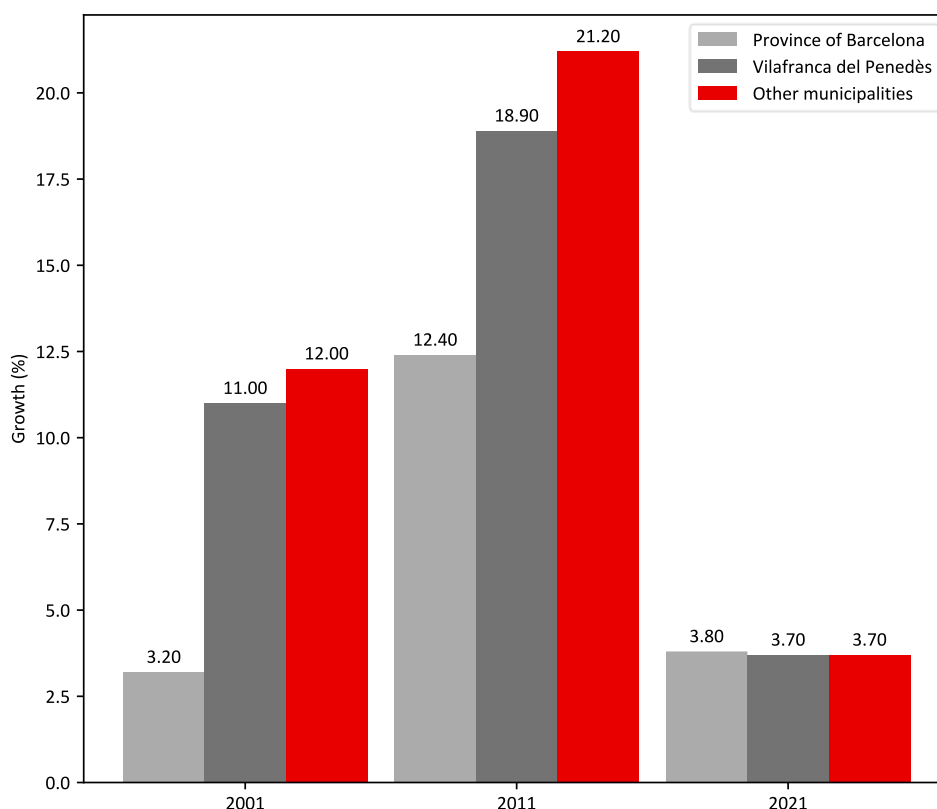


Figure 3. Percentage growth of the population of the Vallformosa Territory compared to the province of Barcelona. Prepared by the authors. Source: INE

As we can see in the figure above, **the growth** between the periods 1991–2001 and 2001–2011 is **significantly higher in the small municipalities that make up the Vallformosa Territory**, in relation to the whole of the province of Barcelona.

This difference, however, is not seen in the last period, which compares the value of the year 2011 with the value of 2021. We believe that, mainly, this is because the data of the 2021 census, to date (2023) is still provisional and represents only an estimate of the real values. Therefore, if we focus our analysis on the years where the values are consolidated and validated by the INE, the National Institute of Statistics, we can state that the population in the Vallformosa Territory has grown significantly more than in the whole of Barcelona province, particularly in the small municipalities, but also in Vilafranca del Penedès.

This observation leaves open two possible explanations associated with the growth factors mentioned above: (1) an aging population, (2) attracting a migrant population. We will look at each of the two assumptions individually.

7.3. Comparative distribution of the population by age groups

As could be concluded from the previous point, comparing the population in absolute terms in relation to global and sustained growth, implies difficulties associated with what would entail a change of scale linking municipalities (with thousands of inhabitants) with a province (with millions of people). In other words, any comparison based on the number of people according to certain ages will lead us to analyse a growth of a certain population group. As such we have chosen to make comparisons in relative terms and are using the province of Barcelona as a basis for this analysis.

Figure 4 shows this comparison for the municipality of Font-rubí. That is, we see the difference for each of the four available censuses – 1991, 2001, 2011 and 2021 – in the population of each age group between this municipality and the province of Barcelona as a whole.

A negative value indicates that the percentage of population that makes up this group in the municipality of Font-rubí is lower than the percentage of the province of Barcelona. At the same time, a positive value means that there is greater percentage of population that is part of this group in the municipality of Font-rubí. The groups correspond to the population groups decided upon by the INE and are structured mainly on the basis of the period of compulsory schooling and work activity. They are people under 16 years of age, people in their active working period, from 16 to 64 years of age, and people who are old enough to be retired, that is, they are 65 years of age or older.

The INE also presents a more detailed grouping with five-year groups, but this division was changed during the 2001 and 2011 censuses to include the group of people aged 80 years or older in order to be able to analyse this growing population in more detail.

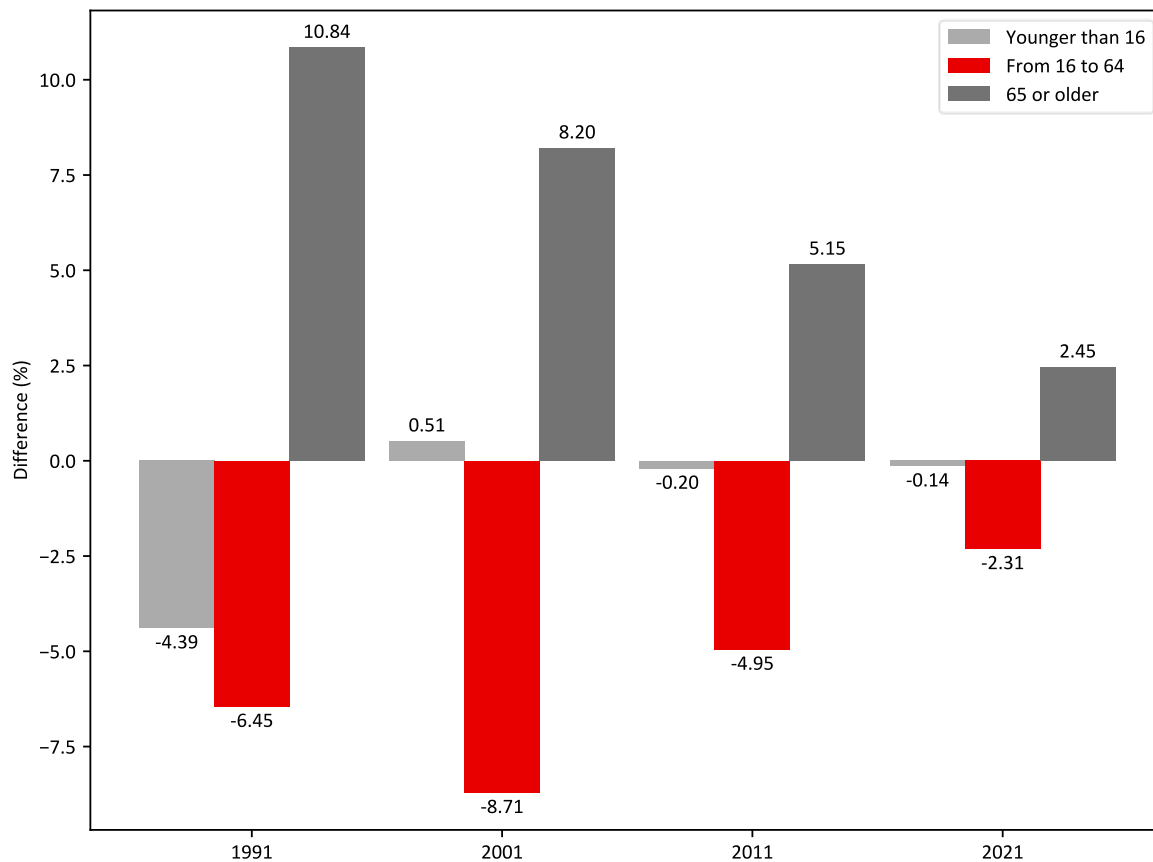


Figure 4. Difference in the percentage of population in large age groups between the municipality of Font-rubí and the province of Barcelona. Prepared by the authors. Source: INE

Figure 4 shows a municipality that in 1991 was significantly different from the province of Barcelona. In detail, we can see that the difference in the group aged 65 years or older was greater. These differences have steadily decreased, especially among the younger population, which is now not much different from that of the province: the percentage difference is less than one point.

We can see a similar evolution in the rest of the municipalities. Figure 5 shows the same statistics for Les Cabanyes. Figure 6, for Pacs del Penedès; Figure 7, for Sant Martí Sarroca; Figure 8, for Vilafranca del Penedès; and Figure 9, for Vilobí del Penedès.

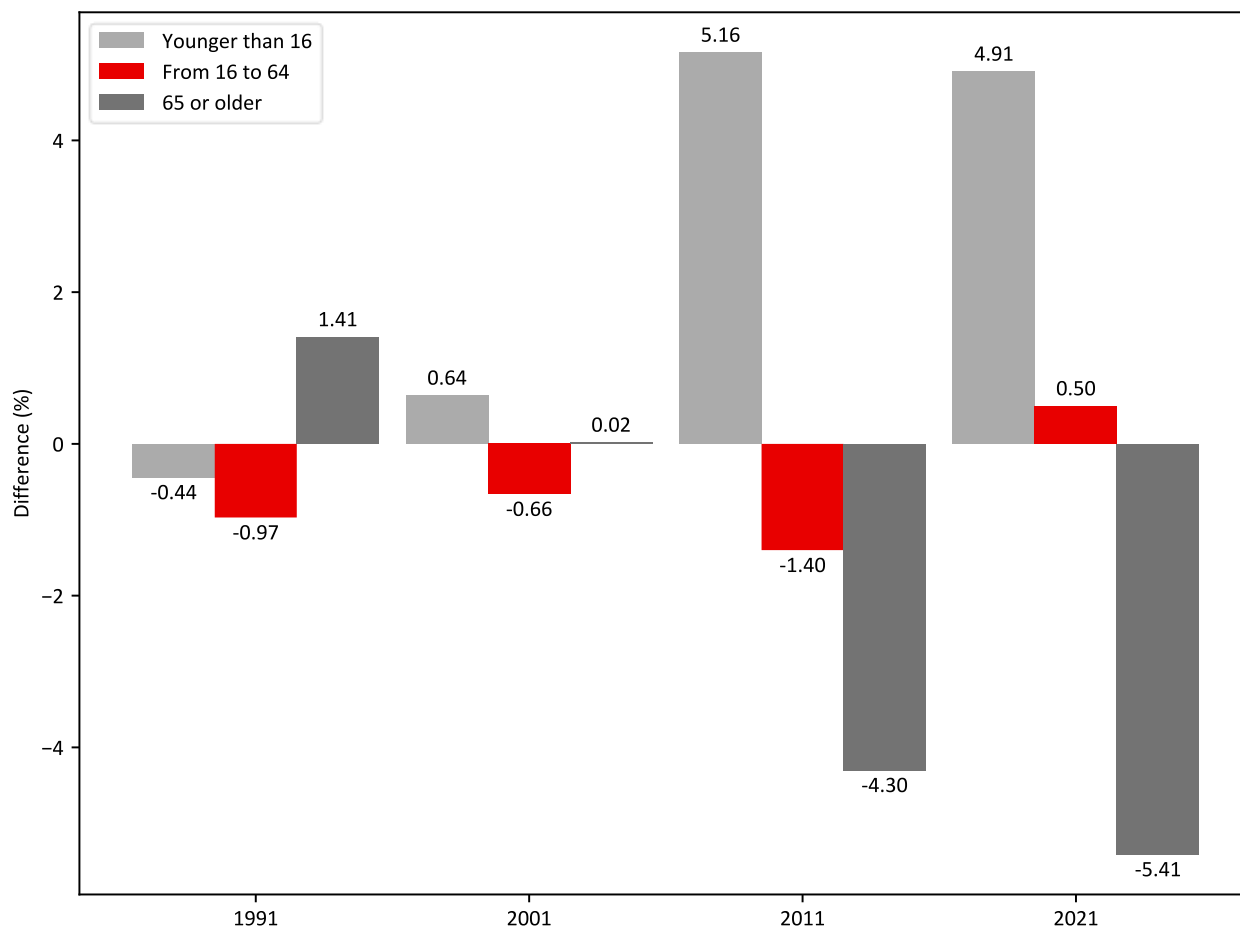


Figure 5. Difference in the percentage of population in large age groups between the municipality of Les Cabanyes and the province of Barcelona. Prepared by the authors. Source: INE

The result for Les Cabanyes again shows a rejuvenation of the population. Although we see that the large group associated with the potentially active population has similar percentages to the total for the province of Barcelona, the population of the younger age group is higher than that of the province. At the same time, it is evident that the older population is smaller.

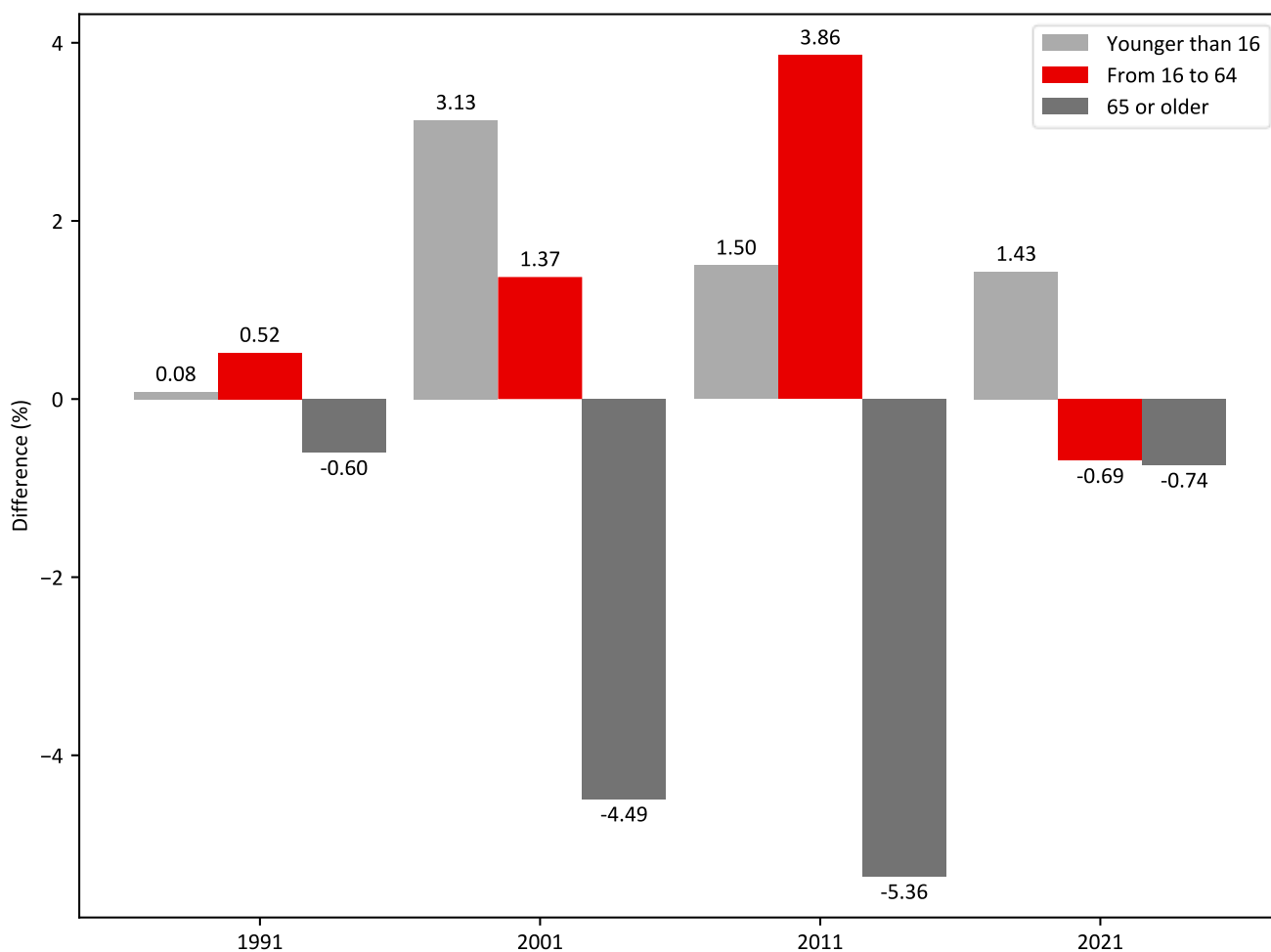


Figure 6. Difference in the percentage of population in large age groups between the municipality of Pacs del Penedès and the province of Barcelona. Prepared by the authors. Source: INE

In Pacs del Penedès, we see that percentagewise both people of retirement age and adults of working age (from 16 to 64 years old) have a slightly negative difference in relation to the whole of Barcelona province. For those under the age of 16, the difference is positive.

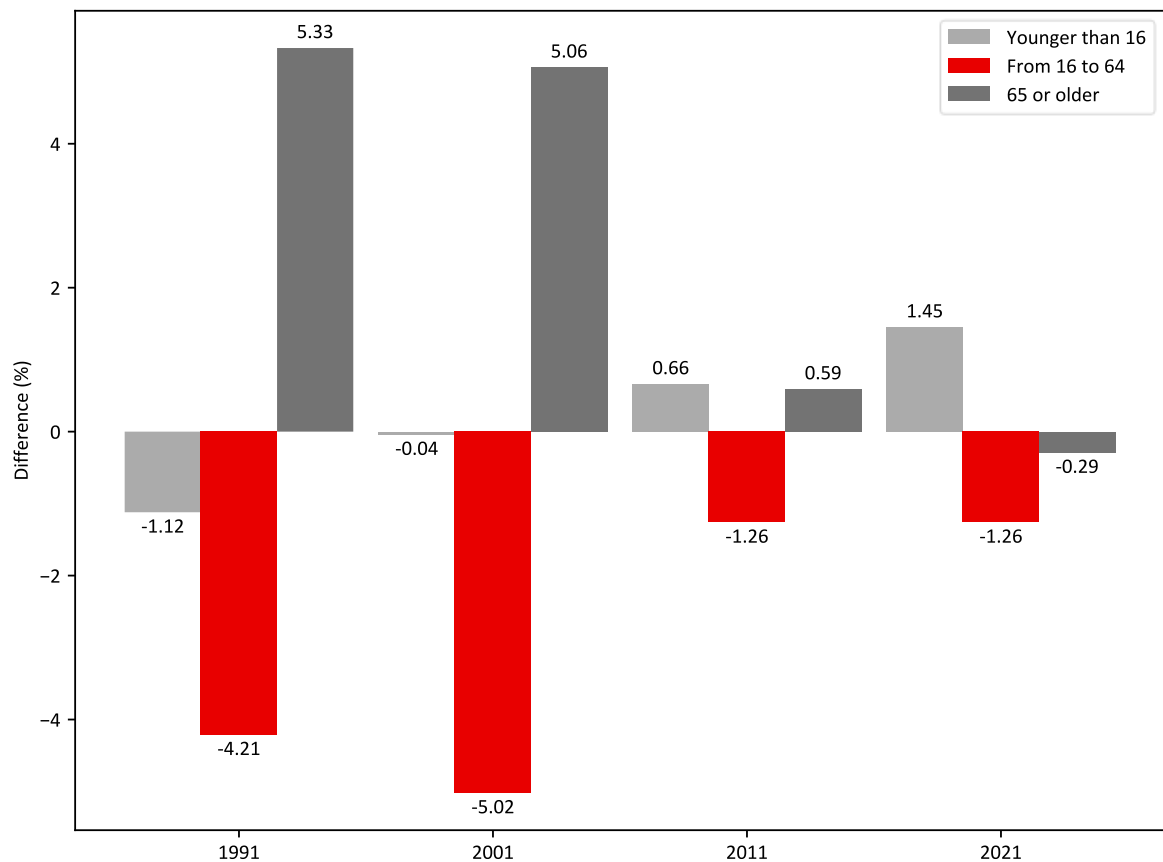


Figure 7. Difference in the percentage of population in large age groups between the municipality of Sant Martí Sarroca and the province of Barcelona. Prepared by the authors. Source: INE

The values for Sant Martí Sarroca show the same trend, as does Vilafranca del Penedès (Figure 8) and, to a lesser extent, Vilobí del Penedès (Figure 9).

We show these below.

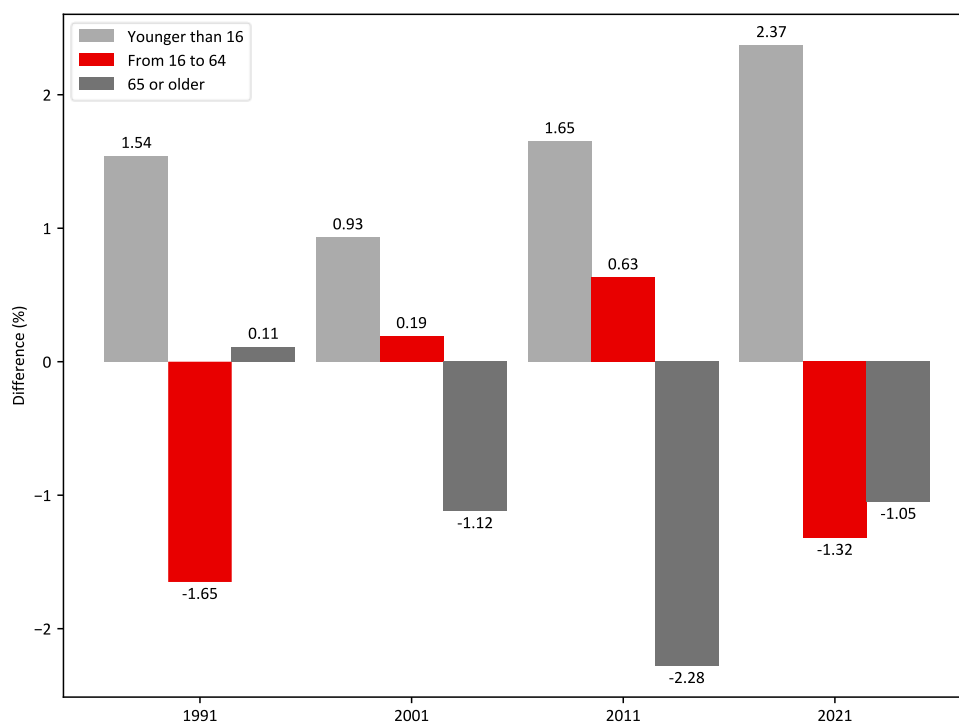


Figure 8. Difference in the percentage of population in large age groups between the municipality of Vilafranca del Penedès and the province of Barcelona. Prepared by the authors. Source: INE

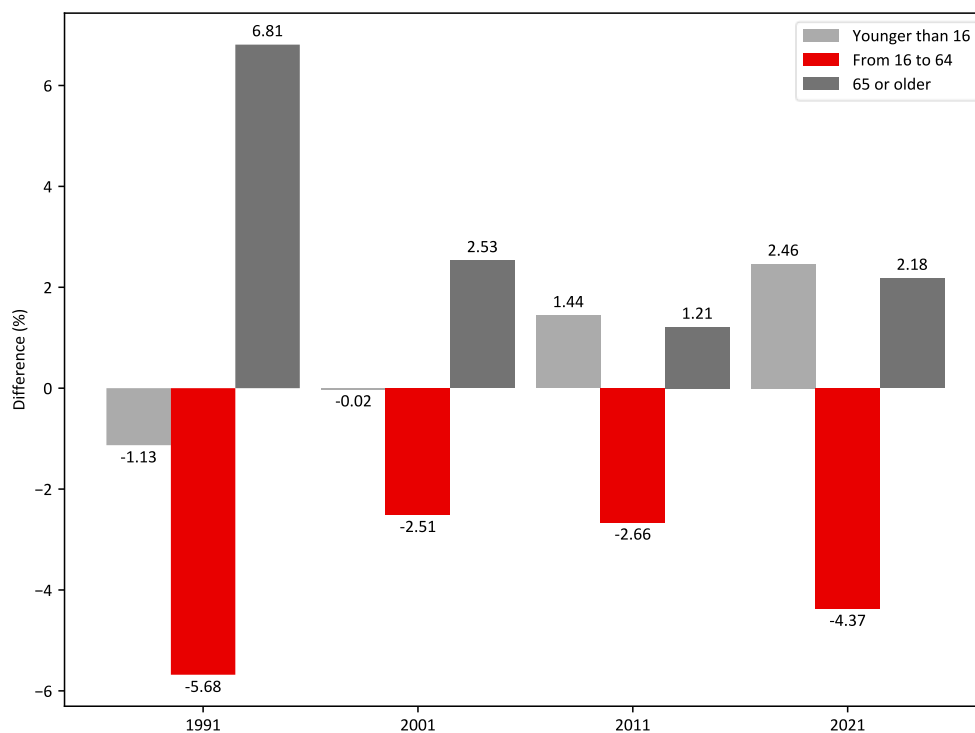


Figure 9. Difference in the percentage of population in large age groups between the municipality of Vilobí del Penedès and the province of Barcelona. Prepared by the authors. Source: INE

It should be remembered that the 2021 values must be considered separately as they are estimates and not definitive values. However, the trends observed based on the representative values in the figures lead us to think that:

the territory is being rejuvenated

... since there is a reduction in the group associated with people aged 65 or older and at the same time an increase in the group associated with children under 16. The group of people of active age, from 16 to 64 years old, is still lower in many cases than the value of the province of Barcelona, a fact attributable to a significant increase in the group of people under 16 years old.

In order to make more accurate comparisons, Figure 10 includes the absolute percentage values for the province of Barcelona in the four censuses indicated.

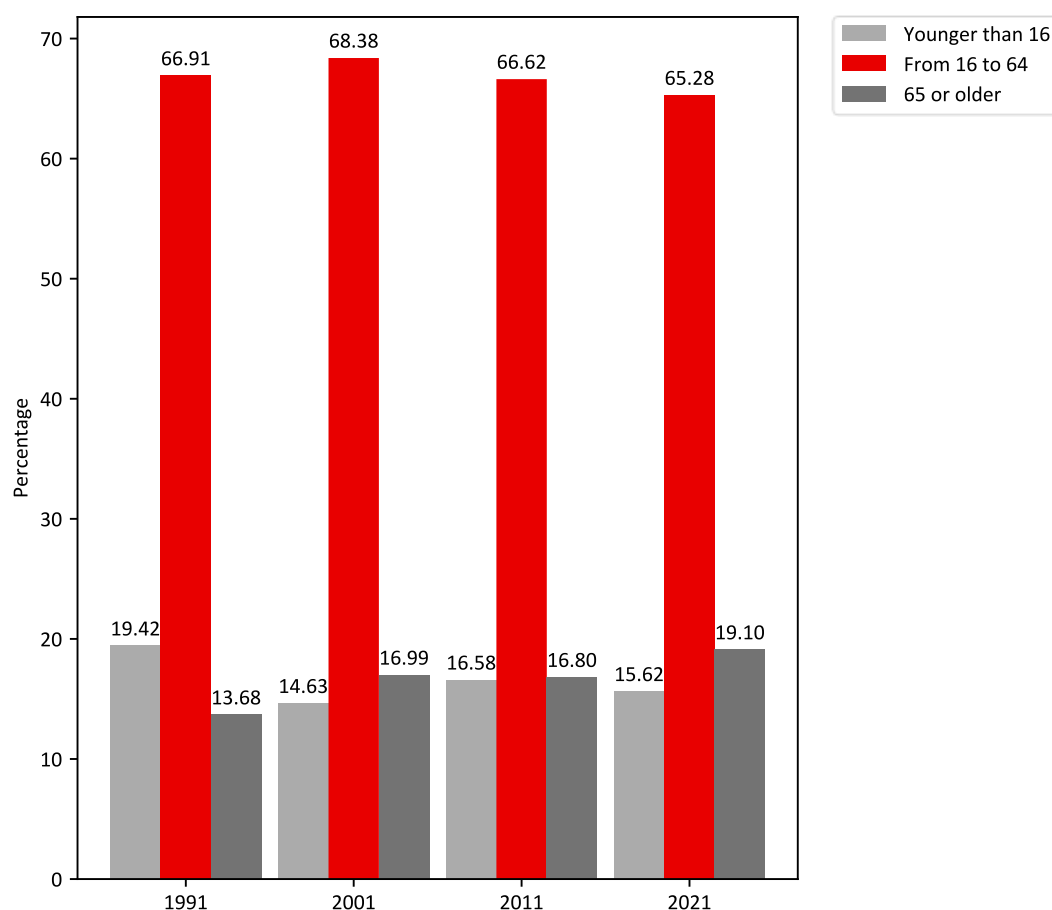


Figure 10. Percentage of population in large age groups in the province of Barcelona. Prepared by the authors. Source: INE

The values in Figure 10 show the sustained aging of the population in the province and enable allow us to obtain the percentages of the population of the municipalities of the territory. For example, if we want to know the percentage of population within the group of minors under 16 years of age in the municipality of Vilobí del Penedès according to the 2011 census, we can see that this will be equal to 66.62% (value of the province of Barcelona indicated in Figure 10) minus 2.66% (difference of Vilobí del Penedès indicated in Figure 9) for a total of 63.96%; that is, it is a value not very different from the total for the province.

In summary, as we said before, we can conclude that:

- **The population of the Vallformosa territory is in the process of being rejuvenated and**
- **It is growing due to an influx of population that is moving to the municipalities that make up the territory,**

... since an above-average birth rate would not justify growth in the potentially active population group.

7.4. Comparative distribution of the population by gender groups

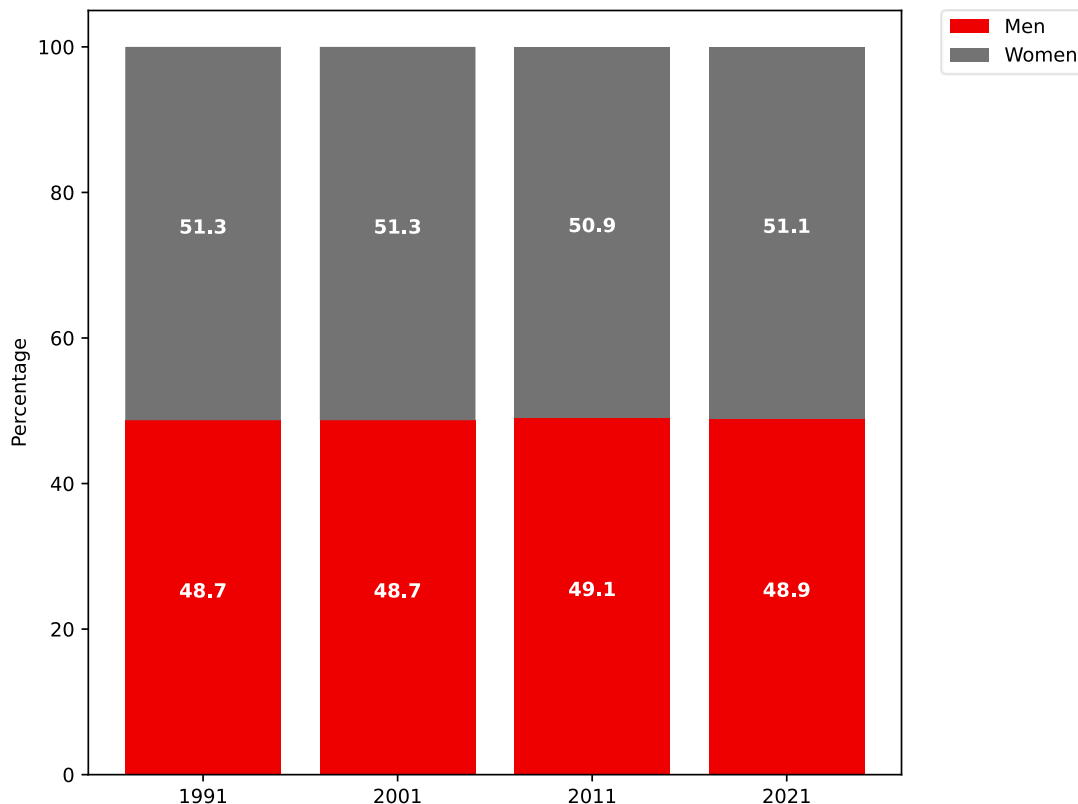


Figure 11. Evolution of the distribution of men/women in the province of Barcelona. Prepared by the authors. Source: INE

The results are as expected: the distribution is very similar, with a small difference between men and women.

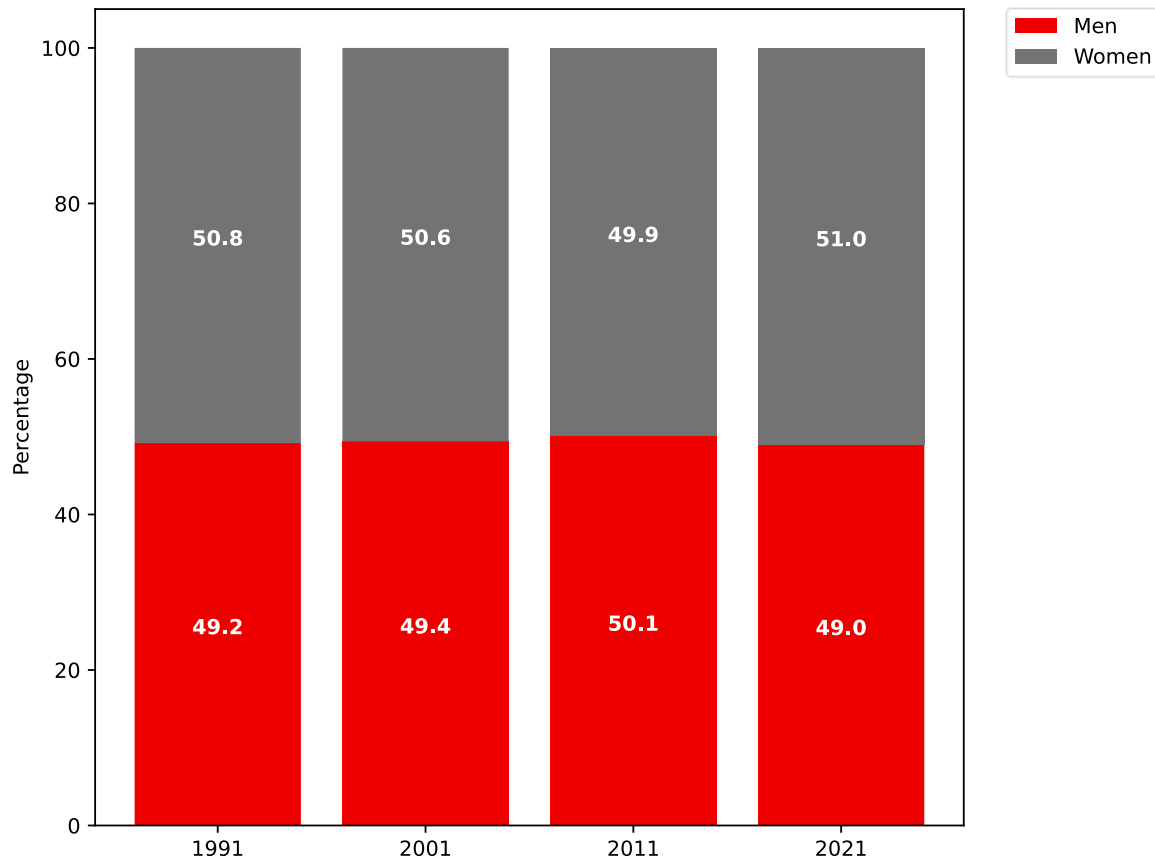


Figure 12. Evolution of the distribution of men/women in the Vallformosa Territory. Prepared by the authors. Source: INE

The figure for the Vallformosa Territory is very similar to the situation in the province (there are more men, but the differences are at most 1%).

Also the difference between men and women for the five smallest municipalities remain small (with a maximum of 2.3 points, and with a tendency towards getting smaller in recent years).

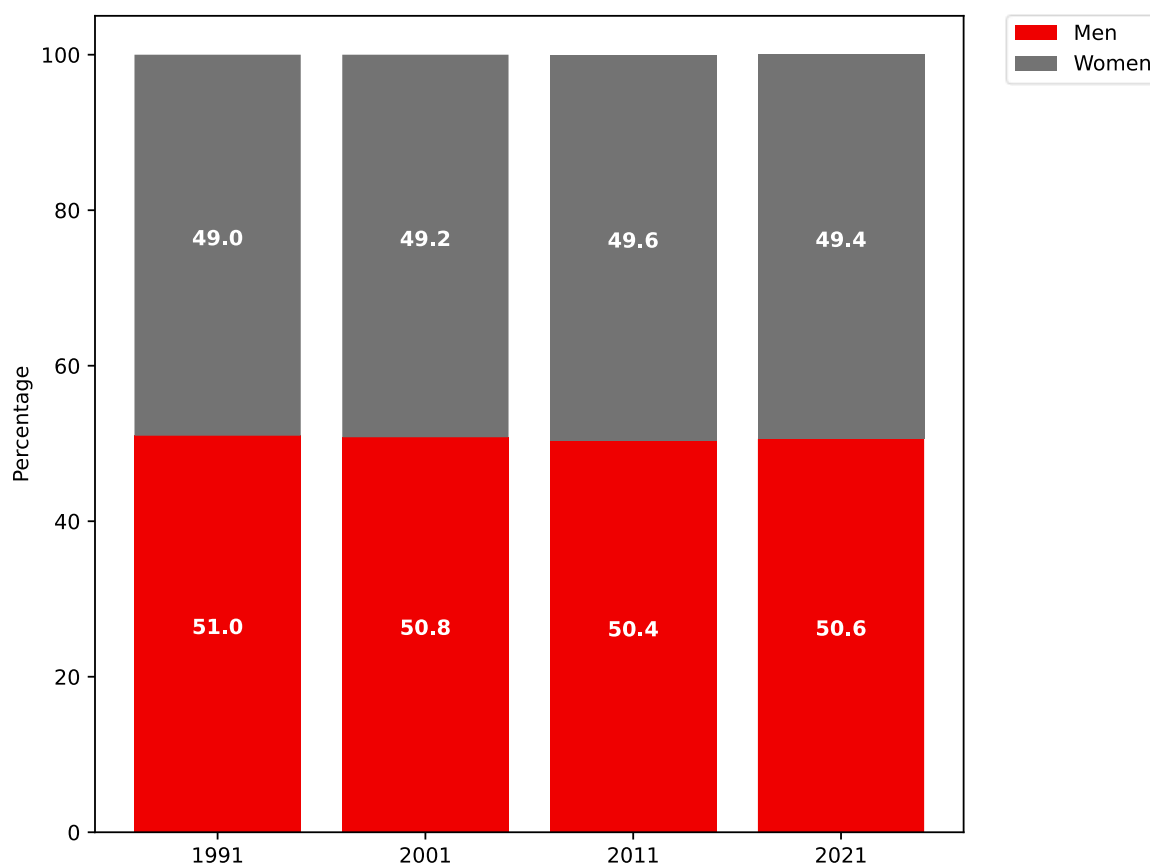


Figure 13. Evolution of the distribution of men/women in the small municipalities of the Vallformosa Territory. Prepared by the authors. Source: INE

7.5. Comparative distribution of population by origin

After analysing the population growth that the territory has experienced and realizing that it is being rejuvenated, we now go on to observe in detail the origin of the inhabitants to verify the sources of recent migration.

This analysis is carried out according to the groups of origin provided by INE. We shall start with the European Union. It should be borne in mind that the INE changed their way of grouping the origin of people in 2001. In 1991 it referred to “Europe” and, from 2001, it distinguished between the “European Union” and the “Rest of Europe”.

Thus, in Figure 14 (which uses data from the four censuses) we need to unite the origin of European people into a single category – Europe. The rest of the figures use the 2021 census data, which does distinguish between “European Union” and “Rest of Europe”.

For the following figures, which compare the population according to its origin, the Vallformosa Territory is divided into Vilafranca del Penedès and the rest of the municipalities, due to the significant difference in population that the children present in Vilafranca, as we have indicated above.

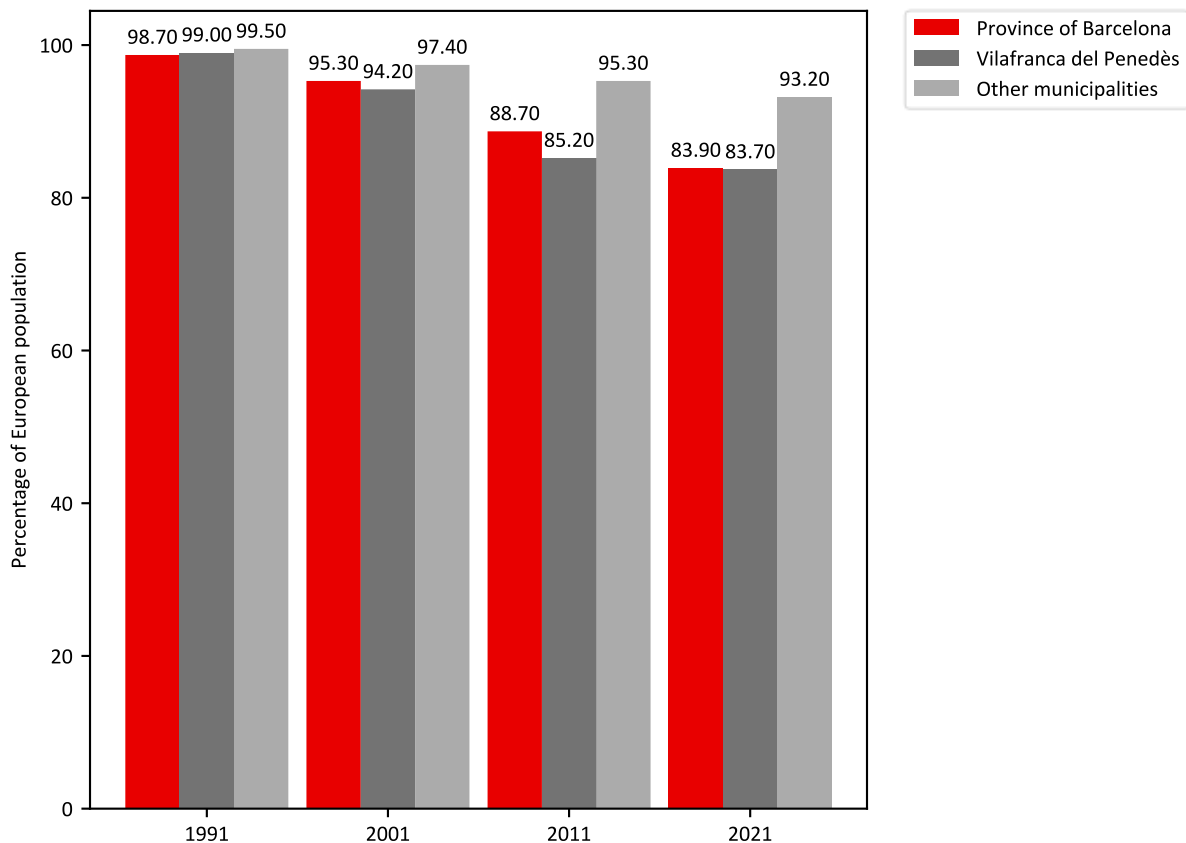


Figure 14. Percentage of European population in the province of Barcelona and in the municipalities of the Vallformosa Territory. Prepared by the authors. Source: INE

As we can see in Figure 14, the differences in the European population in the province of Barcelona and the municipality of Vilafranca del Penedès are minimal. More important is the difference in the rest of the municipalities, where the population with European nationality is significantly higher. Considering

that the population group of European origin is quite heterogeneous, we believe that the analysis should continue in greater detail with regard to the origin of the European population.

Thus, Figure 15 shows a division of origin that differentiates between Spain, the rest of the European Union, other European countries and finally the rest of the world. These values

correspond exclusively to the last census, since this division in detail was not yet made in the 1991 and 2001 censuses.

On the other hand, taking into account the composition of groups that is displayed in Figure 15, we do not think it relevant to analyse other possible differences in more detail.

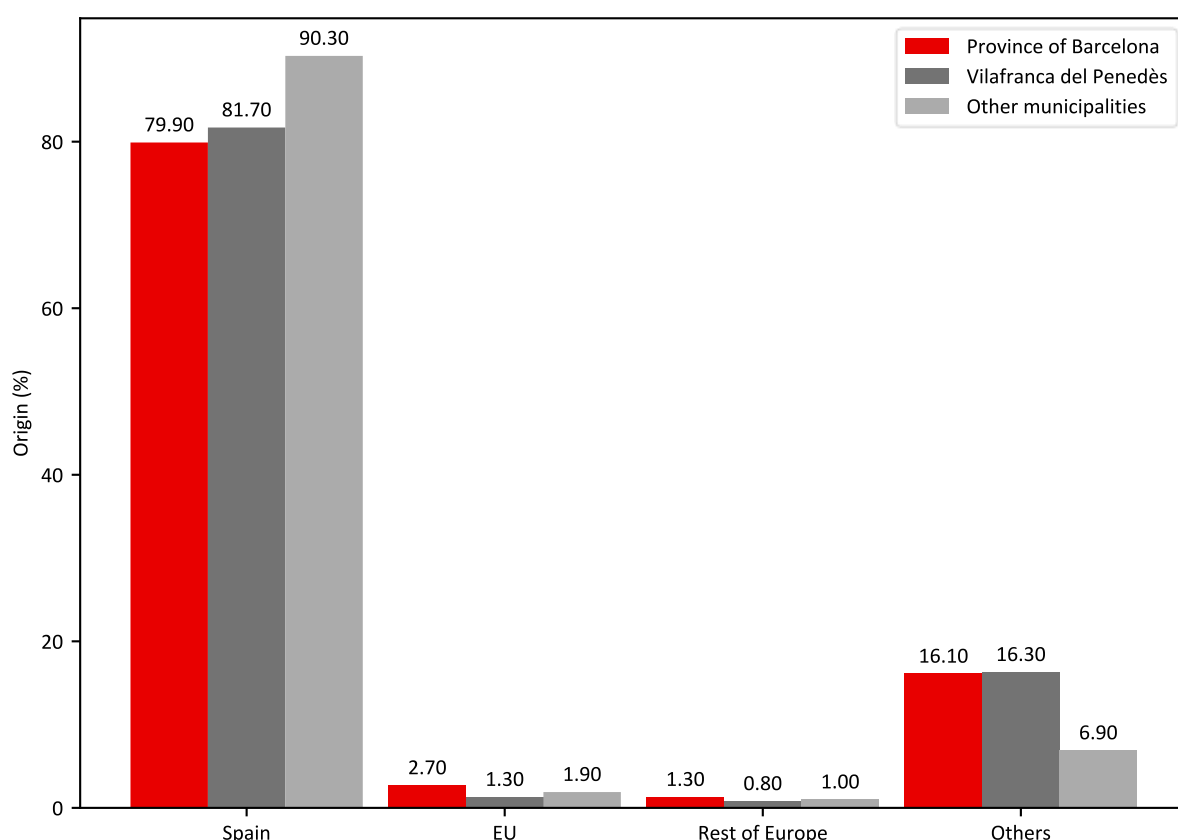


Figure 15. Percentage of population by origin, grouped by Spain, European Union, Rest of Europe and Rest of the World, in the province of Barcelona and in the Vallformosa Territory. Prepared by the authors. Source: INE

Figure 15 shows that the majority of the population of the Vallformosa Territory is of Spanish nationality, with a smaller presence of people originating from other countries of the European Union and the rest of Europe. In all cases, we can see that **the population with Spanish nationality (autochthonous) is greater in the Vallformosa Territory than in the province of Barcelona**, although the number of European people who are not originally from Spain is quite low. There is an important group of people both in the province of Barcelona and in Vilafranca who have **other (non-European) origins but which turns out to be smaller in municipalities with smaller populations**.

In order to analyse whether there are differences in the “Rest of the World” group, the population originating from the African continent is identified separately in Figure 16. In other words, “Other” represents other continents.

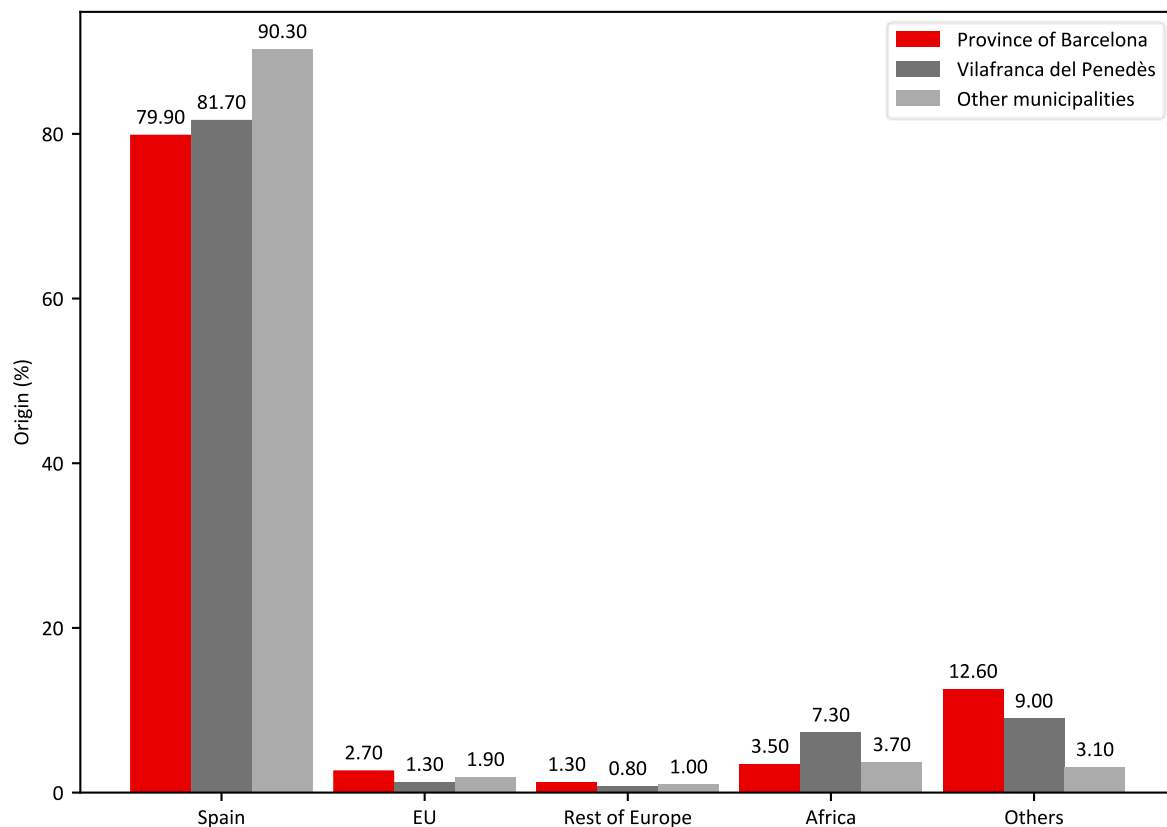


Figure 16. Percentage of population by origin, grouped by Spain, European Union, Rest of Europe, Africa and Others, in the province of Barcelona and in the Vallformosa Territory. Prepared by the authors. Source: INE

Figure 16 shows that **the population from Africa in the municipality of Vilafranca del Penedès is greater than that of the province of Barcelona**. Groups from the Americas, Asia and Oceania are smaller. This result may be due to a call for work effect or grouping reasons in communities. **It is significant that this effect is only seen in the municipality of Vilafranca del Penedès.**

Both Figure 15 and Figure 16 lead us to affirm **that the majority of population growth in the territory is due to internal migration** from other areas of Spain, including the province of Barcelona and the rest of Catalonia.

Next, in Figure 17, we analyse this effect in more detail.

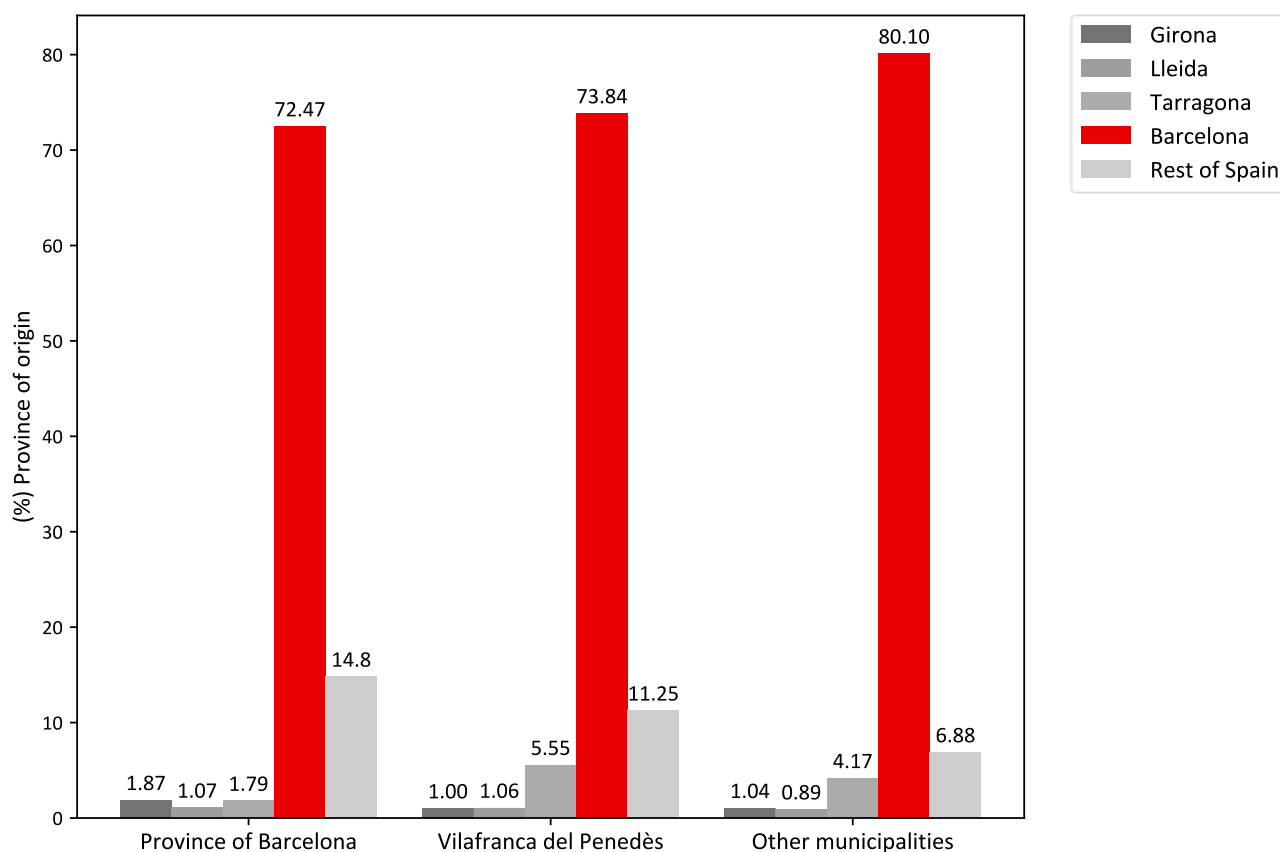


Figure 17. Percentage of population by origin within Spain, grouped by provinces of Catalonia and the rest of Spain. Prepared by the authors. Source: INE

Figure 17 shows that **the majority of the population residing in the province of Barcelona, as well as in the Vallformosa Territory, is mostly native to the same province**. Moreover, the population group coming from outside Catalonia, the lightest grey columns, is significantly smaller in Vilafranca del Penedès and the other municipalities. It should be mentioned that the percentages indicated do not add up to 100%, since the population from outside Spain is not taken into account in any of the three cases.

Figure 18 provides similar data. It groups the population according to their municipality of birth. This grouping shows several population groups: the group that has never changed municipality, the group that has changed its residence within the province of Barcelona, the group that has changed residence within Catalonia, residence within Spain and that which has come to the Vallformosa Territory from abroad.

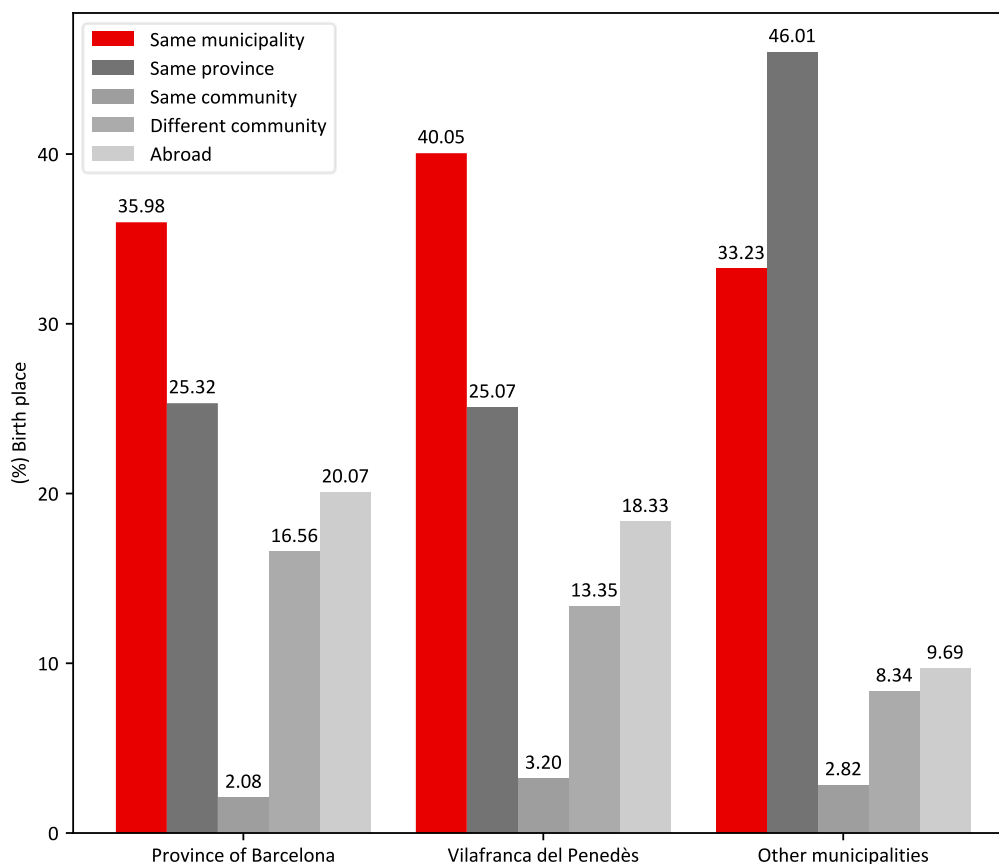


Figure 18. Percentage of population by place of birth, grouped by same municipality, same province, same community, different community, or those born abroad. Prepared by the authors.

Source: INE

The results of Figure 18 clarify that **the new population has moved from other points of the same province to the Vallformosa Territory**, especially in the case of the municipalities of Font-rubí, Les Cabanyes, Pacs del Penedès, Sant Martí Sarroca and Vilobí del Penedès.

It also shows that **Vilafranca del Penedès has very small differences compared with the whole of the province of Barcelona**. At the same time, we can affirm **that this territory has become an attractor** of population that previously lived within the province of Barcelona, that works in the province of Barcelona and that, due to location or other reasons, **has decided to move to reside in the municipalities of the Vallformosa Territory**.

There are no significant differences of origin that can be seen with the figures shown in this section; so we shall analyse other relevant information collected in the census.

7.6. Educational level and scope of employment of the inhabitants of the Vallformosa Territory

To analyse whether there are differences by educational level and labour sector, Figures 19, 20 and 21 show the percentages of population in Vilafranca del Penedès and in the rest of the municipalities in relation to the whole of the Barcelona province.

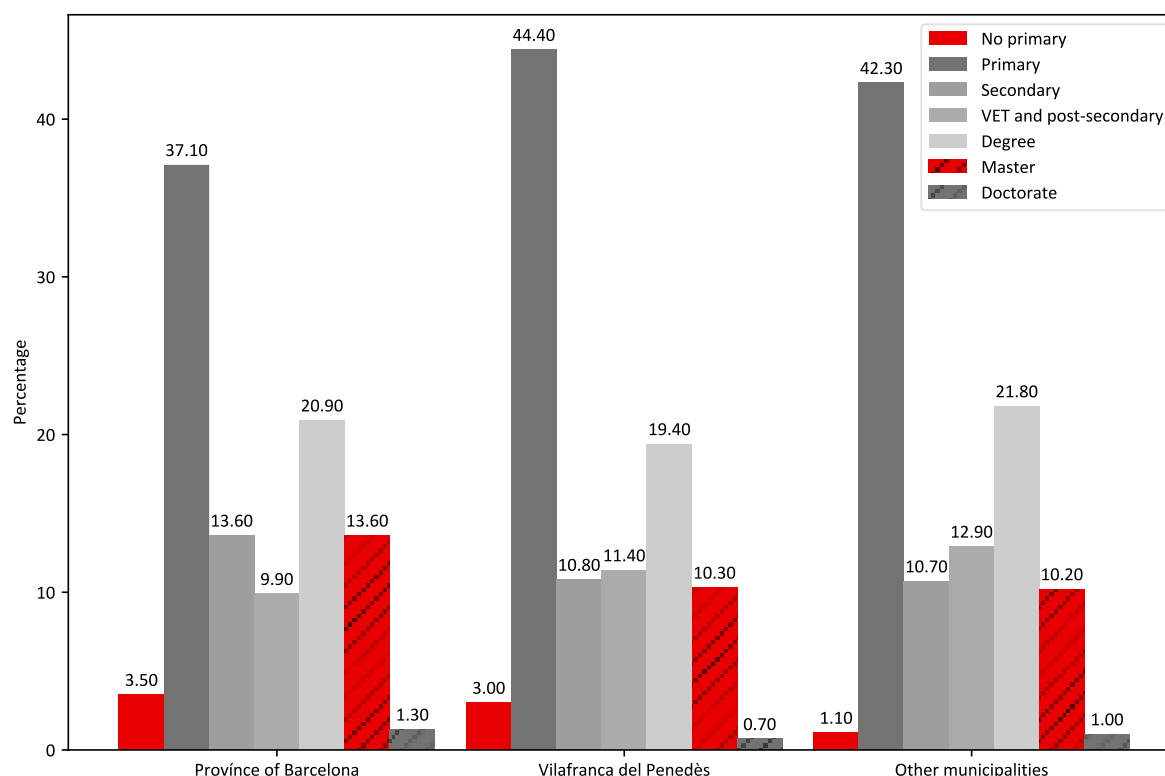


Figure 19. Percentage of population by level of education achieved. Prepared by the authors.
Source: INE

As we can see in Figure 19, the level of education in Vilafranca del Penedès and the other municipalities of the Vallformosa Territory is very similar, with small variations, of two percentage points, between the different groups.

There are also no significant changes when comparing the data of the localities of the Vallformosa Territory with the whole of the province of Barcelona. However, we would point out lower percentages of people for the province as a whole, who have only studied primary education. We also find slightly lower percentages of people who have obtained a master's degree or a doctorate, both in Vilafranca del Penedès and in the rest of the municipalities of the Vallformosa Territory in relation to the overall results of the province.

We can say that, although the differences are small, there is **a higher percentage of people who have only done primary studies or have completed vocational training and post-secondary studies in the Vallformosa Territory** in relation to the whole of the province.

Below we analyse the working and non-working population.

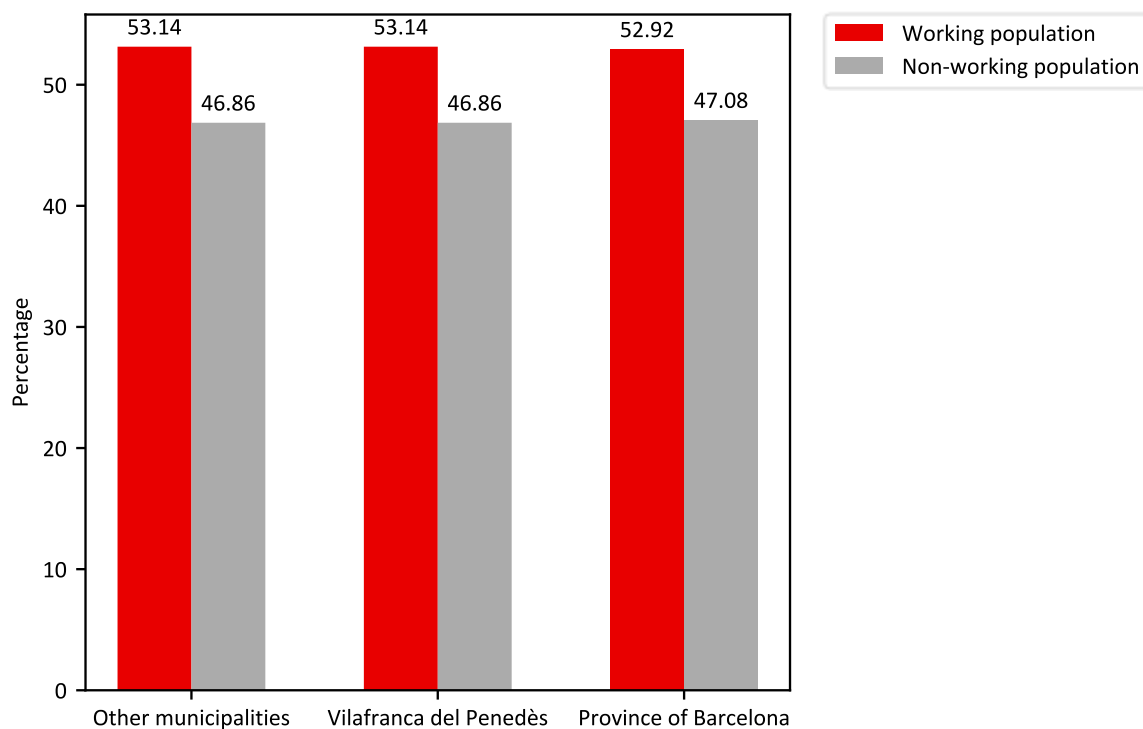


Figure 20. Percentage of working and non-working population. Prepared by the authors.
Source: INE

Figure 20 shows us very similar percentages. In all cases, in the small municipalities of the Vallformosa Territory, in Vilafranca del Penedès and in the province as a whole, the working population slightly exceeds half of the population.

Finally, we also look at the effect of gender on the labour market. The result we obtained indicates similar behaviour both in the province of Barcelona and in the Vallformosa Territory. There is a higher level of working population among men relative to women. At the same time, we also observe a larger working

population in the Vallformosa Territory than in the rest of the province of Barcelona. However, the differences are small.

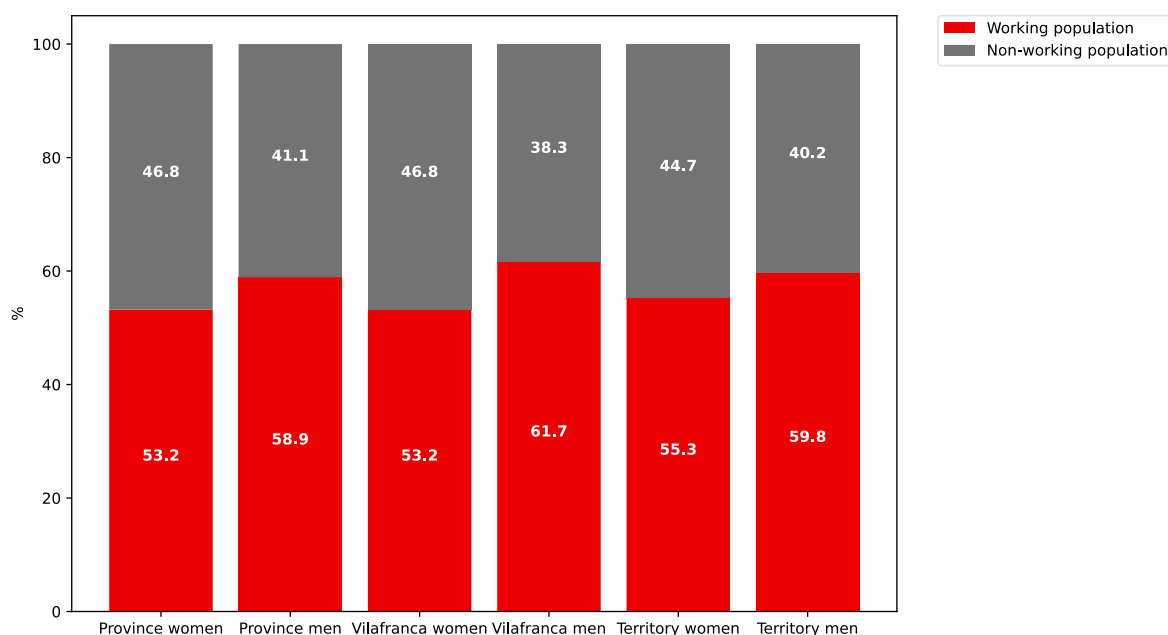


Figure 21. Percentage of working and non-working population by gender.

Prepared by the authors. Source: INE

Lastly, Figure 22 analyses the distribution of the population among the different economic sectors. We can see **the prevalence of the service sector, both in the entire province of Barcelona and in the territory in the study**. In all cases, more than half of the working population is employed.

Although in all the groups analysed the majority of the population works in the service sector, we see differences of more than 12 percentage points between the small municipalities of the Vallformosa Territory and the province of Barcelona, and more than 6 points between Vilafranca and the provincial total.

On the other hand, **we find a greater weight of the primary sector in small municipalities**, coming to 7.70%. That is to say, it is seven times the weight it has in Vilafranca (1.10%) and even more in the overall weight of the province of Barcelona (0.90%). According to 2021 data from the INE, 1.4% of the population works in agriculture in Catalonia.

There is also a **higher percentage of people in these towns (Font-rubí, Les Cabanyes, Pacs del Penedès, Sant Martí Sarroca and Vilobí del Penedès) who work in construction**. At this point, it is necessary to remember the differences observed in educational levels.

At the same time, the percentage of **people who are employed in the industry is slightly higher in small towns.**

In the case of Vilafranca del Penedès, the results are different from those obtained in small municipalities. The **people who work in Vilafranca in the primary sector and in construction have a weight closer to those who do so in the whole of the province of Barcelona.**

Historically, in the period prior to the analysis of the present study, that is, between 1986 and 1991, we would like to mention – even though the data comes from different sources than those used here – that “what differentiates Alt Penedès from the whole of Catalonia is the percentage of the population that works in each sector. The tertiary sector is much less important in Alt Penedès, while it is the other way around with the primary sector”⁹, according to the work *The Alt Penedès, a Dynamic Region in the Metropolitan Confines*, published by the now-defunct savings entity Caixa de Catalunya.

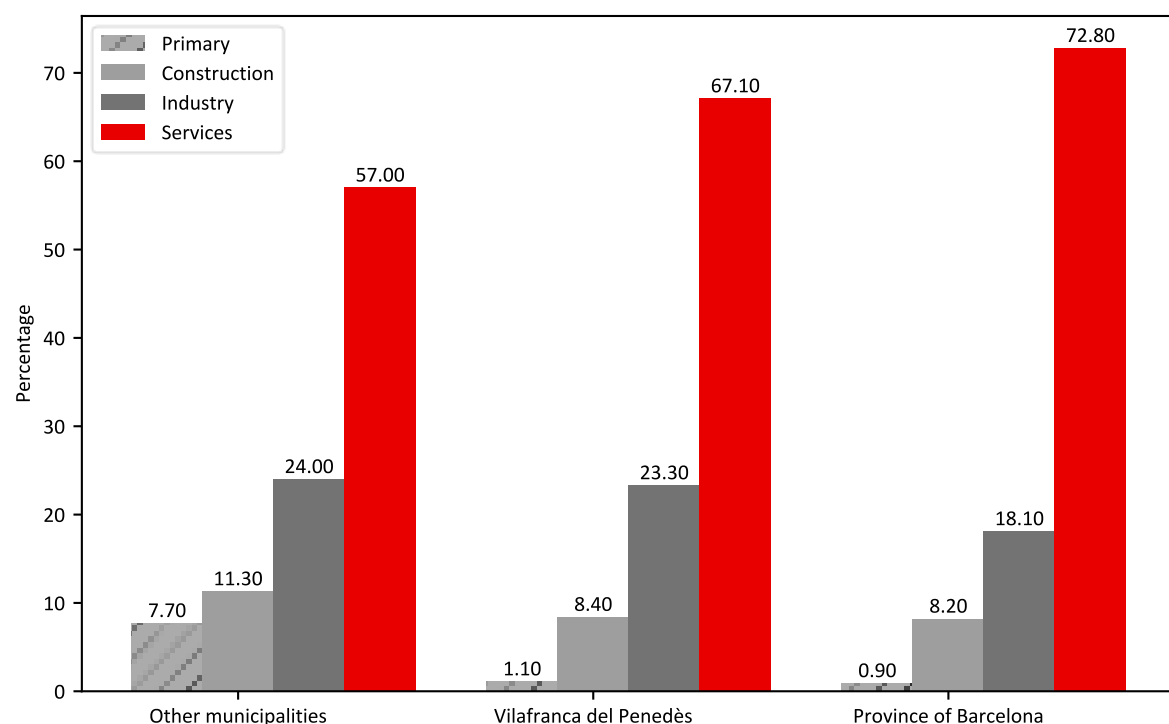


Figure 22. Percentage of population by labour sector grouped by primary sector, construction, industry and services.

Prepared by the authors. Source: INE

⁹ CASASSAS, MENDIZÁBAL, ARRIBAS, CUXART, 1991.

If we analyse all the census information associated with population growth and origin, **education and work data**, we can see that **the differences between the residents of the Vallformosa Territory and the province of Barcelona are small.**

And this leads us to think that **the territory has grown significantly possibly attracting people residing in other municipalities in the province of Barcelona.**

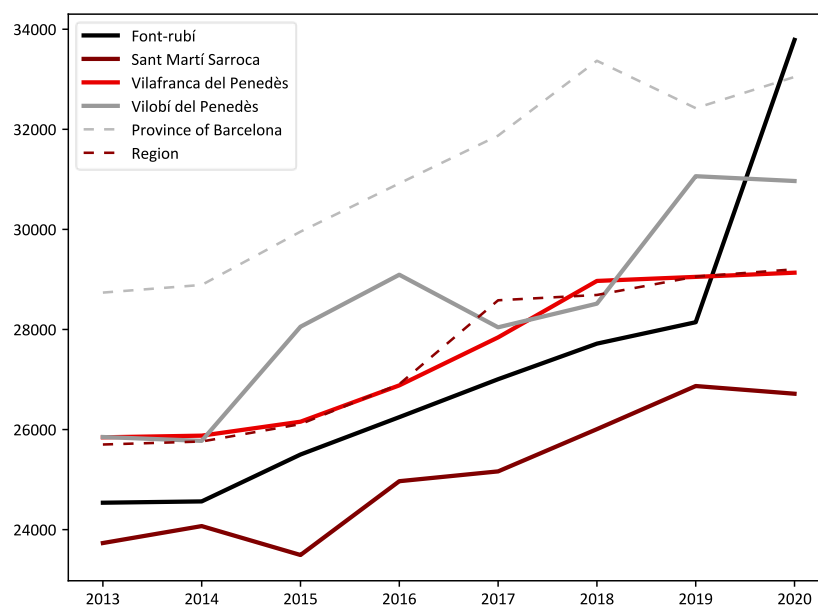
7.7. Income of the people of the Vallformosa Territory

Another important factor to consider is the average income of people in the territory. This information can be obtained from the data of the Tax Agency. The available values are annual, from 2013 to 2020, and are broken down by municipality. It should be noted that municipalities of less than 1,000 inhabitants are included in a single set per province and, therefore, two of the municipalities associated with the territory (Pacs del Penedès and Les Cabanyes) are outside the scope of the available information. (For Les Cabanyes, there is data from 2020, since as of this year it exceeded the threshold of 1,000 inhabitants necessary for the values to be recorded individually).

Figures 23, 24 and 25 show per capita income values in three different ways. Figure 23 shows absolute values. With annual data by municipality, (Font-rubí, Sant Martí Sarroca, Vilafranca del Penedès and Vilobí del Penedès) we can see the value of the income per capita.

In order to make a comparison with **the province of Barcelona and also with the region of Alt Penedès**, the averages of both figures are shown. (In the case of the Alt Penedès region, municipalities with less than 1,000 inhabitants have had to be omitted from the calculation).

Figure 23. Per capita income of the municipalities of more than 1,000 inhabitants of the Vallformosa



Territory. The dashed lines also show the values of income per capita for the province of Barcelona and the region of Alt Penedès (only municipalities with more than 1,000 inhabitants are considered).
Prepared by the authors. Source: Tax Agency

The evolution and values of Figure 23 show that:

The average per capita income of the Vallformosa Territory and the Alt Penedès region is significantly lower than that of the province of Barcelona, and this has been continuously maintained over the last few years with not much differentiated growth between the province and the territory studied. This fact can be seen more clearly in Figure 24, where the values are shown as a percentage with respect to the average of the province. (A value equal to 100% would mean being average, while higher or lower values would mean incomes higher or lower than this average respectively).

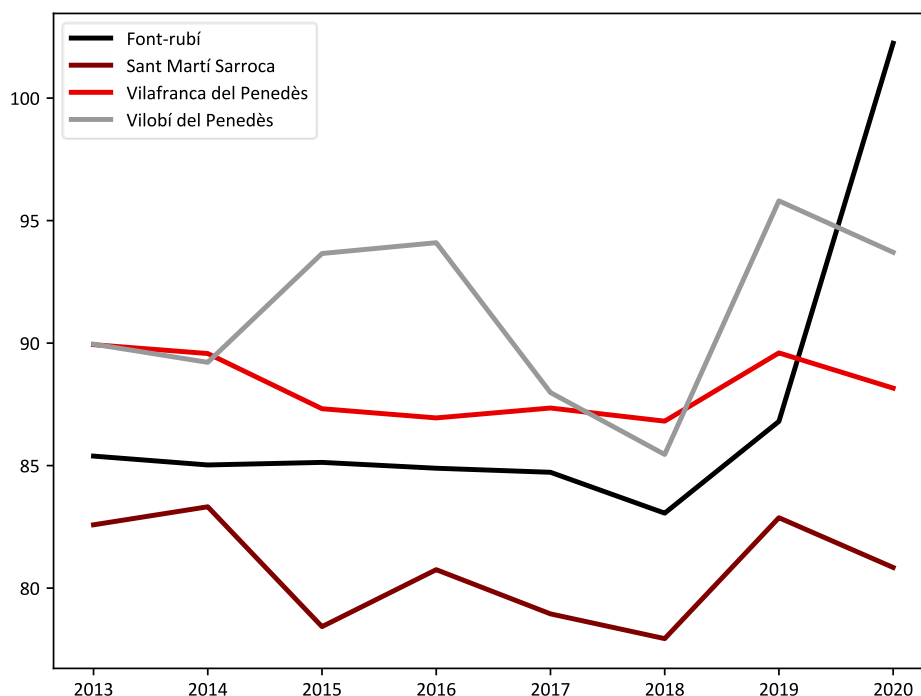


Figure 24. Comparative per capita income of the municipalities of more than 1000 inhabitants with the average of the province of Barcelona. Prepared by the authors.

Source: Tax Agency

The values presented in some cases are atypical (Font-rubí in 2020), but show a certain stability with respect to the differences with the average of the province of Barcelona.

Lastly, Figure 25 shows the same values, but the comparison is carried out with the rest of the municipalities of the province of Barcelona. To obtain these data, we first established the order of the municipalities according to their per capita income (the municipality with the largest per capita income would be the first, the municipality with the second largest per capita income would be the second, and so on). Therefore, a municipality with a high position with respect to the rest of the municipalities could be considered a rich municipality, while municipalities in low positions would be considered poor municipalities.

It should be noted that this relative comparison allows us to minimize the relative weight of municipalities with a large population and at the same time facilitates a fairer view regarding the weight of the city of Barcelona, with it being one of the richest municipalities in the same

province in terms of income per capita. In addition, the capital of Catalonia, Barcelona, is logically the most populous municipality.

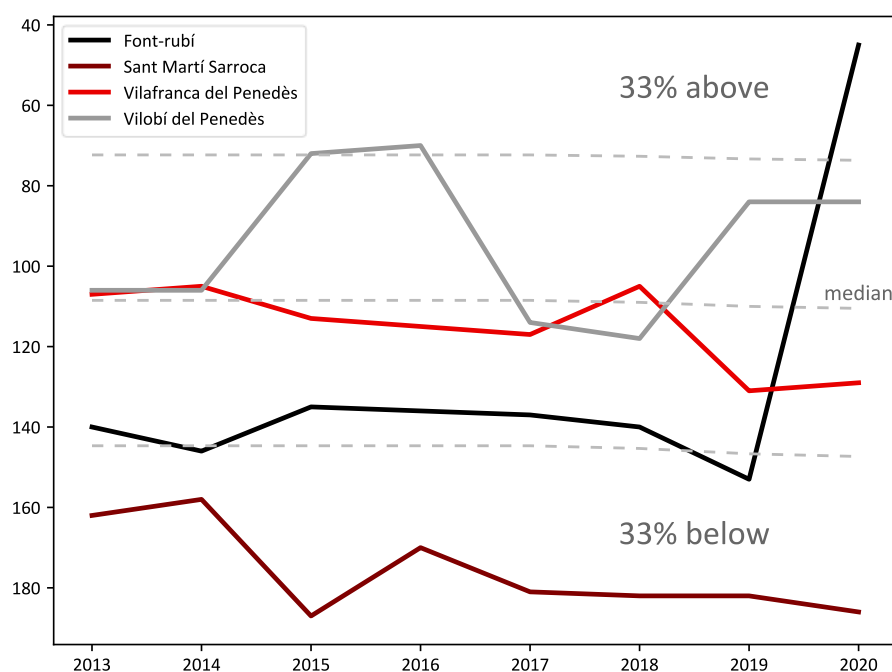


Figure 25. Relative position of the Vallformosa Territory in terms of income per capita in the province of Barcelona. (The dashed lines show the middle position (middle line). The two additional lines – the upper and lower dashed lines – allow us to differentiate between the upper, middle and lower thirds of the total municipality).

Prepared by the authors. Source: Tax Agency

In order to better read the above figure, three lines are included. The first (indicated as average) shows the average position and, therefore, the points above show a position above the average, ordered by municipalities. The other two lines allow us to divide the points into three groups. The upper line identifies municipalities located in the first third of the ordered list, and the lower one identifies municipalities located in the final third of the ordered list. The values between these two lines, therefore, constitute municipalities more or less similar to the average. The results of the graph show that generally:

The municipalities that make up the Vallformosa Territory are in this middle group, with the exception of Sant Martí Sarroca, which is among the poorest municipalities. Again, we see the outstanding growth of Font-rubí, which behaved as an outlier during 2020.

Next, we come to the conclusions section of this study.

8. Conclusions

The data obtained from the results allow us to reach the following conclusions about the population of the Vallformosa Territory:

- 1. There is a continuous trend of population growth in each of the municipalities of the Vallformosa Territory.**
- 2. The province of Barcelona has also experienced steady growth over the past few years.**
- 3. The increase in population in the Vallformosa Territory is due both to migration and to an increase in life expectancy.**
- 4. The growth is significantly higher in the small municipalities of the Vallformosa Territory compared to the whole of the province of Barcelona.**
- 5. The territory is being rejuvenated:** the group of people over 64 years of age is shrinking, that of people under 16 years of age is increasing, while the number of people of working age, from 16 to 64 years of age, is also smaller.
- 6. The territory is growing essentially due to the influx of population that is moving to the municipalities that make up the territory.**
- 7. The population of Spanish nationality (autochthonous) is greater in the Vallformosa Territory than in the province of Barcelona.**
- 8. The majority of the population residing in the province of Barcelona, as well as in the Vallformosa Territory, is mostly native to this area.**
- 9. The majority of population growth in the territory is due to internal migration.**
- 10. The new population has moved from other points of the same province to the Vallformosa Territory,** especially in the case of the municipalities of Font-rubí, Les Cabanyes, Pacs del Penedès, Sant Martí Sarroca and Vilobí del Penedès.
- 11. The percentage of people from non-European backgrounds is lower in the small municipalities of the Vallformosa Territory,** in relation to both Vilafranca del Penedès and the Barcelona province overall.
- 12. The percentage of the population coming from Africa in the municipality of Vilafranca del Penedès is higher** than that of the province of Barcelona.
- 13. The Vallformosa Territory has become an attractor of population** that lived within the province of Barcelona, that works in the province of Barcelona and that, due to

location or other reasons, **has decided to move to reside in the municipalities of the territory.**

- 14. In the Vallformosa Territory, there is a higher percentage of people who have primary or VET and post-secondary studies compared to the whole of the province.**
- 15. The working population, both in the Vallformosa Territory and in the province of Barcelona, is slightly more than half of the people.**
- 16. The primary sector (agriculture and livestock essentially) carries a very large weight in small municipalities.**
- 17. There is also a higher percentage of people in these towns (Font-rubí, Les Cabanyes, Pals del Penedès, Sant Martí Sarroca and Vilobí del Penedès) who work in construction.**
- 18. The percentage of people who are employed in the industry is slightly higher in small towns.**
- 19. In the case of Vilafranca del Penedès, the results are different from those obtained in small municipalities in terms of the type of activity carried out by the working population.**
- 20. In Vilafranca, people who work in the primary sector and in construction have a similar weight to those who do so in the province of Barcelona.**

As global conclusions, we can affirm that, after analysing the census information associated with growth, population origin, education data and work data, we can see that:

a) The differences between people residing in the Vallformosa Territory and in the province of Barcelona overall are small.

And this leads us to think that:

b) The territory has grown significantly attracting people residing in other municipalities in the province of Barcelona.

Regarding income, we note that:

- 21. The average per capita income of the Vallformosa Territory and the Alt Penedès region is significantly lower than that of the province of Barcelona. Sant Martí Sarroca is even poorer.**

In short, after analysing and interrelating the data published by public bodies concerning the population living in the Vallformosa Territory, we have reached the following conclusion, which confirms our working hypothesis:

The Vallformosa Territory is very attractive for populations coming from outside and it is possible for it to undertake a strategic transformation in order to make a qualitative and quantitative leap in training and knowledge, economic prosperity, social and ecological sustainability and personal and community well-being.

9. Discussion and limitations

This study interrelates the official data of the National Institute of Statistics (INE) and the Tax Agency on the population living in the municipalities that make up the so-called "Vallformosa Territory", which are: Vilafranca del Penedès, Font-rubí, Vilobí del Penedès, Les Cabanyes, Sant Martí Sarroca and Pacs del Penedès.

The evolution of the growth of the number of people who live there in the last thirty years, the age, gender, origin, educational level, type of work activity and per capita income of the population was analysed, comparing the small municipalities with Vilafranca del Penedès and the province of Barcelona as a whole and, in the case of the economic level of the people, also with the region of Alt Penedès.

Given that:

- The population of the Vallformosa Territory is being rejuvenated,
- It acts as a focus of attraction for people who once lived in other parts of the province of Barcelona, and now settle there,
- The educational level of the population of the territory is lower than the average of the province,
- The weight of the work activity dedicated to construction is greater and that above all...
- The activity in the primary sector (agriculture and livestock, especially) of people living in small municipalities is seven times greater than the average for Vilafranca del Penedès, the province of Barcelona and the global figures for Catalonia,

We believe that the next step in the research line of the Vallformosa Foundation Chair should be aimed at analysing in detail the farming of these small towns in the Vallformosa Territory.

The data that we can obtain on the types of crops and the size of the plots may be very useful to predict their evolution over time, and to be able to plan, consequently, a transformation strategy aimed at progress, and at the economic, social and environmental sustainability of the territory, with zero carbon footprint (decarbonization) and community well-being. In this way, progress will be made towards two clear objectives of the Vallformosa Foundation:

- a) The promotion of research and development of the primary sector and, in particular, the cultivation and production of organic vineyards, as well as other products linked to the Vallformosa Territory. And
- b) The promotion and dissemination of knowledge concerning the Vallformosa Territory as a basis for sustainable and decarbonized development.

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Annex A: List of tables and figures

General scope of landscape unit.

Map of Alt Penedès

Table 1. Statistical data for Font-rubí.

Table 2. Statistical data for Les Cabanyes.

Table 3. Statistical data for Pacs del Penedès.

Table 4. Statistical data for Sant Martí Sarroca.

Table 5. Statistical data for Vilafranca del Penedès.

Table 6. Statistical data for Vilobí del Penedès.

Figure 1. Evolution of the population in the municipalities of the Vallformosa Territory.

Figure 2. Evolution of the population of the municipalities with smaller populations in the Vallformosa Territory.

Figure 3. Percentage growth of the population of the Vallformosa Territory compared to the province of Barcelona.

Figure 4. Difference in the percentage of population in large age groups between the municipality of Font-rubí and the province of Barcelona.

Figure 5. Difference in the percentage of population in large age groups between the municipality of Les Cabanyes and the province of Barcelona.

Figure 6. Difference in the percentage of population in large age groups between the municipality of Pacs del Penedès and the province of Barcelona.

Figure 7. Difference in the percentage of population in large age groups between the municipality of Sant Martí Sarroca and the province of Barcelona.

Figure 8. Difference in the percentage of population in large age groups between the municipality of Vilafranca del Penedès and the province of Barcelona.

Figure 9. Difference in the percentage of population in large age groups between the municipality of Vilobí del Penedès and the province of Barcelona.

Figure 10. Percentage of population in large age groups in the province of Barcelona.

Figure 11. Evolution of the distribution of men/women in the province of Barcelona.

Figure 12. Evolution of the distribution of men/women in the Vallformosa Territory.

Figure 13. Evolution of the distribution of men/women in the small municipalities of the Vallformosa Territory.

Figure 14. Percentage of European population in the province of Barcelona and in the municipalities of the Vallformosa Territory.

Figure 15. Percentage of population by origin, grouped by Spain, European Union, Rest of Europe and Rest of the World, in the province of Barcelona and in the Vallformosa Territory.

Figure 16. Percentage of population by origin, grouped by Spain, European Union, Rest of Europe, Africa and Others, in the province of Barcelona and in the Vallformosa Territory.

Figure 17. Percentage of population by origin within Spain, grouped by provinces of Catalonia and the rest of Spain.

Figure 18. Percentage of population by place of birth, grouped by same municipality, same province, same community, different community, or those born abroad.

Figure 19. Percentage of population by level of education achieved.

Figure 20. Percentage of working and non-working population.

Figure 21. Percentage of working and non-working population by gender.

Figure 22. Percentage of population by labour sector grouped by primary sector, construction, industry and services.

Figure 23. Per capita income of the municipalities of more than 1,000 inhabitants of the Vallformosa Territory.

Figure 24. Comparative per capita income of the municipalities of more than 1000 inhabitants with the average of the province of Barcelona.

Figure 25. Relative position of the Vallformosa Territory in terms of income per capita in the province of Barcelona.

