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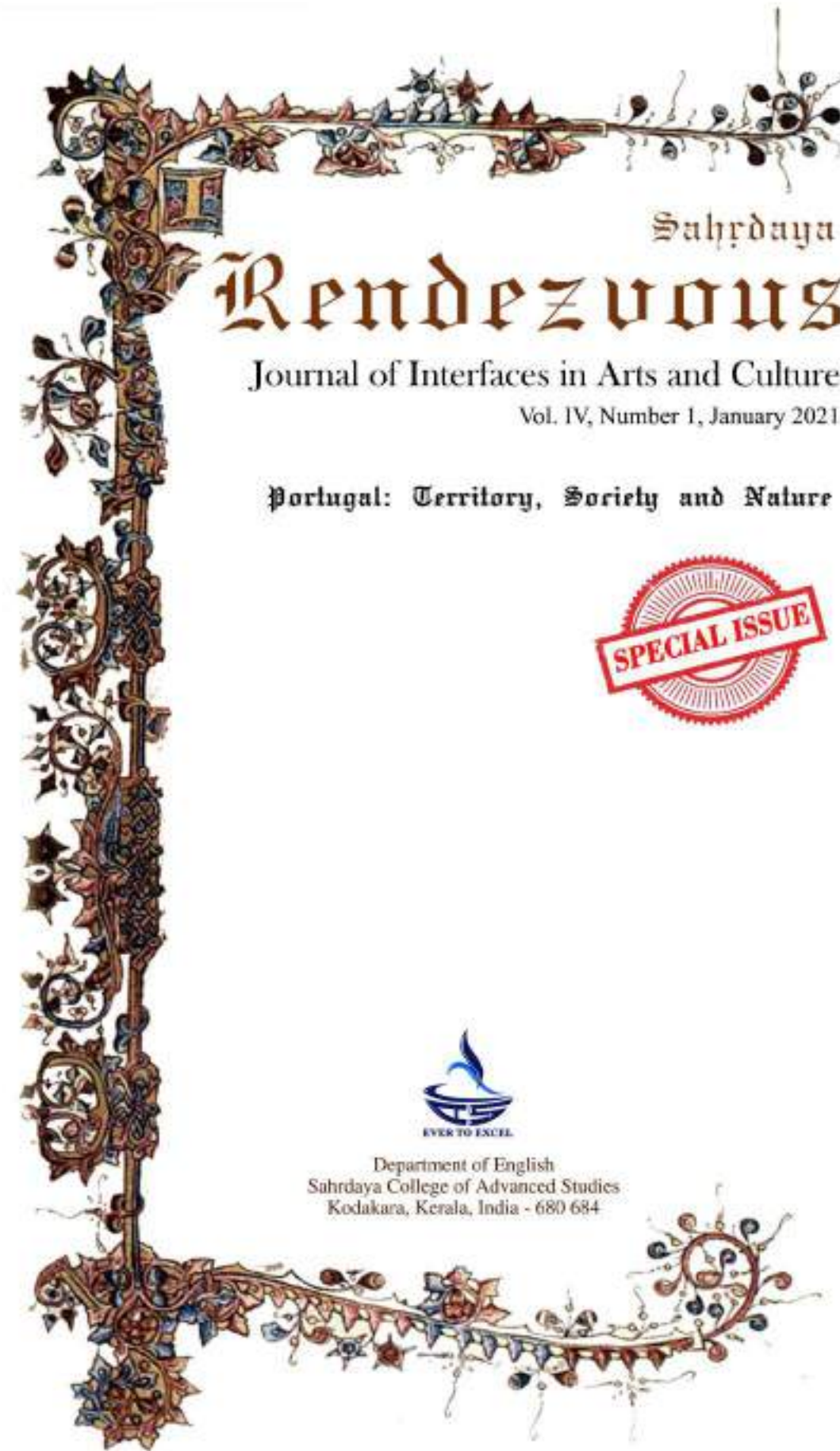


Department of English  
Sahrdaya College of Advanced Studies  
Kodakara, Kerala, India - 680 684

Rendezvous

Journal of Interfaces in Arts and Culture

Vol. IV, Number 1, January 2021



Sahrdaya

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Portugal: Territory, Society and Nature



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Portugal: Territory, Society and Nature



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## **“Portugal: Territory, Society and Nature”**

### **Editorial**

The Special Issue of the *Rendezvous*, “**Portugal: Territory, Society and Nature**”, is the initiative of an interdisciplinary collaboration that is critically examining the research, policy, and practices which currently underpin geography and spatial planning in Portugal. On this theme, this Special Issue has contributions that critically assess the following proposition statements:

- Concepts that shape how geography is understood and discussed within any society
- Narratives that shape how the problem of geography is framed and communicated
- Science that underpins geography, and critical considerations of the role of science in supporting action and change
- Governance processes of interaction and decision-making
- Systems, approaches and framings that conceptualize feedbacks and interconnections between social, biophysical, climate, and institutional problems from local to global scales
- Studies of future scenarios that consider ways of supporting decision-making and implications of long-term future changes

We have contributions from several areas of geography research and practice with broader disciplinary perspectives in the social and biophysical sciences and humanities. As a result, this special issue epitomizes results of recent studies and discusses long-standing questions in diverse areas of geography, paying special attention to the interconnectedness of: (1) human geography studies: human modifications and territorial planning, teaching, population and tourism migration; (2) physical geography and developmental ecology constraints, that is, the notion of ‘nature conservation’. The editors have brought together a solid and productive cast of researchers with singular focus, presenting at the same time the diversities and similarities in the approaches to the geography studies.

The first part of this special issue is composed of the contributions about the themes: human geography, population, teaching, frontiers and migrations, and tourism in Portugal. *Paulo Nuno Nossa* seeks to bring a contemporary geographical insight into the study of Portuguese demographics from the early days of census taking to the present, which could reflect on the relationship between migration and the socioeconomic context in the country. *Miguel Padeiro* focuses on Portugal’s recent demographic ageing process and presents some reliable statistics to show how and why Portugal has been ageing so quickly in comparison with other European countries. *Fátima Velez de Castro* and *Érica Mitelo* pursue to offer a reflective summary on the Portuguese immigration scenario, highlighting the volunteer and workflows, from the second half of the 20th century onwards. *Luís Mendes* develops his paper about recent urban regeneration as a tool in the restructuring of Portuguese cities and the problematic of gentrification, focusing on the case of Lisbon. *Manuel Pérez Pintor* and *João Paulo Candeias Garrinhas* discuss the Eurocity Elvas,

Badajoz and Campo Maior (EUROBEC) as a socio-economic and territorial reality of a new cross-border governance structure in Portugal. **Norberto Santos** presents an intriguing reflection about gastronomy and wines in Portugal as fundamental to the development of touristic activity. **Miguel Castro**'s study based on the schoolbooks used by the Portuguese dictatorial regime, intends to make a brief expedition throughout the twentieth century (until 1975), exploring how Geography was an instrument for the construction of a submissive, obedient, and apolitical population.

The second part of this special issue encompasses contributions on the themes such as physical geography, ecology, biological invasions, space planning, and biological conservation. **Bruno Martins** and **Adélia Nunes** present the reader with a summarized but an inquisitive vision about physical geography highlighting certain unique aspects of Portuguese territory. **Jorge Luis Oliveira-Costa**, **Rui Ferreira de Figueiredo** and **Vânia Regina Pivello** discuss the role of coastlines in plant invasion dynamics, focusing on the case of *Acacia longifolia* (Andrews) Willd. in Portugal.

Thus, this distinct issue of *Rendezvous* reaches out in a singular effort to capture the intricacy of the structure, origin, processes, dynamics and mechanisms of Geography, representing a coherent and synthetic framework, attempting convincing clarifications of the solutions to the problems, conflicts and impacts of the different territories.

#### Guest Editors



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### **Editor's Note**

*Rendezvous* is an international refereed journal published annually (January) under the auspices of the Department of English, Sahradaya College of Advanced Studies, Kodakara, Kerala, India. The journal publishes original, scholarly, unpublished research papers in English related to literature, arts, history, culture, literary criticism and life of any country. It is the general policy of the journal to allow differences in opinion of individual scholars resisting the generally growing attempts of unification and universalization by the virtue of majority. We respect boundaries, territories, identities, nations and nationalisms against a tendency to withdraw oneself into the narrow-mindedness of extreme nationalism – social, religious or cultural – that advocate exclusiveness. Interfaces in the subtitle of the journal indicate the reader's freedom to invent comparisons and relationships between and among the articles published here. Contributors of the articles express their individual ideas and opinions which need not necessarily reflect those of the editors, advisory board or the publisher.



## **The Portuguese Population: The Transitional Period to Consolidated Modernity**

**Paulo Nuno Nossa**

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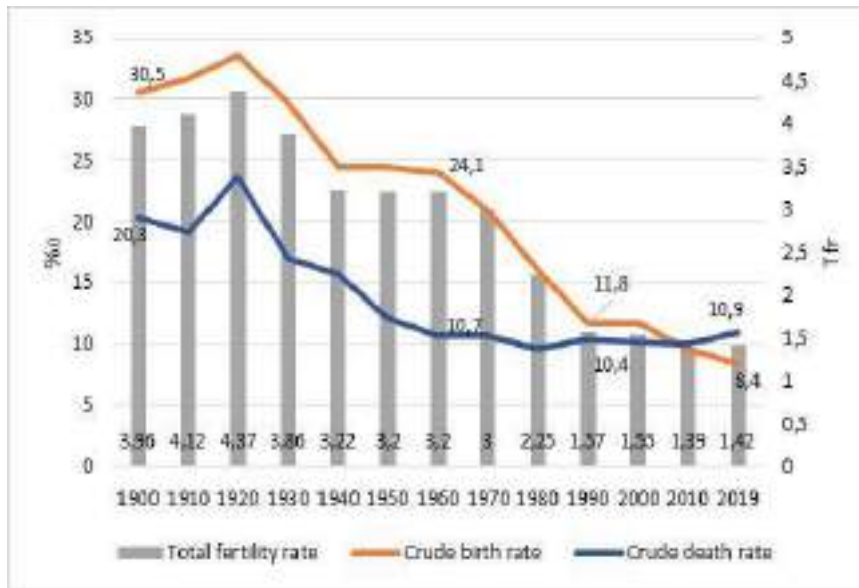
### **Introduction**

This article seeks to bring a contemporary geographical insight into the study of Portuguese demographics from the early days of census taking to the present, which could reflect on the relationship between migration and the socioeconomic context in the country.

Demographic Transition Theory (TTD) guides our understanding of the trends regarding its key variables, fertility and mortality, in Portugal from 1990 to the present. TTD is divided into three stages: 1) the potential phase of high population growth; 2) the transitional growth phase; and 3) the incipient decline stage. Stages 1 and 3 tended to be marked by zero population growth. In the first, high levels of both fertility and mortality were recorded, while, in the latter, low levels of these variables were obtained. The transitional or intermediate stage saw accelerated population growth resulting from a progressive fall in mortality, while fertility, at first remained high, before beginning to steadily decline.

Figure 1 illustrates the crude birth and mortality rates over a period of approximately 120 years. Ferrão (2005:51) posits that the hundred-year stage of Portuguese demographic modernization witnessed a transition from a pre-modern phase with high birth and mortality rates to a consolidated modernity with significantly lower levels of birth and mortality. This led eventually to a net negative population growth at the beginning of the 21st century, which, as a detailed analysis would show, firstly continued to remain high before beginning a steady decline from 2007 to the present.

Figure 1 - Crude birth and death rates during the transition phase of Portuguese demography (1900 - 2019)



Source: INE - Portuguese National Institute of Statistics

Thus, according to both Ferrão (2005) and Bandeira (1996), whose detailed volume is entitled *Demography and Modernity: Family and Demographic Transition in Portugal*, the following demographic trends have been found:

- The first phase of demographic transition (from the end the 19th century to the 1950s);
- the second, or transitional phase, (from the 1960s to the early 1990s); and
- the third phase of consolidated modernization (from the 1990s to the present).

We will show that the economic and social development in Portugal has left visible marks of demographic modernization, including the trend towards emigration. Political and economic decisions in the 1960s contributed significantly to the accelerated second phase of transition, as they promoted the modernization of the socio-economic fabric, social structures, and values in force, especially those regarding fertility and conjugality. The country was

relatively late to achieve both economic and demographic modernization, and it then progressed rapidly to a phase of accelerated aging that places Portugal today amongst the countries of the world with the highest rates of aging.

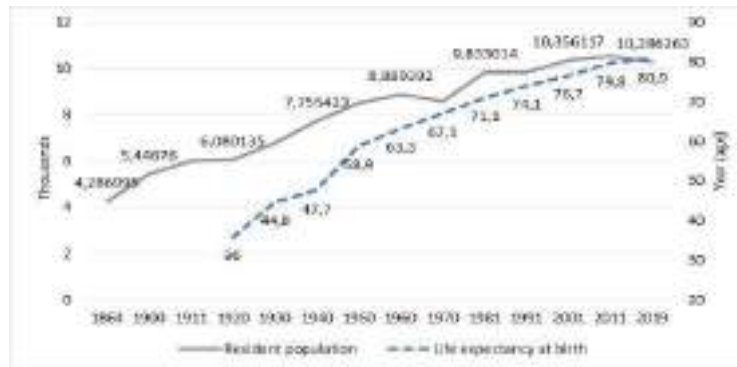
### **Demographic Transition in Portugal: The First Four Decades of the 20th Century**

Portuguese demographics prior to the late 19th century must be analysed with caution due to the various shortcomings of the demographic sources which are beyond the scope of this article. Rodrigues, Moreira and Henriques (2009) point out the gradual improvements that enabled Portugal to enter statistical modernity in the late 19th century, precisely between 1864, the date of the first General Population Census and the beginning of the 20th century. The Civil Code of 1864 (articles 2445 and 2491) stipulated the founding of the Civil Registry, which only began to serve a fundamental legal function from the date of the publication of the First Civil Registry Code (1911). This mechanism began to gather data regarding the return of emigrants as well as that identifying individual and family events, namely, births, marriages and deaths (Tavares, 1996:200).

Although Serrão (1973) dates the first institutionalized demographic statistics to the Liberal Regime of 1800-1862, Bandeira (1996) holds that the systematic publication of demographic data began to slowly achieve international standards only in the late 19th century. Citing Sousa (1979), Bandeira (1996:139) equates the mortality record keeping quality in Portugal to the standards in effect in France, Italy and Spain of the period.

Portugal opens the 20th century with a population of 5,446,760 (Fig. 2) which represents an increase of 27.1% over the General Census figure of 1864. Bandeira (1996:146) calls attention to the fact that the population growth registered in this period resulted exclusively from natural growth (birth minus death rates) and that, although the emigration balance might have been significant, insufficient data exists to determine the numbers.

Figure 2 - Portuguese population and life expectancy trends (1864 - 2019)



Source: INE - General population censuses

The second half of the 19th century witnessed a slow but steady departure from the demographic tendency of the old regime, with its high levels of both birth and mortality that resulted in slow and irregular population growth (Rodrigues 2009:327). Despite medical advances in bacteriology (1857-1870) and Chadwick and Smith's sanitation reforms in England (1842 and following) that marked the beginning of the European urban-sanitary paradigm, infectious diseases, namely cholera and smallpox, had severely negative effects in terms of mortality, as described by John Snow (1854) writing about the London cholera outbreak (Nossa, 2012).

Ricardo Jorge (1858-1939) produced public health reports that called attention to the existence of what he called the “macabre symbiosis” or close relationship of dependence between: malnutrition + low social-economic level + inadequate medical hygiene = poor demographic index (Reis, 1961; quoted by Nossa, 2001:77). In this unfavourable context, a violent and prolonged outbreak of the plague hit the city of Porto (1899), and Ricardo Jorge portrayed an urban context of the time marked by serious poverty, unsanitary conditions and overcrowding:

There are vices here of bad manners and ignorance; there are the most revolting practices of treating children according to unceasing tradition; there are the homely and totally unsanitary dwellings where more than a third of the population lives under threat; there is the wear and tear of infectious diseases spread by contagion; finally, there is a totally inadequate sewage

system, besmirching the soil and the water. (Ricardo Jorge, 1899; cited by Serén, 2001:205)

The 20th century began with a decrease in mortality (Fig.1), interrupted in Portugal in the period 1916-1919 both by the effects of World War I and the emergence and spread of the influenza pandemic of 1918-1920. At the same time, high fertility continued while infant mortality fell which accelerated population growth from the 1930s until 1960, when the impact of emigrations made itself felt (Henrique and Rodrigues, 2009). On this last point, Bandeira (1996:151) emphasizes that demographic fluctuations were strongly influenced by the migratory balance and that the recorded population growth was not merely due to a positive physiological balance. In the early twentieth century, particularly 1920-1940, a series of factors cumulatively contributed to a dramatic fall in migratory opportunities, namely the combined effects of two World Wars, refugee immigration and the contraction of the world economy resulting from the Great Depression of 1929. The intense transatlantic flow of migrants to Brazil and the USA shrank, leading to an upswing in demographic growth between 1930 - 1940 (+ 1.28%; Bandeira, 1996:153).

#### **Economic and Demographic Modernization in Portugal: 1960-1990**

The consolidation of demographic modernity in Portugal has lagged behind that of other developed European countries, with a significant drop in birth rates between 1960-1990, as illustrated by the steep slope in Figure 1. This yielded a steady decrease in the natural balance and a total fertility rate (TFR) that fell to 1.57 in 1990, precisely half of that of 1960 (3.2).<sup>1</sup> This demographic trend corresponds to the 2nd phase of the transitional period, as per TTD, and results from the combination of concurrent social, political and economic changes that had a significant impact on Portuguese society.

From the economic point of view, the country witnessed a significant developmental jump, which translated into an average GDP growth of 6.9% from 1960 to 1973 (Lopes, 1996:236). Said changes included alterations in the productive and employment structure, population distribution, productivity and social and educational conditions.

---

<sup>1</sup> Total Fertility Rate - Average number of children per woman.

In the early twentieth century, as in much of the world, Portugal embarked on a period of economic autonomy in order to recover from the financial imbalances generated by the First World War. A policy of import substitution led to a rise in agricultural and industrial activity (Lains, 1994:924). After World War II, especially in the 1950s, significant international changes took place. In 1951, the first European institution for economic coordination – the European Coal and Steel Community – arose in 1951 and four years later evolved into the European Economic Community (EEC). In 1959 Great Britain, together with the Scandinavian countries, Switzerland and Austria, founded a free trade association – European Free Trade Association (EFTA). As Silva Lopes (1996:237) states:

Growth in the economies of the centre spills more intensely into those of the periphery, through foreign trade, investments, and labour migration. (...) Thus, much of the economic progress achieved in the Portuguese case is explained, as in the case in other southern European countries.

Portugal joined EFTA in 1960 which led to the dismantling of customs duties. A preferential agreement was established with the EEC in 1972 and the country was fully accepted as a member in 1986. Lains (1994:931) points out that this allowed the Portuguese economy to grow faster than the European average: "In 1963, the year in which Portuguese industrial production first exceeded that of agriculture, Western Europe saw the birth of its last industrial nation".

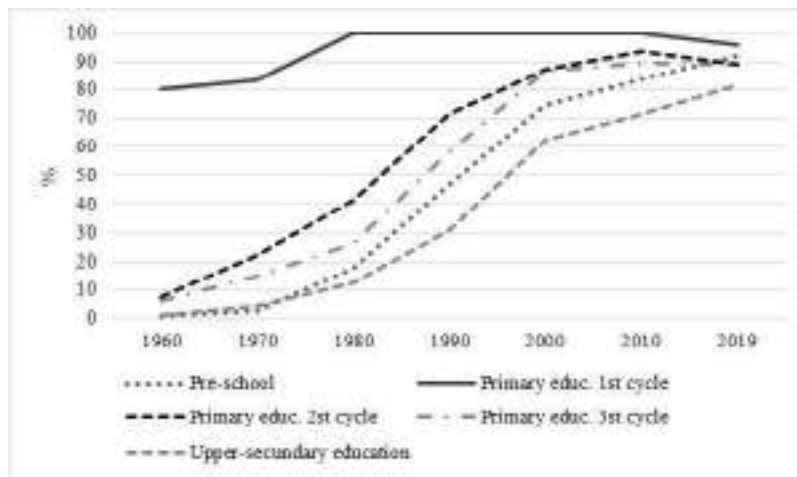
Ferrão (2005) calls this series of changes “modernizing shocks” that led to significant changes in living conditions, family organization, schooling, population distribution and the labour market, with a consequent impact on demography.

Several factors explain the sharp and steady fertility drop between 1960 and 1990. Shorter (1975) points out that the entire nineteenth century witnessed a trend towards secularization and the increasing privatization of family life (living less and less in residence with other members), with impacts on conjugality and reproduction. He speaks of the ‘second sexual revolution’ starting in the 1960s that was marked by an increasing freedom in partner choice and a definitive rejection of marital options by the family and the surrounding social environment. "We witnessed an eroticization of the sentimental life of men and women and the discovery and affirmation of the

meaning of the body in affective life" (Shorter, 1975; quoted by L. Bandeira, 1996 pp. 30 - 31).

In addition to more permissive conjugal values, the significant fall in infant mortality (Fig. 6) combined with a growing appreciation of children which progressively decreased their participation in productive functions and increased their emotional and material costs, requiring greater investment in youth as school careers lengthened. In the Portuguese case, the political regime changes on April 25, 1974, led to the democratization of access to education, which significantly raised schooling rates. Between 1964 and 1986, a minimum compulsory education of six years was set and later extended to nine in the period 1986 - 2009, when the current mandatory 12 years of schooling was established.

Figure 3 - School enrolment rates by cycles, Portugal (1960-2019)



Source: INE- Portuguese National Institute of Statistics

From a macro point of view, Almeida (2004) points out the importance of Portuguese reproductive health policy. A 1942 law (DL no. 32 171 of 1942) was in force until 1976 that restricted and criminalized the sale of contraceptives which were considered to be abortion products. Despite this legal framework, condoms were available for sale in pharmacies, as well as through military supplies services (Almeida, 2004:31). In the early 1960s, as in the rest of Europe, the contraceptive pill reached Portuguese pharmacies, despite the church's efforts to strongly discourage its dissemination and use.

Public debate about the need to offer family planning services in Portugal by way of the public health system began in the 1960s led by Albino Aroso (1967), and the right of access was constitutionally enshrined in 1976. Despite these advances, generalized access to modern contraception was only achieved in the mid-1980s, when family planning was placed under the auspices of primary health care. In 1987, the pill became, for the first time, the most commonly used form of contraception, with interrupted coitus falling into second place (Almeida, 2004:35).

These changes, in addition to the institutionalization and subsequent liberalization of divorce in 1975, greatly contributed to changes in family makeup, which gradually grew more nuclear and steadily less extended and traditional. It is worth pointing out that, until the introduction of the Civil Code of 1867, the only permitted form of marriage was that performed by the Catholic Church. From this date, two types of marriage were sanctioned, civil and religious. Divorce, which had been allowed during the First Republic (1910), was terminated in 1940 upon the signing of the Concordat between the Holy See and the Portuguese Republic, which, among other things, prohibited divorce from religious marriage. This restriction was amended in 1975 and revised in 1997, when restrictions on litigious divorce were reduced, extending the legal framework through which this could be requested.

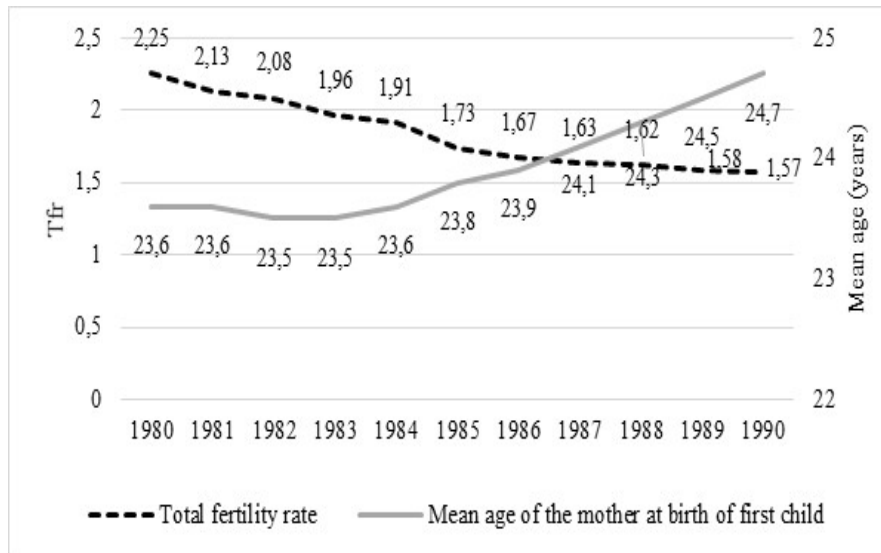
The decline in fertility is therefore a mark of the second half of the 20th century: "Having fewer children and earlier were key characteristics of the family model during the 1960s and 70s, in conjunction with a growing (sub)urbanization and the opening of the country to the world" (Stinger, 2005:56).

Throughout the 1980s, Portuguese demography consolidated its modernity regarding fertility. As Figure 4 demonstrates, FRT, which had stabilized between 1940 and 1960 at 3.2, decreased for the first time to 2.08 children per woman, thus falling below the generation replacement index (2.1). This foreshadowed the inevitable aging that would materialize at the beginning of the 21st century. Simultaneously, within a decade, the average age of the woman's first delivery gradually rose (from 23.6 in 1980 to 24.7 in 1990), due to changing priorities that included the prolongation of female schooling, the adoption of other forms of conjugality, including de facto union, a greater ease in family re-composition as well as a growing and increasingly active role of women in professional life. The drop in fertility



now seen in Portugal, in consonance with other southern countries such as Spain and Greece, had taken place in the early 1970s in most European Union (EU) countries, taking approximately 10 years to achieve identical values.

Figure 4 Overall fertility rates and the mean age of mothers' first delivery, Portugal (1980-1990)

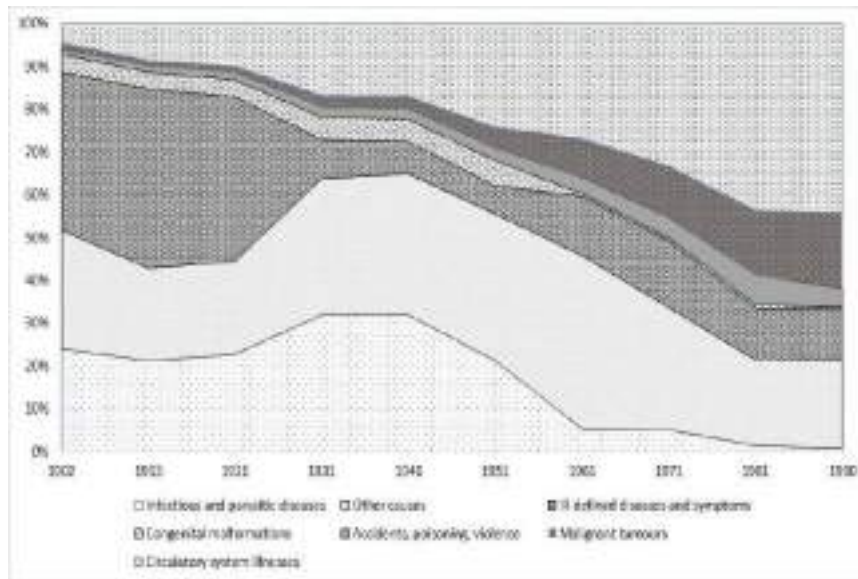


Source: INE- Portuguese National Institute of Statistics

The 1960-1990 period saw a gradual decrease in the crude death rate, with a change in the principal causes of death. Infectious and parasitic diseases gave way to cerebrovascular disease and malignant tumors, which Omran (1971) designated the ‘Epidemiological Transition’ that generally encompasses three fundamental changes:

1. Infectious diseases were supplanted by non-communicable disease and external causes;
2. Morbidity and mortality became more prevalent among the older rather than the younger cohorts;
3. The predominance of mortality and the subsequent reduced life expectancy gave way to a situation marked by the prevalence of chronic disease in conjunction with longevity gains at the top of the age pyramid.

Figure 5 - Principle causes of death, Portugal (1902-1990)



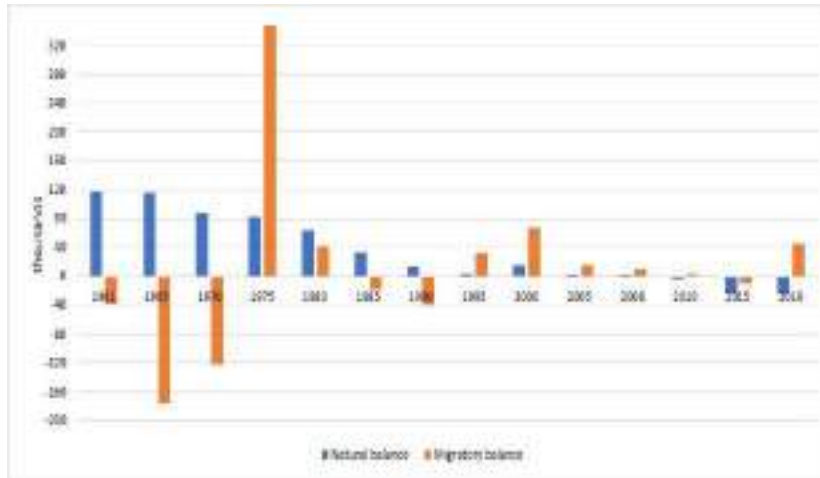
Source: INE/Nossa (2001:43)

Figure 5 displays the changes in the epidemiological profile since 1940, arising from contemporary anti-biotherapy which permitted the progressive control of infectious disease associated with better quality living conditions and sanitation, water chlorination and better sanitary organization and control. Moreover, starting in 1965, the national vaccination plan was extended universally (Nossa, 2001). Thus, once again with some delay, Portugal began to take on the epidemiological profile characteristic of developed societies, led by countries in northern Europe, with progressively lower overall mortality and an average life expectancy at birth approaching 70 years of age and that reached 71.1 in the 1980s.

The Infant Mortality Rate (IMR) also fell sharply from 77.5% in 1960 to 10.9% in 1990, placing Portugal among the OECD countries with the lowest rates (<3% (Fig. 6). The marked IMR fall was achieved by way of maternal education, by the universalization of pregnancy and childbirth health care, by the establishment of specialized and multidisciplinary health teams, as well as the creation of neonatal units distributed throughout the country that yielded a significant reduction in both perinatal and neonatal mortality,



Figure 7 - Trends in infant mortality and life expectancy, Portugal (1900-2019)



Source: INE- Portuguese National Institute of Statistics

Taking now a cursory gaze at the 2nd transitional phase (1960 - 1990), two contradictory trends were obvious in the natural and migratory balance. 1961–1970 showed a positive, though decreasing, natural balance yielding a population loss of 278,267 residents, corresponding to an annual growth rate of -0.32%. This negative value resulted from a large migratory loss between 1960-1970 resulting from falling infant mortality rates (-3.28% per year). Although the Portuguese economy improved significantly, due, notably, to industrial growth and modernization and rising exports, the living conditions of a significant part of the Portuguese population did not immediately benefit from this new socio-economic context, owing to a traditional delay in adjusting to the conditions of modernity. Barreto (2007) traces the enormous net negative emigration flows to an association between political and socio-economic factors:

- The prolonged dictatorial regime (48 years) maintained the last European colonial empire and encouraged the departure of settlers and, later, 1961-1974, accumulated approximately 8,600 military war dead (Angola, Guinea and Mozambique);
- High numbers of agricultural population, with low incomes and a low industrialization rate;

- High illiteracy rates and limited schooling rates at all levels of education (Fig.3);
- Low percentage of the population covered by social protection systems (social security and health);
- Infant mortality rates above the European average;
- Low wages and productivity per worker; and
- Low levels of sanitation and potable drinking water at home, particularly in rural areas.

The combination of these factors contributed to the largest wave of emigration in contemporary Portuguese history: 1960 saw 646,962 emigrants and 1970, 406,011 (Ferreira, 2009: 23). This drain of workers as the working-age population attracting them abroad significantly impacted youth dependency rates and reproductive potential, especially in inland regions of the country. A large number of young people left for Europe (France, Luxembourg, Germany, and Switzerland), while the exodus to the USA continued, especially from the Azorean islands. The marked depopulation and aging of many inland regions of the country today can be traced in part to this process which left only the elderly behind. These areas have not managed to attract enough people to make up for population losses.

This situation was suddenly reversed in 1975 and the migratory balance inverted, bringing unprecedented number of emigrants home (Figure 7) This exceptional event derived in part from the combination of the 1973 oil shock that depressed European economies and it encouraged the return of thousands of emigrants. Above all, however, the April 1974 military overthrow of the dictatorial government not only ended the colonial wars in Africa but also led to serious political and social unrest in those countries that forced between 600,000 to 800,000 former colonial residents to return to the mainland who were then to be absorbed by a population of approximately nine million. However, the vertiginous rise in the migratory balance to extremely high positive numbers (around 374,000) is misleading. It derives from the categorization as “emigrant” of all those born in the former colonies and who, even though having no Portuguese passports, were classified as returning emigrants due to their birth in former colonies.

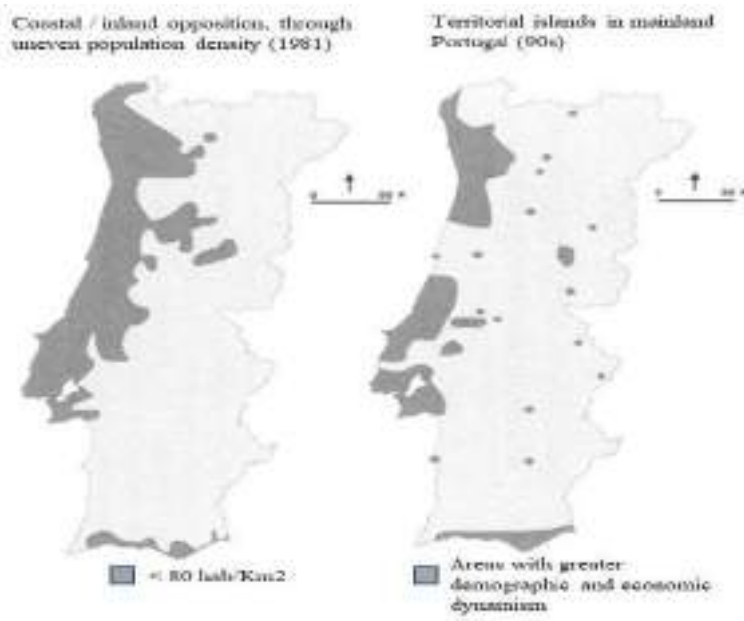
Following 1974/75 permanent emigration fell sharply but not definitively. Economic woes in the 1975-1985 period significant enough to warrant International Monetary Fund (IMF) intervention again continued to

contribute to the outflow of the active population until the early 1990s. Despite the negative factors described above, by the end of the second transitional period, the 1991 census accounted for a population of 9.8 million, which represented an increase of a million (977,755) in the 1960-1990 period, for an annual growth rate of 0.35%

The rapid pace of the country's demographic, economic and social modernization, that was condensed into a particularly short period of time, specifically with regard to the 2nd transitional phase, resulted in almost unavoidable developmental asymmetries. The most visible contrast is the inland-coastal disequilibrium in population distribution and economic dynamism (Fig. 8). Ferrão (2002: 154) points out that the economic and social modernization of the 1960s and 70s described above brought Portugal into industrialized Europe (1963), while worsening population distribution imbalances. The inland Portuguese regions saw their population peak in the 1940s and 50s (Cravidão & Matos, 1990). The lack of development planning meant that these areas were unable to compete with the dynamic growth of the coast and entered into a process of depopulation and aging that continues today, as a result of unequal rates of modernization.

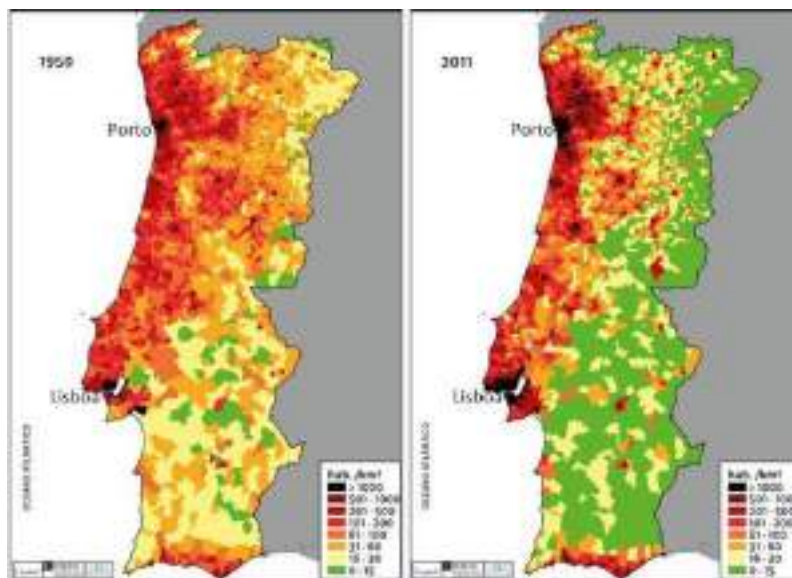
Historically, the trend of the Portuguese population settling on the coast was later reinforced by the pull of jobs in industries that settled and / or modernized there, due to the offer of energy and fundamental infrastructure facilitating the import of raw materials and the distribution of transformed products. This coastal strip marked by the most accelerated urbanization rates of the 1970s to 90s, degenerated in some cases into disorder and congestion. All the-cost, however, benefited from significant foreign investment that boosted those regional economies that managed to organize networks and attract a qualified workforce led to the differentiation of infrastructure such as schools, hospitals, a high-speed road network, in opposition to the depopulation and low-intensity urbanization in more peripheral regions (see Figure 8). At present (2020), 39% of the current Portuguese population (2020) lives in the metropolitan areas of Lisbon and Porto (comprised of 35 of the 278 municipalities in mainland Portugal), while medium-sized cities concentrate 19.2% of the population, located, primarily, in a 70 km wide coastal strip (Figure 9).

Figure 8 - The “Country's Geographies” (1981-1990)



Source: Ferrão (2002: 152)

Figure 9 -Population density Portugal mainland (1950-2011)



Source: Marques, T. Sá (2017)

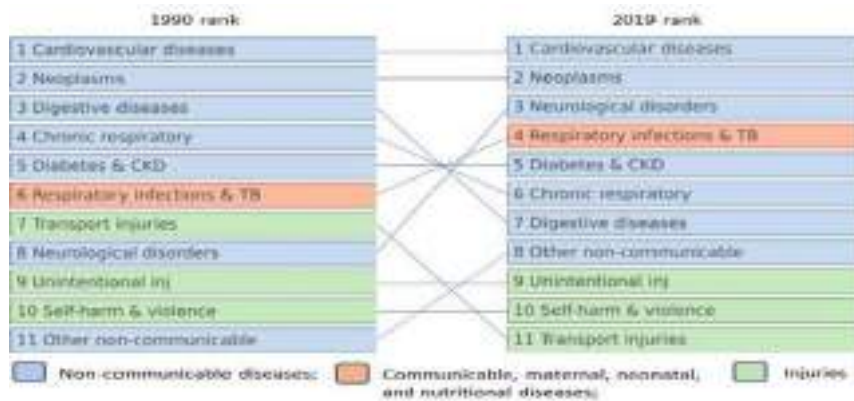
### Consolidated Modernization and Aging Populations

Now let us turn to the demographic trends in this 3rd stage of consolidated modernization. We will look into fertility and mortality trends from the 1990s to the present, a period in which the Portuguese population first reached 10 million.

Figure 1 illustrates that the 1991-2019 period was marked by a fall in fertility rates to historically low values, resulting in a negative natural balance. This proximity to equilibrium between fertility and mortality, which have now stabilized at lower levels is characteristic of the last phase of TTD, and appears to be particularly marked in the 1990s and later. Mortality had already stabilized at lower values in the 1960s with the preponderance of cause of death being attributed to chronic degenerative diseases, as explained above; this trend continued. The last 20 years have witnessed few relevant changes in causes of death of the Portuguese population (Figure 10), except:

- an increase in the prevalence of respiratory infections in the elderly arising from a range of multimorbidities in conjunction with chronic disease, and from unique socio-environmental factors that may be associated with the lack of energy resources in the country (Nossa, 2020).
- Significant mortality increases associated with neurological disorders, including Alzheimer's and Parkinson's, as well as a rise in mental illness, all of which have seen similar trends at a global level, heightened by longevity gains (Nossa, 2020).

Figure 10 - Trends in Portuguese causes of death (1990-2019)



Source: IHME / healthdata.org



Both the quantitative and qualitative transformations in fertility are more obvious. Figure 4 shows the historically low levels of TFR (<1,6) in the first decade of the 21st century, which is characteristic of consolidated modernization. Almeida (2004), points to the confluence not only of historically low TFR rates but also the rise in mothers' average age of first delivery. After the 1974 revolution, and above all with the consolidation of the National Health Service, which tended to be free and universal, starting in the 1990s, Portuguese women sought out access to highly effective contraceptives that allowed them to postpone the birth of the first child, which is one of the key characteristics of the so-called Second Demographic Transition (STD): (1) low TFR, (2) postponement of maternity, (3) more permissive and less stable conjugal practices. Lundberg (2011) ascribes this change to a series of alterations: change in traditional marriage and family values; changing demands in the labour market with less focus of manual labour and greater need for knowledge and qualifications; and the consistent growth in women's empowerment. All of these have enabled what he calls new cost / benefit equations for motherhood and conjugality:

The production benefits to marriage come from economies of scale in providing for multi-person households, and from the returns to specialization and exchange within the household. When one spouse specializes in market work and the other in housework, each becomes more productive in his or her separate sphere, and gains from trade analogous to those from trade between nations ensue. (Lundberg, 2011:13)

Cunha (2014) calls attention to differences between the fertility slumps in Portugal and those in Germany or Italy, where, in addition to the late age of first childbirth, the number of childless couples also grew significantly. Portuguese families took an “alternative path”:

The number of second births fell more and more with obvious consequences for third or fourth ones. In this context, it is not the transition to motherhood that has been called into question, but that to the second child (...). (Cunha, 2014:23)

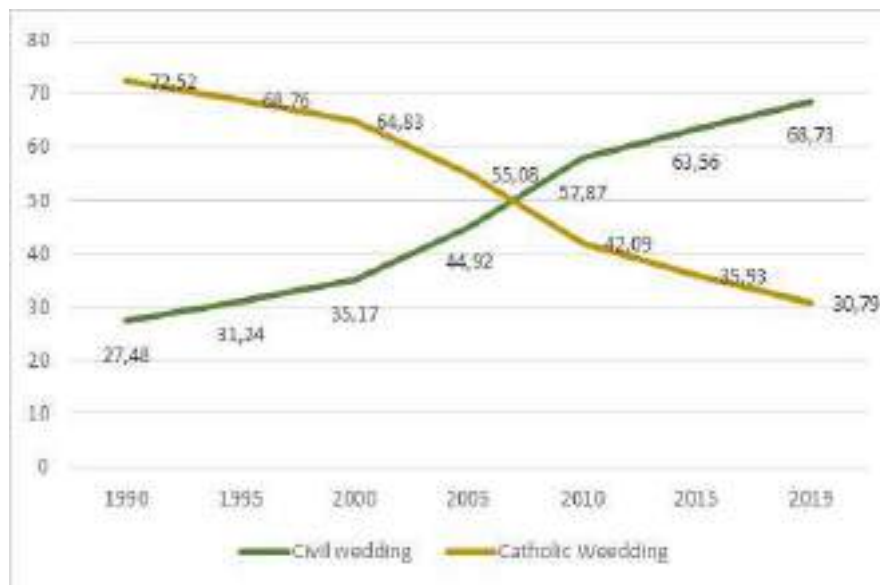
This delaying or even the lack of a second child seems to be a consequence of the difficulty in achieving professional and financial goals, which are more clearly evident in times of economic and labour uncertainty. During the financial crisis of 2009-2014, Portuguese TFR hit historic lows.

It is not surprising, therefore, that the 2013 *Fertility Survey* (INE) found that the most cited reason by men and women for not having children was:

- 1st - The financial cost of having children (Male 67%; Female 68%);
- 2nd - difficulty in finding a job (Male 59%; Female 48%).

Thus, the current low fertility levels can also be traced to the changing value of conjugality. Sharp declines have been observed in the religious identity of the partners combined with a marked increase in the number of civil marriages that increased 2.5 times between 1990 and 2017, when they comprised 65.8% of all marriages; this is a reflection of the growing secularity of Portuguese society (Figure 11)

Figure 11 - Trends in religious and civil weddings in Portugal (1990-2019)



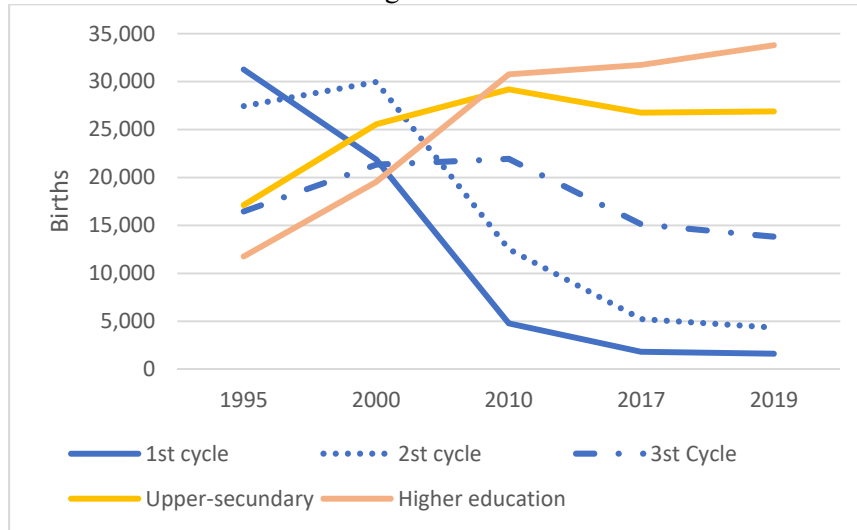
Source: INE- Portuguese National Institute of Statistics

With regard to maternity outside marriage, social values have also become progressively more liberal, and, in 2019, 5.7 out of 10 Portuguese births took place outside marriage and of these, 1.8 were born outside marriage and without parental cohabitation.

It is also important to call attention to the birth trends in the last 20 years, in relation to women's academic qualifications. The last decade has witnessed

an absolute reduction in the number of births, with a variation rate of -1.06%/years. In the 1995-2019 period, however, the highest frequency of births between 2010-2019 were ascribed to more highly educated women.

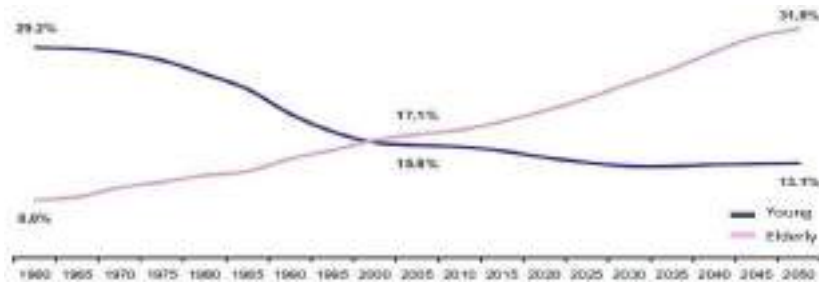
Fig. 12 - Live births to women residing in Portugal: total and by mother's highest level of education



Source: INE- Portuguese National Institute of Statistics

In view of the scenario outlined, at the beginning of the 21st century, Portugal met all the conditions to undergo demographic ageing. This situation has been worsening significantly, owing to the continued increase in longevity with the widening at the top of the age pyramid in conjunction with a persistent decrease in fertility. The proportion of people aged 65+ has more than doubled in the last four decades, from 8% in 1960 to 22% in 2019, while the younger cohorts fell from 29% to 13%. Figure 13 shows that the proportion of elderly Portuguese exceeded that of youth for the first time in 2001, reaching an aging index of 101.6, a scenario that worsened significantly by 2019 when there were 161.3 elderly persons for every 100 youths, making the country the fourth fastest aging country in the European Union (28).

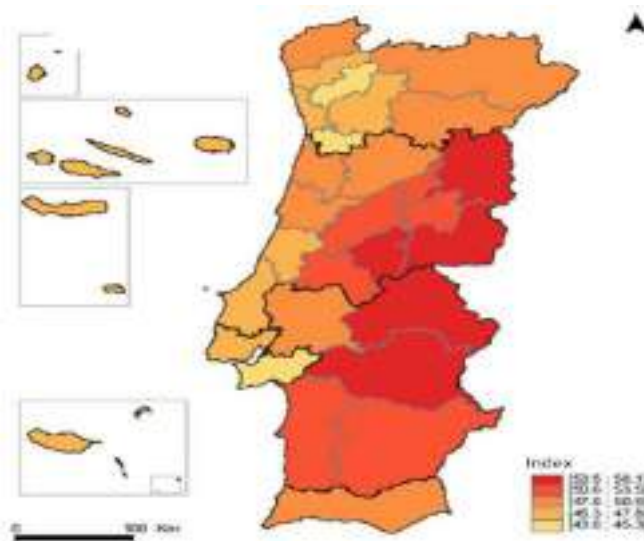
Figure 13 - Proportion of youth and elderly to the total population (%); Portugal, 1960-2050



Source: Carrilho and Gonçalves (2006:24; 24; Population Censuses, Estimates and Projections of Resident Population; INE)

As described above, Portugal's population is unequally distributed throughout the country for reasons including unequal access to jobs and services, as well as a history of unequal emigration and return. It is not surprising that the Longevity Index based on the most recent census in 2011 should reflect this spatial differentiation, which reaches its highest values in the most remote counties.

Figure 14 - Longevity Index, Portugal (Census 2011)

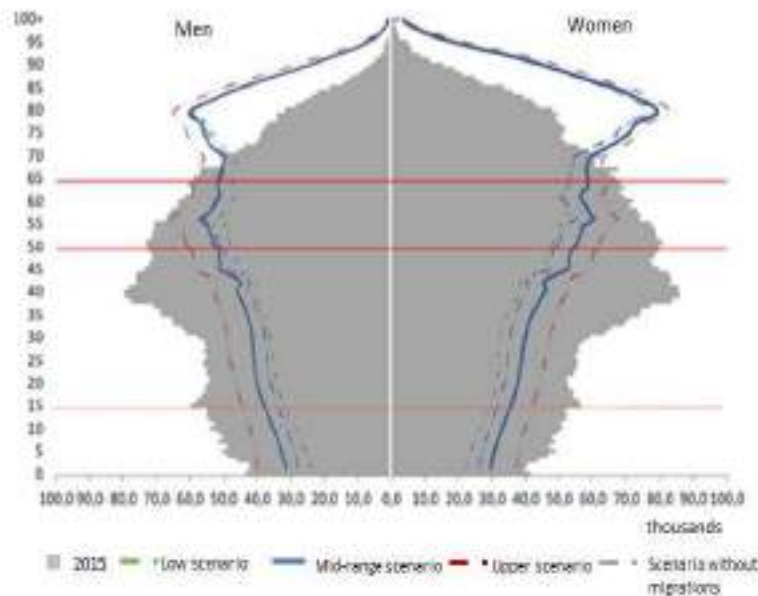


Source: INE - 2011 Census

**Conclusion**

Following the delayed demographic modernization that took place over a period of approximately 30 years, an equilibrium of fertility and mortality at lower levels was achieved and has lasted throughout time, resulting from profound changes in social values between 1990 and the present. In a very short period of time, social goals including values regarding fertility and conjugality underwent reorientation in Portugal, as women's empowerment grew in tandem with a trend toward rising gender symmetry. Today, Portuguese society is marked by the secularization of social daily life and a diversity of forms of conjugal partnerships that serve to delay fertility and oftentimes limit it to a single child. Moreover, the 2011 census revealed that within simple families (1 nuclear family without other people), 23.8% of couples have no children.

Figure 15 - Portuguese Age Pyramid: 2015 - 2055 (projections by scenarios)



Thus, assuming that longevity continues its civilizational gains supported by 45 years of social policies, the demographic ageing that began at the turn of the century will continue, as has happened throughout Europe. Figure 15 demonstrates that the Portuguese population will surely continue to

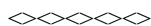
age and potentially fall to less than 9 million residents, depending on projections with or without migrations.

The prevalence of the number of the elderly people in Portuguese society will demand a short-term revision of social policies and the reformulation of the concept of liveability and well-being.

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## Challenges of an Ageing Country

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### Introduction

The world is ageing. Worldwide, the number of people aged 65 or over doubled between 1990 and 2017, having increased from 325.5 million (6.2% of the world population) to 654.6 million people (8.7%) (World Bank, 2019). While the elderly represent 9% of the global population (16% projected in 2050), they account for nearly 20% of the European population; corresponding to an increase of 22.2 million older persons since 2001 (+ 29%) (Eurostat, 2017).

This process is particularly significant in Portugal: with a total of 21.1% of people aged 65 and over, Portugal is among the five countries with the highest proportion of older persons in the world (UN, 2017). On a national scale, demographic ageing is the result of a shift in the balance between fertility levels and longevity. This essentially reflects the progress made over the last century in terms of economic development and increased incomes, living and health conditions, public facilities and behaviour and ways of life. At a regional scale, the ageing population has traditionally been associated with the depopulation of rural areas, which is a consequence of the rural exodus and the emigration of young people active in the 1960s to the 1980s, and more recently in the context of the 2008 financial crisis. However, existing spatial imbalances have enhanced a gradual change in the geography of ageing; that is, in its spatial distribution. These trends would necessarily lead to a rediscussing of ageing in a significantly different context and with different public policy consequences.

Here I focus on Portugal's recent demographic ageing process. I present some numbers to show how and why Portugal has been ageing so quickly comparing to other European countries. I then highlight the spatial distribution of ageing, which increasingly departs from a traditional view of rural decline and instead becomes an urban issue. Finally, some of the new and future challenges that ageing brings and reveals, both for scientific knowledge and for public policies, are highlighted.



### **One of the World's Most Aged Countries**

The economic, social and cultural changes that have occurred in the last 50 years have led Portugal to become one of the oldest countries in the world. In 1990, Portugal occupied the thirteenth European position (EU-28), with 13.2% of people aged 65 or over. By 2010, that figure had risen to 21.1%, which placed Portugal in fourth place behind Italy, Greece and Germany. Outside Europe, only Japan's elderly population surpasses these countries. Current projections predict that Portugal will be in second place in the EU-28 in 2050 and in first place in 2080, with more than 36% of the population over 64 years old (Eurostat, 2017).

Ageing results from a complex set of factors, which are well-documented at both national and international levels (Nazareth, 1988, Leston Bandeira et al., 2014, Rosa, 1993, Ferreira Rodrigues, 2008, Livi-Bacci, 2017, Notestein, 1945). At the most basic level and from a strictly demographic point of view, the ageing process is governed by three elements: falling birth rates, increasing longevity, and young adult out-migrations.

Portugal has a long history of lower fertility standards when compared to other European countries (Leston Bandeira et al., 2014, Ferreira Rodrigues, 2008). This is particularly pronounced in the North and Central regions, where birth control by the institution of marriage and high levels of celibacy compared to other European countries had already led to lower birth rates in the 1970s. Portugal today maintains a differentiated family model in relation to other European countries, which is characterised by a greater preponderance of family as the basis for social solidarity and production of welfare (Portugal, 2011). However, the change in family structures is notable. This is related to the so-called Second Demographic Transition (Van de Kaa, 1987), including changes and diversification of family structures, higher divorce rates, and diversification of types of households. The mother's average age at birth of the first child rose from around 24 years in the 1970s to more than 30 years in 2016. Therefore, the total fertility rate (TFR), which measures the number of children per woman of childbearing age, had fallen below the threshold of generation replacement in the 1980s. In the last decade, it has stabilised between 1.3 and 1.4 children per woman. From this point of view, Portugal appeared in third position in 2016 and in sixth position in 2017, surpassed only by the other countries of Southern Europe (i.e., Malta, Spain, Italy, Cyprus and Greece).

Figure 1. Portugal's age pyramid (1991, 2020, 2050).

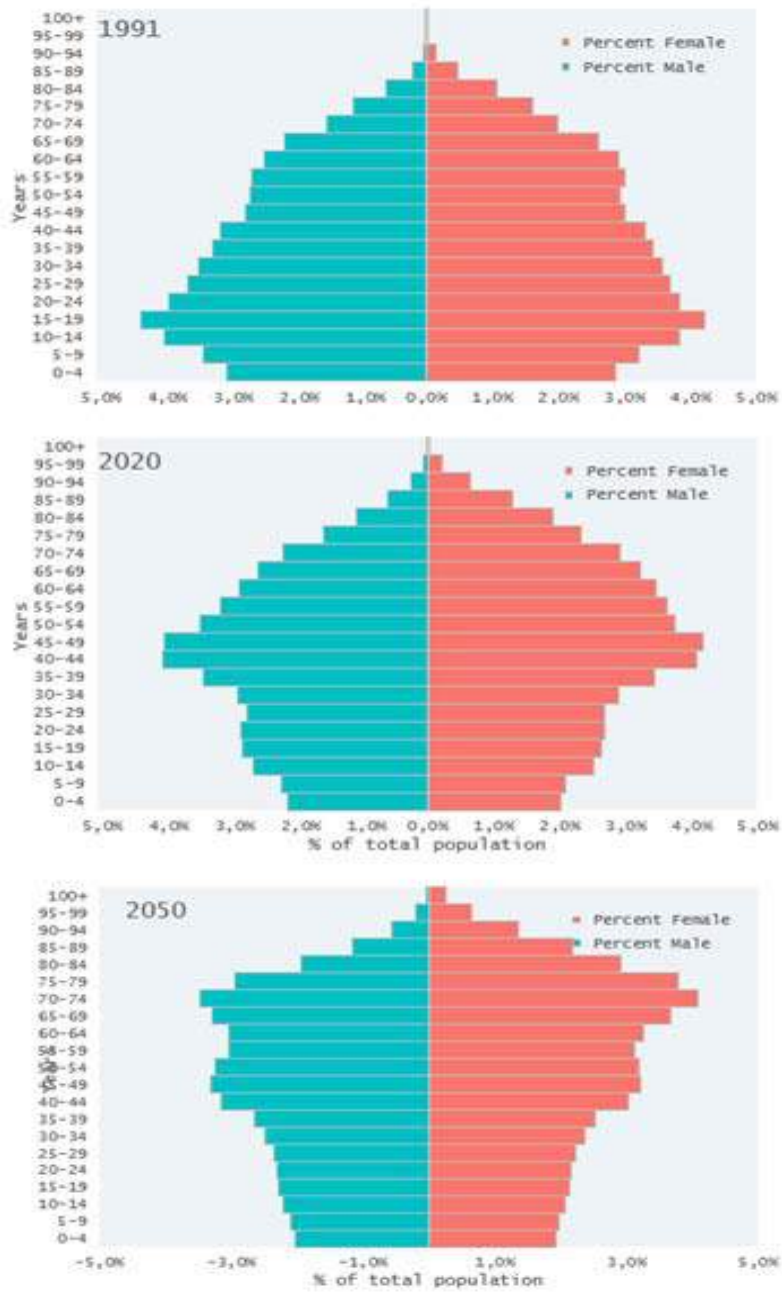
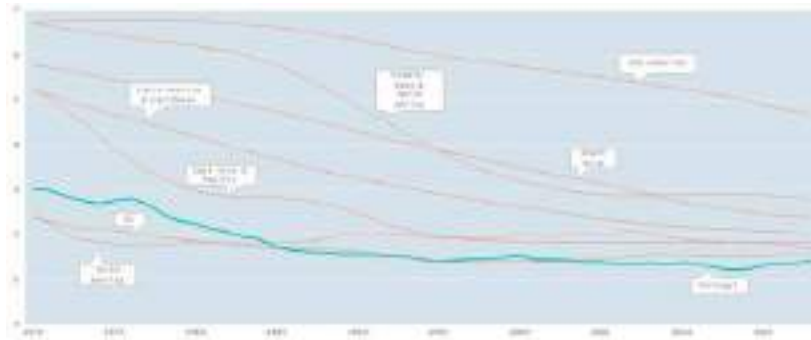


Figure 2. Evolution of TFR (total fertility rates) between 1970 and 2018 in Portugal, compared to some other regions. Source of data: World Bank.



Portugal has also experienced a steady increase in longevity, which is associated with economic development and the progressive improvement of the material and social conditions of the population. The national GDP per capita was multiplied by 4.9 between 1960 and 2016 (constant 2011 prices, INE data). The number of higher education graduates more than doubled between 1994 and 2017. The urbanisation rate rose from 38.8 to 65.8% between 1970 and 2019. The proportion of households with connections to piped drinking-water sources rose from 47% in 1970 to 99% in 2011, access to sewage rose from 60 to 99% in the same period, and the existence of a shower or bath installation increased from 32 to 98%. This huge and rapid development of water supply and sanitation networks benefited from large national and municipal investments, and generated substantial gains in the health of the population. This was accompanied by a gradual increase in response capacity in terms of medical and social assistance, and by increased access to healthcare centres and the strong progression of human and material resources (Santana, 2010).

Consequently, the infant mortality rate fell from 55.5 ‰ in 1970 to 24.3‰ in 1980, and was reduced to 3.1‰ in 2019. This places Portugal below countries such as France, Germany, or the United States (World Bank data). As a consequence of the reduction in mortality, life expectancy rose from 67.1 years in 1970 to 76.4 years in 2000, and reached 81.3 years in 2018. Healthy life expectancy at 60 (as defined by the number of years one person reaching 60 years can hope to live without any disability) increased from 16.9 years in 2000 to 19.4 years in 2016 (WHO, 2017).

Table 1. Percentage of different age groups within population aged 65 or over (1970-2019).

Total population of age groups (% of total population aged 65 or over)					
	65-69 years	70-74 years	75-79 years	80-84 years	85 years or over
1970	328,257 (39.2%)	235,170 (28.1%)	147,525 (17.6%)	83,002 (9.9%)	43,981 (5.2%)
1990	474,974 (35.0%)	348,356 (25.7%)	273,934 (20.2%)	167,287 (12.3%)	92,158 (6.8%)
2019	622,912 (27.3%)	549,591 (24.1%)	432,058 (18.9%)	353,254 (15.5%)	322,609 (14.1%)

Source: INE.

With the increase in longevity, the growth of the older persons population results not only from the higher percentage of 50-64 years old who reach the next age group (65+), but also from the increasing survival rates from one older age group to another. In Portugal, life expectancy at age 65 rose from less than 15 years in 1980 to almost 20 years in 2016 (INE data). In addition, there are almost 600,000 more older persons living in 2019 than in 2000, and 1.39 million more than in 1970. In 1960, about two-thirds of the older persons population was aged between 65 and 74 years old, while 15% were 80 years or more. In 2019, the proportion of 65 to 74 years old decreased to about half of the older population. The so-called *old old group* (i.e., people aged 80 or over, although definitions may vary), now represent close to one-third of the older population. These data mean that since 1970, the population aged over 80 has been multiplied by 5.32, corresponding to an increase of almost 550,000 people. This is the largest increase within age groups.

Finally, migration has also played a major role in Portugal's demographic trends. Many Portuguese people crossed the Atlantic Ocean to Brazil in the nineteenth century and the first half of the twentieth century. During the 1960s and 1970s, more than 1.5 million people, representing more than 17% of the 1960 total population, left the country. Although these were predominantly young adults seeking jobs in the industrialised countries of Europe and North America, young people aged 10 to 19 were also largely included in the emigration fluxes. Domestic migration also occurred at the

same time from the rural areas to the urban areas of Lisbon and Oporto, which added to the age structure imbalance in the regions of origins.

In 1960, life expectancy in Portugal was 63.3 years, while in other Western European countries it was 70.7 years. In 2019, life expectancy in Portugal had risen to 80.9 years (World bank data). However, healthy life expectancy at age 65 has not followed such a positive path: between 2013 and 2018, it dropped from 9.6 (men) and 9.3 (women) to 7.8 (men) and 6.9 years (women), respectively. These numbers are in stark contrast with the EU-27 average (men 9.8 years; women: 10.0 years) and raise questions about how Portuguese older persons live.

### **The Changing Geography of Ageing**

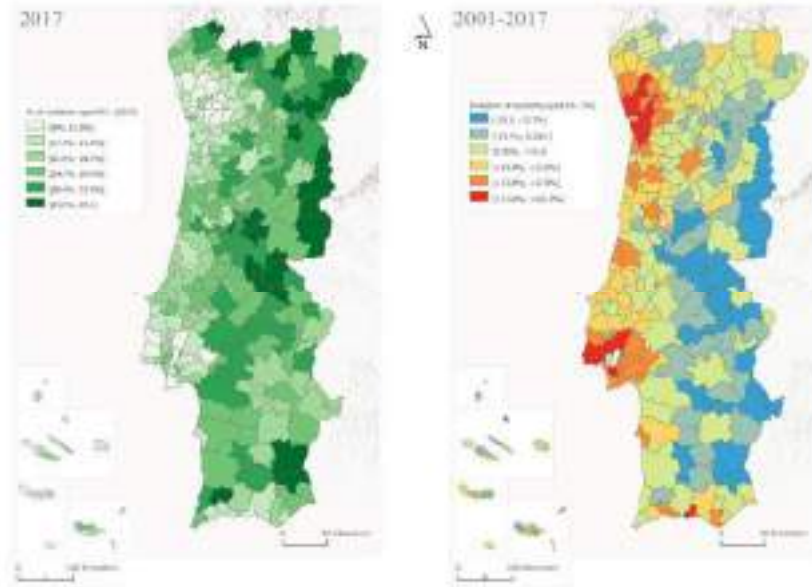
Until recently, it was not uncommon to associate demographic ageing in Portugal with the dichotomy between a dynamic and urbanised coastline, and an interior marked by depopulation and the absence of economic prospects. Portugal has long been a demographically unbalanced territory with large proportions of the population located near the coast, particularly in the urban areas of Lisbon and Oporto.

Given that urban areas—particularly metropolitan areas—are usually more attractive for employment and for active young people, they were generally considered to be younger. It is indeed true that there is still a difference today between the municipalities closest to the coast and those located in the border areas. Of the 10 municipalities with the highest proportion of older persons (65+), eight are located on the border with Spain, while the remaining also fall under the inland country. All of them exceed 36% (Figure 3).

However, a closer look at the maps shows that ageing does not oppose coastal and inland municipalities in an absolutely linear way. Several inland municipalities exhibit lower percentages of older population than coastal municipalities in percentages. This is the case in Viseu (20.7%), Guarda (22.6%), Tarouca (20.8%), Barrancos (21.9%), Castro Verde (22.9%) or Vidigueira (23.2%), all of which have a lower proportion of older persons population than cities normally known as dynamic cities: Portugal's two main cities of Lisbon and Oporto, and also Coimbra (25.0%), Figueira da Foz, Óbidos and Espinho (25.1%). This means that the traditional opposition

between a younger coastline and an older inland country must be re-examined.

Figure 3: Percentage of people aged 65 or over in Portuguese municipalities.



Demographic ageing patterns are distributed according to the degree of urbanisation of the population, although not in a linear way. The large urban centres of Lisbon (28.4%) and Oporto (28.1%) have a higher proportion of older persons than their respective suburban areas. Leaving aside the municipalities located in the Azores and Madeira, which have the lowest proportions of older persons in the country, the municipalities of Lousada (13.2%), Paços de Ferreira (13.7%), Vizela (14.3%), Paredes (14.3%), Felgueiras (15.0%), Penafiel (15.4%), Marco de Canaveses (15.6), Mafra (16.0%), Braga (16, 1%) and Alcochete (16.4%) in mainland Portugal have the lowest proportions of older persons. In both metropolitan areas, the values are concentrically distributed. Coimbra (25.0%) is also surrounded by slightly younger municipalities.

The numbers are changing. Recent trends have unveiled new developments (Figure 3). Low density areas, with reduced demographic dynamics, have exhausted or are in the process of exhausting the ageing process. The older persons population is decreasing because of the effect of

mortality without replacement, and as a result of very low migratory balances (negative or just above 0) and a continuous decrease in birth rates. For example, Penedono lost almost half of its population between 1981 and 2017, with the gross birth rate falling from 15.8 to 4.1 ‰; Aguiar da Beira lost one-third of its population in the same period and the birth rate fell from 16.7 to 4.1 ‰.

In contrast to the rural areas, central areas are now ageing rapidly. The central areas of Lisbon (+ 7%) and Porto (+ 18%) continue to age, although less intensely. The remaining central areas also age at a very variable rate, largely depending on the geographical size of the municipalities and the weight of the municipal population living in predominantly urban or rural areas, as follows: Aveiro and Viseu (+ 40%), Leiria (+46 ‰), Faro (+ 37%), Coimbra (35%), Viana do Castelo (+ 31%), Vila Real (+ 29%), Torres Vedras (+ 28%), Caldas da Rainha (+ 25%), Bragança and Figueira da Foz (both + 19%), Évora (+ 13%), Santarém (+ 9%), Guarda (+ 8%), Castelo Branco and Portalegre (7%), Beja (+ 3%).

Finally, the metropolitan peripheries, while considerably younger than other territories, are rapidly ageing. The most dramatic changes in the proportions of aged people can be seen in municipalities located in the metropolitan areas or margins of Lisbon and Oporto: Seixal (+ 101% between 2001 and 2017), Odivelas (+ 95%), Valongo (+ 90%), Maia (+ 81%), Loures (+ 78%), Vila Franca de Xira (+ 74%), Trofa (+ 72%), Gondomar, Vizela and Sintra (all + 71%). These 10 municipalities, which accounted for 14.7% of the Portuguese population in 2017, together represent 12.6% of the Portuguese population of older persons but represent 25% of the total growth in the number of older persons. Consequently, there is a growing urbanisation of the older persons population. The proportion of older persons is higher in rural areas, where close to 30% of the population is over 65 years old, against 20% of the urban population. However, there are three times more older persons living in urban areas than in rural areas: the former have been increasing in absolute numbers, while the latter have seen their numbers decrease. Therefore, ageing is becoming an urban and suburban problem, which will have dramatic consequences on the way we deal with this demographic trend.

### **With a New Geography, New Ageing Challenges**

The urbanisation of ageing has several consequences. At an individual level, the ageing process is associated with several interrelated biological, psychological, and social losses. From a strictly biological point of view, the disabling process (Lawrence and Jette, 1996, Verbrugge and Jette, 1994) results from the degradation of the functional properties of cells, tissues and organs (Fedarko, 2011; Westendorp & Kirkwood, 2007). It translates into a gradual deterioration of various physiological functions (respiratory, cardio-vascular, endocrine) and a decrease in motor (locomotion, resistance to effort), cognitive (memory, executive functions) and sensory (vision, hearing) functions. Psychological and social losses relate to the accumulation of several events: from independence (ability to perform daily tasks) and autonomy (ability to take decisions), to the resulting drop in self-esteem and the sense of control, to the loss of beloved ones, and to the sense of a meaningful life. Driving cessation and/or the decreasing number of trips using public transit, and the drop in participation in social events all have consequences in terms of social exclusion.

In fact, the ageing process, including the biological, social, and psychological losses, is not evenly or randomly distributed across space. In the last three decades, improving understanding of the so-called social-determinants of health (Marmot and Wilkinson, 2005) has helped us to recognise the role of residential settings in shaping people's health and behaviours. Exposure to risk factors, behaviours and ways of life, the existence of support (institutional or informal), all with important effects on the progression or slowing down of the incapacitating process, vary according to the socio-economic status of the individual and their level of literacy, material conditions, attributes of the living space, and the organisation and distribution of services and amenities. This recognition has largely guided the 'age-friendly environments' paradigm into the establishment of goals and policies directed to the promotion of 'active and healthy ageing' and of the idea of 'ageing in place'. A common challenge lies in how age-friendly the places where increasing numbers of older persons live are, including what barriers and facilitations give or hamper the potential for ageing healthier and postpone the disablement process.

Faced with the continuing increase in the number of very old people (80 years and over) and their resulting necessities, the difference between life



expectancy at birth and life expectancy in good health raises the question of the conditions of the residential environment in which the elderly live (including housing and the neighbourhood). As the age group that spends the most time at home and in the neighbourhood of residence, the elderly are particularly sensitive to the various attributes of their immediate environment, including the quality of public space, accessibility to shops and services, local services, public transport service, the existence of social support, and the feeling of security and calm.

However, this issue has not been sufficiently taken into account by the public authorities. Most local institutions continue to combine skills related to ageing with medico-social services and they do so in an often assistentialist rationale, leaving aside the themes mentioned above that can encourage the elderly to go out and keep active. A few attempts at gerontological plans have emerged in several municipalities in recent years, but these plans have only very rarely been maintained. In municipal councils, ageing is a fragmented issue that is spread between several areas of activity, mainly in the area of social action and, less clearly, in the area of housing, security and mobility. Consequently, Portuguese municipalities may in the future have to rethink the current models of their performance; especially in view of the probable degradation of the sustainability of social security (Rosa, 1993), the gradual fading of traditional models of family support, a greater presence in Portugal than in the rest of Europe, and the difficulties of a welfare state that has never reached the maturity of other countries. At the national level, the National Strategy for Active and Healthy Ageing, which was developed in 2017, is still awaiting approval by Parliament and still has not been implemented, thereby leaving municipalities and local institutions responsible for these issues.

A fundamental problem lies in the way in which contemporary trends around territories and mobility, on the one hand, and ageing as a social construction, on the other hand, influence each other. Ageing is inserted in the context of urban areas that undergo complex changes, which tend to favor lifestyles that are more connected, accelerated and in constant movement ("hypermobiles"). Globalisation has changed the context that shapes the ageing of the population, accelerating everyday life, resizing personal interests, connections and citizenship, and involving the intensive use of ICT. The new groups of elderly people are (and will be) more mobile and dependent on the car, and (will have) greater access to digital tools than their

predecessors. Finally, a growing trend towards individualization has given rise to the replacement of old routines with new forms of personal commitment, expanding the world of choices, needs, and aspirations (Phillipson, 2013).

Portugal's urban spaces are where the majority of the next generations of older people will live, and therefore influence the indicators of life expectancy and good health. These spaces have a certain number of specificities that can contribute to an improvement in the living conditions of the elderly, or on the contrary reinforce the obstacles to these improvements. On a physical level, Portuguese cities are frequently marked by numerous slopes (which make walking difficult) and by the famous "calçada portuguesa" (a distinctive cobblestone pavement that is often the cause of falls and slips in rainy weather). The inheritance and predominance of functionalist urbanism and the place of the automobile in society and in space have in Portugal produced fragmented urban forms, which are sometimes difficult to read and often have deficits in terms of proximity services and social support. Fragmentary logics still prevail and give the landscape a patchwork aspect, with vacant and expectant terrains intertwining with urbanised spaces, presenting contrasting configurations, very open and especially fragmented urban landscapes. This is a reflection of an urban genesis that is much less than in other countries controlled by governmental bodies and is much more dominated by laissez-faire logic and private will. On the social level, the bonds of solidarity based on family relationships—an aspect that strongly distinguishes the countries of Southern Europe (Portugal, Spain, Italy and Greece) from Northern Europe—contribute to a reduction in the isolation of the elderly, which makes it possible to overcome certain obstacles linked to the lack of access to services and to resources dispersed in the territory. However, it is not certain that these links will continue over the coming decades.

The affirmation of private logic in urban production and an entrepreneurial urbanism (Harvey, 1989), aimed at the attractiveness of an international capital and active young people (or foreign pensioners in some cases), may hinder local policies. Development in the real estate market, trends towards gentrification in the central areas and the consequent periphery of active young people all lead to an increase in the elderly population. However, this not only endangers the physical and residential permanence of elderly people but it also threatens the permanence of the identity and

familiarity of these neighbourhoods, the continuity of a sense of place and of cohesive communities. The literature calls this a symbolic displacement (Atkinson, 2015).

The future direction of the territories, at the local scale, is (and will increasingly be) inseparable from the evolution of their elderly population. Even though the diversity of situations invites the mobilization of ingenious and local solutions, there are at least three fields in which the municipalities can face a more efficient articulation. In the domain of urbanism and public space, it is important that territorial entities do not lose sight of the objective of familiarity and continuity (even when the space and context changes), nor the singularity of the experiences of the elderly vis-à-vis other people with reduced mobility. The frequent assimilation of everyone into a single item “universal accessibility” can reduce the daily experience of the elderly to their relationship with the (in)existence of concrete obstacles in their local mobility. In terms of mobility, interventions favorable to walking and public transport cannot hide the fact that the existence of a network is not sufficient if people are unable to access the bus stops. At the same time, the car, which is often demonized, plays an important role in the continuity of social interactions among the elderly, so that total pedestrianization can be an impediment to accessibility. Finally, the involvement of the elderly in matters as important and with such an impacting potential as commercial urbanism, urban rehabilitation, management of public spaces and, more generally, urban planning, is a fundamental requirement. The elderly population cannot be seen only from the perspective of their dependence and their needs for medical and social support. Recent experiences in different social contexts show that their skills, experiences, memories and knowledge can contribute to a better valuation and greater acceptance of public interventions, which can sometimes be very comprehensive and not only dedicated to ageing (Buffel, 2015; Fitzgerald & Caro, 2017) . The inclusion of the elderly population in planning processes is not only an obligation but will certainly also be an inevitability in the future.

### **Conclusion**

This brief analysis has essentially sought to draw a very general picture of ageing in Portugal and to show the recent trend towards its (sub)urbanisation. The progressive change in the geography of the elderly population in the national territory is notable, possibly with considerable medium- and long-

term consequences for public policies. We need to increase our knowledge (with a solid scientific basis) of the experiences of elderly people in urban environments that are often characterised by high deficiencies in services and accessibility, and also a high dependence on the car. Consequently, it is important that public authorities endow themselves with the means to rise to the challenges of an ageing population, without which the living conditions of the elderly (current and future) may deteriorate significantly.

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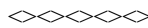
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## Regarding a Chronotopic Analysis of Immigration in Portugal

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### 1. Introduction of the subject of Portugal as a Country of Immigration

Thinking of Portugal as a country of immigration is a relatively recent idea. Considering the emigration dynamics, especially strong during economic crisis moments, as well as the role of the Portuguese diaspora around the world, it might be said that the current identification is that of a state of emigration. But that does not match the real situation of a country that has been receiving immigrants from several nationalities. Based on this idea, we have published in 2008, a study in which we have analysed the immigration dynamics in Portugal<sup>1</sup>, in the end of the 20<sup>th</sup> century/beginning of the 21<sup>st</sup> century. From a “departure port”, the country became also an “arrival port” (Velez de Castro, 2008: 16).

Rocha-Trindade (2001: 170) mentions that history provides us clues on the search of this country by some «immigrants», if one may call them that, in earlier times. Since the 18<sup>th</sup> century, British have been establishing in the Oporto region, due to the Port wine business. But Portugal also knows a few Russians who have established here since the October Revolution, Jew refugees escaping war and Nazi persecution, and English families that have rooted in the country after the end of the British Empire. Far from being numerically relevant, these are initial cases, testimonies of the search of Portugal as an immigration destination, aiming to establish residence, develop a working activity, and settle with family.

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<sup>1</sup> The study mentioned in the bibliography is available in:

[https://www.researchgate.net/publication/301548338\\_A\\_EUROPA\\_DO\\_OUTRO\\_-\\_A\\_IMIGRACAO\\_EM\\_PORTUGAL\\_NO\\_INICIO\\_DO\\_SECULO\\_XXI\\_Estudo\\_do\\_caso\\_dos\\_imigrantes\\_da\\_Europa\\_de\\_Leste\\_no\\_concelho\\_de\\_Vila\\_Vicosa](https://www.researchgate.net/publication/301548338_A_EUROPA_DO_OUTRO_-_A_IMIGRACAO_EM_PORTUGAL_NO_INICIO_DO_SECULO_XXI_Estudo_do_caso_dos_imigrantes_da_Europa_de_Leste_no_concelho_de_Vila_Vicosa) (accessed on 11/01/2021)

Given the present situation, this article aims at conducting a reflective summary on the Portuguese immigration scenario, highlighting the volunteer and work flows, from the second half of the 20<sup>th</sup> century onwards, always envisioning a geographic approach. Our discussion will be based on the already mentioned study (Velez de Castro, 2008), where some of the conclusions mentioned at the time will be revisited, culminating in the analysis of the current situation. Apart from bibliography review, statistical data and cartography will be used to enrich the discussion. We will start by presenting the chronotopic evolution of immigration in Portugal, from the 1960's until the early 21<sup>st</sup> century.

## **1. The Evolution of Immigration in Portugal: from the Second Half of the 20<sup>th</sup> Century to the Early 21<sup>st</sup> Century**

### **2.1 Territorial Dimension of the Chronotopic evolution**

Fonseca (2009, p. 519) establishes that the country's integration in the international migration systems began in the 1950's, with the increase of the rise of the volume and diversity of the migration flows. This fact coincided with the closure of a long cycle of transatlantic emigration, in which Brazil was the main destination. This change in the course of Portuguese emigration took place at the same time along with a vast set of economic and social transformation related to the end of the colonial empire, important events such as the EFTA membership and beginning of the colonial war. During the European emigration cycle itself, Portugal witnessed the early industrialization and rural exodus.

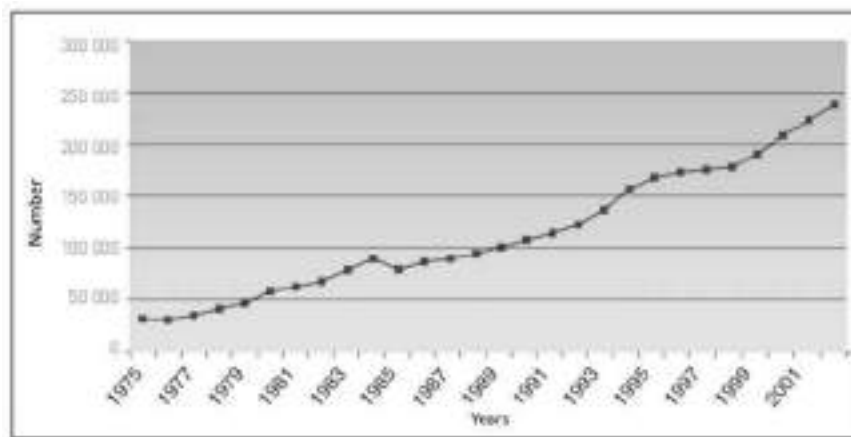
The intensity of the international migration flows can be verified from the 1960's onwards. According to 'Statistics Portugal', 1.465.435 emigrants left the country. As a consequence, in those years the Portuguese population declined. Being one of Europe's oldest State-Nation, and, traditionally, a country of emigration, in the last 30 years, as it was verified in other European countries, recorded a considerable increase of immigration. As stated by Velez de Castro (2016: 12), in 1960, foreigners represented 3% of the population in Portugal, with larger representation of the female gender.

*The 1960's* are the initial time reference in which academics focus to name what can be considered the contemporary period of Portuguese emigration. Pires (2003: 119, 121) claims that, until this decade, the foreign population in Portugal remained practicably stable (around 21.000

individuals), many of them being Spanish refugees or immigrants with a long history of integration and impetus of specific sectors of Portuguese economy, for example, connected to the production of wine and Port wine.

In the 10<sup>th</sup> General Census of the Population (1960), 29.428 foreigners were living in Portugal, corresponding to 0.3% of the total resident population of the time. From that total, 67% were Europeans, i.e., Spanish and English, French and Germans connected to industry, living in the metropolitan areas of Lisbon and Oporto. Around 22% were Brazilian, being considered as part of a migration counter-current from Brazil, living in the northern and urban coastal areas.

Until the 1970's, those who were immigrating to Portugal were essentially Portuguese-African individuals, who kept family, social and historic ties between the two territories. But during the second half of the 1960's and early years of the 1970's, there was a slight increase of immigration, with the arrival of English and Germans connected to industry and tourism (graphic 1).



Graphic 1. Evolution of the number of documented foreigners living in Portugal from 1975 to 2002

Source: Velez de Castro (2008)

It must be mentioned that, until that date, work-based immigration was made in a very restricted legal framework. A report from the minister of the work area in question was necessary; therefore, only qualified workforce was considered as eligible individuals. In that decade, the flow from African



colonies was already significant. However, the numbers from that time require a greater precision, given that migrations were considered as inter-regional due to being overseas provinces.

In the middle of that decade, with the April 25<sup>th</sup> 1974 Revolution, a retraction from the traditional migration flows from Europe and Brazil was verified. However, in the subsequent five years, the foreign population with residence authorization increased around 82% (op. cit.: 123). The second half of the 1970's was marked by the decolonization process in Angola, Mozambique and Guinea-Bissau and by the return of thousands of Portuguese to the metropolis (Mainland Portugal and the archipelagos of Madeira and Azores). Rocha-Trindade (2001: 170) estimates that around 500.000 to 800.000 individuals entered the country. Larger proportions have not been reached because the then Minister of Interterritorial Coordination, António de Almeida Santos, outlined the Portuguese Law n° 308-A/75 from June 24<sup>th</sup>, introducing a more rigorous definition in the right to access the Portuguese nationality and the access conditions to the right to return, which limited the arrival of many individuals.

With the arrival of the returnees between 1975 and 1976, apart from the impact in Portuguese demography, it had an important contribution to the economic and demographic revitalization in a few Portuguese regions. This reality mitigated the effects of immigration in the 1950's and has contributed to the growth of the number of economic migrants from the PALOP [Países Africanos de Língua Oficial Portuguesa/Portuguese Speaking African Countries], given that the “repatriates” of African origin have eased the development of interpersonal knowledge networks and support to the settlement of new immigrants.

During the 1980's, the number of immigrants has intensified “widening to Brazil and other African countries of Portuguese language, beside Cape Verde, with the arrival of new workers coming mainly from Angola and Guinea-Bissau” (Fonseca, 2009: 523). Authors such as Ferreira and Rato (2000: 4), referring to the 1980's, claimed that there was a generalized degradation of life conditions in developing countries and an increase in mobility, favouring and incrementing undocumented immigration and trafficking of human beings. This dynamic was related to the acceleration of the economic growth in countries such as Italy, Spain, Portugal and Greece,

with their EEC membership<sup>2</sup>. The needs of the work market increased, with a consequent search of workforce, hence from this decade onwards there was, not only a consolidation of African immigration, but also a diversification of the origins of the foreign population. It was also during this decade that Southern Europe became an attractive pole for immigrants, mainly from Africa and already from Eastern Europe (Pires, 2002: 152; Góis and Marques, 2018: 128).

The problem of undocumented immigration is then growing. From the 3 million immigrants that, have settled in Italy, Greece, Portugal and Spain around that time, it is estimated that around half of it, was in an irregular situation. According to Baganha and Góis (1999: 254) this situation was also related to the restrictions to immigration imposed by other European countries, leaving Southern Europe as an easy alternative to enter the EU.

In the 1990's, Portugal maintained the immigration movements from the Portuguese-speaking African countries, mostly Cape Verde, as well as the substantial increase in the number of Brazilians living in Portugal. On the other hand, there was also an increase in the number of communitarian citizens, a flow resulting from the geographical proximity and life conditions offered by Portugal, whether to enjoy the retirement or to develop a professional activity. The movements from central and eastern Europe start rising, connected to the easiness of travel provided by the fall of popular democracies, as well as repulsive factors linked to the economic situation, namely unemployment and economic difficulties (Rocha-Trindade, 2001: 170).

Malheiros and Fonseca (2011: 2) also state that, in the 1990's, the Portuguese emigration balance was positive, with the number of immigrations clearly becoming higher than those of emigration. However, due to the deceleration of the Portuguese economic growth in the first half of the 1990's, a new growth cycle began, although with a slower pace compared to the second half of the 1980's. This growth has resulted from job opportunities in some sectors of activity, such as construction and public works (e.g., construction of the Vasco da Gama Bridge or Expo98 in Lisbon), and in retail and finances, that were not filled by the internal population.

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<sup>2</sup> European Economic Community, today named EU – European Union.

Pires (2003: 136, 137) points out that, *in the late 20<sup>th</sup> century*, the foreign population with residence authorization was around 200.000 individuals, circa 2% of the total resident population, without including undocumented immigrants. Fonseca and MacGarrigle (2014: 52) claim that it has been in the final decade of the 20th century that Portugal has had a transition of the migration regime, not only as a country of emigration but also of immigration. Pires (2002: 151) mentions that, in the early 21<sup>st</sup> century, a new legal regime of permanence authorizations entering into force in 2001, gave statistical visibility to a set of changes in the immigration phenomenon. He stresses the fast development of a new flow from Eastern Europe and the acceleration of immigrants from Brazil. In December 31<sup>st</sup> 2001, it is estimated that around 335.000 foreigners were residing in Portugal, in a regular situation, mainly from the African continent (47.6%) and from the European continent (30.2%). Thus, immigrants represented 3.3% of the total population of the country, and around 260.000 individuals would have a resident authorization, with the remaining ones benefiting from the permanence authorization status.

Recently available data from the Portuguese Immigration and Border Services (SEF) (2021)<sup>3</sup>, set the amount in number to 350.898 documented foreigners living in Portugal in 2001. In the early 21<sup>st</sup> century, the country was living in an unprecedented immigration scenario, being more and more diverse and complex, a fact visible in the demographic, economic, academic and geographic profile of the immigrants.

## **2.2. Trying to Establish a Social-territorial and Work Profile**

Baganha and Góis (1999: 258) outline a general framework which analyses immigrants from the 1990's in Portugal. In general, it is unqualified workforce, who occupy undervalued positions in the work market. It is focused mostly in the metropolitan areas of Lisbon and Oporto, due to offering more and better job opportunities.

The proportion of immigrated women/men in Portugal was, during that decade, relatively balanced, except in the case of immigrants from India and Pakistan, with a more masculine flow. The 16 to 64 years old age group was dominant, especially immigrants between 25 and 45 years old. Eastern

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<sup>3</sup> Information available in: <https://sefstat.sef.pt/forms/evolucao.aspx> (accessed on 21/01/2021)

European immigrants were to be highlighted with an age average between 30 and 50 years old. African immigrants presented a higher set of youngsters compared to other continents, as a result of a higher birth rate and due to the fact that they are a more numerous and younger group of migrants in Portugal. On the contrary, the European group is the one that revealed the least young contingent, but revealed a higher contingent of the elderly, as a result of retired people seeking our country to live. The diversification of the immigrant groups and Portugal in the beginning of the 21<sup>st</sup> century, lead to the consideration of two large segments.

The first one was comprised of Europeans and Brazilians, with a more scattered residential pattern, a group where it could be identified with a tendency to the existence of own businesses. The weight of the scientific and technical professions, as well as that of directors and administrative senior staff, was meaningful. The second segment was comprised of immigrants from the PALOP and countries such as Zaire, Senegal, Pakistan and India, among others. They were concentrated in the urban coastal areas, especially in the Lisbon Metropolitan Area, presenting low academic qualifications. According to Pires (2002: 161), the construction was the sector employing most of the individuals comprehended in the latter segment, although retail, hotels and restaurants (Brazilian and Chinese), services (individuals from PALOP in the case of domestic services; Brazilians linked to the computer world, advertising and health), agriculture and transforming industry (Eastern Europeans) were also relevant.

Menezes (1999: 136) completed this idea and presented the profile of the immigrant in the industrial centres. They were normally male individuals who, at first, immigrated alone and only then reunited with the family. They had low professional qualifications, occupying places with precarious conditions in the intensive industry and construction. The difficulties in integration and cultural and economic discrimination were clear, given that most of them lived in degraded neighbourhoods in the suburbs.

But, according to Baganha, Marques and Fonseca (2000: 29), a general comparison regarding immigrants/national autochthones, witnessed that the proportion of Portuguese population that occupied the categories of “entrepreneur” or “self-employed worker” was far less, compared to the number of Europeans and Brazilians. The growing number of immigrants, mainly from the PALOP, had been determined by the job opportunities in

construction and public works, but also by the legalization process of 1992 and 1996, resulting in the emergence of a large number of immigrants linked to informal economy. It is still relevant to mention that, concerning Brazilians, as verified, many were also dedicated to hospitality and restaurant businesses, like the Chinese and Indians, who are also connected to retail business, jointly with Mozambicans.

Baganha, Ferrão and Malheiros (2002: 79) mentioned that the training/instruction level of the immigrants living in Portugal, in the early 21<sup>st</sup> century, also aided in tracing their profile. Normally, it was the Northern-Americans, Asians (Japanese, Koreans, Iranians, etc.), EU Europeans and some Brazilians who presented a higher level of education, adequate to the positions they had, as previously verified. Those who presented an intermediate level of education were normally the Chinese, Indians and some Brazilians working in retail, restaurants and hotels. Lastly, the African community presented the lower levels of education.

Referring to the group of African immigrants, Morén-Alegret (2002: 141) defended that their presence in Portugal as an older immigration group, was felt in their associative power. Machado (2001: 180) claimed that, those who settled in the Lisbon Metropolitan Area, in 1999, circa 95% were from the PALOP. In the 1990's, the global growth rate was 133%, being that, more specifically, the group of Guinean immigrants, grew 453% and the group of Angolan immigrants increased 339%. The estimated 100.000 to 130.000 Africans residing in Portugal in the early 21<sup>st</sup> century presented internal heterogeneities, mainly regarding the jobs they had. Normally those from the Atlantic coast were linked to construction, while those from the Indian coast were connected to retail.

Pires (2003: 147) mentioned that the immigrants from the European Union had a greater preference for Lisbon and the Algarve, where they had jobs connected to technical and scientific staff. However, the stereotype of the entrepreneur, rich Eastern European was not always the case, given many were employees or students.

Rocha (2001: 182) and Pires (2003: 151) approached the case of Brazilian immigrants. According to the authors, until the 1980's, the economic emigration to Brazil was almost non-existent, being a receiving country thus far. However, it is from that date of coming to Europe onwards,

especially to Portugal, the Brazilians gained a new meaning due to specific motivations, connected to language, family and cultural ties. The Brazilian economic investments made in Portugal were decisive, with the formation of market niches in specific sectors (health, computers and cosmetics). Also important was the image of Portugal as a “gateway” to Europe. Normally they were a young population (between 18 and 39 years old), from both genders, hailing from the main States (São Paulo, Minas Gerais and Rio de Janeiro).

In the case of the group of Eastern Europe immigrants, studied by Lopes (1999: 104), the disruption of the economic and political regimes in their countries of origin was key. The subsequent emergence of a new immigration flow operated a historical turn in the migration movements of that region in Europe, providing them with greater density and complexity. It has been a flow that began in the 1990’s, increasing its proportion in the following years. Mainly originating from Romania, Moldova, Ukraine, Russia, Bulgaria, Georgia, Belarus and Latvia, they enter the Schengen space through the Austrian, German, Dutch or French border, via airway, presenting tourist visas and directing into Portugal via road (trucks, buses, trains, etc.). In the early 21<sup>st</sup> century, four groups were prominent.

The first – Moldovans – with the 10<sup>th</sup> or 11<sup>th</sup> grade, became factory workers and mechanics, many coming from the rural space. It was not common to find liberal professionals from this nationality, where the age average was around 40 years old. Normally they were not followed by family in an early stage, but later there was regrouping with family. The second – Romanians – had higher technical training (many of them engineers), but younger than the previous group. Very much connected to their families, they were followed by their families during the migration process. With regard to the third – Ukrainians – also with high / higher academic training; it was common to find physicians, air force pilots, reserve officials and public servants. Their ages were around 35 to 40 years and it was one of the nationalities where there was a higher contingent of women with higher academic training. Lastly the fourth – Bulgarians – were those who manifested a higher cultural level, many of them being connected to art.

So far we have outlined a territorial and social scenario of immigration in Portugal from the 1960’s until the early 21<sup>st</sup> century. Understanding the recent past will enable us to better understand the current situation of the country. As follows, we will analyse the geographical

dimension of the phenomenon, i.e., how the distribution of immigrant population is processed in the Portuguese territory.

### **3. The Geographic Distribution of Immigrants within the Portuguese Territory**

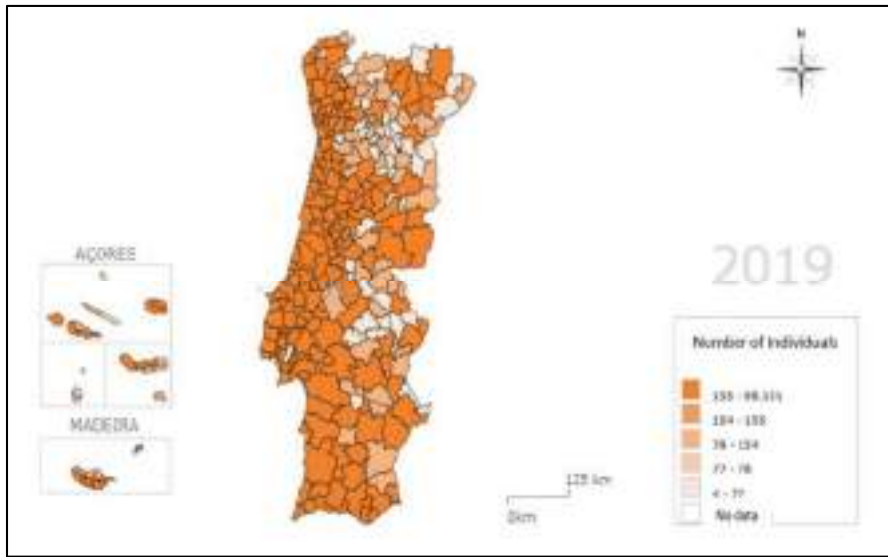
An analysis to the geographic distribution to the foreign immigrants in Portugal enables us to understand that they follow the demographic patterns of the Portuguese nationals. That means that, in general, they tend to settle in the urban coastal areas.

The metropolitan areas of Lisbon and Oporto and the urban coastal strip are the destinations of choice for these immigrants, since these are the locations where the amount and diversity of jobs is greater. Baganha, Ferrão and Malheiros (2002: 9, 93 and 94) have verified that, in the early 21<sup>st</sup> century, Mediterranean Europeans (French, Italians and Spanish) were heavily concentrated in the Lisbon Metropolitan Area, as the Afro-Asians did.

In the case of the Northern Europeans, they were scattered along this area, i.e., Germans and English tended to settle down also in the Oporto Metropolitan Area and, in the case of those who were retired, they sought the Algarve. Dutch were also rooted in the areas of Évora and Beja, due to being linked to agriculture. In the case of North-Americans, the connections to the Azorean ancestors guided them towards this archipelago, whereas Brazilians were dispersed through the Lisbon Metropolitan Area and northern region.

The distribution pattern seems to vary according to nationality. In 1998 it is certain that most foreigners with residence authorization were living in the capital. However, the region of the Algarve was already considered an important attraction – a region, mainly for Union immigrants. Setúbal, apart from Lisbon, was also a district that was concentrated by a significant number of immigrants.

Currently, the pattern of geographic distribution of immigrants in Portugal seems to be disperse (map 1).



Map 1. Foreign population with resident status in Portugal, in 2019

Source: Pordata (2021)<sup>4</sup>

Concerning geography, Malheiros (2005: 113) mentions that the significant presence of immigrants in Portugal, was translated in a large set of territorial changes, including landscape. Considering this complexity, as follows, we will develop a reflection on the contemporary situation of immigration in Portugal.

#### 4. The Current Situation of Immigration in Portugal: a Few Trends

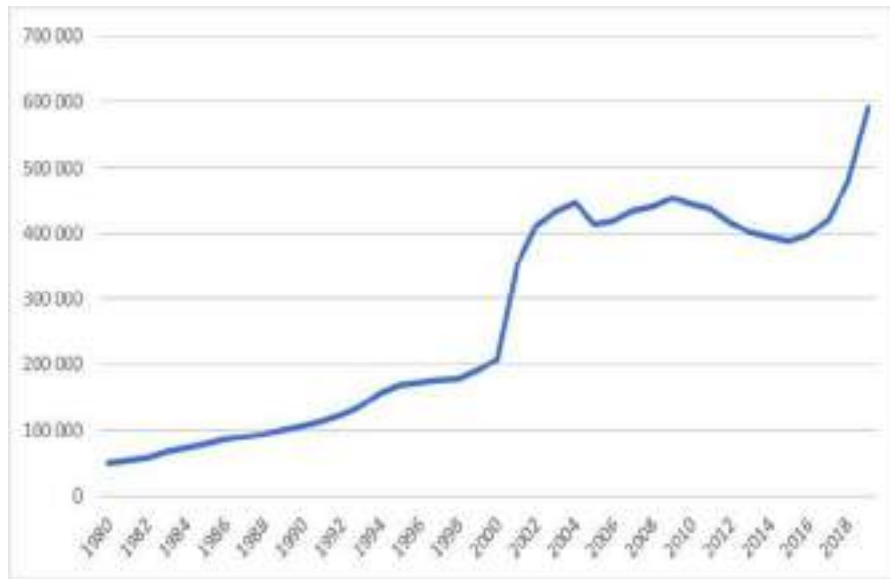
Barreto (2020: 226) claims that one of the more remarkable changes in the later decades of the 20<sup>th</sup> century in Portugal was to take the role of an immigration territory. According to data from SEF (2021), in 2019, the

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<sup>4</sup> Information available in:  
<https://www.pordata.pt/Portugal/Popula%C3%A7%C3%A3o+estrangeira+com+estatuto+legal+de+residente+total+e+por+algumas+nacionalidades-24> (accessed on: 21/01/2021)



number of (documented) immigrants was 590.384, corresponding to 5.7% of the total resident population of the country (graphic 2)<sup>5</sup>.



Graphic 2. Evolution of foreign population in Portugal

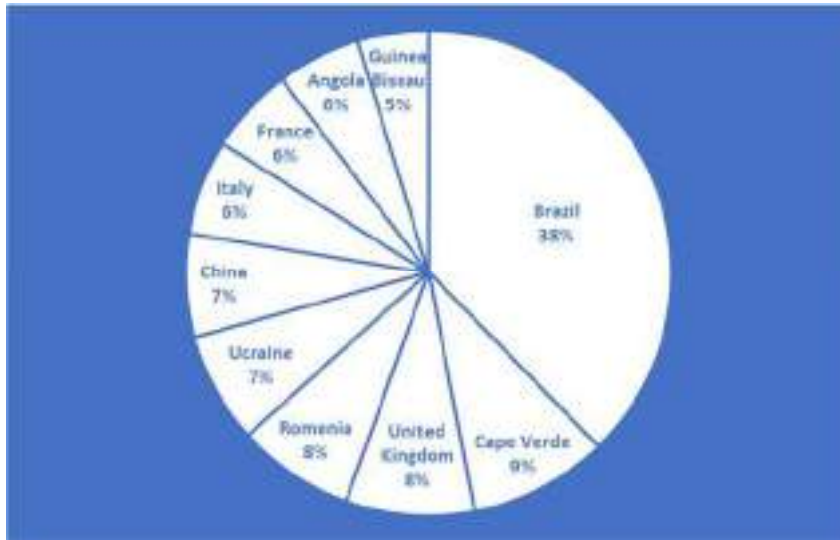
Self-made, based on SEF (2021)

Malheiros (2013: 255, 253) stresses the period between 1998 and 2002 as the immigration peak, resulting from a very significant increase of foreigners entering Portugal. This author mentions still that the migration courses have two trends. On one hand, most of the immigrants dislocate based on a personal or family strategy, taking the costs of immigration. On the other hand, there are immigrants who travel to Portugal comprehended in a group, aided by a third party, many of them with a specific job in sight (e.g., agriculture).

Padilla and Ortiz (2012: 166) have differentiated Portugal from the remaining countries in Europe due to considering its situation as more complex and paradoxical, caused by the need to recruit qualified, but also unqualified, labour. Immigration to Portugal has a dualistic character. On one hand, the strengthening of economic relations with European economy, the opening to foreign investment and the development of the touristic activity

<sup>5</sup> According Pordata (2021), 10.286.300 inhabitants were living in Portugal in 2019.

have attracted highly qualified professionals. On the other hand, it still needs labour in sectors demanding lower academic qualifications, such as construction, restaurants and other areas with undifferentiated positions. Apart from these two trends, one must mention the “lifestyle-migrants” segment, not only retired people, but also active aged population from Northern and Central Europe which is seeking the Algarve and rural inland areas to reside and work, looking for tranquillity, environmental quality and the contact with nature.

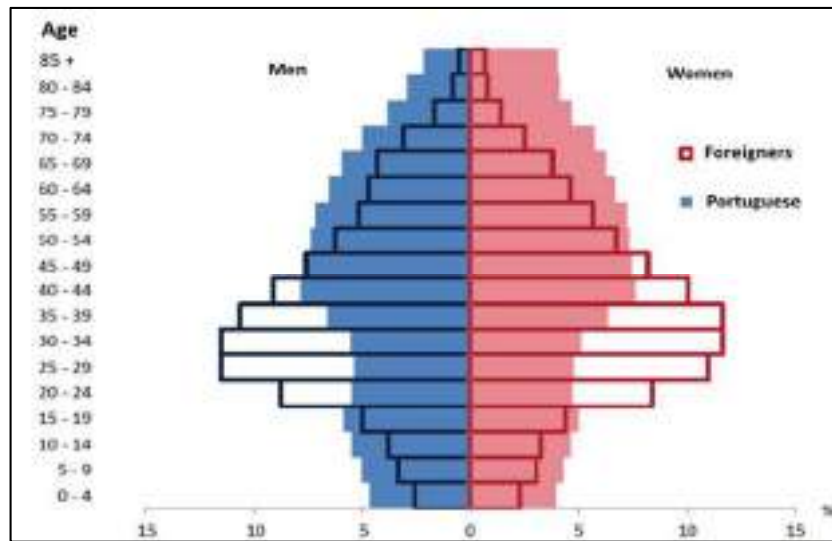


Graphic 3. The 10 main nationalities living in Portugal in 2019

Self-made, based on Oliveira (2020)

The 10 main nationalities present in Portugal represented 67.9% of the foreigners living in Portugal (graphic 3). According to Oliveira (2020: 70), the Brazilian group is standing out, being 1/3 of the country’s immigrants. This case, as well as with the African countries (Cape Verde, Angola and Guinea Bissau) still present expressive numbers, resulting from the historic relation which has remained in the contemporary migration systems. Concerning the group from European countries, there are two trends: on one hand (Romania, Ukraine) the presence of work migrations; on the other hand (United Kingdom, France, Italy) the group of lifestyle migrants. We also have to highlight the Chinese nationality, which has increased

significantly in Portugal, as well as throughout Europe, as a result of a work migration.



Graphic 4. Age pyramid of the foreign and Portuguese population in 2018

Source: Oliveira (2020), adapted

The contribution of immigration to the Portuguese society is quite relevant, as it strengthens the active population’s age range, as well as the birth rate. Oliveira (2020: 87) mentions that *the live births from mothers with foreign nationality and residence in Portugal have more than doubled its proportion in the total of births verified in the country between 2001 and 2010, reaching its maximum number in that final year, representing 10.6% of the total number of births. Between 2011 and 2015 the live births from mothers with foreign nationality have lost relative importance in the total amount of births, with its decrease being justified with the decrease of the foreign population residing in Portugal and the reduction of foreign population entering the country, namely in fertile age (especially felt between 2010 and 2015). In 2019, 12.7% of births in Portugal have occurred from foreign women.*

From a work and social point of view, Peixoto (2017: 257) reinforces the idea that Portugal still needs immigrants, both to suppress the need for labour in certain sectors of activity, such as construction, where the deficiencies have increased. Besides, its role is key in maintaining the balance

in the social security system, concerning the contribution towards the payment of pensions.

Malheiros (2013: 260-263) assumes a phase of stabilization and integration of immigrants in Portugal, which so much contributed towards the cultural diversity of the country. The author draws attention to the issue of racism and xenophobia which cannot be cast aside, present in everyday lives. Therefore, it is urgent to provide effective answers in the sense of promoting the full inclusion of foreign citizens in the Portuguese society.

## 5. Concluding Remarks

The main conclusion this reflection has prompted is that Portugal is no longer only a country of emigration, but also one of immigration. This dynamic reflects the globalization of migration flows at a world scale. The country's integration in the EU, the strong historical relations and the particular conditions of the natural and economic environment have also contributed to migrations as motivating factors.

This article intended to conduct a chronotopic evolution of volunteer and work migration flows in Portugal from the second half of the 20<sup>th</sup> century until present times, thus enabling us to highlight a few particular aspects. It was in the 1990's that the immigration was boosted. Currently, the figures indicate a stabilization, although with a continuity of foreigners entering the country. Geographically, a trend in the localization in the Lisbon Metropolitan Area and in the urban coastal areas is verified. However, it must also be considered that there is an increase of a scattering pattern within the territory, with the reinforcement of the rural inland areas, or due to job opportunities, whether through the establishment of own businesses (e.g., Chinese stores) or due to environmental reasons (in the case of lifestyle migrants).

Foreigners are still very important in Portugal to suppress labour needs in sectors such as construction. However, their presence is more and more visible and ubiquitous in the work market in general. The demographic contribution is also quite expressive, both to maintaining the levels of active population, and to reinforce the birth rate. The diversification and variability of nationalities, as well as of the cultural practices, bring new challenges to the Portuguese society, namely in terms of social mingling and inclusion. This means it is urgent to consider that we will face more and more challenges

with different “others”, thus being up to the public institutions and civil society to find forms of acting which would promote tolerance and the peaceful interaction of citizens.

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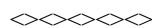
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## Notes for a Thesis on Gentrification in Portugal

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### Introduction

It is now agreed that gentrification is a global strategy for urban regeneration in countries both in the Global North and in the Global South. Despite being a polysemic concept and always loaded with ideological and class load, it has proved to be operative to understand urban change in the context of degraded or disinvested areas, both in the historic center and in peripheral areas of our cities, but whose location and / or heritage makes them strategic to be used by the cyclical movement of capital for the generation of urban business and the extraction of surplus value essential for the reproduction of real estate capital.

Not wanting to deepen a concept that has existed for more than 50 years in urban studies worldwide and that has a tradition in the scientific literature of geography, sociology, architecture and urbanism, it may be useful to start by defining what we mean by gentrification, because despite the concept unfolds in multiple local geographies and very specific historical-geographic contexts, it already brings together a set of main characteristics that are relatively consensual in the academic world.

In an effort to review the literature on the evolution of the concept, Savage and Warde (1993) argue that for there to be gentrification in the urban space, four processes must coincide: i) a reorganization of the city's social geography, with replacement, in the central areas of the city, from one social group to another with a higher status; ii) a spatial regrouping of individuals with similar lifestyles and cultural characteristics; iii) a transformation of the built environment and the urban landscape, with the creation of new services and a residential requalification that foresees important architectural improvements; iv) lastly, a change in the land order, which, in most cases, determines the increase in land values and an increase in the share of dwellings in property.

It is not a central concern of the present text to problematize the conceptual definition of gentrification, as there is an abundant scientific

literature that deals precisely with this issue, being the central core of the characteristics of the relatively consensual process between the national and international scientific community. To deepen the discussion of the concept, we refer to a wide international bibliography discussed in Portuguese in Rodrigues (1992, 2010) and Mendes (2008).

As is well documented, the term “gentrification” was used for the first time by Ruth Glass, in 1964, to designate the residential mobility of individuals from the middle classes to the popular areas of the city of London. Since then, the concept of gentrification has come to appear with some frequency in urban studies, especially Anglo-Saxon ones, particularly from the 70s and more recently, since the mid-80s, it has also attracted the attention of the various social sciences. Variable definitions, but very close to that of Ruth Glass, have been advanced over the past four decades, with the following to be emphasized: «Gentrification is the process [...] by which poor and working-class neighborhoods in the inner city are refurbished via an influx of private capital and middle-class homebuyers and renters - neighborhoods that had previously experienced disinvestment and a middle-class exodus. [...] a dramatic yet unpredicted reversal of what most twentieth-century urban theories had been predicting as the fate of the central and inner-city» (Smith, 1996: 32). «Gentrification is a term that has come to refer to the movement of affluent, usually young, middle-class residents into run-down inner-city areas. The effect is that these areas become socially, economically and environmentally up-graded » (Hall, 1998: 108). «Gentrification is a process of socio-spatial change where the rehabilitation of residential property in a working-class neighborhood by relatively affluent incomers leads to the displacement of former residents unable to afford the increased costs of housing that accompany regeneration» (Pacione, 2001: 212).

As a theoretical and exploratory essay on this issue, without direct empirical foundation, the text follows a hypothetical-deductive methodology, so its construction starts from postulates or concepts already established in the consulted literature, through a logical work of relationship hypotheses, which, in our view, represents a possible perspective of interpretation of the phenomena under study.

The paper will be organized in three main sections. The first addresses a very short theoretical framework on questioning the evolution of the concept of gentrification in the light of the intersection of global forces



and specific local contexts, proposing the “glocal” dimension to perceive the breadth, elasticity and operability of the concept in the light of the times and contemporary spaces. In the second section, we will try to describe in more detail the different phases of the unfolding process of gentrification in Portugal, although we are always referring to a process typical of the two big cities: Lisbon and Porto. In the third section, we will try to understand what is specific about the gentrification process in Portugal, raising a series of hypotheses that, in our view, explain the great resilience of Portuguese cities to the process, which gives it a slow pace of progress in the decades of the last quarter of the 20th century (marginal and pioneering gentrification), but then a very fast pace from the beginning of the 21st century, gaining outlines of super-gentrification in the last decade after the capitalist crisis of 2008-2009. The paper ends with a small section of final remarks.

### **1. Gentrification: a Glocal Concept?**

For about half a century, the concept of gentrification has thus come to designate this new process of social recomposition (and substitution) in the urban space, often linked to urban rehabilitation of housing in old city centers, through investments both public and private. By definition, gentrification thus began to designate the arrival of groups of higher socioeconomic status, generally young and middle class, to devalued central areas of the city. The effect is that these areas become socially, economically and environmentally valued, undergoing a filtering up process (Hall, 1998). It is a process of socio-spatial change, where the rehabilitation of residential properties located in working class or popular / traditional neighborhoods, attracts the fixation of relatively wealthy new residents, leading to the eviction of ex-residents who can no longer afford the increase in housing costs that accompany regeneration (Pacione, 2001). Consequently, it is a process by which the poor and working-class neighborhoods in the center city are requalified, through the influx of private capital and owners and tenants of the middle and upper-middle class (Smith, 1986).

In fact, it indicates a process of ennoblement of historic neighborhoods, that is, an accentuation of the upper-bourgeois residential connotation or even a transformation in that sense of neighborhoods previously connoted in different ways. It is a phenomenon of class social substitution and reappropriation by the bourgeoisie - and the respective neoliberal ideology and underlying symbolic order - of the popular habitat

spaces of the central old areas (Bourdieu, 1979), which implies the expulsion of the former residents, then eviction and residential segregation, culminating in a deepening of the social division of urban space. These trends are very evident especially in an extension of the concept of gentrification to recent cases of major urban renewal and regeneration operations, carried out by various agents of production of the urban space, already characterized by Lefebvre (1974): landowners, promoters of real estate, the state, businesses and citizens.

Gentrification is not a new phenomenon; however, its current forms are distinguished from the first specific episodes that were restricted to the center city. The main differences between the new forms of gentrification in the 1990s and the classic form of the phenomenon of the early 1970s are scale and extent. From a local and sporadic anomaly, limited to the city center, gentrification has become a market strategy, spatially widespread throughout the metropolis and even in areas of rural heritage (the rural gentrification). Several urban studies in the last twenty years have linked the gentrification process with the numerous urban renewal and regeneration interventions, verified throughout the 1980s and 1990s in many cities and sometimes favored or even encouraged by the neoliberal political intentions of urban governments (Hackworth, 2007; Harvey, 2012). It is (super)gentrification as a global strategy at the service of neoliberal and revanchist urbanism, whose critic Neil Smith (1996, 2001, 2002) has endeavored.

Gentrification, in these cases, and according to Neil Smith, undergoes mutations, as it ceases to be solely and exclusively associated with urban rehabilitation and starts to be increasingly linked to the regeneration or even the renovation of entire housing districts, located in the center or in its vicinity and its replacement by luxury, integrated buildings, with qualified services, or other types of high quality residences, new real estate products for high-income groups, all corresponding to spatial forms of bourgeois self-segregation or “voluntary segregation”, in relation to the city of the majority (Lees, Slater and Wyly, 2008). In his most recent writings, Neil Smith makes it clear that urban regeneration projects, which support the ideological promotion of gentrification, feed various misunderstandings with regard to the supposed initial intentions of housing rehabilitation and integration / fixation of the population with less socio-economic status previously residing in the historic neighborhoods targeted for intervention. Moreover, in these

contexts, as in the others that lends the classist stamp to the concept, the filtering up that gentrification presupposes - due to the process of social substitution that implies, from classes of lesser socio-economic status to those of greater - makes it possible to foresee the accentuation of the features of socio-spatial segregation in the areas where the phenomenon takes place. The development of public-private partnerships, which in this context is often designed, constitutes a true subsidy for the richest, the most powerful business fabric and the strategic functions and relations of control, power and domination of the urban space, a fundamental condition in the perpetuation of reproduction of capital, an essential premise for supporting the capitalist production and consumption system. All of this at the expense of investments in local services for collective consumption. It is that if, ultimately, the attraction and growth brought about by gentrification benefit everyone, in the first place, property developers and companies win, very often at the expense of the expulsion of residents and the weakest companies from requalified places, launched by through this (de)valorization, in a process of exclusion and socio-spatial marginality. Something directly correlated with ideological models that aim to maintain the social reproduction of the classes with the highest socio-economic status.

The promotion of gentrification as a tributary of urban regeneration involves, in this more recent context, two types of strategy: exploiting the existence of a strong, innovative economic base with the potential for internationalization; and that of betting on a given supranational projection event. In the implementation of these strategies, the use of gentrification (here understood in a broader and broader concept) seems essential, mainly through the flagship development projects, betting on the recovery of riverside fronts, in the creation of technological and service centers, theme parks, congress and exhibition complexes or large urban operations, supported or not by events of international importance.

Now, the frontier of gentrification, masked by the euphemisms of urban regeneration, continues to serve the scandalously obscene mechanisms of the capitalist machine of urban “growth”, henceforth assuming the contents, forms and scales of a true glocal strategy for uneven urban development and the expansion of the neoliberal offensive in an increasingly revanchist and unjust urbanism, forcing the frontiers of real estate profit, the reproduction of capital accumulation and human greed. Ultimately, **this is due**

to the neoliberal rationale and the unique hegemonic thought that is characteristic of it. The oldest and most dilapidated historic neighborhoods in the center city are the “degenerate” and declining areas, due to domestication and cleanliness, which the frontier of urban regeneration tends to sweep as it advances.

In the case of the Global South, the advance of this frontier represents oppression and symbolic violence over diverse communities and neighborhoods throughout the world of capitalist socio-spatial formation, under a narrative of the criminalization of poverty applied to abandoned, degraded or underutilized areas (urban voids and / or areas of informal or clandestine urban growth), whose locative valences constitute an opportunity for lucrative speculation real estate businesses. This narrative of criminalization is usually accompanied by precarious policies that stigmatize these territories, already marginalized in themselves, often even based on legitimacy built through participatory processes (with supposed empowerment) of the affected communities, and with the ultimate goal of promote interventions that promote urban security through pacification and militarization, in order to create conditions in the urban environment for holding mega-events or building large (forced) relocation or social housing projects. Urban restructuring, especially in the Global South, is oriented and legitimized through public policies that create the conditions of expulsion, through the application of “State of Exception” laws designed to expropriate, eliminating appropriate buildings and infrastructure for decades by poor classes, expelling them in order to pave the way for real estate speculation, part of a wider project of production and capitalist valorization of space (Carlos et al., 2015). The “slum gentrification” process (Cummings, 2013), as it has come to be known, makes use of physical and psychological violence by the police forces and urban pacification, by some more critical authors, considered of terrorist intervention, therefore, with sponsorship from the capitalist state, it dismembers social networks and ties of union of communities installed for decades, often using psychological pressure and terror to force eviction and expropriation.

In fact, gentrification has broadened in recent decades its geographical and ideological expression and its traditional limits, its territorial borders, going beyond the mere internal perimeter of the city center or the historic center to extend the urban areas never before occupied through

the process. The geographies of gentrification have evolved in a very diverse way from neighborhood to neighborhood, from city to city, from region to region, from country to country. And this historical-geographical multiplicity of the process is sensitive to contextual variants, calling for more structural global factors - such as communication and transport networks, transnational financial flows, migrations of transnational elites - which are linked to more local and conjunctural factors - for example, regional dynamics of the housing market, rent gap in different areas of the city, motivations of investors and cultural consumption of local gentrifiers. All of this is mediated by the figure of the State and a myriad of urban policies that, very often, require a pluriscalar rationale (Atkinson and Bridge, 2005; Lees et al, 2015, 2016).

This geographical expansion also requires that its conceptual definition accompany this real practice and become more elastic and flexible to changes in content, scale and extension of the process, leading to an expansion of its conceptual boundaries. In the last decade, gentrifying urban (re)development encompasses not only the residential sector, but also the functional geography of the city, embracing commerce, tourism and governance (that's why we talk about commercial, tourist and even ideological / moral gentrification), producing new spatial objects. We must be sensitive to the multiple and diverse geographies of gentrification in the face of all these changes.

## **2. The Phases of Gentrification in Lisbon**

Thus, following this transition process, the first signs of gentrification in Lisbon, which began in the 1980s and 1990s, were limited to a sporadic and small-scale phenomenon. A casual and local reality, to some extent even marginal, was identified only in some areas of some neighborhoods in the historic center. This is a set of principles that I have been discussing in the literature but also in these forums (which are not yet a consolidated conceptual model), but which seek to explain why in the historic neighborhoods of many Portuguese cities, gentrification denounced during a few decades a primary stage (first and second stages of four in total, according to the model of stages of gentrification formulated by Phillip Clay in 1979), as it was always an embryonic process, of slow and sporadic growth, manifesting itself in space urban in a punctual and fragmented way, in the form of residential enclaves on a small circumscribed scale and limited to just a few dwellings or, at most, to a few neighborhood blocks, resulting in a

reduced and very small eviction (or at least indirect eviction) (Mendes, 2006, 2008, 2012).

This situation is characteristic of other cities in Southern Europe, at least until the end of the 20th century, where there is a predominance of a kind of “soft gentrification” or “pocket gentrification”, being necessary to distinguish this “marginal” gentrification from the molds gentrification as a global urban strategy at the service of the revanchist city and the neoliberal offensive, the most widespread “hard gentrification” model in cities in the Anglo-Saxon world or in the Global South of capitalist socio-spatial formation, where the inequalities, conflicts and contradictions inherent to this urban development process are very violent.

**The initial phase of gentrification (1980s)** consisted of a small group of pioneering individuals - “the marginal gentrifiers” - who, unaware of the notion of investment risk, purchase and renovate properties for their own use on their own initiative. Very little eviction occurs at this stage as these gentrifiers obtain housing that is vacant or part of the normal transaction turnover of the housing market. This group of newcomers largely consists of design professionals and artists who have the ability and time to carry out the renovation projects themselves. They are individuals with cultural capital above the average, but still in a situation of precarious employment, but who continue to give preference to the central areas of the city to take up residence, attracted to the non-conformist lifestyle and to a diverse and tolerant cosmopolitan social environment of the neighborhoods of the city center, refusing the normativity of suburban life and the very idea of massification of the suburbs of modern urbanism. In 1984, Damaris Rose highlighted women, students, artists, gay and lesbian communities, young couples and single parents.

At this stage, the State has an essentially regulatory role and contains the advancement of gentrification.

In a **second phase of the gentrification process (90s)**, there is a social expansion of the protagonists that also begins to renovate their new homes, as activities related to information, communication, culture, leisure, tourism, entertainment, etc. expand and require increasingly central locations. Some very subtle and low-intensity promotional activities in the neighborhood are beginning to be created by real estate agents in relation to

some housing developments, while small-scale speculators often renovate some houses for resale or, alternatively, for rental. The properties purchased at this stage begin to disperse to a larger area, often taking advantage of those that are vacant and, therefore, relatively easy to acquire. At this stage, the attention of public and municipal entities, but also of the private sector, is beginning to come together in urban rehabilitation strategies.

After the first two phases of gentrification, the media began to focus their attention on the life of the neighborhoods, becoming increasingly centers of interest. While pioneer individuals continue to influence the area, gentrification is often accompanied by larger real estate agents and urban renewal is beginning to appear as a priority political and economic strategy for the revitalization of the center city. As a result of the increase in the volume of real estate interventions, the physical and architectural improvements become increasingly visible in a third phase, in beginning of the 21st century. Consequently, house prices in the area start to escalate. The eviction process expands to more aggressive forms, as real estate values in the neighborhood also increase and the State passes legislation facilitating eviction and private initiative. The best kept properties become part of the middle-class market, as owners seek to take advantage of the area's enhanced notoriety, and this ultimately leads to further eviction. Outside the neighborhood, the new middle-class residents seek to promote initiatives that advertise the neighborhood, taking the opportunity to make greater demands on public resources for reinvestment in the area; while they can also go back inside to shape the life of the community, through the constitution of associations of residents.

Finally, in a **third phase (beginning of the 21st century)**, a greater number of properties become valued and a simultaneous influx of middle-class individuals occurs. These are more affluent individuals (yuppies), not necessarily associated with the first marginal gentrifiers. To accommodate the growing demand for real estate in the area, buildings for non-residential use can be transformed into private condominiums or other new real estate products, which had previously been kept for speculation and which, however, appear on the market. Accompanying this process, we also have commercial gentrification with the appearance of more sophisticated commerce, raising the standing of establishments, previously occupied by traditional and proximity commerce. All of this contributes to the rising prices

of houses and rents, adding to more eviction. Often, at this stage, neighborhoods / areas close to the city end up, contagiously, receiving the growing demand of the middle class.

In this last phase, the role of the State is completely assumed by neoliberal and pro-market interventionism, stimulating private initiative and public-private partnerships, in a context of growing economic financialization.

This phase, in fact, was short-lived and was quickly overcome by the phase that begins in the aftermath of the capitalist crisis of 2008-2009, in my view, a **fourth phase (from 2009 to the present)**, a phase of super-gentrification that still exists today.

Currently, gentrification has become mature and appears to be more aggressive, which implies displacement of the most vulnerable and at social risk and a perspective of housing emptied of the notion of right, to gain the status of a mere financial asset for attraction and reproduction of foreign investment. As the city of Lisbon has become a destination for international real estate demand, the rise in prices accompanies the average yields of this demand, which are very high compared to the national ones and exclude the average Portuguese from the possibility of acquiring housing in Lisbon. Therefore, the issue is no longer just that of direct eviction, which involves eviction of people from their homes and neighborhoods, denying them the right to housing and place, but it is also a matter of indirect eviction, because it is preventing or to deny the access of the most vulnerable groups to this place, while opening the way to allow the most favored groups to do so.

Focusing on Lisbon, it is undeniable that the city is experiencing a peak of international projection as a tourist destination until the pandemic, at the same time that its housing market acquires financial asset formats and attracts global dynamics of demand and foreign investment. This process was leveraged by government programs and the neoliberal turn in urban politics, which fostered the attraction of a transnational elite and favored the financialization of real estate and urban restructuring in the Portuguese main city. We are now witnessing a tourist gentrification, by transforming the popular and historic districts of the city center into places of consumption and tourism, by expanding the function of recreation, leisure or tourist accommodation / short-term rental that begins to gradually replace the



functions traditional housing for permanent use, long-term leasing and traditional local neighborhood trade, aggravating trends of eviction and residential segregation. Neighborhoods are emptied of their original population or the population with low socio-economic status is prevented from accessing housing in these areas, putting the social sustainability of the historic center at risk, as they seem to lose the social and economic fabric that gave it identity, memory, in short, the so-called “authenticity” that is talked about so much and a consensus is not reached on what it is, but that, precisely, constitutes the tourist resource.

It is true that the short-rental for tourists, has been one of the reasons responsible for the increase in the prices of rents and housing in the city center, worsening the conditions of access to housing. However, we cannot forget that this recent and galloping rise of housing prices not only in the noblest central areas, but also in the pericentral areas, results in a large and greater measure of the enormous demand for properties for acquisition by a foreign elite with great financial capacity and attracted by the tax regime of Non-Habitual Residents, by the Golden Visa law and encouraged by the tax exemption policy that the Real Estate Investment Funds benefited from. These three Government programs in the last decade encouraged the accumulation of real estate capital at the expense of the progressive financialization of Lisbon's housing stock (Mendes, 2017; Barata Salgueiro et al., 2017; Sequera and Nofre, 2019; Cocola Gant and Gago, 2019).

Therefore, strictly speaking, gentrification in Lisbon, in its current phase, is the product of a housing and rental market that is experiencing strong distortions, in an effort to respond to the real estate demand of a transnational elite, as a lucrative opportunity for real estate speculation and reproduction of invested capital, in a context of neoliberal financialized capitalism. Therefore, in the case of Lisbon, the explanatory situation is not limited to tourism, but is related to a broader and structural set of urban policies. It was the neoliberal turn of successive legislative packages for a more pro-market urban rehabilitation (since the creation of urban rehabilitation societies in 2004), the Golden Visa and Non-Habitual Residents programs, the new urban rent law, the new tax regime for Real Estate Investment Funds, the new neoliberal law on short rental, the liberalization of urban land use during the recent review of the city's municipal master plan, as well as the availability of a huge vacant housing stock and accumulator of a large rent gap, together with the strong

growth of tourist demand in the city, which generated a “perfect storm” that introduced significant changes in the residential market, going from an abrupt pause to a high level demand very quickly, with the supply now beginning to fall short of that satisfaction. This situation led to a rapid depletion of the new and good quality residential stock that was available, located mainly in the historic center of the city, but not only in the luxury residential segment. It also aroused the interest of many national and international property developers, leading to the remodeling of buildings in the historic neighborhoods of Lisbon, with a view to the development and expansion of tourist accommodation, but also of new housing products aimed at new residential demands by foreigners, above all, for second residence. At this moment, there is no neighborhood in the historic center that is not gentrified and the frontier of this process extends, precisely, to divested pericentral areas, with an abundance of vacant or empty urban void that may allow urban business for capital reproduction in the real estate: Marvila and Alcântara.

### **3. Why are Portuguese Cities so Resilient to Advancing the Frontiers of Gentrification? Some Explanatory Hypotheses:**

**First Hypothesis.** One of the points of controversy surrounding the gentrification of the central areas of the Portuguese city lies in the immediate association of this process with urban rehabilitation. If it is certain that the re-appropriation of an old habitat space and sometimes in a state of marked urban degradation necessarily implies the presence of a previous process of rehabilitation of the building, it is no less certain that gentrification cannot be seen as an automatic consequence of urban rehabilitation, conservation or renovation policies, or of any policy to encourage private investment towards the rehabilitation of residential buildings.

The direct association of gentrification with urban rehabilitation deserves, therefore, more discussion, especially in the Portuguese case, which is marked by a great rigidity of the housing market and by an evolution of successive legislative packages since the middle of the 20th century that stabilized the rental market and strongly limited the proliferation of the gentrification phenomenon.

In particular, benefiting families with low socio-economic status and privileging the maintenance and settlement of the “indigenous population”, that is, already living in the old neighborhoods, the successive legislative

packages related to the conservation and rehabilitation of the housing stock acted as a heavy constraint to the advancement of gentrification, limiting the process of social substitution inherent in the displacement of the most economically weakened groups, who in the meantime would be at risk of being displaced by the “gentrifiers”, the new residents, belonging to a new upper middle class and relatively wealthy (“Filtering up”).

In fact, all the urban rehabilitation programs carried out by the State since the mid-1970s have promoted urban rehabilitation and the conservation of the existing building in the historic center of Portuguese cities in general, according to the interest of the “indigenous populations” already living in the neighborhood’s city center, against the segregation produced by eventual cases of gentrification, therefore according to the public and collective interest.

**Second Hypothesis.** The control of rents established in 1948, with retroactive application to 1942, in Lisbon and Porto generated a policy of freezing rents in the decades that followed until the 1990s, which made those that prevailed until today remain very low, which it will have justified a weak competitiveness in the rental market, preventing the eviction and release of the leased properties. This fact had as an immediate consequence a great housing immobility of those who were already installed and a displacement to the periphery of those who sought housing, that is, young couples and immigrants. It also contributed to accelerating the degradation of the housing stock in the inner city, since the rents charged did not compensate the landlords for the investments necessary to carry out conservation and maintenance works on the buildings. However, this factor ended up, in the 21st century, widening the rent gap to such an extent that it boosted the attraction of real estate investment and worked, contrary to what would be expected, as a stimulus for super-gentrification.

**Third Hypothesis.** The so-called “return to the city” movement, as a large-scale migratory movement in the “periphery-center” sense, of re-urbanization, contrary to the suburbanization movement, was not achieved in the Portuguese case. The truth is that most gentrifiers come from the city of Lisbon itself and not from the suburbs, not only because the typology of southern European suburbs is different from the Anglo-Saxon, but also because the process of depopulation in the center city was more limited,

compared to other countries, with the maintenance of the residences of a significant part of the middle and upper middle classes.

**Fourth Hypothesis.** The typological difference in the suburb between the Anglo-Saxon world and Southern Europe explains in part a late development of gentrification in Portugal. In the English-speaking world, more specifically in the United States and Canada, it is in the suburbs that middle- or upper-class families generally live, with variable levels of quality of life and security, but generally higher than those in central residential areas. Whereas in the southern suburbs of Europe, the opposite is true, the suburbs are home to the middle and lower-middle class, while in the center the location of the upper middle class is privileged, which, in part, never completely freed the center to generate an intense phenomenon of gentrification or of the bourgeois class returning to the center.

**Fifth Hypothesis.** Like southern Europe, Portugal is a semi-peripheral country in the World Economy. The concept of semiperiphery, formulated by Immanuel Wallerstein, sought to account for the intermediate position of countries that would fall between the two polar categories of the world system - countries of the center and countries of the periphery. Using world-system theory and regulation theory, we can describe the semi-peripheral condition of the Portuguese economy, paying special attention to the heterogeneity of its modes of regulation, the discrepancies between forms of organization of the economy and society and the persistent imbalances and dependencies that they result. That was the way to adapt to Portugal the intuition that the semi-peripheries have intermediate structures, because they contain elements characteristic of both the center and the periphery of the world economy (Santos and Reis, 2018). Being between the Center and the Periphery, it knows with relative delay the major socio-economic changes inherent to the capitalist production mode of the 2nd half of the 20th century (deindustrialization, tertiarization, suburbanization), affirming the intermediate nature of its economic, social structures and policies. Therefore, the marks of social and economic modernity are incomplete, since Portuguese society as a semi-peripheral society is one of intermediate development, so that the principles of the market never reached the hegemony in Portugal as reached in other central countries, always living under the tutelage of the State, which may partly explain a delay in the development of the gentrification process, if we think about the housing market and the

immobility mechanisms that still characterize it (Allen et al., 2004; Arbaci, 2019). Of course, the process of European integration (since 1986), the entry into the European Union and, in particular, the country's preparation for participation in the Economic and Monetary Union, at the turn of the millennium, was decisive for the recent evolution of the Portuguese economy and the opening of the Portuguese banking system to transnational capital flows, facilitating the attraction of foreign investment and its fixation in the housing market, which, recently, has fuelled gentrification in recent times.

### **Final Remarks**

Urban regeneration is defined as a spatial strategy in which prestigious urban uses have been increasing through private sector investments in public areas. Recent urban regeneration is a primary tool in the restructuring of Portuguese cities and that it is devised as a government-assisted urban spatial strategy to achieve gentrification indirectly (state-led gentrification). These developments have opened new discussions on the displacement of lower income groups and gentrification of inner cities in a country as Portugal, where, as far as it was possible to know, all the urban rehabilitation programmes launched by the Government ever since the mid-1970s, have tackled urban rehabilitation and the conservation of already built heritage in the historical centre of the city of Lisbon, in agreement with the original residents living in inner-city neighbourhoods, as against the segregation produced by eventual cases of gentrification. Such was the case of Lisbon's inner city for the last decades of the 20<sup>th</sup> century, where the gentrification was still at a primary stage (*Pioneering gentrification*, the first stage in a total of four according to Clays's 1979 model of gentrification stages). It was merely sporadic given the characteristic physical nature of the quarter, resulting in a reduced and very narrow displacement, as we saw already in this paper. The successive legislative packages of urban rehabilitation programs aimed at improving residents' habitability conditions until the beginning of the 20th century acted as a brake on gentrification forces.

But recently, Portugal has been regaining confidence of international and national investors in the last decade, while tourism has been growing and that Lisbon has become one of the leading European capitals, and gentrification has taken on more aggressive contours that bring it closer to what is the prototype known in the literature of a phenomenon that promotes

eviction, deepening residential segregation and socio-spatial injustice. The combination of these factors, driven by further incentive to foreign investment programs and the growing importance of this segment in urban regeneration, revitalized the residential market and place it in an unbeatable time. The Golden Visa and the Non-Habitual Resident programs, the new urban rental law, the new tax regime for Property Investment Funds, the new law of short rental, along with a strong growth in tourism in the city of Lisbon, introduced significant changes in the residential market, boosting urban regeneration, and have created renewed interest among many national and international developers, leading to a great rise in the refurbishment of buildings in Lisbon's historic district.

Historically, the traditional center of Lisbon has been home to diverse groups of people. Over the past ten years especially, however, the property values have increased. This, coupled with the economic crisis, the financial austerity and the new law of urban rental (bulwark of a neoliberal turn in legal and urban policy frame) legitimized the “tourism panacea” in the city center. Escalating rents have pushed out the poor people and immigrants, so that the tourist attractions, restaurants, entertainment bars and shops for visitors and tourists now dominate much of the central districts. We argue that this shift in capital flows to the real estate market of tourist accommodation combined with the growth of tourism and, lately, with a neoliberal trend increasing in the urban regeneration policies, all together reinforce the importance of activities aimed for tourism consumption and encourage displacement and gentrification. This process was also responsible for the very rapid acceleration of the pace of expansion of gentrification, which seems to have skipped several stages of development of the process, going from embryonic gentrification to supergentrification in less than a decade, without going through the stages of adolescent and mature gentrification, as happened in other cities in the Global North.

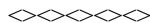
New trends in urban policies, from the beginning of the 21st century, mainly oriented to a hegemonic touristification in the historic districts of Lisbon, have fostered the emergence of more aggressive forms of tourist and commercial gentrification, which seem to lead to displacement and worsening of residential segregation and socio-spatial fragmentation. Physical structure and environmental conditions have changed, the poor, immigrant and aged population has been displaced from the inner-city area, and the higher income

groups had taken the area over. With this transformation, the area has been re-structured according to the expectations of the local and national authority and the increased rent has been facilitated. These conclusions strengthen the idea that gentrification is effective in the regeneration process and this is evolving in Lisbon's inner city to another level because in reality, public authorities themselves now seem to recognize gentrification as an opportunity for urban revitalization or regeneration.

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**Eurocity Elvas, Badajoz and Campo Maior (EUROBEC):  
The Socio-Economic and Territorial Reality  
of a New Cross-Border Governance Structure in Portugal**

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**1. Borders**

For centuries, borders represented an end (*Finisterra*), a line of separation and division, a territory where national states assert their political and military power, a space of discord and insecurity, of defense, fortification and policing. More recently, it has tended to become a space for approximation, complementarity, integration and greater development (Batalha and Mallmenn, 2017; Porta e Álvarez, 2017).

According to the European Commission (2017), the borders of the European Union have a major impact on economic, social and territorial dynamics. They represent 40% of the area of the community territory, with 30% of its population (150 million inhabitants) and 30% of the wealth produced measured in GDP. These territories are home to 2 million workers, being 1.3 cross-border workers, who carry out daily labor movements between locations belonging to two or more countries; they constitute 0.6% of total employees in the European Union.

In most of the border regions of southern Europe, there are important constraints in terms of their development and they have to respond to the great challenges of globalization. These are doubly peripheral regions in relation to the most dynamic political, economic and cultural centers in central Europe and the respective countries (Scott, 2019).

Low-density territories, markedly rural and in marked demographic loss, where a high number of unemployed predominates, resulting from a poorly diversified economic fabric, with low value incorporation and scarcely realized innovatives, which makes the border economic environment unattractive for the investment (Scott, 2019).

These regions have, in general, lower rates of integration and territorial cooperation, which can be seen in the duplication of urban policies, services, equipment, transport or in the lower exchanges and population or economic flows, resulting from obstacles such as the persistence of asymmetries at the institutional and administrative levels and (even at the level of the general European legal framework).

However, the relationships of competitiveness between cross-border urban centers, differentiate-governance practices, the existence of cultural and linguistic barriers, which constitute persistently one of the main obstacles in cross-border cooperation (Decoville, Durand, Feltegen, 2015; European Commission, 2017).

## **2. Cohesion and Regional Policies in the European Union and Legal Instruments for Cross-Border Cooperation in the European Union.**

With globalization and the political integration process of the European Union, and the consequent elimination of internal borders and the Schengen Agreement, the border regions, in a process that begins in the 90s, receive the support of European structural policies, aimed at the local economy and regional development and the enhancement of the territory, with a view to solving problems in border regions, reducing development inequalities and promoting greater territorial cohesion in the European Union.

In 1975, the European Union created financial mechanisms to support projects within the scope of the cross-border cooperation policy, namely INTERREG, with the support of the European Development Fund which would constitute one of the main EU funds (ESPON, 2012). However, the first experiences of international cross-border cooperation take place at the internal borders of the European Community, in the 1950s, after the Second World War (Verschelde and Ferreira, 2019), in Euroregions based on the border between Germany and the Netherlands (Peters, 2019). Perkmann (2003) emphasizes the fact that until 1980 cross-border cooperation had relatively informal agreements. The first example is EUREGIO, between Germany and the Netherlands (Vassil and Olmedo, 2014).

In the Madrid European Framework Convention (1980), the Council of Europe defines cross-border cooperation, as a set of planned and concerted actions aimed at deepening and developing formal cooperation relations between neighboring communities or territorial authorities, belonging to two

or more States. It aims at removing the obstacles associated with the border effect, helping to blur territorial inequalities and the marginal position of border territories in relation to the most advanced national economic centers or the most dynamic regions of the European Union, contributing to making European cross-border regions into an important and dynamic center development (Gómez and Pérez, 2014).

With the Lisbon Treaty (2009), a new dimension is added to the policy of economic and social cohesion, the territorial dimension, which aims to reduce inequalities in development between the regions of the European Union, in particular among the less favored, such as border regions (Peters, 2019; Valcárcel and Calleja, 2019). In Europe, the solution for these regions involved concerted actions between institutions from both sides of the border, for the economic and social development of the territory. The European Commission has encouraged the creation of programs for cross-border cooperation, within the framework of the Community's territorial and cohesion policy. The aim is to develop complementary networks, associated with the concept of “critical mass”, which intend to provide cross-border urban centers with a number of strategic resources and equipment that would allow them to grow and reinforce their competitiveness, by obtaining savings of scale and agglomeration (Berges, 2015).

More recently, multilevel and multilateral governance (supranational, national and subnational) has been introduced in the process of planning and implementing regional policies in the European Union (EU). Multilevel governance comprises two dimensions of cooperation, one vertical and one horizontal. The vertical dimension refers to cases of cooperation between actors belonging to different levels of governance, while the horizontal dimension refers to cooperation between actors belonging to the same level (Gordon, 2019: 2; Verschelde and Ferreira, 2019; Scott, 2019; Medina, 2019).

New governance structures are recreated, such as the European Grouping of Territorial Cooperation (EGTC), as a result of the cohesion policy of the EU, the European Parliament and the Council of Europe, following its constitution to Regulation EC 1082/2006, which guarantees a broad support of supranational legal support for territorial cooperation and institutional integration in border regions, eliminating problems with the chronification of cross-border projects, and enhancing community financial support funds

and bring national governments closer to cross-border projects (Lina Engstrom, Joaquim Nergelius, Wilhelm Persson and Pontus Tallberg, 2011).

The implementation of territorial cooperation programs and projects within the EGTC framework are co-financed by EU instruments, such as the European Regional Development Funds, the Cohesion Fund and the European Social Fund, as well as other EU financial instruments or projects that do not mobilize any EU financial funds (Lina Engstrom, Joaquim Nergelius, Wilhelm Persson and Pontus Tallberg, 2011; Vasileios Migkos, 2020).

These are instruments that purport to answer a set of common problems, through an integrative and multidimensional approach, in economic, social, cultural, political, administrative or environmental areas, which contribute to greater cohesion and balanced development of territories frontier urban areas (within European polycentrism) and their insertion in the global context of the economy (Magri, Miranda, Galao and Goinheix, 2017).

The cooperation mitigates the lack of certain urban functions and guarantee access to economic activities, services and equipment, optimizing means and resources and eliminating duplications, reinforcing territorial competitiveness in a global context of territorial and economic competition (Berges, 2015). In other words, it improves the socioeconomic conditions and living conditions of its inhabitants, privileging knowledge, acquiring skills and deepening trust, between two or more countries, in the area of culture, economy, social cohesion, infrastructure or linguistics (Peters, 2019). It contributes to new centralities, by generating intense material and immaterial flows, and new opportunities for innovation and development (Scott, 2019). Cross-border cooperation also makes it possible to expand the area of influence of certain public services and facilities, such as in the health area.

### **3. Polycentrism and Sustainable Urban Policies**

The European Council, institutionalized in 1999, and the European Space Development Scheme (EDEC), a territorial model that among other measures, seeks to reduce regional asymmetries and promote sustainable urban development, through efficient, intelligent and participative urban management, which natural values resources and historical or cultural heritage (Ramos, 2014) and (DGT, 2018). Subsequently, the Territorial

Agenda for the European Union (2007) considers polycentrism fundamental to guarantee greater competitiveness and economic and social cohesion between the center of Europe and the most peripheral regions (Nunes, Mota and Campos, 2012). A European polycentric urban system encourages the development of cooperation and urban complementarity strategies, at different scales (political, administrative, territorial, functional and sectoral), which include cross-border polycentric urban systems (Nunes, Mota and Campos, 2012).

European cohesion policies stem from urban policies linked to the new paradigms of urbanism, architecture, intelligent city management or urban governance, linked to sustainable development, which give greater economic, functional and territorial prominence to urban centers in the context of European polycentrism (ESPON, 2014). The Urban policies focus on urban qualification, revitalization, rehabilitation and regeneration. It is a restoration of building the cultural and natural heritage. The compact, concentrated and dense urbanism should be contrasted with the dispersion, discontinuity, fragmentation and urban segregation of the last decades. It is meant to be an inclusive urbanism that combats urban poverty developing cities with well-planned and sustainable urban and suburban spaces (ESPON, 2014).

More recently, the EU and its cohesion policy have tended to deepen through Agenda 2030/40, based on sustainable development goals (SDGs), Paris Agreement on EU Political Climate Change, with a view to promoting economic growth, competitiveness, social and territorial cohesion, in which cities must be inclusive, safe, resilient and sustainable human settlements (Medina, 2019).

#### **4. Small and Medium-Sized Border Towns**

Urban border regions are becoming increasingly important in the context of European Regional and Cohesion Policy, Community financing programs, such as INTERREG (1990), the entry into force of the Schengen Agreement (1995) and the Single Currency (2002). These urban areas have the greatest capacity to participate in cross-border projects. The Leipzig Charter approved in 2007, the document “Cities of Tomorrow”, published by the Sustainable Europe Commission, reinforces the importance of cities and cooperation in Territorial Cohesion Policy.

Second, Antoine Decoville, Frédéric Durand, and Valérie Feltegen (2015), small and medium-sized cross-border cities have a population between 20,000 and 250,000, inhabitants, interfering in their classification factors as diverse as geographic, historical, economic, cultural, social or governance issues. For Luís Macorra (2011), small and medium-sized border cities refer to two or more urban centers, belonging to at least two countries, organized around structures of cross-border governance, located geostrategically in the context of urban systems, national and European, or trans-European development corridors, linked to major continental transport axes.

One way of providing small and medium-sized cross-border cities with critical mass and scale, improving the quality of services and recreating innovative territories (clusters, business incubators, science and technology parks), is through the sharing and development of complementarities within the scope of cross-border cooperation, which take place between networks of universities, R&D centers, companies, employment and vocational training centers, linked to the digital sector and scientific, technical, industrial and business management, but also to the endogenous resources of the territory, such as agriculture, which generate high levels of qualification and employment (the great competitive challenge of the European Union), as protagonized in the Europe 2020 strategy (Moura and Cardoso, 2009) and (Decoville, Durand and Feltegen, 2015). It seeks to prevent the duplication of infrastructure, services and urban functions, and to reduce the impact of the disorder of the territory, associated with urban growth and the provision of new infrastructure and equipment (Decoville, Durand and Feltegen, 2015).

Border cities have to respond to other common problems and obstacles, in institutional, administrative legal and economic competitiveness, access to financial resources and community and national programs, labor mobility, tax systems, academic equivalences, differentiated forms of governance, ordering territory, housing, equipment and services management, transport or linguistic differences (Trigal, 2014; Satamaria, González and Carril, 2015). Some European borders due to their new international (transnational) framework and strategic location in multimodal and logistical corridors become suitable spaces to accommodate new investments and promote the European Union's economic and social development (Lato, 2016).

In this context, polycentric urban strategy seeks to provide small and

medium-sized European cross-border cities with a greater international dimension, to ensure greater territorial convergence, to restore and expand the natural hinterland (Decoville, Durand and Feltegen, 2015). It had recovered the centrality lost with the process of European integration, the disappearance of internal borders and the control over the movement of people and goods.



**Figure 1** - Experiences of cross-border urban cooperation in Europe.

**Source:** Antoine Encovile, Frederica Durando and Vallérie Feltgen (2015).

In fact, border cities are possible capitals and development poles, as opposed to the strong polarization of large cities and metropolitan regions, promoting a more harmonious and balanced development of the territory of the European Union, cross-border urban territories whose development strategies are sustained, largely through community financing programs and funds (Ramos, 2014). In fact, borders tend to increasingly constitute opportunities and development opportunities for cross-border urban centers and their inhabitants, in the commercial, employment, tourism and cultural spheres, generating opportunities for economic and social development (Magri, Miranda, Galao and Goinheix, 2017).

New models of governance and cooperation are recreated around functional territorial regrouping, such as Euroregions and Eurocities. An important part of these governance structures in Europe are European

Grouping of Territorial Cooperation (EGTC) (Decoville, Durand and Feltegen, 2015). In Portugal, cross-border governance structures have multiplied recently, such as Eurocities: Valença / Tui; Chaves / Verin; Vila Real de Santo António / Castro Marim / Ayamonte; Monção / Salvaterra.

## 5. EUROBEC

### 5.1. The Origin of a Eurocity

In 2006 the idea to create the Eurocity Elvas-Badajoz arose. However, the protocol for cross-border cooperation was only signed on September 16, 2013, between the Municipality of Elvas (Portugal) and the Ayuntamiento de Badajoz (Spain). This cooperation commitment aimed at the design, management and sharing of services, equipment and facilities between both cities, the development of experiences and projects of cross-border cooperation of common interest with community financing in the area of economy, social services and culture, to promote cooperation and the creation of companies and to improve conditions for attracting companies and investments, by taking advantage of synergies resulting from the construction of the logistics platform around Caia or from structural investments, such as the rail freight line originating in Port of Sines (and High - speed). It is also recommended to build a Euro-citizenship that fosters integration, interaction and partition processes, promoting active citizenship. In 2015 Campo Maior (Portugal), claiming the geographical proximity to Elvas and Badajoz, and the economic and functional links, requested the integration into Eurocity, which was voted in favor by the Mayor of Elvas and the Mayor of Badajoz.



**Figure 2** - Location of EUROBEC (Badajoz, Elvas and Campo Maior) in the context of the Iberian Peninsula. **Source:** Own elaboration.



Elvas, Badajoz and Campo Maior are close together territorially, with a long history of historically consolidated connections (Figure 2), due to cultural and anthropological affinities, where there is growing population mobility between the two sides of the border, a functional space with some urban density. Campo Maior is also home to one of the largest companies in Portugal and the Eurocity, Delta Cafés, with important logistical and multimodal transport requirements.

Despite the geographical proximity, in the last decades, the projects developed under Interreg were very small (Bruno Janeco, 2015). The most recent cross-border cooperation actions between Badajoz, Elvas and Campo Maior, in an integrated perspective in the Eurocity context, take place within the scope of INTERREG VA through the GURA projects (Guardiães da Raia, finally not approved) and the EUROBEC project (Building Eurocity, approved in June 2007). EUROBEC, includes Eurocity governance structures, Eurocity strategic design and micro-cooperation, where several actions stand out, among which: the creation of a common agenda (cultural and sports), elaboration of the Eurocity strategic plan, sustainable cooperation, creation of the Eurocity card, creation of the Observatory and a communication plan.

Order No. 9370 of October 24, 2017 published in the Diário da República 2nd series, which finally authorizes the celebration of the Cross-Border Cooperation Protocol between the Municipalities of Elvas, Badajoz and Campo Maior, called “Eurocidade Elvas, Badajoz and Campo Maior”, aims to create a body without legal personality in the form of a working group, in which the different parties seek to address the following issues:

- a) The concertation of initiatives and the adoption of decisions;
- b) The promotion of studies, plans, programs and projects susceptible to state, community and international financing;
- c) The promotion of forms of relationship between agents, structures and entities, public and private, that contribute to the development of the respective border territories.

However, it was only in March 2018 that the authorization to sign the EUROBEC constitution agreement was published in Diário de la República, contributing to the delay in the start of the planned actions.

The following areas are subject to Eurocity action: urban equipment; energy; transport and communications; education, teaching and vocational training; heritage, culture and science; free time and sport; Cheers; social action; housing; civil protection; environment and basic sanitation; Consumer defense; promotion of development; spatial planning and urbanism; municipal police and external cooperation.

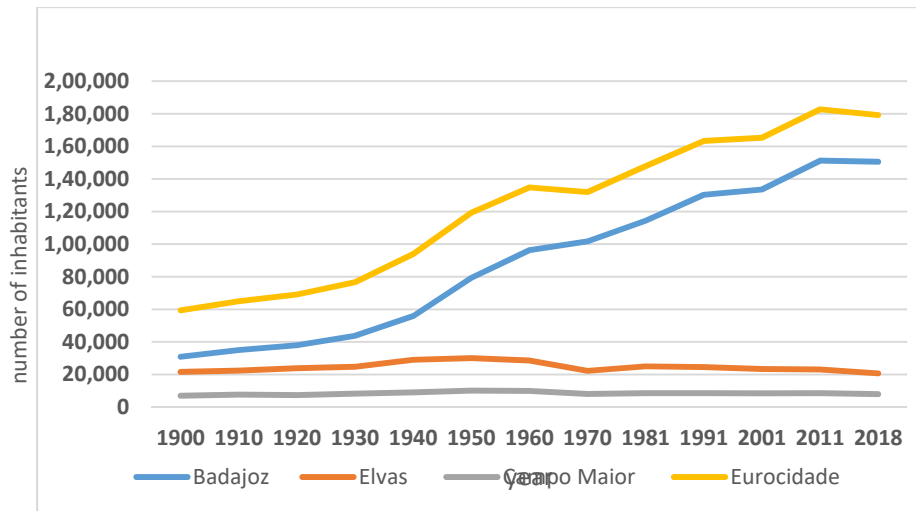
In this context, EUROBEC is an opportunity to mitigate the main bottlenecks and development problems, strengthen cross-border cooperation and enhance the strategic advantages resulting from territorial integration in the context of increasing globalization.

The capital function of the eurocity in the context of the two regions could increase the functional area of influence and strengthen its position.

## **5.2. EUROBEC's Socio-Economic and Territorial Dynamics**

EUROBEC is the largest urban complex on the border between Portugal and Spain, occupying the three municipalities at 2360.4 km<sup>2</sup>. This cross-border urban territory is located in the southwest of the Iberian Peninsula; it has a geostrategic baricentric position between the cities of Lisbon, Madrid and Seville, as a territory of cross-border cooperation between Spain and Portugal which is the largest urban center in Extremadura. It is a privileged central location that could be reinforced in the future as a territory of articulation between Spain and Portugal, a rotating platform in terms of logistics, services and business infrastructures that connect the sea ports of the Portuguese Atlantic façade and Madrid (Ayuntamiento de Badajoz, 2005).

In 2018, the resident population in EUROBEC, amounted to 179,143 inhabitants. This population represented 16.8% of the total population of Extremadura and 25.4% of Alentejo. Between 1900 and 2018, there was a strong population growth in the urban territory that constitutes EUROBEC. The number of residents goes from 59,335 to 179,143 inhabitants.



**Figure 3** - Population Evolution at EUROBEC 1900 - 2018. Source: INE, Population Census and General Population Census and Annual Estimates of Resident Population.

In this Eurocity, however, there are different demographic dynamics. In 2018, the population of Badajoz amounts to 150,330 inhabitants, constituting the largest urban center and a major driver of demographic growth in the Eurocity. The population of Elvas is 20,706 and Campo Maior 7,907 inhabitants. The systematic departure of the population and the consequent drop-in birth rates in Portuguese municipalities have contributed to a marked aging of the population. There is a strong imbalance in the urban structure of EUROBEC, with a strong macrocephaly of the city of Badajoz.

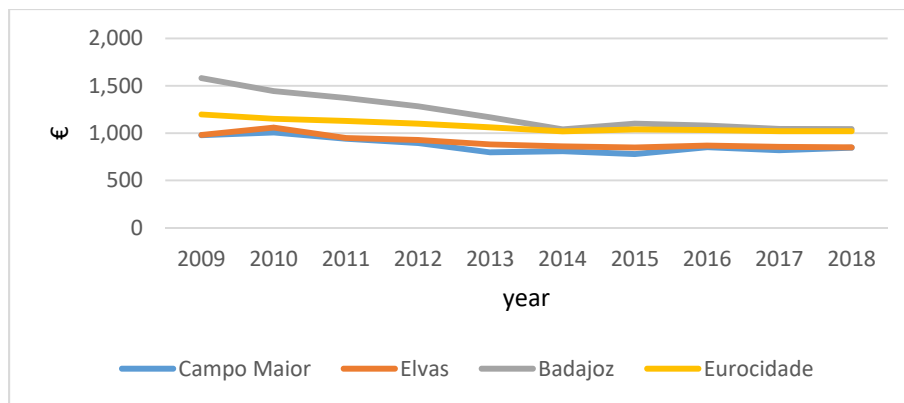
The three EUROBEC centers have an urban Muslim foundation in the 8th century, with the Islamic Alcazaba of Badajoz, with six 8 hectares, the largest in Europe (Garcia, 2010). This border territory had a prominent role in the context of the Iberian Peninsula, being the scene of important war events and political negotiations in the history of Spain and Portugal, and consequently of Europe, in the context of the geostrategic alliances of the Iberian kingdoms, with other transpirenaicos.

In fact, following the War of Restoration and successive ones (1640-1668), the three urban centers assert themselves as important bastioned military squares (Garcia, 2010). The bastioned military heritage of the three urban centers has since given this territory a strong identity, constituting, today, an important strategic asset for the future. In this context, Eurocidade has an urban

center classified as World Heritage by UNESCO, the Quartel Fronteira City of Elvas and its Fortifications.

The 30s and 60s of the 20th century, mark the growth and urban expansion of Eurocidade, especially in Badajoz. Since the 1960s, the great urban expansion outside the ancient city of Badajoz, which held 120 hectares, has been consolidated. In 1990, the occupied area amounts to 1500 hectares, and in the beginning of the 21st century to 3000 hectares (Cayetano, 2017). Urban policies that created an expansionist and fragmented city model, little cohesive and solidary, evidenced in the cities of Elvas, Campo Maior and Badajoz. The three urban centers of the Eurocity are degraded and underutilized and have become vacant historic centers, with gentrification or miscegenation phenomena (more recently in Elvas and Campo Maior), simultaneously with certain suburban peripheries.

Despite the fact that residential mobility, together with labor mobility, is essential to ensure greater mooring and integration of the territory, generating complementarities and economies of scale of agglomeration that are fundamental for cross-border development, there has never been a consistent phenomenon of residential mobility, despite the difference in average value of accommodation between Badajoz, relative to Portuguese municipalities, is always higher; in Badajoz € 1,042 and Elvas and Badajoz € 846.



**Figure 4 - Average bank valuation values for accommodation in Eurocidade 2009-2018. Source:** PORDATA and TINSA, 2009-2018.

The Eurocity as a highly outsourced territory, since 88.9% of the population is employed in this sector. Badajoz is the most important urban, service, administrative and commercial center, of regional and cross-border

scope, in 2011 with 92.2% of the employed population of this sector. In Elvas, the tertiary sector in 2001 occupied 77.4% of the employed population and Campo Maior, 61.4% (2011 Population Census and 2011 General Population Census). With regard to groups of professions, based on the National Classification of Professions in Spain and Portugal, it appears that in Eurocity the population employed in public administration and compulsory defense / social security (16.2%), wholesale trade and retail / repair of motor vehicles and motorcycles (13.2%), human health and social support activities (13%), accommodation, restaurants and similar (6.3%) and manufacturing industries (5.5%) (Census of la Población 2011 and General Population Census 2011).

The agricultural sector, due to the increasing levels of mechanization, is experiencing a sharp setback in terms of the active population. EUROBEC's territory is located in the Mediterranean region of Europe, although it has continental contours. Vulnerable to the effects of climate change, with loss of natural resources, ecosystems, habitats, landscapes, biodiversity, soil or water, problems of “desertification”, degradation, erosion and loss of soil, resulting from the intensification of livestock and agricultural practices, namely by intensive and super intensive olive groves, and irrigation linked to agro-industrials (DGT, 2018).

As occurs in many of the border regions of southern Europe, in Eurocidade Elvas, Badajoz and Campo Maior, there is a high unemployment rate. In 2011 Badajoz had the highest unemployment rate (25.1%). In Elvas the unemployment rate reached 18.4% and Campo Maior 15.08% (Censos de la Población 2011 and General Population Census 2011). The high unemployment rate in the Eurocity, the existence of certain administrative obstacles, and the lack of cross-border labor culture led to reduced cross-border labor mobility in the Eurocity.

The characteristics of the job market and unemployment in the Eurocities reflect the specificities of this border territory, which has felt, in the last decades, with particular intensity, the absence of large productive investments, the impact of the globalization of the economy and world trade, of European policies associated with the disappearance of borders and European integration, national guidelines associated with public administration and defense reforms, the growing cross-border economic integration in the context of Eurocity (whose polarizing effect of Badajoz

affected Portuguese municipalities). The high population belonging to different ethnicities influence unemployment rates.

A more diversified economic base is required. A small number of economic sectors tend to place important obstacles to the development of urban centers and creates weaknesses in times of pandemic disruptions or more resilient cyclical crises. In view of the wealth of Eurocity, urban and cultural tourism has increased significantly in Eurocity, in particular in Elvas, as a result of its UNESCO classification, an increase in tourist flows, accompanied by an increase in its internationalization, and in hotel units (Table 1). Between 2015 and 2018, overnight stays grew 21.0% of overnight stays, from 357,769 to 432,962, an increase of 75,193 overnight stays. The majority of overnight stays are concentrated in the municipality of Badajoz, which records in 2018, 340,896.

However, it is in Elvas that the highest percentage growth in the number of overnight stays in this period is 51.6%, from 55,729 to 84,501, an increase of 28,772 overnight stays. It is an increase higher than that observed in the same period for Portugal (27.5%), Alentejo (39.1%), Spain (27.5%) and Extremadura (39.0%). Eurocidade Elvas, Badajoz and Campo Maior, in the regional and cross-border context, are surpassed, in terms of the number of overnight stays, as we saw in relation to the number of guests, by Évora (645,904) and Cáceres (461,667) (Table 1).

Territorial unit	2015	2016	2017	2018	Var. 2015-2018	
					Nº	(%)
Portugal	53074176	59122640	65385260	67662103	14587927	27,5
Alentejo	1924308	2134313	2487385	2675945	751637	39,1
Elvas	55729	63587	74854	84501	28772	51,6
Campo Maior	6173	6553	0	7565	1392	22,5
Espanha	53131920	59188243	65462131	67748622	14616702	27,5
Extremadura	1930481	2140866	2487385	2683510	753029	39,0
Badajoz	295867	285788	301838	340896	45029	15,2
Eurocidade	357769	355928	376692	432962	75193	21,0
Cáceres				461667		
Mérida				373130		
Évora				645904		

Table 1- Evolution of overnight stays in Portugal, Spain, Alentejo, Extremadura, Elvas, Badajoz, Campo Maior, Cáceres, Mérida and Évora.

Source: Junta da Extremadura and INE - Statistical Yearbook of the Alentejo Region, 2015-2017.

The Eurocity has a major role in terms of trade, hotels and restaurants (one of the activities that generates greater cross-border flows, especially by the Spanish who highly value Portuguese cuisine). Trade is one of the main economic sectors of Eurocidade, an important generator of employment, mobility between the urban centers of Eurocidade and attraction of visitors and tourists. Badajoz is the biggest retail shopping center in the Eurocity of the Alentejo and Extremadura region and the Iberian Southwest border.

One sector, the traditional trade sector, which suffers from competition from large commercial areas, has important structural and entrepreneurial weaknesses, affecting the traditional trade areas of the Eurocity, especially in Elvas and Badajoz. The “Markets” of Badajoz are also highly sought after by the population of Elvas and Campo Maior.

Another of the demands of the Portuguese urban centers of the Eurocity, is the massive purchase of fuel from the stations of Badajoz. In addition to cross-border mobility between the three urban centers for commercial reasons, there is a high demand for other services by the Portuguese, namely in private health. Badajoz is the largest health center in the Eurocity, which stems from being its largest municipality and has a wide area of provincial influence. In Badajoz there are five hospitals, public and private, with a wide range of health services and hospital facilities, and in Elvas a hospital. The high number of Spanish doctors and nurses working at the Santa Luzia Hospital in Elvas and health centers stands out. However, in the last decade, there has been a retraction in cross-border cooperation and complementarities between the health units of the three municipalities, in sharp contrast to what is happening in Europe where the health sector is one of the privileged in the area of cross-border cooperation.

EUROBEC has an important network of services, equipment and infrastructure anchor in the development of the territory, especially the city of Badajoz. Services, equipment and infrastructure that, when endowed with a greater critical mass and complementary dynamics, can provide an opportunity for efficient management and ensure economies of scale in the construction of new equipment that in isolation could not be achieved, ensuring greater sustainability urban renewal, a strengthening of the cross-border hinterland and a greater competitiveness of the Euro-city.

Among the various facilities, the Eurocidade Elvas, Badajoz and Campo

Maior, due to its population size and regional influence, is also the most important center of culture of the lane, between Portugal and Spain, having a much wider and diversified offer of material heritage, immaterial, services, equipment and cultural infrastructures, in the expansion and diversification of the cultural offer, which determined an increase in cultural demand, although the complementarities between the three urban centers remain relatively limited.

From the standpoint of culture, education and recreation of Eurocity citizenship, one of the objectives is to make this territory trilingual (including English). At the moment, in primary and secondary schools, on both sides of the border there is already a high number of students attending the subjects of Portuguese and Spanish. In Eurocidade there are 6,113 students attending Portuguese or Spanish, as a second language, as in schools in the municipalities of Elvas, Badajoz and Campo Maior 4,947 students attending Portuguese in schools in Badajoz in 2018-2019. In the academic year 2017-2018, in the municipalities of Elvas (887) and Campo Maior (279), a total of 1166 students attended the Spanish (DGEEC, 2020) and Junta de Extremadura (2020).

Eurocidade has a network of higher education establishments, linked to the Polytechnic Institute of Portalegre and the University of Extremadura. There are 8,756 students in the Badajoz centers, schools and colleges in the academic year 2019-2020. The Escola Superior Agrária de Elvas (ESAE), integrated in the Polytechnic Institute of Portalegre, has 426 students in the same period. In cross-border interurban cooperation, the technological dimension must be a priority for the whole Eurocity, namely the development of EUROBEC's intelligent management systems, in order to allow the environmental and functional optimization of the three urban centers in order to acquire an urban resilience.

The construction of the conventional line of goods along Sines -Évora - Elvas / Caia - Badajoz -Madrid, may reinforce the centrality of this territory as a multimodal and logistical interposition and promote greater territorial integration, since the Port of Sines is an important exit port for scattered cargo types from the Iberian Peninsula, due to its privileged strategic location at the crossroads of the major international shipping routes by sea, and can constitute an important revolving plate between Africa, North America and South America.



In 2019, the first company was installed on the Logistics Platform of the European Southwest, based on the border, in Spanish territory, which will have a goods terminal that will connect this station to Madrid and the rest of Spain to the Portuguese Sea Ports through the new electrified line of goods, with the objective of supporting regional companies and expanding markets, enhancing the economic development of Eurocidade (Caballero Calzada, 2019).

A structuring project, which should be viewed in cross-border terms, and closely linked to the construction of Eurocity, is inserted in European policies and economic and territorial cohesion, cross-border cooperation and trans-European transport, with the different public and private agents of Eurocity and Europe, regional and central administration involved in the logistics platform in institutional, governance, business, construction and management of facilities and infrastructures, implementation of free zones or customs procedures (Janeco, 2015).

EUROBEC is served by road, rail and air links that connect the Eurocity to several destinations in Portugal, and Spain (especially the large urban areas of the Iberian Peninsula), with Badajoz having better accessibility than Elvas and Campo Maior. The city of Badajoz has a wide network of municipal transport, with urban and peri-urban lines that depart from the city center, and include rural centers and peripheral neighborhoods, with day and night routes, with a wide range of buses powered by electricity. In the context of Eurocity, however, road passenger transport lines between Badajoz and the Portuguese municipalities of Eurocity are reduced. The geographical proximity between the three urban centers, around 20 km, means that individual transport by residents is privileged.

Passenger rail transport has serious deficiencies in Alentejo and Extremadura. Only more recently has the Badajoz-Mérida-Madrid Line been invested, which has made it possible to shorten travel times relatively. Badajoz, awaits the High-Speed Train / AVE, one of the great aspirations; until its completion a High-Performance Train is planned that substantially improves the quality and the distance between the two cities. In this context, the Badajoz railway station receives modernization works.

EUROBEC is the only one, on the border between Portugal and Spain, which has in its territory an airport, where domestic flights are operated, to

Madrid, Barcelona throughout the year, and to Palma de Mallorca, during the summer, although there are also flights to Paris, Valencia and the Canary Islands. It is worth mentioning the successive delays in completing the High-Speed train line between Badajoz and Madrid and the suspension of the connection to Lisbon-Badajoz, one of the strategic assets considered fundamental for Eurocidade Elvas, Badajoz and Campo Maior.

From the point of view of spatial planning, each urban center is 20 km away. The only hypothesis of territorial confluence is, however, between the municipalities of Badajoz and Elvas. The city of Badajoz, whose objective is to compact the interstitial spaces generated by a radial growth, has been converging in relation to the border, asserting itself as a new centrality of the city in terms of residences, university students, commercial toilets, services and logistics. The future urban growth of Elvas can be based on two complementary models, a nuclear one, structured according to the radials to the urban center, similar to the city of Badajoz, which would necessarily include a qualification and revitalization component of the historic center, in a more urban style. Mediterranean, or other linear, more expansionist, which follows a catechetical model of urban growth, around the EN4, is a strategy to bring Elvas closer to Badajoz, which depends in the long term on the economic dynamism surrounding the Eurocity project, with a wide range of spaces that support this growth.



**Figure 5 - Road Structure and Urban Growth in Elvas and Badajoz.**

**Source:** CESUR (2007).

The importance given to cross-border cooperation and Euro-city is framed by strategic and structural documents from the municipalities of Elvas and Badajoz and the Alentejo region. The PROT (Regional Spatial Planning Plan)

of Alentejo, the PDM (Municipal Master Plan) of Elvas and Campo Maior, was revised in 2009 and the “Territorial Development Strategy and Action Plan Alto Alentejo 2020”, highlight the development of logistical activities and the creation of Eurocidade Elvas / Badajoz (DGT, 2018; CME, 2009; DHVFBO, 2007).

The Campo Maior PDM incorporates strategies to optimize the benefits resulting from the structuring of this cross-border urban reality, at a time when this urban center did not yet integrate the future Euro-city, as a structuring factor in the cross-border cooperation and territorial integration of these three municipalities. The PGM of Badajoz (Plan General Municipal) and the PEB of Badajoz (Strategic Plan of the Ciudad de Badajoz, with many of the actions already implemented) recommend as one of the major strategic objectives, the implementation of the Elvas / Badajoz eurocity. EUROACE 2020 (Euroregion Alentejo-Centro-Extremadura) gives territorial importance to the railway corridor Sines, Madrid and the rest of Europe.

In fact, the urban development plans of Elvas, Badajoz and Campo Maior installation of business and logistics investments and transport infrastructures linked to multimodal road and rail modes (Sines, Évora, Elvas-Caia, Badajoz, Madrid and Europe intermodal freight line and Alta Velocidad Madrid-Badajoz), which are part of one of the major trans-European transport corridors, and because they are based in this territory, can contribute to the internationalization of the economic base and the territorial assets of the Euro-city, contributing to the international projection of Alentejo and Extremadura.

In the urban centers of Elvas and Campo Maior, we are witnessing the development of a set of spatial planning instruments aimed at the urban and sustainable qualification of these urban centers, which include the regeneration of urban peripheries; the rehabilitation of historic centers and their cultural, historical and heritage assets, including their amenities and immaterial identity values; the use of historic or heritage buildings for cultural, museological, creative industries, arts or tourism purposes; the introduction of environmental efficiency technologies to mitigate climate change in the rehabilitation of buildings; spatial planning policies that review urban perimeters and contribute to the consolidation of urban fabrics; rationalization and qualification of equipment and services; policies to support the elderly population, intergenerational relations and ethnic minorities; sustainable mobility; economic revitalization (including trade)

and enhancement of public spaces, the attraction of productive investments, employment and greater social cohesion.

This plan develops the urban, residential and functional rehabilitation and reuse of Casco Antigo (old city). Prepare the city for a set of opportunities arising from the global economy and the trans-European transport network, namely the availability of soil to accommodate the route of the High Speed and conventional freight line, as well as the respective terminals, logistics.

To create a new urban centrality (markedly cross-border) around Fronteira do Caia (Real de la Feria, Amusement Park, IFEBA Centro Comercial el Faro), with neighborhoods of villas, more recently a high typology is added in density with the University Campus and Technological Science Park of Extremadura and the University Hospital of Badajoz (Ayuntamiento de Badajoz, 2005).

### **5.3. Building EUROBEC's Governance Structure**

The implementations of all these actions require efficient, multi-scale governance structures that involve the participation of various institutions and actors, from the public and private sectors, from civil society at the local, regional, national and European level, in the concerted search for solutions or in joint enhancement of urban strategic assets, which allow for efficiency gains and economies of scale. A cross-border urban cooperation that does not eliminate all the logic of competition between the urban centers of Eurocidade Elvas, Badajoz and Campo Maior, but where each investment based in one of the urban centers must be viewed in a cross-border logic of the eurocity, with the objective of obtaining savings scale, efficiency and urban qualification.

From a sociological point of view, there are certain 'ghosts' among the border population, namely that Eurocity is a political union, with the consequent loss of nationality. In the context of the strong territorial and functional dominance of Badajoz, this urban center is considered a threat to development by Campo Maior and Elvas when there is a border mentality with losses in relation to a neighbor who throughout history has been the invader or enemy.

The EUROBEC start-up involves the strategic design of the Eurocity, which after a diagnosis, consists of a document with strategic proposals and future operational priorities, which result from several documents and studies prepared by the different working groups, in the short, medium and long term. This structure makes a broad and multisectoral diagnosis, which should assess

EUROBEC's problems, challenges, potentials and common opportunities, which identifies the bases for the construction of a new cross-border urban reality and which defines the instruments for planning and spatial planning in the future. The Ayuntamiento de Badajoz, in the context of Euro-city, is responsible for developing the Euro-city diagnosis and strategic plan, as well as implementing the Observatory.

After the strategic phase, the EUROBEC Observatory should be created, which accompanies and monitors the implementation of the various strategic proposals, materialized in the set of actions, for the construction of EUROBEC. It aims at improving and developing cross-border cooperation between the different actors and agents, public and private, of the eurocity, generating synergies and cross-border networks that lead to the successful completion or the emergence of new projects included in the actions of the major strategic axes, and that allow to secure real development processes in this border region. Finally, EUROBEC's governance efficiency can be enhanced by collaborating on projects financed under programs such as Interreg and other regional and cohesion policy funds.

Immediately, the operationalization of the Eurocity and its consolidation requires a set of cooperation micro-actions that should evolve civil society, through an active Euro-citizenship with cultural and sports initiatives, a common cultural agenda, the Citizen Card, language courses, school exchanges and teacher training, which allows for better cultural and linguistic knowledge. It is a possibility of creating a common social area with access to public services by the population residing in Eurocidade Elvas, Badajoz and Campo Maior. The construction of the eurocity requires symbols that strengthen the sense of belonging among citizens and reinforce territorial marketing, such as the already created EUROBEC common brand. It is a unitary image with a common signage in the public space.

The eurocity may have its own communication and multimedia systems, such as a future cable television, written press, radio, eurocity website or common computerized advertising panels. For eurocity to compete in wider and more demanding tourism markets, it is important to group all tourism resources and values, creating a joint eurocity tourism workshop or post initiatives in potential markets, not restricted to major tourism fairs (BTL and FITUR), but specific actions in public spaces and projection events, with greater efficiency in promoting the EUROBEC brand.

The strategic diagnosis must analyze the historical, demographic, economic and functional constraints, the duality of legal systems, the excessive duplication and fragmentation of administration and public services, the border mentality and the insufficient degree of integration of infrastructures and services, which hamper the construction of the eurocity. In order to overcome some of the obstacles of a legal and administrative scope, or those linked to the commitment and political will, transparency between institutions and efficiency in public management, which hinder the consolidation of the eurocity and the adoption and development of broader cooperation projects, Eurocity Elvas, Badajoz and Campo Maior should adopt instruments that facilitate cross-border cooperation, such as the European Grouping of Cross-Border Cooperation (EGTC) and the European Cross-Border Mechanism (MTFE) under discussion for approval by the European institutions.

This proposal must be participated by the central governments of Spain and Portugal, Junta da Extremadura, CCDR-A, the universities and polytechnics of Extremadura and Alentejo and Euroace. A project participated by civil society, economic and social agents.

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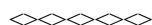
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## **All Sorts of Things about Gastronomy and Wine: A Heritage to Be Valued.**

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*“All men eat; but very few know how to eat. All men drink, but even fewer know how to drink. A distinction must be made between men who eat and drink and those who live to eat and drink” (Balzac, 2008, 44).*

### **1. Gastronomic Tourism: General Considerations.**

As we said in another context “gastronomic and wine products offer the visitor the possibility of getting to know the culture, customs, traditions and stories of places and people better, and in an extremely pleasant and enjoyable way. The persistent demand, which has been felt in recent years, (...) integrated in the generic name of new tourism, has in food products the ideal way of exploring the specific identities and know-how of each occupation; the authentic cultural expressions resulting from the preparation specific to each community; the unique presence of festivities and gourmet and terroir products, which become components of territorial renown” (Santos and Cravidão, 2015, 11). In fact, it can be seen that Portuguese gastronomy and wines can positively surprise tourists (Santos, 2017), as a factor to exceed expectations. “The numerous international awards and, above all, the opinion expressed by tourists in successive satisfaction surveys, confirm that gastronomy and wine are one of the strongest factors in the appreciation of destination Portugal” (Tourism 2020: 105).

Condominas (1980) makes the diet the central point of the social space, remarking that it commands the technology and the group economy, with that space perceived as an “area of intermingling between the biological and the cultural, adopting the expression social food space” (Poulain and Proença, 2003). This space is a form of freedom (Figure 1), clearly an expression of free will, when basic food needs are overcome.

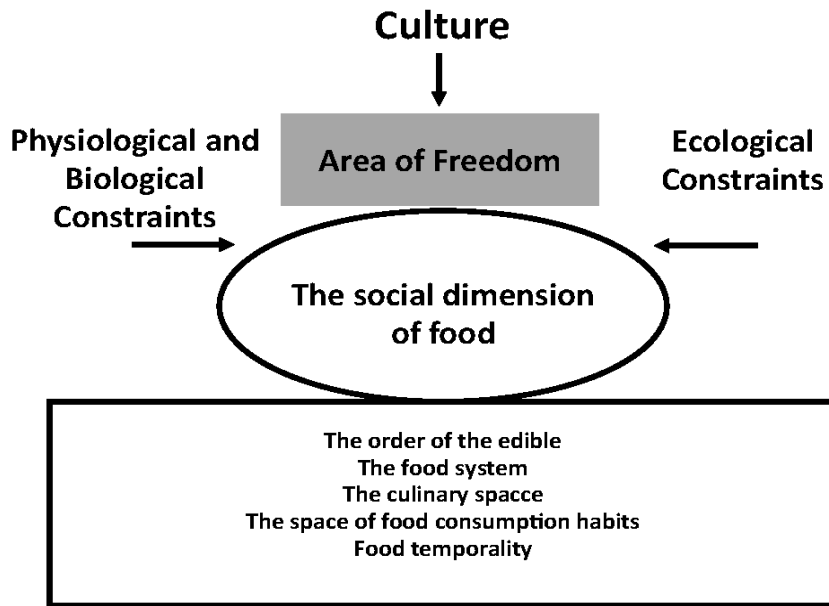


Figure 1. The social food space. Adapted from Condominas (1980)

These are superlative expressions, not only the nutritional dimensions, but also the sociocultural dimensions. As noted by Condominas (1980), Corbeau and Poulain (2002) and Poulain and Proença (2003), eating means effectively ingesting food to satisfy the physiological need to ensure the functioning of the body's metabolism, survival; but it also means the existence of a social affiliation and belonging, which creates social bonds and promotes participation in the process of production-recomposition of identities. “Food, or more precisely ‘the social food space’ and the imaginary that supports it, appear not only as a ‘total social phenomenon’, (Mauss), but also as a ‘total human phenomenon’, according to the happy expression of Edgar Morin (1973)” (Poulain, 1998, 6).

Thus, being products of continued use, foods are “a privileged means for societies to change their values, their identity ties, their pleasures”, (...), although “human societies have always turned to basic foodstuffs or ingredients from other places” (Montanari and Pitte, 2009). This shows that gastronomic traditions are dynamic processes because they result from the continuous adaptation of forms of practice and knowledge, endogenous to communities. Others are the result of exogenous acculturation or innovation,

which make it possible to recreate local or regional food heritage, depending on the scale under analysis. This perspective is indicative of the appreciation created by “local food traditions, regional cuisine and the 'terroir' products which place themselves as a space of cultural roots and identity resistance in the face of changes in lifestyles and the supposed standardization of tastes” (Poulain, 1998, 2). This food homogeneity is, moreover, evident and convergent with new ideologies, practices and techniques such as, “the reduction of cooking times and the taste for raw foods, (...) alongside the cult of vitamins, (...) the restriction of foods, condiments and more calorific cooking methods, (...) the expansion of grilled (...) steam cooking, (...) frying pans for couscous and pressure cookers, (...) ready-to-eat products and fast food establishments, (...) light meals at any time, (Flandrin and Montanari, 2001, 433). This third wave of globalization of the kitchen (Hall and Mitchell, 2002), corresponding to today's situation, has to do with technological advances in communications and transport, with urbanization, increasing the money available to families, market liberalization and foreign direct investment as facilitators (Kennedy, et al, 2004, Mak et al., 2012).

This influence of globalization does not, however, remove the growing importance of local identity and authenticity expressed in gastronomy and wines (G&V). In fact, it even allows situations that promote diversification when the relationship between global and local results in a diversification that is expressed both in terms of consumption, in a strong relationship with tourism, and in glocalization, which creates variety in the supply of culinary products in the destination (Figure 2).

The globalist perspective is associated with a set of changes that have taken place in developed societies, from East to West. In Portugal (Santos, 2001; Mónica, 1997 and 1999, Barreto, 2003, Sousa, 1995, Mattoso et al, 2010) changes are occurring: i) a process of deruralization associated with rural exodus and emigration, ii) a change in the structure of the working population and the attraction of more developed urban areas, iii) remittances from emigrants, iv) greater socio-professional mobility, v) increased accessibility, vi) a change in lifestyles, vii) the feminization of the active population, viii) the ageing of the population, ix) the increase in the urban population, x) the growth of tourist activities, xi) the integration of the country in the international/global market, xii) the growth of the Information Society and, xiii) the increase of leisure and holiday time. These changes, which have

once again taken women out of the home, have contributed to the emergence of an extensive food supply outside the home, the development of consuming foods outside meals, the supply of products assigned to the domestic space by the agri-food industry, and the internationalization of a number of products, represented by fast-food, cola drinks and hamburgers (Poulain, J.-P., 1998). Of course, “food history and geography are full of migrant food and beverages, [promoters of acculturation and modification of habits and traditions]. From the Middle Ages, cod spread to all the Catholic countries of Western Europe, but it benefited from the help of an eminently emigrant and diasporic people, the Portuguese, who brought it to the Antilles, Brazil, India, and even Macau” (Montanari and Pitte, 2009, 10)

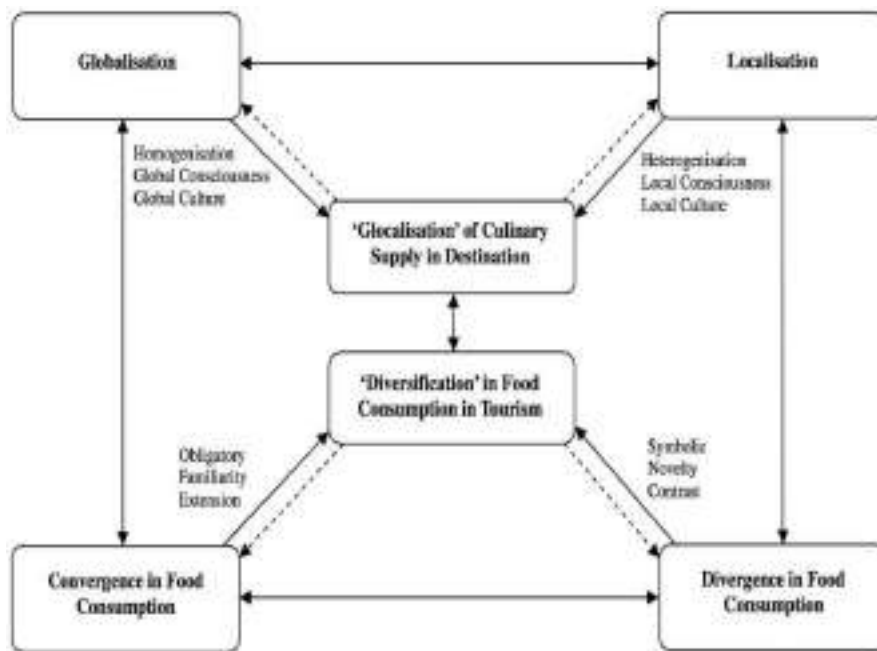


Figure 2. Influence of globalization on food consumption.  
Adapted from Mak et al. 2012.

In gastronomic tourism, each dish is seen as a history and a revelation of identity, which incorporates us into an experience of local authenticity, even though the dissemination of this identity and authenticity is global. Therefore, gastronomic tourism is fundamental for cultural preservation and must be configured around quality and territorial authenticity, as is the case with the European Charter of Wine Tourism. The latter indicates the territory, tourism and wine culture as pillars, in an environment that relentlessly evokes

authenticity, sustainability and competitiveness (Hall et al., 2000, CEE, 2006, Santos, 2016, Salvado, 2016).

It is clear that the experience gained from G&V is hedonic, appealing to all the senses. Today's tourists want more than just a few days to rest. They want their desires and expectations to be met, they seek out journeys that put them through unique sensations, whether differentiated products and services or a remarkable experience, that will lead them to a new sensory experience. (Netto and Gaeta, 2010). G&V has these characteristics. In addition to the primacy of pleasure, experience and emotion, which are valued, gastronomic tourism values local development and creates jobs. In fact, it allows a doubly sustainable approach, because it is clearly an eco-touristic product, providing environmental sustainability, but also economic sustainability, by allowing counterparts through job creation, improving people's quality of life and, at the same time, contributing to reducing seasonality. In the same way, it makes it possible to explore situations of co-petition, collective and inclusive efforts (in relations between the largest and the smallest stakeholders, between a significant variety of companies - restaurants, wineries, producers, bottlers, agricultural entrepreneurs, livestock breeders, event organisers, producer associations, among others). Good examples of these circumstances are the associations of wine routes in Portugal. These routes have a close relationship with the landscape, building it, changing it and signifying it, because "each society has an abundant semiotic economy, often born from the landscape images related to food" (Fumey, 2010). Indeed, the landscape is a construction resulting from man's actions on nature, with agricultural, livestock and forestry activities playing an important role, in a sense close to what Ascher gives us when he states that "regions and *terroirs*<sup>12</sup> are not facts of nature, but constructions" (Ascher, 2009, quoted by Santos and Gama, 2011). In the landscape and in the terroir, there thus emerge claims integrating the cultural, socio-economic, and sensory ecological dimensions, because there is an internal coherence, a specific character, associated with

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<sup>1</sup> According to Ascher (2009) A *terroir* product is one that could not be produced anywhere but there. The *terroir* will be the result of a combination of local means of production and know-how that would contribute to the nature and specific quality of a product and particularly of a food.

<sup>2</sup> Santos e Gama (2011) refers to O *terroir* as the territory worked on, resulting from various influences: the morphology that serves as a support, the dynamic characteristics of the physical world, which influences the actions, the relationships that are established with the know-how of its inhabitants, the image transmitted from it.

representations and local or regional identities and some immutability. Thus, landscape units and terroirs imply i) identity, ii) coherence of uses, iii) biological richness, iv) rarity and v) sensations (Abreu et al, 2004)

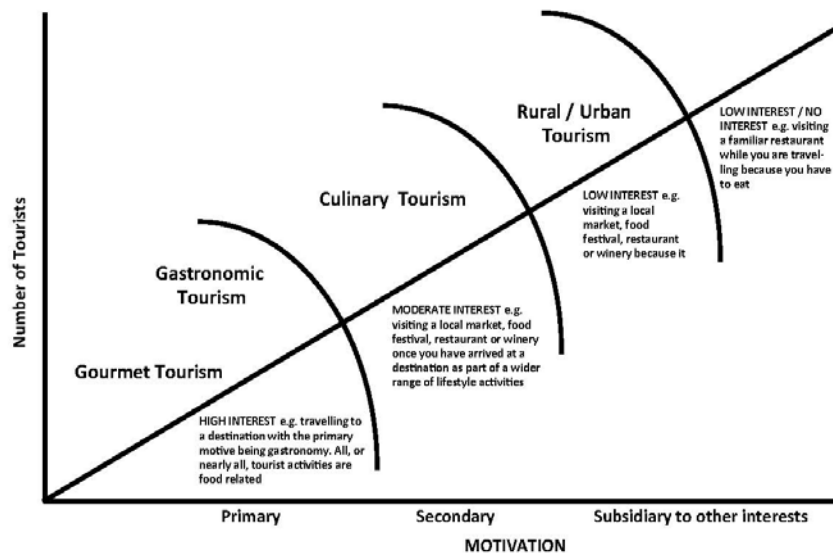


Figure 3 Adapted from Hall and Sharples, (2008)

The gastronomic experience has accompanied the valorization of a new tourism, increasingly prosumer and holistic, oriented towards multi-attraction (Hunt & Crompton, 2008; Caldeira & Kastenholz, 2018; Deukhee et al., 2019). Although a tourist trip with gastronomy or wine tourism as its primary motivation, may still have a small market share - as is the case with the offer in Portugal - if we add to this offer all those who see in this typology, even if not primary, a need to overcome expectations, then it can be said that Portugal has an immense added value in oenogastronomic terms. Hall and Sharples (2008) offers us an image of the relationship between food and tourism, territory and tourist motivations (Figure 3).

Tourist motivations define the type of involvement, from high interest, that has the primary motivation in gastronomic tourism, to disengagement or very little interest, because we all need to eat to satisfy our basic needs. However, it is important to note that there is a myriad of gastronomic experiences, which Smith and Xiao (2008) (Table 1) have systematized, showing the valorization that gastronomic tourism has had and promises to continue to have.



Facilities	Events	Activities	Organizations
Food processing facilities	Food and wine shows	Dining at restaurants	Restaurant classification
Wineries	Kitchen shows	Picnics utilizing locally-grown produce	Certification systems
Breweries	Product launches	Purchasing retail food and beverages	Food/wine classification systems
Farmer's markets	Food festivals		Associations (e.g. Slow food)
Food stores	Wine festivals	Wine region tours	
Food-related museums	Harvest festivities	Agricultural touring	
Restaurants	Food Workshops	City food districts	
Farms		Cookery schools	
Orchards		Wine tasting	
Vineyards		Visiting wineries/cellars	
Urban restaurant districts		Observing chef competitions	
Wine routes		Reading food, beverage magazines and books	
Food routes			
Gourmet trails			

Table 1 - Typology of culinary tourism resources.

Adapted from Smith and Xiao (2008, 290)

Thus, there is an undeniable trend towards uniformity - noticeable, for example, in the diffusion of Old-World grape varieties in the New World of wine and among all Old-World countries - with techniques that dilute regional differences, the production and vineyards are retained, geared towards the particularism of their terroir (Montanari and Pitte, 2009) as is the case with

PDO<sup>3</sup>, DOC<sup>4</sup> and IGP<sup>5</sup>, in Portugal. In fact, “humanity is very reactive to new ideas, which today ensures a rapid and global dissemination of certain foods and drinks (...). However, it also creates a permanent diversity. (...) Biodiversity is not only genetic, it is cultural (...), [but] the *produits d’origine* should not be taken as sacred cows, but as generators of emotions” (Montanari and Pitte, 2009, 11-12). “Food is definitely an attraction and has matured into a highly sought-after niche market in its own right” (Getz et al. 2014, 2).

## 2. Gastronomy and Wines in Portugal

Knowing the habits, techniques and storytelling of the cuisine of a region are the ideal way to get to know the cultural heritage of the communities in that region. G&V's theme, in Portugal, comes across as a valuable differentiating element of the tourist offer. Today, with an expression strategically identified throughout the national territory, it allows the valorization of the regional variety that enhances the gastronomic alternatives, meeting the motivations of the current tourists. As G&V is a product that cuts across various sectors of activity, it allows a robust socio-economic presence and the involvement of a large number of stakeholders who may be directly related to tourism or engaged in other activities. This sharing is creative and integrated because “tourism helps modern diners to understand their own identity in the originality of their contemporary updating and to see in otherness the enrichment of the encounter” (Poulain, 1998, 20).

By Resolution of the Council of Ministers No 96/2000, national gastronomy is declared an intangible asset, part of Portugal's cultural heritage.

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<sup>3</sup> PDO: Means protected designation of origin and is a geographical name or equivalent. It designates and identifies a product originating in that place or region, whose quality or characteristics are essentially or exclusively due to the specific geographical environment, including natural and human factors. The production stages take place in the delimited geographical area (<https://tradicional.dgadr.gov.pt/pt/produtos-por-regime-de-qualidade/igp-indicacao-geografica-protegida>)

<sup>4</sup> DOC: stands for Controlled Denomination of Origin. It is a PDO in which the wines come from the oldest producing regions and, therefore, are subject to their own legislation (soil characteristics, grape varieties, vinification, bottling).

<sup>5</sup> PGI: Means Protected Geographical Indication and is a geographical name or equivalent. It designates and identifies a product originating in that place or region, has a certain quality, reputation or other characteristics that can essentially be attributed to its geographical origin, and for which there is at least one of the stages of production taking place in the defined geographical area. Food and farm products, wines (<https://tradicional.dgadr.gov.pt/pt/produtos-por-regime-de-qualidade/igp-indicacao-geografica-protegida>).

It is now recognised as the fruit of traditional knowledge that attests to the historical and social evolution of the Portuguese people. In accordance with this guidance, there emerged the Resolution of the Council of Ministers No169/2001 of 19 December, which creates the National Commission of Gastronomy. This would become the leaven for the successful G&V valuation strategy in Portugal. Eight measures are defined that are intended to project gastronomy as an intangible asset: i) the survey of traditional Portuguese recipes, in all their diversity, detailing the aspects that make them unique; ii) the creation of a database of traditional Portuguese recipes and products; iii) the identification of the requirements that allow the certification of traditional Portuguese recipes and products; iv) the creation of conditions to enable restaurants and drinks establishments in the country whose menus include recipes of traditional Portuguese cuisine to be inventoried; v) the internal and external promotion of national gastronomy, with the specific aim of fostering tourism demand; vi) the organization of local, regional and national gastronomy competitions; vii) the promotion of new recipes made with genuine Portuguese products; and viii) the contribution to the improvement of national tourism facilities, making the different agents in the sector aware of the need to remodel their establishments, in terms of both premises and quality of service provided.

Following this logic of valorizing G&V, the National Strategic Plan for Tourism of Portugal (PENT, 2007) offers the territorial identification - this is too restricted, and was monitored and improved in the next plan - the motivations, activities and markets. Thus, the motivation is to enjoy typical products and deepen knowledge about the oenological and gastronomic heritage through product tasting activities, learning processes and visiting local tourist attractions (Gastronomy and Wine, 2006). As for markets, three types of trips are identified: discovery (the majority), deepening (very small in number) and learning (about 15%).

In *Gastronomy and Wine* (2006) the study of strategic products (Figure 4) shows that these trips are interpreted differently, depending on the type of experience preferred by the tourist/consumer. Thus, the experiences can be aesthetic, if the involvement is passive, or an escape, if tourists are actively involved in the experience. They can simultaneously seek amusement and also look for an environment of discovery and learning, so, still having fun and ultimately contributing to something useful for the destination.

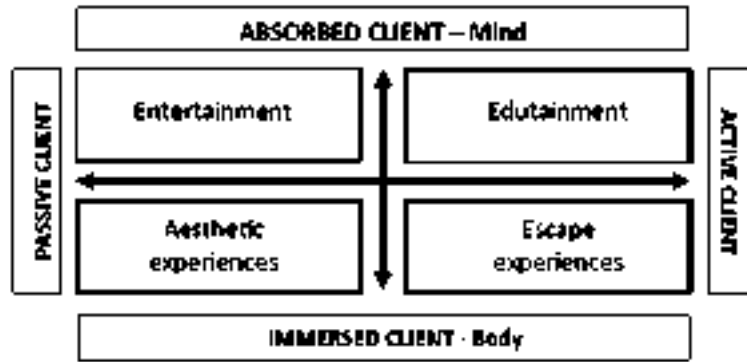


Figure 4. Types of Gastronomy and Wine Tourist Experience  
 Source: Adapted from Gastronomy and Wine (2006, 37)

The year 2013 granted Portugal international recognition (together with 6 other countries - Cyprus, Croatia, Spain, Greece, Italy and Morocco) for a food model: the Mediterranean diet. It is inscribed on the Representative List of the Intangible Cultural Heritage of Humanity and is associated with a range of expertise, knowledge, rituals, symbols and traditions. This diet involves the recognition of the process of cultivation, harvesting, fishing, livestock farming, food preservation, preparation and sharing and consumption of foodstuffs (Mediterranean Diet, 2013). Family or group meals are an element of cultural and community identity throughout the Mediterranean basin with the affirmation and renewal of the family, group or community identity. The Mediterranean Diet therefore emphasizes the values of hospitality, neighbourhood, intercultural dialogue, creativity and a way of life guided by respect for diversity. The conditions were beginning to align to make Portugal a leading international wine country.

Between 2013-2015 the strategy for Tourism in Portugal was reassessed and “the Gastronomy and Wine product was assumed to be strategic for the whole national territory, giving expression to a plan of quality, diversity and expertise, which was only recognized in Porto and North and Alentejo” (Santos, 2014, 81), in the 2007 PENT. Thus, having defined a classification of strategic products, G&V was classified as complementary in the country, allowing the appreciation and enrichment of the offer, corresponding to satisfying a secondary travel motivation (PENT 2013-2015), as mentioned above.

The plan for the period between 2016 and 2020 (Tourism 2020), was innovative because it gave more significance to the motivations of tourists than to strategic products, while never failing to give them maximum attention. Stakeholders' freedom of choice has increased in terms of decision-making, in order to “better respond to the motivations of demand, as opposed to the temptation to impose on tourists what we believe is best for them” (Tourism 2020, 9). The strategy, in terms of public policy, has definitely been directed towards the tourist and identifies an “excellent country offer at the level of some of the 'secondary' motivations of tourism (e.g. gastronomy), resulting from a strong qualification in recent years” (Tourism 2020, 38). This qualification arises at the level of specific tourism segments, where gastronomy and wine are included - but also includes nature, boating and seamanship, health, religion, events and business - which requires more specialized but complementary skills in the tourism offer. The gastronomic products and Portuguese wines show an enormous quality and ability to surprise everyone who visits Portugal, especially those who do not have that motivation as a reference. “The numerous international awards and, above all, the opinion expressed by tourists in successive satisfaction surveys, confirm gastronomy and wine as one of the strongest factors in the valorization of destination Portugal” (Turismo 2020, 105)

The latest strategic plan presented (Tourism 2027 Strategy) was also innovative and reclassified products as differentiating, qualifying and emerging assets (Figure 5), clustered around *People*, considered as cross-cutting assets. In this way, G&V can be understood as a qualifying asset, capable of enriching the tourism experience and/or providing value to the facilities offered by the territories, stimulated by the destination's differentiating assets.

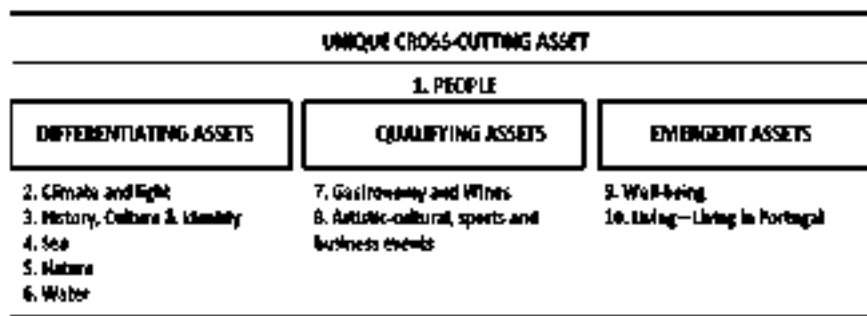


Figure 5. Strategic assets of Tourism in Portugal  
 Source: Adapted from Tourism 2020 Strategy (2017, 46)

As stated in the strategy paper, “traditional gastronomy is present throughout the country. Portugal is a country with some of the best fish in the world; it has internationally recognized *chefs* and several Michelin-starred restaurants. The awards for Portuguese wines place the country among the best in the world, a worthy business card to boost Wine Tourism” (Estratégia Turismo, 2027, 48).

However, G&V qualification does not stop there. 2019 saw the publication of the Wine Tourism Action Programme, which set out to be a strategic reference in terms of wine tourism, seeking to make the country a world reference destination for wine tourism. In March 2019, the then Secretary of State for Tourism, Ana Mendes Godinho, said that Portugal “had 2.2 million visitors per year who already have wine tourism and gastronomy as their main or secondary motivation” (dnóticias.pt 2019). The main source markets for these tourists are the United Kingdom, Brazil, the United States of America and China. These findings led the Wine Tourism Action Programme to define its priorities thus: i) to enhance the value of wine producing areas/destinations, ii) to qualify the supply of wine tourism products and services, iii) to train wine tourism agents, and iv) to contribute to adding value to wine exports. This qualification is complemented by resources and key elements for the development of wine tourism that are identified as i) the territory, gastronomy, human resources, and support infrastructure and facilities.

The importance of wine tourism in Portugal's tourism strategies is now evident, largely due to a set of facts and figures (Table 2) that facilitate aggressive promotion, associated with qualified human resources and internationally recognized products of excellence.

<b>- country with the 3rd largest variety of native grape varieties in the world (+ 250)</b>
<b>- 8th largest world exporter of bottled wine</b>
<b>- 9th country in the world in terms of vineyard area</b>
<b>- 11th world wine producer</b>
<b>- Over 190,000 hectares of vineyards in Portugal</b>
<b>- 31 Protected Designations of Origin</b>
<b>- 14 Geographical Indication designations</b>
<b>- Over 500 private wine tourism players</b>

Table 2 - Wine Tourism Facts and Figures, Portugal, 2019

Source: Wine Tourism Action Programme 2019-2021

To conclude this analysis of strategy, which has gathered public and private governance information and even requested input from academia and associations and communities, with a clear purpose of promoting a quadruple helix management (Carayannis & Campbell, 2009, McAdam et al., 2012, Fitjar and Huber, 2015, Miller et al., 2016, Lew et al., 2018), it is important to mention here the distinction obtained by Coimbra, as European Region of Gastronomy, in 2021, after the success achieved by the Minho region in 2016. This award is the responsibility of the International Institute of Gastronomy, Culture, Arts and Tourism, (IGCAT), which seeks to empower local communities to guide, facilitate and support regional leaders in recognizing the potential of different gastronomic, cultural, artistic and sustainable tourism resources and to balance globalized food trends affecting the planet, health and local economies. This award, resulting from the application made by the Intermunicipal Community of Coimbra Region (CIMRC) (REG, 2019), will valorize produce from the land. While gastronomy will be a key element, a strategy, mentioned above, of composition with landscape, history, geography and culture is to be adopted so as to access the traditions and thus allow its economic strength to be revealed. Great emphasis is placed on Brotherhoods which “appear as institutions that, aware of the importance of local food, take their daily space and time for the inventorying, preservation and dissemination of gastronomic products” (REG, 2019, 27).

With regard to the objectives and lines of action the brand Coimbra Region, European Region of Gastronomy 2021 sets out to promote the regional gastronomic heritage. To do so it needs to involve local communities and strengthen the regional gastronomic identity. It can thus contribute to the recognition of gastronomy as a differentiating factor and potential clustering of local dynamics, valuing professions (those linked to rurality, and for which it is important to attract the youngest). The result of this strategy will allow, also to promote the transfer of knowledge between the various agents, assuming the combination of tradition as innovation as a factor of supply enhancement (REG, 2019).

Of course, one could add to this list other recognitions and contributions of G&V to the quality of destination Portugal. Before concluding, it is important to remember the participation of Porto in the Great Wine Capitals (GWC) network since 1999, proposing to enhance the wine tourism experience of all those who visit the city (like the other 10 cities,

today part of this network: Adelaide, South Australia; Bilbao, Rioja; Bordeaux, Lausanne, Switzerland; Mainz, Rheinhessen; Mendoza; San Francisco, Napa Valley; Valparaíso, Casablanca Valley and Verona) and support the city to make the most of its exceptional culture, heritage and geographical location (GWC, 2020). Of great significance, too, are the additions to the World Heritage Representative List of property *Alto Douro Wine Region* (<https://whc.unesco.org/en/list/1046>) and property *Landscape of the Pico Island Vineyard Culture* (<https://whc.unesco.org/en/list/1117>). The former has been included since 2001 with criteria (iii) (iv) (v) and the latter since 2004 with criteria: (iii) (v), highlighting the integrated, qualified and competitive way in which the products associated with vine and wine culture are present in Portugal.

### Final thoughts

The quality of G&V Portugal has followed, in terms of quality and recognition, the national (domestic tourism) and international (inbound) projection of Portuguese tourism. Specific campaigns have added the quality of human resources and food and wine heritage to the territory, and these are exploring and expanding the path of success trodden by Port Wine worldwide. The “G&V practices should be seen as the commendation of difference and the safeguarding of local identity and, at the same time, as a path for the future to promote local development through innovative and differentiating practices. But this is openly based on authenticity, storytelling of processes, relationships and expertise, and experiential marketing, exceeding the most demanding expectations (Santos, 2017, pp. 555-556).

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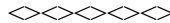
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## **Building a Passive and Obedient Society through Geography**

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"Be extremely subtle, so subtle that no one can find any trace"  
*The Art of War*, Sun Tzu

Based on the schoolbooks used by the Portuguese dictatorial regime, we intend to make a brief trip throughout the twentieth century (until 1975), exploring how Geography was an instrument for the construction of a submissive, obedient and apolitical population. Geographical knowledge helped, on the one hand, to the building of a regional identity and, on the other hand, to the interiorization of a submissive attitude, by the population of a poor and rural country, to the will of a small tyrant, with a xenophobic and claustrophobic view of the world.

1. Having been a Geography teacher for 33 years, I have always told my students that I had learned much more Geography from non-geographical books than in the myriad of the specifically school ones. With this attitude, I intend the students to be aware not only of the omnipresence of Geography in their daily lives, but also that this science is much more than a mass of information that, by itself, has no practical application. This position from a geographer may seem strange, but in my case, it is justified. I have always been attracted by different spaces (near or far), to understand, feel and live them!

This predilection started early. First in the comic books. I still read Tintin with the pleasure of traveling through this juvenile hero's adventures; later with literature, not just the traditionally called "travel literature", but through novels, too - I went on a long boat trip, looking for the huge white sperm whale, with Melville; I went hunting (I, who never fired a shot) in Africa, with Hemingway (Green Hills of Africa); I visited the great spaces of North America, by train, along with the "Lonesome Traveler"; I got off the train and hitchhiked, or travelled by car, from east to west of the United States with Kerouak, "On the Road"; I felt the "Call of the Wild" through the icy north with Jack London and with him I went to the Pacific, too; I sailed down the Mississippi with Twain, and before the Pirates of the Caribbean made a splash on the screens, I had already been on adventures with Fernão Mendes

Pinto and Stevenson. I met Clavell's Japan, Marco Polo's China and I traveled on the "Pink Colored Map", with Capelo and Ivens!

I can hardly describe the pleasure I had on these "trips" and on so many others. I would like to be able to tell their stories with the enthusiasm I felt. However, I am here trying to make a parallel between what I learnt about the geography of the world and Portugal's with other books than the school ones.

From a primary pupil's point of view, the less famous school textbooks painted a Portugal which seemed enormous, full of beautiful places. However, they never reached the great landscapes of Tintin! The problem with this child is that he found geography very boring! He had to memorize the provinces of Portugal and its colonies; to know the name of the rivers, mountains and mountains' ranges. In my school days I had to learn that the highest mountain in Portugal was Pico do Ramelau, located in East Timor, today independent, but that at the time belonged to Portugal.

We can explain this Geography's apparent contradiction with several factors. Modern Geography, since the creation of the Societies of Geography, reduced this science to an accumulation of knowledge on the earth's surface phenomenon and accidents, explaining the reason for them to happen and exist. In the field of Physical Geography, supported by other sciences knowledge, a specific synthesis was built with a unique approach. The Human Geography was fundamentally an explanation and spatialization of historical phenomena and a presentation of the political and economic organization of the state of the world, country or region. Fifty years ago, in the final exam of Primary School, a 9-year-old child had to know Portugal's northern railway, as well as all the names of the places where the trains stopped to pick up and drop passengers - traumatic! This opinion, being controversial, summarizes what I think about this science, my science, which has been reinvented for decades and is currently one of the most complete and useful sciences for the well-being of the citizens of the planet. In Portugal, Geography owes much of its "aggiornamento" to Orlando Ribeiro, who managed, through Regional Geography, with origins in France "Vidaliana" school, to affirm this science as a basis for understanding the world.

My parents were teachers, so I lived with books ever since I can remember, including school textbooks. In the 1950s, my parents were already

teaching and therefore I had contact with the scholar textbooks of different decades. Just for pleasure, I started reading many different texts, collections of texts and school textbooks of History, Portuguese, Geography and Philosophy. Over the years, I have gathered a set of school textbooks, which have given me the possibility to follow their evolution through almost three quarters of the XX century.

Sporadically, I read and reread texts, fables, traditional tales, poems, “lenga-lengas” and other readings that transport me through time. This type of exercise causes a paradoxical sensation. On the one hand, the emotion of touching and reading something that transports me to my childhood and youth, brings me a feeling of comfortable nostalgia; on the other hand, I realize that those books are memories of a time without freedom, a time of poverty and poor living conditions, which saddens and revolts me. However, the pleasure of reading, of feeling the smell of the books, makes me overcome negativism and the joyful part prevails.

As I was selecting the old manuals - arranged in small piles on my desk - I reread some excerpts; almost immediately, I am invaded by images of a poor Portugal, with hardworking people, God-fearing and confident in the word and guidance of their leader, the falsely humble Chairman of the Government, Professor Oliveira Salazar. I still remember seeing him on television, a black and white screen full of “sand”: a gray and austere character who, due to his old age and appearance, imposed respect and some fear. I would see him more assiduously, over the blackboard of the austere classroom, of the austere school, of my austere 1st class - the Portuguese dictator would die shortly afterwards, but because of his longevity in office he would remain in the history of Europe. The following year, another photo of another Professor, also gray, also austere, would appear in the classroom! It is on a voyage through a Geographical vision of Portugal, made from old piles of school textbooks that rest temporarily on my desk, that I invite you to follow me.

2. With a ripped cover and wrinkled pages, as a consequence of the passage of time, I take the oldest Atlas, dated from 1830. In this “*Lições Elementares de Geographia e Chronologia, com seu Atlas Appropriado, Accomodadas ao Estado de Conhecimentos e Mais Circunstancias dos Alumnos da Aula de Arithmetica, Geometria, Geographia e Chronologia do Real Collegio das*

Artes da Universidade de Coimbra” (“Elementary Lessons of Geography and Chronology, with its Appropriate Atlas, Accomodated to the State of Knowledge and more Circumstances of Alumnos of Class of Arithmetica, Geometry, Geography and Chronology of the Royal Collegio of Arts the University of Coimbra” - free translation of the author (long title, but an enlightening one) - I can be carried, not only for the kind of Geography that was transmitted to students, but also to imagine the room and the Professor trying to teach the arid content of the Atlas. The only readable author, José Albino (the second author is illegible) organizes this manual with an introduction where he presents “Esphera, Globo and Cartas Geographicas” (Sphere, the globe and geographical maps), in the second part of the book the “Lições elementares de Geographia e Chronologia” (Elementary Lessons of Geography and Chronology) with his “Taboas da Geographia Theorica” (Tables of Theoretical Geography). The following pages are dedicated to “Geographia Theorico-Physica” (theoretical Physical Geography) and “Geographia Theorico-Politica” (theoretical political Geography); until now in the Atlas there is not any illustration, a picture or a map - is unfortunately deeply and boringly " Theoretical"! When you began the second half of the book, the title seems to promise greater empathy with the student: Part II. Section I. Geografia Pratica Actual (Practical Geography Nowadays). Promises, but does not deliver; the globe, the geographic phenomenon like mountains, rivers, seas, gulfs, countries, capitals, forms of government, religions and territorial divisions, presented in tables with very small letters to better accommodate larger amount of information. We continue without a map in the Atlas! A Portuguese Atlas, from a country that since the Discoveries was recognized through its cartography, does not seem to make sense! This is followed by the “Geographia Historica” which is essentially “Chronology”, where the calculations that lead to the division of time are presented. Interestingly the division in Eras, had three types: “Epochas da Historia Sagrada”(Eras of Sacred History) " Epochas da Historia Ecclesiastica” (Eras of Ecclesiastic History) and " Epochas da Historia Profana" (Eras of Profane History). It is also interesting to observe how the biblical narrative, the Greco-Roman mythology and the history itself intersect, apparently, without conflicts. Finally, three illustrated pages: the first with cosmographic schemes; the second with the geocentric scheme of Ptolemy, the heliocentric of Copernicus and also that of Ticho-Brahe, scheme of translation, eclipses



and phases of the moon, on the last page, an armillary sphere and four Cardinal points compass scheme.

It is obvious that would be difficult, at that period to get an illustrated Atlas with a wide variety of maps; the technical means were reduced and the press did not have the capacity that was verified in the 20th century; other aspect that also contributed to this lack of maps was the deficiency of confirmation and credibility of many of the cartographic materials. However, an Atlas without at least a map of the world leaves readers with no idea of the division of space at the level of the globe, of relative positions, which for example can explain much of Political Geography. In the 19th century, teaching was to transmit and to learn was to keep inside the student brains information that did not need logic or interconnection between them; it was enough that one knew how to enunciate data and put the right figures in the right place. This Atlas serves mainly to frame other more recent atlases and to establish a link with geography textbooks that marked the Estado Novo period in Portugal.

The beginning of the 20th century in Portugal was socially and politically in a turmoil. The overthrow of the monarchy and the implantation of a Republican and secular State took place through fights and social effervescence and political instability and volatility. That politic outcome of this situation was the institution of a fascist-inspired dictatorship state in the country.

The school, regardless of the focus of the analysis, reflects the social environment and fundamentally the political orientation of the regime. The political powers know that from the Education System they're able to control populations, their formation, greater or lesser, and the creation of a people that will act, as much as possible according their objectives, and act within the limits of freedom granted by the regime.

After the implantation of the Republic (1910/11), the concern regarding the Portuguese education system was great. With a rural country, with widespread poverty and a very high illiteracy rate, the Republicans, in parallel to the fundamental political reforms, promoted as an instrument against Portugal's chronic backwardness towards Europe, a reform in the education system and also a new orthographic form. At the beginning, concerns were focused on the two extremes of the system - Primary Education and University Education. The concern would be to expand basic schooling

and prepare academic elites to teach and promote a movement that could lead the country to reduce the gap towards the rest of Europe. Thus, between 1910 and 1920 several reforms and changes were carried out at all levels of education. In this paper we are not going to explore changes in the Portuguese education system, but focus on school textbooks.

Many of the supporting materials, including manuals, were written and designed according to the new guidelines that aimed at raising the literacy level of the population, so that they could have access to an honest and reliable information. Notwithstanding this desire to build new materials the ones done before were also included as support for the teaching of Geography, a science that the Republic came to give new breath and visibility, considering it as an integral part of the training of citizens.

A necessidade de iniciar o aluno na compreensão da cartografia com, e para, o estudo da localidade, levaria à elaboração e utilização, com fins pedagógicos, de documentos cartográficos que derivavam, sequencialmente, das escalas grandes para as mais pequenas: da planta da sala de aula para o mapa. (Gonçalves Fernandes, 2018:1)

*(The need to initiate the student in the understanding of cartography with the study of the locality would lead to the elaboration and use for pedagogical purposes, of cartographic documents that had derived, sequentially, from large scales to small ones: from the floor plan of the classroom to the map. (Gonçalves Fernandes, 2018: 1)*  
[Free translation of the author's responsibility]

Gonçalves Fernandes, writes later in his article:

*The idea, which he exemplified in the Chorographia de Portugal, would gain supporters and would be used ever since, with the consequent appearance of examples published in school books by other authors, as attested by the "lesson plan, high school plan, city plan and letter corographica "inserted in the Geography Course : classes I, II and III , by José Nicolau Raposo BOTELHO (1907); the "plan of the school, plan of the surroundings, topographic map, charter 1:12,500, geographic map and globe" of the Compendium of geography: for 1st, 2nd and 3rd classes of high schools , by Ildefonso Marques MANO (1915); or the reproduction of figures 4 and 5, by*

*Ferreira Deusdado, in the Geography Compendium: I and II classes of the Liceus Course , by Luís SCHWALBACH (1922). (Gonçalves Fernandes, 2018: 6.7) [Free translation of the author's responsibility]*

There is manual used in the Catholic ecclesiastical seminary, whose date or author cannot be read due to the state of the book's conservation. However, it must have been written before the orthographic reform of 1911, thus dating its release between 1900 and 1910. It was used after the implantation of the Republic, giving us an idea of the way Portugal's Geography was taught, which shows that there were no major changes with the revolution, meaning that some of the manuals, like this one, had a longevity in the new political system, too. Comparing it to the 1830 manual, the difference is not substantial in the layout and typographic quality, and Geography remains a science of compiling information about the various terrestrial spaces. The first part includes 10 figures, explaining constellations, curvature of the globe, armillary sphere, solstices, translation, moon phases and eclipses. The rest of the manual is a long list (269 pages) organized similarly to a monography, which presents the physical geography of the globe and, subsequently, Human Geography, where each continent and countries are described with political limits, physical accidents (mountains, rivers and natural resources) and human factors, such as administrative divisions, population, form of government and "official" religion. There is no map of the world or from any continent; the geographic knowledge was limited to transform students into a huge and useless "encyclopedia" of facts and data that were abstractions and impossible to use due to the zero spatial training or contact with maps.

In my opinion, the Book that brought a real "revolution" to the teaching of Geography in Portugal was the "New Portuguese School Atlas" of 1925, written by João Soares (former professor at the Instituto dos Pupilos do Exército, therefore linked to the military institution). This Atlas that I can only evaluate for its second edition (1934), is a true Geography book, edited by Sá da Costa and the Geographic Institute of Agostini (this last one from Italy, like in the Portuguese Discoveries, we used the cartographic knowledge available in the Italian peninsula). The book presents the following organization: General History - maps from the Paleolithic to the 20th century, essentially from Europe; General Geography (physical maps of the globe, politicians by continent and the world; the end 15 pages with maps dedicated to the Geography of Portugal and its colonies.

It is a high graphic quality book, colorful and with geographical accuracy, comparable to more recent ones. This last Atlas compensates and supports the old “dry and gray” school textbooks- However, studying was expensive and buying one more book to support the History and Geography teaching would be another expense in addition to the effort made by the few families who could pay for their children’s education.

From 1926, with the establishment of a military dictatorship, and from 33 with the establishment of the Estado Novo, many reforms were carried out, but all in the direction of centralizing and limiting the content to the needs and social vision of the regime. Always with strong censorship, the regime limited its scope in the Education System based on the social organization inspired in the Italian fascism. With Salazar, the three pillars of the regime were reflected in a collection of school posters (The Lessons of Salazar) spread across all classrooms, where God, Nation and Family summarized the range of thoughts and practice of daily life permitted to the population of a country ruled with an “iron hand”, voted to a rurality without evolution and a mediocre poverty.

The Geography Manuals reflected this reality, as stated by Sérgio Claudino (2005:197) referring to textbooks in general: “Apela-se a livros de abundante ilustração, descritivos, mas de texto limitado.” (free translation: We appeal to books of abundant illustration, descriptive, but with limited text). The dictatorship is interested in an educational system that focuses on minimum learning so that the functioning of the country's economic base is not jeopardized, but never a population in a quest for wisdom that could threaten the stability of the *satus quo*. Thus, the priority was in Primary Education, not neglecting the other levels. With less open access for the general population, high school guaranteed the formation of elites, on the one hand, and on the other, technical education assured workforce with an intermediate level of specialization. This would ensure a low average stratum of the socio-professional stratification of a country that was projected with a well-defined and relatively tight social hierarchy, for its self-preservation.

In this collection we have two Compendiums of General Geography (“Compêndio de Geografia Geral”) from the 20s and 30s of the last century; one by José Mattoso, 1928, and another one for Technical Education by António G. Matoso. The first compendium resembles a complete copy of the manual that we mentioned earlier and which we placed in the first decade

of the 20th century. Even the few images available are similar to those of the beginning of the century. The most obvious changes are the updates in Political Geography, which changed drastically with the Great War. In the second book the difference is primarily in the number of illustrations and the introduction of photos, which could make geography less "abstract". In addition to these innovations, the manual already lists fewer countries, selecting the "Greatest territorial powers" (Spain, France, England, Belgium, Germany, Italy, the United States of America, Brazil, Argentina, Chile and Japan). The logic of this selection about great territorial powers, does not make sense to me, but it reflects the guidelines of the Regime. World territorial powers such as the USSR or China (already on the road to being a People's Republic and in a climate of internal friction, due to Mao Zedong 's "Long March") and the lack of inclusion of India, where Portugal, at the time, had some territories, make no political or social sense.

The last part of this compendium includes a trip to Portugal, including island and overseas colonies. The Political Geography of Portugal is lacking color, mechanically describing the numbers of the population, language, religion, government, administrative, judicial and military organization, public education, the capital and the cities. The Human Geography of Portugal is condensed in 8 pages, with 3 photographs, - apolitical and without opinion; no economic, social or cultural references. Geography should be harmless and aseptic; the Portuguese proverb, "Knowledge does not occupy a place" (O conhecimento não ocupa lugar) does not apply to these manuals, where thinking about reality, opinion and personal perspective were prohibited in education. The book dedicates 15 pages to Physical Geography, due to its greater propensity for objectivity at this level of education. Studying the mountains sites, the rivers, coves, gulfs and lagoons is harmless; memorizing them does not develop critical thinking. 'Be obedient, trust the providence of your leader, Salazar, and nothing harmful will happen to you!'

For the majority of the population, this apparent reality would be confirmed during the period of World War II. Salazar was never directly involved in the war. He was nicknamed "Old Fox", by José Freire Antunes. According to this author, Salazar was considered "intolerable" by Churchill. He was able to overcome the almost six years of war without ever committing to any of the parties and without ever participating actively and militarily in

the conflict. So, the majority of the population who listened to the radio and read the press, strongly censored by the regime, had the perception that Salazar, in "his infinite wisdom", managed to protect the country from the misfortunes reported in the media. Only a minority of the population, who was able to access BBC World and other outside sources of information, became aware of the devastating reality that plagued Europe. This political situation was connected with the strong control of the education system and the propagation and transmission of selected scientific knowledge that was presented innocuously, in a controlled way, without stimulating critical thinking (Have we overcome this phase in recent times world? We should think about it, sometimes).

The duration of the Regime was long, and several changes happened in the role that Geography had in the *curricula*. Sometimes Geography became autonomous, other times it appeared (as a minor partner) together with History or with natural sciences, such as Biology, Zoology or Botany. That's what happens with Augusto Soeiro and Carlos Vilamariz 's "Geographic-Natural Sciences" manual, dated from 1945, for the first 3 years of high school. The manual tries to achieve some internal logic by structuring itself in this sequence: basic principles of Geography, Geology and Geomorphology, Study of Man and vertebrates and invertebrates, Botany and again Geography, this time Human, but always descriptive; finally, Geography from Portugal, from Minho to Timor. Over 687 pages to learn by heart, over 3 long academic years.

Another manual, for the 1st year of high school, "Compendium of Geographic Sciences", by Albano Fernandes (1947), makes the preceding compendium seem short. In the first one, the contents were summarized in 691 pages, 3 academic years, in a single volume. In this one, just to cover the first-year program, it uses 451 pages of geographic information to memorize by hardworking students. For geographers, who like me graduated in the 1980s, the annual reference book for Physical Geography was A. Strahler's; these compendia are small reproductions of that guide to Physical Geography; taking into account that only a small percentage of the students would follow Geography, the amount of information was clearly exaggerated; actually, in 1947 there was an obvious confusion between knowing and memorizing.

In the following decades, teaching manuals were increasingly oriented towards the “Single Book Policy”, which simplified the control of contents and their possible “subversive” messages. Probably, the goal of one book per subject each year, was not fully achieved but, essentially, the general direction of all manuals was the same and small “leaks” in the uniformity would not cause any substantive change. This type of policy led the authors of manuals to be reduced to small groups, which (one way or another) fit the intended guidelines of the regime.

Two names that over these decades were ubiquitous in Geography textbooks were Evaristo Vieira and Alves Moura. These two authors succeeded in authoring several Geography manuals, adapting themselves to the technological innovations in the printing and editing of books for more than thirty years.

In my possession, I have 3 compendiums from 1962, 1967 and 1972 by the authors mentioned. In the “Compendium of Geography for the 3rd High School Year” (62) we can find some interesting news paths, fundamentally in relation to Human Geography. In this manual, the influence of French Regionalism is quite obvious, and its structure is similar to a typical monography. In relation to Human Geography, the concepts of civilization, the spatial distribution of Man in relation to natural resources, the influences of the climate, the diversities of lifestyles, the population, the houses and other typical approaches of Regionalism are quite visible. Still in the Human Geography field, the book features almost 100 pages devoted to Economic Geography, dividing this part into Geography of the Production (mining, agriculture, forestry and animal productions and manufacturing industries) and consumption and circulation Geography. The fact demonstrates an attempt to make known that Portuguese Geography was also along with others existing in Europe, particularly the French, which was the country with the strongest influence in the Portuguese culture, until the revolution, perhaps due to the profound aversion that the Portuguese dictator had in relation to the Anglo-Saxon culture.

The 1967 manual is a modern school book and, amazingly, it includes color and a good number of maps! This compendium, which included one more name in the team of authors (Américo Palma), managed to have several editions; it was used, at least in some high schools, after the 25th April (Portuguese democratic revolution). This manual, only for the 1st year of high

school, starts with some basic concepts of Geography, well explained and presented, with the support of images, diagrams and maps and provides students with basic tools of Geography, but also concepts and knowledge that can be used by students outside the classroom, in everyday life. Geography definitely ceases to be a science of the "abstract" and begins to be related to the world of students, providing instruments that can support their vision of the world. The second part is centered in the African continent, in a descriptive and monographic way, but due to the graphic, cartographic and photographic support it becomes less arid and manages to arouse the interest of students.

In the same strain of the previous one, the Geography Manual for the last two years of High School Education, by the two authors referred to before, is a long monograph of the world. The interesting thing about this book is a last part dedicated to Overseas' Portugal that starts with a "reminder". The Colonial War, which started in 1961 in Angola, but soon spread to Guine-Bissau and Mozambique, required an effort by the population to interiorize the "belonging" to a space unknown to the majority of the Portuguese people. For a war to be won, on the ground, the support of the people who provide men for combat and, at the same time, keep the country's economy functioning normally, is essential for the conflict to be won.

In the school book, there's a call for previous attention to a reminder, the authors transcribe part of the *Observations of a Decree-Law for High School Education* where it can be read:

In the seventh-grade year, it goes further in knowledge. The program focuses on the study of metropolitan and overseas Portugal. But that's not simple extension of the 5th year program; problems in their mainly economic aspect are faced, trying to **instill in the student the notion that the overseas represents a potential value that it is necessary to study and to be acquainted with, to direct its evolution in the most harmonious sense of national interests.** (Vieira and Alves de Moura, 1972; 431) [Free translation of the author's responsibility]

In pedagogical and didactic terms, the authors point out a possible methodology, which despite being from the 70s, is not yet widely used today. Of course, the teaching and the methodologies are well beyond this proposal, but this guidance may still be a way to work (with some



adjustments), and calls for the construction of a close pedagogical relationship and forms of development of critical thinking.

Each Teacher will be the advisor, the co-worker, the critic. Each subject indicated in the program will be a problem to discuss; the teacher guides the work to be carried out, indicates the general lines to follow, provides the necessary elements, and the student studies the problem, solves it, presents it to the master's criticism and discusses it.” (Vieira and Alves de Moura, 1972; 431) [Free translation of the author’s responsibility]

This concern with didactics may explain that Author Evaristo Moura, accompanied by Carlota Vieira and Guilherme Pimentel, also edited a collection of 3 atlases (My Atlas, volumes I, II and III) for the first 3 years of High School Education. The copy we have is the one that supports the previous compendium. It is a basic workbook that seems to us too childish, for students in the 3rd grade, but perhaps because there was so little practice of using and consulting maps before, it was necessary to follow a basic path. The booklet presents a first set of maps of Europe, with exercises of matching terms and coloring some spatial phenomena. The rest of the Atlas is dedicated to Portugal, continental and overseas, with the distribution of some physical and geological phenomena and another part with human singularities. Finally, with the maps of the colonies with the same organization of the continental metropole, is an interesting Atlas as a support to a schoolbook, with some very basic tasks; however, it could help students to memorize chorographic aspects.

At the most basic levels of education, the Primary and the Preparatory Cycle, in the early 1970s (with the transformation in the Educational System initiated by Veiga Simão) Geography was, as it is today, linked with History. *The Handbook of Graça Fernandes, Manuela Simões and Gustavo Freitas (1970) - History and Geography*, appears, and unlike the Atlas previously mentioned, with an amount of information and depth that seems too complex for children aged between 11 and 12. The book begins in 1640 and ends in 1933 and is mostly a History book; Geography appears just as a framework for historical phenomena and is used to present some concepts of the contemporaneity. The presentation of the country is shown in a very regionalistic way, where the human activities are essentially linked to the rural world. The natural regions, their people, the agricultural, industrial and

commercial urban centers, and of course the overseas provinces, highlight a perspective of a country that is unified in its diversity. There is a strong impression that it is a rural country, and that image is reinforced by the countless photographs of rural landscapes, farmers' houses and their traditional activities. There are sporadically some notes about some new perspectives, for example five short lines on regional planning and five more lines on tourism. The structure of the active population that the manual identifies reveals Portugal before the 1975 Revolution - Sector I: 36%; Sector II: 32%; sector III: 32%. What the manual does not reveal is the backwardness of the industrial sector and a tertiary sector comparable to the one of the 1930s. It is this "imaginary" country that, to some extent, still remains in regional identities.

In primary education, Geography was essentially a chorography of physical and human phenomena, always supported by general maps. The rest was presented like stories about heroes. Geography and history were taught through characters who, for their heroic deeds in favor of the country and the rest of the population, made the essential things of the country's objectives. These men (almost all, if not all) suffered torments and had the capacity for austerity and self-discipline that they overcame due to devotion to the homeland – a sort of a Portuguese "*heimat*". Africa and its maps show how they were forged in the effort and transcendence of Portuguese heroes and not of a mass of immense compatriots of ours, without a name, who died in the adventures of a colonial empire which was the last to fall. Three names come to my mind that fulfil these deeds: Capel, Ivens and the Infant D. Henrique; they were men who appeared as protagonists in the development of Geography, but essentially of the History of Portugal. Of course, these men were important in the development of the knowledge of the Portuguese world, but what is highlighted is the way in which Geography was taught, through repetitions of heroes and their historical achievements. This type of narrative is not unique in Portugal; this approach was current through historic personages, especially in the early school years, when children occupied their imagination with bravery, creating, links with the country and the values of identity, sacrifice and perseverance.

3. " we push up the collars of our coats and walk briskly in a failed attempt to keep the cold out with soft summer coats, but the relentless wind blowing from the sea was endless and we keep on listening to the "sea talk" over the

1000 meters of road we're on. We want to reach the small group of houses and the small and unexciting tavern, which in our mind, resembles a comfortable bar in a refined hotel, where the controlled environment avoids the cold, tears and the constant dripping nose that prolonged contact with the wind always exasperates me.

- If I want a glass? Of course, I do! Beer always tastes better in a thin glass. I go to the counter near the door to order the last drinks, before we make our way through the dunes, where we set up our tent, during this camping trip we're on! We stand close to the seashore to hear the sound of the waves that slowly rocks us down to sleep!

In the dim light of the room, a group of men, sunburned by the mirror of the salty water which the cold ocean helps to wrinkle, lively discussing who is right about a national and regional historical fact - Who ordered the plantation of the Pine forest in Leiria? Some of the fishermen bet on D. Afonso Henriques others state D. Dinis was the one!

- Gentlemen – one of them addresses us. You, who attend school and study History, help us out here.

In weak voice, not to exacerbate a possible exalted reaction induced by the ethyl environment, I reply:

- D. Dinis.

- Say it again friend, louder! And so I do, now loud and clear, as requested.

The winning team rejoices and orders beers for everyone, including the two of us. Being treated by gentleman at the age of 17 and assuming I am able to answer their question, gives me a sense of stupid astonishment: ME?!

The conversation continues about the History and Geography of Portugal. I am astonished by the level of knowledge they show and by the fact they admire mine, as a natural consequence of having more qualifications than them.

- Where are you gentlemen from? – they ask us.

- Alentejo – I reply. And they, who must have no more than basic education, know the characteristics of 'my Alentejo' and compare it to Extremadura (the region we are in); they speak about the economic activities (linked to the sea

and the land), the lifestyle, and the main lines of behavior of the inhabitants of that region. The great amount of information surprises me more and more.

The night ended with the inevitable Portuguese jokes about ‘the Alentejo’ folks and with words that remain in our memories: Be aware that tough men are not only those who work with bulls ... at sea, you are also tough and brave! While leaving, the man is trying to complete and highlight the main characteristics of the inhabitants of the regions....”

A colleague of mine told me about another situation, in Lisbon, during his university student days, while going on school trips with Professor Orlando Ribeiro. This Professor, one of the most relevant celebrities in the Portuguese Geography, always had a peculiar behavior. When the bus trip started, Orlando Ribeiro kept silent, looking disgusted to the landscape and he continued to be silent until Vila Franca de Xira (about 25 kilometers away from Lisbon). After this point, the Professor began to speak and comment on the surrounding landscape, decoding the geographical phenomena of the itinerary. It seemed that overtaking Vila Franca gave him a sudden thrill and an unstoppable desire to speak. The fact is that leaving Lisbon, heading north, the northern industrial belt of the Portuguese capital is on the right bank of the Tagus. The landscape was, and still is essentially composed of factories and industrial complexes and an almost uninterrupted sequence of small towns, where poor quality homes and towers have been built in “the blink of an eye”; this is the typical landscape of areas where housing was necessary to accommodate an enormous population mass that would become a part in the industrial development process.

*Portugal, the Mediterranean and the Atlantic*, an essential book of Portuguese Geography, by Orlando Ribeiro, describes a country with this double influence, but it reveals an eminently rural Portugal where the geographical phenomena are explained and justified in a regionalist way. Traditional houses are made of materials that flourish in the region, activities (essentially agricultural) depend on edaphic, geomorphological and climate conditions (local and Mediterranean or Atlantic), etc ... Nothing in the book is wrong. On the contrary, everything is relevant and helps to explain the landscape; however, not the actual Human Geography reality. Nowadays, things are much more complex (as one could predict at the time) and far from the bucolic landscape which must have justified Orlando Ribeiro’s silence.

Other factors affect the landscape and to explain them we must go further than the Regional approach. Although the book is a milestone on the Portuguese educational system and has become a part of the national imagination that people still identify with the outlines of human regional character and characteristics of the landscape - the geographical regions defined by Orlando Ribeiro are coincident with the administrative provinces, at least to a certain extent.

Finalmente, em 1945, foi publicado o *Portugal, o Mediterrâneo e o Atlântico*, de Orlando Ribeiro,

no qual, atendendo a todos os critérios anteriormente utilizados, se delinearão “divisões geográficas” que mantinham a “subdivisão em regiões secundárias” que Lautensach iniciara em 1932, e que foi a divisão em que essencialmente se baseou, mas se adoptaram as linhas gerais da divisão de Barros Gomes, fundadas nas “espécies florestais dominantes” e que se sintetizava em “três grandes conjuntos naturais, a que se ajustam os factos essenciais da geografia humana: Norte atlântico, Norte transmontano e Sul”. Procurando uma “certa identidade de aspectos comuns” e “o sentimento de não sairmos da mesma terra”, Orlando Ribeiro delinearía uma nova síntese, que demoraria a ser transposta para os manuais escolares de Geografia. (Gonçalves Fernandes, 2018: 16)

Finally, in 1945, *Portugal, the Mediterranean and the Atlantic*, by Orlando Ribeiro, was published, in which, are gathered all the previously used criteria, “geographical divisions” were outlined that maintained the “subdivision into secondary regions” that Lautensach had started in 1932, which was the division on which it was essentially based, but the general lines of the Barros Gomes division were adopted, founded on the “dominant forest species” and which was summarized in “three great natural groups, to which the facts fit essential elements of human geography: North Atlantic, North Transmontano and South”. Looking for a “certain identity of common aspects” and “the feeling of never leaving the same land”, Orlando Ribeiro would outline a new synthesis, which would take a long time to be transposed into Geography textbooks. (Gonçalves Fernandes, 2018: 16) [Free translation of the author’s responsibility]

It is a fact that the regional division of Portugal may have taken a long time to reach the school textbooks; however, there has been an approximate regional division for a long time and Geography has scientifically supported and outlined it, although with somewhat different boundaries and with internal subdivisions – in the essence, these regions were the provinces. With greater or lower accuracy, Geography has “officialized” the Administrative Code of 1936 based “roughly” on Amorim Girão.

A “culpa” foi de Amorim Girão e do Código Administrativo de 1936. O primeiro porque empreendeu o *Esbôço Duma Carta Regional de Portugal*, “de início com intuítos puramente científicos, embora com vistas à sua possível utilidade ou aplicação”; o segundo introduziu um novo nível administrativo, ao recuperar a escala provincial, e consagrou uma adaptação em onze províncias, das treze divisões regionais originalmente previstas por Amorim Girão, refazendo os limites provinciais, ao conjugar e adaptar as edições de 1930 e de 1933, num “negociação” que resultou numa *divisão legal*, a qual, “em coloridos mapas, e tendo sobreposto os dezoito distritos, decoraram as paredes de todas as escolas do País ao longo de dezenas de anos, permanecendo muitos deles até aos nossos dias”. (Gonçalves Fernandes, 2018: 16/17)

The “responsibility” was of Amorim Girão and the Administrative Code of 1936. The first because it undertook the *Outline of a Regional map of Portugal* , “initially with purely scientific intentions , albeit with a view to its possible usefulness or application”; the second introduced a new administrative level, when recovering the provincial scale, and enshrined an adaptation in eleven provinces, of the thirteen regional divisions originally envisaged by Amorim Girão, redoing the provincial limits, by combining and adapting the editions of 1930 and 1933 , in a “negotiation” that resulted in a *legal division* , which, “in colored maps, and having overlaid the eighteen districts, decorated the walls of all schools in the country over tens of years, many of them remaining until today”. (Gonçalves Fernandes, 2018: 16/17) [Free translation of the author’s responsibility]

In Portugal, the inhabitants of a certain region feel part of that territory and admit specific characteristics in their lifestyles and behavior, which have been passed from generation to generation; they are stereotypes which are part of

a national imagination and identity. It is normal and usual that when asked about the place of origin the Portuguese name the region (province) before they answer the city or village, they live in.

This common reality has its origins in the great influence that formal education provided during the dictatorship, which was effective and managed to build regional and collective identities, based on the principles and values of a conservative Christian-Jewish culture. A rural country with humble, hardworking people, accepting their lot without questioning, as a destiny that God imposed in his wisdom. The point is that God has never imposed a thing and the ‘wisdom’ was nothing but a small dictator’s, with no vision of the country’s future.

How did this regional feeling spread and consolidate in the mythical imagination of the Portuguese? And how did it become associated with behaviors and lifestyles? The answer could be that it had to do with the role that Geography manuals have played through time; however, after exploring all these textbooks, we can state the textbooks did not lead to this reality - stacking knowledge without much use in the daily lives of the vast majority of the population was not the smartest way to promote identities and behaviors. It was primary education and technical basic education that created the behavioral patterns and the image of an unchangeable Portugal, which passed from generation to generation. This led the populations not only to a blind obedience, but also to an identification with a well-defined and distinct destiny, rooted in a geographical reality.

The teaching in the Estado Novo (New State) was oriented to play a role in a social stratification without changes, because if that occurred it could cause disruption in the hierarchies and undermine the power of the governing elites. The “determinism of birth” led to the resignation and fatalism, in a blind faith in the instituted authority over the ordinary citizens. Salazar's successor, Marcelo Caetano, wrote in 1928, in the newspaper “A Voz” (The Voice):

Uma criança inteligente, filha de um operário hábil e honesto, pode na profissão de seu pai ser um trabalhador exímio, progressivo e apreciado, pode chegar a fazer parte do escol da sua profissão e assim deve ser. Na mecânica da escola única, seleccionado pelo professor primário para estudar ciências para as quais o seu espírito não tem a mesma preparação hereditária que

tem para o ofício, não passará nunca de um medíocre intelectual (CORTESÃO, 1982).

An intelligent child, son of a skilled and honest worker, can in his father's profession be an excellent, progressive and appreciated worker, he can become part of his profession's choice and so it must be. In the system of the single school, selected by the primary teacher to study sciences for which his spirit does not have the same hereditary preparation he has for the father's profession, he will never be more than a mediocre intellectual. (CORTESÃO, 1982) [Free translation of the author's responsibility]

The school served the existing power and structure; social calm was essential to avoid the regime to be at stake.

Citado por Luísa Cortesão (CORTESÃO, 1982), o deputado Correia Pinto, defendia em plena Assembleia e a plenos pulmões, a 4 de Maio de 1938, que "... saber ler para acreditar no que dizem os jornais e publicações? Saber ler para fazer a cultura do ódio entre os homens e do ódio entre as classes? Saber ler para saber até que ponto vai a prática e a ciência do mal? Pergunto: vale a pena saber ler para isto?" E, defendendo o «homem do campo inculto e humilde, e que sabe qual o lugar que ocupa na sociedade» afirma: "Este homem tem uma cultura, uma polidez e boa educação; sabe tratar com os fidalgos e sabe tratar com gente da sua igualha. E chama-se a este homem um inculto, um desprezível analfabeto!" que, quando vai para a cidade "não pode aprender rapidamente a cultura da cidade e fica à mercê dos «meneurs», que o levam para a luta de classes, para a guerra social. (Simão, 2014:8)

Cited by Luísa Cortesão (CORTESÃO, 1982), deputy Correia Pinto, defended in the National Parliament and from the top of his lungs, on May 4, 1938, that "... knowing how to read to believe in what the newspapers and publications say? Knowing how to read to create a culture of hatred among men and hatred between classes? Know how to read to know how far the practice and science of evil goes? I ask: is it worth knowing how to read for this?" And, defending the "uncultured and humble country man, and who knows what place he occupies in society" says: "This man has a culture, politeness and



good education; he knows how to deal with gentlemen and how to deal with people of his kind. And this man is called an uneducated, despicable illiterate!" who, when he goes to the city "cannot quickly learn the culture of the city and is at the mercy of the" meneurs ", who take him to the class struggle, into the social war. (Simão,2014:8) [Free translation of the author's responsibility]

I have learned more geography reading books other than specifically geographical texts; books that contain amazing information about landscapes, customs, travels, cultures, lifestyles, legends, history ... Eight of the school textbooks I have in my possession, none of them of Geography, cover 18 years (from 1951 to 1969). They are manuals for technical and secondary cycle of education, and there is one of the 3rd class (Primary Education). They all contain reading texts, from selected authors, about a huge diversity of subjects; two of them present the Portuguese History through stories.

These books are a pleasant memory for me. Even today, when my head is tired from reading so many "papers", articles, thesis and other professional literature, without which my activity would be impossible, I take a rest by reading light texts. I often take these manuals and read what I have already read and reread since my childhood - the nostalgia of a time when everything seemed mild and cozy.

In an ingenious and subtle, but effective way these books taught, history, geography, but mostly the lifestyle and rules to live by in the Portuguese society of the 50s and 60. Portugal was deeply rural, backward and poor in relation to Europe, in full development, rebuilding its industrial apparatus and starting a specialized tertiarization, possible not only because of the hard work of the Europeans but also due to the enormous aid that the Marshall plan allowed.

The 3rd Class Reading Book (by Romeu Pimenta and Domingos Evangelista), dated 1954, is an example of how Portugal was presented (replicable at other levels of education). The 62 short texts can be divided in these categories: behaviors and social rules; Homeland and devotion to it; rural activities and practical knowledge linked to the agricultural world; the Empire; heroes of the Portuguese history; religion; Portuguese folk tales and legends. The book has a clear writing and leaves no doubt of what is right and wrong (accepted and

forbidden) in its messages, but all of them are in a fun way, or when it comes to Fatherland or God, it takes on a discreet, but effective, solemnity and austerity. The children also had the possibility to illustrate pictures and comment on them. There are small exercises of grammar and creative writing based on themes or images. Despite my disapproval about the way children were conditioned in school, oriented to a gray life in a sad country, we cannot deny that the book is tender and sympathetic, and makes one remember how persuasive it was in its most noble function: that instilling a taste for reading and knowledge is restricted, is certain, but effective!

*The History Book*, undated, but from the early 60s, looks frightening, having the image of an austere and slightly sad Infante D. Henrique, in his Burgundian hat (not a Portuguese one) printed on a black cover. Fernando Pamplona's manual is entitled "Portugal Gigante" (Giant Portugal) and it is a historical narrative. The collection is full of texts by Portuguese authors of undoubtable quality, parenthetic by other authors, less known, but who have intrinsic quality. The texts are slightly *naive*, smooth and easy to read. With the appearance of a children's story, these texts are effective in their message and are able to teach the intended message - the History of Portugal, through the country's heroes and great deeds (often extended to a dimension that never existed). The book covers the historical journey of the national territory, from the Romanization of the Iberian Peninsula to the Estado Novo, and features authors like Fernando Pessoa, Oliveira Martins, Alexandre Herculano, Vitorino Nemésio, or Damião de Góis. The Book is almost a return to oral culture, where writing does not exist and everything runs from generation to generation - telling stories close to a warm bonfire or fireplace, with a dim light can reach the listeners and teaches the way of living of a people as effectively as school.

If culture is any act of a people that is passed on to subsequent generations, then narratives and storytelling is undoubtedly one of the most effective ways of making culture that lasts over time. *Papalagi*, a little book that observes us from the outside, makes us reflect on the uselessness of a huge number of acts and procedures that were inculcated in us, not so much by the School, but by the stories that we have listened to. Currently, storytelling is successfully used in various social sciences; the unique, the personal are sometimes overlooked in metanarratives; this approach involves us in groups to which we belong, but which we

cannot identify with. Dictatorships understood the potential of a well-told story and used it in their advantage - the *Portugal Gigante* is an example of this strategy.

In this line of teaching history, using short narratives seems to have taken hold during the Estado Novo, extolling the heroes and great sagas of a small country, in size, but giant in its greatness of giving new worlds to the world.

We can find another book *Leituras da História de Portugal*” (Readings About the History of Portugal), with the main title *Casa Lusitana*. Like *Portugal Gigante*, this book follows the same line of narratives, with stories and curiosities about the country. Almost in a playful way, aspects so important as the sense of belonging, identity and knowledge of the collective past, makes us feel Portuguese, a real part of the whole. The entire history of the Portuguese territory is presented with texts that can address historical facts through legends, popular poems, episodes from the lives of national heroes, reports of battles and pictures of each era’s everyday life. Each student can read the different texts available, in class or outside, and inadvertently acquire information, true or romanticized, of events, regions and characters that will populate the imagination and become internalized by children and young people. This strategy was so effective that even many years later, what they had learned would remain in the memory, forming a collective imagination that became an identity and united the people by an invisible connection we all call nation.

Now, all make sense! The wisdom, knowledge and the identity of my companions of that ethylic night, in a small tavern, in a lost village, in a poor corner of a poor Portugal! So many years later I understand how a culture is imprinted. I know that was also the result of the dictatorship that delayed the country, that isolated it from a world in movement, but that was responsible for a strong sense of belonging and a way of being Portuguese. I don’t understand this as a “whitening” of the Portuguese dictatorship; on the contrary, to achieve a sense of belonging and identity, dictatorships are not necessary, but the pride of being part of a whole that represents us as a whole is an achievement of democracy, it’s more effective, conscious and consistent. Critical sense and freedom of thought make us stronger, more supportive and, above all, more human.

An example of my statement is a book by Professor Manuel Viegas Guerreiro (Father of modern Portuguese Anthropology), who is responsible for a school textbook for the 2nd year of the 1st cycle named *A Nossa Pátria* (Our homeland; 1961). Being an anthropologist, and in spite of his strong disagreement with the Portuguese regime, in this collection of texts Viegas Guerreiro reflects his way of seeing Portugal and the empire. The book uses prose excerpts of books, short stories, poems, legends, folk stories and riddles and frames a picture of the history of Portugal, and of the country with its regions, lifestyles and traditional behaviors, which forms and informs the readers, in this case the students. I still have the same pleasure of the first time I did it when I reread the small pieces of the water colored picture of the country, colonies and the peoples contained within this book. This manual is an impressive display and an introduction to great figures of the Portuguese culture and literature, even with names that opposed to the regime. Some examples are Alves Redol, Manuel da Fonseca and also the folk poet, António Aleixo. In addition to these authors, I will refer only to a small sample, which begins with Teófilo Braga (fleeting 2nd President of the Republic), Júlio Dinis, Almeida Garret, Eça de Queiroz, Fernando Pessoa, among other great names in national and international literature. Besides these authors, in the field of Humanities, we have names such as Orlando Ribeiro, Leite Vasconcelos and Viegas Guerreiro, himself making appearances in this school book.

From the beginning of the 60's, I have three more reading book (s) to support the study of the 1st Cycle of Professional and General Technical Education. *Readings*, by Virgílio Couto, methodologist aligned with the regime, structures his book according to the mentality that was intended to develop in the students: Deus (God), Pátria (homeland), devotion to studies and at the end of the book a short text by Salazar.

This manual uses, like Viegas Guerreiro's book, excerpts from literary books (national and universal literature), poems (popular and educated ones), legends, riddles, proverbs, fables and some interesting didactic innovations. Three times in the book, there is a play (one of them with the legend of Sopa de Pedra - traditional dish from Ribatejo), in which the lines are well marked so that they can be put in practice by the students in the classroom. These role-plays, included in a gray and monotonous type of education was a ray of sunshine in the daily repetition and another innovation

within the teaching of language, relatively rare in books of these levels of education; they were an embryo of Comics. The Trains (one page), The Great Adventure (Vasco da Gama's journey to India (9 pages), Marco Polo's journey (7 pages) and the Odyssey (7 pages) are the 4 incursions of reading, accompanied by drawings. This easy, playful and schematic way of presenting subjects was an attractive approach for teaching programmatic contents that would effectively be assimilated by the students.

In this digital age, cartoons are present in the daily lives of our young people and children and they are also used as a didactic tool; however, and unfortunately, this practice is relatively residual. Especially in Belgium, since the end of World War I, comics in Europe have been used to transmit messages to children and young people about behaviors, postures and attitudes, under the cover of short stories with *gags* that enchant and fascinate their audience. In Portugal, this type of approach is not common and has never been widely used in an educational and school context. The Comic Strip is a narrative in which the image, with (technical) movement, is complemented with a minimal text. It is a synthesis of image and text, and it is through this synthesis, in a small square, that we have an immediate reading of the story.

In this schoolbook, it is not exactly what happens; there is a short text, often in a field above the square and an illustration of what was written; not being strictly Comics, it is a more attractive way to allow students to have contact with complex literary pieces. In relation to the manuals, to which we had access, this is one of the exceptions which was pedagogically advanced, in a world where texts without illustration was the norm. Despite these innovations, the rest of the compendium portrays a rural reality where the urban and industrial world do not exist. In these compendia, economic activities are almost exclusively linked to the traditional primary sector: agriculture, forestry, fisheries and mines. The valued work is physical; industries, commerce and services are marginal. Only a small minority could aspire to be more than rural workers, and that small lot only got disqualified industrial jobs. The industrial sector was awakening in Portugal, in the 1960s with EFTA; nevertheless, the country's growth model was supported by low wages and poor differentiated labor. School played the role of ensuring a low formation to the populations, only the necessary to support the functioning of the productive apparatus, and to reinforce aspects related to reverence and obedience to the instituted power and the fear of God.

*Portugal Maior* (beginning of the 60s), Reading Book for Professional Technical Education, organized by Augusto R. Góis and António Henriques, with the collaboration of Virgílio Couto, presents a structure that corroborates what we state - three parts: **National Formation; Professional Training; The Taste of Good Reading**. The first part was divided: A - **Our History**: The great moments, The great Portuguese, Art and monuments, Our language. Second part - **Professional Training**: 1 - **The Exciting Romance of Work**: The great inventions, The riches of the Earth; 2 - **The feeling of Social and Moral Values**: The pride of producing, Stories of profit and example; fables. Finally, the last part is entitled, The best writers of Portugal: Prose; Poetry; Theater; Selected Places.

The textbook continues to be mildly effective in the country's message with well-defined regions, where the landscape, the natural riches and the character traits and ways of life stand out. All regions are the best, in some aspect, and men are always tenacious, sacrificed, hardworking and welcoming. Agricultural activities are described in their toughness, but also in the reward that hard work provides. The landscape is described in its beauty, but it is always compared to the quality of its inhabitants. There is a physical determination to impregnate men; in general, they are rude, but respectful, honest and hard workers, dedicated to the family and contributing to the welfare of the country. The bravery and resistance of men to natural adversities and rural work is always accentuated to the agricultural or livestock activity in the province; in Ribatejo, the bullfights and the brave and marialva (machos' stand) attitude towards a powerful and "aggressive" animal; in Alentejo, the struggle to produce bread for the country under the blazing sun that leaves men's skin wrinkled and burnt; in Trás-os-Montes, the ruggedness of daily life in the fields is compared to the granitic landscape; on the Atlantic coast, fishermen challenge the greater power of the sea by putting their lives at risk, with trust and faith in God. We could go on almost indefinitely, and we would always have a strong, rude and fearless type of man, similar to the natural landscape that surrounded him, working for a greater good and believing in a divine reward.

I will end my traverse, personal, and sentimental, but also as a geographer, by school textbooks that populated my childhood, but which are also documents from a recent past that should not be forgotten. Taking

Freedom for granted is the worst danger that Freedom itself has not yet overcome.

The *Seleta Literária* by Júlio Martins and Jaime da Mota, was approved by the Ministry of Education in 1950 but other editions were published adding new texts and new authors. Not being a manual, it is a fabulous journey book through the Portuguese literature, from the Middle Ages to the 60s. The selection may be questionable, by one or another author, but it is undoubtedly a group of authors who dignify the Portuguese literature; we will not quote them here, as it would be tedious and would add nothing to support this study. Actually, only by reading can one enjoy the quality of the represented writers. The selection is organized in Medieval, Classical, Romantic and up to the present time (1960); in each of these divisions there are texts of prose, poetry and theater, and 64 authors representing schools and trends in writing and literature. The illustrations are present, using facsimile photos of historical works of the country's history and literature.

They understand the organizers of this Selecta Literary [Literary Selection] that the graphic presentation of any textbook should require special care, so you can awaken a sense of satisfaction in the reader and, as possible, contributes for their aesthetic education. (Martins and Mota, 1950: 423) [Free translation of the author's responsibility]

It is with a deep "feeling of pleasure" that one can read it; it feels just like a book of stories or chronicles. It is a misfortune that the tradition of publishing this kind of books (not only manuals or practical workbooks) to support students has been lost. Learning by reading seems to have been removed from Portuguese teaching; obviously, this doesn't mean reading printed books or carrying the weight to school, but why not in digital format? If the digital age brings new challenges and new ways of studying and learning, this does not definitely implicate the death of literature. While for those like me, who were born with books and for whom physical contact with them is essential in the act of reading, for the new generations it is different; however, none of this implies a lack of knowledge about authors and literature or less contact with reading. Different does not mean breaking with the past. Getting used to living with difference is enriching, and in each age, it is good to look at the past, understand the present and hope for the best in the future. A colleague of mine citing an author that she could not remember told me this axiom:

"those who do not have a historical view of the past, end up with a hysterical view of the future".

The last school book we are presenting here is not worth by its level of literary quality (despite the fact that there are a few texts of unquestionable quality) but as a historical document from 1969, where one can subliminally read an “anxious country” and a disturbed regime guessing its end. In 1969, Portugal, the last of the Colonial Empires in Africa, was on 3 fronts of war (Angola, Mozambique and Guinea), and without seeing anything similar to a victory. Politically isolated from Europe and the world (in a stubborn "proudly alone"), Portugal needed popular support for the concept of a diverse and territorially dispersed nation and country. The economy was growing due to a slight (and inevitable) opening to the outside world, allowed by the participation in EFTA.

The country had moved towards greater universalization of education, which seemed the only way to sustain a modernizing industry and services. Basic reading, writing and arithmetic were no longer enough; the economy could only be supported with further education, although the main competitive factor was the low price of the work force and low investment in fixed capital. The war required more and more resources, not only economic and technical, but also human; the country drained its capital and men on a continent that the majority of the population did not know or feel like their own. Wars are not won only on the ground, but also with popular support; the Portuguese people, although obedient to power, were in poverty and losing the most precious thing they had: young people and men. 68 and 69 were the years of the greatest migration in the history of Portugal; escaping from poverty, war, censorship and lack of freedom, the country suffocated and not even the new President of the Council (the same as Prime-minister) changed anything essential - the dictatorship continued.

The “Anthology Portugality. We... are All of Us” [*Antologia Portugalidade. Nós... Somos todos nós*] is the mirror of an attempt, through education, to instill in young people the notion of a plural and multiracial nation, with dispersed territory. The objective would be to train young people filled with the spirit of sacrifice and to feel identified with this plural reality. This impossibility was visible to everyone in 1974, but this book was written to support the regime ideas and to educate young people for this “imaginary country” that clearly did not exist.



This book selects a set of texts that have traversed national history since its foundation; very few are renowned authors, but the majority of the writers in this book are figures linked to the regime, politicians, military and many others who fortunately have not remained in our memories. Portugal is praised through episodes that are enlarged in their importance, in order to mark the sacrifice of giving their lives to the homeland. It is also a markedly colonialist book, emphasizing the meritorious work of the Portuguese in Africa and the sense of charity of the nationals towards the “poor” and “backward” indigenous people. It was a book widely used in the colonies, but also in the metropole, essentially in Technical Education, from which a contingent of workers and soldiers would leave, some to support the economy of the country, others to destroy the created capital, in a war young people were forced to fight for a cause that was clearly not theirs.

This analysis of school textbooks, framed in a reality of the country where I live, is also a private and sentimental trip to my past. The basic idea that presided over my writing of this text was to “paint” a personal fresco of a period of our history, which should not be erased, but rather remembered not to make the same mistakes. Simultaneously, I proceed, even if fragmented, incursion into the role that Geography (my science) played in the education of a society and a country that, at the time, intended to be built as the image and likeness of a small dictator that remains in history not for the best reasons.

But there’s a feeling of joy that I cannot hide in the end - it was a happiness to travel along my childhood and youth through these old books that I random collected.

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## Brief Notes on Physical Geography of Portugal

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### Portugal: Position and Territory

Portugal is located on the European mainland and occupies approximately 89 015 km<sup>2</sup> of mainland territory, 218 km to 112 km (direction of the parallels), 600 km in the direction of the meridians (from 37°N to over 42°N), and 3 130 km<sup>2</sup> of island territory, which correspond to the archipelagos of Madeira and the Azores (fig. 1).

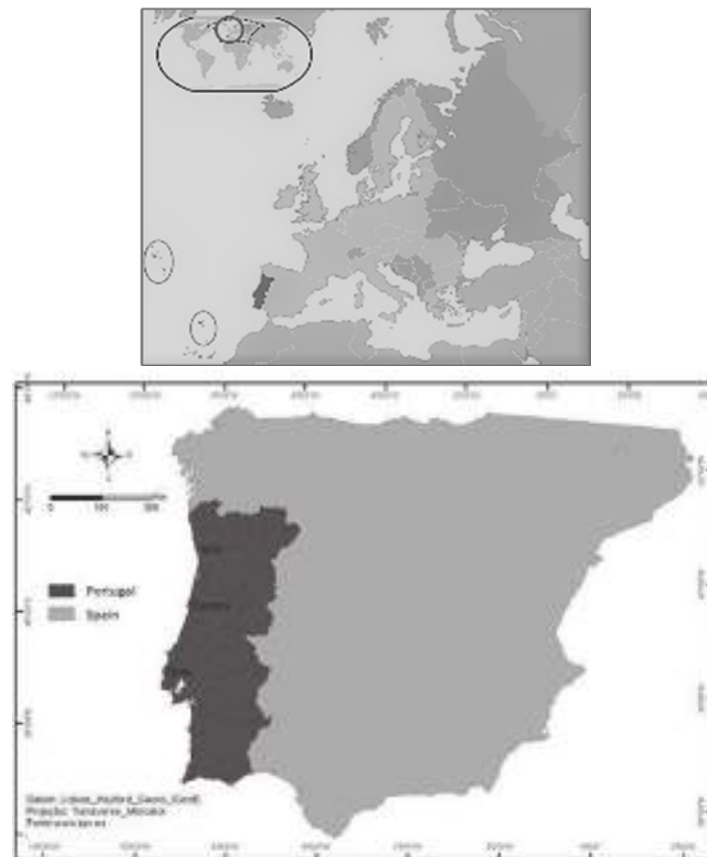


Fig. 1 Geographical location of mainland Portugal.

Portugal's position as the "Land's End" of the Iberian Peninsula led to the coast (848 km perimeter) and the border with Spain (about 1200 km) becoming extremely important. As this is the European peninsula closest to Africa, it acts as a bridge between the two continents, which made it an attractive target for Arab invasions. This fact played an important part of the history of the Iberian nations during the Middle Ages. Its Mediterranean position on the western edge of Europe turned the Peninsula into a crossroads, facing the sea and the New World.

### **The Iberian Peninsula**

The massif character of the peninsula is confirmed by its width, which is around 1000 km at the widest part. According to the meridians, the length varies from 820 km at the longitude of Gibraltar to 700 km at the longitude of Huelva. This character is reinforced by the fact that its structure consists of an extensive core of Precambrian and Paleozoic rocks (Hesperian Massif, Ancient Massif or Hercynian Massif). Rocks from that age seldom appear on the Balkan Peninsula and never on the Italian Peninsula, for example. As is natural in any peninsula, the coastline (4118 km) of the Iberian Peninsula is well-developed and about half of this is the Mediterranean coast. The coastline, especially the Mediterranean section, has developed with large arch formations supported by various capes (Finisterra, Carvoeiro, Roca, Espichel, Sines, Sagres, Santa Maria, Gibraltar, Gata, Palos, da Nao and de Creus, for example). The Cantabrian coast has a varied outline with a much more rectilinear character as a whole, although with detailed bays and inlets. In general, this coastline is not particularly jagged. The Galician rias and the Tagus estuary are the largest openings on the coastline of the Iberian Peninsula.

Of the southern European peninsulas, the Iberian Peninsula is the one linked to the continent by a narrow isthmus, some 440 km long, separated from Europe by the Pyrenees which, in a sense, gives the peninsula an insular character. Given its size, the Iberian Peninsula could be said to be a small continent with considerable geo-structural and climatic diversity which, together with cultural diversity, has helped to create extremely varied landscapes.

In this peninsula, featuring massif and plateau, large plains are relatively rare and only constitute important morphological units in the

Guadalquivir valley and the western part of Portugal. The plateau areas predominate, and of these the *Meseta Ibérica* stands out. It is in the interior of the peninsula, with an average altitude of close to 650 metres; inclining to the west with a slant of close to 0.5%, and having more important landforms on the eastern edge, which affects course of the main Iberian rivers (Douro, Tagus, Spanish part of the Guadiana, Guadalquivir). The main exception to this predominance of the route to the west is the River Ebro. The *Meseta* is bordered by reliefs, practically without exception, which accentuates the continental character. It is divided by the *Cordilheira Central* [central mountain chain], into a northern and southern sub-meseta.

The interior of the Iberian Peninsula is therefore almost always quite a long way from the sea. This distance is usually reinforced by this mountainous ridge or by the peripheral peninsular chains. Only to the west does it seem to be a little more open to a maritime influence. However, even there, a larger scale examination shows that there is almost always a ridge (known as a marginal relief or massif) which separates the coastal platform from the inland regions and which, although it seems insignificant, can be a considerable barrier to maritime influences (fig. 2).



**Fig. 2.** The marginal relief in the Porto area (adapt. from Araújo, 2007, 2008, 2016).

**The Geological Bases**

Included in the Iberian microplate, most of the Portuguese territory belongs to what we know as the Ancient Massif, Iberian Massif or Hercynian Massif. Granitoid and metasedimentary rocks predominate here. The rocky massif

consists mainly of Palaeozoic and cratonized Precambrian layers, mainly by the Hercynian orogeny, which prints an arched zonality to the different terrains that make up the western branch of the Ibero-Armonic arch. A large part of the Portuguese territory, from a geo-structural point of view, is included in the Central Iberian Zone (CIZ).

The major deformation that these terrains suffered at the time of the Hercynian orogeny seems to have concealed the less intense deformation of the Caledonian cycle. The CIZ suffered a strong turbidity sedimentation in this period, resulting from the dismantling of the Cadomian land mass. A much more complex evolution occurred after this period of sedimentogenesis. In the upper Cambrian, the rift corresponding to the CIZ underwent a transition to the right, generating elevations, separations and mass landslides which served to fill this basin (Leford & Ribeiro, 1980). This gives rise to a divergence between the Cambrian and Ordovician formations, which in any case are not homogeneous in all sectors of the CIZ, suggesting two exposed land areas: the Galicia-Trás-os-Montes (GTMZ) sub-Zone (Ribeiro, 1974) and another NE of Montes de Toledo (Escorza, 1977). A phase of continental rifting became established in the lower Ordovician, which generated strong crustal fracturing at the end of the Ordovician, naturally accompanied by strong basic magnetism and metamorphism. The Hercynian tectogenesis period seems to have begun in the Devonian, with the opening and closing of the Variscan ocean.

According to some authors (Ribeiro & Ribeiro, 1982; Schermerhorn & Kotsch, 1984; Pereira, 1985; Ribeiro & Iglésias, 1985; Ribeiro, 1986) it was only at the end of Silurian-beginning of Devonian that the Paleo-Tethys was formed. In the lower Devonian, the Variscan ocean came to encompass the rift that corresponded to the CIZ, reaching its apogee there. Tectonic activity in the Silurian is confirmed in the variety of facies displayed by the metasediments, which may indicate the alternating deposition of sediments, whether finer or coarser, which could be related to the greater or lesser intensity of the orogenic movements. Studies suggest that there were three phases of ductile deformation D1, D2, D3 (Noronha et al, 1979; Ribeiro, 2013), with the occurrence of other, fragile, phases, called D4. The closure of the Variscan ocean, which started in the mid-Devonian, went through a complex mechanism, with subduction and obduction of the oceanic crust followed by a collision between the Jaurentin-Baltic, Armorican and

Gondwana plates. Along with this, another complex mechanism was generated that explains the imbrication of Helvetic nappes and displacement - "flake tectonics" (Ribeiro & Iglésias, 1985).

From the mid-Devonian the nappes are stacked in the GTMZ (Andrade, 1988), which contributed to the deformation of the nappes themselves and of the native rock (Pereira, 1988). During this Hercynian tectogenesis, granitoids with isotopic age of 370 Ma are produced (Pinto, 1985), already deformed by D1, characterized by having a greater intensity in the innermost areas of the chain, giving rise to folds with a predominantly NW-SE orientation, with a vertical axial plane in the native rock layers, and diverging in the parautochthonous rock. D2 shear folds of monolithic symmetry developed at the base of the carrying planes, also resulting in granitoid formations 320 Ma of age.

This was followed by the collision of the continental margins that bordered the ocean, welding the two continental blocks and finishing the evolution process of "flake tectonics". After the lower Carboniferous, the basic crustal biotitic granitoids appeared, resulting from the crustal fusion of metasediments and pre-existing granitoid rocks. They are associated with regional metamorphism along the sutures. The deformation continued during the Westphalian, by conjugate ductile disconnections associated with D3 folds. Subvertical ductile shear zones NW-SE right and ENE-WSW left were then generated (Iglesias & Choukrone, 1980). Granites 310 Ma of age emerged, controlled by the shear zones, resulting from the fusion of either the pre-Hercynian granitic masses or metasediments and giving rise to leucogranites that generally occupy the cores of the large antiforms of the third phase (Silva, 2000). The D4 and later deformation phases took place in the upper Westphalian to the Permian. They were characterized by a stress field that caused a NNE-SSW fault system, more predominant than the right NNW-SSE (which resumed the D3 NW-SE system), because the rotation of the maximum compression facilitated the reopening of the NNE-SSW system (Ribeiro, 2013). Biotitic granites emerged at this stage due to the decompression of the crust which led to the melting zones being displaced to deeper crust levels, close to the mantle.

The epi-Hercynian materials occupy the West and South Edges, as well as the Tagus and Sado basins. Carbonate rocks, mainly from the Jurassic, predominate in the first, as well as formations composed essentially of

sandstone and sand of mainland origin, predominantly from the Cenozoic. Small basins can also be found scattered around the territory. However, these are basins where the thickness of the sediment is no deeper than 300 metres. The characteristics of the cover reflect the evolution of a continental margin which began in the Permian during the first episodes of the opening of the Atlantic. In general, these covers are tabular or moderately folded, except in the presence of complex evaporites near the base of the cover. Elongated, the Western Rim developed during the Mesozoic. It would correspond to a rift with a NNE-SSW orientation. The sediments that were filling it came from the Hesperian massif to the east and west, and the Berlengas islands, composed of granite, shale and gneiss, are evidence of this. Neritic sediments would predominate on the rims of this rift, which was followed by one with reef characteristics, with a thickness varying between 500 and 1000 meters. The deepest facies are mostly on the axis of the rift. From a structural point of view, the cover reflects the influence of the tectonic style on the rocky massif, and series of faults in varying directions are common because of the post-Hercynian realignment of the network of faults and late-Hercynian fractures. Examples are the N-S alignments, which correspond to the sub-meridian displacements on the western margin, such as the Coimbra fault; ENE-WSW, which broadly corresponds to upper Miocene age irregularities in the Baetica direction; NNW-SSE, predominant alignment of diapiric perturbations with a probable age between the Dogger and the Miocene; NW-SE and NNW-SSE.

To the south, the South Rim, also called Algarvia, is defined by an ENE-WSW slope. From a structural point of view two main areas can be distinguished. One is defined by the Sagres-Algor-Vila Real axis, with an ENE-WSW orientation; the second is defined by the Albufeira-Guilhim-Luz de Tavira axis, with an E-W orientation. Between them there is a moderately folded belt, with the anticlines sloping to the south, and there are often several overriding events. The tectonic activity occurred after the lower and middle Cretaceous, and is likely to have caused folding and tilting, especially along the main flexures. In general, the Algarve comes from a structure that can be described as a monoclinal dive to the south.

The structure of the Tagus and Sado basins consists of Paleogenic-Neogenic and Neogenic continental debris material, with marine and brackish intercalations corresponding to the most significant Miocene transgressions.



The structure is made up of sub-horizontal layers, with a maximum thickness of around 1400 metres, supported on the massif. To the west, the cover is made on the West Rim formations. The subsidence of the basin has produced a number of normal faults on the banks of the basins. Only the NW of the Tagus basin has reversed faults as a result of the overriding of the West Rim over the Cenozoic of the basin.

The relief as it is today is still the result of recent tectonic movements (Ribeiro, 2013), the neotectonic, which reinforces the persistence of the pre-Miocene movements, leading to interplate deformations in the post-Vilafrancan period (Vannev & Mougénot, 1981). These movements include movements with a large radius of curvature, which may have caused the rise of Pliocene surfaces in the interior, and their sinking at the coast; horst and graben systems in extension, occurring in late-Hercynian irregularities (graben) and relief of the "piano key" type in the marginal sector (Araújo, 2077; 2008; 2016); inverse faults; and disconnections and alignments of uncertain origin. Based on the elevation where certain deposits (on the coastal platform) related to tectonic movements are found, it could indicate that continental uplift has been taking place at a rate of the order of 0.1 mm/year and 0.13 mm/year (J. Cabral, 1988, 1993, 1995) in recent periods, covering around 120,000 years (A. Ribeiro, 1984).

### ***The Importance of Cold in the Relief in Portugal***

If we turn our attention to recent studies on the factors that had the greatest influence on the evolution of the relief during the Quaternary, it is undeniable that the cold and the processes associated with it contributed very significantly to the modelling of relief forms (Daveau, 1973, 1978; Rebelo, 1975, 1986; Cordeiro 1990a; Cordeiro, 1990b, 2004; Pedrosa, 1989a, 1989b; 1993, 1994; Pedrosa et al., 2007; Vieira, 2008; Martins, 2017). In terms of spatial effects and geomorphological evolution, periglacial phenomena left deep marks in the Portuguese mountains, and it can even be said that cryonival dynamics are the main cause of today's slopes (Ferreira et al., 1992). The processes which occurred during the last great glaciation were the source of huge amounts of deposits, which still regulate many of the slopes (fig. 3) (Cunha, 1988; Lourenço, 1996; Pedrosa, 1993, 1994; Pedrosa et al., 2001; Martins, 2017).



Fig. 3 Stratified slope deposit - Serra do Marão (North of Portugal) (Source: Pedrosa, 1993); deposit with Late Glacial characteristics - Serra do Alvão (North of Portugal) (Source: Martins, 2017); solifluction deposit - Baixo Alcovo (Centre of Portugal) (Source: Lourenço, 1996).

Paleozoids dating from 28 ky (a thousand years before the present) regularize deposits of heterometric characteristics, where huge blocks, usually imbued in a sandy matrix, are common. They have tended to be found on valley floors and their genesis is attributed to mass movements. It would have implied the simultaneous existence of freeze/thaw cycles, which would facilitate the fracture of the rocks, as well as climatic conditions that would enable the transport of materials via movements such as landslides, debris flow, and more or less generalized solifluction. This would be more active when higher temperatures thawed the snow, making higher quantities of water available in the soil, thus enabling the materials to be shifted more easily (Pedrosa, 2004; Martins & Pedrosa, 2011). These are deposits whose origins seem to be related to the cold before Würm IV (Pedrosa, 1993; 1994). The period between 28 and 21 ky BP (Paudorf oscillation) was marked by relatively dry cold periods, allowing several freeze/thaw cycles (Daveau, 1973, 1978; Rebelo, 1986; Cordeiro, 1986, 1988; Lourenço, 1996, 2008), enhancing the frost-shattering of the rocks and the transport of the materials

along the slopes by gelifluction, a fact corroborated by the presence of "coiffes" (Valadas, 1984) in several deposits (Pedrosa, 1993, 1994b).

Traces of significant climatic fluctuations can also be seen in areas closer to the coast. On the Minho coast, for example, at least five transgressive marine levels and several generations of colluvium associated with colder periods have been identified (Texier and Meireles, 1987, Carvalho et al., 2006). Most of the slopes were covered with arboreal vegetation at the end of the Pleistocene (Marine Isotope Stage 22, around 0.87 Ma) (Capraro et al., 2005; Muttoni et al., 2007; Ravazzi et al., 2009; Joannin et al., 2008; Magri, 2009). Subsequent temperature and precipitation fluctuations account for the significant changes in biodiversity and plant cover density. In the warmer periods, species such as *Quercus*, *Eucommia*, *Corylus*, *Carpinus* flourished, while wetter periods favoured *Carya*, *Pterocarya*, and *Juglans*, and in the colder ones it was conifers that predominated: *Picea*, *Tsuga*, *Cedrus*, *Abies* (Subally et al., 1999; Capraro et al., 2005; Magri, 2009). And it was around 15.5 ky BP that the Late Glacial started (Cordeiro, 1990), accompanied by a very significant rise in temperature. This continued until around 12 ky BP, at which time a new climate crisis began (Cordeiro, 1990; Nonn, 1966; Vliert-Lanöe, 1988; Garmendia, 1988). This could be related to the polar front shifting south from its previous location at latitudes slightly above 50°N (Ruddiman & McIntyre, 1981).

The Late Glacial had very important implications for the evolution of the slopes and was responsible for moving a great deal of material that had been the result of previous morphogenetic processes. Part of it was evacuated through river dynamics. The rest was deposited on valley floors and a large part of the sides were settled (Rebelo, 1975; Pedrosa, 1989a, 1989b, 1993; Cordeiro, 1990). This promoted the fixing of vegetation and prevented some erosive processes. It also contributed to the development of soils, even though, going by the traces found not to any great extent. The cold continues to be a determining factor in the dynamics of the slopes (Rebelo & Cordeiro, 1997, Martins, 2017), even at low altitude areas near the coast (Carvalho, 1964; Daveau, 1973, Carvalho et al., 2006). By this time the polar front was at latitudes very close to southern Galicia and northern Portugal (Ruddiman & McIntyre, 1981). One of the most striking features in the current landscape is the flat shape of the valley floors in areas close to the coast. These are well-defined valleys, generally deep and with convex sides and steep slopes, where

the river almost always meanders. Human action in preparing the land for farming purposes has naturally contributed to the flattening of the valley bottoms. However, this morphological characteristic was very much related to the gradual process of filling the valleys and small gullies very much in line with the quaternary dynamics. Indeed, in a periglacial environment, where precipitation is not abundant, it would have been difficult for the fluvial dynamics to transport the materials and so they were deposited on the valley floors very slowly. The conditions for their slow and steady entanglement were thus met (Pedrosa, 1989a; 1989b). The start of the Holocene, around 10 ky BP, was accompanied by a rise in temperature (Schulz & Paul, 2002). We often find paleosols contemporary with this period, reflecting the conditions of greater biostasis then prevailing. Meanwhile, the anthropic impact had grown. Fires and the beginning of agricultural activity were important factors in speeding up erosion (Chaline, 1985; Rebelo, 1985, 1986, 2007; Cordeiro, 1990a). The technological advances made by humans in the Neolithic contributed to a significant demographic increase and a general improvement in living conditions, with which sedentarism is not unconnected. The sub-Boreal period began around 5 ky BP (Goudie, 1979).

The significant increase of oak pollen (*Quercus*) in some mountains in the North and Centre of Portugal suggests that precipitation values increased (Cordeiro, 1990b), although alternating with colder and drier periods, almost always responsible for the sudden increase of grasses and heathers (Cordeiro, 2004). Around 2.9 ky BP (sub-Atlantic period), the increase in rainfall and temperature values may have contributed to a significant increase in tree species, especially birch (Daveau, 1988; Cordeiro, 1990b). The anthropic impact on the environment became greater, largely due to burning and agricultural practice, especially after the Christian Reconquest (Cordeiro, 1990b), when pseudo-peat bogs containing pollen from cereals, olive trees, vines, as well as plants (Chaline, 1985; Rebelo, 1985, 1986, 2007; Cordeiro, 1990b) became relatively common. There are frequent upthrusts in several slopes, whose genesis seems to be related to the Little Ice Age (LIA), where the process of rock frost-shattering, especially in the more shaded slopes and at higher altitude, would have been very intense (Pedrosa, 1994). This period started around the 14th century (Holzhauser & Zumbhul, 1999) or the 16th century (Grove, 1998; Pfister & Brazdil, 1999), and lasted until the middle of the 19th century. Temperatures at that time were significantly

lower than they are today, there was greater inter-year variability in rainfall and summers were cooler and wetter (Alcoforado, 1999).

### **The Climate of Portugal**

The annual cycle of the weather typical of Mediterranean countries is frankly original worldwide. It is characterized by a sunny, hot, summer without rain, clearly alternating with a cool season when wet days and cloudless days follow one another. In the rest of the world, rainfall is spread almost equally between all the months of the year, which is to say, it rains in the summer. In the Mediterranean climate, the hottest time coincides with the driest time. Therefore, this climate does not favour plant life and agriculture. The subtropical anticyclone of the Azores affects the subsidence of the air, which is therefore very dry. This prevents precipitation in the summer at the latitude of Portugal, and throughout the year at the latitude of the Sahara. Basically, the Mediterranean summer is a temporary northerly extension of the desert belt that separates the temperate zone from the intertropical one, in the western part of the continents.

In a transition belt such as the Mediterranean, relatively small variations in latitude can lead to major climate changes. The disturbance of the polar front in the autumn, winter, and part of spring, mainly affects the north and centre of Portugal, which are closer to the depressions that influence them. In the summer, however, the eastern influences (which barely penetrate the interior of the Mediterranean coast) and southern influences become more relevant. Thus, the whole area is crossed by a game of tension between the Atlantic and Mediterranean influences.

The Mediterranean characteristics extend over the whole territory, although less strongly to the north, and an increasingly noticeably as one moves south. North-western Portugal has many Atlantic features. But the lowlands of Trás-os-Montes and much of the south are undoubtedly Mediterranean. If we look at the rainfall distribution in Portugal, it can be seen that the contrasts are marked where the relief is more differentiated (figure 4). It rains more at higher altitudes, near the coast and, in particular, on slopes exposed to the sea winds; it rains less in depressions, especially those farther from the coast and sheltered by surrounding upland relief. Closer to the ocean, it rains more often, but less heavily. On sheltered slopes, the heating of air masses caused by the subsidence movement to the lee side of

the barrier no longer allows the condensation of the moisture they still contain. Inland and to the south, all areas with rainfall exceeding 800 mm are mountainous areas (Serra de Sintra, S. Mamede, Monchique and Caldeirão).

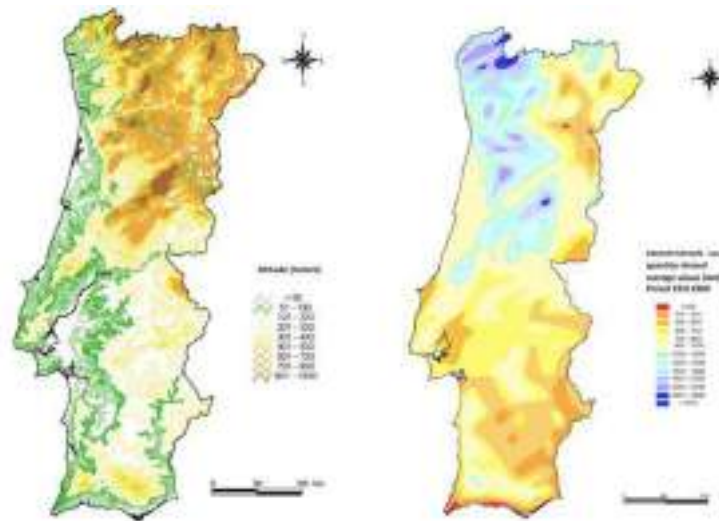


Fig. 4 Hypsometric and precipitation map of mainland Portugal (adapted from the *Atlas do Ambiente* [Environmental Atlas]).

The importance of the contrast between the interior and the coast can be clearly seen in Portugal. An example is the contrast between the coastal platform and the areas located inland of the marginal relief, in the Porto region. The Senhora da Hora and Serra do Pilar weather stations show annual temperature ranges (close to 9.3°C) considerably lower than Santo Tirso (close to 12.3°C), even though this last station is only 25 km from the sea. As might be expected, these characteristics become more marked as we go further inland, thus clearly showing the influence of continentality and the distribution of terrain features on the annual temperature range. This is always lower on the western side of the Peninsula (6.2°C at Cabo de S. Vicente around 10°C in the Porto region) than on the Mediterranean coast (the lowest is 11.4°C on the Costa Brava, but the most usual values are around 13-14°C). The temperature ranges on the western side of the Peninsula are also lower than on the Cantabrian coast (where they never fall below 8.9°C), which may be because this coast has poor exposure to the westerly winds. As we head inland, these values increase rapidly. However, it should be noted that this increase is not regular. There is a clear acceleration that coincides with the

condensation barrier in the north of Portugal. The isohyets thus describe a valley that coincides with the layout of the Cordillera Central and keep quite close (a variation of 3°C of temperature range within about 20 km), practically coinciding with the Portuguese border. This plot shows the clear importance not only of the distance to the coast, but also of the relief and, above all, of the consequences that has for precipitation and air humidity.

In fact, low air humidity contributes to its rapid heating during the day, and in the summer, and to a rapid cooling at night and in the winter, thus accentuating the values of the daily and annual temperature range. It is also a result of the moderating influence of the Atlantic, which has no parallel in the Mediterranean Sea. This is evident because the highest figures for the annual temperature range do not coincide with the geometric centre of the Peninsula. This is clearly shifting eastwards, occurring in the region of Soria (21.6°C), the Serranía de Cuenca (21.3°C), Aranjuez (21.4°C) and the Sierra de Segura (21.4°C), which are at ever shorter distances from the Mediterranean (between 200 and 100 km), as you move south. It therefore seems clear that the variation in the annual temperature range is not explained simply by the distance from the sea; it is strongly influenced by the distribution of landforms, and by good exposure to westerly winds (resulting in high values of precipitation, and therefore, air humidity).

In the winter, the polar front can reach only the south of the peninsula, allowing the anticyclones of thermal origin that build up in the interior of Europe in winter to extend ridges towards the Peninsula and constitute blocking situations, which have the effect of reducing in rainfall in some seasons, in the month of February. In the cool season, Portugal is generally included in the latitudinal belt swept by the depressions from the polar front. These are air-flow systems in which two different air masses converge. The rise of the warmest air mass favours the condensation of humidity, causing clouds to appear, with precipitation. Depending on how fast the air masses are moving, and their more or less northern trajectory, rain can be light or heavy in Portugal and tends to affect SW or NW facing slopes. As a rule, there is more rain in the north and centre of Portugal. But an associated depression may form further south, as a long tongue of cold air forces itself above the warm subtropical air. Depressions of this kind cause more abundant rainfall in the south of the country. When the cold air higher up is separated from its northern origin, there is talk of a there being a ‘drop’ of cold air,

which can persist for some time. Low pressure systems alternate with other situations where the dominant airflow from the west is interrupted because it is blocked by the presence of an anticyclone that extends upwards to a very high altitude. Depending on its position, cold winds blow from the north-east, or a great calm reigns, favourable to night-time cooling in valleys and basins, where a dense layer of radiation fog develops at dawn, or even a layer of frost.

The influence of the anticyclone from the Azores predominates in the summer, producing a widespread subsidence over the Peninsula. However, given its location in a transition area, it is possible to have typical summer situations in the winter and vice versa. The frequency of atypical situations is controlled by the difference in latitude between the northern and southern areas of the Peninsula. The thermal depressions in the interior of the Peninsula together with the Azores high are responsible for a north wind, which is stronger from late morning. The north wind causes a sea current which heads west under the Coriolis effect, and a compensation phenomenon forces water from the ocean depths to rise to the surface [upwelling]. As the Atlantic coastal waters are cooled, a layer of fresh, moist air develops above them, which is responsible for the formation of advection fog. This penetrates inland to some extent. Throughout the rest of the Peninsula, influenced by a very stable anticyclonic situation, the sunshine strongly heats the ground and the layer of air that overlays it, to the point of giving rise to a mass of so-called Iberian air, which is very hot, and blurred by a thick dry haze. The atmospheric pressure then falls in the heated inner layers of the peninsular atmosphere. If the thermal low strengthens, it even takes over the sea air of the western coast, interrupting the torrid heat of the interior for a few days. But the heating cycle soon begins again, re-establishing a very strong west-east temperature gradient across Portugal.

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**What is the Role of Coastlines in Plant Invasions Dynamics? Three Steps to Understand the Invasibility of Coastal Systems by *Acacia Longifolia* Andrews (Willd.): A Data Paper Synthesizing Geographic, Climate and Taxonomic Information from Global to Regional Scale**

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**1. General considerations**

Charles Elton in 1958:

“(biogeographic arrangement of the earth - the water tanks of different size connected by tubes of different size) Biological invasions are so frequent nowadays in every continent and island, and even in the oceans, that we need to understand what is causing them and try to arrive at some general viewpoint about the whole business” (Ecology of Invasion by Animals and Plants).

Globalization has broken the natural barriers to the fluxes of species – therefore, several exotic species could establish, multiply and dominate new environments to the detriment of native species – influencing local/regional or general extinctions (Mooney & Hobbs, 2000). One species is invasive when it acquires a competitive advantage concomitantly to the disappearance of natural obstacles, which allow fast dispersal and proliferation of new areas where it becomes dominant (Pyšek *et. al.*, 1995).

Biological invasions represent a threat to the ecological-geographical balance and conservation of native species populations (Vitousek *et. al.*, 1990) due mainly to the biodiversity loss (Williamson, 1996). Invasive Alien Species (IAS) increased rapidly during this century with extensive environmental effects on habitats, human activities, health, causing serious economic damage to agriculture and forestry (Pimentel *et. al.*, 2001).

The competitive advantage of IAS is frequently related to high phenotypic diversity, which allows the invasive species grow and reproduce under a variety of environmental conditions (Cronk & Fuller, 1995). However, variations in phenotypic diversity contributes to invasion success (invasiveness) if it allows the invasive species to develop itself under broad

environmental conditions (invasibility), or provides the invasive species with competitive advantages in favorable environments (Lockwood, 2007). Therefore, knowing the role of biological traits and adaptations in face of biotic (Williamson, 1996) and abiotic (Rejmánek, 1999) interactions (Richardson *et. al.*, 2001) allows understanding the success of invasive species. Among the environments under high risk of plant invasion are coastal ecosystems (Di Castri, 1990).

Coastal systems are influenced by several human disturbances, which are related to process from local to global scales (Carter, 1988). Sands and flow regulation (Carter, 1988), land use in the coastal zone (Nordstrom, 2010), deforestation (Carvalho *et. al.*, 2010), tourism and off-road activities (Nordstrom, 2010), and forest use for consumption and fire (Nordstrom, 2010), alter the physical characteristics of landscape, such as coastal structure, cyclic flood dynamics, drainage and sedimentation (Carter, 1988). Although there are a large number of studies on IAS in coastal ecosystems, the knowledge of dispersion patterns and vectors as well as management measures in coastal areas with different situations of invasion is scarce.

Invasibility is a key concept in the invasion ecology, and we propose here three major shifts on approaching this concept to improve the understanding of biological invasions toward management: a) shifting the focus from identifying changes in species biological behavior to the understanding of environmental dynamics, b) changing the focus on invasiveness to invasion susceptibility, and most importantly, c) change the focus on patterns description to historical analysis.

There are noticeable environmental contrasts between eastward and westward continental coastlines, especially in the middle latitudes. In this belt, also known as 'temperate zone', we can find several different climate types (Mediterranean, temperate, subtropical), and great contrasts that go from human voids (in the inland areas) to highly populated regions (mostly in the coastal areas). The latter are also traditionally characterized by intense regional and global movements of people and goods, and thus correspond to object of prime importance in the consideration of major drivers of biological invasions. On studying the invasibility in these regions we need to go beyond the effects of the environment on biological invasions; it is also needed to include the organism's effects on the environment. An unresolved problem in the invasibility study of the Australian *Acacia longifolia* species is that many of its invaded ranges, characterized by coastal environment systems in the boundaries between the continents with a long history of human presence are classified as 'temperate zones' when they are functionally a mix of specific climate conditions (oceanic, humid, subtropical, Mediterranean, and others different types).

More problematically, this climate zone is widely regarded as the ecological niche of *Acacia longifolia*'s invasive species distribution, both because the two *Acacia longifolia* species (*A. longifolia* subsp. *longifolia* and *A. longifolia* subsp. *sophorae*) occur predominantly in areas of coastal dunes with poor soils and ecosystems historically modified, and because the temperate Australian regions where many of these species occur can also climatically support both *Acacia longifolia*'s native and non-native species distributions. The Australian *Acacia longifolia* is a diverse global invasive coastal species, and research on the *A. longifolia* dispersal can provide new insights into the mechanisms that explain distribution patterns of non-native species in temperate regions. For example, the ability to outcompete native species under dry or wet stressful conditions in the temperate regions provides *A. longifolia* a growth advantage that, over time, results in relatively high abundance in drier conditions and lower abundance in wetter conditions. *A. longifolia* may also alter the environment by consuming resources, decreasing native coastal species performance or influencing ecosystem functioning.

In this work we aim to review empirical evidences using data for *Acacia longifolia* to analyze coastal systems invasibility, under three synthetic steps: (i) explaining the influence of geographic conditions on invasibility levels at large spatial scales; (ii) correlating this knowledge with the dynamics of *A. longifolia* invasiveness in temperate regions; (iii) seeking to understand the coastline invasibility phenomenon, using the *A. longifolia* as an empirical example of invasive species. We examine multiple lines of evidence to try to untangle these issues, about how determinant is ecological similarity between different ranges to explain the susceptibility to invasion by *A. longifolia*.

First, to understand the *A. Longifolia*'s invasibility, what is the best climate resolution of analysis? Evidences in several studies establishes that *A. longifolia* invasive species, most likely *A. longifolia* subsp. *longifolia*, is distributed by the Mediterranean and Humid Subtropical climates. Species occurrences further suggest that *A. longifolia* prevalence normally increases from the coastlines to the inlands, expressing a non-human influence in the establishment and spread of *A. longifolia* in this scale of analysis. Second, what current/potential distribution in native range should we consider? Distribution patterns analysis establish that, in the Australia, the *Acacia longifolia* fall within well-established bioclimatic envelopes but little is known about the *A. longifolia* patterns of distribution ranges in the other continents.

Third, the taxonomic scale. How much do we gain considering the subspecies level? Taxonomic differences of *Acacia longifolia* species from multiple most invaded sites across world clearly distinguish between these

areas. Specifically, *A. longifolia* subsp. *longifolia* is distributed in a higher covered area, with wide eco-geographical conditions, and have more significantly available plant traits information than *A. longifolia* subsp. *sophorae*. Critically, the significantly habitat susceptibility to invasion by *Acacia longifolia* species seems to occur much more frequently with *A. longifolia* subsp. *longifolia*. All these evidences are consistent with expected invasibility differences between invaded ranges by *A. longifolia*.

Fourth, to tackle susceptibility without losing detail: Are these evidences able to tackle the habitat susceptibility by *A. longifolia* invasions at global scales? All these reflections are used to produce conceptual models to contextualize the susceptibility of invasion by *Acacia longifolia* in the temperate climate regions and help to distinguish the different patterns that we encounter.

**2. Australian *Acacia longifolia* Invasion: Geographic, Climate and Taxonomic Scales in Invaded Ranges**

Over the last fifteen years the first inventories and lists of plants introduced and their occurrences to all world have started to appear; an important part of this global and regional data has already been published on the website: [www.gbif.org](http://www.gbif.org). The Europe Aliens Database ([www.europe-aliens.org](http://www.europe-aliens.org)); Global Invasive Species Database ([www.issg.org](http://www.issg.org)) and Invasive Species Compendium ([www.cabi.org](http://www.cabi.org)), and other international datasets (such as the University of California Berkeley & Jepson Herbaria database, the American invasive species database of USDA, and the Californian invasive species database CAL-IPC) (Figure 1), were used for an analysis of the distribution of *Acacia longifolia*, clarifying the behaviour of this plant species elsewhere in the world.

**Figure 1.** Important global invasive species database





**2.1. What is *Acacia longifolia*?**

*Acacia longifolia* is a small tree or shrub, fabaceae, that occurs in coastal environments and may reach up to 10 m in height (Oliveira-Costa *et. al.*, 2020). It is native to temperate Australia and is commonly used as an ornamental plant (le Maitre *et. al.*, 2011). However, *A. longifolia* is considered a weed in many places because of its fast growth and rapid dispersal. It invades coastlands, lake banks, streams, drainage channels and riparian zones, forming dense populations and replacing native vegetation (Carvalho *et. al.*, 2014). *A. longifolia* is difficult to control because of its extremely efficient reproduction through seeds (up to 11, 500 per tree) (Marchante *et. al.*, 2011).

**Table 1.** Taxonomic synopsis of *Acacia longifolia*

**Taxonomic synopsis (ISSG, 2021; CABI, 2021; FLORA OF AUSTRALIA ONLINE, 2021)**

<i>Taxonomic name</i>	<i>Acacia longifolia</i> (Andrews) Willd.
<i>Common names</i>	Golden wattle; Acácia-de-espigas; Acácia marítima
<i>Organism type</i>	Tree; Shrub; Small tree; Bushy shrub; Tall shrub
<i>Variants</i>	<i>A. longifolia</i> var. <i>longifolia</i> ; <i>A. longifolia</i> var. <i>sophorae</i>
<i>Occurrence</i>	Coastland; Grasslands; Riparian zones; Shrublands
<i>Uses</i>	Ornamental; Stabilize sand dunes in coastal areas
<i>Native range</i>	Australia (Southern Australia)
<i>Know introduced range</i>	Portugal; Brazil; Argentina; United States (California); South Africa; Spain; Uruguay; Italy
<i>Impacts</i>	Reduction in native biodiversity; Ecosystem change; Habitat alteration; Changes in hydrology and fire regimes
<i>Biological control</i>	Biological control agents used are the gall wasp <i>Trichilogaster acaciaelongifoliae</i>
<i>Highlighted morphological differences between the leaves of <i>A. longifolia</i> (Andrews) Willd. and <i>A. sophorae</i> (Labill.) Court.</i>	<i>A. longifolia</i> leaves: phyllodes 5-20 cm long and 5-15 mm wide, mostly broadest near or below middle, mostly thin and pliable, commonly narrowing gradually towards apex; pods mostly straight (near-coastal tracts and hinterland). <i>A. sophorae</i> leaves: phyllodes 5-12 cm long and 10-30 mm wide, often thick and sometimes fleshy, mostly broadest near or above middle, commonly narrowing abruptly towards apex; pods mostly coiled or contorted (mostly coastal).

**Figure 2.** Life forms, uses, and morphological differences of *Acacia longifolia*



***A. longifolia* (Andrews) Willd.**



***A. longifolia* (Andrews) Willd.**

***A. sophorae* (Labill.) Court.**

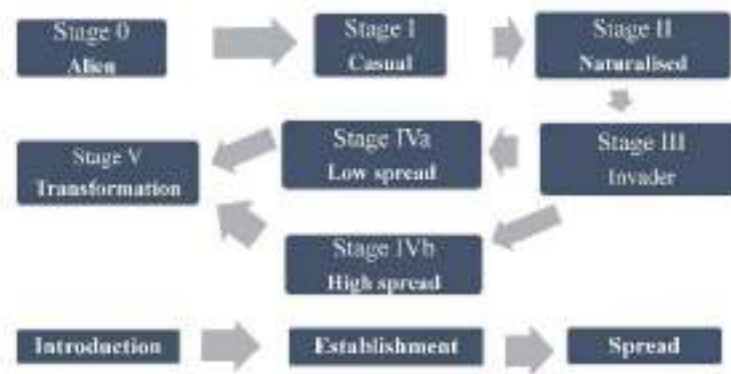
**2.2. Description of the problem invasive species**

Biological invasions have become a global problem, and the impacts caused by Invasive Alien Species (IAS) are increasing rapidly, as their spread into new regions can promote ecological, economic and social damage (D’Antonio *et. al.*, 1996). Accordingly, to EEA (European Environment Agency), IAS cost Europe between € 12 and 20 billion per year. Therefore, one of the first questions in invasion ecology is ‘what is the factors that determine biological invasions and successful invaders?’ (Williamson, 1996). The establishment and perpetuation of self-sustaining invasive communities is traditionally associated with environmental variables (invasibility) (Lockwood, 2007), although variations in biological traits among species (invasiveness) occupying similar environments indicate that sustainable invasive communities may also be mediated by intrinsic species attributes (Simberloff & Rejmánek, 2011). Based on this, there is scientific and societal concern that the factors explaining why some alien species become invasive and resistant in new regions include both biological and environmental characteristics. Therefore, research with invasive plant species has mostly been directed towards understanding properties that confer plant species’ strong invasiveness and invasibility elsewhere in the world (Pyšek *et. al.*, 1995).

**Table 2.** Terminology and definitions on invasion ecology  
Terminology and definitions (RICHARDSON & PYŠEK *ET AL.*, 2006)

<i>Native (=indigenous =autochthonous)</i>	A natural species, belonging to the region or country where it has lived for millions of years (Richardson & Pyšek <i>et al.</i> , 2006).
<i>Invasive</i>	Exotic species, frequently alien, that expand naturally and quickly (without direct human action) in natural and semi-natural habitats, producing important alterations at the level of composition, structure or ecosystem processes. They can eliminate others species (concept different to infestation) (Richardson & Pyšek <i>et al.</i> , 2006).
<i>Alien/Established</i>	Exotic species that form self-sustaining populations for several life cycles without direct intervention by people, or despite human intervention; they often recruit offspring freely, usually close to adult plants, and their persistence does not depend on an ongoing input of propagules (Richardson & Pyšek <i>et al.</i> , 2006).

**Figure 3.** Stages and phases of the process of invasion



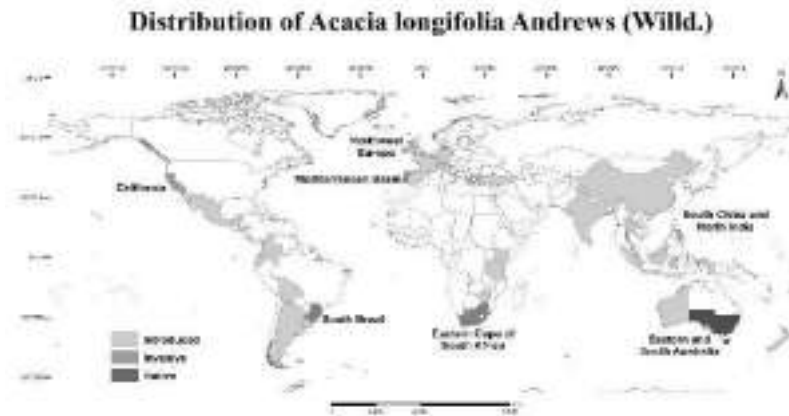
**2.3. The spatial distribution of *Acacia longifolia* and its process of invasion**

The early detection and identification of *Acacia longifolia*, combined with the analysis of the biology and eco-geographic conditions of this plant species, is very important for the different regions around the world (native and invaded ranges), mainly for areas well-known for their conservation values and ecological vulnerability (Oliveira-Costa & Pivello, 2017). Through this work, which was supported by the University of Coimbra (CEGOT - Centre of Studies on Geography and Spatial Planning), it was discovered that the number of *Acacia longifolia* species in its native range and in areas where this plant species has invasive behaviour elsewhere in the world, has increased extensively, and that this plant species can eliminate native species and seriously threaten the ecosystems in their natural places (Oliveira-Costa *et. al.*, 2020).

**Table 3.** Current geographical range of *Acacia longifolia*  
**Current geographical range (ISSG, 2021; CABI, 2021; GBIF, 2021)**

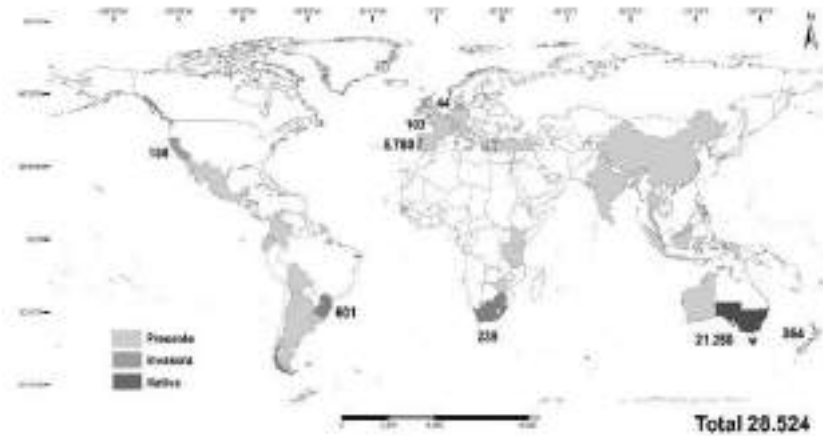
<i>Native range</i>	Australia (Southern Australia)
<i>Alien range</i>	Uruguay; Sri Lanka; La Reunión Island; Myanmar; Mauritius Islands; Kenya; Indonesia; India; Dominican Republic; Colombia; Argentina
<i>Introduced/planted range</i>	Turkey; France; Italy
<i>Invasive range</i>	Israel; South Africa; Brazil; Portugal; Spain; New Zealand
<i>Alien/stablished range</i>	United States (California)

**Figure 4.** World distribution of *Acacia longifolia*



**Table 4 and Figure 5.** *Acacia longifolia* occurrences  
Species occurrence (GBIF, 2021)

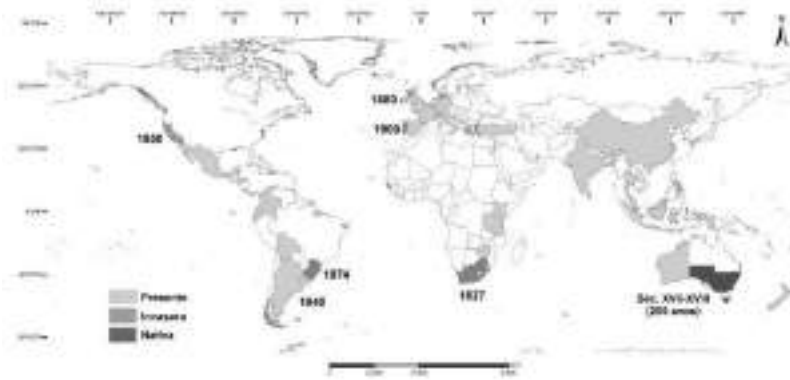
<i>World</i>	
28,524 occurrences	
<i>Native range</i>	
<i>Australia</i>	21,250 occurrences
<i>Invaded ranges</i>	
<i>New Zealand</i>	264 occurrences
<i>Antarctic continent (Tasmania)</i>	619 occurrences
<i>Portugal</i>	5,780 occurrences
<i>Brazil</i>	601 occurrences
<i>South Africa</i>	239 occurrences
<i>United States of America (California)</i>	158 occurrences
<i>Spain</i>	103 occurrences
<i>France</i>	44 occurrences
<i>Other countries</i>	
<i>Mexico</i>	1 occurrence
<i>Costa Rica</i>	1 occurrence
<i>Indonesia</i>	2 occurrences
<i>Belgium</i>	1 occurrence
<i>Switzerland</i>	1 occurrence
<i>Norfolk Island</i>	2 occurrences



Still, through this work an assessment was undertaken of the history of the invasion of *Acacia longifolia*. Endemic to Southern Australia, this plant species has spread to different countries around the world and virtually worldwide (including Portugal; Brazil; California; South Africa). It was intentionally/accidentally introduced to different regions around the world in the past (end of century XVII/begin of century XVIII), mainly for ornamental and commercial reasons (map below). Despite the impacts of such species already having been reported elsewhere – biodiversity loss, altered forest successional trajectories, disrupted nutrient cycles, increased potential susceptibility to new invasions – the history of invasion of *A. longifolia* and its potential distribution around the world is unknown, and there has been a notable lack of studies addressing its world invasibility and invasiveness, that make control and management efforts more difficult.

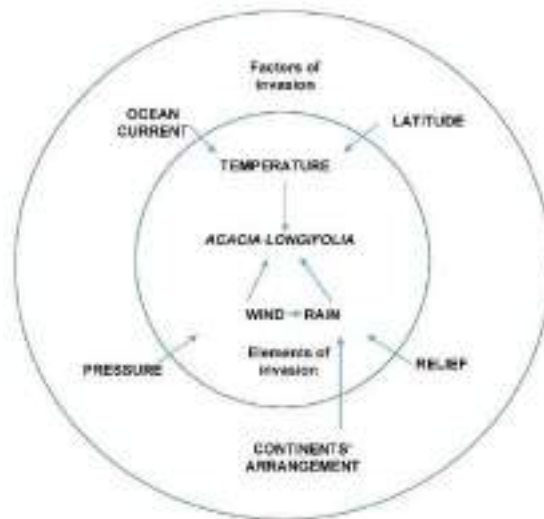
**Table 5 and Figure 6.** History of past introduction of *Acacia longifolia*  
**Ages of past introduction (GBIF, 2021)**

<i>Native range</i>	
<i>Australia (Southern Australia)</i>	end of century XVII
<i>Invaded ranges</i>	
<i>North and Northwest Europe (United Kingdom)</i>	year 1800
<i>United States (California)</i>	year 1850
<i>South Africa</i>	year 1827
<i>Brazil (Southern and South Brasil)</i>	year 1874
<i>Mediterranean Basin (Spain, Portugal, France)</i>	year 1900



The analysis of the invasibility traits (such as latitude/altitude, climate characteristics, relief and soil conditions, ocean currents, wind, the arrangement of continents) of sites that has been reported as prone to invasion by species widespread in coastal areas, is fundamental for understanding the potential invasiveness, and therefore, minimising the ecological and economic impact of these species. Nevertheless, there are many approaches to analysing the relationship between environmental traits and invasibility. One of them is to elaborate inventories and conceptual maps of the factors and risk elements of invasion by species with invasive behaviour elsewhere in the world. According to Simberloff & Rejmànek (2011), traits related to environmental attributes are amongst the most rapid drivers of invasion by plants.

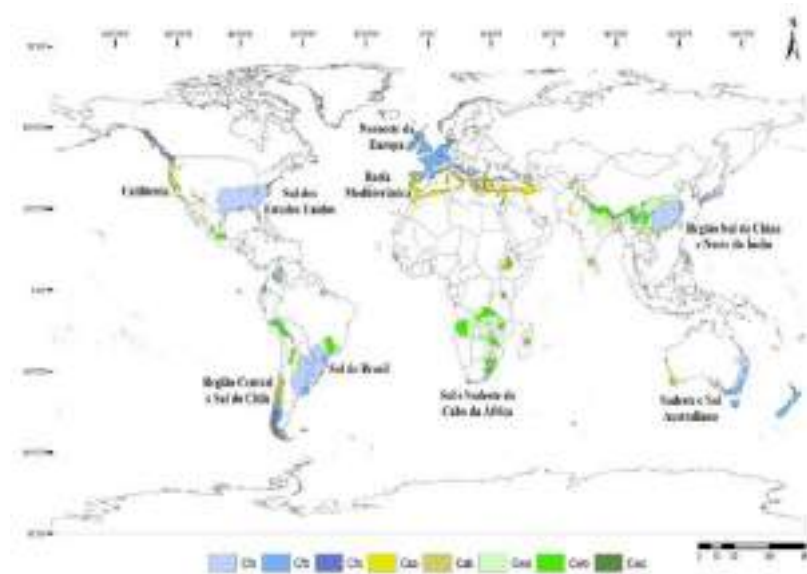
**Figure 7.** Factors and risk elements of invasion by *Acacia longifolia*



Inventories and conceptual models of invasion (considering species with potential invasive behaviour in coastal areas), with the situation of invasion and its current status, have been conducted in many different regions around the world, permitting predictions of suitable geographic locations for the establishment and spread of invasive species in coastal systems, and direct eradication efforts (Oliveira-Costa, 2014). In the literature, invasive plants are usually related to their high competitiveness in temperate regions compared to their native counterparts, and their abundance may be related to resource-rich zones (Oliveira-Costa & Pivello, 2017). The theoretical assumption behind this approach is the concept of invasibility, where the structure of the environment's traits can allow opportunities for invasion, where non-native species will be able to maintain viable populations given environmental and anthropogenic disturbances.

**Table 6 and Figure 8.** World climate and climate classification map  
**Temperate Climate (KOPPEN, 1900; HOLDRIDGE, 1947)**

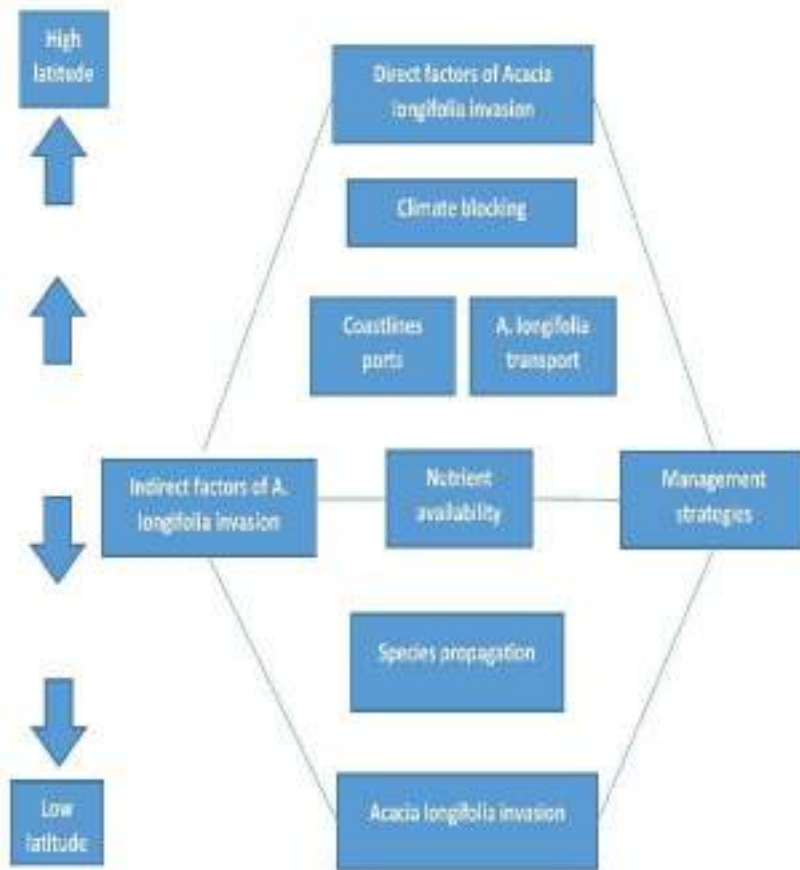
<i>Temperate regions</i>	<i>Latitude</i>	<i>Precipitation</i>	<i>Biotemperature</i>
<i>Oceanic climate (Cfb)</i>	56°30' - 42°00'	1.000 mm - 2.000 mm	6° - 12° (high humidity)
<i>Mediterranean climate (Csa)</i>	42°00' - 27°30'	2.000 mm - 4.000 mm	12° - 18° (middle humidity)
<i>Subtropical climate (Cfa)</i>	27°30' - 13°00'	4.000 mm - 8.000 mm	18° - 24° (low humidity)





Therefore, in this study we also aimed to verify a possible relationship between invasibility traits associated with the environmental conditions and the invasiveness of the *Acacia longifolia* species, by inventorying it through a conceptual model (Figure 9) with the factors and elements of the process of invasion by *A. longifolia*. We present the results of an ongoing project (Oliveira-Costa *et. al.*, 2020), develop through at the Centre of Studies on Geography and Spatial Planning of the University of Coimbra, that intended to extend to other countries the understanding of which elements and factors influence the *A. longifolia* invasive behaviour (Oliveira-Costa *et. al.*, 2020). These data were used for the present analyses about the status of invasion of *A. longifolia* to Portugal and Brazil. The study will evaluate: (i) the species propagation; (ii) the direct and indirect factors of *A. longifolia* invasion (climate blocking, the influence of coastlines seaports, the *A. longifolia* transport, nutrient availability); (iii) management strategies (Figure 9).

**Figure 9.** Conceptual map of the process of invasion by *Acacia longifolia*



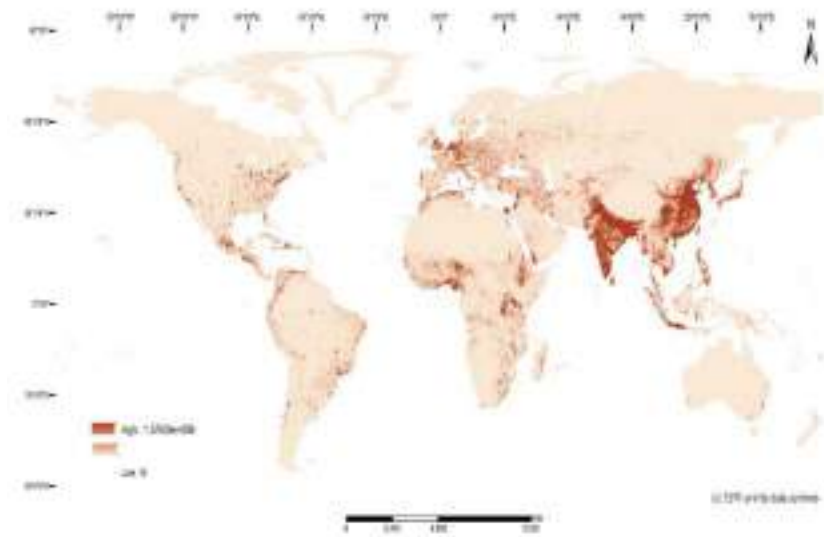
**Table 7 and Figure 9.** Overview of the most important airports and seaports of the world and the most densely populated cities

**World airports and seaports and global density populations (AIRPORTS COUNCIL INTERNATIONAL, 2021; WORLD PORT SOURCE, 2021; ICAO, 2021; ARCGIS, 2021)**

<i>World continents and sub-continents (according map position)</i>	Seaports (per TEU volume annually)	Airports (per million passengers annually)	Population density (per square mile)
<i>Eastern Asia (8)</i>	Shanghai, China (1°)	Beijing (Beijing Capital Airport), China (96 million passengers) (2°)	Shenzhen, China - 8 million hab. (44m hab per square mile) (5°)
<i>Southeast Asia (9)</i>	Singapore (2°)	Tokyo (Haneda Airport), Japan (85 million passengers) (5°)	Seoul, South Korea - 17 million hab. (43m hab per square mile) (6°)
<i>Western Asia/ Middle East (11)</i>	Jebel Ali, Dubai, United Arab Emirates (10°)	Dubai (Dubai International Airport), United Arab Emirates (88 million passengers) (4°)	Karachi, Pakistan - 9 million hab. (49m hab per square mile) (3°)
<i>Western Europe (14 and 16)</i>	Rotterdam, The Netherlands (11°)	London (Heathrow Airport), UK (78 million passengers) (7°)	St. Petersburg, Russia - 5 million hab. (22m hab per square mile) (26°)
<i>North America (6)</i>	Los Angeles, USA (17°)	Atlanta (Hartsfield-Jackson Airport), USA (104 million passengers) (1°)	New York, USA - 27 million hab. (8m hab per square mile) (50°)
<i>South, Eastern and Central Europe (13 and 15)</i>	Hamburg, Germany (19°)	Paris (Charles de Gaulle Airport), France (69 million passengers) (9°)	Athens, Greece - 3 million hab. (13m hab per square mile) (40°)
<i>Southern Asia (10)</i>	Jawarharlal Nehru Port, India (29°)	New Delhi (Indira Gandhi Airport), India (68 million passengers) (10°)	Mumbai, India - 14 million hab. (76m hab per square mile) (1°)



Figure 10. World population density



**Figure 11.** World air traffic



**Table 8 and Figure 12.** *Acacia longifolia* and *Acacia sophorae* occurrences  
Species occurrence (GBIF, 2021)

<i>Acacia longifolia</i> subsp. <i>longifolia</i> (13,855 occurrences)	
Australia + Tasmania	6,746 occurrences
New Zealand	194 occurrences
Portugal	5,780 occurrences
Brazil	600 occurrences
South Africa	231 occurrences
United States of America (California)	156 occurrences
Spain	102 occurrences
France	44 occurrences
Mexico	1 occurrence
Costa Rica	1 occurrence
<i>Acacia longifolia</i> subsp. <i>sophorae</i> (7,855 occurrences) *	
Australia + Tasmania	7,816 occurrences
New Zealand	33 occurrences
United States of America (California)	1 occurrence
Spain	1 occurrence
Belgium	1 occurrence
Switzerland	1 occurrence
Indonesia	1 occurrence

\*The *A. sophorae* occurrences in Portugal is not identified on GBIF

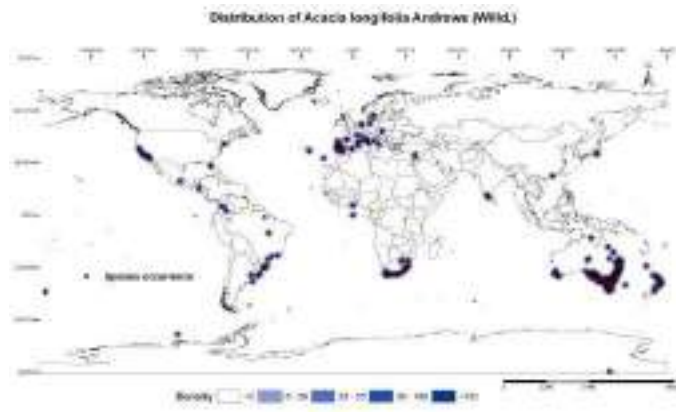


Figure 13. *Acacia longifolia* occurrence records

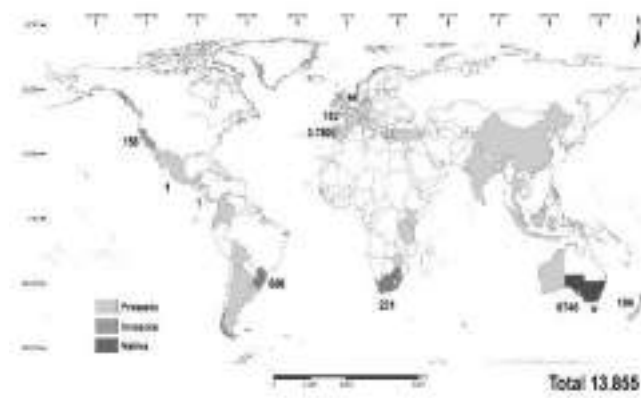
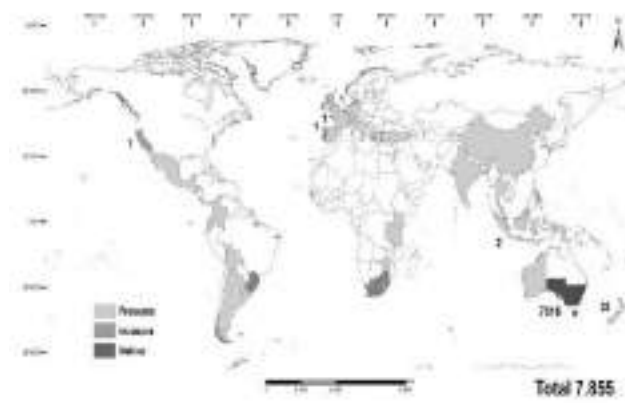


Figure 14. *Acacia sophorae* occurrence records



### 3. Changes in the Environment versus Biological Invasion Patterns by *Acacia longifolia*: A Comparison Between Continents, in Portugal and Brazil

The regional climate of all study areas is classified as a transition among Cfb (oceanic climate), Csa (mediterranean climate), and Cfa (subtropical climate), with a warm, humid summer, from June to September (north hemisphere) and from October to March (south hemisphere), and a dry winter from November to March (north hemisphere) and from April to September (south hemisphere).

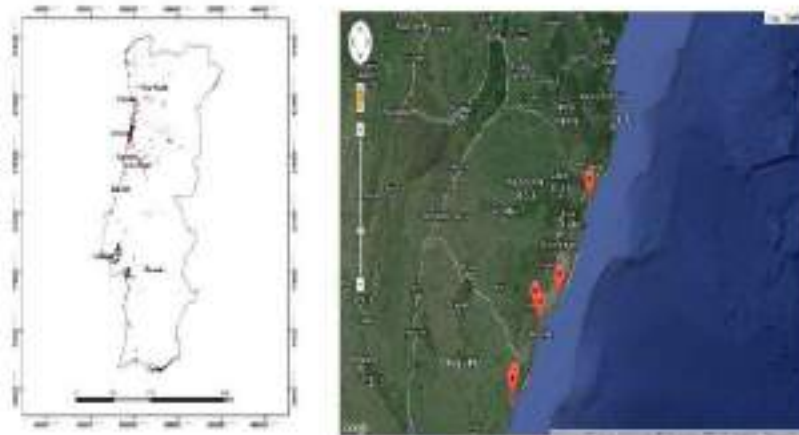
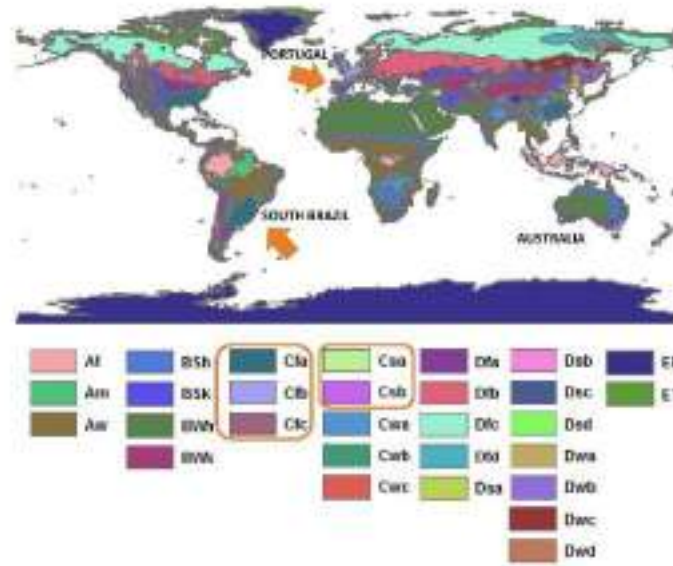
**Table 9.** Study areas at regional scale

<b>Regional study</b>			
<i>Study areas</i>	<i>Climate</i>	<i>Altitude</i>	<i>Invaded areas</i>
<i>Portugal</i>	Mediterranean (Csa)	2.000 m - 3.000 m	Portugal continental (Trás-os-Montes, Minho, Douro Litoral, Beira Litoral <sup>2</sup> , Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve), Madeira Island (Madeira and Porto Santo Islands).
<i>South Brazil</i>	Subtropical (Cfa)	1.000 m - 2.000 m	Curitiba; Florianópolis (Ponta das Aranhas, Parque Rio Vermelho, Parque Dunas Lagoa da Conceição) <sup>1</sup> ; Itapema; Restinga; Laguna; Araranguá; Pelotas (Estrada Praia do Laranjal, Loteamento das Acácias, Vila Assunção II) <sup>2</sup> ; Santa Vitória do Palmar <sup>2</sup> ; Hermenegildo <sup>2</sup> ; Barra do Chuí <sup>2</sup> ; Chuí <sup>2</sup> ; Rio Grande (Praia do Cassino) <sup>2</sup> ; Mostardas (Parque Nacional da Lagoa do Peixe) <sup>2</sup> ; Torres (Restinga) <sup>2</sup> ; Tramandaí (Horto Florestal do Litoral Norte/SEMA) <sup>2</sup>

<sup>1</sup>Some invaded areas and *A. longifolia* populations situated at Central Region of Portugal (ex. ‘Parque de São Jacinto’ and other places), and State of Santa Catarina/South Brazil (ex. ‘Parque Estadual do Rio Vermelho’ and ‘Parque Municipal das Dunas da Lagoa da Conceição’), are under CONTROL at the moment.

<sup>2</sup>The invaded areas and *A. longifolia* populations focus of the present investigation are the ‘Beira Litoral’ in Portugal (County of Leiria), and the State of Rio Grande do Sul in South Brazil.

**Figure 15 and Figure 16.** Study areas at regional scale (Portugal and South Brazil)



**3.1. What is the new in *Acacia longifolia* from the portuguese coastal systems? Ecological-geographical conditions of the *A. longifolia* in the portuguese region**

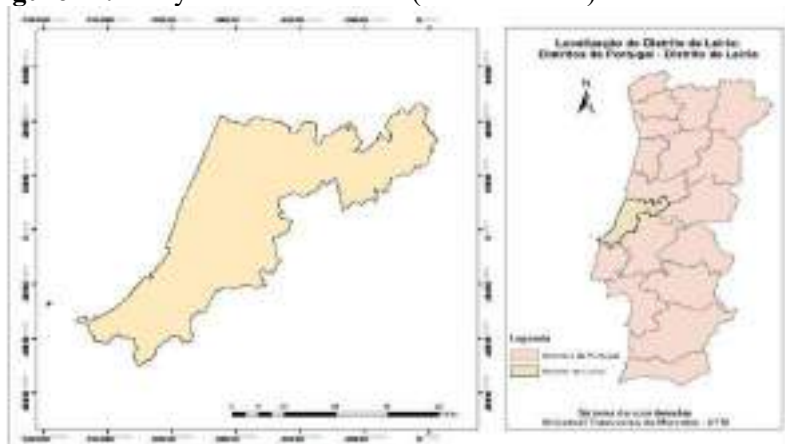
The country of Portugal has an area of 92.090km (Figure 14), which comprises the centre of this study. It is bordered on the north and on the east by another country, Spain. Portugal is comprised of 10.5 million inhabitants, and a human population density of 115 inhabitants per kilometre. The

dominant land cover consists of a mix of forests and underforests, and low-density residential areas. Continental Portugal has a significant tree layer made up of predominantly non-native forests represented by host species from the genera *Pinus* L., *Eucalyptus* L'Hér, and *Acacia* Mill. Historical and geographical factors, such as natural/human-created migration routes, opened up possibilities for the colonisation of exotic species, making this country prone to plant invasions. The present study was carried out from September to November 2019, in several coastal environments near Leiria (47°30'-48°30'W; 21°30'-22°30'S), in Leiria district, central Portugal; the sites were 10 km apart. The local climate is classified as a transition between Cfb (oceanic climate) and Csa (mediterranean climate), with a warm, humid summer, from June to September, and a dry winter from November to March. Leiria District is part of the geomorphologic province of Atlantic Coastal System and Sandstone. The drainage has a dendritic pattern, which reflects the regional geology. Under the whole area we delimited 1 transect with sub-transects, each containing presence and cover of *Acacia longifolia* and/or *Acacia sophorae*.

**Table 10.** Study areas at local scale (Leiria District - Central Portugal)

<b>Study areas</b>
Leirosa, Parque do Osso da Baleia, Marinha Grande, São Pedro de Moel, Leiria
<b>Species presence</b>
<i>Acacia longifolia</i> and <i>Acacia sophorae</i>
<b>Dominant vegetation and land use</b>
Mediterranean Biome - forest and underforests (native and exotics)
<b>Dominant soil type</b>
Brown earth and Sands ('cambissolos', 'fluvissolos', 'solo dunar')

**Figure 17.** Study area at local scale (Leiria District)





**Figure 18.** *Acacia longifolia* presence and abundance in Leiria District



**3.2. What is the new in *Acacia longifolia* from the Brazilian coastal systems? Ecological-geographical conditions of the *A. longifolia* in the Brazilian region**

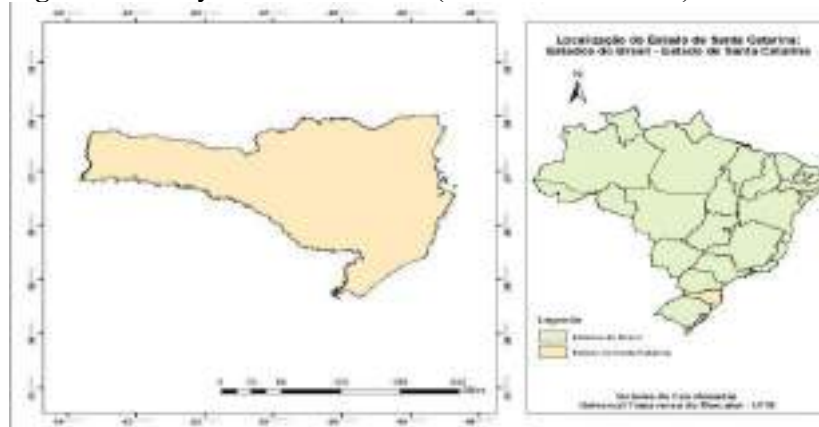
In 2008 *Acacia longifolia* (Andrews) Willd. was found in the Florianopolis Island, a south Brazilian coastal area well known for its conservation values and ecological vulnerability. Since then, the surface covered by *Acacia longifolia* has increased extensively forming thick mats, which can eliminate the local species and threats seriously the coastal systems in this place. The Nitrogen concentrations (N) in the shoot and in the soil layer in approximately a five-years-old stand of two Australian species (*Acacia longifolia* and *Acacia podalyriifolia*) and in a Brazilian specie (*Dodonaea viscosa*), as also the soil contents (texture, organic matter, pH, field capacity, density), were evaluated in the Florianopolis Island, Santa Catarina State, South Brazil. Was collected single samples of leaves and soils in aleatory areas of forest understory. The two Australian species presented high nutrient accumulation efficiency concentrating 30 mg/g nitrogen average: 30.545 mg/g by *A. longifolia* and 29.745 mg/g by *A. podalyriifolia*. The Brazilian specie just accumulated 20.810 mg/g of nitrogen in the shoot. In the soil layer there was only accumulation of 0.149 mg/g N, and was found 85%, 10% and 2% of matter level (respectively sand, fine particles and organic matter). The soil pH and soil density estimated was 5.5% and 1.5 g/ml, respectively. The field capacity measured for the forest understory area was 25-30% (under 72 hours' time analysis). The high accumulation of nitrogen and the soil conditions may represent an advantage to Australian species as nutrient

supply for invasion success, or a disadvantage to natives with biodiversity loss in areas subject to frequent invasion.

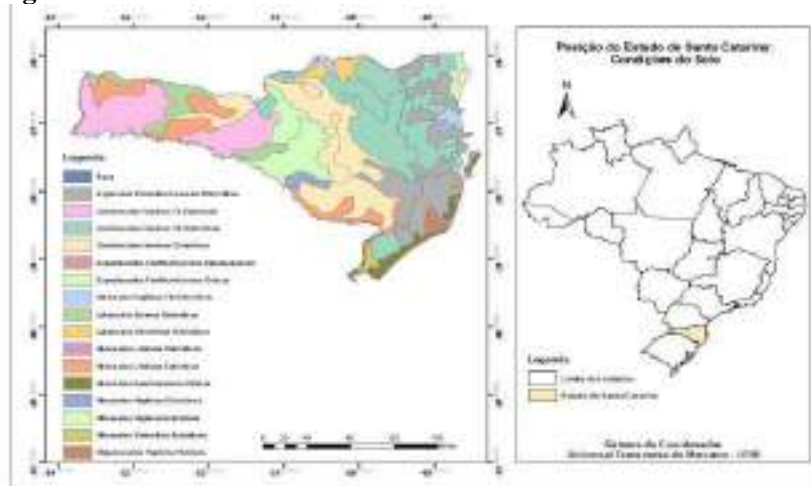
**Table 11.** Study areas at local scale (Santa Catarina State - South Brazil)

<b>Study areas</b>
Florianópolis - Parque Municipal das Dunas da Lagoa da Conceição and Parque do Rio Vermelho
<b>Species presence</b>
<i>Acacia longifolia</i>
<b>Dominant vegetation and land use</b>
Atlantic Forest - forest and underforests (native and exotics)
<b>Dominant soil type</b>
Brown earth and Sands ('cambissolos', 'fluvissoles', 'solo dunar')

**Figure 19.** Study area at local scale (Santa Catarina State)



**Figure 20.** Soil conditions in Santa Catarina



**Table 12.** Data on the *Acacia* ecology in Brazilian coastal systems

PRELIMINARY DATA ON THE ACACIA ECOLOGY IN BRAZILIAN DUNE SYSTEMS							
PRELIMINARY TEST PLANT N <sub>2</sub> -FIXING							
Study areas	<i>Acacia longifolia</i> (invasive)	<i>Acacia podalyriifolia</i> (invasive)	<i>Dodonaea viscosa</i> (native)				
<sup>1</sup> Rio Vermelho Park (I)	30,5mg/g	27,0mg/g	22,9mg/g				
<sup>2</sup> Rio Vermelho Park (II)	25,7mg/g	29,7mg/g	22,7mg/g				
<sup>3</sup> Lagoa da Conceição Park	22,5mg/g	26,2mg/g	20,8mg/g				
PRELIMINARY TEST SOIL CONDITIONS							
Study areas	Sand (average: 85%)	Fine particles (average: 10%)	Organic matter (average: 2%)	pH (average: 5,5%)	Density (average: 1,5g/ml)	Soil capacity (average: 25-30%)	Nitrogen concentration (average: 0,1mg/g)
Rio Vermelho Park (I)	86,6%	10,4%	2,9%	5,9%	1,5g/ml	31%	0,1mg/g
Rio Vermelho Park (II)	85,3%	10,8%	3,9%	4,2%	1,5g/ml	25%	0,2mg/g
Lagoa da Conceição Park	86,2%	11,5%	1,9%	4,8%	1,4g/ml	25%	0,1mg/g

<sup>1</sup>coastland area of the dune systems in the Parque Estadual do Rio Vermelho ('dunas primárias')  
<sup>2</sup>inland area with lagoons in the dune systems of Parque do Rio Vermelho ('dunas secundárias')  
<sup>3</sup>coastland area of the dune systems in the Parque Municipal das Dunas da Lagoa da Conceição

**Figure 21.** Some differences about use types and habitat preferences between portuguese *Acacia longifolia* (d; e) and brazilian *Acacia longifolia* (a; b; c)



**4. Final considerations**

The establishment of self-sustaining *Acacia longifolia* communities is traditionally associated with intrinsic species attributes, although environmental variables occupying similar indicate that sustainable *A. longifolia* communities may also be mediated by environment attributes. Endemic to Australia, *Acacia longifolia* has spread to Mediterranean and

Tropical regions virtually worldwide. Despite the impacts already reported elsewhere – biodiversity loss, altered forest successional trajectories, disrupted nutrient cycles –, there has been a notable lack of studies addressing *Acacia longifolia* invasibility among plant communities elsewhere in the world. Analysis on the environmental conditions is fundamental to understand the potential invasiveness, and therefore, minimize ecological and economic impacts. In the literature, *Acacia longifolia* is usually related to its high competitiveness in temperate regions, and their abundance may be related to resource-rich zones. Therefore, in this data paper we showed the importance of invasibility to understand the process of invasion by *A. longifolia*, verifying a possible relationship between environmental traits associated to species invasibility to the invasiveness of *A. longifolia*, by comparing it with coastal species between Mediterranean and Tropical regions. We presented here some preliminary results of an ongoing research project that intends to extend to other countries the comparison among *Acacia longifolia* species from different ranges.

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