Abstract

The paper is focused on the interrelationship between demographic resources and sustainable development, illustrated by the case studies of two regions of Portugal: Alto Minho in the North, and Alto Alentejo, in the Centre-South. In the introduction, conceptual issues related to demographic sustainability and rural development are discussed. In the following sections, the main socio-economic features of these two regions and a brief diagnosis of their population structure and dynamics are presented. This serves as the basis for the identification of strengths and weaknesses, as well as of the opportunities and threats related to demographic sustainability of those regions. In the concluding section, guidelines for promoting sustainable development of Alto Minho and Alto Alentejo are presented.
**Introduction**

Over the two last decades, demographic, social, economic, cultural and environmental processes, both endogenous and exogenous, have intensified internal differentiation of most rural areas on the peripheral EU regions (Lovering, 1989; Marsden, 1996; Ilbery and Bowler, 1998). The whole range of demographic processes was marked by intensive change, i.e., from migration flows (internal, external and return) and natural increase to changes in the age composition and socio-economic characteristics of the population. At the same time, urbanisation and urbanity, (re)valorisation of traditional products and habits, industrialisation and terciarisation of the rural economy, as well as development of transport and communication infrastructures, have also increasingly contributed to the internal differentiation of rural areas.

In rural Portugal, spatial differentiation has occurred at all levels - national, regional and local. It has mostly been an outcome of the intensified multifunctional land use and diversified livelihood activities of rural populations (Amaro, 1984; Gaspar, 1987; Ferreira, 1993; Cavaco, 1994; Covas, 1997; Joaquim, 1999; Costa, 1999).

A major consequence of the growing internal differentiation of the Portuguese rural space has been the polarisation of trends, often non-desirable, in population growth and structures. Population decrease and ageing have characterised vast parts of the rural areas, while, at the same time, excessive population densification has occurred in specific limited zones within these areas. It is likely that such divergent processes undermine the sustainability of the demographic resources, i.e., the pillar of sustainable regional development in all its dimensions - environmental, economic, social, political and cultural. This can become an obstacle to the establishment and implementation of development programmes directed towards valorisation of comparative and competitive advantages of rural areas, as well as for their economic, social and spatial cohesion.

Despite the importance of demographic resources of rural areas as the basis for sustainable development, population has often been neglected in related spatial planning tools and measures. Development agents perceive much more frequently population groups only as the beneficiaries and rarely as the active stakeholders, sometimes pivotal for sustainable rural development (Roca, 2000).
In this paper an attempt is made to approach population as an important resource for sustainability of socio-economic and cultural change. This will be illustrated by the case studies of two Portuguese rural regions – Alto Minho, in Northern Portugal and Alto Alentejo, in Southern Portugal. These two regions were selected because they are peripheral and marked by pronounced internal differentiation. Moreover, they are in different phases concerning the multifunctional use of the rural space and the diversification of economic activities. The main objectives of the paper are: (i) to outline socio-economic profiles of these two regions and identify the strengths and weaknesses of their demographic resources, as well as to determine opportunities and threats to their further development; and (ii) to contribute to the discussion on the policies that should promote demographic sustainability as a key-factor in sustainable regional development.

The main indicators chosen for the diagnosis were: population size and density; share of urban population; population growth and net migration rates; masculinity and age-child ratios; share of population with higher education degree; total, female male and youth participation rates; share of students in the non-active population; shares of male and female active population in agriculture, industry and services; shares of employers, employees, self-employed and non-paid family workers in total active population; shares of highly skilled, skilled industrial, agricultural and non-skilled workers in the total active population.

The basic spatial unit in this analysis is the county (Port. concelho), classified as "rural", "peri-urban" and "urban" on the basis of the officially adopted demographic and spatial planning criteria (INE-DGOTDU, 1999). The main sources of information are the Population Census of 1981 and 1991, the last published Agriculture Census (1989), and demographic estimates for the period of the nineties, released by the National Statistical Office.
Basic regional profile and demographic diagnosis

Alto Minho

Basic Features

This region is located in the Nortwestern part of Portugal, along the Atlantic coast and bordering with Spanish Galicia. Its geomorphology is mostly mountainous and hilly, particularly the interior part of the territory. Fertile soils are concentrated in the narrow Minho and Lima river valleys.

Most of the population (over 60 %) lived in peri-urban areas and only 6 % in Viana do Castelo, the regional urban centre. Ponte de Lima and Valença are the most important local urban centres in the Lima and Minho Valleys, respectively.

Administratively, the region consists of ten counties, of which two (an urban and a peri-urban) are on the Atlantic coast and others are in the interior. The peri-urban counties in the interior are mostly in the two river-valleys while the remaining ones are classified as rural and mountainous.

Substance family farming predominates in agriculture. The average arable area of the landholdings is 3.5 ha, with fragmented plots. The only exception is increasingly market-oriented viticulture and dairy farming on larger farms.

Large industries are concentrated only in Viana do Castelo, while small and micro industrial enterprises are disseminated all over the rural area. In the 1990's, local and external investors have started innovative small and medium-size enterprises, using the endogenous natural and human resources. This was stimulated by the inauguration of new "entrepreneurial zones and poles" in the valleys of Lima and Minho. The increasing number of producer services enterprises has compensated for the shrinking construction sector.

It is worth stressing that moderate industrialisation has contributed to the preservation of the traditional cultural and natural landscapes, which has been an added value to the
flourishing tourist industry (especially rural tourism) in the interior parts of Alto Minho. Small and medium-size retailing has marked the commercial activity in all parts of the region.

An important factor in this region's economy have been emigrants' remittances and return migrants' savings, though their volume has decreased since the late eighties.

The traditionally weak transport infrastructures have only recently been significantly improved with the national freeway to Spanish Galicia and a new regional road network, mostly along the two river valleys, linking the main local urban centres with Viana do Castelo.

Demographic Resources

In 1998, the population was 120 000. The average population density was 113 per km2, with higher values for Viana do Castelo county and other two peri-urban ones on and near the Atlantic coast, and lower values for the counties in the interior of the region (figure 1).

While population decline prevailed until the end of the eighties, slight population increase was registered between 1991 and 1998. This was mostly due to population increase in the coastal area and slower and/or stagnating rates of decrease in the interior counties. Return migration from abroad and in-migration from Portuguese urban areas have been a continuous feature, though less pronounced in the nineties. Temporary residents have become increasingly important, especially emigrants in the interior parts of the region and second residents on the Atlantic coast.
Population ageing started in the eighties and intensified in the nineties. In 1998, the child-age ratio was 106.3, with a strong dichotomy between the coastal and riverine counties and the ones in the interior, particularly in mountainous zones: the child-age ratio was bellow 100 in the former and almost 200 in the latter group (figure 2).

In 1991, more than two thirds of the population of Alto Minho had only incompletely or completed elementary schooling. The level of educational attainment was even lower in the interior rural and peri-urban counties. Only 3.6% of the population had completed college education, and it was mostly concentrated in Viana do Castelo (51.9%) and Ponte de Lima (10.1%). However, the number of students increased considerably in the nineties, mostly thanks to the opening of professional high schools and university colleges.

In the early nineties, the labour participation rate was relatively low (41%) and has stagnated in relation to the previous decade. No differential spatial or functional patterns could be identified in this respect. This could be related to diverse factors such as population ageing, educational attainment of the youth and the importance of agricultural activities. The female participation rate increased in most counties, although constantly lower than the rate for the male population. Although a decrease in the total participation rate was registered in the rural and peri-urban counties, the values for women decreased less, or even slightly increased in some counties, which probably reflects the increased ageing and, consequently, feminisation of agriculture. On the other side, a considerable increase in the total and female participation rate was recorded in Viana do Castelo and Ponte de Lima, which, probably, has to do with the widening of non-agricultural employment opportunities.

The employment status of the active population changed significantly between 1981 and 1991: the number of employees and employers increased, while the number of self-employed and non-remunerated family workers decreased. By the end of the eighties,
the groups of employees and employers predominated in the coastal counties and in Ponte de Lima and Valença, while the employers represented more than half of the labour force of the counties in the interior of the region. Such trends are related to changes in population distribution among sectors of the economy and their impact on spatial organisation (figure 3).

In the eighties, the population employed in the primary sector decreased 39%, while active population in the secondary and tertiary sectors increased 13% and 55.9%, respectively. Thus, in 1991, the population was almost evenly distributed between the secondary (30.2%) and tertiary (38.3%) sector. In turn, employed in agriculture represented only 28.7% of the total active population.

In 1989, the majority of the population in the interior, particularly in the mountainous counties, was active in family farming (Cavaco and Ramos, 1994: 123). Part-time farming was not a rare phenomenon, but much less intensive in the interior. The pluriactivity was a livelihood feature of almost one third of the heads of farm-households and their husbands or wives. It seems that pluriactivity became even more typical for the agricultural population in the nineties, thanks to the increasing number and spatial diffusion of non-farm employment in the secondary or tertiary sectors.

Another important trend recorded in the eighties was the improvement of the socio-professional structure of the active population. In almost all counties, the number of highly skilled workers in all three sectors of the economy, and especially of skilled industrial workers, increased significantly, while, at the same time, a decrease of non-qualified labour was registered. In 1991, farmers still predominated in the counties of the interior of Alto Minho and qualified industrial workers in the coastal counties, as well as in Ponte de Lima and Valença, while highly skilled workers were concentrated only in Viana do Castelo (figures 4 and 5).
Alto Alentejo

Basic Features

Alto Alentejo is located in the Central-South-eastern part of Portugal, bordering with the Spanish Extremadura. A vast sedimentary plain in the South and West and mountains and hills in the North and East mark its landscape.

The region is predominantly rural, characterised by large villages and dispersed micro-settlements. It is administratively divided in fourteen counties, ten rural and four urban. The medium sized town of Portalegre and the small sized town of Elvas, near the border, are the main urban centres.

Almost one half of the landholdings are medium-size or large farms and cover most of the arable land. In the nineties, the effects of the application of measures of the Common Agricultural Policy (CAP) led to greater land concentration and the replacement of grain fields by pastures. Traditional extensive agriculture has been oriented to the production of cereals, olive oil, wine and meat (lamb, beef). The traditional production of dried fruits, cheese and pork products has been recently revived. Climatic and soil conditions are also favourable for the production of cork.
Small-size family enterprises dominate the industrial sector and are unevenly distributed. The extraction and processing of granite, an abundant endogenous resource, is expanding. Nevertheless, retailing and services predominate in the regional economy.

The well-preserved cultural landscape and built heritage represent an important asset for the development of tourism and leisure industry, though it has not yet gained a momentum.

Until the mid-eighties, Alto Alentejo suffered from weak transport linkages among urban centres and to Lisbon. Since then, however, both inter- and intra-regional transport infrastructures have significantly improved.

**Diagnosis of the Demographic Resources**

In 1998, the population of Alto Alentejo was 120,000. Population density was very low (20 inhab/km²) and majority (almost 60%) was concentrated in the four urban counties (figure 6).

High rates of population decrease have been registered over the last decades, due to the double effect of negative natural growth and net migration. This trend was accompanied by intense population ageing, especially in the rural areas, where the old commonly outnumber the young two to three times (figure 7). More recently, the exodus of youth has been counterbalanced by the out-migrants' and emigrants’ return in the pre-retirement age or as retirees.

In 1991, the total participation rate was 39.4%. Such low value is probably related to population ageing and an overwhelming lack of job opportunities. The rate was even lower in the rural counties. Female participation rate increased considerably in the
eighties, though it remained inferior to the male participation rate, especially in the urban areas and in some rural counties with a strong market-oriented agricultural sector.

Labour transfers from the primary to the secondary and, especially the tertiary sector occurred in the eighties. In 1991, over 50% of the active population were concentrated in the tertiary, while the remaining part was evenly distributed between the primary and the secondary sectors (figure 8).

Tertiary activities have been predominant even in rural areas, although market-oriented farming is still very important in some counties, mostly those located in the fertile plains in the South. Pluriactivity among rural population is not significant. In 1991, only one quarter of the population lived on family farm-households and among them only 10% had off-farm employment.

Employees largely predominated (77%) in the active population in 1991, which is related to the higher degree of proletarianisation of both agricultural and non-agricultural activities.

The number of highly skilled workers as well as managers and administrators decreased over the eighties and in 1991 represented, respectively, only 10% and less than 3% of the active population (figure 9). On the other hand, there was an increase in the number of skilled industrial workers in all counties, probably due to the expansion of extractive industries, as employment in the manufacturing industry declined. In 1991, 20.7% of the active residents were non-skilled workers. Their number increased considerably in all three sectors of the economy during the eighties (figure 10).
In the context of the diagnoses outlined above and other related studies (Fontoura, 1991; Guerreiro, 1991; Trigueiros, 1991; Alves, 1994; Roca, 1999), the strengths and weaknesses of the demographic resources, as well as of the opportunities and threats to the sustainable development of Alto Minho and Alto Alentejo were identified. The main findings of the SWOT analyses are summarised in Boxes 1 and 2.

**Box 1. Demographic Resources of Alto Minho. SWOT Analysis**

<table>
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<tr>
<th>Strengths/Opportunities</th>
<th>Weaknesses/Threats</th>
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<tr>
<td>High population size and density represent a reliable basis</td>
<td>Maintenance or even intensification of population densification in coastal urban</td>
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market-oriented activities that require considerable amounts of workers and consumers.

The alleviation of population decline in the nineties, partly due to the favourable inversion of migration flows together with a considerable number of temporary residents, who can soon become permanent residents, demonstrates the region's greater capacity for retaining and attracting population, thus enabling sustainable population growth.

The considerable number of children and young people guarantees, at least in the medium run, labour force replacement and make possible larger investments in, and the use of, human capital.

Old people can be a valuable asset, since they are the source and potential transmitters of traditional know-how and culture as an added value to the development of craftsmanship, tourism and environmentally friendly farming.

The increasing return of retired and pre-retired migrants, former urbanites, can stimulate the expansion of services directed towards this segment of the population and, hence, job creation, especially for local young people and women.

The significant improvement in the level of education and skills of the young population can, in the medium and long run, attract new enterprises, thus favouring job creation and, at the same time, diminishing the dependency on external human resources in the medium and long run.

Relatively low participation rates demonstrate that there are still unexplored labour force reserves, especially women and young people. This can attract external investments.

areas and riverine zones while the mountainous interior is being depopulated, and, consequently, polarisation between "pull" and "push" areas, can provoke serious environmental problems and urban degradation, with negative effects on the cultural landscape and overall threats to sustainable development.

The predominance of old population in the mountainous interior areas impedes a greater and better use of the potentialities of such areas, mainly the exploration of high quality agro-forestry products and of alternative rural activities such as organic farming and agro-tourism in these areas.

The spatial separation between young and old people can make difficult the transmission of traditional know-how and culture.

The lack of more and better job opportunities as well as cultural and leisure activities can contribute to out-migration of the youth, especially those better educated and skilled.

The generally low level of educational attainment of the population represents an obstacle for the use of labour force reserves and makes the economic diversification of peri-urban and rural areas difficult.

Furthermore, the maintenance of such low level of education of the population represent, in the short and medium run, an obstacle for attracting investments in economic activities alternative to agriculture and industry, concentrated in Viana do Castelo. This makes the sub-region less competitive in relation to other regions of the Northern Portugal.

The decrease of labour participation rates in the rural and peri-urban areas in the interior of the region can contribute to the decline and even abandonment of agricultural activities, which leads to
Pluriactivity as a source of livelihood of the population in peri-urban areas represents an important competitive advantage for attracting external investments.

The relatively high degree of skills of the non-agricultural active population, especially the young, is a positive factor in the development of activities based on high technology and innovation, indispensable for pursuing sustainable development of Alto Minho.

Environmental degradation and the loss of the cultural landscape and other identity features, mainly in the mountain areas.

The lack of non-agricultural employment opportunities for women, especially the young ones, can stimulate out-migration. Hence, an important labour reserve will be lost.

The polarisation of economic activities between the coastal/riverine areas, which are economically diversified, and the interior/mountainous areas, where subsistence agriculture still prevails, can further aggravate the demographic and economic imbalance between these two areas. In turn, this makes a fuller use of demographic resources more difficult.

A large part of the highly qualified workers is concentrated only in Viana do Castelo and Ponte de Lima, which creates obstacles for its full use aimed at the sustainable development of the whole territory of Alto Minho.

<table>
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<th>Box 2. Demographic Resources of Alto Alentejo. SWOT Analysis.</th>
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<tr>
<td><strong>Strengths/Opportunities</strong></td>
</tr>
<tr>
<td>Low population pressure on endogenous natural and economic</td>
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<tr>
<td>resources can be</td>
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<td></td>
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<tr>
<td><strong>Weaknesses/Threats</strong></td>
</tr>
<tr>
<td>Low densities and depopulation are an obstacle for the better</td>
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<td>use of declining resources</td>
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considered as an added value for the design of a short run strategy aimed at attracting external human and physical capital.

Population increase in the two main urban counties, Porto Alegre and Elvas, where more employment opportunities are offered, can be a sign of a greater capability of retaining population in the sub-region.

Old people can be a valuable asset, since they are the source and potential transmitters of traditional know-how and culture as an added value to the development of craftsmanship, tourism.

The increasing return of retired and pre-retired migrants, former urbanites, can promote the expansion of services directed towards this population segment and, thus, job creation, especially for local or immigrant young people and women.

The recent improvement of the level of education and skills of the young population can increase the attractiveness of the sub-region to external investment.

The low levels of female participation rates and their increase in the 1980's indicates the importance of this segment of the population as a labour reserve, mainly in the primary and tertiary sectors.

The relatively large number of population employed in medium and large farming enterprises can enable the development of high-quality traditional products, valorised on internal and foreign markets.

The existing and increasing volume of skilled industrial workers represent the basis for the human capital necessary for the development of extractive industries based on local mineral resources, a viable development option for Alto Alentejo.

demographic resources and can lead to the degradation of the rural landscape.

The excessive concentration of population in the four urban counties may cause the increase in pressure on local resources and thus provoke environmental degradation and loss of the identity features of the cultural landscape and, thus threat the sustainable development of these areas.

The exodus of youth, particularly from rural areas, can jeopardise the transmission of the cultural heritage, an added value for craftsmanship, rural tourism and leisure activities.

The low level of education of the population diminishes the power of attraction of the sub-region to investments.

Population concentration of more educated and skilled labour in the urban areas may aggravate the disparities between the rural and urban spaces.

The increase of the labour participation rate of women in active age, when not accompanied by institutional support to the families, can contribute to further fertility decrease.

The extensification of agriculture and cattle breeding can create labour surpluses that will, in turn, prompt people to leave the region in search for non-agricultural employment.

The predominance of employment in tertiary activities can be a sign of the "social welfare" character of the local public services that act more as employers of the low-income population and less as promoters of viable job alternatives through adequate professional training, oriented towards this region's development.

The small proportion and decreasing number of highly qualified labour on the
entire territory, including the four urban counties, is a main constraint to the implementation of development programmes based on high technology and innovation. It is also a sign that push factors still surpass pull factors in Alto Alentejo.

Final Remarks

Despite considerable differences in their natural, socio-economic, cultural and demographic characteristics, Alto Minho and Alto Alentejo present some common weak points, especially as regards the spatial disparities in the distribution, growth and structure of demographic resources. Thus, Alto Minho is characterised by an increasing differentiation in the volume and composition of endogenous basic resources between coastal/riverine/urban/peri-urban counties on one side, and, on the other, the inner/mountainous/rural counties marked by unfavourable social, economic and environmental processes. The polarisation of demographic resources is also present in Alto Alentejo, where urban counties are favoured in relation to the majority of rural ones.

Should such trends persist in the future, they can become threats not only to demographic but also to social, economic, cultural and environmental sustainability of the two regions. Consequently, any sustainable development policy should embrace actions and measures favouring increased territorial, social and economic intra-regional cohesion, including incentives to a greater internal territorial mobility of population and employment opportunities.

Another weak point, common to these two regions, is the very low educational attainment and skills levels of most of the population in active age, which represents a serious obstacle to the establishment and development of enterprises based on technological innovation. In the case of Alto Alentejo, the exodus of managers and highly skilled workers has already aggravated the situation. Therefore, it would be necessary to (i) create incentives aimed at retaining and even attracting this type of labour force; (ii) organise short term (re) training courses for skilled industrial workers who are still quite numerous in both regions; and (iii) promote the opening of higher
professional education institutions that could meet the labour needs of the enterprises both the existing and new ones, based on innovative technologies.

Nevertheless, in both regions there are still reserves of under-explored demographic resources. It has to do with population segments that are rarely considered as development actors. Both in Alto Minho and, particularly in Alto Alentejo, old people can be considered as transmitters of traditional culture and knowledge, added value, especially for tourism and leisure activities. Women in productive age are still under-utilised and could be employed in craftsmanship and rural tourism. Concerning the young, with an increasing level of education and skills, they could represent a key-factor for attracting external productive investment to both regions. However, such resources should be used in a nearer future or, otherwise, there is a risk of loosing them to more competitive territories.

Another human resource that has yet to be explored in short term are temporary residents of both regions, since there is a high probability that they will become permanent residents. Such trend could greatly contribute to invert depopulation, especially in the case of Alto Alentejo, as well as to stimulate the expansion of proximity services which would lead to job creation for local people, particularly for women and the young.

There are, however, two population groups who bear a great deal of responsibility for the sustainability of the multiple dimensions of regional development, but who continue to be neglected in the design and implementation of planning policies in these (and other) rural territories. In Alto Minho, they are identified as small-scale family farmers who are full-time and, especially, part-time active in viticulture, corn, potatoes and flax cultivation, as well as in cattle breeding (basically for home-consumption). In Alto Alentejo, they are employees and employers dedicated to market-oriented olive oil, wine, cork production and sheep, goat and cattle breeding. Both groups play a pivotal role in the conservation and affirmation of the cultural and natural landscape, an important added value for the development of tourist and leisure activities as well as a factor of attraction of highly skilled workers and higher income retired population, potential residents of those sub-regions. However, the role of these development actors has been largely jeopardised by (i) population ageing and consequent depopulation of
the rural areas in Alto Alentejo, and (ii) the almost complete abandonment of agriculture and increasing importance of the consumption function of rural space, basically residential, by the local population in Alto Minho.

Therefore, measures should be adopted to stimulate the role of multifunctional agriculture, including those aimed at promoting the environmental sustainability in these regions, so that each becomes a "space of opportunities". This has, actually, been one of the main objectives of the New Reform of the EU's Common Agricultural Policy, but it has not yet implemented in Portugal.

References


INE;DGOTDU (1999): Tipologia das Áreas Urbanas, Lisboa: INE;DGOTDU.


