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The population of the town of Siles (Jaén) in the twentieth century

I. INTRODUCTION

As Hawley (1962) suggests population is essentially a quantitative concept applied to demography in order to identify aggregates, observations and measures of all kinds. When this data is accompanied by a qualitative knowledge the characteristics of the populations could be highlighted, moreover, in ecological terms, the variation of the number of inhabitants in any population constitutes an important indicator of their degree of adaptation to the environment.

The general objectives of this work are:

- Study the evolution of the density, the real growth, the vegetative and the migratory balance of the population of the town of Siles during the 20th century, and identify the social, economic, cultural and environmental factors that may have influenced its behaviour.
- Contribute to the demographic knowledge of the populations through the characterization of a municipality of the Andalusian mountainous area, and observe their situation within a regional and national framework.

Siles is a town in the natural region of the Sierra de Segura (Jaén). A geographical area historically characterized by a high degree of isolation, caused by topographic and political factors, which has determined the lives of its inhabitants. The municipality has an area of 175,87 km², of which 165,66 are included in the Cazorla, Segura

and Las Villas Natural Park, and has had an average census population in the 20th century of 3.748 inhabitants. Its economy during this century has been based on olive farming, tree felling and the wood transport in streams.

The twentieth century has recorded the greatest demographic, social, economic and cultural changes in history. In the specific case of Spain, these transformations have fundamentally marked the evolution of its population.

II. MATERIAL AND METHODS

The study of the Siles population was carried out with data collected from the Civil Register and the ecclesiastical registers. With the aid of the Microsoft Access software, the table includes 6.623 individual death records and 10.793 births records. Likewise, demographic data were gathered from the Spanish Statistical Office (INE) and the Institute of Statistics and Cartography of Andalusia have been used.

The calculation of the *de facto* population has been chosen. For the calculation of the number of inhabitants as of 1 July of the intercensal years, the formula of geometric growth exposed and developed by Livi-Bacci (1993) has been used.

The indicators used are:

Crude birth rates and mortality (Livi-Bacci, 1993). Real growth rates (Luna, 1984) and vegetative growth (Rodríguez Otero, 1984). Migratory balances have been calculated indirectly (Henry, 1983). De Rubio (2001) has taken the aging index, the general fertility rate and the

dependency rate. The gross density explained by Hardesty (1979) is also used

III. EVOLUTION OF THE SIERRA DE SEGURA POPULATION BY MUNICIPALITIES

The rural region of the Sierra de Segura is composed of thirteen municipalities, which sums up 26.351 inhabitants according to the 2011 census. This figure constitutes 20,2% less than in the 1900 census. In the first half of the 20th century there is a progressive increase of inhabitants in all the municipalities as a consequence of a high vegetative growth and low migratory movements, propitiated by the increase of the exploitation of the pine groves and an expansive phase of the olive grove. The second half of the century and the beginning of the XXI century is characterized by the loss of population in almost all municipalities, caused mainly by negative migratory flows. Those situations have socioeconomic roots and as a consequence have transformed the traditional settlement structures of the Sierra de Segura, causing the depopulation of settlements and the grouping of the population around the headwaters (Araque, 1988. Garrido and Garrido, 2003) equipped with infrastructures.

The excessive concentration of emigration between the ages of 16 and 39 has influenced the age structure of the population, modifying it and causing its aging, and has caused an increase in the economic burdens of the active population (Delgado Urrecho and Martínez Fernández, 2017; Aguilar Idañez, 2003). Between 1981 and 2001 censuses, the population show a significant increase in aging rates and an increase in dependency rates.

The depopulation observed in the Sierra de Segura region in the 20th century has also been noticed by Egea (1999) for the Jaén rural counties of the Condado, Sierra Mágina and the Cazorla area.

Since 1980 the welfare policy directed to the agrarian regions is running out without a functional alternative and territorial system, which accelerates their depopulation, aging and dependence. This is the reason which explains that other policies need to be added in order to maintain dynamically occupied the territory (Rodríguez Gutiérrez, 2016).

IV. POPULATION DENSITY

In the 20th century is characterized by a transition of the number of inhabitants per square kilometre. It can be

observed that the values of the Segura and Siles populations are located in an intermediate zone in relation to other Spanish rural populations (Luna, 1984; García Moro, 1986; Sánchez Compadre, 1989). The low density of inhabitants of rural populations has meant that during a good part of the century they have minimally provided services to the community, negatively influencing their socio-economic status and favouring the emigration of their inhabitants (Sánchez-Compadre, 1989). The rural weakening we have witnessed for so many decades now represents the loss of an immense heritage, tangible and intangible (López Fernández, 2016).

The scarce population density of the Sierra de Segura and Siles with respect to the province of Jaén, Andalusia and Spain is evident. Population densities between the censuses of 1900 and 2011 have declined in the Sierra de Segura (-20,2%) and Siles (-23,8%), and increased in the province of Jaen (40,8%), Andalusia (134,9%) and Spain (151,7%).

V. VEGETATIVE OR NATURAL GROWTH

The vegetative growth of the population of Siles in the 20th century and the beginning of the 21st was marked by a higher number of births than deaths in all the decades, with the exception of the last two periods that offer negative values, showing a declining population with a demographic exhausted future.

It is observed that until 1960 the variable that most strongly influences the level and evolution of vegetative growth is the number of deaths, from these years, and with a low and more stable mortality, it is the evolution of births that provokes the main oscillations.

A characteristic that all the observed populations have in common is the decrease of the vegetative growth from the decade of the 70s caused mainly by the fall of the natality, much more pronounced in the rural populations.

1. THEORY OF THE DEMOGRAPHIC TRANSITION

The date of initiation and the mode of dissemination of the demographic transition in Spain show strong differences between regions, since, in addition to the classic factors of economic development and industrialization, cultural factors play an important role in the diffusion of new currents (Brel, 2001).

The overall death rate falls from a crude rate of 30,70‰ in the five-year period of 1900-1904 to that of

8,41‰ in the five-year period 1955-1959. The decline has been widespread, being more relevant in children under four years. There are numerous factors that converged and influenced its decline, among others it should be noted the medical advances (vaccines, antibiotics), the generalization of hospital care (new hospital services), urbanization of the town (sanitation and conduction of potable and residual waters, electrification and paving), conditioning and building of houses, educational improvements, improvement of food (better conservation of food and greater purchasing power of families), etc. The increase in overall mortality from the decade of the years 70 is relative, a consequence of an aging population structure.

The brute birth rate falls from 49,9‰ in the five-year period from 1900-1904 to 14,2‰ in 1970-1974. In the later lustrums it remains to fall again in the last decade of the 20th century and in the initial years of the 21st. The factor that has most influenced this decline has been the decline in fertility (incorporation of women into the labour market, social acceptance of contraceptives, economic crises, decline in child mortality), also, in the second part of the century, The emigration of a significant proportion of women of childbearing age has affected the drop in birth frequencies. When comparing the declines in rates between the first five years and the last of the twentieth century, it can be seen that 73,4% fell in Spain, 70,8% in Andalusia, 72,5% in Jaén and 79,2% in Siles.

The transition from an old demographic to a modern demographic regime in the Siles population has been carried out at a higher speed and in a shorter period of time than the other represented populations, when it is observed that the birth rate and the general mortality begin later and low before the 15 annual births per thousand inhabitants.

VI. MIGRATORY BALANCE

The evolution of the migration balance in Siles throughout the analysed period was studied in four differentiated stages:

1. FROM THE YEAR 1900 TO 1939

Stage characterized by few migratory flows, which can be related to causes such as: the existence of work in the region by the olive plantation and the repopulation of pines, the lack of work at national level due to poor industrial development, poor communications, the attach-

ment to the family as a source of resources, the minimum emigration abroad, etc.

2. FROM THE YEAR 1940 TO 1984

Period characterized by an emigration movement of great magnitude. From 1940 to 1979 it was recorded per decade: an average negative migratory balance of 909 individuals for an average population of 4.228 residents. This caused, for these decades, average proportions of negative real growth of -13,94% inhabitants, and it was the average vegetative growth of 10,6‰ that provided the numerous men and women who left.

The reasons for the emigration of the population are economic and sociocultural (impoverishment of the life of most of its inhabitants in all senses).

3. FROM THE YEAR 1985 TO 1999

Stage characterized by a low emigration balance, but unlike the first occurs with the demographic transition completed. In these fifteen years there was a negative migratory balance of 225 individuals, of which 72,4% were women. The reasons for the drop in the emigration balance are: the exhaustion of the number of individuals that make up the appropriate age groups to emigrate, the economic crisis and its consequences of unemployment and temporary contracts, unemployment subsidies and the rural employment policy (PER).

4. FROM THE YEAR 2000 TO 2014

In the initial quinquennials of the 21st century, a positive migratory balance is manifested, fostered by the return to the town of former emigrants, who, once retired, return to their native town, and by the arrival of a small number of non-EU immigrants that breaks with the evolution of Continuous decline but not solve the complicated situation of an aging demographic structure (in the 2001 census 12 foreign individuals are collected by 75 in the 2011).

VII. CONCLUSIONS

The 13 municipalities that currently form the Sierra de Segura region registered a similar transition in the number of inhabitants during the 20th century. Population increased

in the first half caused by high vegetative growth and few negative migratory flows. Then, suffered a decrease in the second half caused mainly by the high emigration movements that occurred. In the last decade of the 20th century, and the first decade of the 21st century, some municipalities of Sierra de Segura region registered an increase in population due to their proximity to the national road 322 that links Bailén with Albacete, which shows the relevance that communication axes had on the human settlements.

The density of population in the 20th century indicates an intermediate stage compared to other rural areas such as the eastern Alpujarra (Luna, 1984), Casares de la Hurdes (García Moro, 1986) or the region de Babia (Sánchez Compadre, 1989). In these regions emigration caused similar declines in population densities.

In the population of Siles a new demographic state is generated in the decade of the 40s as a consequence of the decrease in mortality and the maintenance of the high birth rate, increases the real growth of the population and its rejuvenation which together with the crisis of the existing traditional agriculture (Martínez Carrión, 2002) provoked the beginning of a negative migratory flow that will influence relevantly in the evolution of the real and vegetative dynamics of the population.

The Siles population, like many other economically less developed rural populations, is in decline, registering in the last five years of the twentieth century and in the initials of the XXI more deaths than births. This negative vegetative growth is caused by the aging of the population that produces a low number of births and a high number of deaths (Ayuda, Pinilla and Saez, 2000).

The main feature that differentiates the demographic transition from that of the population that includes urban areas is that it develops in a shorter period of time.

In the population of Siles a negative migratory balance manifests throughout practically all the XX century, reduced during the first 40 years (12,9%), relevant in the following 45 (82,3%) and scarce in the last 15 years (4,7%). The causes of the emigration have been socio-economic and it has been directed mainly to the north, center and east peninsular. This emigration was triggered by the public powers since it is considered a mechanism of demographic regulation and reduction of economic and social tensions (Benedicto, 1953). There is a higher emigration balance in women (53,2%) caused by their lower labour demand, which has not broken the gender balance of the population. Its consequences have been: the depopulation of most of its villages, a negative real growth and the increase in the average age of its inhabitants. When the young-adult age groups of the population pyramid were emptied, the imbalance of the age structure of the population increased and the frequencies of marriages and births decreased.

The emigration flow, the reduction in the number of births and the increase in average life expectancy have caused the aging of the population and, with it, an increase in the weight in the local economy linked to retirement pensions and, therefore, a reduction in productive activities. The aging of the population also forces public authorities to make innovative social policies to meet the new needs of the elderly. Related to this Pressat (1985) pointed out that one of the sectors where aging puts more pressure on consumption and needs is the medical services sector. Geriatric treatments, increasingly effective and more expensive, hospitalization, increasingly frequent and necessary for older people, make it virtually impossible for everyone to access the care provided by medical science.