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### Article

## Resilience of rural cultural landscapes: A case study of hazelnut in the Giresun-Ordu subregion

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### ABSTRACT

This article examines the resilience of the rural cultural landscape (RCL) shaped by hazelnut production in the Eastern Black Sea Region of Türkiye. Addressing the cultural landscapes shaped by agricultural production with their economic dimensions constitutes the original aspect of the article. In the study, the resilience of RCLs is discussed in the context of the socio-ecological resilience approach. The main aim is to evaluate the resilience of the RCL of the region by identifying causal relationships between socio-cultural, economic, and institutional dynamics in the Giresun-Ordu Subregion.

In the study, historical profiling, which enables the provision of context-specific detailed information, has been adopted. Within the scope of the article, the effects of the historical change and development of socio-cultural, economic, and institutional dynamics in the Giresun-Ordu sub-region on the RCL of the region are analyzed comparatively in three periods. This comparison has been carried out through agricultural production mode-method-economy, social structure and culture, and physical space features. The changing, unchanging, and evolving characteristics of the rural cultural landscape of the region were identified.

As a result of the method followed and the evaluations made, migration and demographic changes in the region have brought about adaptations in the agricultural production style, method, and economy. These adaptations have transformed the way of life by making migration permanent and continuous. It is possible to say that the rural cultural landscape of the region, which can continue its traditional economic and social structure by adapting to all these changes and transformations, is resilient.

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### INTRODUCTION

Heterogeneous agricultural areas, that is, rural cultural landscape (RCL) areas where agricultural product production and management decisions are based on

interactions between socio-cultural, economic, and spatial factors, cover two-thirds of the world's land surface. These areas constitute a significant part of cultural landscapes (Farina, 2000; Wr̀bka et al., 2004; Found & Berbes-Blazquez,

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2012; Wijetunga & Sung, 2015; Cañizares & Pulpón, 2018). RCLs are faced with interrelated economic, demographic, social, cultural, and environmental changes, such as increase/decrease in population, intensification/abandonment of agricultural activities, urbanization pressure, disaster risk, especially globalization, and climate change (Plieninger & Bieling, 2012; ICOMOS, 2017). These changes lead to a decrease in the level of welfare in rural areas, an increase in unemployment, and migration of the population to urban areas. Moreover, the aging of the population and, in parallel, a decrease in agricultural production, loss of traditional practices, rural lifestyles, local knowledge and culture, and loss of natural vegetation and biodiversity are consequent results of this process. However, these areas need to be protected to eliminate these problems—to increase the quality of life of the local people, to provide employment, to prevent migration, to ensure the continuity of tangible and intangible heritage, and to protect the natural-ecological environment (Rescia et al., 2010; Ioan et al., 2014; ICOMOS, 2017; Li et al., 2019). Therefore, RCLs are discussed in the context of a socio-ecological resilience approach that takes into account the connections between social, economic, and natural components. The resilience of these landscapes is possible by preserving and maintaining the integrity of their economic, socio-cultural, and spatial structures and functions against internal and external threats (Giannecchini et al., 2007; Rescia et al., 2010; Rescia et al., 2012; Oteroz-Rozas et al., 2012; Found & Berbes-Blazquez, 2012).

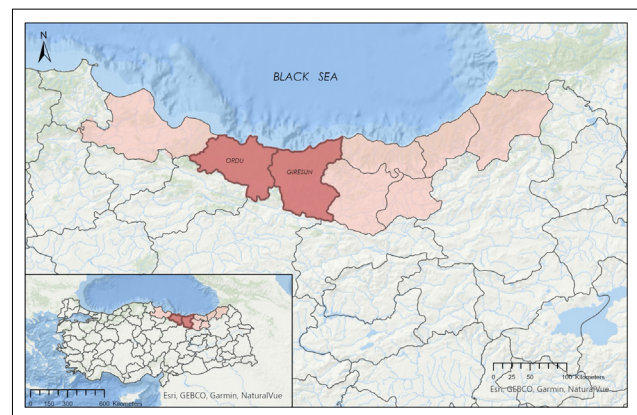
The protection of RCLs shaped by agricultural production should be considered together with the resilience of agricultural production and the agricultural economy. Only in this way is it possible to talk about the protection of RCL areas in the context of their adaptability to changes (Plieninger & Bieling, 2012; Meuwissen et al., 2019). In other words, the changes caused by the interactions between economic, socio-cultural, and spatial structures constitute the nature of the unique dynamic structure of RCLs that lives, continues, and is transmitted. In this context, it is possible to maintain the resilience and preservation of RCLs, which can maintain their traditional economic and social structures by adapting to changes (Bürgi et al., 2012; Rescia et al., 2010). Fundamentally focusing on uncertainty, change, the dynamics of change, how to adapt to change, and how to shape change, resilience is defined as the capacity of a system. This system functions to experience shocks while maintaining essentially the same function, structure, feedback, and therefore identity (Berkes & Seixas, 2005; Adger, 2000; Carpenter et al., 2001; Folke, 2006; Holling, 2001; Plieninger & Bieling, 2012; Utami, 2020; Nicholas-Davies et al., 2021; Viñals et al., 2023). In this regard, it is possible to say that RCLs can be preserved with the continuity of agricultural production and the lifestyle based on this production, and, of course, the population engaged in production.

In this context, hazelnut and tea are two products that define the RCL specific to the Eastern Black Sea Region in Türkiye. Türkiye is one of the most important producers in the world for both of these products. While the produced tea is consumed in the domestic market, the produced hazelnut is exported. Despite the demographic structure of the Eastern Black Sea Region, which has been migrating out of the region and country since the 1950s, its economy is based on agricultural production<sup>1</sup>.

In this article, the resilience of the RCL of the region is discussed by examining the changes that the Giresun-Ordu Subregion, which we can define as the RCL shaped by hazelnut production, has undergone since the 1950s. Addressing the cultural landscapes shaped by agricultural production with their economic dimensions constitutes the original aspect of the article. From this point of view, the contribution of the study is that it offers a unique approach to evaluate the resilience of rural cultural landscapes by identifying the causal relationships between socio-cultural, economic, and institutional dynamics. This study reveals how hazelnut production in the Giresun-Ordu Subregion, which is under the pressure of urbanization and losing its rural population, continues with its own conditions and rules. It also contributes by emphasizing the critical importance of socio-cultural structures in terms of the continuity of agricultural production in the region and the resilience of the cultural landscape of the region.

## RESEARCH METHODOLOGY AND DATA

This research study area includes Giresun and Ordu provinces, located in the Black Sea Region of Türkiye. (Figure 1) The reason for choosing these provinces is that they are the places where traditional hazelnut production first started in Türkiye, and hazelnut has been the main agricultural product for about 70 years (Kaptan, 1978; Kaynar, 2018). In the following parts of the study, the term Giresun-Ordu Subregion is used for these two provinces.



**Figure 1.** Location of the Giresun-Ordu subregion in the Eastern Black Sea Region.

The resilience of rural cultural landscapes is influenced by complex relationships between socio-cultural, economic, and institutional dynamics. Qualitative research allows examining these dynamics and the interactions between them in detail and provides detailed and comprehensive information specific to a particular geographical or cultural context. For this reason, a qualitative research method was followed in the study, and the examination of printed and non-printed materials for hazelnut production and the study area and observation-based determinations constitute the data collection techniques. The fact that not much is known about the ongoing processes in cultural landscapes reveals the importance of interpreting this landscape within its own historical and cultural context (Antrop, 2004; Antrop, 2005). Therefore, historical profiling was adopted as a method to evaluate the effects of socio-cultural, economic, and institutional dynamics, changes, and developments on the RCL of the region from the 1950s to the present in the Giresun-Ordu Subregion (Carpenter et al., 2005). The historical profiling method allows the effects of the change and development of these dynamics on the rural cultural landscape of the region to be addressed with a comparative evaluation. Historical analysis of RCLs is critical for classifying distinct dynamics and assessing causal relationships between different periods. For this study, considering the effects of the socio-cultural, economic, and institutional dynamics of the study area on the RCL of the region, three periods were determined: 1950-1980, 1981-2000, and 2001-2020.

The examination of the region in this context was carried out in three areas: agricultural style-method-economy, social structure and culture, and physical space.

Agricultural production style-method-economy includes features specific to the structure of agricultural production in the region. Social structure and culture include features related to the demographic structure, lifestyle, and cultural values in the region, and physical space includes features related to hazelnut production areas and land cover in the region.

The study consists of three consecutive stages. In the first stage, the examination items under three areas revealed the characteristics within which the resilience of the RCL will be evaluated. These characteristics were determined through a combination of literature review on the resilience of social and ecological systems, farm systems, and agricultural landscapes, preliminary research into the region, and assessments of the current situation regarding the resilience of cultural landscapes. In the second stage, the changes experienced in the Giresun-Ordu Subregion in three periods, 1950-1980, 1981-2000, and 2001-2020, were examined in the fields of agricultural production style-method-economy, social structure and culture, and physical space. As a result of this analysis, the unchanging, changing, and evolving historical profile of the RCL was obtained

by evaluating the cause-effect relationship between each feature or different features and the change in each period. In the last stage, the changes and transformations of the RCL of the region in the historical process were determined and it was discussed whether the resilience of the RCL of the region could cope with change, could adapt to the dynamics of change, and could reorganize if necessary.

### Data Sources

Primary and secondary sources were used in this study, which focuses on hazelnut production in the Giresun-Ordu Subregion of the Eastern Black Sea Region. The primary source of the study is the authors' observations of field studies carried out in the Eastern Black Sea Region, especially the city of Ordu, in July-August-September 2021 and 2023. The main contribution of the field study is the compilation of information on the hazelnut production process in the region, social relations, cultural values, and demographic and spatial structure in the rural area.

Considering the secondary sources used in the compilation of this information, historical information about the hazelnut production process, actors, institutions, and socio-cultural structure in the region is compiled from various academic research from different disciplines<sup>2</sup>, especially the associate professor thesis titled "Eastern Black Sea Rural Area Settlement Order and Agricultural Production Relations" (Kaptan, 1978). In addition, reports of public institutions such as the General Directorate of Cooperatives (2015), the Competition Authority (Gündüz et al., 2018) and the Development Foundation of Türkiye (2022), were also used as a source of information about the current situation, actors, and institutions in the hazelnut production process. For statistical data on hazelnut production in the region and throughout Türkiye and data on demographic structure such as population, migration, immigration rate, Turkish Statistical Institute (TUIK) data between 1950 and 2020 were used at regular intervals (Turkish Statistical Institute, 2024). Information about the economic, spatial, demographic, and cultural changes in the region after the 2000s was obtained from regional plan reports. Finally, Coordination of Information on the Environment (CORINE) land cover data for the years 1990, 2000, 2006, 2012, and 2018, created by the European Environment Agency, were used to determine land use and changes.

### Preliminary Information on Hazelnut Production in the Giresun-Ordu Subregion

83% of the production in the Eastern Black Sea Region, which meets 44% of hazelnut production for export in Türkiye, is defined as the traditional production region, and it is carried out in the Giresun-Ordu Subregion. The economy of both provinces is largely<sup>3</sup> based on the only agricultural product, hazelnut (TUIK, 2024). The approximately 298 thousand tons of hazelnut production of this subregion in

2020 correspond to 37% of Türkiye's total. At the same time, 46% of Türkiye's total hazelnut production areas are within the borders of this region (TUIK, 2024), and 22% of the raw material production in the world chocolate industry is met from here (Gündüz et al., 2018).

32% of the land cover in the Giresun-Ordu Subregion is agricultural areas, and the majority, 27%, consists of agricultural areas where hazelnut is produced. Forested areas and meadow-pasture areas, which constitute the natural vegetation of the region, define 54% of the land cover. Thus, hazelnut production areas and forested areas, two important elements of the cultural landscape of the region, constitute approximately 81% of the land cover (TUIK, 2024; Dikçınar Sel, 2021).

The Eastern Black Sea Region, which includes the Giresun-Ordu Subregion, is the region in Türkiye whose economy continues to be dominated by the agricultural sector and where agricultural employment is the highest (TUIK, 2024). In the region, ongoing agricultural economic conditions prevail due to the effects of uncertainties, constraints, or opportunities in the production of hazelnut (Kaptan, 1978). Under the influence of these conditions, domestic and international migration, which started after the 1950s and continued thereafter, had demographic and spatial reflections in the region and effects on the local economy. The prevalence of hazelnut production in the region initially caused the agricultural areas, especially corn and sub-corn vegetable areas, to shrink, and animal husbandry and transhumance to decrease. Subsequently, the conversion of forested areas into hazelnut production areas led to the decrease and aging of the rural population. The lifestyle based on four-season labor and animal husbandry has been replaced by a lifestyle based on hazelnut production, which is a seasonal occupation.

### Hazelnut Cultivation and Production Process in the Giresun-Ordu Subregion

Hazelnut, which can be harvested 50-60 years after it starts to bear fruit, is produced in gardens created with traditional methods in small-scale family businesses in the region (Yılmaz, 2014; Balık, 2023). The hazelnut production process consists of three stages (Figure 2):

1. Pre-harvesting agricultural practices: With these practices carried out between May and July, hazelnut orchards are prepared for the harvest that will start in August.
2. Harvesting, threshing, storage, and transportation: Hazelnut harvesting is done in two ways by hand: from branches or from the ground. Hazelnuts brought to the threshing floor are dried for 3-5 days. Then, the hazelnuts are separated from their shells by a hazelnut sorting machine and, after being dried again in the threshing floor, they are bagged and prepared to be taken to the market. Hazelnuts require a short period of time and intense effort, including harvesting, threshing, storage, and transportation, covering 30 days of the season.
3. Post-harvesting agricultural practices: With these practices carried out between September and April, hazelnut orchards are prepared for the next harvest.

All hazelnut production activities take a maximum of 75 days, assuming a good garden of 3 hectares (Kaptan, 1978).

Except for the hazelnut sorting machine used to separate the hazelnut from its green shell and the machines used to disinfect the hazelnut quarries, all remaining production activities are carried out by manual labor (General Directorate of Cooperatives, 2015; Kaynar, 2018). The most important feature of hazelnut production in the region is that the workforce remains dependent on manual production,

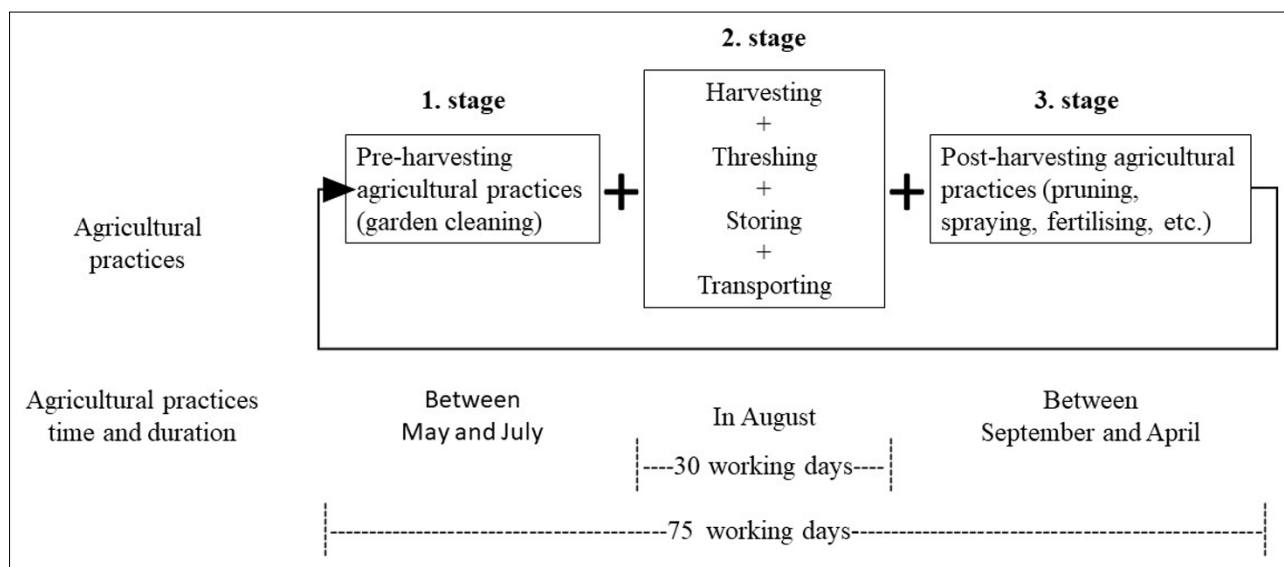


Figure 2. For hazelnut production on a 3-hectare field, agricultural practices, including their timing and duration.

and since mechanization is not possible, there is a seasonal need for workforce (Kutluata, 2015; Kaynar, 2018).

### **Changes and Developments in the Socio-Cultural, Economic, and Institutional Dynamics of the Giresun-Ordu Subregion and Their Impact on the Rural Cultural Landscape**

Hazelnut cultivation has a 2500-year history in the Giresun-Ordu Subregion, benefiting from a favorable climate (Kayalak & Özçelik, 2012; Doğanay, 2013; Gündüz et al., 2018; Development Foundation of Türkiye, 2022). Despite this, significant production began with the Republic's declaration in 1923, following the Izmir Economic Congress's agriculture-focused policies (Boratav, 2016). Türkiye then specialized in exporting raw materials, including hazelnuts. To meet global demand, Türkiye developed legal and institutional frameworks for hazelnut production, trade, and export. Key developments included the establishment of the Giresun Hazelnut Stock Exchange in 1926, the world's first Hazelnut Institute in Giresun in 1936, and the Hazelnut Agricultural Sales Cooperatives Association (Fiskobirlik) in 1938 to enhance hazelnut agriculture (Korkmaz, 2021). By the 1950s, hazelnut production had become a significant socio-economic activity in the region.

As stated before, in this study, the change and development of socio-cultural, economic, and institutional dynamics in the Giresun-Ordu Subregion were examined in three periods: 1950-1980, 1981-2000, and 2001-2020. Geographical features in the region and the hazelnut production that developed accordingly in these three periods have reshaped the relations between agricultural production style - labor use, agricultural production actors - market presentation, demographic structure - migration, people, and land.

The 1950s are important in terms of hazelnut becoming the only agricultural product in the region and the involvement of local actors in the formation of the hazelnut production and buying-selling order (institutionalization of Fiskobirlik and merchants). While Fiskobirlik, which became a state institution in 1964, became an important actor in hazelnut exports, its power was weakened with the intervention of the central government in the 1980s and was replaced by the private sector. The 2000s are important in that Fiskobirlik, a local producer cooperative, was privatized and the production mechanism began to break away from the local, and international investors with foreign capital began to take part as a local actor. While the fact that agricultural production is based on hazelnut as the only product, the population engaged in agricultural production, and the income obtained from agricultural production caused these changes, they were also affected by the changes themselves. Due to the low productivity in hazelnut production in small-scale family businesses, the region has constantly emigrated. However, due to the increasing

demand for hazelnut and the existence of the market, hazelnut production has maintained its leading role in both agricultural production in the region and the regional economy. The state has supported hazelnut production either through legal regulations or by intervening in the market or not. These dynamics have shaped agricultural production, demographic structure, lifestyle, living habits, and land cover in each period.

### **The Form of Agricultural Production and Practice, the Actors of Agricultural Production, the Income Obtained from Agricultural Production**

The form of agricultural production and practice, the actors of agricultural production, and the income obtained from agricultural production are highly important issues in this process. Additionally, the fact that the migrating population maintains its relationship with the place where it migrates, and the population's belonging to the place, may cause changes to reduce or exacerbate the effects of the difficulties and/or threats that arise in this shaping process. For this reason, the reflections of the changing dynamics in the region in these three periods were examined under the fields of agricultural production style-method-economy, social structure and culture, and physical space.

Agricultural production style-method-economy includes features specific to the structure of agricultural production in the region. These features are the size of the agricultural enterprise, the number of days worked in the agricultural enterprise, the purpose of production, the mode of production, the way the land changes hands, the type of agricultural enterprise, the form of agricultural practice, the use of labor in agricultural practices, the income obtained from agricultural production, the form of presentation to the market, the role of the state, the harvest method, harvest season, and market formation (Ashkenazy et al., 2018; Berkes & Sexias, 2005; Fang & Liu, 2008; Found & Berbes-Blazquez, 2012; Folke, 2006; Garmestani et al., 2006; Huang et al., 2018; Kaptan, 1978; Meuwissen et al., 2019; Nera et al., 2020; Rescia et al., 2010; Zambon et al., 2017).

Social structure and culture include the characteristics of the demographic structure, lifestyle, and cultural values in the region. These features are the ratio of the rural population in the total population, rural population change, net migration rate, the relationship between entering and leaving migration, seasonal population change/difference, lifestyle, tradition, customs, rituals and agricultural production relationship, and sense of belonging and sense of place (Rescia et al., 2010; Pătru-Stupariu et al., 2019; Bender & Haller, 2017; Keitsch et al., 2016; Król, 2020; Adger, 2000; Stephenson, 2008; Ioan et al., 2014; Cumming et al., 2005; Basile & Cavallo, 2020).

Physical space includes features related to hazelnut production areas and land cover in the region. These



features are the production region, production area, change of ownership of agricultural land, and change in natural vegetation (Giannecchini et al, 2007; Rescia et al., 2010; Rescia et al., 2012; Oteroz-Rozas et al., 2012; Found & Berbes-Blazquez, 2012).

The study areas and the characteristics that define these areas were constructed from data groups that can reveal the basic structure of each area in the context of the resilience of the RCL. These features differ in the periods subject to examination, and this difference helps to monitor the change and transformation of the rural structure.

The examination carried out within the scope of these features is important in terms of being able to more clearly reveal the cause and effect relationships in each period and between periods, and showing how the RCL of the Giresun-Ordu Subregion evolved and which features were effective in this process. Because there is a mutual relationship between spatial and cultural structures in RCLs shaped by agricultural production. Agricultural areas and natural

areas provide both a physical and ecological spatial environment for agricultural production. Traditional practices, knowledge, skills, and traditions, and such cultural accumulation can contribute to the conservation and preservation of agricultural production.

#### The Period Between 1950 and 1980

The 1950s represent the period when hazelnut production began to increase in the Giresun-Ordu Subregion and became the dominant agricultural product until the 1980s. This situation has caused changes in the traditional agricultural structure of the region in the last 30 years. First of all, while hazelnut production areas increased, corn, sub-corn vegetable production, and animal husbandry decreased. Due to the production of hazelnut for marketing, there has been a transition from subsistence agriculture to commercial agriculture in the region, and socio-economic transformation has occurred. During this period, the rural population increased (Table 1). This situation has brought about a change in the lifestyle based on four-season agricultural activities.

**Table 1.** Change in rural population size and rural population ratio in Giresun-Ordu subregion (TUIK, 2024)

	Rural Population			Rural Population Change	Total Population			Ratio of Rural Population (%)
	Giresun	Ordu	Total		Giresun	Ordu	Total	
1950	264785	340106	604891	-	299555	373028	672583	89.94
1955	293694	368032	661726	56835	334297	407687	741984	89.18
1960	322363	411245	733608	71882	381453	469379	850832	86.22
1965	352946	460278	813224	79616	428015	543863	971878	83.68
1970	360773	490680	851453	38229	451679	608721	1060400	80.30
1975	354749	515553	870302	18849	463587	664290	1127877	77.16
1980	352972	543715	896687	26385	480083	713535	1193618	75.12
1985	341156	543790	884946	-11741	502151	763857	1266008	69.90
1990	279973	493285	773258	-111688	499087	830105	1329192	58.18
2000	240503	471134	711637	-61621	523819	887765	1411584	50.41
2007	177138	320126	497264	-214373	417505	715406	1132911	43.89
2010	173875	314793	488668	-8596	419256	719183	1138439	42.92
2011	170951	305102	476053	-12615	419498	714390	1133888	41.98
2012	170598	318076	488674	12621	419555	741371	1160926	42.09
2013	173196	0	173196	-315478	425007	731452	1156459	14.98
2014	159369	0	159369	-13827	429984	724268	1154252	13.81
2015	151132	0	151132	-8237	426686	728949	1155635	13.08
2016	151853	0	151853	721	444467	750588	1195055	12.71
2017	146756	0	146756	-5097	437393	742341	1179734	12.44
2018	176238	0	176238	29482	453912	771932	1225844	14.38
2019	148608	0	148608	-27630	448400	754198	1202598	12.36
2020	146462	0	146462	-2146	448721	761400	1210121	12.10

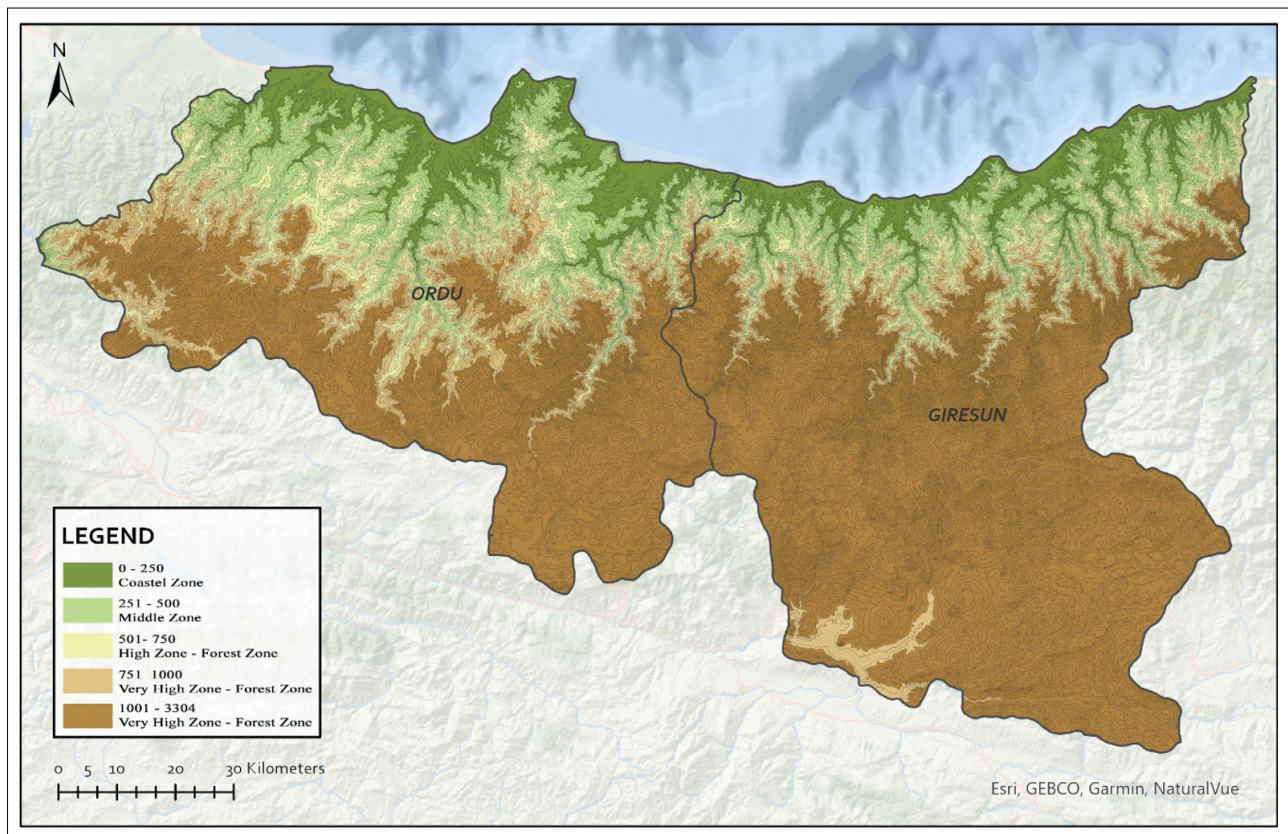
During this period, hazelnut production in the subregion was carried out in small family businesses in agricultural areas divided by geographical conditions and inheritance. Although hazelnut producers who cultivate their own land generally carry out their agricultural activities based on family labor, they receive support from seasonal workers during harvest. This harvest is carried out by the picking from the ground method. Hazelnut farming, which is an occupation in which working in an agricultural enterprise for a maximum of 75 days a year is sufficient, has become the main livelihood product of the rural population. However, corn, sub-corn vegetable production, and animal husbandry activities have decreased, but since hazelnut production is an activity that does not cover the whole year, these traditional agricultural activities have continued to exist.

While Fiskobirlik, a local producer cooperative, and merchants were active in the formation of the hazelnut market until 1964, as of this year, the purchase guarantee for hazelnut has been given by the state through Fiskobirlik, and this made the state the leading actor in the formation of the market. The state's supportive role for producers has contributed to hazelnut continuing as the agricultural item that is most produced. The agricultural areas of the region producing hazelnut increased by 42% in this period (TUIK, 2024). This increase occurred when corn production areas, one of the main agricultural products of the region, turned

into hazelnut production areas, and the coastal zone/middle zone below 500m altitude became the hazelnut production areas (Figure 3). This situation caused hazelnut to become the only agricultural product that generates income below 500m altitude. During this period, the rural population of the region increased by 48% due to hazelnut production, whose productivity increased with agricultural measures and the accompanying agricultural income (TUIK, 2024) (Table 2).

However, after the 1970s, the production amount in existing hazelnut production areas reached its highest level. This situation means that the productivity of hazelnut production can no longer increase. The shrinking of the size of the agricultural enterprise<sup>4</sup>, and the vegetative structure of the hazelnut, which yields more crops in one year and less in the next, have led to a gradual decrease. The effects of this decrease in productivity can be observed from the fact that the rural population growth between 1975 and 1980 fell behind the increase values in 1950 and 1970 (Table 1). Considering the net migration rate values between 1975 and 1980 in Table 3, it is seen that the rural population rate decreased from 90% to 75% due to migration from rural areas to cities or out of the region due to economic reasons (Table 1).

However, the traditional lifestyle based on four-season occupation with corn production and animal husbandry has changed with the changing agricultural business structure



**Figure 3.** Altitude map of the Giresun-Ordu Subregion - hazelnut production zones.

**Table 2.** Changes in hazelnut production areas and rural population in the Giresun-Ordu sub-region (TUIK, 2024)

	1950	1960	1980	2000	2020
Hazelnut production areas	-	139.000	197.154	271.823	345.019
Change in hazelnut production areas	-	-	42%	38%	27%
The ratio of hazelnut production areas in land cover	-	11%	15%	21%	27%
Rural Population	604891	733608	896687	711637	146462
Rate of change in rural population size	-	21%	22%	-21%	-79%

**Table 3.** Change in the net migration rate for the provinces of Giresun and Ordu (TUIK, 2024)

Years	Giresun		Ordu	
	Net migration	Net migration rate	Net migration	Net migration rate
1975-1980	-17.523	-40.6	-20.668	-32.3
1980-1985	-19.955	-43.4	-24230	-34.5
1985-1990	-34.828	-73.9	-42.91	-54.6
1995-2000	-5849	-12.1	-36.958	-44.7
2008	1550	3.68	-3739	-5,18
2009	-2597	-6.14	-961	-1,33
2010	-3040	-7.22	-8345	-11.54
2011	-2288	-5.44	-10509	-14.6
2012	166	-0.4	21645	29.63
2013	3283	7.75	-15540	-21.02
2014	3237	7.56	-11382	-15.59
2015	-4634	-10.8	-2765	-3.79
2016	15092	34.54	15766	21.23
2017	-9146	-20.69	-12194	-16.29
2018	14405	32.25	24661	32.47
2019	-7985	-17.65	-21254	-27.79
2020	286	0.64	5492	7.24

and migrations with hazelnut. It is possible to summarize the lifestyle changed by migration with what we call "guest workers." They mostly spend their time working away from their hometowns, and they only come to their homeland during certain periods of the year and carry out agricultural activities based on hazelnut. This situation reflects the mode of production in the region and the dynamics of rural life in the region.

### The Period Between 1981 and 2000

In the 1980s, although the rural population in the Giresun-Ordu Subregion increased quantitatively from 1950 to 1980, the rural population rate decreased from 90% to 75%, which will drop to 50% with the migration in 2000 (Table 1). Despite this remarkable decrease in the rural population, the agricultural areas producing hazelnut

increased by 38% between 1980 and 2000 (Table 2). This increase in hazelnut production areas can be explained by the change in land cover in the region. The hazelnut production region, which was only up to 500m altitude in the previous period, expanded to upper altitudes after the 1980s. In fact, the declaration of the entire region as a legal hazelnut production area in 1989 caused corn production areas between 500m and 750m altitude to turn into hazelnut production areas. The examination of the land cover shows that hazelnut production increased up to an altitude of 1000 meters and that some of the forested and pasture areas at this altitude have turned into agricultural areas (Tables 4-5).

As mentioned, although hazelnut production areas increased from 197,154 hectares in 1980 to 271,823 hectares in 2000, it is understood that hazelnut production areas expanded towards lands less suitable for production and, naturally,



**Table 4.** Distribution of land cover in the Giresun-Ordu subregion based on CORINE data (%)

	1975 (*)	1990	2000	2006	2012	2018
Artificial Surfaces	0.1	0.44	0.69	0.79	0.99	1.05
Agricultural Areas	30.2	39.03	38.57	44.15	45.05	45.03
Forest and Semi Natural Areas	69.7	60.19	60.25	54.55	53.41	53.36
Water Bodies	-	0.34	0.49	0.51	0.55	0.56

(\*) (Kaptan, 1978).

**Table 5.** Agricultural land change in Giresun-Ordu subregion based on CORINE data (%)

	1990	2000	2006	2012	2018
Non-irrigated Mixed Agricultural Areas	54.78	54.94	28.09	25.93	25.90
Agricultural Areas Mixed with Natural Vegetation	39.98	40.02	26.88	23.22	23.27
<b>Non-irrigated Fruit Areas</b>	<b>0.56</b>	<b>0.58</b>	<b>39.85</b>	<b>45.78</b>	<b>45.75</b>
Irrigated Mixed Agricultural Areas	0.97	0.97	0.76	0.83	0.83
<b>Pastures</b>	<b>0.54</b>	<b>0.37</b>	<b>0.53</b>	<b>0.46</b>	<b>0.45</b>
Non-irrigated Arable Land	2.06	1.99	2.75	2.62	2.62
Permanently Irrigated Land	1.11	1.12	1.14	1.13	1.13
Irrigated Fruit Areas	0.00	0.00	0.01	0.04	0.04

production did not increase at the same level (Güvemli, 1997). It is possible to see the effect of this situation on the net migration rate of the period (Table 3). Despite the insufficient economic income based on agriculture in the countryside, due to the economic and social opportunities offered by big cities, the region continued to lose population by migrating out of the rural areas, and the ratio of the rural population dropped to 50% (Table 1).

In hazelnut production in small family businesses, labor force loss due to migration has been tried to be compensated by increasing the use of chemical fertilizers and pesticides. However, the migrating population continued to operate its own land either through relatives or sharecroppers (Kaptangil, 2005). In this way, the use of land for agricultural purposes continued without changing land ownership in the region. In addition, while the migrating population could carry out agricultural practices as agricultural workers on their own land during their residence in rural areas, they filled this gap by employing temporary agricultural workers after migrating (Özbekmezci & Sahil, 2004; Atalar, 2015). Thanks to these adaptations, the migrating population was able to continue hazelnut production by coming to the region with their families only during the harvest season. However, since these types of hazelnut producers have to complete the harvest during their stay in their hometowns, they have adapted their harvesting method. While previously harvesting hazelnut was done by picking them from the ground, they shortened the harvest time by

starting to pick them from the branches. Hazelnut is now harvested from both the ground and the branch.

These solutions, shaped according to dynamics, enabled agricultural production to continue despite the 21% decrease in the rural population. Due to hazelnut farming, which is a seasonal agricultural activity, the lifestyle in the region has transformed into one where a part of the rural population not only works "abroad" as in the previous period but also lives and comes to their hometown for a month during the harvest season. We call this situation "guest workers-seasonality" due to the fact that the population living abroad maintains their connection with the place they migrated from and the seasonal nature of hazelnut production. Rural life has maintained its vitality seasonally, depending on hazelnut production, with both producers and seasonal workers.

The state's hazelnut purchase guarantee, which lasted from 1964 to 1994, reshaped the market formation with the state's restriction on Fiskobirlik's exports in this year (Şentürk, 2010). The export of hazelnut, which Fiskobirlik now purchases from producers as well as traders, has begun to be dominated by the private sector. During this period, hazelnut production remained the most profitable product in the region. Although there is a decrease in productivity due to various reasons, especially the decrease in the size of agricultural enterprises through inheritance, the income obtained from hazelnut production has been considered a source of assurance for hazelnut producers. Hazelnut

production has become a way for the hazelnut producers, both in rural areas and abroad, to meet the planned or unplanned expenses of themselves and their families in daily life, such as a child's school expenses, marrying a daughter, circumcising a son, and paying debts.

### The Period Between 2001 and 2020

In the Giresun-Ordu Subregion, where the rural population has been decreasing since 1950, hazelnut production areas in the region have increased continuously between 2001 and 2020, as in previous periods (Table 2). Between 2000 and 2020, agricultural areas producing hazelnut in the region increased by 27%, from 271,823 hectares to 345,019 hectares. When the land cover data of the subregion is examined, this increase occurred as the hazelnut production region expanded to cover almost all agricultural areas (Figure 4). However, it is seen that hazelnut agricultural areas, which were up to 1000m altitudes in the previous period, have increased to areas above 1000m altitudes, and forested areas at this altitude continue to turn into agricultural areas (Tables 4-5) (Figure 4).

In the previous period, hazelnut producers operated their land through sharecroppers/divider, which caused agricultural practices to be inadequate (Kaptangil, 2005). This practice has led to a further decrease in the efficiency of hazelnut production in family businesses, which

are gradually shrinking due to the problems caused by division through inheritance. In addition, the increase in the agricultural areas producing hazelnut has expanded to lands less suitable for production, making agricultural practices difficult as in the previous period. Therefore, rural population in the region continued to decrease due to the ongoing low productivity in hazelnut agriculture over the years (Table 1). In this context, looking at the values given in Table 1, between 2000 and 2020, the ratio of the rural population decreased from 50% to 12% and the rural population decreased by 79%, but this information does not reflect the truth. In reality, although the rural area continues to lose population and its rate continues to decrease, it must be said that there is not as sharp a decrease as stated. As can be seen in this data, the reason why the rural population rate decreased to 0 in 2013 is that the villages in rural status were moved to urban neighbourhood status due to Ordu province gaining metropolitan status. Although the net migration rate decreased during this period, it continued to lose population through emigration.

In this period, alongside the migrating population from the subregion, a new breed of producers emerged: those born and raised abroad, representing the generation of previous migrants. They continue agricultural practices by cultivating inherited land. While agricultural tasks were typically carried out by seasonal and temporary workers,

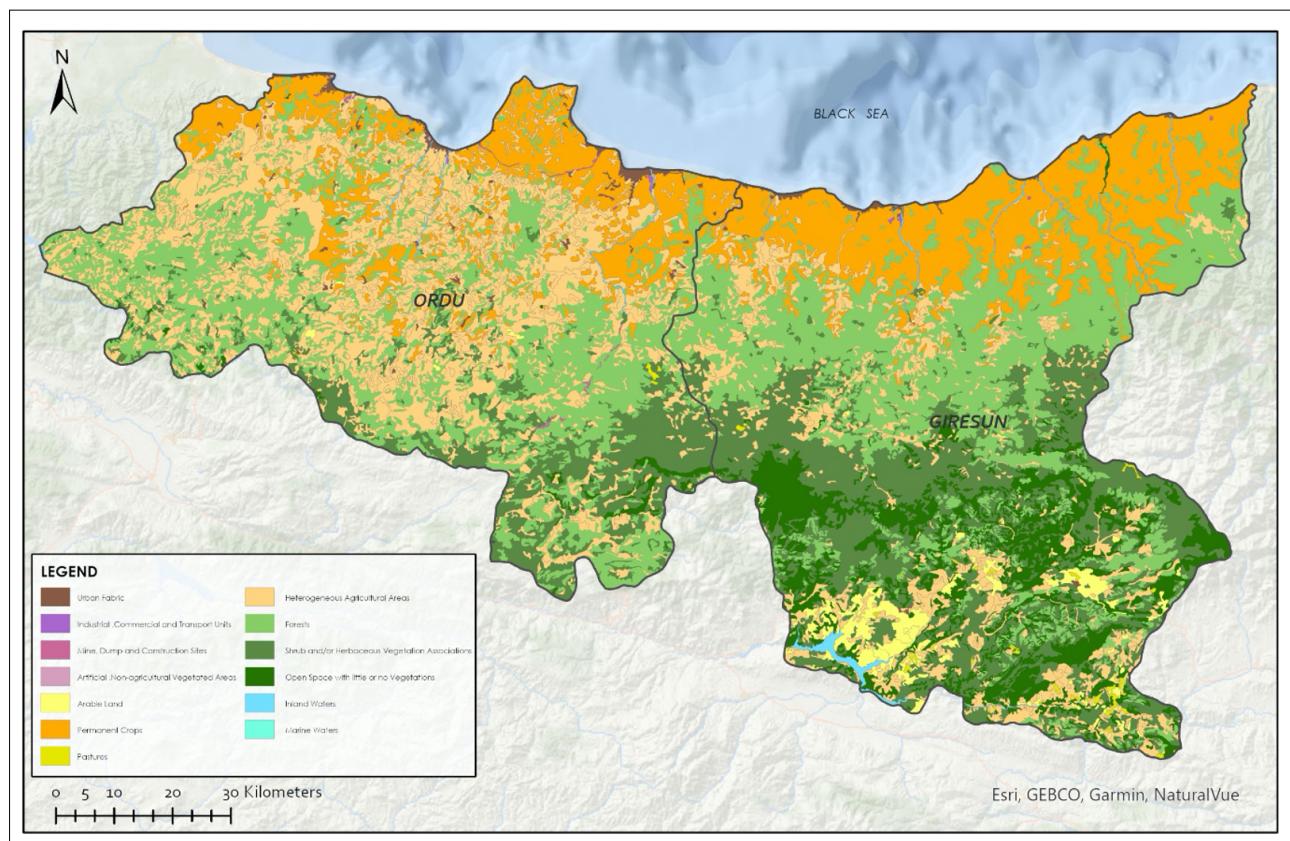


Figure 4. Land cover map of the Giresun- Ordu subregion in 2006, based on CORINE data.



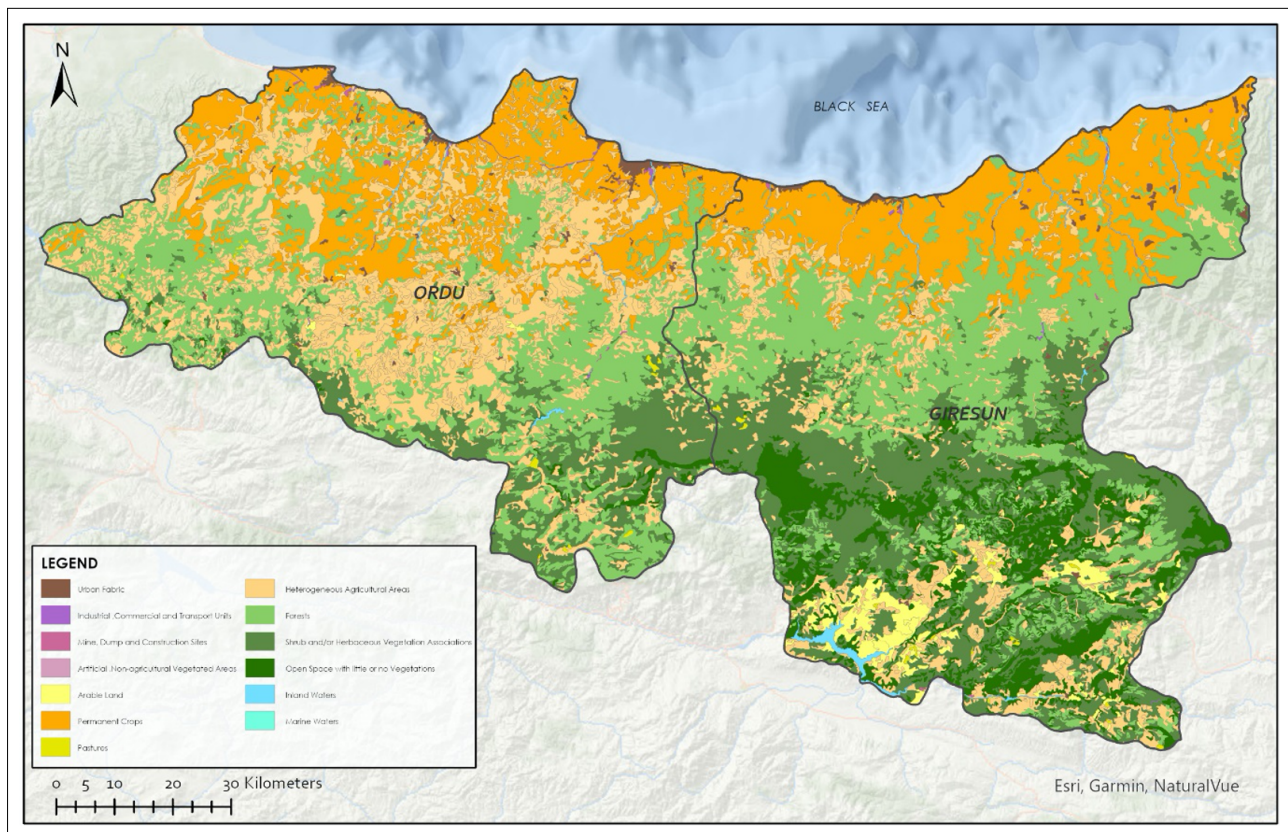
hazelnut harvesting shifted towards the branch-picking method, which gained preference. Additionally, hazelnut producers now spend more time in the production area. Despite being able to maintain sufficient relations, they may only stay for two to four weeks. Nevertheless, their continued connection to the region remains a crucial factor in sustaining hazelnut production.

However, as can be seen from Table 4 and Figure 5, in addition to climate change, the effects of increasing urbanization in the region, forested areas are lost by turning into hazelnut orchards. Also increasing mining activities on the natural structure and climate of the region have increased the frequency and severity of natural disasters, especially floods and landslides. This situation affected both crop productivity and caused the hazelnut harvest in August to be extended until mid-September. Hazelnut producers, who arranged his arrival to his hometown according to the harvest season, continued hazelnut production by adjusting the harvest date according to themselves, as he had to complete the harvest in the limited time he was in his hometown. Although it is important that agricultural practices that affect the yield of hazelnut and harvest are carried out on time, the product continues to be obtained in any case.

During this period, the presence of the private sector in the market strengthened its already dominant position with the entry of foreign capital. So much so that it is

known that 68% of hazelnut exports in Türkiye were made by a single foreign capital company in 2019 (Ordu Chamber of Commerce and Industry, 2019). Of course, the state appears to have an encouraging role in this process. Especially after Fiskobirlik was privatized in 2001, the state continued its purchases through the Soil Products Office, but this was subject to changing practices from time to time. For example, between 2009 and 2017, the state had no intervention in the hazelnut market, and the trader became an important actor during this period. Even in this case, economic prosperity continued regardless of the fact that hazelnut is a product dependent on location and its quality, actors and practices.

In the early 2000s, a large part of the rural population of the Giresun-Ordu Subregion migrated domestically and abroad, and it became a geography where a certain part of the population made "guest workers" lifestyle permanent due to the seasonal structure of short-term hazelnut production during the harvest season each year. In other words, while approximately 20% of the region's population lives outside the region as "guest workers", the region has become a "visited geography" during the harvesting season. It is understood that the region continues to be the dominant region in the country where hazelnut production is made, and in this context, agriculture continues to be the main economic sector of the region despite all these changes.



**Figure 5.** Land cover map of the Giresun- Ordu subregion in 2018, based on CORINE data.

## DISCUSSION

In the period between 1950 and 1980, hazelnut became dominant in agricultural production and the economy in the region. The rural population increased due to hazelnut production. The areas of hazelnut production increased, and hazelnut production areas became the main element of land cover below 500m altitude. The most important reason for this increase in hazelnut production is the government's purchase guarantee for the hazelnuts produced. As a result of this subsidy, productivity in the existing hazelnut production areas in the region reached the highest level after the 1970s. The economic situation caused by the cessation of the increase in the amount of hazelnut production led to a decrease in corn production and livestock in areas above 500 meters of altitude. This has led to the migration of the rural population in the region to cities or out of the region. The traditional lifestyle changed, with a certain part of the population having to work abroad and coming to their hometown at certain times of the year. Guest workers have become common due to migration.

Between 1980 and 2000, hazelnut production areas in the region began to spread towards forested and pasture areas. Natural vegetation changed with the expansion of hazelnut planting areas. As a result, unsuitable forested areas were destroyed for hazelnut production, and hazelnut production areas expanded from 500m altitude to 1000m altitude. Hazelnuts began to be produced in an increasingly larger area, in parallel with the continuation of the purchase guarantee given by the state to the hazelnuts produced. The declaration of the region as a legal production zone during this period also legalized this situation.

With hazelnut becoming the dominant agricultural product in the region and almost all agricultural production being hazelnut, significant declines in item productivity occurred. The economic situation caused by this situation led to the migration of the rural population in the region. However, while the rural population migrated out of the region, they did not leave the region completely but retained the ownership of the inherited lands on which they produced hazelnut. This situation enabled hazelnut production to continue through sharecroppers/dividers or temporary agricultural workers. In this way, the ritual of the migrating population coming to the region during harvest time and contributing to the production by participating in the hazelnut harvest continued. This guest worker population, on the one hand, earns a basic living by working outside the region, and on the other hand, continues the traditions by participating in hazelnut production during the "harvest season" and contributes to the family budget with the "bulk money" they obtain from hazelnut production. Hazelnut production has become a seasonal activity due to migration. The region has become a geography where the population living abroad visits once a year, usually in August, that is, during harvest time.

Between 2001 and 2020, the expansion of hazelnut production areas towards forested areas continued, and hazelnut production increased to areas above 1000m altitude. In these years, the influence of neoliberal policies in the country gradually weakened the dominant and decisive role of the producer in hazelnut production. However, production continued at an increasing rate due to the fact that hazelnut was exported, in other words, due to the presence of a foreign market. The rural population continued to decrease due to the expansion of hazelnut production areas into areas that are not suitable for production and the ongoing low productivity over the years. In addition to the population that migrated during this period, the generation of the population that had previously migrated from the region, born and raised abroad, continued to produce hazelnut by cultivating their own land. Agricultural practices carried out through temporary agricultural workers have allowed hazelnut producers to continue production by going back and forth once a year. Migrations out of the region and the seasonal structure of hazelnut production have made guest workers permanent. Life in the region has taken a form where the population living abroad continues to produce hazelnut in a geography that they visit once a year during the harvest season.

## CONCLUSION

In conclusion, when the events that took place in three areas, namely agricultural production style-method-economy, social structure-culture, and physical space, in three periods covering a 70-year period, are examined, it is possible to summarize the change and transformation of the RCL of the Giresun-Ordu Subregion in the following items:

- The regional economy continued its agriculture-based structure.
- Hazelnut is the only agricultural product produced for income generation.
- The encouraging role of the state, due to the purchase guarantee in hazelnut, has been decisive.
- With the spread of hazelnut production, corn production was abandoned, and corn production areas turned into forested areas.
- Hazelnut production areas have expanded towards forested areas, and the natural vegetation of the region has changed.
- Hazelnut production is carried out as a seasonal agricultural activity under the influence of the "guest worker" population.
- The migrating population plans their visits to the region according to the harvest season and thus continues hazelnut production in the region.



- The fact that hazelnut production can be carried out seasonally has ensured the continuity of rural life culture in the region.
- Land ownership has not changed hands. The fact that land is acquired through inheritance shows that there is a strong sense of belonging and attachment to the region.
- Due to division through inheritance, the size of agricultural enterprises has gradually decreased.
- Hazelnut production is an important tool in generating economic income.
- The power of Fiskobirlik, a local producer cooperative in hazelnut production, has weakened.
- The merchant continued his existence as a local actor in hazelnut production.

Hazelnut production has played a determinant role in the RCL of the Giresun-Ordu Subregion. Diversity in cultural landscapes is a source of resilience (Carpenter et al., 2001). Accordingly, what is accepted is that agricultural production and agriculture-based structures are not dependent on a single product. In addition, rural areas are abandoned, and agricultural production weakens (Rescia et al., 2010). However, the research results reveal that although the rural areas of the Giresun-Ordu Subregion are migrating, they continue the production style that defines the economic structure, space, and socio-cultural life by adapting to the unique conditions of hazelnut production, which is the only agricultural product. This supports the view that migration to areas where new economic opportunities are offered as a result of inadequate socio-economic conditions in rural areas is not always negative (Plieninger & Bieling, 2012). Of course, this does not mean that the economic, socio-cultural, and environmental effects of dependence on a single product and the change and transformation in land cover in favor of agricultural areas should be ignored. However, the fact that the RCL of the region maintains its basic structures and functions shows that it has the ability to cope with these impacts and make changes to this day. Migration in the sub-region has brought about adaptations in the style, method, and economy of agricultural production. These adaptations have transformed the way of life by making migration permanent and continuous. Agricultural production continues through institutions and socio-cultural structures such as the migrating population not selling their land in the region, visiting the region during harvest time and participating in production, and this becoming a ritual repeated every year. In this way, it is possible to say that the RCL of the region, which can continue its traditional economic and social structure by adapting to all these changes and transformations, is resilient.

This change and transformation process in the rural cultural landscape of the Giresun-Ordu Subregion is an important reference point that should be taken into

account in determining future agricultural, economic, and demographic trends. Preserving natural resources and adopting a sustainable agricultural policy will contribute to the region achieving an economically and ecologically balanced structure and increasing the welfare of the local community.

## NOTES

<sup>1</sup>According to TUIK, agricultural employment in the Eastern Black Sea Region was 62% of total employment in 2004, 54.68% in 2010, and 41.3% in 2020. In 2020, agriculture constituted 17.6% of total employment in Türkiye, indicating that the Eastern Black Sea Region remains more agriculture-focused than the national average.

<sup>2</sup>See: Kutluata (2015), Güvemli (1997), Yılmaz (2014), Kaptangil (2005), Şentürk (2010), Kayalak & Özçelik (2012), Doğanay (2013), Kaynar (2018), Korkmaz (2021).

<sup>3</sup>In 2020, the GDP distribution in Giresun and Ordu shows that agriculture accounts for 13%, industry 27%, and services 60%. Nationwide, agriculture is 6%, industry 34%, and services 60%. The higher share of agriculture in Ordu-Giresun is due to hazelnut production, while the lower industrial share is because the region's industry is agriculture-based (TUIK, 2024; DOKAP, 2022).

<sup>4</sup>The average business size in 1975 was 15.55 in Giresun and 15.02 in Ordu.

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