

## Assessing the Environmental Capacity of the Southern Caspian Sea for the Development of Agritourism with Emphasis on Rural Areas of Guilan, Mazandaran and Golestan Provinces of Iran

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### ABSTRACT

**Purpose:** The purpose of this study is to assess the environmental capacity of the southern Caspian Sea to develop Agritourism in rural areas of Guilan, Mazandaran, and Golestan provinces. Agritourism is considered a service activity in providing currency and income for rural communities and is an economic strategy.

**Research Method:** The present study is applied in terms of purpose and descriptive-analytical in terms of approach. Secondary data analysis was used to assess the agricultural situation and field data were used in the field of environmental landscape, human activities, and infrastructure. Data were collected and monitored, encoded, and analyzed in an SPSS environment.

**Findings:** The results indicate that – according to the maps drawn in the field of agricultural products in these three provinces and to the opinions of relevant experts – Guilan Province, with an average of 3.47 in relation to the formation and development of Agritourism from the situation, is the best; Golestan Province, with an average of 3.38, is the next; and finally, with a very small difference, Mazandaran Province with an average of 3.24, is in the third place. As a result, the southern part of the Caspian Sea, especially its rural areas, is suitable for the development of agritourism.

**Research Limitations:** The main challenges in the process of this research are the lack of easy access to experts related to agriculture, tourism and rural issues, as well as the lack of up-to-date statistical data in this field.

**Originality/Value:** This research was conducted for the first time in the southern region of the Caspian Sea and could pave the way for further research.

**Keywords:** Agritourism, Caspian Sea, Capacity of Agritourism, Guilan, Golestan and, Mazandaran Province


### INTRODUCTION

The main activity of rural areas in the third world is agriculture. The experiences of developed countries show that by using agriculture and related activities in rural areas, rural development can be achieved. Today, in most parts of the world, especially in rural areas of Third World countries, due to the prevailing environmental and managerial conditions, the agricultural sector can no longer earn money for farmers alone (Chenari, 2020), and this causes them to face pressures.

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Due to the high costs of producing agricultural products, think about selling or changing land use and migrating from the village (Varmazyari, 2013). In this situation, one of the most important conditions for the continuation of productive activities and preventing the intensification of agricultural land-use change, especially in rural areas, is to diversify agricultural activities and move to multifunctional agriculture to provide income sources and create complementary and sustainable income sources Fleischer and Tchetchik (2005). In the meantime, rural tourism and especially Agritourism as one of the alternative tourism branches can play an effective role. Agritourism, perhaps more than any other sector, has the potential to contribute to the economic development of local communities through its connection to agricultural activities. In other words, this form of tourism motivates and diversifies the agricultural sector. Because the activities of the agricultural sector can be a stimulus for services in the tourism sector (Chorn, 2015). This is more understandable in Agritourism attractions (Varmazyari, 2013). In other words, Agritourism can improve the economic resources and environment of the village and preserve the heritage of the past (Chenari, 2020).

In agritourism, because tourism products and services are demand-driven instead of supply-oriented (tourists are eager for its attractions), they declare their readiness, follow it, pay for it, and pay attention to their behavior and performance. They consider themselves responsible for the environment and on the other hand, the host community considers tourists as people within their income sources, a form of sustainable tourism is formed responsibly. In this form of tourism, a kind of alliance and empathy has been formed between the guest and host community in the context of rural geography, which everyone will benefit from in some way (Chenari, 2020). Various elements are involved in the formation of this type of tourism, including the presence of tourists, the host community, i.e. villagers and farmers, agricultural activities, the environment as a landscape and geographical space, and facilitators (Phillip *et al.*, 2010). Among these factors, the environment as the first and most influential factor will play a significant role in the formation and development of agritourism. The environment in Agritourism as a landscape, structure, and shaping the spatial organization of a geographical area includes all the elements that define themselves in the form of human and natural components. And is geographically defined as the same stable environment. has pointed out that agritourism should be done in a place that has conditions such as sustainability of agricultural activities, compatibility of regional conditions with tourism activities, quality, and environmental security.

Therefore, research that seeks to measure the suitability of a region for tourism should examine the four aspects of agriculture, tourism, beauty, and adaptation (Kaswanto, 2015). In this regard, the southern region of the Caspian Sea and especially its rural areas due to special geographical and cultural conditions can be a good platform for the development of agritourism. The existence of natural environments and mountain and sea landscapes, forest areas, rice fields, tea and citrus orchards, traditional livestock systems and green pastures, special architecture, and suitable climate are the most important components that are considered in connection with agrotourism. On the other hand, this geographical area annually receives a large number of domestic and foreign tourists and travelers, who by identifying and introducing attractions related to Agritourism and directing visitors to them, can provide the ground for the prosperity of this form of tourism. But what is considered the main goal of this study is the study and environmental feasibility of the southern Caspian Sea to develop agritourism. In this regard, the research question is posed as follows: Does the geography of the southern region of the Caspian Sea have the conditions to accept all types of agricultural agriculture?

In relation to the research literature in the field of agritourism, extensive research has been done by researchers all over the world, some of which will be discussed below. Lupi *et al.*, (2017) consider the variables of landscape and environment, the economic components of the farm, its specialization, and the characteristics of the farmer, to be effective in shaping Agritourism activities. Hung and Law (2011) argued that the agritourism business model generally plays a key role in determining performance. Schilling and Sullivan (2014) found fruit and vegetable farms, rural low-density residential farms, and medium-sized farms more suitable for agritourism. Tew and Barbieri (2012) considered Agritourism as an effective use of resources, promoting agricultural production and improving land-use productivity in rural areas. According to Mortan (2006), the development of Agritourism in Romania is a distinct opportunity between rural and urban environments, as well as the best way to preserve customs in rural areas to ensure sustainable rural development.

Agritourism and its formation conditions include the existence of a small and valid natural scale and rich in cultural structure or areas that have a suitable landscape and large-scale single-product attractions, beauty and good landscape Good transport for access, good infrastructure, stable political conditions (Ellenberg *et al.*, 1997). In the field of agriculture in Iran, research

has been conducted which includes: Bouzarjahmari *et al.*, (2017) considered the development of Agritourism in areas that have the necessary potential for tourism development as one of the strategies that have been proposed to strengthen rural areas. Norouzi and Fathi (2017) in Lenjan Township showed that the agricultural sector of Lenjan Township has the necessary capabilities to develop Agritourism in selected items in this field and the attitude and acceptance of farmers and tourists in most items related to festivals. Agricultural and horticultural activities are positive.

Langroudi and Heidari (2012) believe that the rural areas of Guilan province, considering the existing potential, have very favorable conditions for the implementation and development of agritourism; and they need more attention and practical and more accurate planning in this regard. Nokashti (2015) acknowledged that Shaft Township with its diverse agricultural products that are attractive to non-native and indigenous tourists and the holding of numerous festivals can take new steps in the development of tourism in this township and also increase revenue. Villagers and job creation for some unemployed people in this township. Bakhtiari (2015) to determine suitable Agritourism areas in Kerman province showed that with increasing altitude, this index decreases in all months of the year. Moradi (2012) states that the most important factor in attracting tourists to the township is the agricultural attractions of this township, including farms and gardens for growing flowers and plants. Ahadzadeh and Mirzaeighaleh (2010) in a study states that despite the natural conditions and attractive agricultural activities in this region, cultural conditions heterogeneity ethnic-religious homogeneity, and lack of intimate communication with non-residents have led to very effective investment in agritourism. Has not been. Overall, based on studies, this study also seeks to examine the possibility of developing Agritourism in the southern Caspian Sea. What makes this study different from other previous studies is the geographical level and indicators studied (Javan and Saghqaei, 2004; Spillan, 1994).

The background of the subject of Agritourism shows that various terms have been used instead. Terms such as; Agritourism, farm-based tourism, farm tourism, farm tourism, and recreational tourism are often used in Western Europe, Eastern Europe, and the United States (Topcu, 2007). The customers of Agritourism are mostly urban residents and those who enter the agricultural space from outside. This type of one-off purchase may provide job opportunities for farmers to reduce various risks in a competitive urban economic

environment (Brumfield and Mafou, 2002). In drawing a coherent framework of two-level agritourism, ie the actors of this type of tourism, and secondly, the issues around which the action takes place, can be discussed (Moradi, 2012). Agritourism actors include tourists; Hosts (farmers of the villagers); Governmental and non-governmental institutions, associations, associations, or (facilitators/affiliates), and the farm itself and related activities, each of which is influential in the process of Agritourism (Chenari, 2020). Agritourism cannot be called rural tourism. Because the range of activities and elements involved in rural tourism is much wider than agritourism. The farms that make up the main identity of Agritourism are only an important part of rural areas. Therefore, it can be boldly claimed that Agritourism is only a part of rural tourism (Sznajder *et al.*, 2009). Creating new job opportunities, can promote socio-cultural values in these areas and bring additional income to farmers (Barbieri and Mshenga, 2008; Mahaliyanaarachchi, 2017). Agritourism helps farmers maintain the dynamism and sustainability of agricultural products and at the same time diversify their economy. and be an opportunity for agricultural and rural development and creating healthy and informative recreational opportunities for domestic and foreign citizens in the rural environment (Lilakoohi *et al.*, 2022). Which generates additional income for farmers. Goal and motivation for the development of agritourism, including economic goals and motivation. Goal and motivation for the development of agritourism, including economic goals and motivation. Socio-cultural is an environmental physical (Varmazyari, 2013). In creating and developing it, factors to consider are geographical location and proximity to attractions, social skills, financial planning and earnings (Shabani *et al.*, 2017) quality of products and services, and needs identification. Some further actors are Customer, desire to learn and change (Varkani, 2012), branding and advertising, partnership with the local community, public relations, information (Sznajder *et al.*, 2009), farmland and its performance (Barbieri and Mshenga, 2008) owner's family wealth or net farm income (OECD, 2009), traditional experience, educational experience, customer service (customer satisfaction), convenient public facilities, access to safe environments, strong social relationships; They are one of the most important factors in the success of Agritourism (Chenari, 2020).

In general, in the development of agro-tourism, it is important to pay attention to several issues, including human resources, natural resources, infrastructure, and organizational communication. According to Spillan and Parnell, (2006), five factors of attraction,

facilities, infrastructure, transportation, and hospitality are necessary for the development of agritourism in an area. These factors in agro-tourism are systematically coordinated and related to each other. He considers the coordination of the three stakeholders necessary in creating an agritourism destination. These groups include tourists as consumers, farmers as producers and employers, and the host community (Imani, 2011). Sznajder *et al.*, (2009) categorize 9 categories of products and services in tourism, which include: accommodation products and services, food, raw materials, direct sales, leisure services, sports services, recreation and entertainment, socio-cultural attractions, and services therapy (Jomehpour and Heidari, 2016). From the perspective of farmers, Agritourism is an element to increase income; from the perspective of tourists, it is for spending leisure time in rural areas and gaining experience; from an economic perspective – i.e., providing income and employment to residents; and from the perspective of local people, it is for practicing teamwork, collective wisdom and public benefit (Varkani, 2012). Agritourism is formed based on rural facilities and can be used as an opportunity to diversify the activities of people involved in the agricultural sector and is a link between tourism and the agricultural sector and is a reflection of the provision of new opportunities in the field of creating economic opportunities through tourism in farms. Agritourism allows tourists and visitors to learn and acquire agricultural knowledge and to understand the unique rural scenery. Agritourism is closely related to environmental tourism (Scialabba and Williamson, 2004). And can be a tool for measuring the quality of life, and measuring the standard of living of specific social groups (Degan, 2011). As a result, it has a good position in the rural development planning system (Lopez and Garsia, 2006). Agritourism provides the opportunity to use and enjoy the rural environment and culture at a reasonable price for families, couples, and the elderly (Hall *et al.*, 1998). It also makes it possible to buy products directly, enjoy the beautiful agricultural landscapes, supply the required fruits and vegetables, and learn the principles and experiences of agriculture (Varmazyari, 2013). Agritourism is a process for agricultural promotion. And be a torn tool alongside the main farm activity to earn more (Singhbagi and Reeder, 2016).

Agritourism has been able to provide special economic opportunities in rural areas (Brumfield and Mafou, 2002), which are influenced by factors such as farmland characteristics and performance, owner's family wealth or farm net income (Barbieri and Mshenga, 2008), farmer or owner characteristics, Farm location, geographical area and climate, farm size,

amount of land, farm attractions for visitors, owner's family wealth or farm net worth, as well as internal and external characteristics of a person, age, level of education, degree Social skills, farmer personality, the degree to which agriculture can seize and exploit a lucrative opportunity (opportunism), access to the Internet, the use of new agricultural and tourism management advice. Another variable that is assigned to agriculture and farm income and organizational structure is the personal abilities of the owner or farmer and influence in the banking system to obtain loans and investments in case of expansion of Agritourism (George and Rilla 2011).

The higher the net family assets, the greater the chance of success in Agritourism and the likelihood of this factor being effective. Organizational structure as a joint-stock company or partnership affects the chances of agritourism. Access to and use of professional advice is also expected to help farmers in this challenge (Singhbagi and Reeder, 2016). Geographical features of the region also include the natural resources of the region, climate, infrastructure, cultural tastes and values, socio-economic conditions, and political considerations (Fakhimzadeh, 2016; Che et al, 2007; Sonnino, 2004).

This type of tourism helps to preserve the life cycle and landscapes of rural areas and rural revitalization and also provides an opportunity to provide green tourism and preserve ecosystems (Norouzi and Fathi, 2017) in their theory; Agrotourism teaches tourists and ordinary people about agriculture and how to cooperate and participate in the local economy of villagers and farmers, reducing their migration to cities and the desire for urbanization. It adds new prices to the value of agricultural products and benefits the local community through the direct sale of these products. Also (Imani, 2011) categorized agritourism activities as follows: agriculture and accommodation, supply and sale of agricultural products, serving tourists with local foods, leisure activities and hiking in the countryside and Farms and handicrafts and native arts.

Today, Agritourism acts as a tool for rural development in areas that have an agricultural economy and potential for tourism development (Timothy, 1998). According to Timothy (1998), Agritourism is an element of tourism planning in a holistic and participatory manner. Abri, (2012) presents farm-based tourism as an alternative farm company to multifunctional agriculture, which includes the process of transformation, diversification, and development of the farm business.

Agritourism is a gender approach due to its family-centered nature and especially the prominent role of women in its activities; hence, the issue of Agritourism planning is directly related to women's issues related to the issue of rural development. The development of this sector also includes the social, cultural, and economic development of women (Topcu, 2007). Relying on its economic characteristics and effects, Agritourism activities can play a major role in the mobility and dynamism of various economic sectors of local communities, which ultimately contributes to the development of rural and underdeveloped areas (Varkani, 2012; Shaw and Williams, 2012). Agritourism is one of the most important potential and sustainable signs of rural areas (Woods, 2015). Robinson considers agriculture as the center of development and the only solution is to return to small-scale agriculture (Woods, 2015). Ellenberg *et al.*, (1997) consider Agritourism from two perspectives as an important factor in the growth of rural and local communities: a; Changes in the agricultural sector such as structural and market adaptation, and b; There is a growing trend in urban residents who want to know more about rural life, including an increased desire to find the origin of food agriculture (Te Kloeze *et al.*, 1993; varkani, 2012).

According to (Mason and O'Mahoney, 2007), agrarianism provides access to new income opportunities and increases the income of villagers and local communities and agricultural development. Also, according to Longworth and Hecht, Agritourism can strengthen the mutual relations between urban and rural communities and be effective in preserving agricultural lands. Roberts and Deere believe that agritourism in rural areas can be considered as a complement to historical, ecological, and nature-oriented tourism activities. The impact of Agritourism on the development and sustainability of the rural environment can be classified as economic, socio-cultural, and environmental impacts (Varkani, 2012).

## MATERIALS AND METHODS

### *Study Area*

The study area includes the southern region of the Caspian Sea, which includes the three provinces of Guilan, Mazandaran, and Golestan, which due to climatic conditions and natural resources, similar biological geography has been formed in the region. This area has three views of the sea, and the agricultural system, as well as the forest and mountainous area, which has formed a special landscape. In the Caspian region, the main activities are based on agriculture,

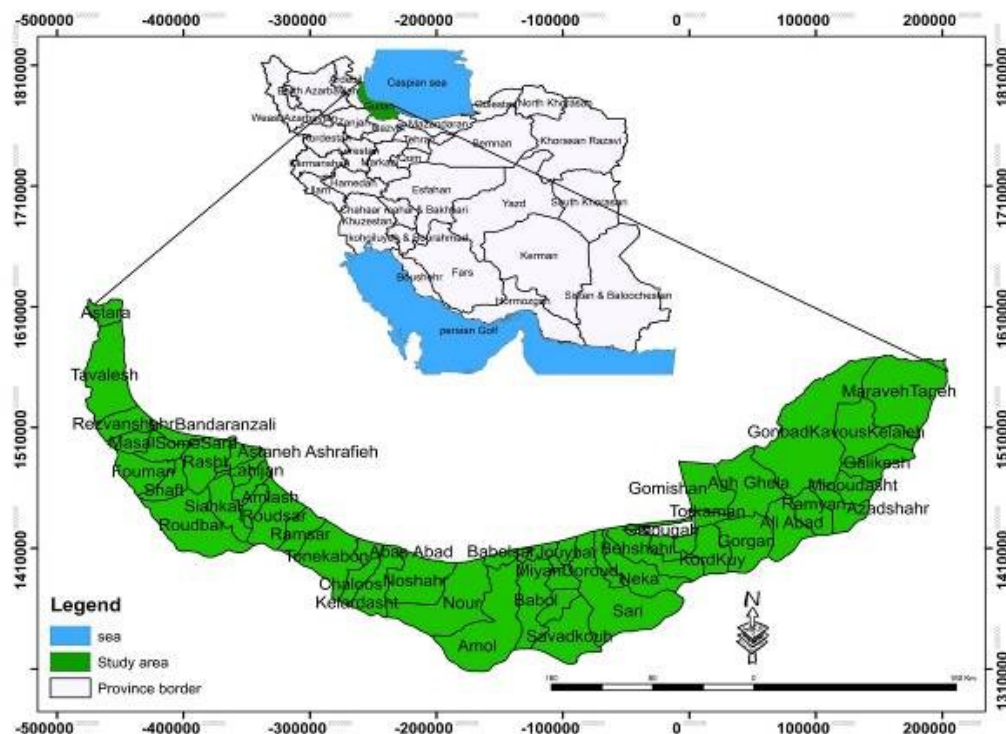
which, in addition to being a tourist destination, can provide the basis for the prosperity of agritourism (Fig.01).

### *Methodology*

This research is applied research in terms of purpose and descriptive-analytical research in terms of the collection method. In terms of the research method, relies on a quantitative approach, Because it makes it possible for the research team to determine a quantity through numerical data or data that could be easily converted into statistical data, to measure the behavior and opinions of a large group of respondents, and the data were completed after designing a researcher-made questionnaire online by experts and senior managers of Jahad Agricultural, Cultural Heritage, and Natural Resources in 52 cities in the southern region of the Caspian Sea, which includes 156 questionnaires. In this study, to investigate the possibility of developing Agritourism in the Caspian region, the agricultural situation, environmental landscape, and human activities, as well as the discussion of infrastructure from the perspective of experts and statistics of the Statistics Center were examined. Secondary data analysis was used to assess the agricultural situation and field data were used in the field of environmental landscape, human activities, and infrastructure. Data were collected and monitored, encoded, and analyzed in an SPSS environment.

## RESULTS AND DISCUSSION

Initially, to assess the situation in the southern Caspian Sea region to develop agritourism, the general structure of the region in terms of agricultural status, natural landscapes, and man-made was examined. About the agricultural components of the study area in line with the objectives of agritourism, the data of the Statistics Center of Iran were used. In this regard, variables such as the status of greenhouse activities, the status of agricultural exploitation, the status of light and heavy livestock breeding, the status of bees, the status of silkworms, the status of fish farming, and status of crops and orchards have been used, which are described in detail below. Be. The three provinces of Guilan, Mazandaran, and Golestan are considered potential areas for the production of agricultural and horticultural products due to their fertile soil and suitable climatic conditions, as well as their abundant surface and groundwater resources. Rice, tea, olives, hazelnuts, citrus fruits, watermelons peanuts, and livestock products are the most important livestock, agricultural and horticultural products of these three provinces. It is also possible to develop the area under cultivation



**Figure 1: The study area (Guilan, Mazandaran, and Golestan provinces) in the north of Iran**

Source: Research data, 2021

and increase the production of products such as tea, olives, flowers, ornamental plants, greenhouse products as well as vegetable and summer products in these three provinces. Also, due to its vast and susceptible pastures and having suitable climatic conditions for growing fodder crops, as well as the potential of farmland that can be used to feed livestock, has a good position for the maintenance and breeding of livestock. Livestock activities in these three provinces mainly include the maintenance and breeding of livestock, including cattle and calves, sheep and lambs, buffaloes, poultry, silkworms, bees, and aquatic products, and livestock products, including raw milk, red meat, meat, and eggs. It is honey and fish meat. One of the most important livestock activities is silkworm breeding so that the production capacity of silk cocoons in Guilan can be superior to the production of other regions in the country. The pervasiveness of silkworm breeding operations, the existence of mulberry orchards, and the considerable number of nomadic families in the province are the most important factors in achieving this. Silk production activity can, as a side activity, in addition to providing raw materials for spinning mills and creating employment, provide a favorable environment for increasing the income level of farmers in the province. Other important livestock activities that can be considered according to the specific climatic situation in these provinces are their availability of necessary water resources such as wetlands, springs, dams, and rivers. Therefore, breeding hot and cold

water fish can be one of the most efficient and effective activities in these three provinces.

On the other hand, due to the existence of various tree species and vegetation in the forests and pastures of these provinces, if protected, restoration of degraded forests, rangeland improvement and optimal use of forests and pastures, forest-related industries and medicinal plants grow, wood and forage production increase, livestock feed is provided, ecotourism operations flourish, and jobs are created in non-forest and non-rangeland activities. Due to the large volume of rainfall and the flow of numerous rivers in these provinces, in the case of controlling surface water, improving the course of rivers, and strengthening groundwater aquifers, the existing water reserves can be used and exploited optimally. Other capabilities of the province's water resources include easy access to groundwater aquifers, the existence of water resources such as the Caspian Sea, wetlands, and dams, as well as the possibility of using drinking water from springs in mountainous areas and foothills. Due to the wide dispersion of rural areas as well as the existence of mountain villages, villages adjacent to tea and citrus orchards, villages adjacent to reservoirs, rivers, wetlands, and the beach, as well as villages located in the highlands, it is possible to launch rural tourism and rural tourism tours. Due to the long coastline of the Caspian Sea and flooded rivers, there is a good opportunity for the development of maritime



tourism, sea tours, and fishing tours, and due to the diverse wildlife, the possibility of hunting tours. Due to the cultural diversity and historical monuments, it is possible to conduct scientific, research, and cultural tours, and due to the temperate climate, it is possible to attract tourists from non-temperate regions.

Given the importance of Agritourism and to investigate the possibility of developing this type of tourism in the southern Caspian Sea, a general understanding of the study area from the perspective of Agritourism components is necessary. Also in the field of horticultural products, Babol township in Mazandaran province, Rasht in Guilan province, Sari in Mazandaran province, and Rudsar and Talesh in Guilan province have gained the first to fifth ranks, respectively. In this regard, the exploitation of horticultural products in Mazandaran provinces with 182788 exploiters and Guilan with 175101 exploiters are in more favorable conditions. This index also indicates a situation that allows the formation of agriculture. The existence of garden areas can provide conditions for components such as harvesting by tourists, shopping on the farm, picking garden products, gardening, and photography in Agritourism (Fig.02).

Another agricultural activity in the furregion is silkworm breeding, which can attract agritourists. In this regard, Shaft, Langrood, Lahijan in Guilan province, Minudasht in Golestan province, and Babol in Mazandaran province have gained the first to fifth ranks, respectively. Raising silkworms, participating in the breeding process such as feeding and also watching them while cocooning can be attractive for Agritourism tourists (Fig.03).

One of the main characteristics of the development of Agritourism in any geographical area is the presence of farmers and the activities of various agricultural sectors. This means that the area is rich in terms of active and agricultural activities. In this regard, the study of the general situation of the Caspian region shows that in terms of agricultural land use status, Guilan province with 219011 farmers and Mazandaran with 189699 farmers are in more favorable conditions than Golestan province. The cities of Rasht, Babol, and Sari are ranked first to third (Fig.04).

As a result, according to the number of beneficiaries, the situation is such that the region is prone to the development of Agritourism and needs to assess the attitude of farmers and educate them to be able to form this type of tourism. Beekeeping is another important product of the Caspian region. In this regard,

Guilan province with 3649 farmers in the first place, Mazandaran province with 3520 farmers in the second place and Golestan province with 2353 farmers in the third place. The most important areas for beekeeping and honey production in the Caspian region are the cities of Babel in Mazandaran province, Rudsar, Talesh, Rezvanshahr and Rudbar in Guilan province. Visiting bee farms, buying products and participating in the honey production process are among the most important attractions of this sector in Agritourism (Fig.05).

Another important agricultural activity in the Caspian region that is seen in most rural houses is poultry farming. In agritourism, local poultry play an effective role in the production of organic meat and eggs. In this regard, Babol in Mazandaran province, Rasht and Talesh in Guilan province, and Amol and Sari in Mazandaran province are the first 5 cities in the field of poultry breeding. In general, in the field of poultry breeding, Mazandaran and Guilan provinces are in more favorable conditions than the Golestan provinces. Agritourism tourists enjoy watching poultry, goose, and duck farms as well as using products such as meat and eggs (Fig.06).

Other activities in the field of agriculture in the Caspian region, which can also be considered in the tourism sector, are greenhouse activities. In the field of greenhouse cultivation, Abbasabad, Mahmoudabad, Amol, and Tonekabon counties in Mazandaran province and Soomehsara County in Guilan province are among the top 5 counties in greenhouse production, respectively. The number of greenhouse cultivators in Mazandaran province is 1496 farmers, in Guilan province 385 farmers and in Golestan 61 farmers are in first to third place, respectively. In this section, tourists can prepare their plant products by attending various greenhouses during the production process. Eat food and get the necessary training if needed (Fig.07).

Other agricultural activities in the Caspian region are the breeding of heavy and light livestock and the production of its by-products, which are very important in agritourism. In the field of heavy livestock breeding, Rasht and Talesh counties in Guilan province, Gonbad Kavous County in Golestan province, Babol County in Mazandaran province and Fooman in Guilan province are the most exploited (Fig.08).

But in the field of light livestock breeding, Babol and Sari cities in Mazandaran province and Gonbad Kavous, Gorgan, and Maraveh Tappeh cities in Golestan province have the most users of light

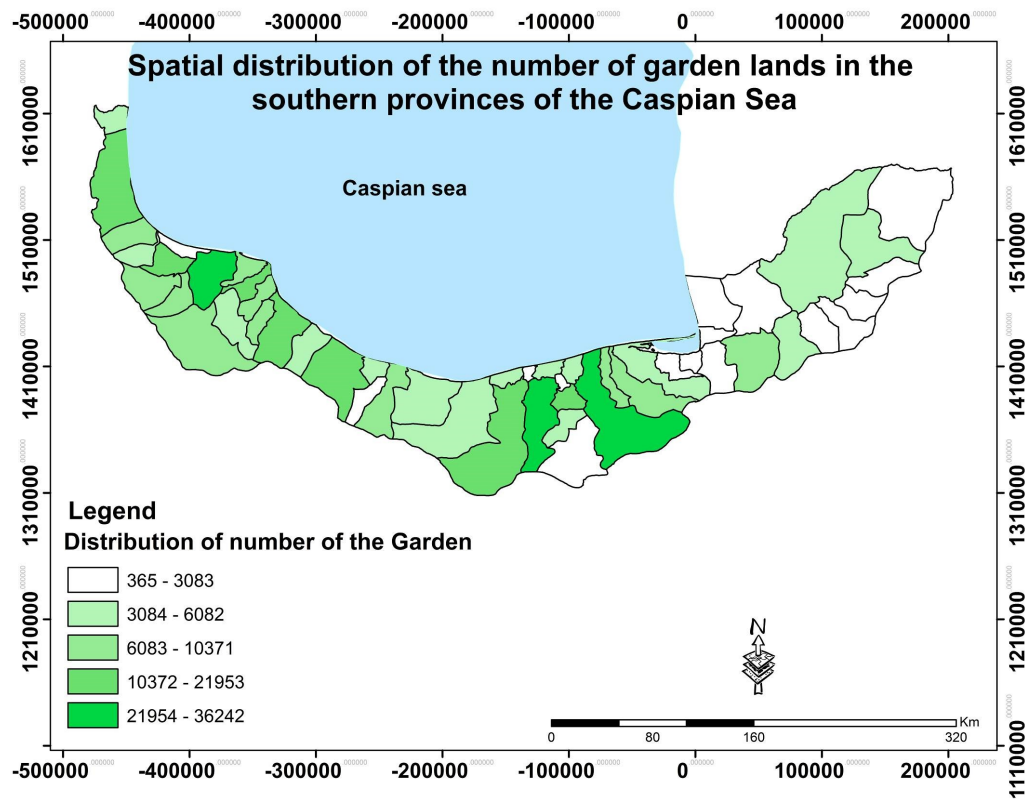


Figure 2: Spatial distribution of the number of garden operators in the three provinces (Guilan, Mazandaran and Golestan)

Source: Research data, 2021

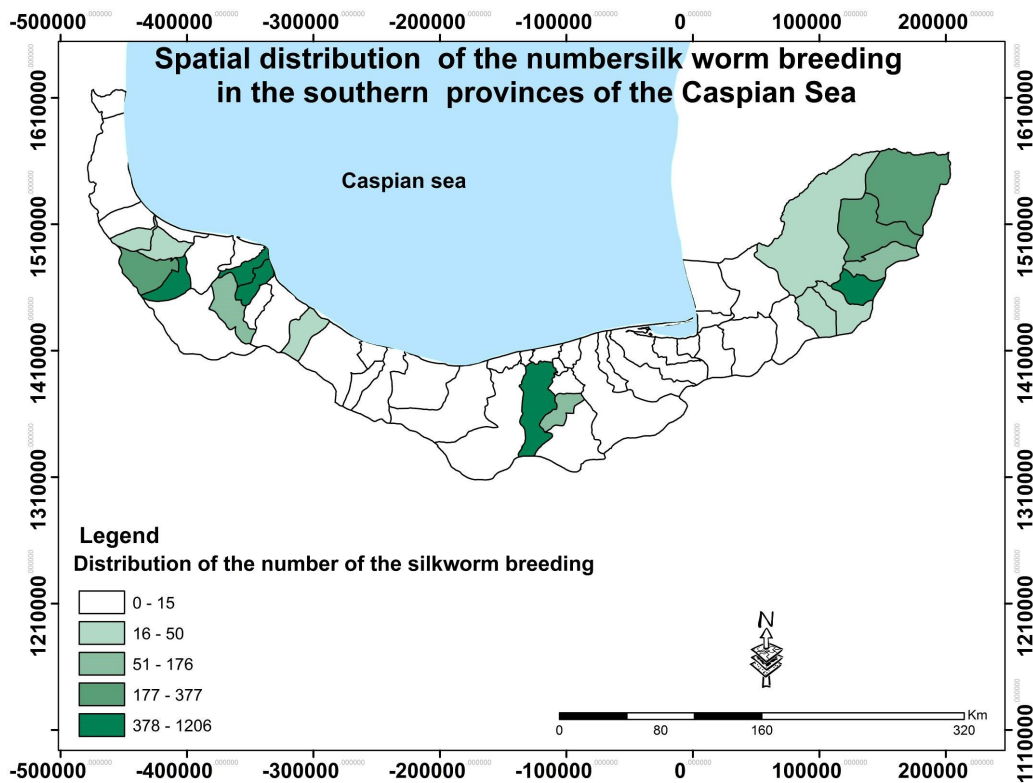
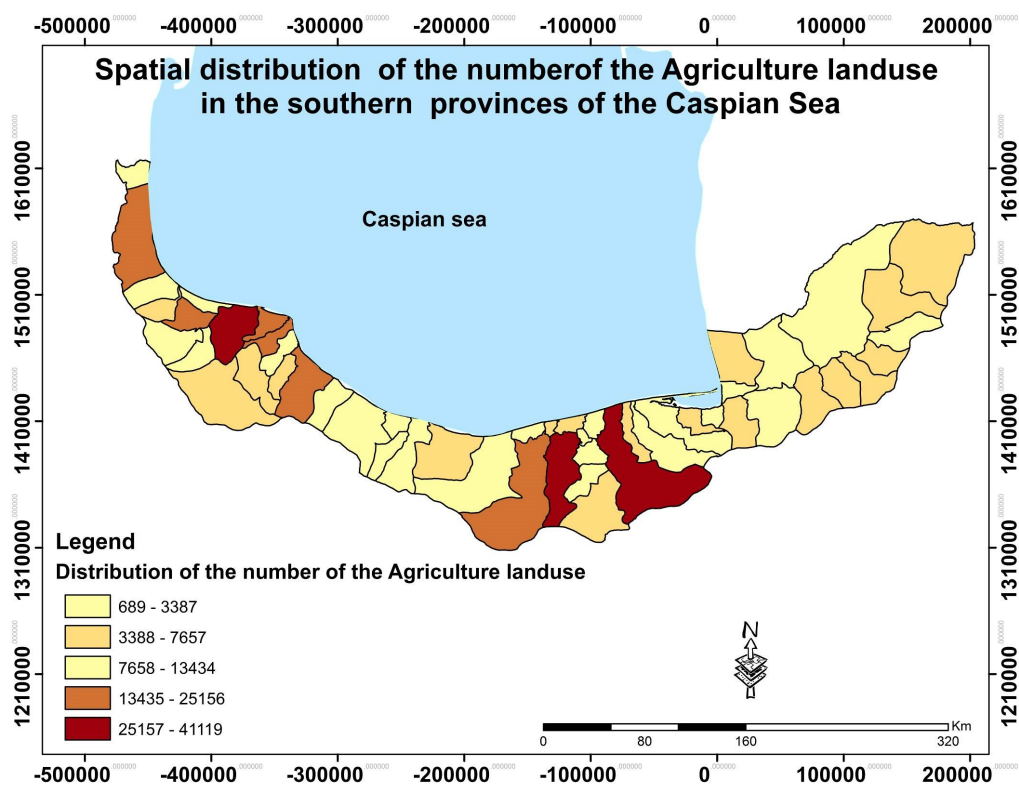


Figure 3: Spatial distribution of the number of silkworm farmers in the three provinces (Guilan, Mazandaran and Golestan)

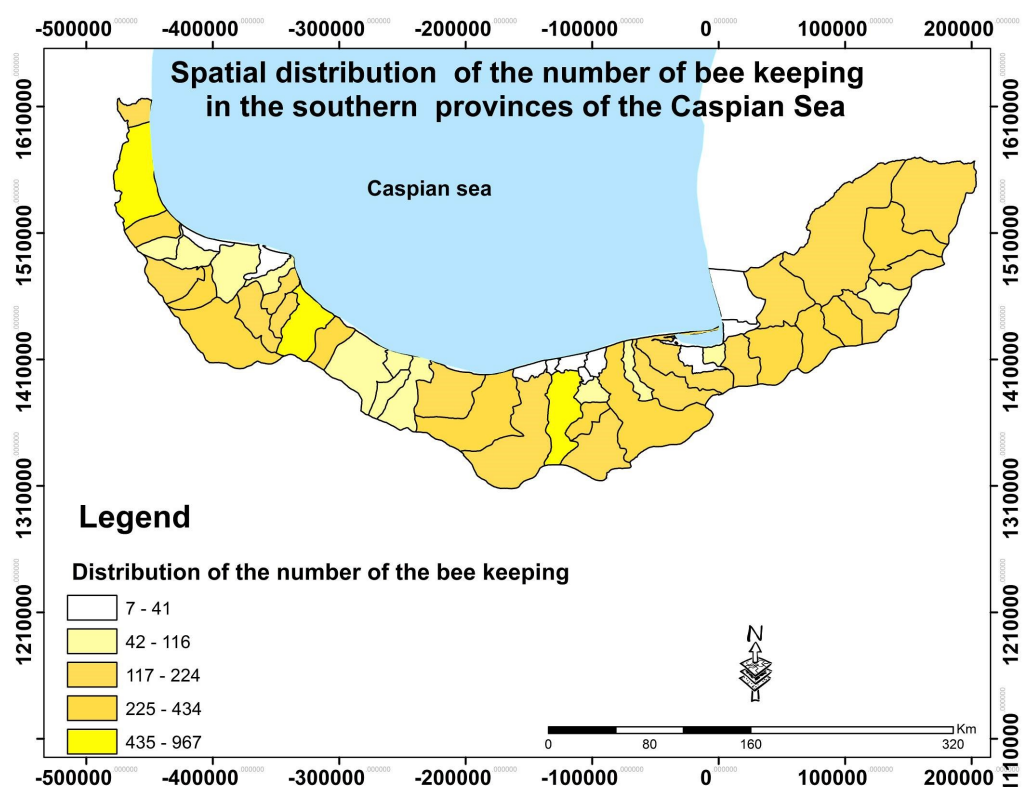
Source: Research data, 2021





**Figure 4: Spatial distribution of the number of farmers in the three studied provinces (Guilan, Mazandaran and Golestan)**

Source: Research data, 2021



**Figure 5: Spatial distribution of the number of bee operators in the three studied provinces (Guilan, Mazandaran and Golestan)**

Source: Research data, 2021

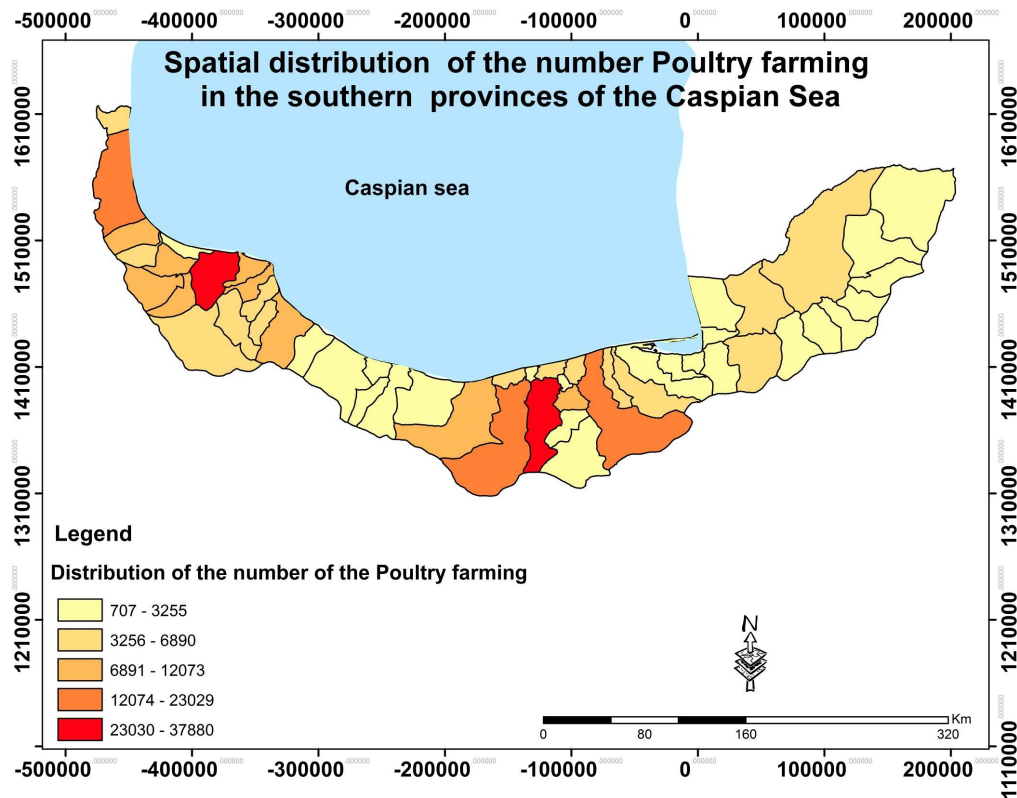


Figure 6: Spatial distribution of the number of poultry farming in the three studied provinces (Guilan, Mazandaran and Golestan)

Source: Research data, 2021

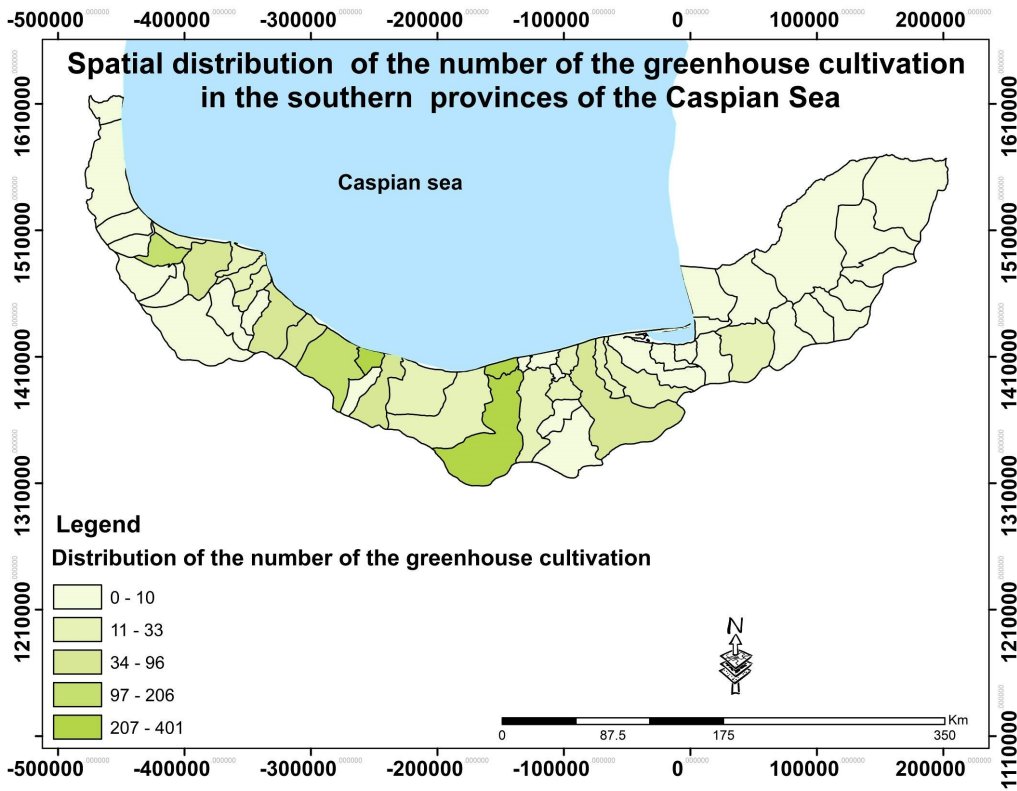


Figure 7: Spatial distribution of the number of greenhouses in the three studied provinces (Guilan, Mazandaran and Golestan)

Source: Research data, 2021

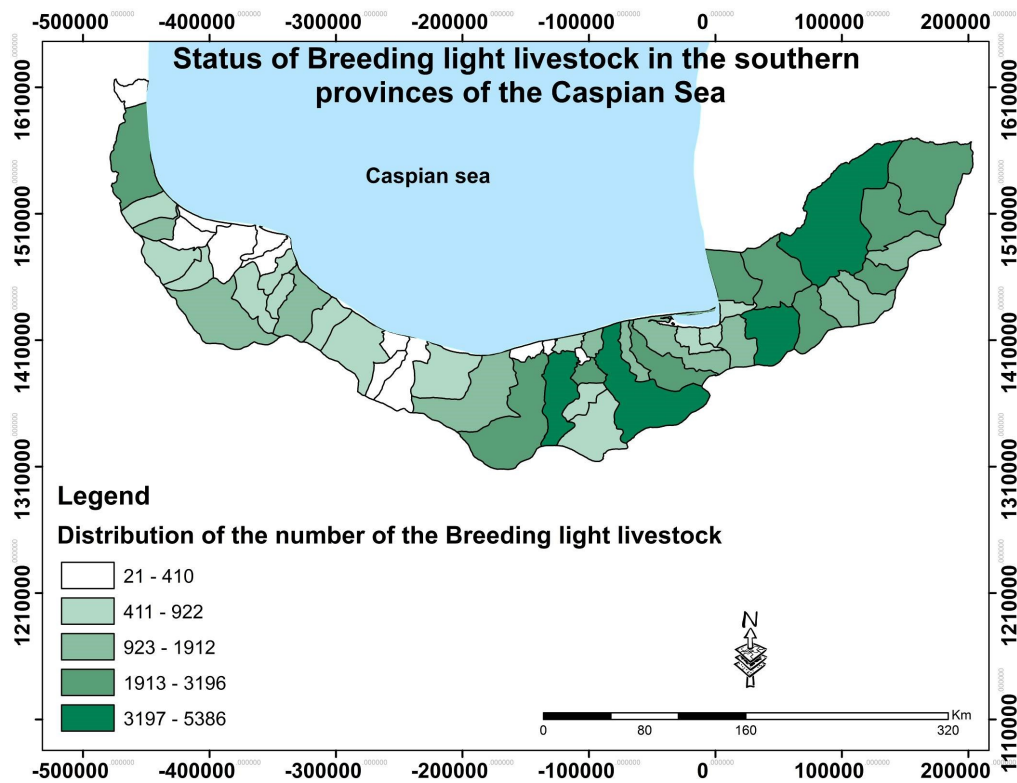


Figure 8: Spatial distribution of the number of light livestock in the three studied provinces (Guilan, Mazandaran and Golestan)

Source: Research data, 2021

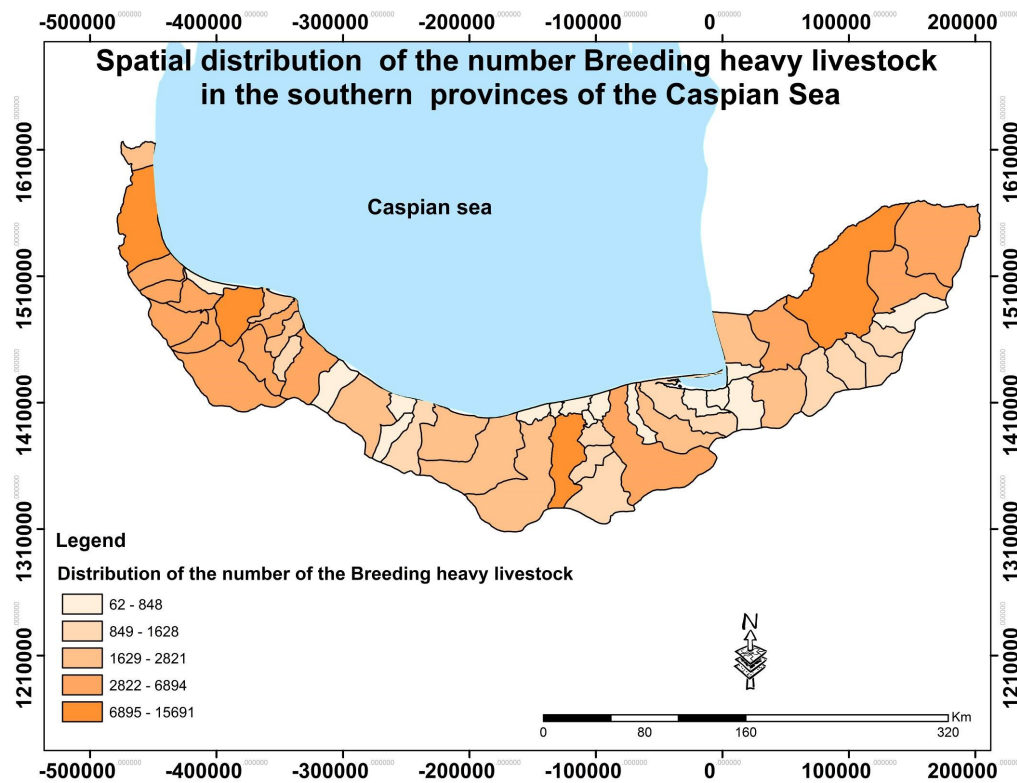


Figure 9: Spatial distribution of the number of heavy livestock in the three studied provinces (Guilan, Mazandaran and Golestan)

Source: Research data, 2021

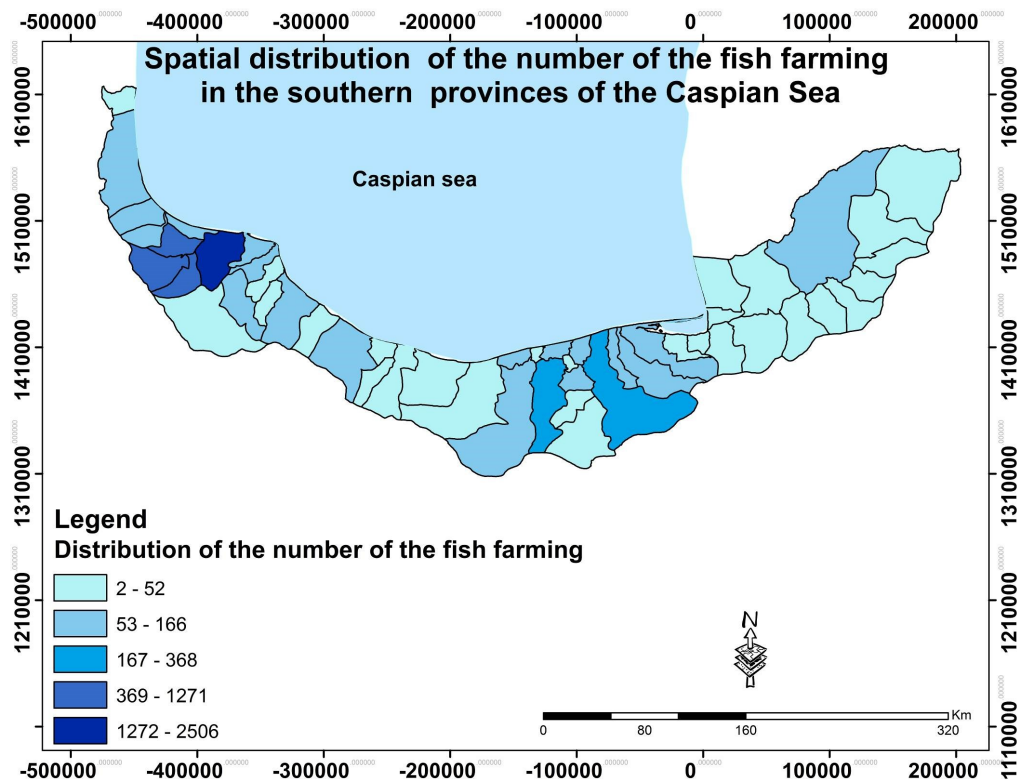


Figure 10: Spatial distribution of the number of fish farms in the three studied provinces (Guilan, Mazandaran and Golestan)

Source: Research data, 2021

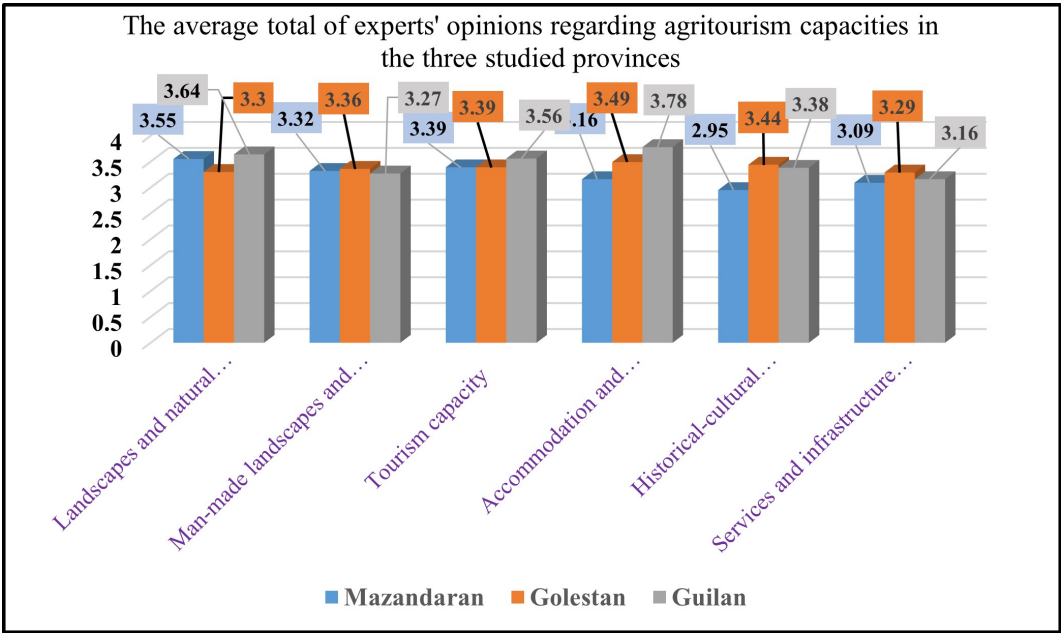


Figure 11: Average status of feasibility study of natural and human potentials about Agritourism in the southern provinces of the Caspian

Source: Research data, 2021

livestock. In the field of heavy livestock breeding Guilan provinces with 73879 farmers, Mazandaran province with 34608 farmers and Golestan province with 31068 farmers and in the field of light livestock breeding Golestan province with 30878 farmers, Mazandaran province with 29914 farmers and Guilan

province 11296 farmers Operators are in third place. In connection with Agritourism and livestock activities, components such as visiting light and heavy livestock farms and feeding livestock should be considered. He mentioned taking pictures and playing with children with animals such as sheep, goats and calves, as well

as buying by-products such as milk, cheese and meat (Fig.09).

Fish farming (cold water and hot water) is another important product in the northern provinces of the country. This can be due to favorable conditions such as the rich water resources of these provinces. In this regard, Rasht, Shaft, Soomehsara and Fooman counties in Guilan province and Sari County in Mazandaran province won the first to fifth ranks, respectively. Guilan province with 5886 operators, Mazandaran province with 1877 operators and Golestan province with 261 operators are in third place. In connection with Agritourism and aquaculture, there are countless attractions in the world, such as fish therapy, fishing by tourists, barbecue and fish kebabs, fishing competitions, feeding fish and other aquatic products. Considering that the southern region of the Caspian Sea has good potential in the area of aquaculture and production of its products, it can play an effective role in agricultural and aquaculture tourism (Fig.10).

In general, based on the data of the Statistics Center, it was found that the Caspian region has good conditions in terms of indicators studied about agritourism, and the success of Agritourism in this region should be evaluated from the perspective of the local community and necessary training for applicants. Give tourism plans. Also, indicators; Landscapes and natural landscapes, man-made landscapes and landscapes, tourism capacity, accommodation and recreational facilities, historical and cultural attractions and monuments, and services and infrastructure facilities were examined through statistical tests.

To evaluate and measure the indicators used in the research, a one-sample t-test was used. The main purpose of this test is to compare the desired variables using the default mean. This means that since the indicators of each indicator are measured with a Likert scale, after combining the indicators and making the index, the number 1/3 is considered as the average limit and the data in each of the indicators with this Numbers have been measured. In the one-sample t-test, the null hypothesis indicates the equality of stability with the number 1/3 (average limit) and the opposite hypothesis indicates the inequality with the average limit. If the null hypothesis is rejected, the upper and lower limit values should be used: if the upper and lower limits are positive, the mean is smaller than the observation value; therefore, using this test, all indicators are divided into three levels. The results of a single-sample t-test indicate that the indicators of landscapes and natural landscapes, man-made landscapes, tourism capacity, accommodation and recreational facilities,

historical and cultural attractions and monuments, and infrastructure services and facilities are of a significant level. According to the t-statistic regarding the landscape and natural landscapes index, the results show that the test with a high accuracy of 99% is significant.

To investigate the feasibility of natural and human potentials for Agritourism in the provinces on the southern shores of the Caspian Sea, a total of 6 dimensions were studied, including natural landscapes, landscapes, and human landscape Construction, tourism capacity, accommodation, and recreational facilities are attractions, historical and cultural monuments, and services and infrastructure facilities. According to the studies conducted in 6 general dimensions, the status of natural and human potentials in the field of landscapes and natural landscapes of Guilan, Mazandaran, and Golestan provinces have the first to third ranks, respectively. Also in terms of man-made landscapes and landscapes, Golestan, Mazandaran, and Guilan provinces with averages (3.36, 3.32, and 3.27) have the first to third ranks. In terms of tourism capacity, Guilan province with an average of 3.56 is in the first place and Golestan and Mazandaran provinces with an average of 3.39 are in the next place. In terms of accommodation and recreational facilities, Guilan, Golestan, and finally Mazandaran provinces have the first to third ranks, respectively. In terms of historical attractions, services, and infrastructure facilities, Golestan Province is in first place, Guilan Province is in second place and Mazandaran Province is in third place. In general, according to the maps drawn in the field of agricultural products in these three provinces, as well as according to the opinions of experts of Jihad Agricultural, Natural Resources, and Fisheries, Guilan province has a better situation in the field of Agritourism and then from that Golestan province and finally with a very small difference Mazandaran province is in the third place.

Agritourism, is an opportunity to boost the economy of the villages in the southern region of the Caspian Sea. In the Caspian region, various agricultural and rural activities are scattered in different places. For example, rice tourism components should be observed in plain areas. In the foothills, horticulture and local fruits are produced, and to see livestock activities animal life and adventure in nature, one should travel to the villages of the mountainous region. Based on this, in each of the rural areas located in the three high-altitude areas of the Caspian region, special activities are going on that should direct agritourism in this direction.

Regarding the possibility of developing types of

**Table 1: T-statistic Explanation table of t-statistic values and level of significance, standard deviation and Statistical indicators**

Indicators	Statistical indicators			Test Value = 3.1		Statistical indicators	
	T	mean	df	Sig. (2-tailed)	Mean difference	95% Confidence Interval of the Difference	
						Lower	Upper
Landscapes and natural landscapes	5.268	3.4917	155	.000	.39167	.2422	.5411
Man-made landscapes and landscapes	2.827	3.3200	155	.003	.22000	.0636	.3764
Tourism capacity	4.431	3.4467	155	.000	.34667	.1894	.5039
Accommodation and entertainment facilities	4.548	3.4875	155	.000	.38750	.2163	.5587
Historical-cultural attractions and monuments	1.898	3.2720	155	.084	.17200	-.0101	-.3541
Services and infrastructure facilities	1.284	3.1867	155	.004	.08667	-.0490	-.2223

agritourism in each of the three high-altitude areas in the Caspian region (plains, foothills and mountains), based on the evidence and conditions in the region, it was determined that the plains are suitable for types of agritourism, especially activities that require communication. It is suitable for tourists who do not have direct contact with agricultural activities. The farms in the foothills have the right conditions to promote agritourism, which has a direct and indirect relationship with the agricultural components, and in the mountainous areas, because tourists are not limited to visiting rural areas, they can enjoy all the tourism components. Experience farming as much as possible.

Agritourism is an action to attract tourists to the Caspian region for agricultural purposes. This type of tourism allows the general public to engage in entertainment, and recreation with educational purposes and to see and enjoy rural activities such as agriculture, animal husbandry, historical and cultural activities, hand-picked harvest, natural activities and farm attractions.

To attract tourists and create an uplifting and entertaining environment, farm owners and farmers provide many activities and facilities for visitors, including holding a museum and exhibition of agricultural products, archery, giving breakfast with organic products. He pointed out places for lighting fires, camping, canoeing, raising domestic animals, gatherings and group events, planting flowers and plants, cutting dry branches from trees and cooking competitions on the farm.

Also, visiting the animal-keeping area, picking sheep's

wool, showing how to milk a cow or prepare a horse for riding, horseback riding, harvesting, picnicking under the trees, storytelling and storytelling are other activities that can be done in the Caspian region.

In total, the findings of this research showed that the development capacity of agritourism in the three provinces of Guilan, Mazandaran and Golestan, according to the 6 studied indicators, is as follows:

*Landscapes and Natural Landscapes Index:* According to experts, Guilan Province ranks first with an average of 3.64%, Mazandaran ranks second with an average of 3.55%, and Golestan ranks third with an average of 3.30%. Therefore, regarding the Landscapes and Natural Landscapes index, Guilan Province has had more favorable conditions.

*Man-made landscapes and landscapes index:* Regarding this index, according to experts, Golestan province ranks first with an average of 3.36%, Mazandaran ranks second with an average of 3.32%, and Guilan ranks third with an average of 3.27%.

*Tourism capacity index:* Regarding this index, Guilan ranks first with an average of 3.56%, and the two provinces of Guilan and Mazandaran rank second with an average of 3.39%.

*Accommodation and entertainment facilities index:* Guilan province ranks first with an average of 3.78%, Golestan ranks second with an average of 3.49%, and Mazandaran ranks third with an average of 3.16%.

*Historical-cultural attractions and monuments index:* Golestan province ranks first with an average of 3.44%,



**Table 2: Average status of feasibility study of natural and human potentials about tourism and agritourism**

Province	Landscapes and natural landscapes	Man-made landscapes and landscapes	Tourism capacity	Accommodation and entertainment facilities	Historical-cultural attractions and monuments	Services and infrastructure facilities	Total mean
Mazandaran	3.55	3.32	3.39	3.16	2.95	3.09	3.24
Golestan	3.30	3.36	3.39	3.49	3.44	3.29	3.38
Guilan	3.64	3.27	3.56	3.78	3.38	3.16	3.47

Source: Research data, 2021

Guilan ranks second with an average of 3.38%, and Mazandaran province ranks third with an average of 2.95%.

*Regarding the Services and infrastructure facilities index:* it was also found that Golestan province ranked first with an average of 3.29%, Guilan ranked second with 3.16%, and Mazandaran ranked third with an average of 3.09%.

On the other hand, regarding agritourism capacities, based on the average opinions of experts at the provincial level, it was found that Guilan province with 3.47% in priority, Golestan with an average of 3.38% in second place, and Mazandaran province with an average of 3.24% are in the third place. As a result, Guilan province has more favorable conditions for the development of agricultural tourism (Fig.11).

## CONCLUSION

Agritourism can protect farmers from challenges such as market fluctuations, climate change, financial problems, and competitive markets, and its growth and development pave the way for the distribution of benefits to alleviate poverty and increase public welfare and a factor to improve the economic downturn in rural areas. Be. On the other hand, Agritourism is considered an element of sustainable development in rural areas. Because it values tourism activities and on the other hand, it creates significant profits for farmers and tourism enterprises, Agritourism farms in the United States in 2011 out of about 82 million tourists in total, \$2.4 billion in activities such as Accommodation, picking new produce, and visitors' participation in tours and farm affairs and buying souvenirs have generated income. However, given the global experience of the role that Agritourism will play in improving the conditions of rural areas, this type of tourism can be a strong arm along with other development factors in rural areas. Therefore, planning, guiding, and developing Agritourism is

considered a very important source of income and job creation, which also has extraordinary social, cultural, and environmental impacts, but guiding this process with Scientific knowledge of the capabilities and bottlenecks in each region is possible. In this study, according to the statistics collected in the field of agriculture and according to the spatial distribution maps of each of the main agricultural products in these three provinces, it was concluded that Guilan province compared to Golestan and Mazandaran provinces has more favorable conditions in The field of landscapes and natural landscapes are man-made landscapes and landscapes, tourism capacity, accommodation, and recreational facilities, attractions and historical-cultural monuments, and services and infrastructure facilities. In Guilan province and its rural areas due to the existence of natural landscapes and landscapes such as rivers, valleys, slopes, high mountains, citrus orchards rice fields sea landscape, and thousands of other natural attractions, a fertile ground for development There are different types of agritourism. These conditions can be justified with a little difference for Golestan and Mazandaran provinces.

This research can be compared with the research of authors such as Lupi *et al.*, (2017), Hung *et al.*, (2015), Abri (2012), Mortan (2006), and Ellenberg *et al.*, (1997). These authors focus on issues such as the study of landscape and environment variables, economic dimensions of the farm, its specialization and characteristics of the farmer, shaping Agritourism activities, emphasizing the agritourism business model, emphasizing fruit and vegetable farms, residential and low-rise rural farms Density are noted. They also acknowledged that Agritourism promotes the effective use of resources, promotes the production of agricultural products, and improves land-use productivity in rural areas, and considers Agritourism a distinct opportunity between rural and urban environments, as well as the best way to maintain customs. And customs in rural areas to provide sustainable rural development. Researchers such as

Bouzarjahmari *et al.*, (2017), Nokashti (2015), and Moradi (2012) acknowledged that the development of Agritourism in areas that have the necessary potential for this can be one of the strategies that could be used to strengthen rural areas, which is why many northern cities attract local and non-native tourists due to their diverse agricultural products.

In this research, at first, the feasibility of agricultural capacities in 3 provinces of Mazandaran, Guilan, and Golestan has been studied. With the feasibility study of agricultural capacities, it was determined that the development of Agritourism requires knowledge

of the capabilities of these provinces in the field of agritourism and its organization in a suitable framework to provide more opportunities for attracting domestic and foreign tourists.

For this purpose, the provinces of Mazandaran, Golestan, and Guilan with a very small score of the composition won the first to third ranks, respectively. Finally, it is suggested to examine and evaluate the other elements of agritourism, including the attitudes of tourists, farmers, subcontractors and facilitators, and various environmental attractions, especially about the farm system and related activities.

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