

## CASE REPORT PAPER

# The role of Hashilan wetland in agrotourism: A case study of Kermanshah province, Iran

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## Highlights

- The choice of location is considered one of the key factors for starting production, and the results of this decision will have a long-term impact on the political, economic, environmental, social and technical aspects.
- Hashilan wetland is located in Miyan Darband county in the centre of Kermanshah city, which according to studies has a very good position in attracting tourists.
- This study examined the role of the Hashilan wetland in agrotourism.

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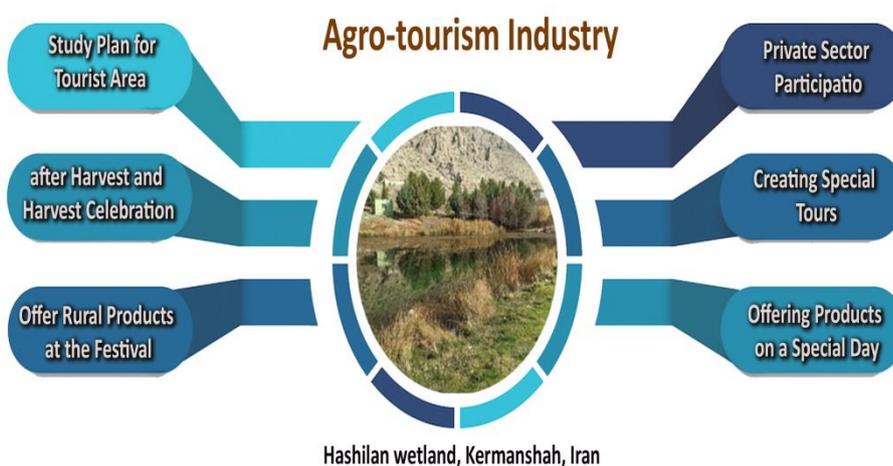
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## Graphical Abstract



## Abstract

Spatial factors are among the fundamental components in the location and development of rural industries in general and agricultural products in particular. Studies show that unsuitable location conditions cause the necessary inefficiency in production. The right location plays an important role in market competitiveness and should be chosen to gain strategic advantages over other competitors. Therefore, the choice of location is considered one of the key factors for starting production, and the results of this decision have long-term effects on the political, economic, environmental, social and technical aspects. Therefore, the various sources and opportunities should be identified first, and then the construction and development of each department should be carried out. Because according to the existing potentials in different regions, more and more important decisions are made in this field day by day. For this purpose, it is necessary to identify the effective indicators and sub-indicators in this field to properly use the potential and capabilities of different regions. Our country, especially Kermanshah province, is not an exception in this regard. In order to increase productivity in the field of agricultural production and utilize the capacity of regions, the capabilities and potentials of different regions should be studied and scientific methods should be used to prioritize the classification of different regions for production work and utilization of natural and environmental talents of regions. Therefore, this study investigated the role of Hashilan wetland in agrotourism industry.

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## 1. Introduction

At present, the country's exploitation systems are not stable and agriculture does not have a favorable income for farmers. Reversing the composition of the urban population, along with other changes and the resulting pressure, will exacerbate land use change and threaten food security. Therefore, there must be a coherent agenda by policy makers to improve the agricultural situation and provide a solution to increase farmers' incomes and reduce agricultural risks. Given the importance of tourism and ecotourism and the importance of the agricultural sector in recent years in the world, today the leisure use of agricultural activities and the development of agrotourism in many countries has been considered and implemented and has had positive results (Liu et al., 2020; Ciolac et al., 2019; Lan and Hanh, 2020). Agrotourism or agricultural tourism is a constructive interaction between the tourist and the rural people, during which the life of the people, art, cultural heritage and most importantly their agriculture are introduced to the tourist and provide the possibility of direct income and economic development. Agrotourism as a subset of rural tourism is one of the most suitable areas for sustainable development in rural areas. The attractiveness of this type of tourism is mostly due to the cultural dimensions that the villagers give it.

At present, special villages in the country have been identified as "Tourism Destination Villages" and various plans have been made for the presence of tourists in the village and the possibility of economic, cultural and social productivity of the people living in it. The rural settlements where agrotourism will be practiced will become places where all elements of local sustainable development will be assembled, and become a possible alternative to the problems of agriculture and the "health" of the rural environment, the development of agrotourism, related to the evolution of agriculture, takes many forms and brings many benefits also for tourists that are willing to practice this activity if some principles are respected (Ciolac et al., 2019). But what shows Agrotourism is that this model of rural tourism, if accompanied by careful study and proper and comprehensive planning, can pave the way for development in any village, even villages that do not have special features. Because the basis of agrotourism is agriculture, which is the predominant livelihood of the country's villagers. In other words, agrotourism is regarded as a tourism product directly related to the agricultural environment, agricultural products, or agricultural accommodation. This is an issue that, contrary to global experiences in this field, is currently not considered as it should be and perhaps in our country (Alalhesabi and Fatahi Masom, 2019).

Wetlands are of great habitat importance due to their high biodiversity in the conservation of plants and animals, especially birds. Due to their limited area compared to other habitats, wetlands are able to accommodate a great variety of plant and animal species. According to the definitions in the World Wetlands Convention, known as the Ramsar Convention. Wetlands Areas covered by swamps, sludges or natural and artificial catchments, whether permanent or temporary, where saline or fresh water is found stagnant or flowing, including seawater with a depth of at least six meters below sea level. This definition includes rocky outcrops, marine grasslands in coastal areas, mudflats, mangroves, estuaries, lakes and swamps. Wetlands are of great social and cultural importance, so that these natural environments bring together many local communities and create settlements around them that are highly biologically interdependent. Wetlands, due to their special features and structural elements, are generally spaces that have a strong sense of place and have extremely high values in the field of tourism. In other words, natural ecosystems provide human beings with many services (Yavari et al., 2021).

Hashilan wetland located in the central part of Kermanshah city is no exception to this rule and has an important role in the economic prosperity of the region. When agriculture grows, so does the economy in general, speeding up the reduction of rural and urban poverty (Ammirato and Felicetti, 2014). Some principles can be mentioned in the case of agrotourism in order for it to be sustainable tourism: economic development, social development and environmental protection. According to data from the National Tourism Administration of Vietnam, agrotourism has promoted socio-economic development in many places, making them more attractive to tourists, and at the same time generating income for local farmers and agricultural

enterprises (Lan and Hanh, 2020). Indeed, one of the key elements of ecologically sustainable development is to ensure that the values of environmental resources are estimated correctly (Marshall et al., 2018).

But the main question is that despite some potentials and natural talents in some areas, especially wetlands in Kermanshah province and especially Hashilan wetland, why these areas have not been able to attract tourists? And what are the solutions to make these areas the most productive? Therefore, the need to answer this question has led to the issue.

## 2. Objectives of study

### 2.1. General objective

The main purpose of this study is to investigate the effective factors on tourism attraction using the agricultural potentials of the region using the views of managers, planners, stakeholders and local people. In this way, it is possible to consider the components of the possibilities in selecting areas prone to attract tourists in a way that uses the spatial visits in a desirable way and promotes their productivity.

### 2.2. Specific objectives

- a) Study of the status of the wetland and the role of its macroclimate and microclimate on rural agriculture.
- b) Explaining the views of local people about the indicators and criteria for participation in participatory management programs in order to attract tourists to Hashilan Wetland.
- c) Providing executive solutions to develop a specific plan for expanding local participation.
- d) Identifying the views of experts and those involved in the project regarding the strengths and weaknesses of the project and explaining appropriate solutions.
- e) Examining the attitude of local people towards the implementation of the plan.
- f) Creating research space.
- g) Communication and cooperation with other departments and departments related to agriculture, such as the environment and regional water to solve the problem of flooding and drainage of villages in the lagoon.
- h) Creating a friendly relationship between the exploiters and the executive apparatus, especially the agricultural Jihad and the environment organization.
- i) Introducing agricultural products of Alahiarkhani village to tourists.
- j) More communication with rural women and motivation for employment and entrepreneurship and return of people to healthy and local food and development of organic products.
- k) Preservation and registration of indigenous knowledge in the field of production of agricultural products - livestock and local food.

### 2.3. Location of Hashilan wetland

Hashilan wetland is located in Miyan Darband rural district in the central part of Kermanshah city and is located in the northwest side of Kermanshah city (Fig. 1). It is about 36 km from the western front and 33 km from the eastern front with Kermanshah. The rare and unique habitat of Hashilan is a wetland with an approximate area of 560 hectares (450 approved cases) in the northwest of Kermanshah plain and north of Alahiarkhani plain at the end of Miyan Darband region. Which is located between the southern slope of Khorin heights and the north of Weiss Mountain. Around this wetland are the villages of Hashilan, Jelogireh-Olia and Sarab Sheleh, Docheqha, Kolahkaboude-Olia, Kolahkaboude-Sofla, Kolahkaboude-Vasati, Malek Tappeh and Lal-Abad. The nearest village to the southeast side of the wetland is Hashilan village and Jelogireh-Olia and Sofla villages and Sarab Sheleh are located in the northwest of the wetland. This habitat is one of the valuable ecosystems and biomes of the province and the western region of the country, which has been declared a "No Hunting Zone" by the General Directorate of Environmental Protection since 1994. This area is currently under the protection of the "Environment Protection Agency" of the province. This wetland is one of the beautiful and

unique ecosystems of the west of the country, so that the main sources of water supply of this wetland include Sarab Sabz Ali, Sarab Sheleh and Cheshmeh Men-Mi, which are located on the southern slope of Khorin height. In addition to mirages and springs; Streams and surface waters of the upstream basin and the southern slopes of Khorin heights are other main sources of water supply in this wetland. Sarab Sabz Ali is the most important and water-rich source of water supply of this wetland, which is located in the north of the wetland, and other mirages and springs also supply a part of the water of the wetland. In this wetland, there are about 110 large and small islands with an area of approximately one 100 m to one hectare. Numerous plant and animal species live in the islands and habitats of this wetland according to the conditions. Vegetation is the surface of the wetland is grassy and sometimes in the form of aquatic plants, inland and non-aquatic in the islands. This wetland is a very valuable habitat for different species of migratory or local birds. With the onset of autumn rains and cooling of the air, many birds come to this ecosystem from the north of the Caspian Sea, and if the conditions are favorable and the weather is temperate, most of them spend the winter in this wetland. Inside and around the wetland, mammals such as wolves, foxes, rabbits, wild cats, mice and heights are also suitable habitats for wild goats. Many snakes and turtles live in this wetland. Surrounding lands include agricultural lands, natural resources and residential areas. Some of them, including agricultural lands and residential areas, are privately owned, and national resource and afforested lands are state-owned.



**Fig. 1.** Satellite image of Hashilan Wetland (2020) adapted from Google Earth.

In this study, the study area is Hashilan wetland, which is located in a part of Alahyarkhani plain and in the vicinity of this wetland are a number of villages that directly benefit from the benefits of Hashilan wetland (Fig. 2). Also, the agricultural lands of these villages are either located in the protected area of the wetland or their agricultural lands have a common border with the central zone of the wetland. The population of the villages around the wetland is 1115 people and the number of households in the study area according to the statistics of 2006 is equal to 277 households. This number of households live in 10 villages around the wetland. According to the statistics provided by the Kermanshah Agricultural Jihad Organization, there are 3249 hectares of agricultural land in the villages of the Hashilan Wetland, which are mainly agricultural lands and are dedicated to agriculture. Of this amount, only 12 hectares are allocated to gardens, which are also scattered gardens that have been built around agricultural water wells or on the outskirts of villages as a hobby and to meet their consumption needs. After the construction of the irrigation canal of the irrigation and drainage network of Gavshan Dam in the lands of this region, most of the lands of these villages are cultivated with irrigated crops and only a small part (less than 5% of the lands) is cultivated as dryland. This has created a very good prosperity in the region and has improved the economic and living conditions of the local communities around this wetland. To improve agricultural wetlands conservation and development, a wide range of positive measures should be undertaken. Sustainable tourism in agricultural wetlands, when properly managed and developed, plays a major part in protecting wetlands and supporting those working in and around wetlands through jobs and increasing incomes (Liu and Zhou, 2013).



(a) (b)  
**Fig. 2.** Wetland view adapted from the author 2021.

### 3. Conclusions

Nowadays, the growth of global tourism has caused a significant interest in research focused on the impact of the tourism on environment and community, specifically on agrotourism structures. So at the tourism industry in the world is expanding in all sectors, especially agrotourism and attracting tourists to aquatic ecosystems, especially wetlands. Agrotourism should not be understood only as the production of agricultural products. Agrotourism is a wide range of activities, including gastronomic tours, education (training in plant cultivation, cooking), ethnographic tourism (learning about people's life and culture), eco-tourism (studying flora and fauna), and recreational (Baranova and Kegeyan, 2019). However, despite the growing awareness of people and countries about the importance of natural environments, especially wetlands, the real understanding of the importance and function of these habitats is still low. Wetlands were of special importance from the distant past, so that they were considered as the habitat of many migratory species and birds and helped the survival of the migratory bird generation. However, these pristine places, with their special conditions and characteristics, have received less attention from different groups, which can be invested in this field, in addition to attracting tourists, also help the economic prosperity of the region. In addition to generating income, this process also contributes significantly to the sustainable development and preservation of the natural environment of the region. Our country, and especially Kermanshah province, due to special and almost exceptional conditions, has a variety of wetlands that, if invested, will play a key role in the economic prosperity of the regions. One of these wetlands is Hashilan wetland located in Miyan Darband rural district in the central part of Kermanshah city, which according to the studies has a very good position in attracting tourists.

Therefore, it is suggested that with the necessary information and culture, as well as considering the following conditions, preparations be made for the transformation of Hashilan wetland as one of the tourist attractions for economic prosperity and sustainable development in rural areas:

- a) Compilation of a study plan for the Hashilan tourist area (Fig. 2).
- b) Selecting a working day in accordance with national festivals for agricultural products (after harvest and harvest celebration - thanksgiving for rain - village festival), nature day or religious holidays, etc.
- c) Informing farmers and producers in order to offer and present their agricultural, livestock and garden products or handicrafts and rural products in the festival.
- d) Private sector participation in the development and management of facilities and facilities.
- e) Creating special tours and agencies in order to boost tourism in the region.
- f) Offering products on a special day to tourists and visitors in order to attract tourists.

To improve agricultural wetlands conservation and development, a wide range of positive measures should be undertaken. Sustainable tourism in agricultural wetlands, when properly managed and developed, plays a

major part in protecting wetlands and supporting those working in and around wetlands through jobs and increasing incomes (Liu and Zhou, 2013). In this regard, can be used the model proposed by Baranova and Kegeyan that believe the system development model of agrotourism, consisting of five main blocks:

- a) The management subsystem, including the management bodies that affect agrotourism through the issuance of regulations, the development of targeted programs and concepts.
- b) The scientific and educational subsystem provides the organization of agrotourism with personnel, conducts scientific research in this area.
- c) Marketing subsystem and it is impossible to promote the products and services of agrotourism without it. Organizations can create their own websites, advertisements, and can address to travel companies.
- d) The financial subsystem provides agrotourism organizations with financial resources both public and private.
- e) Managed subsystem consisting directly of agrotourism organizations and the corresponding infrastructure (guest houses, manors, ethnic villages, etc.).

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