

SECOND HOME TOURISM AND AGRICULTURE IN RURAL AREAS: EXAMINING THE EFFECTS OF SECOND HOMES ON AGRICULTURAL RESOURCES IN NORTHERN IRAN

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ABSTRACT

Second home tourism leads to new economic opportunities for local communities, and presents challenges for existing economic sectors in rural areas such as agriculture and livestock; it also fosters differing perceptions about the impact of appropriate development paths within rural areas. Despite the economic importance of second home tourism and its profound and often negative effects on the agriculture, no focused research of phenomenon has yet been conducted in Iran. The study aims to investigate second-home tourism in Iran with special reference to the perceptions of its positive and negative effects amongst second homeowners and local residents in the rural areas. The data were collected from 60 local household residents and 60 second homeowners randomly chosen. The data were first gathered through questionnaire, which was then used to analyse the second home tourism impacts on agriculture from the perception of tourism stakeholders. The research proves that uncontrolled second home development negatively affects natural attractions and agricultural resources in mountainous areas of Babol district, and overall northern Iran. Thus, there is more conflict existing between the two industries rather than synergy. Thereby, controlling second home tourism is one of the key factors for sustainable rural and agricultural development in the area.

Keywords: Second Home Tourism, Rural Tourism, Environmental Impacts, Agriculture, Iran.

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Introduction

Agriculture is one of the *oldest and most fundamental primary occupations of all human beings* and it is the most basic aspect of the global economy. Linkages between agriculture and the rapidly growing tourism sector have been the subject of considerable interest recently (Hall & Gössling, 2013, Saarinen, Rogerson, & Manwa, 2011, Mao et.al, 2014). Usually, scholars are searching to find ways to increase the sustainability of tourism by establishing the positive relationship between these two sectors. Some suggestions are focused on the use of local food produce to maximise the benefits of tourism to local communities (Hunt & Rogerson, 2013; Telfer & Wall, 2000; Trejos & Chiang, 2009). Until recently, the relationships between rural tourism and local agriculture had not been explored in depth, this situation is even worse when we come to second home tourism (Torres and Momsen, 2011). In most of third world countries, rural economy mainly depends on agriculture as a source of income generation and labour employment. Due to geographical and economic structure of Iran, agriculture has necessarily become the backbone of rural economy. Also, it provides important environmental, cultural, and social services of tremendous economic value. On the other hand, tourism is one of the newest and most rapidly spreading sectors and is becoming an important part of rural economy in the country. In the face of current problems of climate change, soil degradation, urbanisation and depopulation of rural areas, it can ensure the sustainability of rural economy by diversification of income resource (Butler, R.

and Hall, C.M., 1998). One of the most important conflicts of these two sectors has emerged, because both have the same resources for consumption which are natural environment and landscape. Agriculture is highly relied on natural resources such as, water, soil, land, which are limited and unsustainable. These resources along with air and weather create tourism attractions and they are mainly used for tourism activities. As tourism sector is associated with rural heritage and culture, it is able to utilise rural landscapes and its amenities (Mao and et.al., 2014:127). The tourism sector has acquired a wider significance as rural areas are transforming into service-based economies.

Second home tourism as an important part of tourism is bringing some rapid changes as well as opportunities for local communities. Significantly in today's world, the consumer landscape consists of tourists and second home owners, who lead a highly mobile lifestyle, characterised by an ideal imagination about the countryside and nature. This situation often creates conflict within rural environments between traditional populations and newcomers, with respect to the use of natural resources (Muller, Hall & Keen, 2004). Moreover, second homes are often seen as a root cause of a range of environmental problems. It also can affect the agriculture in a negative way, for example, there is an overuse of the agricultural resources such as land, labour, soil, water, etc. In some cases, particularly in northern Iran, its competition with agriculture has led to environmental resource degradation. Particularly in the case of second home tourism,

the extensive changing land use brings a new geographical landscape and social pattern in rural areas. So, it is changing the rural function from agricultural production to domination of recreational and tourism activities.

More importantly, it limits public access to natural attractions. For example, according to the deputy head of environment in Iran (DOE), out of 900 km of Caspian sea coastline, only 20 to 30 per cent is opened to the public and up to 80 per cent has been occupied by private cottages and governmental accommodations for their staffs (Hamshahri newspaper, 2016).

With consideration of the geographical location of Northern Iran which is surrounded by Caspian sea from the North and Alborz chain mountains from the South, this region offers a unique landscape with the mountains and coastal region, which are vulnerable and fragile. Also, the evidences show that second home tourism development has negative impacts on the natural resources used in agriculture, such as soil, forest, pastures, water, and air. For example, the communication roads facilitating transportation for second home owners have been constructed passing through the Hyrcanian Period forest which is a remainder from the Tertiary Geological Periods and is the world's only Hyrcanian Mixed Forests Eco region, which has caused forest fragmentation in the area. Since mountains are among the most fragile environments on earth, the dramatic growth of human population and irrational use of land in the last few years has led to the degradation of agricultural ecosystem.

Due to limitations in fertile land, the linkages between local agriculture and second home tourism are becoming ever more critical. Meanwhile, there are no studies that particularly focused on the linkage between second home tourism and agriculture in Iran.

This study therefore, aims to investigate the environmental impacts of second home with special reference to agriculture, from the viewpoint of local people and second home owners and it is going to find answers for the following questions:

1. What is the environmental impact of second home tourism? In other words, how the second home tourism affects natural resources that are connected to agricultural activities?
2. How does the perception about environmental effect of second home tourism differ among the local community and second home owners?

By understanding the situation constraining the second home effects on agriculture resources, strategies for overcoming these can be formulated.

Literature Review

Shaw and Williams (2002:298) argue that tourist consumption in the late 1990s began to "revolve around environmental quality and the respect for nature." They point out that tourism is "drawn to some of the most fragile and sensitive areas, largely because such factors add to environmental attractiveness." Hunter (1995), on the other hand, believes that

the tourism industry needs to focus its efforts towards the management of the environment, given its reliance on resources for its offerings.

As for any other types of tourism, second home tourism has impact on the environment (Tombaugh, 1970; Coopock, 1977; Nordin, 1993; Jansson and Müller, 2003, Marjavaara, 2008). It is known that high densities of second homes can create tremendous problems and increase the potential for environmental degradation (Halseth, 2004), which can affect agriculture in direct and indirect ways. In a comprehensive study of the environmental impacts of rural second home tourism by Hiltunen (2007), Leppänen's conclusion is confirmed, namely that this form of tourism has some negative impacts on the physical environment, just as any other form of consumption does (Roger, 2008 :23).

To define the second home, there are a great variety of terms which have been used in different resource such as cottage, recreational home, vacation home, weekend home ,etc.

Also Johnston defines second home as a house which is purchased or leased by households living in the cities or other parts out of the township (1988:p423). In this article, the term 'second home' is used and refers to houses that are used mainly for recreational purpose, these houses are usually located in the rural zone.

In many countries, the proportion of second homes is very high. For example, in Finland it is estimated that in 2003 there were 4,65,000 second homes meaning that every

sixth family owned a second home, while every second family had access to a second home through friends or extended family relations (Hall and Page, 2006). Many of these second homes are located in rural areas. So, the growth of rural tourism, second homes, and retirement populations in many rural areas is a strong indication that rural areas hold an appeal that cannot be understood in traditional economic terms (United Nations, Economic Commission for Europe and et.al. 2007:500). As In the case of Sweden, Ljungdahl (1938) stated that the local population was becoming increasingly dependent on the incomes generated by the summer guests (tourists) rather than the decreasing incomes from traditional sectors, such as agriculture and fishing.

Second home development is a salient question in the field of tourism, since second home owners interact in the local communities in different ways, and pose challenges about managing seasonality, socio-cultural interaction, business opportunities and land use (Flogenfeldt, 2006; Gallent, 1997; Girard & Gartner, 1993; Halseth, 1993; Muller, 1999). In general, the increasing number of second homes causes increasing competition between locals and second home owners for shared resources, such as fishing, land use and freshwater (Butler and Hall, 1998).

On the other hand, second home tourism represents a vehicle by which urban dwellers can experience the natural attractions in rural areas and satisfy a desire to connect to the nature or even to their origin (Torres and Momsen, 2011:7). At the same time, It has been

shown that second home tourism development may cause environmental concerns, because of a need to regulate the siting and standards of new development (Gallent, Tewdwr-Jones, 2000 :4). These concerns are even higher in mountain regions, because of limitation in resources. Usually, mountain regions are attracting people for a variety of reasons ranging from pure survival and subsistence to recreation. Indeed there is a growing migration to mountain areas all around the world for leisure purposes (Kaltenborn P. 2009, Moss, 2004; Williams and Hall, 2002; Chipeniuk, 2004) and it is a target area for second home seekers. Also, those areas that still depend on farming and other traditional primary sectors are typically less well off in terms of a broad range of economic indicators. (Asiedu&Gbedema, 2011:47). In Iran, many rural areas are located in mountainous region and by default, the survival of majority of rural communities, depends on maintaining an agriculture base. In other words, agriculture is one of the most important economic activities and it is essential to sustaining livelihood, securing food production and providing income. Shifting global consumption patterns, tastes and attitudes towards food, leisure, travel and place have opened up new opportunities for producers in the form of rural tourism, agritourism, ecotourism, food tourism and specialised niche market agricultural production for tourist consumption (Torres and Momsen, 2011:2). According to the Food and Agriculture Organisation (FAO, 2012), synergies between the agriculture and tourism sectors, realised by strengthening linkages

between them could facilitate the contribution of tourism to sustained growth and poverty reduction (Mao, 2014). Obviously tourism destinations in many developing countries are located in regions where farming dominates the livelihoods of the poor communities (Mao, 2014).

As Torres and Momsen mentioned in their book, "agriculture is one of the oldest and most basic parts of the global economy, whereas tourism is one of the newest and most rapidly spreading" (2011:2). Furthermore, as agriculture is an environment-dependent activity that involves the use of ecosystem goods and services and environmental resources such as land, soil, water, energy, in the same way, tourism is an environment consumption industry. These environmental issues affect the ability of farmers to produce the necessary quality and quantity of foods required to support the rural population as well as tourism industry in many tourism destination countries. Then linkages between local agriculture and tourism are becoming ever more important. Also, linkages between agriculture and tourism may be considered as a new solution in most of the third world countries.

Tourism, as an activity, affects a range of policy areas: environment, employment, regional development, education, consumer protection, health, safety, culture, new technology, transport, finance and taxation (United nation, 2007:111). In this research, environmental components have been focused as inputs for agriculture and tourism sectors.

Torres and Momsen (2011) in their book pointed to a number of challenges that confront the realisation of synergies between tourism and agriculture. Cox et al. (2011:151-162) noted that in Italy, the conversion to organic farming methods was associated with a parallel growth in agritourism and associated speciality food production, targeting niche market consumers seeking high-quality, healthy, environmentally responsible and regionally produced foods. Similarly, in California and the United Kingdom, Rilla (2011 :) noted that several farms involved in agritourism shifted to organic farming methods and production of organic value-added speciality products.

The potential for synergies also exist between agriculture and second home tourism. Second home tourists allow farmers to reduce food miles by bringing the market to the farm and so cut the costs of distributing products. It has also been acknowledged that tourism, at the same time, has positively influenced the production of some agricultural products in many places.

According to Sannebro (2001), it has been noted that second home owners, in the Stockholm Archipelago have shown great interest in niche products from the local agricultural sector. These products gain a higher price for the producer in this market, compared to what they are able to get if they sell the products to retail chains. However, the higher prices paid by tourists can generate a local price inflation on products (Wall and Mathieson, 2006, Hoogendoorn and Visser,

2004), which is not beneficial to the permanent residents (Marjavaara, 2008:13).

Hence, the relationships between the agriculture and tourism sectors in developing countries have not always been symbiotic. Sometimes, increased demand for imported food has harmed local farm production, endangering the survival of local communities (Asiedu & Gbedema, 2011). Also, it has been reported that in many instances, tourism has outcompeted agriculture for limited labour, land and water resources (Belisle 1983; Cox et al. 2011; Momsen 1998). In general, the increasing number of second homes causes increasing competition between locals and second home owners for shared resources such as fishing, land use and freshwater (Stefano ,2004:21, Butler and Hall, 1998).

Indeed, second home tourism may have a dynamic impact on agricultural production. Productivity has declined as a function of labour competition between the two sectors. Due to increasing in second home density, natural resource degradation will occur which can reduce agricultural productivity as well. Thus, this is particularly problematic when the linkage between second home tourism and agriculture turned to competition on natural resource usage. It can be argued that creating responsible linkages between tourism and agriculture shows promise for developing nations, in particular, because a substantial portion of their production and communities is intimately linked to agriculture (UNWTO 2008, Torres and Momsen, 2011: 40).

Second Home Ownership in Iran

In Iran, an extensive form of mobility is associated with visits to, and living in, second homes, which are mostly located in rural areas. In Northern Iran like Western Balkans (Lampietti, and et.al., 2009), diversification of rural economy led to the broader rural economy, which is the best way to create a self-sustaining rural space and presumes that rural areas offer important environmental, cultural and social services that benefits societies as a whole, including provision of an attractive living environment for urban residents and retirees. Research in Iran and elsewhere shows that second homes play an important part in tourism patterns and development (Vosoughi et.al 2010). These homes are often located near the sea, lake, river or in attractive mountain locations. However, due to lack of information and because many of second houses have been made illegally in many of rural areas and on agricultural lands, there is no reliable official data of second homes across the country.

Because the second home residents is a kind of in between, neither tourists, nor permanent resident, nor both at the same time, it is a space between the ordinary and extraordinary. In Iran, it is common for the countryside houses or parent's houses to be inherited and used as vacation homes. Consequently, it caused deep attachment of residents to a place. Indeed there is a high tendency for urban residents, especially in the metropolitan city of Tehran, to escape from a populated city to a peaceful place.

Second home ownership in mountainous region has a long history in Iran. It is because of the warm and dry climate of interior regions and seasonal migration of rural residents from semi-arid and desert areas to highlands. This trend has been facilitated by increase in private vehicles' ownership and their income due to post-war economic prosperity. This trend has grown dramatically in recent years, especially in Babol Township located in northern Iran, where mountain second homes are still dominantly a focal point to be exposed to nature and a place to relax, nurture social relations, engage in outdoor recreation and to maintain links to places.

In Iran, like elsewhere, second home tourism has different effects on rural areas; it has a great deal of positive and negative effects on the environment, which led to changing the rural landscape as well as local's livelihood.

The mountain region in Iran has a great attraction for low-lying and coastal city residents in summer. The data show that about 83 out of 188 housing units in the study area are allocated to second homes. It contains 14.44 per cent of the total houses in the studied villages and it is increasing in the recent years. At the same time, increasing utilisation of mountainous region in northern Iran causes negative effects on the local flora and has a disturbing effect on breeding fauna as well.

The expansion of second home development in Iran reflects global trends of amenity migration to mountain areas where many small communities now witness rapid

change in environmental, social and economic conditions, and have to find ways to interact with, and benefit from, this development.

From the tourism perspective, the development of the mountainous region of Babol began hundreds of years ago, as a group of elderly people, mostly in their sixties and seventies, collectively narrate the myth associated with the origin of their village. Stating that their ancestors were walking through dense jungles for almost a day to get to the mountain area, where they could enjoy the pleasant weather of summer. This group included ranchers who grazed cattle in the mountains, in addition to a far greater number of non-productive cows and other cattle which had been moved to the area. At the same time, they were growing potatoes, sugar beets and other vegetables in small farms in order to supply food. The good climate conditions plus the beautiful natural environment had also made the area ideal for a peaceful and relaxing

life. As a result of all these different activities, a combination of agriculture, recreation and tourism-based practice had taken place in the area. Since then, there had been a slow but continuous growth in the population. But the severe winter forced majority of population to return to their permanent houses in the low-lying cities.

Since 1991, road improvements and increase in private vehicles ownership have greatly facilitated access to the remote mountain areas. Moreover, reasonable and affordable land has created a strong motivation for locals as well as outsiders to own a second home in these quiet and peaceful mountains.

Increase in second home ownership has led to the government being more interested in doing projects which help in development of the villages. Projects have helped in bringing electricity, tap water, and telecommunications equipment to the area.

Table 1: The Growth Rate of Second Homes in the Studied Area, 1966 - 2011

Year	Number	% Growth
1966	92	0
1976	97	0.52
1986	97	0
1996	128	3.40
2006	131	0.23
2011	213	9.20

As Table 1 shows, about 80 per cent of second home ownerships happened during the 1990s and later. Therefore, the research has set the year 1991 as a reference year of increase in second home ownerships. This unplanned

settlement development in the mountains which is often made by second home owners, has brought a special concern for environmental issues.

The study is based on the eastern suburb of Babol Township in the mountainous region of northern Iran and south of Caspian Sea. Based on the 2006 census, this area contains 157 villages with only 61 being continuously inhabited and the rest 96 being populated only during certain seasons, with the majority being summer. According to the census, this rural district has a population of 3201 residents. The further you move from the sea level and up to the higher altitudes of the region, the cultivation pattern changes from rice paddies and citrus orchards to forests and then to grasslands. The average elevation of the region is approximately 2500 metres above sea level. This research has been conducted in three villages which are all located in mountainous regions.

Methodology

The purpose of this quantitative study was to determine the effects of second home tourism on agriculture and livestock, which are two of the primary resources of rural communities' livelihood. The study tested the hypotheses which state that second home tourism has the greatest effect on rural agriculture by affecting the natural resources in northern Iran, especially the mountainous regions of Babol. A sample size of 60 households of the 105 local residents was calculated based on the formula by Cochran. The sample population was distributed in three villages as shown in the Table below.

Table 2: Statistic and Sample Population (Household) in the Studied Rural Areas

Villages	Local residents (Household)	Sample size of local residents	Second home residents (household)	Sample size of second home tourists
Shaikh Mousa	45	26	36	28
Lahe	32	19	26	18
Shalingchal	28	15	21	14
Total	105	60	83	60

In this research, second home owners have been defined as non-native residents using their homes, during a certain period of time for recreational purposes. Considering this definition, the total number of second home owners were about 83. A sample size of 30 households was calculated based on the formula by Cochran; however, the sample size has been doubled to 60 randomly chosen households because larger sample sizes provide more reliable results with greater

precision and power. So the total sample size including both tourism stakeholder groups were 120 households. The samples (residents and second home owners) were selected by stratified random sampling, so that the samples were distributed between the three villages in proportion to the population of each village.

In this research, a questionnaire was designed by identifying a variety of effects on natural resources, especially ones which are

used in agriculture. Agriculture is defined to include all forms of cultivation, horticulture, herbal plantation, livestock, etc.

The questionnaire was developed using the Likert scale approach where respondents are asked to respond to the statements using a 5-point Likert scale ranging from 1 to 5, where 1 is strongly disagree and 5 is strongly agree.

The content validity of the tool was confirmed by the library and information professionals and the reliability was 85 per cent. The study employed SPSS software to analyse the quantitative data collected at the household level. Some open-ended questions

have also been asked and the answers have been used in data analysing.

Research Findings

The purpose of the study was to identify the effects of second home tourism on agriculture in rural areas of Northern Iran and to investigate the relationship between second home tourism and agriculture in the area. To better understand the impacts of tourism on rural areas, we need to know about the demographic trends among the rural population in the studied area between 1990 and 2011. The result is shown in Table 3.

Table 3: The Rate of Population Growth in the Studied Areas, 1966-2011

Year	1966		1976		1986		1996		2006		2011	
	No.	% growth rate	No.	% growth rate	No.	% growth rate	No.	% growth rate	No.	% growth rate	No.	% growth rate
Villages												
Shaikh Mousa Lahe	86	-	97	1.21	90	-0.74	110	2.02	111	0.09	135	3.83
Shalingchal	0	-	0	0	0	0	5	100	5	0	42	100
Total	6	-	0	0	0	0	13	100	13	0	36	100
	92	-	97	0.52	90	-0.75	128	3.4	129	0.23	213	9.2

Resource: Iran National Population and Housing Census, 1966-2011.

The trend of second home development is shown in Table 4. The Table shows that over 80 per cent of these houses were built after the 1990s. This period coincides with two years after the end of the war that is followed by economic prosperity.

The field survey indicated that 30.5 per cent of the second houses are highly durable. 44.68 per cent are partly durable, and the rest 26.46 per cent are old and unsustainable.

Table 4: The Trend of Second Homes Development in the Studied Area, 1981- 2011

Duration	Frequency	Percentage
Before 1981	5	6
1982-1991	10	12
1992-2001	20	24
2002-2011	48	58

By analysing and comparing the two Tables, it appears that after the 1980s, both

the population and the number of second homes have been increasing dramatically. As the statistics indicate, the rate of increase in second homes approached 80 per cent after 1991. As the Table shows, it was doubled every 10 years. Since second home residents were also included in the census, we can come to the conclusion that this growth in the population of the area is linked to second home tourism

development in the area. This trend is more obvious when it comes to rural areas where amenity-rich landscapes exist.

Also, the main question which forms the framework - the effects of second home tourism development on agricultural resources, productivity, land used, and cultivation patterns have been studied in this research. Relevant data are given in Table 5.

Table 5: The Extent and Growth Rate of Agricultural Lands in the Studied Area, 1998-2013

Year	Garden and Nursery		Dryland & Orchards		Irrigated lands		Dry & Irrigated lands		Total	
	Total area (ha)	Growth %	Total area (ha)	Growth %	Total area (ha)	Growth %	Total area (ha)	Growth %	Total area (ha)	Growth %
1998	1.2	-	2.6	-	7.5	-	9.75	-	11.8	-
2008	2.7	4.9	1.2	-16.72	19.2	17.3	20.4	13.81	23.1	12.49
2013	10	12.27	114	36.57	0	-100	114	15.8	124	15.46

Source: Agricultural census of Islamic Republic of Iran, 1998, 2008 and 2013.

Based on Table 5, although the number of lands under cultivation has decreased across the studied area between census years 1988 to 1998, it has again expanded from 1998 to 2003. The most expansion has occurred among dryland farms, and orchards. At the same time, the size of irrigated farmlands has decreased. The main cause of this event can be found in the development of second home tourism in the area which has encouraged second home owners to change the land use and agricultural patterns from pasture lands to fruit orchards. Many of these land use changes were illegal and against the rules of Iran's Environment Protection Organisation (IEPO). Furthermore,

the study shows that since the majority of the second home owners hold positions of power, they are more likely to act selfish, exploitative, and illegally. Based on researches and interviews with rural administrators, it turned out that more than 90 per cent of second homes were built on, and therefore destroyed, fertile pasture lands around the villages. This is happening more often in recent years. This situation becomes even more critical, given the fact that this area has the best pastures in the country; and as a result of this situation, the yield of milk and meat production decreased per hectare.

On the other hand, recent spike in the land price, along with IEPO's lack of supervision because of the severe climate of the mountain areas, particularly during winter, have led to a dramatic rise in the number of illegal seizures of pasteurised lands.

Table 6: The Number and Growth Rate of Livestock in the Studied Villages

Year	Cattle and calves	Sheep and goats	Total	% Growth rate
1986	850	190	1040	—
2003	95	825	950	-0.53

Source: National Livestock Census, 1986-2003.

As it is evident in the Table above, the number of livestock has dropped from 1040 in 1986 to 950 in 2003. The combination of livestock had also changed during this period.

Loss of pasture fields around villages over the last few years is one of the primary reasons behind the reduction of livestock. In brief, the tourism development action, especially in case of second home development, increases the conflicts which local livestock producers have to deal with. Since the recreational usage of the area is not expected to be converted to any other, it is assumed that the current conditions will remain. Another cause behind the downfall in the livestock sector is the low benefit in this industry. Therefore, people working in the livestock sector do not gain as much profit compared to people working in other economic sectors, such as land trading, tourism and other service sectors. Hence, the local cattle ranchers have reduced the number of their livestock and are trying to keep only a limited number of sheep in their barns.

In addition to this, since raising livestock is a difficult task and requires travelling

long distances, livestock workers may be discouraged to keep large numbers of cattle or sheep; therefore, they turn to jobs related to tourism and second home construction in order to make more money. Based on an interview with a district ranger, despite their hard efforts, on an average, the area of pastures is decreasing by one or two hectares every year. Many of these occupations (land use change) are made during winter time. However, second home owners claimed that local villagers who are selling land to them are charging high prices, despite having to pay fines to the government.

Second Home Development and Natural Resources

The third question which is derived from the main question is: what were the impacts of second home tourism on natural resources of agriculture?

Second home tourism has been one of the significant consumers of environmental and natural resources in rural areas. These resources include a wide range of items which are used in agriculture such as water, soil, air and environmental resources.

The most significant problem caused by the tourism industry is the degradation and destruction of aquatic ecosystems. As rivers are being fragmented, groundwater levels sink and wetlands dry out. The growth in the number of second homes during the 1990s created more intense pressure on the land and environment, especially in mountainous regions. This residential tourism, normally characterised by high acquisition power (Stefano, 2004:26), brings about water supply problems. Indeed, residential cottages with gardens need significantly more amounts of water than pasture lands.

The problems become even more acute when more tourists arrive in summer. The result is that water is no longer available for agricultural production, or it becomes so costly that small farmers and ranchers cannot afford to sink deeper wells. They must either give up their livelihood and find a better one, or take the struggle of increasing costs and declining production. Likewise, rural residents supply their drinking water mainly from the water springs that are collected and then distributed by tankers among houses in the area. With the extension of second homes zone, this resource has been surrounded by houses and is often polluted. Due to the lack of reliable information on the quality and quantity of the water, the article is relying on the research participant's viewpoints, including local residents and second home tourists. The local managers were also interviewed for more information

about the effects of second homes on natural resources.

Land

Since fertile land is a rare and valuable environmental resource in the mountainous region, the main disadvantage of the second homes, which represent 44 per cent of homes in the area, is the fact that they provide the same accommodation capacity, but occupy more land and are used only four weeks a year, compared to more than 20 weeks for hotels.

Environmental degradation in the mountain area is a tragedy. The mountain region suffers from varying degrees of pollution, such as the destruction of primary forests due to cutting and fire, pastures' degradation as cattle were grazed in woodlands, and construction of houses on fertile lands. Indeed, pastures were extremely valuable lands, and not just because of feeding livestock, but also because animal faeces were collected from these lands to be spread as farmyard manure. As a result, considerable loss of semi-natural grassland communities during second home tourism boom has led to changing agricultural practices and productivity. On the other hand, deforestation and soil erosion have destroyed flora and fauna. These phenomena have unleashed increasingly devastating floods in recent years, which have led to reduction in agricultural productivity. The expansion of second houses in the area and into the natural environment resulted in increase of different

kinds of pollution which may directly or indirectly affect agricultural productivity.

Water

According to the local residents and tourists who participated in the research, there is a relative increase in both second homes and daily tourists during the summer months and in New Year's holiday in March, which contributes to creating more amounts of waste. More than 60 per cent of the waste which is spread on land is unrecyclable. The environmental pollution in the mountain area and around the river can cause irreversible damage to the quality of water in the river and underground which is an important source for agricultural

irrigation. Water pollution also inhibits trade by killing off fish (an economic resource in the Babul region). The rural council members in an interview about the amount of waste produced by tourists stated that the villagers generate around 2,880 kilograms of solid waste annually, estimated to be eight kgs per day. In summer, due to the presence of tourists, the amount of generated waste is four times greater.

Moreover, the lack of control on environmental pollution and abatement systems on waste generation and disposal among industries and households has increased the chance of groundwater being

Table 7: The Environmental Impact of Second Home Tourism Development from the Second Home Owners' and Rural Permanent Residents' Perception

Variables	Second home's owners			Local residents		
	Average ranking	Level of correlation	Sig	Average ranking	Level of correlation	Sig
Water pollution	4.62	0.031	0.280	4.96	0.042	0.268
Air pollution	1	0	0	1	0	0
Sound pollution	3.75	0.040	0.729	4.51	0.600	0.069
Soil erosion	4.12	0.024	0.775	4.25	0.135	0.195
Reduction of environment quality	3.87	0.016	0.803	4.76	0.301	0.136
Natural hazards	4.62	0.029	0.760	4.16	0.571	0.075
Waste production	4.75	0.010	0.832	4.96	0.246	0.152
Garden destruction	4.37	0.045	0.717	4.46	0.132	0.197
Pasture destruction	4.62	0.008	0.850	4.86	0.222	0.160
Over-population	4.75	0.001	0.926	4.75	0.824	0.029
Environmental effects	total sum of squares	degrees of freedom	root mean square	F-test	Sig	
Between groups	19.87	2	9.93	16.47	0.000	
Inside the group	16.28	27	0.603			
Total	36.15	29				

contaminated, due to the potential pollution source of leachate, originating from the nearby dumping sites. Furthermore, it creates unfavourable landscape around rivers and natural amenities, harming both agriculture and human health. For example, in the past, there were many fish in the river, but over the past few years, discharging wastewater into river and depletion in dissolved oxygen have caused major shifts in the variety of aquatic organisms found in bodies of water.

residents' perspective of the environmental impacts of second home tourism, water pollution, sound pollution, soil erosion, compromising the quality of the environment, waste production, destruction of the orchards and pastures, which are the main natural resources of agricultural production.

In order to carefully analyse the direct and indirect effects of second home tourism on the research participants' satisfaction, path modelling and analysis has been used.

As the Table shows, there is a significant correlation between the rural permanent

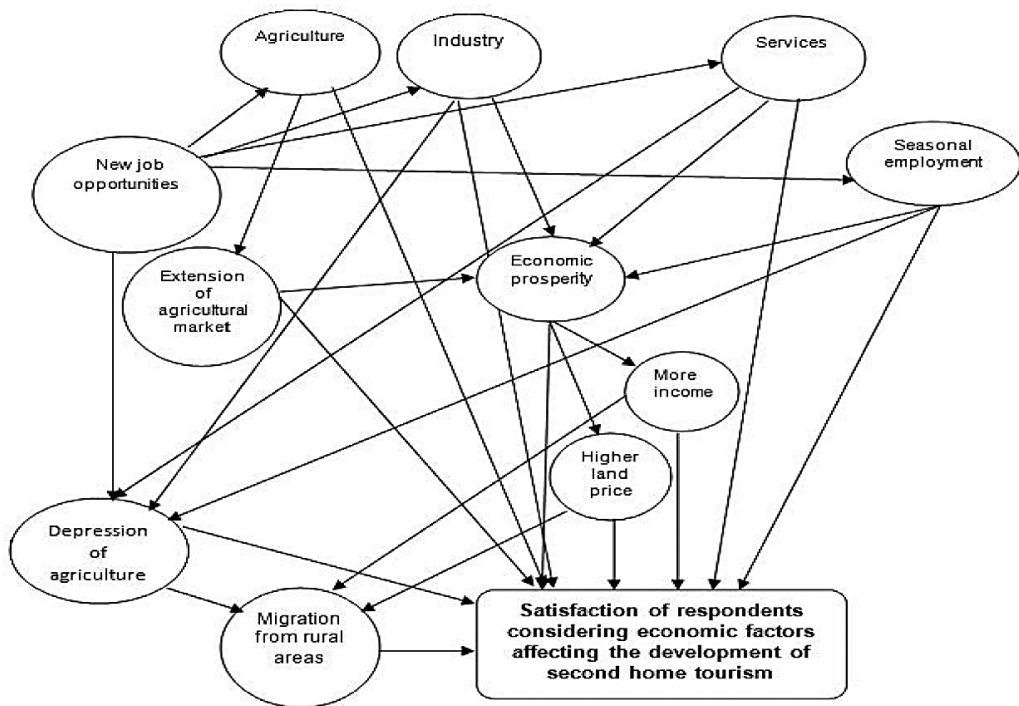


Figure 1: Final Model of Agro-economic Effects of Second Home Tourism on Participants' Perception

Table 8: Path Analysis of the Affecting Factors on the Dependent Variable- Respondents' Perception on Tourism Second Homes in Villages

Second home tourists		Second home owners			Second home effects on :		
Factors		Direct effects	Indirect effects	D & I effects	Direct effects	Indirect effects	D & I effects
1	Job opportunities	31/3	151/0-	16/3	31/0	2/1	51/1
2	Damaging of agricultural jobs	73/0	191/0	921/0	014/0-	076/1-	091/1-
3	Job opportunities in agriculture	57/0	117/0	69/0	0306/0-	182/0	151/0
4	Job opportunities in industry	273/0	169/0	442/0	003/0	058/0	06/0
5	Job opportunities in services	41/1	011/1	42/2	78/0-	76/0	021/0-
6	Creating seasonal jobs	61/1	018/1	63/2	81/0	54/0	275/0
7	Rural migration	-	928/0	928/0	-	055/0	055/0
8	Extending of agricultural	45/0	121/0	57/0	0291/0	189/0-	159/0
9	market	19/0	59/0	78/0	0546/0	155/0	209/0
10	Economic prosperity	35/0	58/0	61/0	0068/0-	328/0	321/0
11	Land value and price Income generation	28/0	000/0	28/0	01/0	097/0	107/0

As the Table shows, from the local communities' viewpoint, the most important economic impact of second home development in the area is the increase in seasonal employment, especially in the services sector, which can attract labour force from agriculture. Simultaneity of tourism and agricultural activities can led to agricultural depression. Meanwhile they believed that tourism has caused the extension of governmental and private centres which are offering goods and services; in the absence of these centres, local people had to travel long distances to meet their needs. These centres include: grocery stores, coffee shops, restaurants, gas stations, bakeries, banks, building materials, equipment stores, etc. Also at the same time, some services such as, janitorial and building maintenance, constructional works, auto service and repair stores have grown due to second home tourism

development. Emerging new opportunities in tourism sector have caused many farm workers to leave their long time main employment i.e., agricultural work. Low benefit and hard work was the reason for their dissatisfaction. Also they noted that, with the extension of second homes in their village, the price of their land, along with their housing price have increased dramatically. Although the first phenomenon has satisfied the local people, the increase in housing price has made a complicated situation, especially for young couples. Meanwhile, there was evidence that this situation is to the advantage of some local landowners who with selling their land can easily afford a convenience store and a medium size apartment in a city and start a new urban life. Often, some prefer to keep their rural homes for recreational purposes. The path analysis of local communities' viewpoints about the effects of second home development on the

economic factors of agricultural sector, shows that increasing employment opportunities for people, particularly in the service sector and seasonal jobs, intensification of rural-urban migration are the most important influences of second homes extension in the area. It has also lead to a decrease in the importance and in 'obsolescence' of agricultural activity. In the same manner, second home owners believed that the land price in the countryside has increased significantly over the past few years. Also in their opinion, the most important jobs that have been created by tourism development in the area were housing construction and other related activities. Based on the path analysis of tourists' viewpoint, creating job opportunities, particularly seasonal employment, prosperity of rural economy, as well as development of agricultural production market have occurred due to tourism development.

Conclusion

Nowadays, tourism is recognised as a tool for rural development. It appears from different perspectives, that the phenomenon which has the greatest impact on landscape and livelihood of rural areas is second home tourism. Since agriculture is the main source of livelihood amongst the rural communities, particularly in the studied area, and is damaged by second home tourism, the local agro-economy has been affected dramatically.

There are different theories and perspectives about the effects of second home tourism on agriculture. In order to meet the

needs for a more comprehensive appreciation of the relationships and interactions between second home tourism and the agricultural sector, this article considers the effects that influence the nature of these relationships.

Torres and Momsen (2011:30) in her research indicated that tourism, has positively influenced the production of some agricultural products in several places. Likewise, Dykes and Walmsley (2015:115) in their article stated that second home owners were making a positive contribution to the destination. They clearly felt that tourists were bringing money into the economy, providing income and employment for the local population (Dykes and Walmsley & 2015:115). It is similar with what has been found in the study area.

The result of this research indicates that despite the importance of tourism and its positive impacts, especially in terms of economic consequences, there are many negative effects on the environment which can be analysed in different ways. On the other hand, negative environmental effects of second home tourism can lead to unsustainable agricultural development. Incidentally, unsustainable agricultural and aquaculture practices present the greatest immediate threat to species and ecosystems around the area and consequently it is leading to unsustainable tourism practices.

Furthermore, based on research participants, the most significant impacts of the second homes, have emerged as changes in

rural land use, followed by the destruction of the forest, national lands, pastures and farms. This is due to the nature of tourism being inherently exploitative, particularly in the case of land. Apparently, more than 90 per cent of second homes in the area have been built on pasture lands, and these are mostly owned by brokers and outsiders who gain more profit from selling the lands than local communities. So it seems that tourism advantages could not reach the local communities, and it contradicts Torres and Momsen's research in different European countries.

Forest degradation and changing of agricultural land use to second homes has led to the destruction of fertile lands, causing the mountainous rural areas to be much more vulnerable to flash floods, resulting in high damages to the crops and agricultural inputs, especially land. Hence, the phenomenon of second homes expansion turned to a full-blown environmental tragedy, not only for the rural areas, but for the country as a whole. This is a trend which began a few decades ago and it will continue in the absence of integrated rural and tourism planning. Final analysis of the research indicates the fact that second home tourism activities have contributed to worsen the negative effects on natural and environmental resources, which are primary inputs to the agricultural sector. Second homes development is in direct competition with agricultural land uses and is threatening valuable agricultural

soils all over the fertile lands of the studied rural areas.

In brief, uncontrolled second home development not only can have major negative impacts on natural attractions, but it can also create serious challenges for agricultural development in northern Iran, and particularly for mountainous areas of Babol province. So, it seems there are more conflicts between second home tourism and agriculture than synergy.

Water is one of the most important natural resources, followed by soil and land, which are all amongst the rare agricultural resources in the semi-arid region of Iran. Since the fertile agricultural land is suitable for all types of activities, including industry and tourism and is rare especially in the mountainous region of Iran, the occupation of these lands by second homes acts as a serious threat to agriculture. Therefore, when planning for the construction of second homes, the principle of conservation of natural resources and agriculture should be emphasised on and taken into account. Furthermore, in order to preserve the agricultural resources, the creation of tourism sites in non-agricultural areas should instead be encouraged. On the other hand, tourism needs to be linked to agriculture development and help further develop the agricultural industry.

Finally, the control on second home tourism is one of the most important necessities for rural and agricultural planning in the area.

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