

# TeMA

Journal of  
Land Use, Mobility and Environment

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THE CITY CHALLENGES AND EXTERNAL AGENTS.  
METHODS, TOOLS AND BEST PRACTICES



## THE CITY CHALLENGES AND EXTERNAL AGENTS. METHODS, TOOLS AND BEST PRACTICES

3 (2021)

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The cover image is Rue de Rivoli - an emblematic street of Paris connecting Bastille to Concorde – that since May 2020 has been reserved for bicycles and pedestrians, Paris, France, Saturday, Nov. 6, 2021.

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## THE CITY CHALLENGES AND EXTERNAL AGENTS. METHODS, TOOLS AND BEST PRACTICES

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## Investigating the side-effects and consequences of the formation of second homes in Alamut rural areas, Central Alborz of Iran

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### Abstract

Rural out-migration is one of the most critical issues in all countries. This flow increases the rural decline, and in many cases, causes rural abandonment. But against our imaginations, there is also a reverse flow from cities to villages. In the Alamut region in central Alborz of Iran, some villages attract populations by the reverse migration flow. This temporary flow forms a new type of housing in the rural areas called "second home". The analysis of second home appearance is the main issue in this article. We used surveys method from locals and field observation in eight villages of the eastern Alamut area. The QSPM (Quantitative Strategic Planning Matrix) matrix is used for analyzing observation and side-effects of second homes in the short-term and long-term. The result showed that second homes in these rural areas have different side-effects. Low skill employment creation, temporary increase of local consumers, rural renovation cost, and second home owner's participation in agriculture activities are the positive effects. But there are also some negative impacts like; seasonal and low-income jobs, destructive impacts on the environment, erosion of natural resources, and increasing demographic instability. This phenomenon has positive impacts in the short-term and negative consequences in the long-term. The approaches for decreasing the expansion of second holiday home and using the positive implications of this phenomenon for developing the rural areas would be explained in this paper.

### Keywords

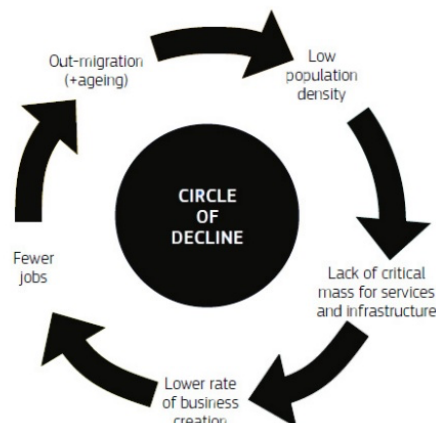
Rural second home; Alamut rural area; Reverse migration flow.

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## 1. Introduction

In many countries like the USA, Sweden, Canada, Australia, China, and Japan, the rural decline is the most critical issue that villages are facing. This issue has been exposed since 1960 in the United States (Li et al., 2019). As figure No.1 shows, decline occurs in a circle. Villages pointed out the rural decline in his studies and believes that rural decline occurs under two mutually reinforcing trends: first, shortage of jobs and sustainable business activity; second, inadequate and declining services. Also, figure No.1 shows rural decline's circle. (Villages, 2018). The essential factor in this circle is rural out-migration. Migration flow is usually from the rural area to the urban area. Ravenstein states that every migration flow from rural to urban areas has a mutual trend (from urban to rural) (Papoli Yazdi & Rajabi, 2013). There are two kinds of migration to rural areas. The first group is the international agriculture workers who work and live seasonal or long-term. The other group was searched for different lifestyles and were interested in living in rural areas or buying a second home (Qian, 2011). In this article, we focused on "second home" in rural areas. Many different terms can describe a second home. These examples include recreation homes, summer homes, vacation homes, cottages, flats, cabins, lodges, huts, chalets, farmhouses, etc. some kinds of dwellings labeled as second homes include boats, tents, and caravans (Marjavaara, 2008). This phenomenon isn't new. But, it turns into a usual issue because of the increasing pressure of urban life (Kheyroddin et al., 2017). The appearance of this kind of habitat is caused by some factors that will be explained. This phenomenon also has various economic, social, and environmental effects in rural areas as the sensitive area.



**Fig.1 The circle of rural decline (Villages, 2018)**

## 2. Problem statements and Method

In this research, we try to explain the reasons and the process of the emergence of second rural houses. The main question of the present article is, what are the consequences and effects of second homes in Alamut Rural Region? The effects and consequences of the formation of second rural houses in the central Alborz regions of Iran (Alamut) have not been carefully studied and presented. Examining and answering the questions in this article can reduce the negative and destructive effects of second home formation on the rural areas. Also, some positive consequences of this phenomenon could be oriented to the endogenous development of rural areas. We chose eight villages between eastern Alamut rural and interviewed twenty persons. The clustered topological structure of the rural areas and difficult access make us chose some of them. But almost all of these villages are faced with second homes. Also, for improving our observation we chose an area that could show non-native second homeowners better. Alamut is known as Alamut lake. So there are always some tourists that traveling to this place every year. Local people didn't simply accept non-native peoples. So it was difficult to interview a specific number of them. Actually, the interview was going to continue with second homeowners too, but Covid-19 has made a limitation. According to the article purpose,



interview questions include second home acquiring methods, resident's uses, and the length of their accommodation. Tab.1 shows the interview question purpose.

Questions	Purposes
"How to get a second home property?"	knowing about the ownership method
"Are second home residents occupied or retired?"	extracting the occupations pattern
"Are they native? Or non-native?"	diagnosis the difference between cultures and lifestyles
"Are second home habitations temporary? Or permanent?"	for determining the length of occupation
Have the second homeowners ever participated in agricultural activities?"	extracting positive impacts
Have they invested in rural development?"	
"Have they affected on jobs or economic development?"	
"Do second homes built in gardens?"	determining consequences
"Has there ever been a conflict between the owner of the second house?"	

**Tab.1 The purposes of interview question**

The effect of the second home will be evaluated using a SWOT (Strengths, Weaknesses, Opportunities, and threats) matrix based on the answers and field observations. But this matrix doesn't show the importance of long-term and short-term effects, so we use the QSPM matrix. This matrix prioritizes strategies. Strategies get weights based on improving the situation with strengths and opportunities and reducing weaknesses and threats. Also, we used satellite pictures to show second home development in rural agricultural lands.

### 3. Theoretical context

Second home is different from owning multiple homes. Multiple homes originate from capital accumulation. The second home doesn't have a specified definition and has various meanings in diverse geography. According to Marjavaara (2008), the core of definition is that second homeowners must have primary residence somewhere else, where they spend most of their time there. Based on this definition, second homes are for temporary use. Some drivers appear this kind of housing, like demands for leisure space, buying empty homes (Oliveira & et al., 2015), buying lands (which mainly include farmlands), and investing in childhood regions. Second homes create short-term or long-term socio-economic links between owners and their new society (Hoogendoorn, 2010).

Metropolitan growth also influences second home development. It formed in two shapes, high-income with luxury homes and low-income migrants. These residents save their connection with cities. Converting permanent homes to property homes is one of the second home creation methods. New buildings in private lands and development by construction companies in some places with high demand are the other methods (Kheyroddin & et al., 2017). Rural second homes in Iran places in the second type. This phenomenon takes place at a different distance from cities. But, in some cases, urban sprawl divides cities and make an opportunity for second home development. The south area of Medellin, Envigado, Bello is one of example of this kind of second homes that belongs to rich citizen's weekend homes (Palacio, 2012).

Some connotations associated with the second home phenomenon, including "getting away from the grind," "romantic," "cottage garden," "slow down and relax," "simple life close to nature," "spiritual second home," and rest and peace." Also, 'complementary spaces' and 'seasonal suburbanization' are other second home spatial connotations (Alipour & et al., 2017). Second home doesn't describe the technical form only but also refers to the function of the house (Adamiak, 2016). This phenomenon is the result of 'commodification of rural through re-structuring of land from marginal agriculture into second home developments' according to Alipour quoted from Overvåg (Alipour et al., 2017).

### 3.1 An overview on the emergence of rural second home

The second home initiative refers to Ancient Egypt. Wealthy families chose out-of-town villas for rest. In the third and second decade, in Hellenistic Greece, rich people traveled for their leisure and comfort (Gomes & et al., 2017). Romans took up residence in some villas on the borders of the Tiber rivers. In the seventeenth and eighteenth centuries, Amsterdam's wealthy classes stayed their second homes in summers (Dijest & et al., 2004). By the eighteenth century, Danish nobbles tried to create estates, castles in rural areas for summer vacation (Tress, 2002). The second home isn't a new subject. There are a lot of studies that show the background of this kind of house. In the late 1950s, second homes have been more popular in western countries. This time middle-class households were involved in addition to high-incomes (Li & Fan, 2020).

There are a lot of studies about second home in the world. "Housing-in-England" report states that two percent of homes in England are second homes or vacant long-term. With some initiative programs for empty homes by the government, the number of vacant houses fallen by 38% (NAO, 2017). English peoples have various habits from other nations. Just 31 percent of second homes were bought in England (Savills, 2019). In French, a study in the late 1960s showed that the proportion of second homeowners increases by settlement's size (Dijest et al., 2004). The French prefer to buy their second homes in their own country (Savills, 2019). More than one-fifth of Swedish families have a second home, and this level hasn't changed since 1970 (Dijest et al., 2004). Because of the urban population's growth, second home ownership in Sweden has some political goals. These goals related to the quality of life include health, and wealth improvement, enjoying open-air activities, and rural landscape (Lundmark & Marjavaara, 2013). In Denmark, second home creation is just allowed in recreational locations. Also, retired peoples are the only groups that can use it as a permanent settlement. Today almost 10% of these homes are used as permanent homes (Slätmo et al., 2019). There is another type of second home with a different purpose in China. In China, Hukoh<sup>1</sup> system makes aliens rent suburbs second home to work in cities (Huang & Yi, 2011).

### 3.2 The Emergence Factor of Second Home

Daily excursions, weekends and short-time holidays, seasonal migration (Hoogendoorn, 2010) are the aims of second home utilization. Second home is relevant to nature and natural activities. The human's relation with nature is undeniable. Second home plays a valuable role in people's connection with nature (Hoogendoorn, 2010; Alipour et al., 2017). It is also a multipurpose home and may have different aspects like a long-term investment or capital accumulation (Lundmark & Marjavaara, 2013). Most researchers believe this purchase is a part of personal or family life-stage investment strategies (Huang & Yi, 2011). One of the first and most important of second home ownership motivation is the sense of belonging to the place. Owners try to experience a different lifestyle and feel nostalgic in their childhood places. Also, second homes provide opportunities for social and recreational activities (Hoogendoorn, 2010). A variety of recreational activities is one of the rural attractions. Traditional recreation activities transferred to modern's in urban settlements. But this kind of leisure is still alive in villages (Overvag, 2009). Also, urban modern-life is so stressful for citizens. This issue encourages them to escape from cities (Huang & Yi, 2014). Climate change and urbanization also hurt social stability and quality of life (Shirgir et al., 2019). Owners find this kind of life more valuable and richer than urban life. Second homes are the result of planners' failure in providing quality of life (Hoogendoorn, 2010). One of the most important issues in modern cities is the aging population (Mariotti et al., 2018). Rural areas are faced with it too. Some of the owners are young people that migrate to urban areas to find jobs and coming back to their childhood place after retirement.

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<sup>1</sup> China's household registration

Three critical processes in second homes' development mentioned by Coppack. These processes include high disposable income, more leisure time because of leisure and work fragmentation, and a high mobility rate (Popescu, 2010; Dijest et al., 2004; Hoogendoorn, 2010).

Second homes frequently build in the region with the natural landscape, seaside, mountains, etc. (Adamiak, 2016). Depends on the settlement distance, these constructions could expand in suburbs or rural areas. As an impartible part of the rural regions and their history, second homes are consumption-based, not a production (Hoogendoorn, 2010). Time is the other factor related to this phenomenon. The second homes usually use on the weekends and seasonal holidays.

Second homeowners include retired and old peoples with high incomes. There is a "semi-retired" stage to convert a second home to a permanent home (Huang & Yi, 2014).

Rural areas face population decline and have low-cost houses and lands (Popescu, 2010) compared to cities. This issue affects citizens' demand for a rural home (Dijest & et al., 2004). Table No. 2 shows some of the indicators from the literature review that were used in interview questions.

Factors	Researchers
Occupation pattern	Dijest 2004, Hoogendoorn 2010, Huang & Yi 2014, Overvag 2009, Paris 2013, Slätmo 2019
Family investment	Huang & Yi 2014
Emotional dependency	Geyer 2015, Hoogendoorn 2010, Huang & Yi 2014, Lundmarka & Marjavaaraa 2013, Marjavaaraa 2008, Stergiou & et al. 2016, Rye 2011, Slätmo 2019
Accessibility	Adamiak & et al. 2015, Dijest 2004, Hilber 2016, Hiltunen & et al. 2015, Hoogendoorn 2010, Huang & Yi 2014, Overvag 2009, Sarker & et al. 2018, Slätmo 2019
Life style	Adamiak & et al. 2015, Popescu 2010, Hiltunen & et al. 2015, Hoogendoorn 2010, Huang & Yi 2014, Marjavaaraa 2008, Overvag 2009, Slätmo 2019
Natural links	Adamiak 2016, Alipour & et al. 2016, Dijest 2004, Geyer 2015, Hoogendoorn 2010, Slätmo 2019

**Tab.2 Second home factors**

#### 4. The Case study: the emergence of second home in rural areas in Central Alborz of Iran

Qazvin province is located on the Alborz southern mountains and the Iran plateau, with 15626 square kilometers in 2016 (Qazvin comprehensive plan, 2011; Qazvin economic, social, cultural report, 2016). With a 1919 square kilometer area, Alamut is one of Qazvin's eastern north sections (Qazvin director plan, 2004). Alamut is a rural area with more than 200 villages that consists of six rural districts. Low population, small, sprawl, poor infrastructure, poor communication, limited production activities, instability are Alamut's village's features (Qazvin regional development plan, 2006). Alamut has rough topography. But this issue couldn't affect second home development. Evan, Zarabad, Varbon, Ayin, Dikin, Koushk, Zavardasht, Garmarud Sofla are our study villages. figure No. 2 shows our study area.

##### 4.1 The second home in Alamut rural area

Because of local's attitude about strangers, our interview sample is some local peoples who were ready to talk with us. Our responders included farmers, wholesalers, tour guides, housewives and etc. Locals stated that this kind of construction has become popular since the Rodbar earthquake. Most of the second homeowners are retired. They choose their childhood places to spend their weekends and holidays. Our case study owners are native. There are some non-natives too, especially in Evan lake's rural area. This lake plays an essential role to attracts these people. According to rural statements, almost all second homes are personal property,



but as local stated "there aren't rental or for-sell houses. If there are, they purchase it from locals and we don't have strange people here".

Second homes have temporary residents, seasonal or weekends. Some residents work on gardens and stay longer than others. Some owners rebuild their inherited homes, but others expand second homes in farmlands. This phenomenon increased land price. Also, second homes don't obey rural home's architectures, which causes visual heterogeneities. The other important issue that effects on the environment is accessibility to these villages. Because of Alamut rough topography, access to villages is only possible with personal vehicles.

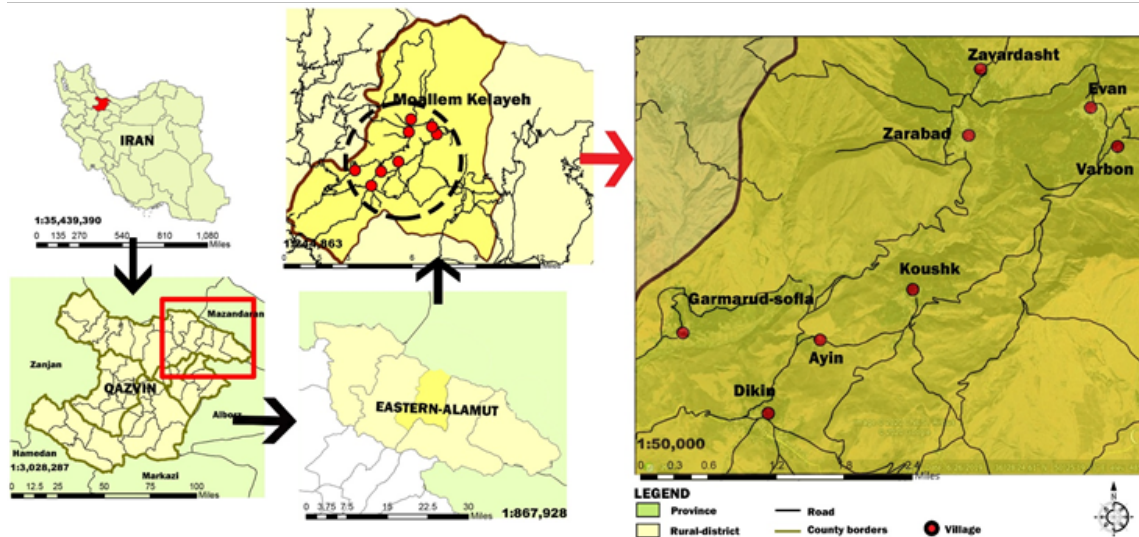


Fig.2 Location of case study villages in Alamut region

## 4.2 Side effects analysis of second home in Alamut

Second home has different effects on the surrounding areas. As Oliveira (2015) states, these impacts depend on some factors include; rural and urban features, development level of the second home location, residency length, and distance from the primary house. Rural areas are the only settlements that have a direct relation to the environment. Rural temporary population growth couldn't always have positive effects. There are still two deprived villages in our case study. So we describe the positive and negative effects of it.

### Economic effects

Second home development affects the local economy in the short-term and long-term. Second homeowners are the consumers of local products and services. Consumers affect local purchasing power by increasing the cost of products. It has some positive impacts like; economic and job diversity, low-skill jobs, and restoration of rural economics. Rural peoples stated second homes didn't create new jobs, and sometimes, they provide some short-term services like helping in gardening like one of our responder point that "...there are some locals that help them in garden's activities, like picking fruits" or building construction. These are low-income and seasonal. Some owners work on farmlands that maybe help to improve agriculture in the future, as they said "they do agriculture activities and have gardens and farmlands here". "they spend money on rural development and road construction".

The second home construction profit belongs to farmers, who invest their lands due to low-profit agriculture and lack of agriculture-related institutions. Some local's answer about land cost is: "yes it's increased as much as you like" or "land cost increased because this is a touristic place". Land and houses cost increase by these luxury buildings. This temporary population needs services and infrastructure. Rough topography in these villages doesn't have enough capacity for this demand. Our villages struggled with Gas piping distribution, but

this issue couldn't affect second home expansion (Fig.3a). Some locals believed that second homes had an effect on it: "gas infrastructures come here, because of them, but they didn't create job opportunities". Rural shopping centers playing an essential role in developing rural products. But, instead of rural organic products, our villages supply urban food (Fig.3b).



**Fig.3 (a) Lack of infrastructures (oct,2019) and (b) rural shopping with urban product supply (oct,2019)**

### Environmental effects

Second home converts "nature" to "culture" and replaces non-residential lands with buildings and human activities (Rye, 2011). "Villages are going to be far from the rural shape and form like apartments" was one of our responder ideas. Owning Multiple homes causes increase energy consumption. Natural area and resource erosion, increasing greenhouse gases, wildlife disorder, biodiversity decrease, desertification, and pollution of water, soil, air pollution are environmental consequences. Also, landscape fragmentation and nature beauty destruction influence the rural environment.



**Fig.4 Rural landscape (oct,2019)**

Villages are nature settlements, so environmental issues have a direct impact on them. Second homeowners using energy for their daily activities. They increase the heat and influence climate change. According to one of our old responders who were farmers mentioned it too "it will affect climate changes. Also, the weather is



going to warmer and agriculture is going to absolute". Rural people have limited contribution from nature capacity. Increasing population creates demand over this capacity. Some owners effect rural decline by built their second homes in gardens. Our observations showed that second homes influence rural landscape with their specific facade. Locals point that "destroyed lands. These row houses were farmlands". Second home development in gardens pulls infrastructures to farmlands. This issue decreases productive power in rural areas. The colorful roofs of these houses are all around the village (Fig.4). Also, difficult access to these villages caused increasing personal vehicle usage. This issue increases greenhouse gases in the long-term.

### Spatial effects

According to satellite pictures since 2011, the spatial structure had been changed in all villages. Second home developed in rural centers and surrounding. Figg. 6, 7, and 8 shows tangible spatial changes in Evan, Dikin, and Zavardasht villages. Even some of them built out of village borders (Fig.5a). Some owners create their second holiday homes in gardens (Fig.5b). Figure no 6 show that even rough topography couldn't affects second home development (Fig.5c).



(a)



(b)



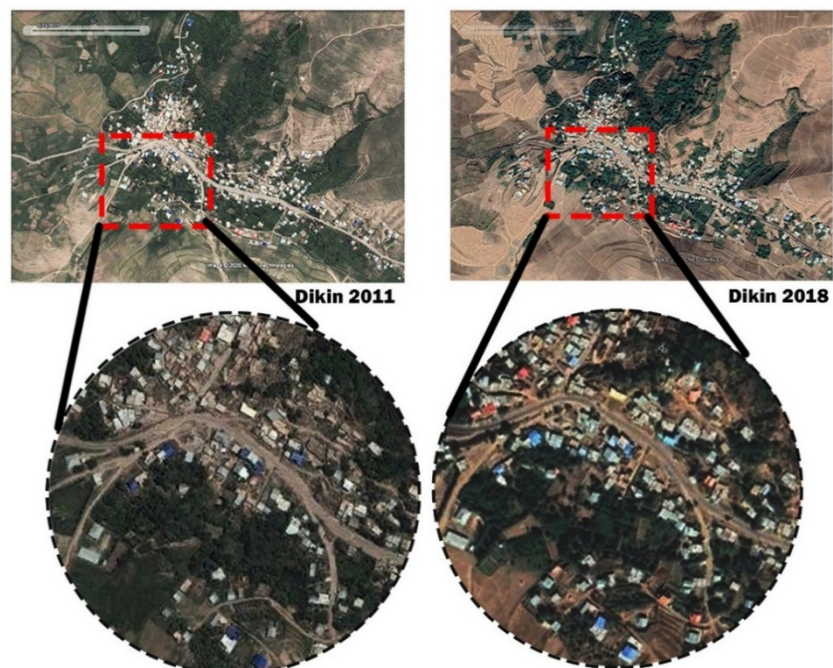
(c)

**Fig.5 (a) Developed out of rural borders (oct,2019), (b) developed in gardens (oct,2019) and (c) rough topography (oct,2019)**

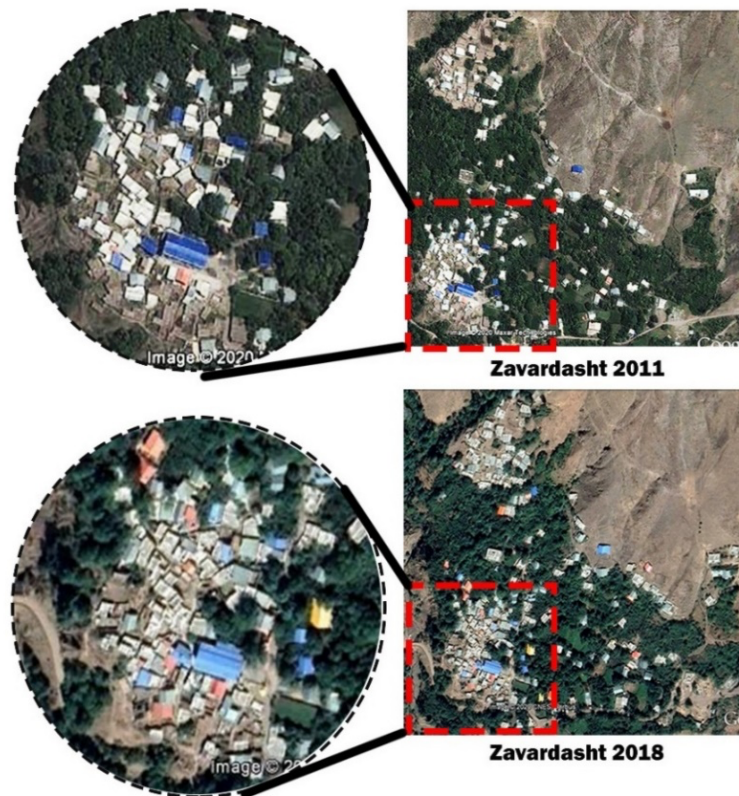




**Fig.6 Spatial changes in Evan**



**Fig.7 Spatial changes in Dikin**



**Fig.8 Spatial changes in Zavardasht**

After SWOT analysis, the QSPM matrix is used for prioritizing strategies. Tab.5 shows the total scores of strategies according to IFEM (Internal Factor Evaluation Matrix), Tab.3, and EFEM (External Factor Evaluation Matrix), Tab.4 results.

	Strength	Wight	Effectiveness score	Final scores
S1	Employment diversity	0.06	2	0.12
S2	Low-skill occupation	0.04	2	0.08
S3	Increasing local service consumers	0.06	2	0.12
S4	Learning about rural life style	0.08	3	0.24
S5	Communication with nature	0.06	3	0.18
S6	Open space activities	0.06	3	0.18
S7	Experience different life	0.06	2	0.12
S8	Relieving from modern life pressure	0.06	2	0.12
S9	Agriculture affluence	0.08	4	0.32
<b>weakness</b>				
W1	Seasonal and low-income occupation	0.06	3	0.18
W3	Increasing greenhouse gases release	0.08	4	0.32
W4	Farmland destruction	0.08	4	0.32
W5	Natural landscape destruction	0.08	3	0.24
W6	Increasing land costs	0.06	3	0.18
W7	Construction without using local materials	0.08	3	0.24
<b>sum</b>		1		2.96

**Tab.3 Internal Factor Evaluation Matrix**

In Tab.5, we suggest some solutions for adjustment second home effect. By using the second homeowner's knowledge and capital, we can reduce weaknesses and threats. Also, rural-urban links should strengthen. So, it isn't necessary to create a second home to experience rural life.

	<b>Opportunities</b>	<b>Wight</b>	<b>Effectiveness score</b>	<b>Final scores</b>
O1	Supplying rural renovation costs	0.04	3	0.12
O2	Stimulation local economic	0.06	3	0.18
O3	Knowledge and capital transferring	0.06	4	0.24
O4	Increasing community power to access local resource	0.04	3	0.12
O5	Achieving finance and profit for investors	0.02	1	0.02
O6	Increasing local relations with external networks	0.04	2	0.08
O7	Participation in agriculture activities	0.04	3	0.12
	<b>threats</b>			
T1	Decreasing rural purchasing power	0.06	3	0.18
T2	Transforming rural productive role to services	0.06	4	0.24
T3	Intensification economic inflation	0.06	3	0.18
T4	Rural local markets weakness	0.04	3	0.12
T5	Natural recourses erosion	0.06	4	0.24
T6	Air, soil, water pollution	0.06	4	0.24
	sum	1		

**Tab.4 External Factor Evaluation Matrix**

<b>Strategies</b>	<b>Total attractive-ness scores</b>	<b>Policies</b>	<b>Implementation</b>
<b>Garden and farmland protection</b>	3.7	Encouraging owners in agriculture activities Prevent building development in farmland	Cession or rent farmland to retirees. Pay penalty for building in farmlands.
<b>Protecting natural resource and landscape</b>	3.44	Harmonic construction with rural architecture	Use indigenous material in construction. Use rural architecture for second homes.
<b>Enforcement of rural economy</b>	3.26	Improvement of agriculture production	Supply organic products in rural markets. Develop agricultural and bestial products.
<b>Using of owner's experience and investment</b>	2.7	Supplying the cost of rural renovation Rural indigenous product development	Use second home in a timesharing mood. Pay second home's tax. Encourage young people to develop rural handicrafts and products.
<b>Strength rural-urban link</b>	2.56	Facilitating rural access to urban services and vice versa	Develop public transportation. Encourage citizens to invest in farmlands. Develop rural markets beyond rural areas.
<b>Consolidation of local's power in housing marker</b>	2.34	Prevent land trade Limiting second home's temporary usage	Prevent farmlands dealing for building Integrate rural land price. Hold the right to housing balance. Convert second homes to primary homes in the long-term.

**Tab.5 QSPM results and policies**



## 5. Conclusions

Rural areas are struggling with losing population. But, in this article, temporary reverse migration is observed in Alamut rural areas. Second homes are the result of this population flow. Farmer studies showed that second home have long history and almost all wealthy families had second home. But, nowadays second home buying is possible for more people. All of countries faced with this phenomenon and their government try to use it in the best ways. Alamut second homeowners are natives. These houses aren't touristic and have been used in half of year. Second homeowners didn't pay taxes. According to our studies, this kind of population attraction can't cause rural development. Second homes couldn't prevent rural decline and increase it in the long-term. Our rural population density is still low because this population is unstable.

The critical services have lack capacity. Governments don't control second home creation and don't consider their demands. One of the essential factors in this circle is a job. Second homes couldn't create new business opportunities. Even a second home could encourage rural out-migration. Second homeowners create a wealthy imagination and make the young population migrate. Second home increases the price of land. This issue ruined the balance of the right to housing. Rural new families can't purchase houses. Villages have struggled with agriculture decrease. Second homes could make a motivation for farmers to sell their gardens to achieve capital. In the long-term, villages turn to lands with buildings that are vacant in half of the year. This phenomenon has positive short-term impacts, but adverse long-term effects are irreparable. These people make villages a place like urban. So, providing opportunities to profiteer owners who look for a low-cost property to build luxury homes doesn't help the rural situation.

It is better to make motivations for locals to develop their villages. Second homes shouldn't develop in this kind of rural area. Second home development could be allowed only with some conditions, including participation in agriculture activities, achieving investments for farmland improvement, paying taxes, etc. Also, our villages have a difficult accessibility and it shows that family belonging can counteract distances. Lack of second home's number data, GIS data, building's age, residency length, second home's population are some of this study challenges. Satellite pictures are only available since 2011, and we couldn't access older photos. Iran's census gathers in November, and some second homeowners have been calculated. So some village's population showed significant growth. Unclear data about second home usage in single or multiple families is another problem in this article. This phenomenon is uncontrollable and unpredictable, like other kinds of social flows.

## References

- Adamiak, C. (2016). Cottage sprawl: Spatial development of second homes in Bory Tucholskie, Poland. *Landscape and Urban Planning*, 147, 96-106. <https://doi.org/10.1016/j.landurbplan.2015.11.003>
- Alipour, H., Olya, H. G., Hassanzadeh, B., & Rezapouraghdam, H. (2017). Second home tourism impact and governance: Evidence from the Caspian Sea region of Iran. *Ocean & Coastal Management*, 136, 165-176. <https://doi.org/10.1016/j.ocecoaman.2016.12.006>
- Dijst, M., Lanzendorf, M., Barendregt, A., & Smit, L. (2005). Second homes in Germany and the Netherlands: Ownership and travel impact explained. *Tijdschrift voor economische en sociale geografie*, 96(2), 139-152. <https://doi.org/10.1111/j.1467-9663.2005.00446.x>
- Gomes, R. D. S. D. E., Pinto, H. E. D. R. S. D. C., & Almeida, C. M. B. R. D. (2017). Second home tourism in the Algarve: The perception of public sector managers. *Revista Brasileira de Pesquisa em Turismo*, 11(2), 197-217. <https://doi.org/10.7784/rbtur.v11i2.1246>
- Hoogendoorn, G. (2010). *Second homes and local economic impacts in the South African post-productivist countryside* (Doctoral dissertation, University of the Free State).
- Huang, Y., & Yi, C. (2011). Second home ownership in transitional urban China. *Housing Studies*, 26(03), 423-447. <https://doi.org/10.1080/02673037.2011.542100>

- Kheyroddin, R., Piroozi, R., & Soleimani, A. (2017). METASTATIC SPREAD OF LUXURY SECOND HOMES IN RURAL AREAS: A NEW TYPE OF SPATIAL DEVELOPMENT IN THE TEHRAN METROPOLITAN REGION: A STUDY OF DAMAVAND COUNTY, IRAN. *Journal of Architectural and Planning Research*, 71-88.
- Kheyroddin Reza, Piroozi Reza (2013). New typology in spatial distributions in metropolitan areas (case study: metastatic growth in Tehran's eastern metropolitan area), *Journal of urban management*, 229-243 (full text in Persian).
- Li, T., & Fan, C. C. (2020). Occupancy, usage and spatial location of second homes in urban China. *Cities*, 96, 102414. <https://doi.org/10.1016/j.cities.2019.102414>
- Li, Y., Westlund, H., & Liu, Y. (2019). Why some rural areas decline while some others not: An overview of rural evolution in the world. *Journal of Rural Studies*, 68, 135-143. <https://doi.org/10.1016/j.jrurstud.2019.03.003>
- Lundmark, L., & Marjavaara, R. (2013). Second home ownership: A blessing for all?. *Scandinavian Journal of Hospitality and Tourism*, 13(4), 281-298. <https://doi.org/10.1080/15022250.2013.862439>
- Mariotti, I., Brouwer, A. E., & Gelormini, M. (2018). Is milan a city for elderly? mobility for aging in place. *TeMA-Journal of Land Use, Mobility and Environment*, 95-104. <https://doi.org/10.6092/1970-9870/5764>
- Marjavaara, R. (2008). *Second home tourism: The root to displacement in Sweden?* (Doctoral dissertation, Kulturgeografi).
- National Audit Office (NAO). (2017). Housing in England: Overview.
- de Oliveira, J. A., Roca, M. D. N. O., & Roca, Z. (2015). Economic effects of second homes: A case study in Portugal. *Economics & Sociology*, 8(3), 183. <https://doi.org/10.14254/2071-789X.2015/8-3/14>
- Overvåg, K. (2009). Second homes in Eastern Norway: From marginal land to commodity.
- Palacio, F. A. H. (2012). Sprawl and Fragmentation. The case of Medellin Region in Colombia. *TeMA-Journal of Land Use, Mobility and Environment*, 5(1), 101-120. <https://doi.org/10.6092/1970-9870/762>
- Papoli Yazdi Mohammad Hossein, Rajabi Sanajerdi Hossein (2013). The Theory of Urban and Surrounding, SAMT publisher (full text in Persian).
- Popescu, A. C. (2010). The Impact of Building Recreational Houses in Rural Areas. Case Study: Râncă Mountain Resort. *Journal of Settlements and Spatial Planning*, 1(2), 109-116.
- Qazvin regional development plan (2006) planning and budget organization (full text in Persian).
- Qasvin economic, social, cultural report (2016) Qazvin management and planning organization (full text in Persian).
- Qavin comprehensive plan (2011) "City and Plan" consulting engineers (full text in Persian).
- Qazvin director plan (2004) "Urbanist and Architectures" consulting engineers (full text in Persian).
- Qian, H. (2011). Towards the development of a spatial planning framework for rural development in China: a case study of Jiangsu Province (Doctoral dissertation, University of Manchester).
- Savills (2019). Second Homes Global trends in ownership and renting.
- Shirgir, E., Kheyroddin, R., & Behzadfar, M. (2019). Defining urban green infrastructure role in analysis of climate resiliency in cities based on landscape ecology theories. *TeMA-Journal of Land Use, Mobility and Environment*, 12(3), 227-247. <https://doi.org/10.6092/1970-9870/6250>
- Slätmo, E., Ormstrup Vestergård, L., Lidmo, J., & Turunen, E. (2019). Urban-rural flows from seasonal tourism and second homes: Planning challenges and strategies in the Nordics. <https://doi.org/10.6027/R2019:13.1403-2503>
- Tress, G. (2002). Development of second-home tourism in Denmark. *Scandinavian Journal of Hospitality and tourism*, 2(2), 109-122. <https://doi.org/10.1080/15022250216289>
- Villages, S. (2018). Revitalising Rural Services. *EU Rural Rev*, 26.

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