

Typology of Spatial Expansion New Sprawl Pattern (Case study: Urumia urban region)

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Abstract

Spatial expansion and land use changes in agricultural lands are among important factors contributing to environmental damages and disabilities of productive economy in the region, especially in agricultural aspects. This trend is common in developing countries. These changes in land use usually occur by those who target agricultural lands for speculations and other abusing forms of economy. In addition this trend also affects environment likewise economy which is attributed as sprawl. Urumia urban region has valuable agricultural lands which plays a key role in both environment and economy. During the past two decades, according to excessive construction in the region these areas are turned out to be more of a recreational site for affluent families which has decreased agricultural functions there and also has damaged beautiful landscapes of the villages. Recent condition is resulted from not being cost effective agricultural activities and inefficiency of the market supplemented with not supporting agricultural activities. This has led that Urumia urban region goes through a spatial expansion which differs considerably with urban sprawl. This paper is aimed to analyze effective factors on land changes and the following sprawl by it. Moreover there are two main questions that should be answered: first, which factors contribute to spatial expansion in agricultural areas? How is the sprawl dominating Urumia urban region attributed? In order to analyze and produce status qua and current relationship between Urumia city and agricultural lands, a descriptive and analytical method were used and in order to analyze the development process the documents were considered and finally in order to examine occurred changes from satellite photographs and cartographic photos in different periods were used. After gathering data and statistics and classification, in the second stage, through observing it was tried to perfect the statistics. The results showed that the absence cost effectiveness in agricultural activities and speculation in land and of the differences between users and speculators have resulted a new form of sprawl in Urumia which differs considerably with its common forms. This new sprawl has features which sustains affluent interests.

Keywords: *spatial expansion, land use change, sprawl, Urumia urban region*

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Introduction

One of the features of the third world in terms of spatial structure is the absence of regular patterns in physical development process in a way that in many cases, most of problems in these regions well up from these mismanagements of the societies (Darukhani & Mohammadzadeh 2013,p. 114). According to interrelationship between cities and rural settlements and due to unbalanced growth of cities, several aspects such as spatial and physical aspects of rural settlements which are close to cities are most negatively affected. Among the side effects, the change in spatial structure resulted from sprawl, change in land use, change in economic structure of villages and destruction of gardens and agriculture are all the main outcomes. (Seydayi, Khosravi & Kiani 2010, p.22). There are so many factors causing these results (spatial expansion and land use) which are mostly related to speculation, a main factor in making the market unstable, it goes without saying is speculation which also damages the environment. In this regard, one of the pre requirements of better usage of lands in rural areas is to maintain the physical structure and sustaining its economy. It can be inferred that having a flawless vision of its land use at any time is desirable (Rezvani 2003, p. 62)

The problem

Green space plays a strategic role in Urumia, because the absence of topographical constraints between the city itself and rural areas nearby, powerful network and easy access to the rural areas, not obeying rules about gardens and agricultural lands by owners, low price of land in comparison to urban lands, increasing demand for industrial, production plans and splitting agricultural lands into smaller parts, have all resulted in destruction of lands in these regions. On the other hand, according to increasing rate of population in Urumia and according to high efficiency of production in several parts of economy, it seems that physical expansion in Urumia is not a result from producing goods, rather, there are some other factors

contributing to a novel form of sprawl in the region which differs considerably with other forms of sprawls. Among other features of Urumia urban region which makes it a source of interest for others to migrate to this region, is its appropriate conditions for speculators which makes the process of land use change an easy process for them. As a result, one can see high number of gardens and agricultural lands change into apartments and houses by speculators. Regarding the importance of the issue, in this paper it is aimed to discover the causes and effects of this trend and it is tried to suggest an appropriate pattern to solve it.

Literature

Literature review

In a research by Mohammadzadehlarijani about land use change pattern in Babol(a northern city in Iran) during 1983-1999, it was deduced that absence of proportion between value added by agricultural activities with valued added by selling land have encouraged most of the farmers to sell their lands. It bears mentioning that the absence of true frame of laws and blur position of management in marginal parts of cities also play important roles (Davudkhani & Mohammadzadeh, 2013,p. 114). In this paper, it is assumed that the main reason of selling lands is not cost effectiveness of agricultural activities. In this regard, Mahdavi et al., 2008(2008), assessed tourism effects on rural development in Darekan and Solghan. According to residents' standpoint, tourism has had negative effects such as speculation, increasing constructions and building modern houses, destruction of species in region and land use change to residential and commercial zones (Zebardast & Shadzavie 2011,p. 92). It seems that Darekan and Solghan have encountered speculation which resulted in spatial changes there. Also Reavani has written a number of articles about the process of building second house in northern rural areas of Tehran and its socioeconomic results (Rezvani, 2003,p. 62). Also Salehinasab in 2005, in his papers analyzes the effects of second houses on society, economy, natural environment and also architectural forms are assessed. In this case also Akbarianrunizi and Mohammadpourjaberi have analyzed environmental effects of tourism and second houses in rural areas with emphasis on host society, case studies were rural areas of Alborz

province in 2012, and the results suggest that expansion in these regions were not well controlled and managed and that is why we observe many negative effects in these regions due to tourism and second houses. Second houses have ruined lots of natural landscapes of these regions and gardens and also most of agricultural lands are damaged (Afrakhte & Jojjipour 2013,p. 165). According to different studies, it can be inferred that the main reason ruining agricultural lands and gardens and spatial expansions is not cost effectiveness of economic activities and negative effects of tourism on rural areas. Moreover, there are some other factors which deviate city growth toward marginal areas. These factors are mostly concerned with deficient system of economy and oil avenues and other sources that make a city powerful and give it some value added in comparison to rural areas. This trend is mostly caused by speculators and causes damages to environment and finally falters productive economy of agriculture and would have negative social and physical effects.

Concepts and standpoints

Due to land use changes and spatial expansion in urban peripheral parts, second houses are formed. The term, is most attributed to houses in which residents build for recreational and pleasure in peripheral parts of cities, mostly rural areas which gain a fantastic weather and lots of green spaces, in addition houses are built by modern forms and are placed on the downhill with beautiful landscapes toward nature (Shams & Hojji, 2009,p. 80). Second houses can be identified by many words: recreational houses, up-country houses, rural houses and weekend houses. The core of these second houses is the point that, original houses of second house owners are somewhere else which they spend more time there. (Kauppila, 2009,p. 4). Second houses are a vital part of tourism which are sometimes used as a tool for recreational activities and resign career and also investment. (Roca & deNazaréRocae, 2010,p. 32). At the same time these houses are a sign of wealthy life for owners which is resulted from accumulated wealth in cities in a way that, these houses are not designed in a luxury way at first, but as the time goes on and the tourism increases, the added values lead to better and more luxurious condition of houses.in the following diagram typology of second houses is described:

Table 1: Typology of second houses, Kappil 2009, 6

Typology of second houses (in term of usage)	<ul style="list-style-type: none">• Investment• Weekend houses which are used frequently• Personal houses used for hosting at weekend and weekdays• A personal house for retirement
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So many researchers have asked reasons of second houses. Roger Majavera believes that, increase in residents' income and subsequently high demand for land in rural areas, low price of lands and houses in rural areas are among the chief reasons of the trend. Moreover, residents' inclination to these regions has caused a fake increase in land price and subsequently an increase in taxes. (Lotfi, Manuchehri, Ahari, 2013, 200). The villagers also can't afford to pay high prices due to low income and as a matter of fact they, they decide to leave villages for cities. In another standpoint Majvera believes that formation of globalization and reconstruction of rural economy has caused villagers to leave their houses which depletes villages and makes their houses, citizens' second houses. In the second diagram the description is defined completely. In addition, this form of migration in villages results in a transformation in villagers' life style (Lotfi, Manuchehri & Ahari 2013, 220). In other words, the extent of this type of tourism in rural areas will decrease agricultural lands and agricultural products and also it would trigger a new form of sprawl which is the result of speculation in the near future.

Physical effects of second houses

Since second houses have socioeconomic interaction with the natural environment, positive and negative side effects can be anticipated in the host society. These outcomes differ place to place. In this case Muler et al. believe that different landscapes of second houses are dependent on local conditions. Local society in areas where second houses dominate and where these second houses are built in previous places of permanent houses, in comparison to those areas allocated to second houses in interesting peripheral parts of city, reflect different attitudes toward circumstances (Roca & de Nazare, 2010, p. 42). According to the essence of second houses and their relations with different activities, environmental changes and socioeconomic effects and also physical impressions are all inevitable. Among the negative effects of the phenomena, migration, destruction of natural landscapes of villages, constriction on local construction, increase in land price and... can be identified (Hasanzadeh et al., 2012, p. 70). Tourism outcomes of

second houses on host place include a range of positive and negative effects: for example, the harmony between second houses and the context may be ignored. Needless to say this method of construction will destruct natural landscapes and natural species and subsequently rural beauties would decrease and as a probable outcome of inappropriate locating of second houses, village would lose its most identifying feature which is attributed by: its differences with other places than villages. (Zebardast & Shadzavie, 2011,p. 10). Among positive effects of physical expansion of second houses which can be used as a pattern for its rural residents, retrofitting deteriorated areas or reconstruction of houses can be named which not only changes rural landscapes but also can be source of employment for rural residents and would draw services and other facilities in rural areas. (Shams & Hojji, 2009,p. 80). Second table present a summary of positive and negative outcomes of second houses.

Table 2: Outcomes of second houses on rural areas(Shams and Hojji 2009, 80)

Negative impacts	Positive impacts
<ul style="list-style-type: none"> • Change in rural landscape and urbanization of traditional structure and standardization of construction • Downhill leveling, destroying rural beauties • Change in landscapes and beach occupancy and stablishing a duality in environment • Change in residential and commercial blocks: changes in productive units and employment and public people 	<ul style="list-style-type: none"> • Building renovation and improvement of physical aspects of village, road network, increase in place access, institutionalizing a good pattern especially in waste and change in material and architecture style • Physical expansion of built environment

But at Iran, this phenomena and consequently land use change hasn't had positive outcomes and houses effects are mostly regarded as negative ones. Rural areas are not capable to adapt themselves with these second houses and villagers as the hardest hit are the loser in the process of land use change who earns nothing more than losing their agricultural lands.

Moreover sprawl is a result from land use change and formation of second houses which have entered into urban planning literature. This issue has emerged in research and is a central point in planning. Klasson regards sprawl as type of spreading expansion and pinpoints urban cores. (Rafiyani,2010, p. 42) in table 3 different standpoints about sprawl is gathered:

Table 3:Different standpoints in sprawl (source: author)

Year	Theorist	Sprawl
1993	Altshor and Gerner	A type of growth with low density with linear growth with emphasis on land use
1999	Pendall	Defines diversity of sprawl for megalopolis according to land price, political system of megalopolis, expenditure of local government, accumulation of traffic and land use policy

2000	Calthrope and Fulton	Sprawl as spatial suicide and among chief challenges for metropolitan area
2005	Bengston	Bengesten regards this phenomena negative and illustrate negative points as below: environmental damages, destruction of agricultural lands, destruction of open spaces, intensifying traffic, decrease in city avenue, increase in hidden costs and losing public sense
2010	Hutchison	Sprawl due to increase in low price lands, numerous production of roads and over producing of machines in country

Sprawl patterns

Urban physical development

Spontaneous and uncontrolled development: in this type, due to population increase, especially increase in urban population, according to effects of socioeconomic factors which hinder urban development within city borders or in other words vertical growth, eventually construction will take place in peripheral parts of city. This type is rarely done by affluent on high price lands. In this condition urban planning guidelines are obeyed considerably but most of the times peripheral area development is triggered poorly and spontaneously, in this type, even though the city has a comprehensive plan, due to high pressure of population and eternal socioeconomic pressures, external development would take place with no plan.

Marginalization in peripheral parts of city by low income

In this type, due to weak partial plans, not sufficient places for residential zone for low income, absence of institutionalization for adding up the investment of poor, low access to formal credit systems and also according to government investments in cities, massive migration by rural workers occurs because of land low price in peripheral parts of city. This trend would be intensified and after years, marginalization would take place which is mostly dominated by population from rural areas, wanderers, brokers and weak sides in form of temporary houses or slum dwellers which are covered in low material using low technology (Masnavi & Ataollah)

Marginalization by affluent

In this type, lands and peripheral areas of cities are occupied by rich people and high income people of society which results in appearance of new forms of urbanizations and sprawl and low density in these regions. A logical result from this trend can be the absence of continuous spatial structure which weakens region's capacity to absorb work force and extra population. All these would call into question region's ability. According to what mentioned above, land

use change due to second house construction in agricultural areas can cause a new form of sprawl which leads villages to poverty.

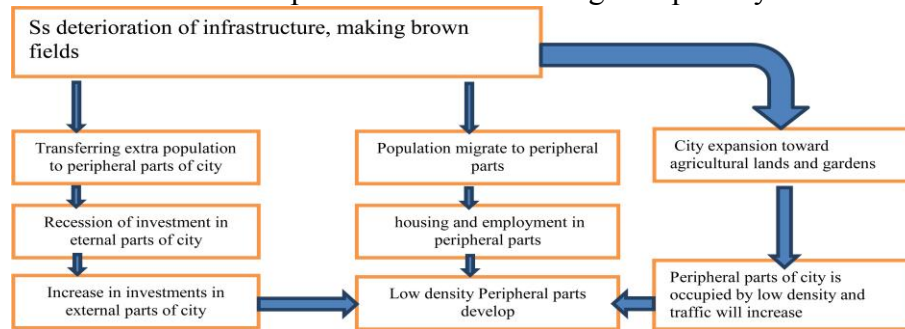
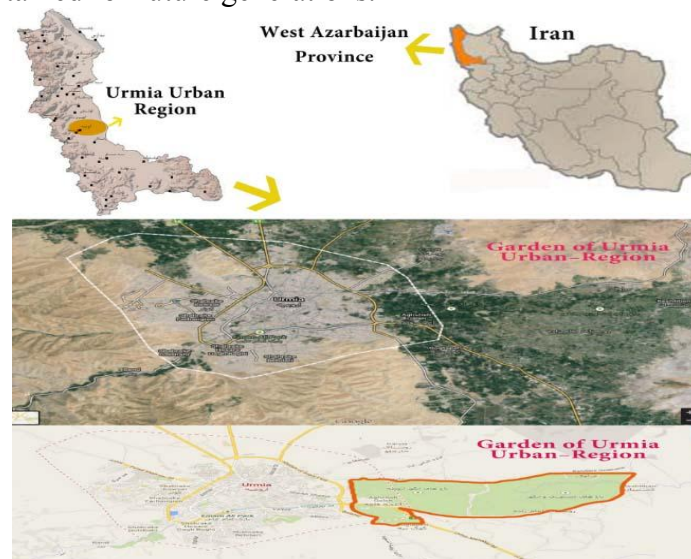


Figure 1: excessive expansion pattern circle

Case study: Urban region of Urumia: rapid spatial expansion

Urban region of Urumia in northwestern part of Iran enjoys a prolific soil and is capable of massive harvest. Due to this feature there are always many gardens around the city which people of Urumia by any background prefer to spend time there at weekends. Urumia garden city is not an antiquated heritage from past which is destined to die due to modernization and mechanization of life, but in fact it should be maintained for future generations.



Picture 1: position of case study in country source:authors

According to observatory results in case study, there are new settlements which have different features in term of residents, employment and

environment in people's point of view. This region which has experienced a spatial development, most of its gardens and agricultural lands are now turned out to residential or recreational gardens. Residents of this area are affluent people who possess big luxury gardens and visit their houses at weekends for fun. Base on the observations, landlords' activities in these gardens are not gardening or increasing agricultural productions but in complete contrast, these people have first bought gardens and then started to build garden houses or some other types. These people are actually the owner's heirs who were not interested in gardening activities and decided to build garden houses for recreational. According to questionnaire, 72% of gardens and agricultural lands in this region are allocated to second houses for affluent people, these lands have lost their land use and turned out to residential zone. Increase in population may result in recreational usage which doesn't take into consideration selling products. Number of invalid constructions between 1986-2011 in region equals to 1100 unit with a substructure of 80 square meter and number of valid constructions equals to 2200 units with substructure of 40 meter and an area of 4/7 hectare. This type of construction is made at gardens which are 15 kilometers away from city. In gardens located more than 30 kilometers away the city, villagers themselves are owners and no construction takes place in them. Moreover, population increase and vertical area in Urumia (Diagram no.3) and also economic benefits of Urumia (for example at agriculture) declares factors such as avenues resulted from oil and unfair distribution of oil avenue in the country results in places in country which are changing constantly. This development causes spatial expansion and contributes to physical phenomena such as sprawl, it should be noted that the expansion is not due to increase in Urumia population or shortage of construction in Urumia.

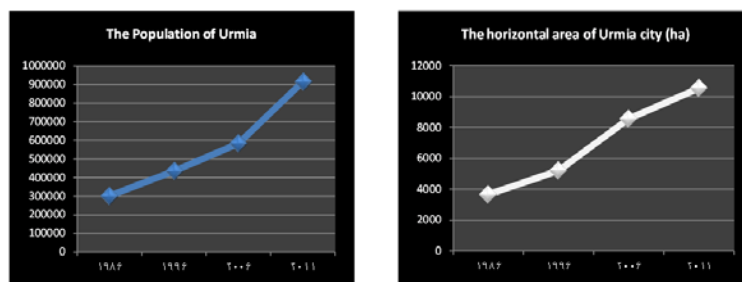


Diagram1: population and vertical areachange of city between 1986-2011
source: Statistics center of Iran

Causes of spatial expansion in Urumia urban region

Population increase and economic profits

Population increase causes an increase of land demand and housing. And consequently an increase in agricultural lands would occur. Moreover, their land use changes into residential. As a matter of fact, farmers prefer to make more money by working less. This happens when farmers decide to use their lands money instead of selling agricultural products. This process occurs in a way that villagers sell a part or whole agricultural land to speculators or migrants and after that, valid and invalid constructions are made. Agricultural lands are transformed to residential, commercial and industrial zones and this triggers a fundamental change in the structure of region economy.



Picture 1: population increase and agricultural land price causes agricultural land use change to residential zone and an increase in construction will occur in agricultural lands and gardens, source: authors, 2011

Tolerance in land price and dollar and fake dollar value

Based on evaluation report during (1991-2014), house price in cities of county has increased rapidly with strong tolerance with boom and bust. Price per meter for land was 43.5 thousand Toman in 1991 while in 2014 the price has increased to 1.8 million Toman. Between 1995 and 1996 (as dollar value increased 20 to 40 times more) and as the dollar increased 3.8 times more in 2014, (Scientific, Economic housing magazine, volume 44) this would cause an expansion toward agricultural lands in peripheral parts of city. This occurs at Urumia like anywhere else. Because farmers in adjacent villages, take their products to border markets for selling and fake dollar value contributes them to sell their products with less value which in turn gives them less profit than they deserve. This trend makes agricultural

activities not profitable to them. That why they decide to sell their lands and leave agricultural activities.



Picture 2: a sign of construction before economic rent (before 2011) in urban region of Urumia, source:author 2011



picture3:transformation of construction after interest to live in gardens, source: authors, 2014

Interests and conflicts of actors

Another factor contributing to construction in peripheral parts of Urumia is interests and conflicts of actors. Their goal is to own a house in short time. Consequently this would cause an increase in fake jobs such as brokering of houses and gardens and land use change would become a probable consequence. According to the questionnaire, statistics before 2011 show that the smallest block being sold was an area of 4400 square meter which was called as a “rope”, but between 2011-2012, gardens bargain went through a tolerance in a way that the smallest block was an area of 1100 square meter was called a ”Charak”. Approximately every day, 20 blocks and annually one block for 20-40 times were in bargain by brokers and speculators. It goes without saying that the trend was a top for speculators and a flop for villagers.

By building invalid wells in any of these blocks, the amount of underground water decreased and amount of agricultural products

were affected. After 2012, with a recession, bargaining houses suffers and goes through a hinder in a way that a block is rarely bargained.



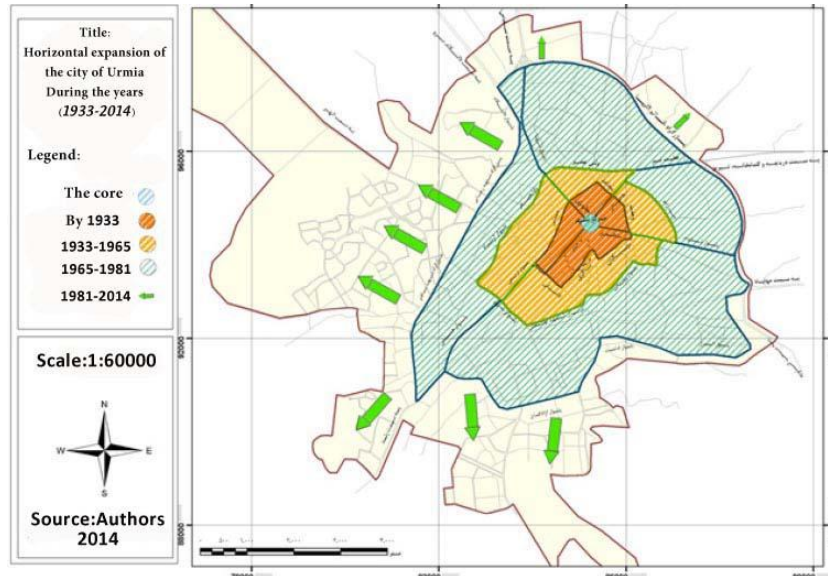
Picture 4: big blocks split into small ones after, source: authors, 2014

Physical expansion of Urumia

When we analyze the way Urumia is formed, it can be inferred that city growth occurred by one center and into 4 circles. The first circle was formed up to 1312 during which the city got access toward 7 gates of city by main roads and the only city center was formed. Second stage is related to years 1312-1344 which led city expansion toward outside of the city and toward 4 directions north-south and east-west and the second circle was formed. The third circle was formed during 1344-1981. At this stage, agricultural lands in northern parts and northeastern parts were constructed. In the final stage, the city size and population increased and population centers started to grow which were directed toward the outsides of the third circles and started to grow in invalid parts of the city. Population growth, increase in land price and finally building second houses by affluent people in peripheral parts of city were among the factors which created the conditions.

Increase in citizen's avenue and their demands and low price of lands and houses in appropriate parts of the city are other factors which contributed to second houses construction in rural areas and emigration of villagers. Constructions and invalid agricultural land use changes which were identified as signs of second houses constructions has negative side effects which weakened regional economy. Agricultural lands which could be used to produce agricultural products, were turned into a product for foreigners to buy them.

In another standpoint, formation of globalization process and reconstruction of rural economy resulted in migration of villagers and depletion and change of rural houses into second houses.



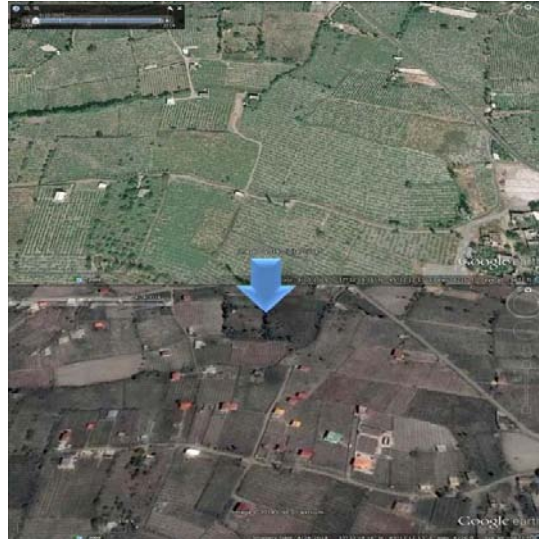
picture5: physical expansion of city toward gardens and agricultural lands among 1933-2014, source: authors, 2014

Tourism

After recession of 2012, 90% of bargaining in region occurred by tourists. In this region, in order to do recreational jobs and being away from noisy life of cities, people decide to travel toward gardens. Tourism in terms of second houses shouldn't be a replacement for agricultural activities in rural areas and it shouldn't decrease the dependency of villagers to agriculture in this region. On the other hand, in this region it is better to make harmony between the three factors: host, land and tourists. In other words, other ways should be found to get connected with tourists.



Picture 6:tourism as the main factor contributing to construction after 2011, source: authors, 2014



Picture 7: increase in construction among 2009-2014,
source: authors, 2014

Results and conclusions

The results of this paper state that a new form of sprawl is formed in Urumia urban region which differs considerably with other usual definitions from sprawl. The main factors contributing to the phenomena in the region are: increase in dollar and land price, physical expansion of city, increase in avenue and demands by citizens, citizen's interests and conflicts. Finally the sprawl is unmanaged and undecided. The results of this trend are destruction of agricultural activity, faltering economy of agriculture and consequently decrease in villager's avenue, land use change in rural areas, destruction of agricultural lands. This important issue is observed not only at Urumia urban region but also in almost all cities of Iran as a popular trend. Due to this problem it seems crucial for the authorities to find ways to manage these conflicts. The attitudes shouldn't be regarded according to socio graphical features. Moreover, these issues should be prevented by applying integrated management.

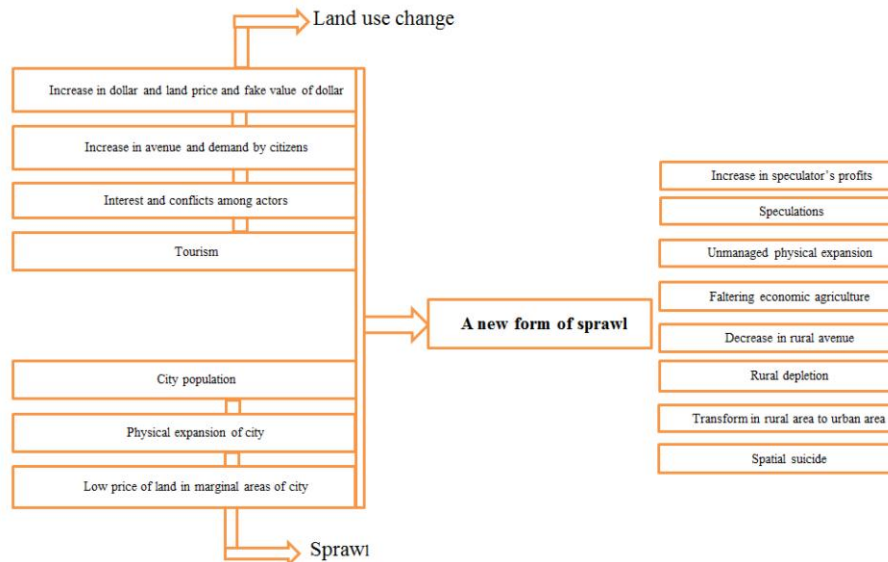


Figure 2: land use change/ new sprawl with new feature

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