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Investigation of degradation of Zagros mountainous natural landscape (Sanandaj)

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Abstract

Sustainable development and conservation of natural resources are extremely important for the protection of sustainable ecosystems. Protection requires continuous planning and training of social institutions. In the recent study, with the aim of studying the effect and influence of law on the preservation of natural resource institutions, both legal and public, quantitative statistics have been studied. Therefore, in the recent study, Landsat satellite images from 2000 to 2021 were used. Based on these changes, land use changes in the region, general statistics show that in the base year of 2000, as the dominant environmental indicator, 37% of the study area was natural cover, which has become low-lying areas in terms of coverage over the years. By this definition, in 2021, this area will be covered to 36.2 low-income areas. The results of recent research show that in the suburban areas and sub-basin areas, it has the most degradation in natural resources. Clearly, the use of agricultural development policy in the glass sector has the most traces of destruction and conversion of lands into agriculture and unprecedented destruction.

Keywords

land change; Protection of natural resources; Organized destruction; Mountain forests; GIS

Introduction

According to its 2030 Sustainable Development Plan, the United Nations It has stated that eradicating poverty and alleviating hunger is one of the main objectives of the UN Sustainable Development Plan 2030 (and even in the Paris Environmental and Climate Change Plans (2015) and the FAO World Plan 2030-2050. Natural and biological resources and the development of agricultural programs and protection of agricultural lands have been emphasized (Theano S. Terkenli 2006), but the decision-making approach and legislation and resource management have been left to the member states, which makes Iran , Not only in order to achieve those international programs and documents, but also in order to achieve the goals of sustainable development and non-migration of villagers to cities and maintain the growth of agricultural production in parallel with the population growth of the country, more seriously review their current laws To address the weaknesses and legal challenges(Lawley et al. 2016), to apply unbridled

unauthorized land use change, even in the best agricultural lands, to control and manage more properly, because annually, on average, 14.2 million hectares of Iran's agricultural lands are cultivated with agricultural and horticultural products(Meybeck et al. 2018). River that maintains this level of cultivation and prevents Unauthorized land use change requires purposeful and serious laws and programs(Jaafarzadeh et al. 2017) (Ghanbari, 1398). Studies show that the process of land use change in agricultural, garden and forest lands has intensified. For example, in the city of Rasht, based on satellite image information from 1382 to 1392, equivalent to 35042 hectares of agricultural land, which is the most prone land in the city and 4832 hectares of forests and pastures have changed land use(Kallali et al. 2007). Factors affecting this change of use in the form of economic variables (high cost of agricultural inputs, low prices of agricultural products and ... (, social) illiteracy and low literacy of farmers, lack of specialization and ... (, natural) soil erosion and On the other hand(Tegen and Fung 1994), according to

the law, the authority to identify agricultural lands and gardens is the Ministry of Jihad Agriculture, and the judicial and administrative authorities will be obliged to observe the opinion of the organization. Large agricultural lands and from the perspective of food security (Argent 2019), self-sufficiency and sustainable employment of rural communities, social, cultural and economic consequences are very important: industrial pressure, tourism (Punt et al. 2009), water shortage crisis and reduced soil fertility and agricultural productivity, changing rural lifestyles Weak restraint laws and corruption make it more difficult to protect agricultural land. People's economic problems, low income, lack of financial support, uneconomical agricultural activities, rising agricultural costs, false rise in land prices, housing, rising living costs And the problems related to the sale of products are important economic factors of land use change Settlement and development pressure, irregular exploitation, incorrect changes in land use and human encroachment on agricultural fields, day by day disrupts the balance of life (Jiang and Bai 2018) Challenges of land use change in the cultivation of strategic crops that employ a lot Like wheat and barley, it is more severe and irreparable in the western provinces, which are the target of the rainfed agricultural economy. Today, in addition to farmers' livelihood problems; Also, the existence of a large number of non-native applicants, especially residents of the center, to have recreational gardens, unfortunately, we are witnessing the fragmentation and sale of agricultural land (Marzooqi, 2003). In general, these factors can be divided into three groups (Asgarkhani, 2016:) Legal factors - demographic factors - economic factors. Therefore, increasing the price and stock market of land and housing; Low yield of agricultural and horticultural lands and growth of commercial and health sectors, on the other hand, urban development and urban planning for various uses and the integration of agricultural areas and urban space into urban areas and rural master plans, the need for proportionality among the population Fixes the constant and the passenger in the form of quantitative and qualitative criteria by the responsible agencies (Ebrahimzadeh, 2010); Therefore, the legal basis of the right to food, to prevent those events, was first included in Article 11 of the International Covenant on Economic, Social and Cultural Rights in 1966 to emphasize its importance (Ismail Nasab, 2016: 2) and at the level of Domestic, we should not underestimate the importance of unauthorized change of use and reform of domestic laws in order to prevent endangering the food security of the Iranian people, which we will examine below. The legal challenges of the Land Use Protection Law in the implementation of the criminal declaration and the investigation of the new Criminal Procedure Code, with the aim of operationalizing public participation, have recognized the prosecution of public litigation in specific hands of crimes by these organizations.

Although in the text of the law, these organizations are mentioned as declaring the crime, but they have been given extensive powers such as giving reasons and objecting to the votes issued. Perhaps it can be said that according to the powers of the "plaintiff", mentioning the title of the plaintiff and the declarant of the crime is considered simultaneous. If the private interests of legal entities or these associations are harmed, according to the same conditions, natural persons can file lawsuits, but the issue that has been neglected in this law is how to oversee the activities of these organizations (Kushki, 2013). The lack of a clear trustee to deal with illegal construction violations and the lack of heavy equipment required are among the problems that have caused many of the rulings issued for the demolition of illegal buildings in villages and summer areas outside the urban area to remain on paper. There are unauthorized constructions in national arenas and lands owned by individuals who identify violations In the natural field, natural resources are in charge, and in the lands of individuals, agricultural jihad is entrusted. For many years, there has been a difference between the various executive departments regarding the appointment of the management in charge of preventing and dealing with unauthorized constructions in the urban area and the village area, and the pure and new areas and the river area outside the village, etc. At one time, this area was under the supervision of the district and the Article 99 Commission, and at another time under the supervision of the Municipality and the Article 100 Commission. Do not cooperate in this area. There has even been a request for the purchase of heavy machinery by the Agricultural Jihad, for which no budget has been provided so far. On the other hand, many construction companies are in the area of roads or rivers with agricultural and garden uses, which are in charge of this section of roads and urban development or the regional water company that must deal with them. Not only is there a dispute over jurisdiction between the various agencies, but the more important category of prevention is the missing link in dealing with unauthorized construction, because many unauthorized buildings were built in a period of time that, if the necessary monitoring and prevention had been applied, We did not see the mushrooming of subsequent villas and more in agricultural fields and gardens, because according to Article 10 of the Law on Preservation of Land Use in Farms and Gardens, everyone must obtain a permit from the Agricultural Jihad to build a building on their land, otherwise illegal action and crime. Is. In the absence of preventive measures, the difficult solution is to pursue and enforce judicial rulings. The Law on Conservation of Agricultural and Horticultural Lands is the most important legal tool for the protection of agricultural lands, but Note 5 of this law states as strange remarks that "lands within the legal limits of villages with approved master plans are subject to the guidelines of the master plan and all

prescribed criteria "They are an exception to this rule." In fact, the power of this comment is more than the principle of law and the most land use changes are created within the lands of the master plan and this plan creates corruption and rent which sometimes landowners by paying bribes and bribing agents to revise the master plan has been effective in designing the village texture. And the planning of the village is determined not on the basis of its ecological and demographic potential, but on the basis of the power and influence of the landowners. In designing and revising the master plan, increasing the master plan should not cause the expansion of the village development into agricultural lands, which unfortunately is never considered by the consultants and executors of the master plan (Droudian, 1396.) Farmers in all stages of production, storage and supply They struggle with the market, often competing directly with government policies, not with global markets and national competitors, especially in the import of agricultural products and inputs such as seeds, fertilizers and pesticides, and the season of import licenses. And their regions; Because the weakness of the agricultural sector in providing employment and local income due to the nature of this economic sector and lack of effective government support, a total of about 60% direct and indirect impact on the attitude and decision of farmers in not resisting selling their land to tourists and corridors to build a second home It is worth noting that the vacancy of the Cultural Heritage Organization is also seen as the trustee of issuing licenses for the agreement in principle to build hotels and motels with proportionate density so that less space is allocated for the reception of travelers and non-natives to construction, which is illegal (Ghadami, 2012).) Another challenge of the Land Use Protection Law is the lack of proper implementation of the executive regulations for issuing agricultural land ownership documents approved in 2006. In accordance with Article 133 of the Fourth Development Plan Law and the Law on Cadastre, agricultural zones, because by not documenting the lands and not specifying their property, and transferring the lands informally and illegally, the main perpetrators escape punishment. According to Article 4 of the Code of Criminal Procedure, failure to pay charges due to unauthorized construction by the seller or other persons (if according to Articles 103 and 104 of the Islamic Penal Code Considering it an unforgivable crime, by declaring a crime in accordance with Article 65 of the Code of Criminal Procedure, it is the duty of the prosecutor and the prosecuting authority in court to identify the accused in accordance with Articles 104 and Note 1 of Articles 285, 306 and 340 of the Code of Criminal Procedure. On the other hand, there are fundamental weaknesses in the law on assignment of lands without official documents in the field of agricultural lands and land reform, and in Article 147 of the former Amendment to the

Registration Law, on the basis of which title deeds were and are issued. Profiteers first cultivate lands and gardens as if they were old houses Or nobles dating back to before 1374, separated and built a small warehouse in other lands and obtained a title deed of six donges and prevented the inclusion of the law of conservation of agricultural and garden lands and the prohibition contained in the law of separation and sale of property They become common and eventually start building. One of the weaknesses of the land use protection law is the amount of fines up to three times the amount stated in Article 3 of the law, which is the practice of most branches of the court has shown that less than three times the number of convictions in the Land Calendar Commission is not deterrent. Even with the development of cities and the entry of agricultural lands in the urban area, in practice, the issue of land use change outside the jurisdiction of the law of land use protection according to Note 5 of Article 1 and Articles 99 and 100 of the Municipal Law easily agree to receive tolls and differences in land use change. This also raises serious questions about the type of texture and agricultural use in urban and rural areas.

2. Materials and Methods

2.1. Location of the study area

The study area of Sanandaj city is one of the cities of Kurdistan province in western Iran. The center of this city is Sanandaj. This city is located in the center of the province. The central part of Sanandaj city is divided into sections: Abidar village, Arandan village, South Hosseinabad village, Suburban village (Sanandaj), Naran village, Sarab Qamish village. The population of this city according to the census of 2016, was equal to 501,402 people. The climate of the study area is cold and semi-arid and prone to humidity. It has mild weather in spring and summer. The average temperature in Sanandaj is 15.20 ° C in spring, 25.24 ° C in summer, 10.40 ° C in autumn and -1.60 ° C in winter. The maximum temperature in July is about 44 ° and the minimum in February is -13.5 ° C. The average annual rainfall is 500 mm and the maximum is 61 mm per day.

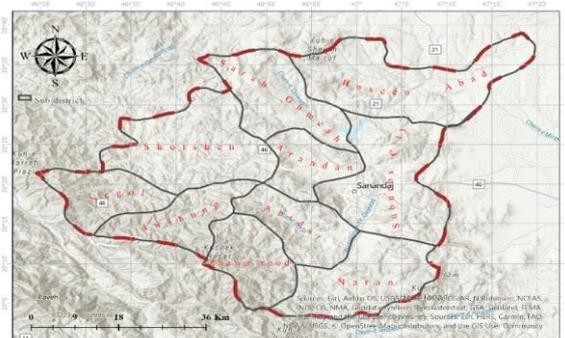


Figure 1: Study area

2.2. Research Method

In order to study the dynamics and changes of land cover, it is necessary to prepare maps that show the state of the land at different times (Onate-Valdivieso

and Sendra (2010). Therefore, in this research, in order to prepare the land use map, the remote sensing images of ETM, OLI and TM meters of Landsat satellite belonging to the years 2000, 2018, 2010, 2019, 2020 with a spatial magnification of 30 meters have been used.

2.3. Satellite image processing

Landsat satellite data have initial geometric correction that all images were examined from this aspect and no need for correction was felt. In this study, the monitored method based on the maximum probability algorithm has been used to classify the images (and Richardhards, 2006). In this regard, in order to perform supervised classification on satellite images, the first step in classifying is to define the areas that are used as educational models for each class (Eastman, 2006). And using ocular interpretation as well as using the Google Earth environment was done on the false image. After mapping urban and non-urban areas, the Mode filter with 3 * 3 kernel window was used to remove single and scattered pixels to obtain uniform layers (Lillesand et al., 2004). The maximum probability decision rule is based on probability. In this method, each pixel with the x pattern is assigned to class i if the vector x is most similar to that class. In other words, the maximum probability classification gives the probability of a pixel belonging to a class in which the probability value is the maximum (Mahdavian Cheshmeh Gol and Mohammad Hosseinian, 2014). The maximum likelihood classification method is still one of the most widely used classification algorithms (Jensen, 2000). Each class i is defined as the mean value and the variance-covariance matrix. Using the probability function and the probability value of each class, the maximum probability of pixels belonging to a class can be obtained. The initial probability value of each class is considered equal to 1 .

2.4. Accuracy Assessment

To interpret and evaluate the accuracy of the classified map, the error matrix was used because the accuracy of detecting changes occurred depending on the accuracy of production maps of different years (Congalton, 1991; Foody, 2002; Bakr et al., 2010). The statistical parameters of kappa coefficient and overall accuracy were calculated for each map.

2.5 Detection of changes

After ensuring the acceptable accuracy of the production plans, a map of land cover changes will be prepared. Detecting land use change that is an essential tool for environmental analysis, planning and management (Shahraki et al., 2011). As a result, after classifying the images, the post-classification comparison detection method was used to determine land use changes and land cover between 2008, 2013, 2010, 2014, 2015 and 2017. This method is the most effective method for detecting changes because in this method it is possible to detect the type of changes that

occurred in each class compared to other classes (Jensen, 2005).

3. Results & Discussion

Based on the results of land use changes in the region, the general statistics show that in the base year of 2000, as the dominant environmental indicator, 37% of the study area was rangeland cover, which over the years has become low-lying areas in terms of coverage. By this definition, in 2021, this area will be covered to 36.2 low-income areas.

TABLE 1- LAND USE CHANGES DURING THE STUDY PERIOD FROM 2000 TO 2020

LEGEND	Area (hectare)				Percent of Area				
	2000	2010	2020	2021	2000	2010	2019	2020	2021
FOREST	34,127.7 ⁶	22,343.1 ²	15,973.8 ⁹	16,281.8 ¹	11.28	7.39	2.39	5.28	5.38
AGRICU LTURAL	6,313.23	54,908.1 ⁰	49,345.8 ⁰	36,935.0 ⁵	2.09	18.16	19.89	16.32	12.21
RAINF D	17,131.1 ⁴	12,283.8 ⁹	33,192.8 ⁶	34,735.7 ⁶	5.66	4.06	3.58	10.97	11.48
IRRIGA TED	6,968.18	2,698.46	3,896.92	1,733.66	2.30	0.89	0.38	1.29	0.57
BURNE D	4.61	1,049.23	4,253.07	5,598.18	0.00	0.35	5.37	1.41	1.85
RESIDA NCE	1,939.77	4,009.23	6,313.15	6,435.16	0.64	1.33	2.48	2.09	2.13
OCHAR D	38,818.7 ⁵	9,577.43	6,323.74	5,944.88	12.83	3.17	10.01	2.09	1.97
GRASSL ANDS &	30,875.8 ⁴	83,171.6 ²	42,951.2 ⁰	51,133.5 ⁹	10.21	27.51	17.63	14.20	16.91
POOR COVER	111,978.7 ⁴	93,555.0 ⁰	50,501.4 ³	32,538.7 ³	37.02	30.95	33.52	16.70	10.76
ROCKE Y AREA	53,860.1 ⁷	18,038.8 ²	88,511.9 ⁸	110,092.7 ⁷	17.81	5.97	4.32	29.26	36.40
WATER BODY	437.60	682.82	1,191.76	1,026.20	0.14	0.23	0.45	0.39	0.34

• **Burned areas**

One of the main environmental problems of the region is fire in natural areas. Therefore, focusing on data analysis in terms of burned areas shows that in 2000, only 4.6 hectares of the total bed area was burned and in the last 20 years has reached 5.598 thousand hectares. It is important to investigate the causes of fires and identify areas of fire, and finally, based on scientific records, we will discuss the intentionality of fires in the way of land use change. The study shows that in the whole city of Sanandaj, 44 hectares of oak forests have been reduced to ashes between 2000 and 2010, and finally in the second ten years of 2010-2020, this volume of fires in forest areas has doubled, i.e., 87 hectares. It is noteworthy that forest fires in the first period accounted for 4.2% of the total fire volume of the total cover. But in the second period, by dividing the reduction of forest area from 34,000 hectares to 16,000 hectares, it covers only 1.9%. Although the share of forests in fires seems to be declining, this belief is not true; Due to the reduction of forests from the city to the first half of 2000, but the area of the fire zone has doubled. A significant issue in the study of fire areas is the development of man-made areas in fire zones; There is no written report from the review of studies on the growth of man-made areas in the burned areas, so in this city, growth and urban development has a new pattern and is introduced here for the first time. This procedure does not exist in the first decade, so in the second decade it had 16 hectares of development, which according to the transformation map of these areas are mostly located in Sanandaj city and the main reason for these conversions are large urban development projects and industrial and mining (figure 2).



major housing construction projects in Sanandaj

20,000 pieces of Nooreh road,

Barghroo village stone quarry

Figure -2. Man-made riding areas and development of man-made uses

Agriculture and horticulture is one of the most important goals of destroying natural resources and sometimes farmers and indigenous people to clear their land of crop residues from the harvest season will set fire to agricultural land and eventually destroy the rich minerals in the soil and its seed bank. . In the recent study, 4 types of agriculture have been extracted and studied. In the years 2000 to 2010, a total of 2 hectares of fallow lands were burned, but in total, from 2010 to 2021, it reached 908 hectares. Therefore, the lands that have gone to fallow in the later periods have reached 20% of the total area. Fallow agricultural areas During

the last twenty years, fallow areas have increased from 6,000 hectares to 36,000 hectares. The subject matter describes the exploitation of agricultural areas and the bankruptcy of food ecological security in some way. Rainfed areas due to multiple droughts cover 34,000 hectares or 12% of the total area. According to the same statistics, the area burned in rainfed fields increases from 29 hectares to 198 hectares, but the changes are very small. In tree areas and gardens of the city at the base of 86 hectares and in the second period decreased to 2 hectares. The recent issue of a strong relationship with the reduction of tree fields in the city will be reduced from 38,000 hectares to 5,000 hectares. Rangeland cover in the recent study has three uses. In a recent study, pastures with canopy cover of 75 to 35% in all burned areas increased from 98 hectares to 253 hectares. This is while the area of these lands has increased from 30,000 to 50,000 hectares due to climate fluctuations and rainfall. Most of the burned pastures are poor and at low altitudes and flat lands adjacent to residential areas. During the years 2000 to 2010, only 499 hectares of poor pastures with canopy cover of 15-35% were burned, but in 2010-2011, this area reached 3529 hectares. According to him, the highest area or percentage of areas that catch fire have always been weak areas, which in the first and second decades, respectively, 47.8% and 77.6% of the total area. Although these rangelands are low in terms of production capacity and have low ecological diversity, they need to be managed and trained by local people and equipped with NGOs. It is interesting to note that in the first decade of 248 hectares of fires occurred in very poor rangeland cover and rocky areas with a canopy of 5-15% in the first decade of 248 hectares, while in the second decade of 2010-2021 areas with poor vegetation establishment of poor vegetation. They have had more than before. In fact, after burning each area, it is not possible to return to the original state or better coverage (Table-2).

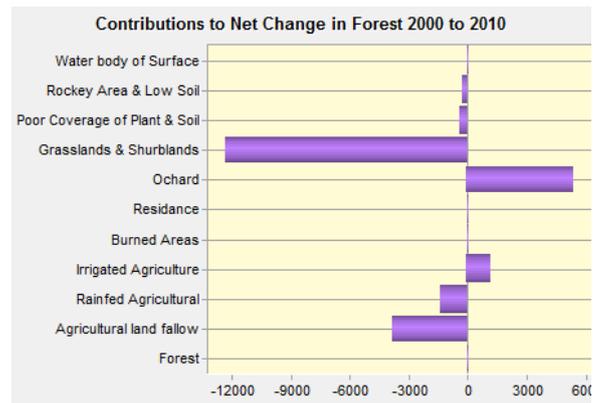
Table 2 - Burned natural areas

Land Cover	Area		Percent	
	2000-2010	2010-2021	2000-2010	2010-2021
Forest	44	87	4.2	1.9
Agricultural land fallow	2	908	0.2	20.0
Rainfed Agricultural	29	198	2.8	4.4
Irrigated Agriculture	37	33	3.5	0.7
Residence	0	-16	0.0	-0.4
Ochard	86	2	8.2	0.0
Grasslands & Shurblands	98	253	9.4	5.6
Poor Coverage of Plant & Soil	499	3529	47.8	77.6
Rockey Area & Low Soil	248	-448	23.8	-9.9

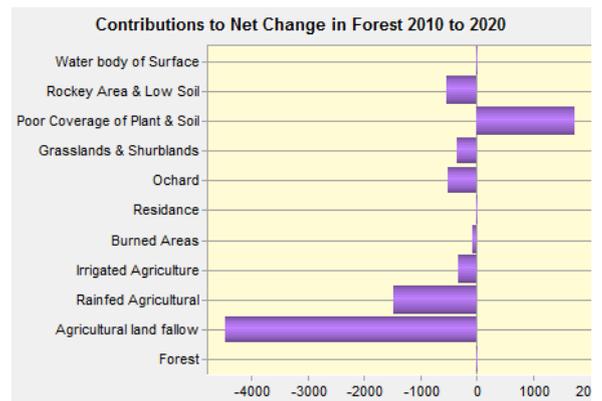
• **Forests and natural cover of trees and shrubs**

The forests of Sanandaj city are very limited and cover an area of about 5.38% of the total land appearance of

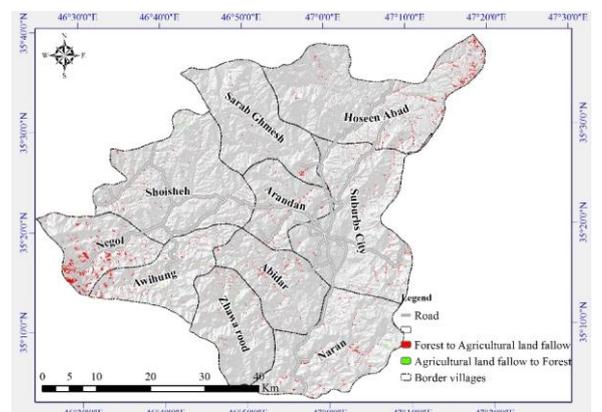
the city. The area of 16,000 hectares of this city is forests and trees, which are mostly located in the foothills. Oyhang, Jawrud and Negel districts have the largest forest area, respectively. Forests are always exposed and threatening a large part of natural areas. Negative rates have always had a constant pattern of destruction of these natural resources. This reduction rate has reached 11,000 hectares during the period 2000 to 2010 to 6,000 hectares during the period 2010 to 2020. In fact, during a ten-year period, 34,000 hectares have reached 22,000 hectares, which is a decrease of 1.3. But in 20 years it has reached 15,000 hectares, so with this rate of destruction, by 2050, a few small spots of the city's forests will remain. The rate of deforestation was calculated at 6% per year for a period of 20 years (Table 3). In the study of changes in the area of forest cover or dense trees, during 2000 to 2010, the conversion of forests to pastures and dense cover with 12,000 hectares shows the highest rate of degradation and conversion. It has reached 1800 hectares and 3400 hectares. During the ten-year period from 2000 to 2010, the density of trees in orchards and irrigated agriculture has been increasing, which indicates the practice of spreading hand-planted trees. However, in the second period of 2010 to 2020, the tendency of changes is towards the conversion of forests into barren and rainfed agricultural areas with an area of 4250 hectares and 1280 hectares of degradation, respectively. During the second period, from 2010 to 2020, the interest in the development of plantation trees has been minimized, in a short-term climate change phenomenon, the development of trees in areas with poor coverage has reached a positive level and is 1950 hectares. According to the conversion plan, most of the conversion of forest lands to rainfed agriculture has occurred in the Negal section. A total of 2400 plots of land with an area of 1366918 square meters have been converted to rainfed. In the analysis of different areas and the share of sub-sectors, it can be understood that with the increase of forests and distance from urban areas, the amount of destruction will reach its peak. It is dry. The situation of environmental degradation and highland forests and rainfed agriculture is on the slope of more than 45 degrees of social crisis and serious environmental degradation. The average of these destroyed lands will reach 48,000 meters each (Google figure). Shuisheh, the second part with the most conversion of forest lands to rainfed agriculture with 480 plots in 220 hectares, the average area of these spots will reach 45,000 meters, the effect of the dam on cultivation and conversion of forest cover is severe and these changes are serious up to one kilometer. Is. However, due to the serious limitations of the forest around the center of Sanandaj, degradation and conversion is negligible, and in 300 plots of land, the issue and cause of the conversion of the forest to rainfed agriculture can be traced (Figure 2).



A



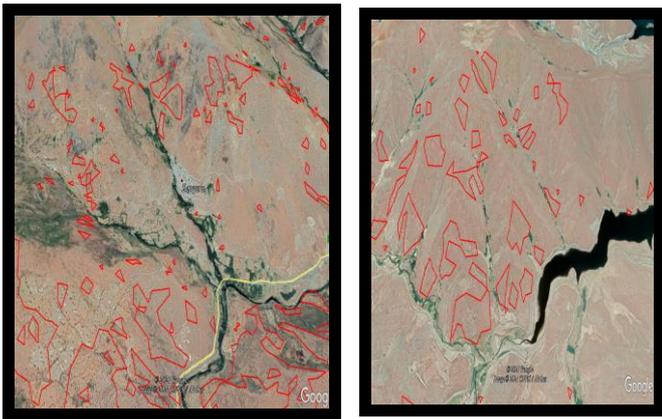
B



C



D



E

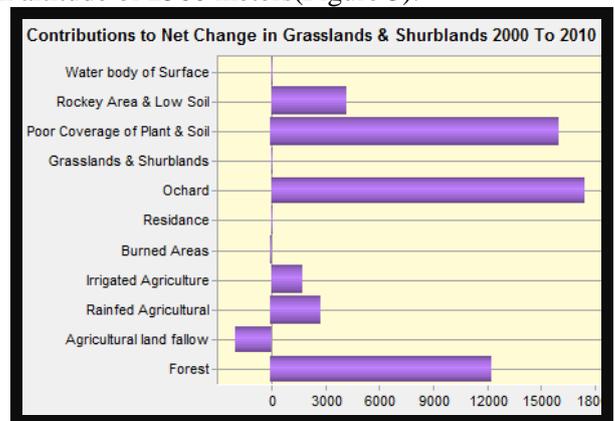
Figure 2 - Changes in forests and natural cover of trees and shrubs

A, B- Net forest changes in the periods 2000 to 2010 and 2010 to 2020, c- Map the most changes, D- Diagram of spots and area during the period, E-Example of changes in the location of the Nogel section

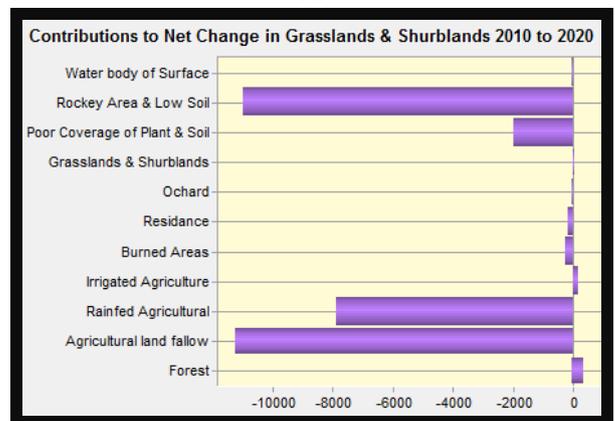
• Pastures and shrubs

Rangelands and plants in Sanandaj city have high species diversity and high richness. Preservation and restoration of this cover is extremely important in preserving the ecosystem of the region and the city. Unfortunately, the abandonment of degradation and grazing beyond potential, the fire has caused a large number of native species of cover to be plunged into the abyss of extinction today. In addition, the unplanned and unbridled economic exploitation of the sale of these cover products in the spring and planting season in dry seasons has caused serious concerns. Ecosystem services This cover, which is the most suitable climatic cover of the mountainous regions of Zagros, is a shelter and bed of rich wildlife and a factor in the development and regeneration of oak trees and forests. Today, only 15 percent of the city's total area is covered by dense pastures, compared to 13 percent over the past ten years. In general, it can be concluded that there are dense pastures in 42 to 51 thousand hectares in the study area. Therefore, the growth or increase of this volume has been according to the analyzes in forest areas. The oscillating range of this level of pastures depending on climate change indicates a bitter reality of the city's water resources that the passage of snowfall and mountain glaciers towards more rainfall has created opportunities for growth as well as cover at high altitudes to be more adaptable to these changes. Have a climate. On the other hand, fire, grazing and shrubbery have increased the opportunity for the growth and development of the woody plant community. Therefore, an analysis commensurate with the pattern of change in this increase is by no means proportionate and commonplace, but rather unbalancedly presents a worrying picture of the destruction of rich and powerful coverage. In tracking spatial and statistical changes, the analysis shows that one of the important

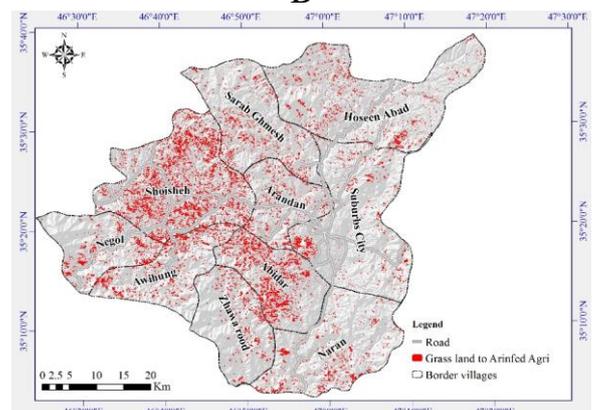
factors in the destruction of this cover is its conversion into dryland agricultural lands at high altitudes and slopes. Management and inability to enforce the law. This destruction occurred only in 10 years from 2010 to 2020. According to the detailed analysis of these changes in rural areas, 33% of the total destruction is in the glass sector with 32% of the total spots. The average per capita of each stain in this section is 7500 square meters. In the next rank, Abidar village has the highest unhealthy situation in the destruction and conversion of rangeland lands to rainfed agriculture. This part of the city has the highest conversion per capita with large plots of 9500 square meters. In one of the cases of encroachment on the privacy of the nationally registered work of the historical castle of Hassanabad with the design of gardens and rainfed at an altitude of 2560 meters (Figure 3).



A



B



C



D



E

Figure 3 - Changes in Pastures and shrubs

A, B- Net Pastures and shrubs changes in the periods 2000 to 2010 and 2010 to 2020, c- Map the most changes, D- Diagram of spots and area during the period, E-Example of changes in the location of the Violation of the privacy of the nationally registered work of the historic castle of Hassanabad

4. Conclusions

The results of recent research show that in the suburban areas and sub-basin areas, it has the most degradation in natural resources. Clearly, the use of agricultural development policy in the glass sector has the most traces of destruction and conversion of lands into agriculture and unprecedented destruction. Due to the rate of deforestation has reached 15,000 hectares in 20 years, so with this rate of destruction, by 2050, a few small spots of the city's forests will remain. Which has the highest rate of destruction compared to the Hyrcanian region (Rahimi and Qomi, 2016). Therefore, the declaration and designation of protected areas is extremely important for the direct fight against trafficking and destruction. Also, training and organizing non-governmental groups to control fires is one of the important social activities related to this issue.

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