

Investigation of the Effect of Zoning Peace on Construction in Plateau and Rangeland

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Abstract

Rangelands and plateaus typically have naturally occurring plant groups. The estimates reveal that rangeland ecosystems cover approximately 50% of the planet's land and provide most of the forage requirements of the world's animal population. In this study, we aim to investigate the impact of Law No. 7143, also known as the Zoning Peace among the People, which entered into force in 2018, on potential illegal buildings in rangeland and plateau areas. As the study area, we chose the plateau and rangeland areas of the Akçaabat district of Trabzon province. We identified illegal buildings in the study areas using Google Earth Pro software satellite images and Triplesat satellite images. We examined 16 plateaus, and as a result of our determinations, we observed that a total of 83 new buildings were constructed during this time, with 33 in the first study area and 50 in the second. The results showed that illegal construction continues in some places, the inspection process is inefficient, and the Zoning Peace Law encourages this.

Keywords: Rangeland, Plateaus, Illegal building, Triplesat, Zoning Peace

İmar Barışının Mera ve Yayla Alanlarındaki Yapılaşmaya Etkisinin İncelenmesi

Öz

Yayla ve meralar genellikle doğal yollarla oluşan bitki topluluklarıdır. Yapılan tahmini hesaplamalara göre, mera ekosistemleri dünya topraklarının yaklaşık %50' sini kapsamakta ve dünyadaki hayvanların yem ihtiyacının büyük bir kısmını karşılamaktadır. Yapılan çalışma ile, 2018 yılında yürürlüğe giren ve halk arasında imar barışı olarak adlandırılan 7143 sayılı yasanın, mera ve yayla alanlarında oluşabilecek kaçak yapılaşmaya olan etkisi araştırılmıştır. Çalışma alanı olarak Trabzon ili Akçaabat ilçesi sınırları içerisinde yer alan mera ve yaylalar seçilmiştir. Çalışmada Google Earth Pro programından elde edilen uydu görüntüleri ile Triplesat uydu görüntüleri kullanılarak zaman içerisinde meydana gelen kontrolsüz yapılaşma tespit edilmiştir. 1. çalışma bölgesinde 33 ve 2. çalışma bölgesinde 50 olmak üzere toplam 83 yeni yapının bu süre içerisinde yapıldığı belirlenmiştir. Elde edilen sonuçlar halen bu alanlarda kaçak yapılaşmanın devam ettiğini, denetlenme sürecinin hızlı ve etkili bir suretle yapılamadığını ve çıkarılan bu af niteliğindeki yasaların kaçak yapılaşmayı teşvik ettiğini göstermektedir.

Anahtar Kelimeler: Mera, Yayla, Kaçak Yapılaşma, Triplesat, İmar Barışı

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1. Introduction

Perennial herbaceous plant communities that are generally formed naturally are called rangeland and plateaus [1]. According to estimated calculations, rangeland ecosystems constitute approximately 50% of the world's land [2], and meet 70% of the forage requirements of in the world [3]. In our country, rangeland ecosystems meet 30% of the forage need used in animal nutrition [4]. The Rangeland Law (No. 4342 enacted on 28.02.1998) defines plateaus as a place allocated for farmers to spend the summer with their animals, graze their animals, and benefit from grass [5]. Plateaus in mountainous areas are areas where nomadic and semi-nomadic, and villagers do animal husbandry [6]. Those who dealt with animal husbandry in the past mostly used plateaus and rangeland. However, because of the decline in the population who depend on livestock for a living and the rising demand for tourism in these areas, these locations are now also used for temporary or seasonal settlements for recreational activities in addition to animal husbandry [6, 7, 8]. In recent years, it has been observed that there are many illegal buildings used as housing and tourism facilities in the plateaus [9].

The first development that is thought to affect the change in rangeland and plateau areas is the Green Road Tourism Project. In order to meet the increasing tourism demands, the Green Road Tourism Project, which connects the plateaus of eight provinces in the Eastern Black Sea Region, was implemented in 2013. With this project, transportation to the plateau and rangeland areas has become easier, and the use of these areas has increased [10].

Another development that is thought to have impacted the plateau areas is law no.7143, which is known as the Zoning Peace and entered into force in 2018. This law covers illegal structures created before December 2017. Taking the statement of those who want to benefit from the law as a basis has encouraged illegal construction. Especially in the plateaus of the Black Sea Region, it has been seen that illegal building for housing and commercial use is more common, and the people who cause this illegal construction apply to obtain a building registration certificate [11, 12]. As a result, it is thought that illegal construction in the plateaus has increased significantly with the law enacted.

In this study, we aimed to determine the change in illegal buildings in the plateau and rangeland areas between the enactment of Law No. 7143 and the end of the process. As the study area, we selected 16 plateaus located within the borders of the Akçaabat district of Trabzon province. In the study, we detected the change over time using Triplesat satellite images and satellite images in the Google Earth Pro software. As a result of this change detection, we examined the effect of this law on the uncontrolled building.

1.1. Legal regulations about plateaus and the effects of these regulations

The use of plateaus for tourism purposes in Turkey started in 1990 with the encouragement of the state. In this sense, 12 plateaus in the Eastern Black Sea Region have been declared as tourism centers by the Ministry of Tourism to attract investors to the plateaus. Giresun-Bektaş, Çaykara-Uzungol, Akçaabat-Karadağ, and Tonya-Erikbeli plateaus are the plateaus declared as

tourism centers [13]. Within the scope of the Tourism Encouragement Law, the number of plateaus declared as tourism centers increased to 21 as of 2019, 18 of which are located in the Black Sea Region [14].

The “Green Road” Project carried out by the Eastern Black Sea Regional Development Administration started in 2013. The project aims to connect the important plateaus and tourism centers of 8 provinces (Artvin, Bayburt, Giresun, Gümüşhane, Ordu, Rize, Samsun, Trabzon) in the Black Sea Region [15]. In addition, the project aimed to expand the tourism demand in the plateaus over a wider period of time, to offer more alternatives to the tourists coming to the region by connecting the plateaus to each other, to facilitate the transportation opportunities of the local people who are engaged in transhumance, and to increase their income levels with the newly created road networks [10].

Today, more than 50% of the country in general consists of structures that are against zoning, which corresponds to approximately 13 million independent sections. This situation leads to many legal disputes between the citizen and the state [16]. It is seen that legalization policies are continuing in our country to find a solution to the problem of informal construction [17, 18, 19]. It is seen that the laws that came into force in our country from 1948 to 2018 include provisions to register illegal structures on urban and rural lands [10]. Unfortunately, a definite solution to urbanization problems has not been produced yet. Over time, various amnesties have been issued to solve the problem of unplanned urbanization. It has been observed that these amnesties have not had the desired effect and have instead encouraged unauthorized construction [20].

The law, which was accepted on 11.05.2018 and called “zoning peace” by the public, entered into force [21]. The implementation of Zoning Peace can be defined as the registration of buildings that are unlicensed, contrary to the license and its annexes, or that do not comply with the zoning legislation, by issuing a building registration document [22]. The implementation of the zoning peace included the buildings built before 31.12.2017. Applications were made to the Ministry of Environment and Urbanization and institutions and organizations authorized by this ministry until 31.10.2018. Building registration documents of those who paid the registration fee until 31.12.2018 were issued and the buildings were registered in the land registry [10, 21, 23].

Moreover, with the Building Registration Certificate, it has become possible to carry out the registration procedures in the land registry. In addition, unauthorized structures on treasury lands have gained the right to apply for a Building Registration Certificate. The Building Registration Certificate provides the owners of unauthorized buildings with the opportunity to stop the previous demolition decisions for their buildings, cancel the fines, benefit from infrastructure services such as electricity and natural gas, and provide property assurance through registration to the land registry [10, 21]. The deadline for obtaining the Building Registration Certificate, which was determined as 31.10.2018, has been extended twice and updated to 15.06.2019 [21]. Finally, it was announced that 10.250.000 citizens applied to benefit from zoning peace until 15.06.2019 [23]. The last payment date of the fee to be paid to

obtain the building registration certificate has been extended until 31.12.2019. Building Registration Certificate applications were made based on the declarations of the unauthorized building owners through the e-Government application. After the payment of the Building Registration Certificate price calculated during the application, the Building Registration Certificate was prepared and given to the beneficiaries.

The main purpose of the enacted law has been described as registering and legalizing illegal uses. In addition, one of the main goals has been to produce the economic resource needed for urban transformation projects [22]. According to the official data of the Ministry of Environment and Urbanization, as of 16.11.2020, 7.280.457 Building Registration Certificates have been received throughout Turkey within the scope of the Zoning Peace. Since the updating and cancellation processes of the building registration documents continue, there are changes in the specified number [21]. As can be understood from the number of building registration certificates received, many unregistered buildings have become legal by obtaining a building registration certificate. The Reconstruction Peace arrangement, which came into force, created a new construction opportunity and caused real people to perceive this arrangement as if it would produce more buildings [11]. We may deduce that the inhabitants of the plateau who construct houses surround the areas where their structures are located and have expectations from potential future legislation from the analysis of satellite images obtained by remote sensing technology and from field observations [9].

2. Material and Methods

In the study, the effect of the law, which is called "zoning peace" in the public, on the illegal construction in the rangelands and plateaus areas within the borders of the Akçaabat district of Trabzon province was investigated. In the study, the examination of the changes in rangelands and plateaus on satellite images covering an area of approximately 9000 hectares was considered as 2 separate study areas.. In the first study area, Balıklı, Hıdırnebi, Karadağ, Kuruçam and Livera plateaus are located, while in the second study area, Bela, Büyükhanzar, Büyükoğa, Enginoba, İskobel, İskotinoz, Karaağaç, Kurtkayası, Limanoba, Ortahanzar, and Simba plateaus are located (Figure 1).

Because they are frequently used by residents of the city center and other provinces in the summer, these plateaus were chosen as the site for the study. TripletSat-2 satellite images (multispectral (MS) and panchromatic (PAN)) from July 2017 and RGB satellite images from July 2019 in Google Earth Pro were used in the study. The MS band of TripletSat-2 with 3.2m spatial resolution has 4 bands (red, green, blue, near infrared), while the PAN band has a spatial resolution of 0.8 m. Radiometric and atmospheric of the TripletSat-2 (MS and PAN) images were carried out by the NIK Construction Trade Ltd – NIK System from which the images were provided. The geometric correction of the images (MS and PAN) images was performed with sub-pixel accuracy using 42 Ground Control Points (GCPs) selected to be homogeneously distributed over the image coordinated Continuously Operating Reference Stations- Türkiye (CORS-TR) GPS method in the field. Other RGB images were then registered with the TripletSat-2 PAN image.

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In the next stage, structures of different years were manually digitized in ArcGIS software using Triplesat (MS and PAN) images and RGB images. As a result, vector building layers were produced. Following this, the areas and numbers of the structures built in different years were calculated in the ArcGIS software. Finally, using the data, the changes in the plateau areas over time were determined.

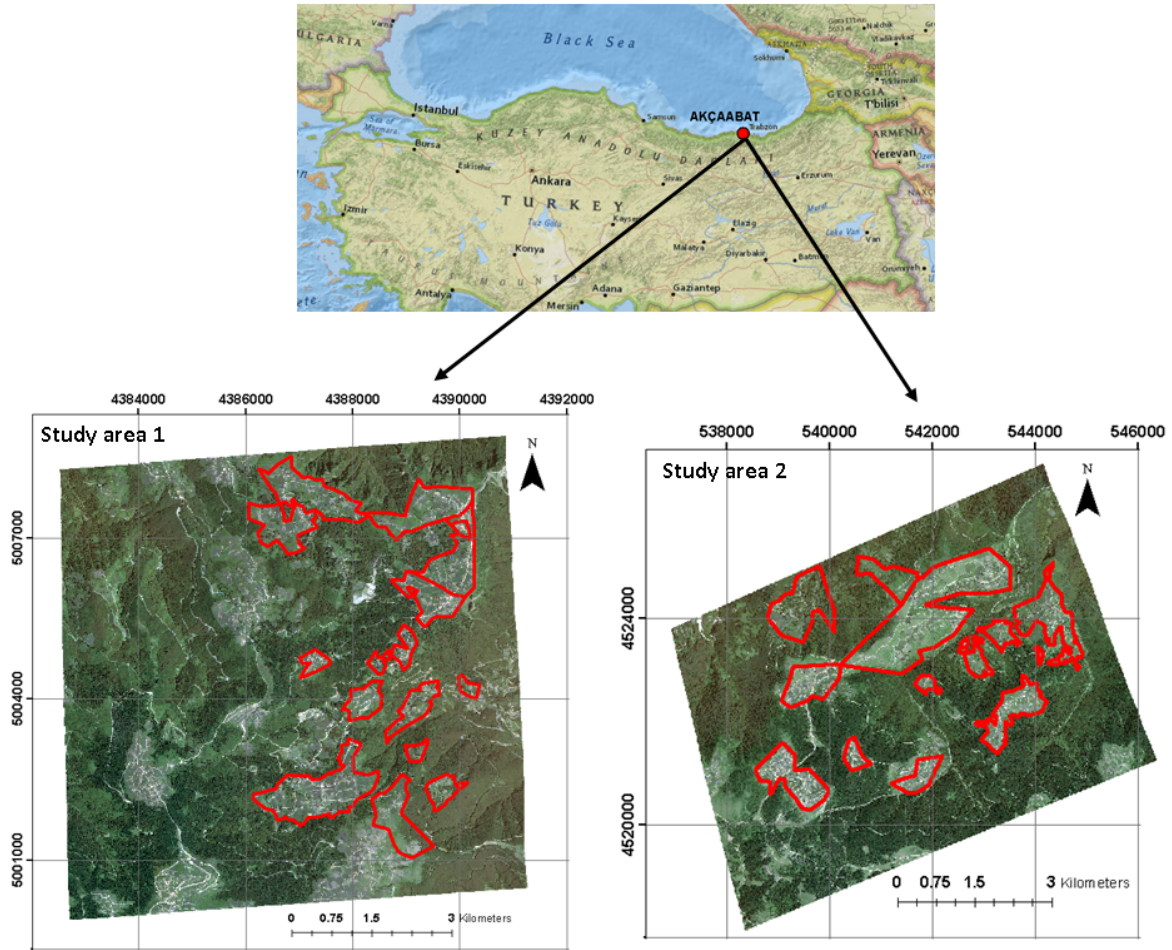


Figure 1. Study areas

3. Results and Discussion

In the study, the effect of the law, which was accepted on 11.05.2018 and called "zoning peace" in the public, on the change in the plateau and plateau areas was examined. As per the law, the building registration certificate is given to the buildings constructed before 31.12.2017. For this reason, the change made between this date and the deadline of 15.06.2019 to benefit from the zoning peace has been determined. The variation was determined using Triplesat satellite images from 2017 and satellite images from the Google Earth Pro program.

3.1. Change Detection Analysis for Study Area 1

According to the results of the change analysis shown in Table 1 for study area 1, it was observed that the number of buildings in Balıklı Plateau increased by 307 in 2017 and increased by 10 in 2019 to 317. The average building area for these years was 102 m² (Table 1). Hıdırnebi Plateau is a highly preferred plateau in the region for both animal husbandry and tourism purposes. When the data is analyzed, the number of buildings in this plateau was determined as 239 in 2017 and 244 in 2019. It was observed that the average building area was 103 m². The results of the change in Karadağ Plateau show that the number of buildings was 275 in 2017 and 289 in 2019. The average building area was calculated as 118 m². When the change in the Kuruçam plateau was examined, it has seen that this plateau is one of the preferred plateaus for settlement purposes. The number of buildings was determined as 238 in 2017 and 242 in 2019. When the building areas average was examined, it has been determined that the average of the building areas in 2017 and 2019 was 106m². Finally, the analyses on the Livera plateau led to the conclusion that the number of structures will stay at 15 in both 2017 and 2019. The building areas average was estimated to be 94 m².

Table 1. Change in the number of buildings and building areas average for the Study Area 1

Plateau	Plateau Areas (m ²)	Building Areas (m ²)		Number of Buildings		Building Areas Average (m ²)	
		2017	2019	2017	2019	2017	2019
Balıklı	529854	31428	32483	307	317	102	102
Hıdırnebi	517458	24867	25242	239	244	104	103
Karadağ	1946883	32337	33462	275	289	118	116
Kuruçam	539658	25268	25612	238	242	106	106
Livera	54019	1417	1417	15	15	94	94

3.2. Change Detection Analysis for Study Area 2

According to the results of the change analysis shown in Table 2 for study area 2, it was seen that the Bela plateau was not a region that was used as a residential area more than the other plateaus in the region. According to the analysis, it was determined that the number of buildings, which was 13 in 2017, was 19 in 2019. It was also possible to say that the building area average on the plateau was 75 m². Büyükhanzar plateau is similar to the Bela plateau in terms of usage as a residential area. The number of buildings was determined as 33 in 2017 and 34 in 2019. It has been observed that the building area average in the plateau was 82 m² and generally similar buildings were built. In 2017, 196 buildings were found to be present on the Büyükoba plateau. By 2019, there were 206 buildings, an increase of 10. The building area

average was estimated to be 101 m². The average building area has demonstrated to us that the homes constructed on the plateau are not intended for short-term habitation but rather for long-term habitation. The Enginoba plateau is one of the most popular plateaus for the construction of permanent buildings, according to the data. In 2017, there were estimated to be 217 buildings, with a building area average of 103 m². There were 223 buildings in existence in 2019, and it was noted that the building area average over the previous time period remained unchanged. Considering the number of buildings, it is understood that the İskobel plateau is one of the most preferred plateaus in terms of settlement. The number of buildings, which was determined as 346 in 2017, became 354 in 2019, and it was observed that there was no change in the average building's areas and which was approximately 109 m². When the change analysis made in the İskotinoz plateau was examined, the number of buildings was determined as 69 in 2017, and 76 in 2019. The building area average was detected as 91 m². According to the results of the change analysis in the Karaağaç plateau, the number of buildings has been determined as 203 in 2017, and 207 in 2019 with an increase of 4 units. However, when the building areas were examined, it has been seen that the building area average was 91 m² and it was built as a permanent building. In the Kurtkayası plateau, it was determined that the number of buildings in 2017 and 2019 was 28. It has been determined that the building area average was 113 m². The Limanoba plateau was found to be less frequently settled than other plateaus when the evaluation of the results was done. In 2017, there were 103 buildings, and in 2019, there will be 107 structures, according to calculations. The building areas average between 2017 and 2019 was 93 m², according to the analysis of the building areas. The examination conducted on the Ortahanzar plateau led to the conclusion that the number of buildings remained constant between 2017 and 2019 at 40. The building areas average was found to be 108 m², and they were constructed as permanent buildings, even though the total number of buildings remained constant. Finally, 131 buildings were there on Simba Plateau in 2017; 135 were there in 2019. Between 2017 and 2019, the building's areas average was determined to be 136 m².

Change analyzes were made in ArcGIS software for 16 plateaus, and the structuring over the years was determined in this way. As an illustration, Figure 2 shows the construction of the Büyükoba plateau in 2017 and 2019.

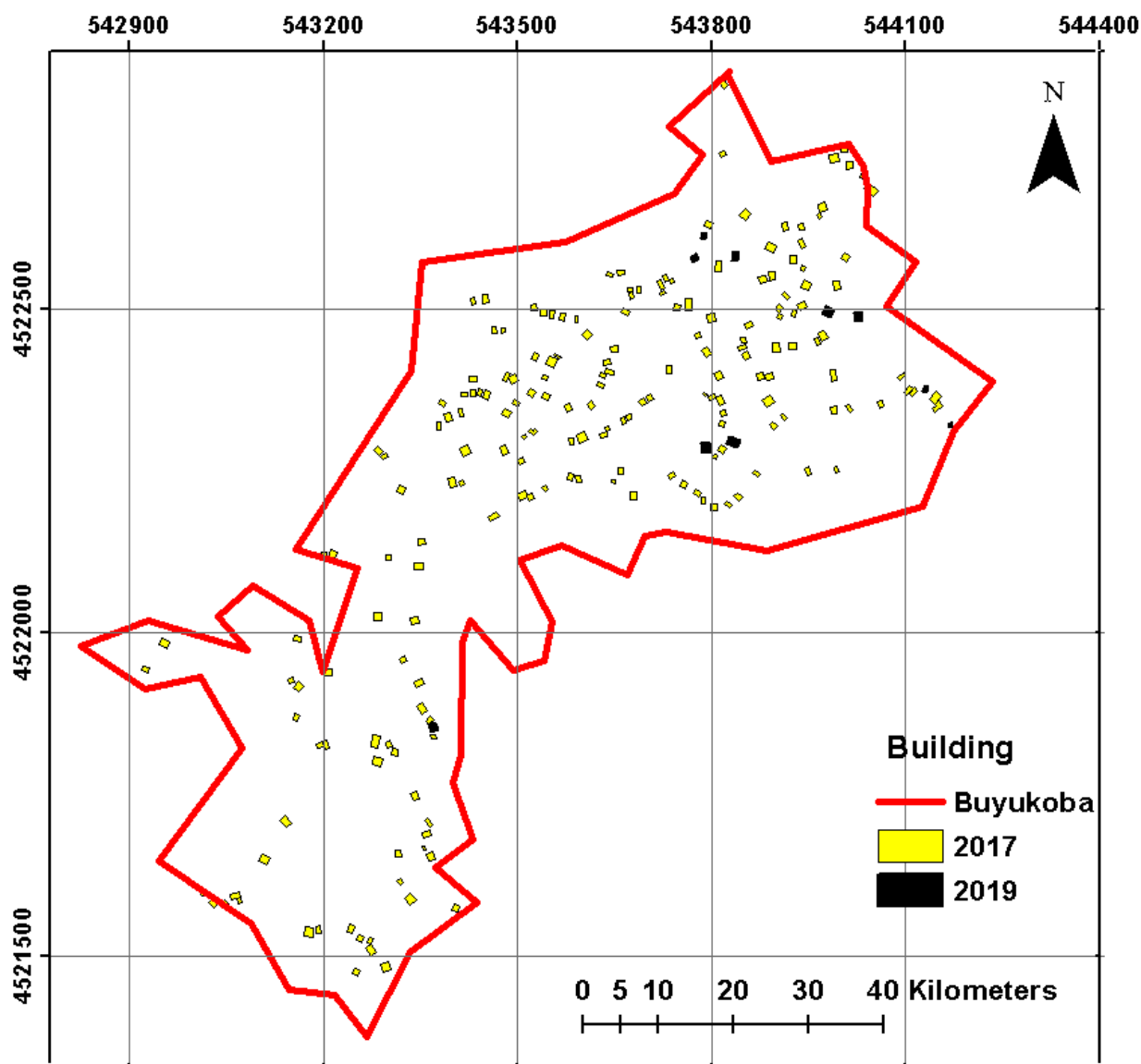


Figure 2. Change analysis for Büyükoba plateaus

Change analysis results for study area 2 are shown in Table 2.

Table 2. Change in the number of buildings and building areas average for the Study Area 2

Plateau	Plateau Areas (m ²)	Building Areas (m ²)		Number of Buildings		Building Areas Average (m ²)	
		2017	2019	2017	2019	2017	2019
Bela	480643	976	1446	13	19	75	76
Büyükhanzar	101892	2721	2769	33	34	82	81
Büyükoba	719644	19844	21047	196	206	101	102
Enginoba	622300	22268	23033	217	223	103	103
İskobel	821134	37704	38755	346	354	109	109
İskotinoz	310129	6255	6811	69	76	91	90
Karaağaç	3147997	18383	18806	203	207	91	91
Kurtkayası	220965	3154	3154	28	28	113	113
Limanoba	174083	9589	9904	103	107	93	93
Ortahanzar	234007	4302	4302	40	40	108	108
Simba	978302	17786	18294	131	135	136	136

4. Conclusion

In Turkey, in the past, rangeland and plateau areas were known as spaces used by individuals engaged in livestock farming to provide feed for their animals. However, nowadays, it is observed that these areas are predominantly utilized for tourism and recreation purposes, with unauthorized permanent buildings being constructed in these regions. The study examined the state of construction in these plateau areas between the start date of the zoning peace law and the expiration of extension periods. The results indicate that construction activity continued from the inception of the law until the conclusion of the extension period. During this timeframe, a total of 83 new buildings were identified in the study areas, with 33 buildings in the first study area and 50 in the second study area. These findings reveal that construction activities continue in these areas, the inspection process is not carried out quickly and effectively, and amnesty laws encourage further construction.

Ethics in Publishing

There are no ethical issues regarding the publication of this study.

Author Contributions

All the authors were involved in designing the study, collecting data; evaluation of results and in the writing of the article.

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