

SEISMICALLY RISKY BUILDINGS -THE DEADLOCK OF ZONING AMNESTY UPON THE EFFECTIVE INTEGRATED DISASTER RISK MANAGEMENT

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Abstract

Integrated Disaster Management is a plan for various interventions for unfavorable situations that occur before/after disasters. To ensure the implementation of successful disaster management, management plans have to be implemented and supported by laws for permanent solutions. Türkiye, as one of those disaster prone countries, particularly for earthquakes, created various action plans and laws at different level. One of the most important example in this regard might be the zoning amnesty that is carried out on registration of unlicensed buildings to identify them for urban transformation. However, deficiencies have appeared in practice and governance were insufficient to eliminate the threats. The Aegean Sea Earthquake affected İzmir in 2020 has brought this predicament to light once again. This study mentions disaster management and mitigation plans in Türkiye generally, and focuses on the İzmir earthquake that occurred on October 30th, 2020. It highlights inconsistency of zoning amnesty with disaster resilience.

Keywords: Earthquake; Disaster Management; Resilience; Zoning Amnesty; İzmir

DEPREMSEL RİSK TAŞIYAN BİNALAR -ETKİN BÜTÜNLEŞİK AFET RİSK YÖNETİMİNDE İMAR AFFI ÇIKMAZI

Özet

Bütünleşik afet yönetimi, afetlerden önce veya sonra meydana gelen olumsuz durumlara yönelik çeşitli müdahaleleri düzenleyen plandır. Başarılı bir afet yönetimi ve kalıcı çözümler için bu planlar uygulanmalı ve kanunlarla düzenlenmelidir. Özellikle deprem konusunda afete yatkın ülkelerden biri olan Türkiye, farklı düzeylerde çeşitli eylem planları ve kanunlar oluşturmuştur. Bunların en önemli örneklerinden biri, ruhsatsız yapıların tespiti ve dönüşümünün sağlanması için uygulamaya koyulan imar affıdır. Ancak bu kanunun uygulamasında eksiklikler ortaya çıkmış ve denetimler tehditleri ortadan kaldırmak için yetersiz kalmıştır. 2020 yılında İzmir'i etkileyen Ege Denizi Depremi, bu açmazı bir kez daha gün yüzüne çıkarmıştır. Bu çalışma, Türkiye'de genel olarak afet yönetimi ve zarar azaltma planlarını değerlendirerek, 30 Ekim 2020'de meydana gelen İzmir depremine odaklanmakta ve imar affının afete dirençlilik ile tutarsızlığını vurgulamaktadır.

Anahtar Kelimeler: Deprem; Afet Yönetimi; Dirençlilik; İmar Affı; İzmir

1. Introduction

Integrated disaster management is the process of dealing with disaster and its negative effects. It considers all possible threats in order to build a resilient society, and it can carry out the work and measures required in the disaster management stages such as, improvement, mitigation, preparedness, response, and recovery [1]. By this way, losses and damages caused by the hazard can be minimized, awareness of the

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communities can be improved for disaster resilience and national and municipal level disaster-resistant mechanisms can be built.

Recovery is one of the parts of the management system that follows the disaster response phase. This process includes the legal, institutional, physical, social, and economic actions required to meet the needs of communities in the most rational ways and techniques. It strives to restore normalcy as quickly as possible, as well as to offer possibilities to cope with potential hazards and to create a safer living environment with the least amount of damage [1]. In order to provide successful management and recovery, a holistic strategy is required to build a legal and systematic management basis. For this reason, several countries have become a part of the Sendai Framework which was adopted in March 2015 at the 3rd UN World Conference in Sendai, Japan. The agreement has some priorities to establish a disaster management system, one of the aim is *“Enhance disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction.”* Build Back Better (BBB) is the guiding philosophy of recovery to enhance the social, physical, economic and environmental status of a community in order to create a resilient community [2]. Actions to BBB in recovery have been identified in the UNISDR report as the basic human right that states, international governments, and other stakeholders are expected to safeguard their citizens against future disasters [2].

Despite the fact that governments have implemented disaster management plans on various stages, current legislations and implementations are fundamentally impeding disaster management success; however, some of these may not have desired impact. One of the current practices in Türkiye is zoning amnesty which threatens the lives of millions. It aims to solve the problem of unlicensed housing which has a risky situation for living. The license problem of these buildings is handled as a result of the zoning amnesty with the certificates provided to buildings without technical competence. However, since these buildings are in use by the people, even the slightest disaster hazards might cause tremendous losses. Even though the state or government claimed that the purpose of the regulation is to register unlicensed dwellings for upcoming transformation facilities; anyhow it was unable to handle risky situations due to a lack of a regulatory system.

Following the earthquake in Izmir on October 30th, 2020, numerous experts questioned the zoning amnesty in terms of integrated disaster risk management and implementation on disaster-prone regions. There were 795.934 unlicensed buildings [3] that have applied for building registration certificates in Izmir only, and because of the earthquake-prone environment of the city, it means most of the settlements are located close to the fault lines. When the research reports and statements made after the earthquake are evaluated, it is clear that there were demolitions and deaths in the structures that benefited from the zoning amnesty legislation. As a result, in this paper, the topic of disaster management is highlighted from the disaster risk reduction point of view, as well as the potential harm of the zoning amnesty on this process.

This study firstly focuses on the general description and disaster management plans in Türkiye, then describes the regulations about zoning amnesty which is totally against the idea of disaster management. Additionally, the study explains general situations after the İzmir earthquake and recovery facilities in the area and criticizes the zoning amnesty and the case of the disaster management implementation in İzmir, in the following sections.

2. Integrated Disaster Risk Management

Along with the disasters that occur across the world, the topic of resilience is frequently highlighted in debates. The term ‘resilience’ was defined in the report of the UNISDR [4] as *“the capacity of a system, community, or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure”*. In unforeseen occurrences, it is vital to establish a resilient society so that life may resume its normal path as quickly as feasible. It is critical to create resilience to disasters that strike individuals at an instant of time when they do not expect it. Obviously, this imposes new tasks and responsibilities to each part of the society. A more effective system can be created with a set of frameworks to be developed for the time of pre-disaster, during disaster, and post-disaster phases.

According to Amendola et al. [5]; integrated disaster risk management is a process for completely and credibly estimating and managing risks from numerous synergistic sources, and it poses a challenge to the scientific and policy communities. Management system can be divided into four stages; mitigation, preparedness, response and recovery [6]. To have successful disaster management, all phases must be carried out as a continuous intertwined system, without being separated from one another. And, all stakeholders, institutions as well as the individuals must take their responsibilities that are defined by the corresponding frameworks. Among those phases, while mitigation refers to any activities made to minimize the effect of future catastrophes, preparedness refers to the activities done to lessen the impact of disasters that are predicted or imminent. Although these stages are the phases that are followed before the disaster occurs, the response stage comes when the disaster occurs or after it. Response phase comprehends the emergency efforts conducted both during the disaster's effect and in the immediate aftermath. When a disaster collides a specific location, quick action is required to ensure the survival of people, resources, and so on. These are the components of the "Immediate / Urgent Response Phase." Search and rescue, and first aid are such actions that have to be considered early on this stage in order to manage the cooperation amongst teams and actors. Recovery is the following process of damage assessment, repairing damage, restoring services, and reconstructing infrastructure after a disaster has occurred [6]. These tasks might differ depending on how the situation is perceived and a variety of disciplines provide fruitful research opportunities [7]. For example, while social scientists are primarily concerned with social rehabilitation of a community, engineers approach physical rebuilding from another perspective. Depending on the sort of exercise, recovery might take months to years.

All of these stages are linked by the concept of Build Back Better, which attempts to reduce the disaster risks while recovering and create a more resilient society. While this method tries to avert potential hazards with the least amount of harm, it also ensures to be ready for future disasters and to raise awareness about it. The notion was incorporated into the Sendai Framework, which was adopted at the 3rd UN World Conference in March 2015.

Türkiye is one of the nations that signed the Sendai Framework action protocol. In addition to the worldwide studies conducted within the scope of the framework, Türkiye is preparing several disaster management plans with the priority of AFAD (Disaster and Emergency Management Presidency). TAYSB (Türkiye Disaster Management Strategy Document), TARAP (Türkiye Disaster Risk Reduction Plan), TAMP (Türkiye Disaster Response Plan), UDSEP (National Earthquake Strategy and Action Plan), are among the plans and strategic documents handled within the scope of Sendai Framework, which determine post-disaster organizational schemes and stakeholders in order to prevent physical, economic, social, environmental and political losses and make cities more resilient [8, 9]. Along with these initiatives, it is planned to build a disaster-resilient society, and AFAD's work in disaster awareness has made significant progress. However, raising public awareness is not enough to produce disaster-resilient cities and communities; besides, current practices must also be evaluated.

Türkiye is prone to a variety of natural disasters, the most common types of which are earthquakes, floods, and landslides. Earthquakes produce the most devastation and deaths, with 70 percent of the population living in active seismic zones [10]. This situation has made many legal regulations mandatory. In terms of legal regulations, the turning point in the field of disaster management and coordination in Türkiye is the August 17th, 1999 Marmara Earthquake. After the great losses in the Marmara earthquake, many laws, decrees, statutes and regulations were enacted in order to return to normal life in the region. With these regulations, it is aimed to solve the problems caused by the earthquake and to eliminate the problems and deficiencies of the country's institutional structure and legislation in disaster management [11].

Despite all these regulations, some of the decisions and laws that have been put into practice have caused controversy. Actions such as opening risky regions for development and legalizing settlements without engineering services are debated promptly after disasters occur. The zoning amnesty, which was implemented several times in the history of Türkiye in order to solve the registration problem of unlicensed buildings and then reintroduced in certain periods, is completely contrary to disaster resilience. Since such applications legalize illegally constructed buildings which are constructed without any

engineering knowledge and ignoring the hazards and risks, result in significant disaster losses, unfortunately.

3. Regulations about Zoning Amnesty in Türkiye

Unregistered construction is divided into two categories: squatter dwellings and building in contrast to zoning legislation [12]. In Law No. 775, the definition of squatter houses is as follows:

“Unauthorized buildings made on land or plots that do not belong to them, without the consent of the owner, without being bound by the legislation and general provisions regulating the zoning and construction works”³ [13].

Additionally, the definition of building that contrary to zoning legislation is;

“Buildings that are contrary to the license and its annexes, science and health rules, floor order, building precedent values, neighboring distances”⁴ [14].

Since these buildings have not been submitted to the requisite testing and do not have regulated static projects, they are at risk of being collapsed in the event of a disaster. As a result, they are dangerous for individuals who live within or stroll adjacent to structures. According to a brochure published by the Ministry of Environment and Urbanization, unregistered buildings account for nearly 50% of Türkiye's existing building stock [3].

The notion of zoning amnesty was first discussed in relation to squatter settlements and neighborhoods, which were once viewed as the problem of urban development. Because of politics and rapid urbanization, squatter settlement began to constitute a critical part of urban areas in the early 1950s, particularly on the outskirts of large cities, and their percentage of the urban population increased [15].

Various laws / regulations were enacted in different periods regarding these structures as shown in Table 1, although the main purpose seemed to solve the problem, it caused them to gain more rights.

The details of these laws and legislation are not within the scope of this article, however, some of them can be briefly mentioned as examples here [15]. Law No.5218 is the first law on zoning amnesty and aimed to solve the unlicensed building problem in Ankara. It is about the allocation of land owned by the Municipality and the state to those who will dwell in the city. Later, Law No.6188 was removed due to the formation of squatters in Istanbul. The residences that municipalities can build on their own lands will be sold primarily to those whose slums have been destroyed. However, this law was not able to solve the problems of newcomers to the city. During the Law No.775 period, the squatters were semi-dependent on the zoning law. Policies of improvement, elimination and prevention should be followed for that type of housing.

Following these zoning amnesty legislations recently, the provisional article 16 included in the "*Law on Restructuring Certain Receivables and Amending Certain Laws*"⁵ which is published in the Resmi Gazete on May 18th, 2018, and added to the Zoning Law. In accordance with this article, unauthorized constructions built prior to December 31st, 2017, are in the process of being recorded [16]. The enforcement has known as "*zoning amnesty*" which was defined by the Ministry of Environment and Urbanization [17] as:

“solving the zoning problems of our citizens with the building registration certificate to be given to the buildings that violate zoning legislation or the license”⁶

³ In Turkish: “*imar ve yapı işlerini düzenleyen mevzuata ve genel hükümlere bağlı kalınmaksızın, kendisine ait olmayan arazi veya arsalar üzerinde, sahibinin rızası alınmadan yapılan izinsiz yapılar*”

⁴ In Turkish: “*İmarlı alanlarda kamu ve özel mülkiyete konu olan parsellerde mülk sahipleri tarafından ruhsat ve eklerine, fen ve sağlık kurallarına, kat nizamına, yapı emsal değerlerine, komşu mesafelere aykırı yapılar*”

⁵In Turkish: “*Bazı Alacakların Yeniden Yapılandırılması ile Bazı Kanunlarda Değişiklik Yapılmasına İlişkin Kanun*”

⁶In Turkish: “*İmar mevzuatına veya ruhsata aykırı yapılara verilecek yapı kayıt belgesiyle vatandaşlarımızın imar sorunlarının çözülmesidir*”

Table 1: Laws in order to solve the problem of unlicensed housing (based on [15])

Period/Topic	Year	Law No
The Period Before Slum Law No. 775	1948	5218
		5228
	1949	5431
	1953	6188
	1959	7367
The Period After Slum Law No. 775	1966	775
For Problems that Slum Law Cannot Solve	1983	2805
	1985	2981
	1986	3290
	1987	3366
	1988	3414
About The Ability to Buy and Sell Unlicensed Buildings	2001	4706
Additional Articles Added to the Laws for Amnesty	2003	4833
		5027
	2005	5377
		5398
EXTENSION OF APPLICATION TIME	2012	6306
	2015	6639
	2018	7143

Zoning Amnesty, in general, is the forgiveness and protection of the buildings that were built until a certain period of time by not obeying the rules in legislation, and those that comply with the conditions specified in the law in terms of condition and location [15]. It should be also mentioned that these buildings had not been serviced following the engineering requirements such as the current seismic codes which are the vital parts of the construction legislation. Although the main goal appeared to be to remedy the problem, it resulted as gaining additional rights of the owners, by leaving many question marks from the disaster risk reduction point of view.

The purpose of this act is to manage unregistered buildings and to generate an economic resource for urban transformation through payments made by individuals who profited from the regulation. A license is given to the buildings who benefitted from the amnesty in order to open a workplace without seeking a building utilization certificate, and the right to connect water, natural gas and electricity services [18]. According to the legislator, this agreement between the state and building owners who have earned the Building Registration Certificate, will be valid until the urban transformation. Citizens who want to benefit from the zoning amnesty firstly receive the Building Registration Certificate on "*e-devlet*" which enables them to carry out the procedures online. There is no need to submit any sketch, project or drawings. Because the process is based on the statement principle only, the probability of abuse of the act is significantly high. Following then, the "*Transition to Condominium Ownership and Genre Changes*" stage begins to ensure the legitimation of the buildings [18]. As is known today, the total number of Building Registration Certificates received within the scope of the Zoning Amnesty has reached 3.153.044 across Türkiye while 332.356 of these buildings are located in İzmir [19].

4. İzmir Case

Izmir is located in Aegean Region in western Türkiye which has a significant seismic hazard level. Among the earthquakes in the last century, the biggest earthquake before the October 30th, 2020 was the Torbalı earthquake dated March 31st, 1928 (M: 6.5). This earthquake had a very wide effect, more than 2000 houses were destroyed or damaged. Latest earthquake occurred on October 30th, 2020, with the epicenter close to Sisam Island (Izmir Seferihisar Offshore) with a magnitude of M_w 6.6 at 14:51 (local hour) [20]. According to the proofs; the duration of the earthquake was 15.68 sec., and 5799 aftershocks with magnitudes varying from 0.7 to 5.1 occurred after the earthquake until December 31st, 2020 [21].

According to the AFAD Report [21], at the time of the earthquake, Level 3 "National Level" response activities were implemented in conjunction with the Türkiye's Disaster Response Plan. The crisis management for this earthquake has been successfully completed satisfactorily. Approximately 3000 people of search and rescue, security and other expert teams from other provinces were transferred to the disaster region shortly after the earthquake. The disaster victims were initially relocated to a tent city for shelter before being transferred to container cities [21].

Although this quick-response activity should be applied after the earthquake, in the time of Covid-19, it has endangered people in terms of epidemic disaster. People have run out of their homes without precaution. A lot of people stay outside together. For this issue, thousands of masks and disinfectants were sent to the region by the Presidency of Republic in order to prevent the spread of disease with high acceleration [22].

According to the report of TBMM [19], 718 structures were collapsed or severely damaged by the earthquake, while 7671 were deemed to be slightly affected. During the first inquiry following the earthquake, it was discovered that 17 structures in the city were entirely collapsed. Despite the fact that the Emergency Management Presidency (AFAD), National Medical Rescue Team (UMKE), Turkish Red Crescent, and other NGOs from all around Türkiye have played an active role in responding quickly, 117 people were killed as a result of these damages [19].

Following the earthquake, the Ministry of Environment and Urbanization teams conducted damage-assessment campaigns. There were 30 buildings which needed urgent demolishing, 9 buildings were already collapsed and 127 buildings with heavy damage in the Bayraklı region [23].

After the assessments, urban transformation projects were launched, with the project stage by deciding on 7 basic zones with 7.53 hectare as a reserve area for new buildings in Bayraklı, Adalet, Manavkuyu, and Mansuroğlu neighborhoods, which were the most impacted by the earthquake [19]. During this process, rent subsidies were disbursed for people whose homes had been destroyed or substantially damaged, and they were offered the chance to utilize the municipality's stock of housing for free. Several infrastructure payments have also been postponed [23].

According to the AFAD [21], when the structures in the earthquake zone were assessed, it was discovered that there was more damage than expected in buildings exposed to risk-increasing improper practices without taking the earthquake hazard into account. Examining the ground motions in Bayraklı reveals that the ground conditions amplify the structural damage [24]. The damages were caused by the similar factors that were effective in earlier earthquakes. The damage is concentrated on 7 to 10 story buildings in Bayraklı, due to the aforementioned ground amplification effects. Another crucial issue in the report is that it cannot be inferred that the undamaged and less damaged structures are earthquake resistant [21]. In addition, according to the statements from the Ministry of Environment and Urbanization [25]; 4 buildings (44% of total) requiring urgent demolition after the earthquake and 36 of the heavily damaged buildings (28% of total) received building registration certificates within the scope of the Zoning Amnesty. Furthermore, two of the collapsed structures (10% of total) had building registration certificates, indicating that they were registered in the Ministry's system, but had no protections against destructive earthquake effects.

5. Evaluation

In Turkey's history, there have been several conversations concerning the zoning amnesty Altındal and Konak warned about avoiding zoning amnesty and similar practices in publications published following the Marmara Earthquake [26]. However, zoning amnesties have come back in a number of forms during the last 23 years.

An important debate on the last zoning amnesty application is on the last sentence of the 10th paragraph of the temporary article 16 of the Zoning Law, which is "*Earthquake resistance of the building is under the responsibility of the owner*" [27]. This is the most controversial part of the Building Registration Certificate. This statement gives the impression that the responsibility for the earthquake resistance of the buildings with the Building Registration Certificate passes to the owner of the building. However, because the administration has financial responsibilities and has an inspection requirement in these structures. It should be examined in a coordinated manner. In order to preserve public order, the administration is the primary owner of law enforcement and cannot transfer administrative responsibilities to individuals within the extent of these authorities [28].

In the meantime, it is apparent that there are also many more risky structures than recorded ones with this law. Furthermore, older buildings, even if they have a license, should be assessed immediately to check their vulnerability. In summary, the zoning amnesty is inadequate to register all of the structures and to take the appropriate measures.

Returning to the İzmir case, according to Court of Accounts statistics as of the end of 2016, the average age of buildings is 25 years or more, and the ratio of the risky structures is about 65 percent [19]. The fact that the average age of the building is over 25, and even more than 30 today. This means that these structures were built before the 1999 Marmara Earthquake, which is considered as a milestone in Türkiye for broad and vital earthquake risk reduction regulations.

Another report [29] showed that only 21% of the buildings in the area are licensed; 7% of these buildings received new construction permits before 2000, and 14% after 2000. 79% of the buildings in the area are unlicensed. By the way, before the earthquake, in various reports prepared by the Municipality and the Ministry, it is mentioned that the settlement in the area should be done with certain measures due to the ground conditions, but the area seems open to settlement. While this situation is included in the reports, the fact that the controls in the area are not carried out and the settlements determined as high density settlements are allowed in the plans show that only those who have a building registration certificate are not responsible for damages after the earthquake.

When the report prepared by the Turkish Grand National Assembly after the İzmir earthquake is examined, it is clear that there are certain shortcomings regarding the zoning amnesty. For example, it is mentioned that there is no information about which building received the building registration certificate for what reason and to what degree does not conform with the requirements [19]. While these evaluations are a process that should be put into practice as of 2018, right after the enactment of the relevant law, it is seen that these examinations are not completed even in 2021. These shortcomings may lead to the loss of hundreds of lives and present a quite opposite situation with disaster resilience strategies.

Since zoning amnesty regulations do not aim to strengthen risky buildings, undertake essential static interventions, or execute parcel-based transformation if requested, policies have no direct effect on reducing disaster-related damages. On the contrary, it has transformed the unhealthy and unlicensed construction to legal and paved the way for the damages that will occur as a disaster.

Despite the drawbacks of this system, it has resulted in the identification of about 3 million [19] risky structures throughout Türkiye as of today. Although it is not a solution that records structures whether they are safe or not, it may be regarded a step made within the framework of disaster risk preparedness. By the way, structures that are proven to pose a disaster risk, endanger public safety, or were not built in accordance with construction and science standards must be demolished.

6. Conclusion

Earthquakes have caused significant damages in Türkiye so far, as well as traumatic experiences. The causes of damage stated in İzmir earthquake reports were the same as in other earthquakes and it cracked the city's and its policies' vulnerability open once again. This circumstance demonstrates that we have not entirely learned from the previous earthquakes or neglected the mistakes which have experienced before. In Türkiye's legal system, it is clear that disaster-response methods appear to be fairly sophisticated, despite the fact that there are deficiencies in the operation and management phases.

The earthquake in İzmir made deficiencies visible once again. The response and recovery phases seem to be carried out successfully with the first aid activities with the coordination of AFAD after the earthquake and the urban transformation projects that started right after the earthquake. However, recovery does not mean only rebuilding the environment after destruction, it is defined in the dictionary of AFAD as to develop the opportunities to cope with possible disasters and to create a safer living environment that will ensure the least damage.

From this stage on, it should be the primary policy to complete these shortcomings without waiting for the next earthquake, and Emergency Response and Disaster Risk Reduction Action Plans should be put forward in this regard. However, beyond these, it should be aimed to successfully provide disaster management with the regulations to be made in the existing laws.

A practice such as zoning amnesty that cannot be reconciled with disaster management and that will put the responsibility of the loss of life on those who applied for amnesty should be reviewed in all aspects. It is to take extra precautions during the execution of zoning regulations in hazardous regions and where construction is not appropriate. It is necessary to carry out the necessary controls with the teams to be formed specific to the neighborhoods, and to ensure the demolition of risky buildings – even if they have benefited from the zoning amnesties until now. Only when this happens, disaster risk management will be fully provided and efficient results will be obtained in recovery works.

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