PROPERTY PROBLEMS IN POST- EARTHQUAKE URBAN REDEVELOPMENT PROCESS: A CASE STUDY IN CITY OF ADAPAZARI

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This Study started with Prof. Dr. Raci Bademli's supervision and terminated for his Privileged Memory

ABSTRACT

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This thesis investigates the underestimated ownership constraints in built-up urban areas as the determining characteristic of the urban redevelopment process after the Marmara Earthquake. In the first part of the study, public provisions for permanent housing have been surveyed. It is observed that relocation of the survivors entitled to such housing sites considerably far away from existing urban areas has generated the need for many adjustments on the property patterns. Without any framework for the remaining ownership and development rights in those damaged urban areas, nearly 43 000 housing units have been developed mostly by the state in order to compensate for the lost properties of disaster survivors. On the other hand, municipalities could not commence any considerable redevelopment framework in damaged urban areas

after the earthquake. They were restricted to revising their development plans with respect to new geological surveys and to redefining the ideal building regulations with low building heights. Adaptation of these renewed plans to existing conditions has necessitated an immense amount of property readjustments. However, this is nearly impossible with existing plan implementation instruments which are incapable of mandating the exchange mechanisms for the reduced development rights. Lack of three dimensional property adjustment and purchasing methods different from constructions option engendered the implementation problem of these development plans prepared after the earthquake.

In this framework, a field survey has been carried out in the city of Adapazarı and the post-earthquake urban redevelopment process is investigated. Transformation of the properties are plotted in Çark Street, where the required resharing of reduced development rights with respect to new development plan can be partially observed.

Besides, the success of the forthcoming urban planning process in Turkey, which is composed of urban rehabilitation and risk mitigation works, again depends upon the capacity to realize ownership and development right transformation in urban environments. As a result, the Marmara Earthquake presents the necessary inputs and justification to restructure the property institution in urban planning.

Keywords: Property, property right, development right, disaster, mitigation, redevelopment

ÖZ

DEPREM SONRASI KENTSEL YENİDEN YAPILANMA SÜRECİNDE MÜLKİYET PROBLEMLERİ: ADAPAZARI ŞEHRİ ALAN ÇALIŞMASI

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Bu tez, Marmara Depremi sonrasında kentsel alanların yeniden yapılanma sürecinin belirleyici unsuru olan yapılı çevredeki mülkiyet ilişkilerini ve problemleri inceleyecektir. Çalışmanın ilk aşamasında kalıcı konut uygulamaları araştırılmıştır. Fakat; afetzedelerin hasar gören kentsel yerleşmelerden oldukça uzak alanlarda yeniden konutlandırılması, mevcut mülkiyet desenleri üzerinde kapsamlı düzenlemelerin yapılmasını gerektirmektedir. Afetzedelerin kayıpları, hasar gören alanlarda baki kalan mülkiyet ve imar hakları üzerinde bir çerçeve tanımlanmadan, çoğunlukla kamulaştırılmış alanlarda, 43 000 konutun devlet tarafından inşası ile tazmin edilmiştir. Diğer taraftan, hasar gören kentsel yerleşmelerde belediyeler,

kayda değer bir yeniden yapılanma süreci başlatamamıştır. Belediyeler, İmar planlarını yerbilimsel çalışmalara göre yenileyerek, kat alanı azaltılmasına netice verecek ideal yapılaşma şartlarını tanımlamayla sınırlı kalmışlardır. Büyük ölçekte mülkiyet dönüşümleri gerektiren bu planların tatbik edilmesi; mevcut imar planı uygulama araçlarıyla neredeyse imkansızdır.

Bu çerçevede, Adapazarı şehrinde bir alan çalışması yapılmış olup, deprem sonrası kentsel yeniden yapılanma süreci incelenmiştir. Yenilenen imar planına göre azaltılan imar haklarının yeniden paylaşımının kısmen gözlendiği Çark Caddesi'ndeki taşınmazların dönüşüm durumları saptanmıştır.

Tüm bunların yanında, Türk kentlerinin önümüzdeki dönem kentsel iyileştirme ve zarar azaltma calışmalarıyla dolu olan planlama sürecinin başarısı, yine yapılı çevrede mülkiyet ve imar haklarının dönüşümlerini gerçekleştirebilme kapasitesine bağlıdır. Bu çerçevede, Marmara Depremi, kensel planlama sisteminde mülkiyet kurumunun yeniden yapılanmasında gerekli verileri ve gerekçeyi ortaya koymaktadır.

Anahtar Kelimeler: Mülkiyet, mülkiyet hakkı, imar hakkı, afet, zarar azaltma, yeniden yapılanma,

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CHAPTER 1

INTRODUCTION

1.1 Background Information for the Study

This thesis will investigates the process of post-earthquake urban redevelopment and discuss the determining role of property relations in the built-up urban areas after the 17th August 1999 Marmara Earthquake.

The permanent housing projects which are presented in the appendix part of this thesis were the most cited subject in Turkey after the Marmara Earthquake. Substantial pecuniary losses and fatalities in the 7 provinces of Marmara Region gave precedence to relocation problem of disaster survivors. However, realization of permanent housing projects regardless of the conditions in damaged urban areas engendered negative outcomes. Lack of a framework for the necessary property adjustments in the damaged areas leads to uncontrolled, deteriorative and speculative urban developments. In order to present a clear discussion of the determining characteristics of property problems, it is beneficial to underline the attained stages of the post-earthquake redevelopment process. These can be enumerated as follows:

1. Ministry of Public Works and Resettlement postponed the planning and preparation of construction license authorities of municipalities in the earthquake region according to Disaster Law- Entry No: 7269 and Development Law-Entry No: 3194.

2. The Ministry directed the damage assessments and right-holder determination works under the scope of disaster survivor relocation problem.
3. A project named M.E.E.R (Marmara Earthquake Emergency Reconstruction) which has both housing and institutional development components has been directed by the Prime Ministry Project Implementation Unit in accordance with an agreement with the World Bank.
4. Designation of new sites for the relocation of disaster survivors in geologically more safe areas has been determined as a principle.
5. The Ministry designated the places of 'Permanent Housing Areas' in Sub-Regional Plans in 1/ 25 000 scale.
6. 43 000 housing units have been constructed in 27 different sites of the region.
7. According to the published notifications of the Ministry, municipalities in the region renewed or revised their development plans with respect to new geological survey results.
8. Renewed geological surveys have foreseen building regulations with low level of floor areas, and these were transferred to the development plans as the same.
9. Realization of these building regulations required restrictions and reductions of existing development rights in the damaged urban areas.
10. If we consider the main characteristics of existing development plan implementation instruments of Turkish urban planning, which are generally accustomed to the production of urban land, renewed development plans after the earthquake cannot be practiced at this time. Lack of options in transforming and transferring of reduced development rights after the earthquake has engendered irregular trades of property shares in market conditions.
11. Underestimation of existing development rights during the preparation of development plans for the damaged urban areas raised an uncertain condition for the urban developments in the region.

Table 1.1: General Framework of Relocation Process After the Marmara Earthquake

New Housing Developments for Disaster Survivors

- **Designation of permanent housing sites with respect to geological considerations**

- Integration Problems
- Unexpected Transition Zone Developments
- High Cost Infrastructural Services

Redevelopment of Damaged Urban Areas

- Collapsing of building stock in damaged urban areas
- Revealing of the necessity for relocation of disaster survivors
- Redevelopment of damaged urban areas with ideal building regulations with respect to geological considerations

Interim Solutions

"Permanent" Solutions

1.2 Aim of the Study

Dimensions and outcomes of the 1999 Marmara Earthquake placed the post-earthquake urban redevelopment process in a critical position in which substantial evaluations have to be performed and necessary institutional learning should be achieved for Turkish urban planning experience. However, ongoing discussions and the content of agenda for the last 5 years do not let constitution of desired conditions for such an occasion. Besides, many approaches and accumulated information for the provision of more secure and sustainable urban areas to disasters have been evaporating in a vicious cycle. Hence, this thesis aims to overcome these obstructions and contribute a new dimension to earthquake studies in Turkey through **reassessment of post earthquake urban redevelopment issues.**

The concept of post-earthquake urban redevelopment is one of the most encountered and substantial experiences of Turkish disaster management. Relocation of disaster survivors and site developments for new housing areas have been the main features of that process. The reason of this can be understood if the scales and locations of those disasters in Turkey are reconsidered. Until the Marmara Earthquake, many of disasters have occurred particularly in rural areas and relocation of limited number of disaster survivors were no more than a modest **property transfer** from damaged areas to disaster safe areas. However, the Marmara Earthquake has occurred in a regional context and affected the most developed urban areas in Turkey. Hence, the problem has been configured as not only a relocation of disaster survivors in new housing sites, but also, redevelopment of those conspicuous damaged urban areas has become crucial in the process. As will be explained in Chapter 4 in more detail, **around 43 000 housing units in 27 new housing areas** is not a simple relocation experience in urban planning. This situation has engendered new problems in implementation level and this study will focus on one of them, as the most determining but neglected factor, which is the **place of property relations and problems in post-earthquake urban redevelopment**.

As scattered in Table 1.1, redevelopment process after the Marmara Earthquake has been carried out as development of new housing sites in the places considerably far away from existing urban areas via construction of housing units for disaster survivors. In other words, an immense scale of **property development** has been implemented by the State which is not easy to be found with a similar dimension in worldwide. However, beyond its own unique problems in the acquisition and development of new housing sites for the relocation of disaster survivors, **a property transfer** practice from damaged urban areas to the new housing sites is configuring the other side of the problem. Although those newly constructed housing units are subject to '*debt coverage*[1]*'* for disaster survivors according to the Disaster Law-Entry No: 7269, relocation of them without any general framework definition for their remaining ownership rights in damaged urban areas, has brought extra problems. That is, according to the revised and newly prepared development plans in those damaged urban areas, **existing development rights have been reduced through planning decisions which foresee floor area reductions in building fabric**. In other words, achievement of ideal building regulation in damaged urban areas with respect to geological considerations can only be performed by re-sharing of those reduced development rights on land. However, this is nearly impossible with existing implementation instruments in urban planning. Lack of necessary exchange and compensation mechanism for those reduced development rights in urban fabric leads to implementation problems of development plans, prepared after the earthquake. This critical evaluation of redevelopment process after the Marmara Earthquake has been also presenting the robust structure of earthquake mitigation and urban rehabilitation studies, which are the forthcoming urban planning agenda of Turkey. **As long as property relations in built-up urban areas and necessary exchange mechanisms for development rights are not subject of urban rehabilitation and earthquake mitigation, even if urban planning cannot internalize them, there will not be a sound achievement in the process.** Hence, this thesis has inquired and evaluated the Marmara Earthquake urban redevelopment process with its outcomes, then assessed them as the justification for *transformation of development rights and*

[1] Debt Coverage is an operation for disaster survivors similar to mortgage system under the scope of Disaster Law-Entry No: 7269

transferring implementation, which are the necessary implementation instruments of Turkish urban planning in the process of earthquake mitigation and urban rehabilitation.

1.2 Method and Content of the Study

The developed method for this thesis is to tackle the theoretical content and practical dimensions of the concepts of property and post-earthquake urban redevelopment. Literature surveys on these two topics are interrelated with their connected statements in the legal framework. In the light of these descriptive framework, basic post-earthquake urban redevelopment examples from world and Turkey are assessed. Finally, the process of urban redevelopment after the Marmara Earthquake is evaluated with an example in urban scale as well. Hence, elaborated allegations and findings have found the opportunity to be matured in terms of a field survey in city of Adapazarı. For this reason an excursion was carried out on 08-12 November 2004 to the city. A questionnaire form is prepared to be utilized as a reference document which takes place both in the fifth chapter and appendix. Such a method requires designing a framework in advance on some predetermined post-earthquake urban redevelopment indicators. These are:

1. Urban Planning Process Before and After the Marmara Earthquake
2. Building and Construction License Statistics after the earthquake
3. Changes in real estate market after the earthquake
4. Spatial documentations for a sample building block or street pattern

Appropriated data were obtained from related municipality departments and provincial administrations. In addition, moderate scale workshops and interviews with disaster survivors, property owners and professionals were realized in Adapazarı.

Underestimation of property and development rights in the process of post-earthquake urban redevelopment after the Marmara Earthquake has led this thesis to handle the concept of post-earthquake urban redevelopment from the point of view

of property relations on urban space. In practice, the importance of post-earthquake urban redevelopment is known as the first phase of mitigation studies for the next possible disasters. However, if the property dimensions are not associated with the components of post-earthquake urban redevelopment, necessary contribution from urban planning will not find their true value. Hence, the case of unregulated development rights on real property (the land and physical structure on it) can be considered as the unique characteristic of the Marmara Earthquake for the world experience.

The substantial role of property relations in the process of post-earthquake urban redevelopment has required to investigate concept of property in a more comprehensive framework. The reason of this is the necessity of placing 'property' in a more substantial context in earthquake studies. Such an analogy provided to examine the outcomes of the Marmara Earthquake with more critical point of view. Therefore in the second chapter general framework of property concept and its components will be inquired with its both practical and theoretical context. Definitions on property terminology will be issued and types of property will be summarized. By doing so that, it is noticed the comprehension of property represents a dual meaning as **'property as a thing'** and **'property as a right'**. Outcomes of the Marmara Earthquake affecting this semiological context of the property. It can be asserted that, since the emergence of risk concerns on real property, the land and physical structure on it, both the **'thing'** and **'right'** characteristics of property are subject to a reassessment. Therefore, today's **absolute** characteristic of property as a 'thing' can be reconsidered with more **relative** manner. It can be claimed that, such a change on property understanding would be utilized to define and develop necessary legal instruments, such as "transforming and transferring of development rights".

In addition, an analysis of practical dimension of urban property system in the Turkish case have contributed to this thesis a proper understanding about the reasons of today's vulnerability of existing Turkish urban fabric to the disasters. It can be claimed that, designation of six hundred years prevailing State land system-*miri*

arazi rejimi- to private disposition via enormous amount of legitimization in legal system and its overlapping with the phenomenon of rapid urbanization, have produced together the existing intricate conditions of urban areas. An investigation on the development of legal documents during the institutionalization process of Turkish urban planning revealed that, Turkish urban planning and its initial land readjustment instrument, which configures the roots of today's well known Article 18 implementation in Development Law, have been institutionalized together with respect to fire precaution concerns in urban areas. In other words, urban planning in Turkey and its property readjustment system have been developed with a manner of mutual determiners of each other on the basis of disaster concerns.

In essence, this thesis is questioning the sufficiency of existing property readjustment and plan implementation instruments in Turkish urban planning. From that perspective, the Marmara Earthquake urban redevelopment process is pointing that, only **land** oriented property readjustment experience is not enough to sustain anymore. Lack of further instruments which are capable to carry out property readjustment on the built-up areas, rather than single land re-arrangements, engendered implementation problem of development plans for damaged urban areas after the earthquake.

The third chapter will cover the basic post-earthquake urban redevelopment issues. Since earthquakes became more influential and destructive in existing urban systems, it is observed that development of post-earthquake urban redevelopments is in a spectrum, from total physical redevelopment via state initiatives, towards comprehensive development with market instruments. From this point of view, assessments of Kriemer (1990) on evaluation of the World Bank experiences is quite important and providing a proper understanding as well as for Turkish Republic and the World Bank collaborated implementations after the Marmara Earthquake. She implies that, in addition to the importance of organizational and institutional enhancements, carefully understanding of legal frameworks of property relations and their problems in related countries have become one of the most accentuated issue in post-earthquake urban redevelopments. It is evidence that, this situation is

the result of urbanization conditions in the 20th century: Rather than rural areas, urbanized areas have become the subject to risk of earthquake hazards.

The fourth chapter will elaborate the urban redevelopment process after the Marmara Earthquake. This thesis has inquired the related legislative issues formerly, then, expressed the redevelopment process in comparison of their defined frameworks in Disaster Law Entry No:7269 and Development Low Entry No: 3194. Such a method has provided the opportunity to assess the capacities of these legal frameworks. In addition, it helped to the study to explore the necessary amendment and reinforcement contents in legal, institutional and professional structure of urban planning.

The fifth chapter will scrutinize post-earthquake urban redevelopment process in damaged urban areas as in the case of Adapazarı in order to examine the problem of reduced development rights in the process of post-earthquake urban redevelopment. It will measure the determining role of property and development rights during the redevelopment of damaged urban areas. Çark Street zone in the central district of Adapazarı is selected as the sample area where the conditions of transformation and un-transformation conditions are both observed. Here, the study has investigated the effects of reduced development rights on real property (land and physical structure on it) in the evolution process of urban space in Adapazarı. It is noticed that, in order to transform the existing building pattern of City of Adapazrı to the building regulation in development plan prepared after the earthquake, it is necessary to reduce around 14 000 dwelling units from existing stock. According to the issued construction and repairing license statistical data of municipality if the damaged housing stock in proportion of 84% cannot be repaired due to the property problems in assembling of flat owners, it is necessary to consider the property issues in more comprehensive framework**.** A fragmented and intensified property pattern in urban areas through the apartment type of building process has revealed its deficit that is not to be compensated easily. Therefore, transferring and transforming of development rights on those property pattern and utilization of them as differ from

only building option is the most necessary point to be elaborated in Turkish Urban planning from now on.

As a conclusive remark, this thesis will evaluate the determiner characteristics of property relations and problems on urban land as the main feature of the whole Marmara Earthquake redevelopment process and elaborate it as the necessary forthcoming concern for earthquake mitigation and urban rehabilitation in Turkey.

CHAPTER 2

CONCEPT OF PROPERTY IN URBAN PLANNING

2.1 Introduction

Production of urban land for new development and their preparation for the construction process are the main characteristic of ongoing property regulation experience in Turkish urban planning. However, post-earthquake urban redevelopment process has shown the necessity of reproduction of urban land. Eventually, such a problem is leading urban planners to cope with existing robust property relations and problems in urban space. This thesis claims that, if there is an underestimation of property relations and their features not handled formerly, many efforts for post-earthquake urban redevelopment and rehabilitation works in urban areas will inevitably fail as well. Hence, one of the crucial necessities to be understood at first is, how such a vulnerable built-up urban space has emerged through which property system. Therefore, this chapter will lay out conspicuous milestones of development process of urban property institution, its place and the way utilization in Turkish urban planning.

Urban planning reveals and introduces many conditions on property relations and produces economic or legislative interests in favor of many parties in society. Since 1999 Marmara Earthquake emerged a substantive new agenda for Turkish urban planning practice, that is, to cope with the robust property structure which had been previously established; it is inevitable for planners to figure out new decisions, arrangements and process for the built-up urban fabric which consists of many '*ownership intensities'*. Therefore, firstly the theoretical and real aspects of property rights in built-up urban fabric should be regarded.

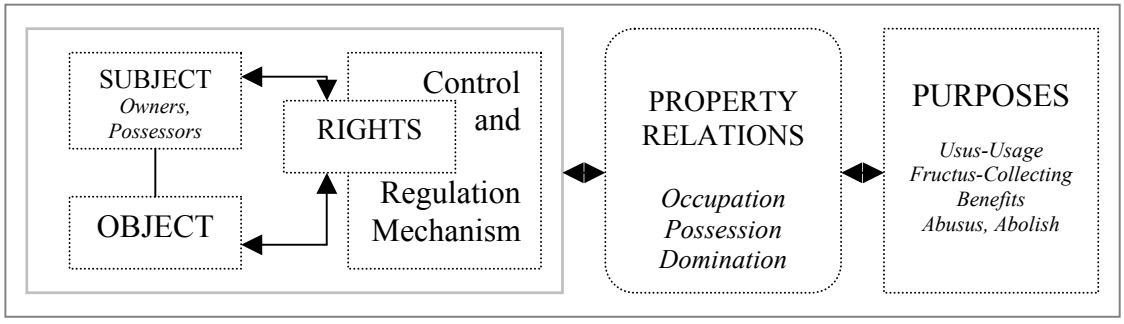
2.2 System of Property and Property Rights

"Property is nothing else than the application of man's individuality to external things or the realization and manifestation man's individuality in the material world" (Ely,1971;537). Ely's definition indicates the relationship between the man and the thing which is hold through the right to control it.

Günay, (1999:51) argues that, a system of property relations, as generalized in Figure 3.1, should consider the 'subjects'(owners or possessors), the objects (things and/or goods), the 'rights' which provide their interrelation, 'the control and regulation mechanism' of local and central state, and lastly the 'property relations' originating from occupation, possession and domination (*occupation, possession, dominium*) over the things, for the purposes of *usus, fructus, abusus"*. Moreover, Tekeli (1992) generalizes the four components of property system with its principles as follows;

- Acquisition of property
- Transferring of property
- Rights and duties on property
- Sanction if there is misuse of property

Figure 2.1: Property System and its Components
Derived from Günay(1999)



Turkish Civil Law (No:4721, year 2001) defines the property right with all its scope and provides its possessors the ownership and enjoyment of supplementary parts, natural products and annexes as well. In general, to hold something provides who possess it the rights of "Usus"(usage), "fructus" (benefits of gains) and "Abusus"(disposition). Hence, property right determines the relationship between the thing and the person, and it is considered as a Real Right (*Ayni hak*) that can be asserted to the third person. From this point of view, **Real right** is a direct relation between the individuals and things without any mediation, and the characteristic of real right is its publicity (Sönmez,1998;173). Hence**, property right** differs from the personal rights and it is constituted in terms of a contract or similar instruments which can only be put forward only to the related person or bodies.

Table 2.1: Property Rights

PROPERTY RIGHTS
• Usage Right • Possession Right • Occupation Right • Domination Right • Right of Exclusion the Others • Development Right • Disposition Right • Mortgaging and Selling Right • Leasing Right • Transferring Right

2.3 Limitations on Property Right

According to Turkish Civil Law (No:4721, year 2001), "property right can be limited in jurisprudence (*hukuk*)-rather than codes of law (*yasa*) and in favour of public good. Establishment, prevention and development of social order and provision of individual interests are succeeded via public good". Keskinok (2001:18) argues the consideration of private property right as not an **absolute right**, but, a

relative right which conveys duty and responsibilities to its owners in the societies in which the concept of public good is developed. He also claims that although property right is not defined as unlimited and absolute right in Turkish Constitution, implementation is totally different from the definitions.

2.4 Modes of Property

2.4.1 Thing or Right -Possession or Ownership

Günay (1999) points out the disputable understanding of property and makes a distinction between, *property as a thing* and *property as a right*. He also emphasizes critical relationship of property with the planning and design issues. "…Hence when property is referred, it should be understood as a right *(mülkiyet*). Otherwise it shall not be used to mean the more restricted notion of things, objects, goods, lands, etc., (*Mülk or Eşya*)" Günay (1999:32).

Umur (1990) and Macpherson (1990) depict the historical change of property understanding from *thing* to *right*. Here, huge effective determination of production relations on property is observed. Until the capitalist market economy, property kept the characteristic of ownership **right** of the thing. With the greatest discrimination of land from its past feudal bounds, which means, "..land became more absolute and parcels of land became more freely marketable commodities" (Macpherson,1990;128); property has been remarked as a **thing**.

The basic distinction between ***ownership*** and ***possession*** is situated on the way of control of property. The former, ownership, (*dominium or proprieatas*) which defines **complete control** on physical objects, the later, possession (*possessio*), defines **factual control** over an object. As a result, 'ownership' might be defined as the right to possess, to enjoy, to use beneficially, and to alienate (transfer) the property in a manner consistent with law. 'Possession, on the other hand, denotes occupancy and supervision and is *prima facie evidence* (valid evidence unless

otherwise proved) of ownership. A possessor enjoys all the rights of ownership unless evidence exists that someone else is the true owner (Günay,1999;34-35).

2.4.2 Real Property, Real Estate, Freehold and Leasehold

The framework of property right in codified Roman Law and in Common Law is different. As in the Roman Law, property is a 'real right' originating from the domination of the owner on an immovable and tangible thing. "Societies practicing the principles of the Roman Law, real property came to be applied legally to 'rights or interests' in land. However in the Common Law countries, since the middle ages, the tenant or the owner was entitled to an estate in land rather than the land itself "(Neolson and Aschman,1957:58). An **estate** is a right in land that is less than full property, but a great deal more than possession. The British practice further classified the estate as '*freehold' and 'leasehold*. The former, has an indefinite, the latter a definite duration. While the leasehold estates were related to *tenancies*, freehold estates in time gained perpetuity and became "the nearest thing to full ownership of land found in Common Law" (Günay, 1999).

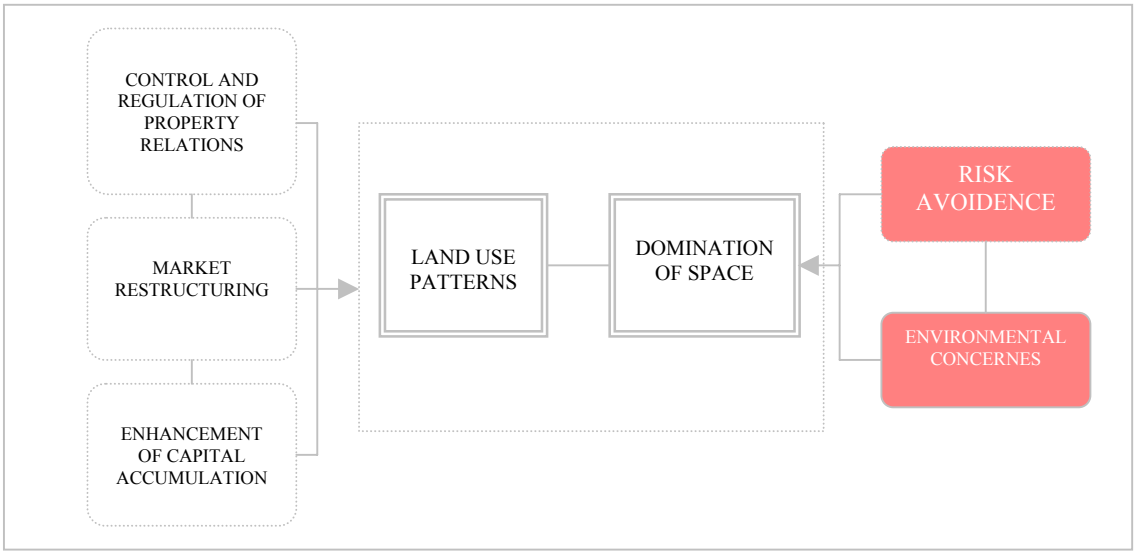
2.5 Changing Modes of Ownership-Risk Ownership

Macpherson (1990;131) points out the occurrence change in the last decades where property is again being seen as a right to a **revenue**. He claims that this is the result of corporate property understanding, where the individuals in the corporations no longer care about the thing, but the revenue it produces. Joint ownership of things that is recognized in the Roman Law under the title of *condominium,* which means domination by more than one person on things, which is called in English Low 'co-ownership' having two kinds, namely 'joint ownership' and 'ownership in common' (Macpherson 1990:131). His claim fits a bit to the Turkish case where predominance of shared ownership and flat ownership are established and configured a *catastrophic 'ownership intensities'*.

Risk mitigation and rehabilitation efforts in urban fabric will lead property understanding to in favor of partnerships and collective corporate property. **It can be asserted that, risk avoidance will take place the main interest of property holders and risk sharing and transferring issues will become overwhelming concerns in urban planning.** Therefore, the more revenue from the property requires the more risk sharing on the property, and that leads property owners- as the result of being *risk owner*- to the participations under the responsibilities of corporate ownership.

Nevertheless, property relations in the process of post-earthquake urban redevelopment will re-shape the built-up urban space. As shown in Figure 3.2., inputs and criteria of urban planning in the process can be rearranged through the inclusion of risk avoidance with environmental concerns. And, property owners will be again main determiner actors, but they are now risk owners as well.

Figure 2.2: Framework of Urban Planning with its Inputs



2.6 Context of Real Property

Real property (land and physical structure on it) consists of inseparable supplementary parts- *mütemmim cüz*, complimentary additions or details-t*eferruat* and natural benefits of property. According to Turkish Civil Law, he who owns a real property, owns its complementary parts as well. However, supplementary parts cannot be considered as unique without the main property and can be shown in title registration. Complementary additions can only be movable things and subject to independent domination, when the opposite is not clarified.

2.6 Types of Ownerships on Real Property

Corporate Property-*Müşterek Mülkiye-Paylı Mülkiyet*

According to the Civil Law, *cooperate ownership* consists of more than one domination right in diverted proportions. Shareowners are considered and treated in accordance to their share proportions like, 3/18, 4/12 etc. Transferring of share is subject to the pre-emption right of other cooperates-joint owners. **That means, if one shareholder would like to sell his share to the third person, other shareowners could assert they have priority to acquire**. Moreover, *corporate ownership* requires *corporate management* of real property; unless the opposites have not been defined in the contract between the joint-owners.

Participatory Ownership-*İştirak Mülkiyet-Elbirliği Mülkiyet*

In accordance with Civil Law, *participatory ownership* is established in respect to the previous relationship among participants and they have total ownership rather than shareholding on real property. Hence, any issue on real property is subject to unanimity and no individual domination right exists. Emergence of participatory ownership can be on a contract or as an outcome of legal process.

Flat Ownership

Flat ownership is one of the conspicuous types of Turkish property institution. Independent types of usage units in a completed structure; floor, flat, office, shop, storeroom and etc. are established according to proportional relationship with land share under the scope of flat ownership. Flat ownership is beyond only a regulation for ownership pattern, it sets out a context with a spatial configuration in a self-property management organization.

There are some compulsory procedures for establishing flat ownership as follows;

- Any independent part, if there is no connotation with land share, could not be subject to flat ownership.
- Since flat ownership is the outcome of land share, any appropriation cannot change in land share portion and value.
- Any kind of right on flat ownership is valid for the land share as well.
- One flat owner could not demand the abolishment of flat ownership.
- Management of property is determined in accordance with management plan and it is executed through the flat owners and covers them.

According to Flat Ownership Law (Entry No:634, Year: 1965), termination of flat ownership is subject to these three conditions as follows:

- Unanimity of flat owners
- **Destruction of main property** (that is the case after the earthquake)
- Expropriation

Balamir (1975) lays out some shortcomings of flat ownership and criticizes the underestimation of 'ownership fragmentation on unit space' during the implementation. He summarizes the negative sides of flat ownership as follows:

- Independent flat patterns cannot be executed and treated like lands and this leads such problems as;

  -New spatial patterns cannot be produced

-Property renovation and rehabilitation cannot be practiced in case of economic opportunities.

-Ownership fragmentation in a real property leads to obstacles for decision mechanism

- High mobilization and exchange of property leads to deterioration.
- Inappropriate collaboration of different social backgrounds
- Inappropriate urban development
- Cost increase in urban services

2.7 Development of Property System in Turkey

This thesis is pointing out the underestimation of property issues and its institutionalization in the development process of Turkish urban planning. Although both development process of property system and urban planning are quite synchronized and parallel, property concerns and planning efforts do not coincide at implementation level. Therefore, there is an inability for defining new instruments for the solution of intricate urban problems; which is the result of discordance between the planning decisions and urban property pattern.

Characteristics of Turkish urban property system are based on public and private property tensions between the Ottoman and Republican periods. As summarized in Table 3.3. legislation efforts for the development of property system in Turkey within the Republican era mostly concentrate on transaction problems of the Ottoman State-Miri land to the individuals' private ownership and interests. That is quite a huge phenomenon if it is considered that, **centuries of prevailing practicing of State ownership has suddenly and desperately become the subject of private ownership.** Therefore, this phenomenon configures the robust structure of Turkish urban property system and produced **the existing urban fabric which is vulnerable to disasters.**

Table 2.2: Legal Regulations in Republican Period for abolishment of Ottoman Property System , Derived From: Köktürk (2003)

<table>
<tr><th>LEGAL REGULATIONS</th><th>CONTENT</th></tr>
<tr><td>658 –Cadastre Law
02 May 1925</td><td>• Establishing an ownership information system for real properties
• Determination of economic conditions of real properties in respect to taxations
• Efforts to succeed an equitable estate tax regulation based on land value</td></tr>
<tr><td>Entry No: 810
19 April 1926</td><td>Enabling
• selling of private lands in terms of ordinary-deed document
• exchange of unregistered and inappropriate real properties and domination rights
• registering of real properties which are untitled under the name of their possessors
• reconciliation and legitimization of existing conditions of real property and its legal situations</td></tr>
<tr><td>Entry No: 743-Civil Law

Enacting Date
17 February 1926

Execution Date
04 April 1926</td><td>• Designation of absolute private property right to the possessors of land
• Appropriation of real property as subject to purchasing
• Emergence of drastic land relations between the big land owners and small peasant groups
<table>
<tr><th>SWISS CIVIL LAW</th><th>TURKISH CIVIL LAW</th></tr>
<tr><td>• Proceeds on registered real properties
• Flexible property system which is based on local conditions and regulations
• Time Lapse- Zamanaşımı, is rarely applied for legitimization of unregistered few amount of real properties</td><td>• Proceeds on unregistered properties
• Unity structure in property system
• Time Lapse- Zamanaşımı is one of the major and desperately applied way of registering many amount of real properties.</td></tr>
</table></td></tr>
<tr><td>Entry No: 837
12 May 1926</td><td>• Abolishment of Act of Land-Arazi Kanunnamesi-
• Invalidation of Public-Miri Land regulations</td></tr>
<tr><td>Entry No: 864
04 October 1926</td><td>• Abolishment of Mecelle-Ottoman Civil Law
• Abolishment of 810
• Validity consideration of acquired rights until the Civil Law and registering them to the title registers.</td></tr>
<tr><td>Entry No: 501
11 May 1929</td><td>Enabling
• property acquisition in terms of Time Lap-zamanaşımı
• designation of title document-senet without any required court decision</td></tr>
<tr><td>Entry No: 1515
09 June 1929</td><td>• title registering regulations in the name of the possessor for 10-15 year period</td></tr>
<tr><td>Entry No: 5519
31 January 1950</td><td>• obligatory judge decisions for title registrations</td></tr>
<tr><td>Entry No: 5602-6235
17 March 1954</td><td>• obligatory expert report for possessionship registering for the lands until the 20 hac.
• obligatory at least 10 years tax registers for the lands more then 20 ha.</td></tr>
</table>

2.8 Basic Problems in the Development Process of Urban Property System in Turkey

Time Lapse-*Zamanaşımı* and Posessionship-*Zilyetlik*

There is one point to be underlined that, insufficient way of property entitling and registration system in the Ottoman period has affected the institutionalization of property system in the Republican Era in negative manner; and so on in Turkish urbanization. Esmer (1983: 458) argues that as a seldom applied method in Swiss Civil Law for unregistered or underestimated properties, *Zamanaşımı*-concept of time lapse-, has been intensively used in Turkish practice. Although the concept of time lapse has always been placed in the focus of debates and disputes, it has been used wide spread for the conditions which Turkish Civil Law could not respond to the unregistered and untitled property rights. In Civil Law (Year 2001; Article No: 712,713) the conditions and rules for gaining and obtaining the property in respect to certain time periods are determined. These are classified as **ordinary** and **extraordinary time lapse**.

However, acquisition of the untitled properties in terms of time lapse engendered another well-known problem in Turkish property system, which is called *Zilyetlik*, Posssesionship: acquisition and appropriation of land in terms of **asserting right on land**. Nevertheless, *Zilyetlik* provides the wealth for individuals via public operations and procedures. On the other hand, Constitutional Court has considered the way of acquisition the land through possesionship-*zilyetlik*, as one of the constitutional principles as being a State of jurisprudence. According to the Court Decision (E.1966/19, K.1968/25), properties that had been acquired by establishment of possession right, **could be treated as the statue of ownership**. However, this decision of Constitutional Court has been criticized due to its legitimization in discharge of public lands without any consideration for their land use or planning regulation for them (Köktürk,2003).

Problem of Title Registration

As the increasing of property problems in an irregular and chaotic property system, which are the outcomes of destructive practicing the time lapse and possessionship, it has been attempted to control and regulate the property appropriation in terms of provision **title deeds**. However, abolishment of unregistered land ownership could not be solved in terms of the legislations which are shown in Table 3.4. Yavuz (1980: 77) argues that the process and adventure of Title Registration legislation cannot be observed and witnessed for any other civil legal regulation.

Table 2.3: Legal Regulations for the Problem of Title Registrations,
Derived from: Köktürk (2003)

LEGAL ADJUSTMENTS	CONTENT
Entry No: 6335 Year: 09.03.1954 • Re-regulation Article:13/D of Law 5602	1. Aimed to prevent large amounts of Public Treasury lands from inappropriate individual designations 2. Laid down tax registration stipulations for the individuals who claims possession right without any title registrations • Until 20 000m2, obligatory expert confirmation • Over 20 000m2,at least 10 years tax registration
Constitution Court Decision E. 1963/175, K. 1963/114 Year:17.05.1963	• Assessment as incongruity of arrangements in Article 13 of Law 5602 to Constitution's immunity principle on the essence of property
Entry No: 396 New Title Registration Law	• Aimed to solve and abolish the problems, deficiencies, shortcomings and handicaps of all legal regulations in order to obtain an appropriate title registrations
Senate's veto	• President's consideration of pre-republic docoments as invalid for ongoing title registrations, has been executed as justification of Senate's veto
Entry No:509 ,Year:17.07.1964	
Annulation of Law 509 (16.11.1965, E. 1964/38, K. 1965/59).	• Procedural annulment due to inestablishment of necessary majority through enacting in Senate
Title Registration Law -*Tapulama Kanunu* Entry No:766 sayılı; Year: 28.06.1966, Official Newspaper: 12.07.1966-12346	

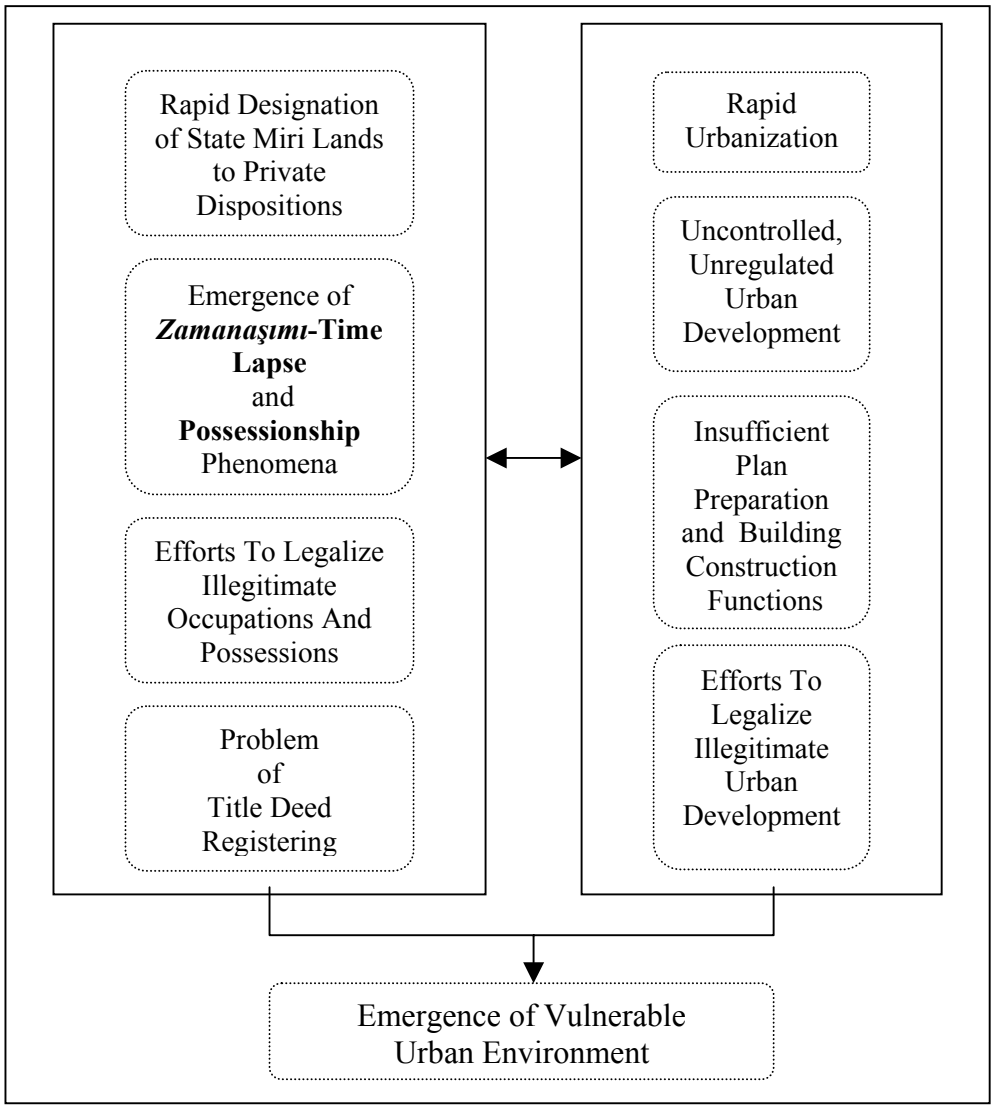
In those aspects, as one of the sound developments in Turkish property institution is enacting the Title Registration Law (Entry no: 5602)-*Tapulama Kanunu*- in 1950 which provided different ways for land acquisition and appropriation. However, it discerns from Civil Law and defines some tolerances which can be enumerated as follows,

1. Any restriction for the objections of title registration operations has been abounded.
2. Unregistered selling operations of titled properties has been considered as valid.

Unfortunately, its extremely tolerant definitions has been abused in time. (Esmer 1983: 1008-1048).

This thesis is pointing that emergence of a vulnerable urban fabric is not only an outcome of rapid urbanization, uncontrolled urban development, insufficient plan preparation and building functions, and finally, legitimization efforts of illegitimate urban developments. Beyond these facts, which were elaborated after the earthquake as main reasons of the big catastrophe, the characteristics of urban property system in Turkey is the **other factor**, however, the most underestimated and weakness part of Turkish urban planning.

Figure 2.3. The Place of Property and Planning Problems in the Emerging of Vulnerable Urban Environment



2.9 Methods for Practicing in Urban Development Implementations

This thesis is accentuating that the Marmara Earthquake is revealing the underestimation of property relations and its improper institutionalization in the development process of urban planning in Turkey. The interesting point is here that, if it is remembered the reasons and driving forces of Turkish urban planning, which are drawn in the appendix part of this study, and property readjustment system have already developed for provision the urban areas more durable to fires, such as the case of İstanbul. In other words, disaster concerns are the main input of both Turkish urban planning and its property readjustment system. Although, disaster concerns are the main input of Turkish urban planning, post-earthquake redevelopment of damaged urban areas could not be succeeded with the existing implementation instruments. As mentioned before, the habit of them is only production of urban land prepared to construction with new development rights. However, transformation of the urban areas cannot be managed and existing development rights are not subject to transferring and transforming. The remain of this chapter will outline these development plan implementation methods.

Assigning of the urban land to the designated usages in development plan are generally succeeded through the operations as follows;

- Expropriation
- Subdivision and Combination
- Site and Plot Adjustments

2.9.1 Expropriation

Gürler (1995:8) defines the operation of expropriation as "… Appropriation and acquisition of private properties and sources by related public institutions or organizations in the name of designated public usages for public good". However, the way of operating the expropriation is criticized from different points of view.

Köktürk (1997:15), layouts these concerns and defects of expropriation in the practicing of development plan as follows;

1. Expropriation abolishes the essence of property right and cannot provide the individual to acquire a similar property in the related area and that leads individuals to propertylessness .
2. Expropriation as a tool for just acquisition of properties which are subject to public service areas, does not aim to produce convenient and regular plots for construction.
3. In respect to development regulations, the residual parts of plots which are not subject to expropriation, cannot be utilized after expropriation.
4. Plots which are designated to public institutional usages and subject to expropriation cannot be acquired due to insufficient amount of budget of related institutions. Hence, being empty of un-expropriated plots leads to environmental and urban deficits.
5. Expropriation is long, expensive and onerous for public institutions and produces inequalities and inequity among individuals (Ersoy,2000:78, Köktürk 1997:15).

2.9.2 Subdivision and Combination Works-*İfraz ve Tevhid*

Article 15 and 16 in Development Law of 3194 and Article 21 in the supplementary regulation, defines how to produce convenient plots in respect to development plan. However, utilization of this method requires the demands of property owners or a court decision (Article 32 in Title Law). On the other hand, the way of subdivision and combination implementation is also criticized in the points as follows;

- Breaking the order and unity of the development plans through partial implementations.
- Augmentation of social and technical infrastructure costs in readjustment area.

In addition, subdivision and combination operations are assumed illegal if the arrangement of building licenses is executed in accordance with this method without the ratification of parcellation plans by the *Municipality Execution Board*

(Ersoy,2000:80, TMMOB HKMO Panel Speeches, 1991:12). **As will be seen in Chapter 4, the notification on date of 31 January 2000, forbids this method in the redevelopment process for damaged urban areas.** Eventually, only Article 18 implementation has been foreseen as valid for the implementation of development plans.

2.9.3 Land Readjustment

Land readjustment operation can be defined as the works and operations for transforming the sites and lands which are inconvenient with their existing conditions for construction or designation to determined usage in development plan (Gürler, 1983:251).

The points and matters related with ownership pattern readjustments in 3194 Development Law are drawn in Article 18. Ersoy (2000) argues that existence of that regulation is the outcome of two general problems during the implementation of development plans. The first is, as practical, not overlapping with of existing built-up area and ownership pattern with newly rearranged plots in accordance with development plan. The second is, as legislative and economic, in-provision of sufficient amount of roads, squares, parks, playgrounds, car parks, green areas, religious centre, police station etc. for the needs of rearrangement area. Hence, in a size up to 35% of the plots which are subject to readjustment are deducted under the name of DOP-PRS *(Düzenleme Ortaklık Payı-Public Readjustment Share*). Through the land readjustment operation, municipalities have the opportunity to acquire roads, squares, parks, car parks, green areas, playgrounds etc. without any payment in favor of public.

Gürler (1995:99) lays out the benefits of land readjustment as follows;

- Adequate in utilization of social justice principle in the way of equal amount of deduction from properties
- Having the opportunity to implement on wide-expanded areas

- Minimization in costs and constraints of infrastructure services
- Enabling the opportunity to produce sufficient amount of urban land in order to regulate the property market and preventing shortages in supply-demand mechanism.

The crucial point that should not be overlooked for readjustment operations is, its characteristic of being an administrative operation in essence. Hence during its official declaration, it is subject to rearrangements and amendments by the municipality in accordance with the objections. However, after the registration of readjustment operation in Title Office, **it transforms to a legislative operation**. Nevertheless, any readjustment is now subject to discretions or court decision and those demands are controlled via judicial procedure (Ersoy, 2000:81, Beyaz,1995:4).

2.11 Preconditions for Implementation of Article 18

According to the Development Law regulations, DOP-PRS is only subject to the requirements of readjustment area and should not be utilized for land production in favor of municipalities. On the other hand, implementation of readjustment operation requires fulfilling the pre-conditions which are determined legally in Development Law. These preconditions are;

- Development plan should be drawn and ratified in advance.
- Carrying out a site inquiry in existing built-up urban fabric whether it is convenient to development plan and legislative regulations
- Determination of registered and unregistered properties in readjustment areas

2.12 Conditions that are not or Nearly Subject to DOP-PRS

According to Development Law-3194, the conditions where DOP-PRS is not subject to operation can be enumerated as follows;

1. If existence of any previous deduction under the name of DOP-PRS, Article 18 will not be proceed.

2. If existence of a structure which is subject to be conserved on the related plot and its situation does not enable the DOP-PRS operation; Law of Expropriation will be practiced through the demand of property owner or related person.
3. If the existing layout is convenient and does not require any adjustment in accordance with the plan regulation, DOP-PRS can be acquired by fiscal payment-*bedel karşılığı*

2.13 Sufficiency of DOP-PRS

The proportion of DOP-PRS is the everlasting disputable issue of readjustment operations and criticized as being insufficient. Arguments for this concern generally concentrate on 35% ratio does not succeed the minimum public equipment standards of urban areas which are mentioned in existing legal regulations.

2.14 Equality of DOP-PRS Operation

The essence of Article 18 implementation is acquisition of DOP-PRS rate in the same amount from each property owner. However, DOP-PRS rate diverges for the implementation of Amendment Plans-*İmar Islah Planı* via the operations in Law of 2981 for unauthorized developments. During the implementations of those Amendment Plans, municipalities or province administrations are entitled to determine the rate of DOP-PRS in the process. However, this is the most destructive implementation way of DOP-PRS either producing a chaotic urban environment, which is dense and lacks of required social and technical infrastructure, or deteriorates the process of adequate city development. Moreover, Ersoy (2000) argues that legitimization of illegal developments produces the conflicts in social system and social equity is harmed in a way that not easy to be cured.

2.15 Designation of Readjustment Area

Realization and meeting the aims in readjustment operations closely depend on to adequate designation of readjustment operation area. According to Article 5 of Implementation Regulation in Development Law, readjustment operation areas should be determined not smaller than development zone.

The crucial point in the designation of readjustment operation areas is the provision of it should be as wide as possible in accordance with development plan. Such designation has the opportunities for both municipal administrations and individual property owners. Ersoy (2000) lays out those opportunities as follows;

- Municipal administration will overcome the obscures and unavoidable expropriations due to insufficient rate of DOP-PRS which do not let the provision of public equipments in minimum standards.
- Property owners will pay off less amount of deduction as DOP-PRS for the public equipment which they benefit from and enjoy.

In summary, considerable points in the designation of readjustment areas can be listed as follows;

1. Designation of Readjustment Area should be subject to, as much as possible, regional-zone-precinct; rather then narrow scale combination of a few development sites
2. DOP-PRS has to be appropriated near to its highest level 35% to minimize unavoidable expropriation
3. Agricultural land and the sites which are not subject to development in near future should be excluded from readjustment operation area (Ersoy,2000:87, TMMOB HKMO, 1987:269).

2.16 Designation of Readjustment Boundary

Designation of readjustment area boundary is as important as determination of the area. The crucial point here is, if the boundaries are not designated and not

determined in development plan; ratification boundary of plan is assumed to be as the readjustment boundary. Otherwise, the decision of executive board of municipality is executed.

2.17 Constitution and Distribution of Development Plots

Principles in constitution and distribution of d*evelopment plots* after the readjustment operations are enumerated in Article-10 Implementation Regulation of Development Law. These are as follows;

- It is expected to distribute newly emerged plots to their original owners, if there is no technical obstacle.
- Any loss in development right should be prevented in the case of distribution of the plots.
- Newly emerged plot can only be moved to the places which has the same development and building conditions.

2.18 Value Differentiation Between Newly Emerged Development Plots

Development plans inevitably reveal differentiated market values for the plots even though they previously had same/similar characteristics. It is possible to foresee different building regulations in the same development area. Moreover, location of plots would be differentiated in relation to the public equipment. Hence, market value of newly emerged plots would not be the same for all plots. That is the most disputable outcome of development operations that requires more attention. Otherwise, in the case of a huge differentiation in new conditions, all operation would be annulled by court decision.

2.19 Readjustments Operations for Shared Ownerships

In accordance with the Civil Law, transferring of shared ownerships to independent properties is not possible through the readjustment operations. After the enacting of Development Law 3194, the notification of General Directory of Title Office , dated 07.11.1985, no: 1477) has declared that;

- All real and individual rights, easements-*irtifak hakkı*- are conveyed as the same through the readjustment operation.
- If the plot has a cooperate-joint ownership, it has to be maintained as the same framework in newly emerged ownership plot
- If readjustment is operated in an area full of shared ownerships, shares should be conserved
- Readjustment operation should not be executed to abolish the cooperation.

However, implementation of amendment plans are out of these circumstances. On the other hand such issues present the robust structure of mitigation and urban rehabilitation implementations where shared ownership and other types of fragmented ownerships are widespread in urban areas.

2.20 Conclusion

In essence, this thesis is questioning the sufficiency of existing property readjustment and plan implementation instruments in Turkish urban planning. From this point of view, the case of the Marmara Earthquake urban redevelopment process, which will be elaborated in the fourth chapter, is revealing that, only **land** oriented property readjustment experiences are not enough to proceed anymore. On the other hand, the place of property relations in earthquake studies is becoming more essential. Next chapter will attempt to lay out how property problems and ownership constraints in the built-up urban areas have determined the content and success of post-earthquake urban redevelopments.

CHAPTER 3

CONCEPT OF EARTHQUAKE REDEVELOPMENT

3.1 Designing of Post Earthquake Redevelopment Process

"Disaster", emerges where an extraordinary condition meets with a vulnerability and it causes damages and losses which are not easy to compensate. Inadequate design and construction techniques of buildings, shortcoming of building supervision system, improper usage pattern, deteriorative transmission periods of properties affect the characteristic and scale of damages altogether. On the other hand, works for passing from emergency conditions towards normal daily life, are generally considered as the *period of earthquake redevelopment*, and the content can be listed as follows;

- Renovation and repairing of damaged buildings
- Provision of necessary social services
- Amendments of required legal frameworks to provide new agencies and institutions or strengthening of existing organizations
- Development of necessary financial supporting systems (Coburn, 1984)

Moreover, Kriemer (1990) underlines the importance of the issues which are, mobilization of inner and external resources, rapid definition of urgent requirements and alternatives, proper relationship between the strategies and easy transitions between them as the necessary requirements of post-earthquake redevelopment.

On the other hand, the problem of **relocation of disaster survivors** is the most influential phase of post earthquake urban redevelopment process. The way of

temporary provisions, to a certain extent, is a need; however, such a short run but quite considerable resource expenditures prevents permanent solutions. Hence, in many cases, transformation of temporary solutions to permanent handicaps in redevelopment process is generally observed and this situation has been experienced as well after the Marmara Earthquake. Temporary solutions are also criticized to cause locks between the emergency conditions and redevelopment process. Such approaches engender the sense of alienation among disaster survivors and obstruct adoptation of society to daily life; nevertheless, disaster survivors will feel themselves as being passive in redevelopment process. (Kreimer, 1990).

On the other hand, post-earthquake urban redevelopment process is generally considered as an opportunity to recover the problems of pre-earthquake conditions and it is handled as the commencement of mitigation studies under the scope of preparedness for next disasters. Hence, earthquake redevelopment process consists of not only a narrow reconstruction framework, but, a comprehensive understanding is the essence of the redevelopment process. Although initial and crucial issues are difficult to decide in the emergency conditions, long term objectives and short term requirements are both the subjects of post-earthquake urban redevelopment. Such a comprehension has the opportunity to cover the issues as follows;

- Redevelopment of new building regulations for the provision of a more durable building environment
- Development of various insurance systems
- Provision of more detailed study areas on the topics of for micro-zonings

However, during the post-earthquake redevelopment process, it is possible to encounter many resistances and they might not be easy to define and overcome in crises conditions. Hence, establishment of a proper relationship and integration between the responsible agencies, community organizations, policy and strategy makers, decision makers and media are important for the sustainability of benefits in the redevelopment process (Coburn, 1984).

3.2 Evaluation of Earthquake Redevelopment Experiences in Worldwide and New Trends

The scale of urban redevelopment after the Marmara Earthquke, which is construction of around 43 000 housing units in 27 sites for relocation of disaster survivors takes a sound place in world experience. From this point of view, this thesis handles the general framework of post-earthquake urban redevelopment experiences in worldwide at first, in order to obtain the necessary understanding to make more sufficient assessments on the Marmara Earthquake. Table 2.1. allows a brief comparison of similar problems and characteristics between conspicuous world experiences with the Marmara Earthquake. Since the earthquakes have become more influential and destructive in existing urban systems, dimensions of post earthquake redevelopment have been developed in a spectrum, from total physical redevelopment via state initiatives, towards comprehensive developments with market instruments.

Table 3.1: Comparative Problem Analysis of Marmara Earthquake

<table>
<tr><td rowspan="3">The Marmara Earthquake
Year: 1999
Magnitude: 7,4</td><td rowspan="3">• New urban developments in different locations
• Integration problems between damaged urban areas and new urban developments
• Institutional capacity restructuring
• International program implementations
• Problems of housing stock
• Problems of fragmented ownerships
• Importance of ownership transformation capacities
• Problem of property and ownership transformations and adjustments
• Suburbanization trends
• Inconveniency of inner city plot conditions</td><td>The Tangshan Earthquake
Year: 1976
Intensity:</td></tr>
<tr><td>The Skopje Earthquake
Year: 1963
Intensity: 6,1</td></tr>
<tr><td>The New Mexico Earthquake
Year: 1985
Magnitude: 8,1
The Kobe Earthquake
Year:1995
Magnitude: 7,2</td></tr>
</table>

3.2.1 The Tangshan Earthquake

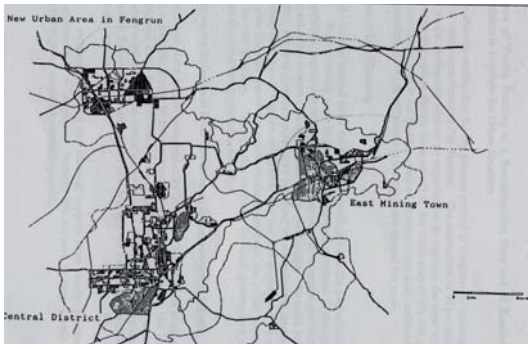
City of Tangshan is an important industrial and agricultural city on a significant place in China's national railway system. In the earthquake, dated 28 July 1976, almost 118 000 people are died. After the earthquake, government of China proceeded the redevelopment process with its almost all agencies and developed a master plan. Chaotic characteristic land use pattern and irregular street layout, have been considered as the problems of post-earthquake urban redevelopment process (Neijia, 1994). That master plan foresaw to develop new settlement areas, industrial areas and building forbidden areas. Moreover, by this plan, it was aimed to reduce the number of population from 0.38 million to 0.25 million. At the end of the 10th anniversary of the earthquake, a new period of construction program was prepared

and redevelopment process became a component of the economic redevelopment plan. In that sense, earthquake redevelopment was utilized as an instrument for substantial changes in economic life of the city through the specialization in mining sector. Within this new development plan, construction facilities accelerated and new infrastructural investments and important public buildings were developed. Weijia (1994, 258) assessed that process as, new developments could not be accomplished due to the **insufficient integration with new urban developments** and he gives the following example;

"…Not all goals in the original and new plans have been accomplished. The plans to move the cement plant out the central city and to increase the city population in the new urban area of Fengrun have still not been achived. Large number of workers living in the new urban area come daily to the central district on factory buses because the public transportation services between Fengrun and the central city are nor sufficient or convenient for travel."

As will be presented with details in Chapter 4**,** such a problem of not having a proper integration between the new settlements and damaged urban areas have been experienced in the Marmara Earthquake urban redevelopment process as well. 27 new settlement areas have been planned after the Marmara Earthquake, however, at a considerable distance far away from the existing urban areas. Hence, a proper urban integration could not be achieved through the process and this leads to problems in all level of daily life.

City of Tangshan before



Plan, after the earthquake: Development areas and renewal of existing city

Figure 3.1: Tangshan Earthquake Redevelopment Plans

Source: Weijia, W., *Reconstruction of the City of Tangshan Twenty Yaers after a Major Earthquke: Planning Achievement and Experience*, 1995

3.2.2 The Skopje Earthquake

The Skopje Earthquake, in 1963, has a substantial place in post-earthquake urban redevelopment experiences with its characteristic of being proceeded in terms of international assistance program. The prepared plan by a group of international experts can be considered as one of the milestone for earthquake redevelopment studies. Through the acquired experiences, an opportunity for new practices and theories have emerged. In addition, after the Skopje Earthquake, renovation of the city center has been handled with an distinct program and many projects have been prepared and implemented by Kenzo Tange, famous Japanese architect.

Kriemer (1990) elaborates the experience of the Skopje Earthquake urban redevelopment implementations and pointed out the importance of those concerns as follows,

- It should not have any differentiation between the necessities and things to be done. Hence, there has to be a proper system for determination the damages and emerged demands.

- Involvement of community groups and non-governmental organizations through the process is a strategic gain. They have a critical place in the process of passing from emergency situation to redevelopment process via determination of necessities that have to be done.
- The place of state in redevelopment process is important, but the way of its involvement is changing. Rather than direct provision of all kinds of requirements, state has to play a role to facilitate the provisions and management (Kriemer, A. 1990)

Although Turkey has experienced many post-earthquake urban redevelopment processes and established a remarkable institutional capacity through the years, these could not go beyond only the relief works. A disaster responsive system that considers the risks and put precautions in active in advance, could not be succeeded properly. From this perspective, especially by the process after the 1992 Erzincan Earthquake, whose content will be laid out in the fallowing of this chapter, Turkey has run into an international framework and proceeding a program with World Bank. As will be mentioned in Chapter 4, an institutional and implementation capacity-increasing aimed project has been carried on under the name of Marmara Emergency Earthquake Reconstruction Project-MEER.

3.2.3 The New-Mexico Earthquake

In the New-Mexico Earthquake, according to official records, around 600 buildings suffered from complete or partial collapses, 2000 buildings had structural damages and total number of fatality was 7000. It is reported that, **around 30% of existing housing stock have been lost and most of the damages occurred in apartments and public buildings**. (Friedman 1986, Smolka and Berz, 1989).

Kriemer (1990), lays out the crucial factors that affected the level of losses after the earthquake and accentuates that, building fabric was inappropriate and vulnerable to the disasters due to being *over-dense, congested and un-rehabilitated.* In addition, low rental price levels and high mobilization in the housing market have prevented

those required reinvestments in time and affected the redevelopment process; unfortunately in negative manner. Although provision of rental aids for almost 20 000 disaster survivor householders, many families returned to their damaged housings due to housing shortage in the city and the risk of being homeless (Kreimer, A., 1990).

Housing Studies

After the New-Mexico Earthquake, urban redevelopment process was carried out by a construction committee, consisting several sub groups under the fiscal aid program of the World Bank. A sous-generis autonomous organization for two years, named RHP *(Renevacion Habitacion Popular*) -Housing Reconstruction Agency- was established with a legal statue for the redevelopment process. Financial supervision for the overall program was provided from Mexican government housing programs (40%), and the remaining was utilized from the World Bank Loans (60%). RHP also had the authority to designate documents for expropriations and determination of ownership right frameworks.

In the first step of the process, a credit program was developed for 40 years via rent stabilization for the householder to make them owner-occupier in a way of condominium developements in around 3000 different sites, with 46 000 properties. In the second step, almost 4000 housing units were repaired via rehabilitation program for amelioration of the building environment.

Mexico-City experience has showed the crucial importance of property relations both in post-earthquake urban redevelopment and mitigation. Factors of over density, problem of ownership intensity and their many externalities have affected the success of redevelopment process. As inquired in Chapter 2, urbanization process in Turkey has been shaped on the essence of many ‘ownership fragmentations’ modes as well. As an outcome of this process, urban environment has been produced with a vulnerable character to the natural and man made disasters. **Hence, transformation**

and transferring of development right practices in the ownership fragmented built-up urban areas are supplementary for world wide institutional capacities.

3.2.4 The Kobe Earthquake

City of Kobe is a harbor city and takes place in Kansai Region where the economic activities are quite intensive in Japan. Having an important place in overseas trade ways and being the most industrialized region in Japan, it will be beneficial to lay out the post-earthquake urban redevelopment process and compare with the Marmara Earthquake.

3.2.4.1 Redevelopment Plan Definition Process After The Earthquake

As formerly known Hanshin Awaji Earthquake, date 17 January 1995, redevelopment practices were directed by a reconstruction unit under the Hyogo Prefecture Administration. In the stage of definition of the redevelopment process, it was initially decided to determine the general characteristics of damages and their reasons. It was comprehended that, especially post earthquake fires were the main effects in those damages. According to the official records- there were 6398 fatalities, 43 700 injured, 450 000 damaged housing unit- 240 332 of them collapsed aftermath, 3,5 million people affected- all presenting the scale of disaster. After the earthquake, special programs and projects were developed for elderly people as being the most affected population from the earthquake; like heath care centers and rehabilitated housing environments.

3.2.4.2 Hanshin Awaji Reconstruction Plan

Redevelopment process after the Kobe Earthquake was handled at first via formerly known *Kobe City Reconstruction Plan*, which consisted of land use development and urban regeneration projects for six regions. As the dual conditions of urban administrations in Japan, that is prefecture administration and city administration structure, it was decided not to put that plan in practice and instead, formerly known

Phoenix Plan-Hanshin Awajii Reconstruction Plan was proceeded for a ten year period, since July 1995.

It can be said that the importance of Phoenix Plan in post-earthquake urban redevelopment studies is its utilization of **process management concerns rather then physical restructuring concentrated urban redevelopment models**.

In terms of the Phoenix Plan, concept of earthquake redevelopment has been handled as determination of visions and strategies for revitalization of urban areas and focused on policy development for **restructuring the life of disaster survivors** by themselves. Security and quality of life concepts were considered and "Creative Reconstruction" approach has been developed through the process. According to the plan documents (2001), four crucial aims were developed. Those are;

1. Recapturing of 21st century welfare level,
2. Provision a new urban society with a richness of a cultural background and proper integration with the world.
3. Provision of a responsive building environment to the natural hazards,
4. Development of diverted multi-central urban areas (Phoenix Plan Report, 2001).

Table 3.2. Context Of Urban Redevelopments in Phoenix Plan

Derived from, 2001 Plan Documents

New Housing Developments	12 500 new housing units, 8500 of them through public agencies * This number has exceeded in 1998 and 81 500 public housing have been provided, in total around 155 000 units have been developed.
Rent Assistance Opportunities	5 year period rent assistance program for lower incomes
Property Adjustment	Two different kinds of property adjustment modes have been proceeded. Cooperate ownership model has been aimed to disseminated. Those are; • land ownership • space ownership (similar to flat ownership example)
Types Of Developed Projects	• Construction of cooperative houses with consist of retail units. • Construction of traditional adjacent building pattern housing • Rental housing in condominium characteristics

3.2.4.3 Encountered Problems in the Implementation Process

According to Miyamoto (1995) and Eadie (1996), problems with the reconstruction plan for the Hanshin Awaji Area can be listed as follows;

- City and regional administrative systems in Japan are proceeded under a distinct system. Hence, this duality have affected not only for provision of the emergency period requirements, but also whole redevelopment period. Although the process have been carried out via the plan, prepared by Hyogo Prefecture Administration, general responsibility framework of city administration have not been clarified properly.
- During the implementation process, an effective and expected level public private partnership system could not be utilized.
- Preparation of adequate contract and bidding documents have taken long time.

- **An effective property and ownership transformation through the land adjustment operations could not be established.**
- Stability and stagnation period of Japanese national economy could not activate the process
- A subvention system for supporting and conserving the municipality budget could not be activated.
- Suburbanization trend of real estate market have affected construction of new settlements outside the existing city. Moreover, inconveniency of inner city plot sizes for the contractors have accelerated that process.
- Inexistency of a proper insurance system have affected the acquisition of the necessary financial supports through the process.

3.3 The Characteristics of Post Earthquake Redevelopment Projects, Evaluation of World Bank Financed Programs

The historical development of post-earthquake urban redevelopment projects can be categorized as passing from the conventional methods, that is reconstruction of housing areas, to the period of defining new policies and programs to overcome the institutional weakness of related country. In those concerns, it will be beneficial to consider the World Bank's experiences as well.

3.3.1 Redevelopment Studies of the World Bank

World Bank was established as an institution especially for the reconstruction of Europe after the World War II. On the other hand, many projects and programs on post-earthquake urban redevelopment and mitigation took a considerable place in World Bank studies after 1970s. The developed criteria for its assistance program concentrates on whether the outcomes of earthquake has influential effect on related country's national economy and budget structure. Size of affected area, socio-economic development level, institutional and administrative response capacity of responsible agencies in the country, accessibility level of acquiring human and

financial resources are all the considerations and inputs of redevelopment programs which have been elaborated experience of the Bank.

According to Kriemer (1990), general encountered problems while setting redevelopment programs in the countries and the important issues in the process can be tabled as follows;

Table 3.3 General Problems and Important Issues of Earthquake Redevelopment Process
Derived From: Kriemer, 1990, *Lessons Learned From Emergency Lending*, World Bank Evaluation Report, Washington

Problems	Important Issues
• Weakening in administrative structure after the earthquake • Lack of coordination between the emergency period and redevelopment process • Inadequate disaster funds • Inappropriate damage determination for redevelopment process • Economic structure deteriorations in the country • Loss of employment • Emergence of migration movements • Inexistency of qualified human resources	• Good comprehension of implementation and activity rank in the redevelopment process • Simple agreements and relations between the agencies. • Existing agencies should be utilized in most effective level, establishment of new institution should be avoided. • Project coordination units should be effective in decision process and would be under the organization of most influential executing unit as possible as. • Strategic importance of existing a formal redevelopment process management authority Avoidance of temporary solutions • Carefully understanding the legal framework of property relations and its problems in the related country

After the Marmara Earthquake, nearly all of those concerns have been observed during the redevelopment process. The size and scale of the disaster have influenced various study areas and considerable amount of information and experience have been provided. Ongoing legislation system in Turkey has been subject to remarkable revisions and enforcements, which is still at the case. On the other hand, one of the conspicuous outcome of this process is, the commencement of mitigation and rehabilitation projects with respect to risk concerns in built-up urban

areas. Risk management, by itself, became a forthcoming input during preparation of urban development plans. As one of the crucial examples of the process after the Marmara Earthquake, **İstanbul Earthquake Master Plan** has been prepared by considerable amount of experts from various research institutes and universities.

3.4 Post-Earthquake Urban Redevelopment Experiences in Turkey, *Gediz and Erzincan Earthquakes*

This thesis has remarked the post-earthquake urban redevelopment experiences as one of the most encountered subjects of Turkish urban planning. From this point of view, it is necessary to give conspicuous examples to make a more proper evaluation for the case of the Marmara Earthquake. Besides, it can be claimed that post-earthquake urban redevelopment process in Turkey has been developed mostly on a single relocation context. Compensation the losses of disaster survivors and provision of housing units by State in new areas which are "secure" with respect to geological measures, are the most applied options. However, it is observed that the **integration problem between the newly developed sites and existing damaged urban areas is the common characteristic in almost all experiences**. Therefore, especially the Gediz Earthquake urban redevelopment gives the specific example of such a situation. Relocation of disaster survivors in **New Gediz** and their return to **Old Gediz**, or habitation in the vicinity areas is configuring the intricate conditions of post-earthquake urban redevelopment. **That is, unregulated and continuing development rights in damaged urban areas. Its underestimation in post-earthquake redevelopment have caused an uncontrolled development in Old Gediz**.

Table 3.4. General Framework of Gediz Earthquke Urban Redevelopmets

Derived from Tercan (2001) and Ergünay (1990)

Date	March 28, 1970	**Losses in Gediz Town Center**
New Gediz Urban Redevelopment Plan 		• 360 lives were lost, • 775 injured 645 collapsed or heavily damaged houses, out of 1673 total stock **damage levels increases due to the post-disaster fires*
Total Economic Lost		56 million dollars
Post-Earthquake Urban Redevelopment		
Developed strategy by Ministry		• provision of houses as early as possible with a total number of 10 000 units
Preliminary Urban Redevelopment Arrangements		-Density reductions in damaged urban areas (150 persons/ha.) -Road expansions -Detach housing basis new building regulations
Major Redevelopment Policy		
Majority of the local people and the political administration expressed the desire to move the city 7 km south of its location, to an empty and unused area that is suitable for further growth		
Works Completed in New Gediz Urban Development		-construction of 9375 new houses, -development of 589 businesses units, -construction of 360 schools and public service buildings -road improvements and constructions
Total expenditure		25 million dollars

Content of Redevelopment Plan	
Principles of Development plan for New Gediz	Gediz will transform into a regional commercial and industrial center.
Estimated population in 1985	20 000
Population density:	119 persons /ha

Post-Redevelopment Events in Gediz

1. New Gediz developed as an industrial and commercial regional center more rapidly than foreseen in the development plan. This brought a big demand for land, and unauthorized buildings have developed in geologically unsafe areas.
2. The moderate level of destruction in some villages where post-disaster housing was provided, and the decision taken by the State to permit the repair and rebuilding of damaged houses in the original villages, led to a general reluctance to occupy the Sate provided houses. This gave an opportunity to keep both houses for different purposes. For example; one for storage and the other accommodation.
3. The job opportunities created in the public sector and the more opportunity of access to public services attracted people from the nearby villages. Thus caused, Old Gediz reached to its pre-earthquake population by 1983.
4. The housing units provided by the Sate were substantially extended and changed by disaster survivors, or, used for functions other than accommodation, like storage or animal sheds.
5. Population of Old Gediz reached 3450 in 1988. Between 1970 and 1988, its administrative status was uncertain, and the city developed in an uncontrolled way.
6. Tercan(2001) argues that old Gediz still does not have a plan, all new developments occur more or less as predicted by the plan in existence before the 1970 earthquake, but totally out of control.

Urban redevelopment process after the **Erzincan Earthquake** in year 1992 not only has a specific place in post-earthquake urban redevelopment experiences of Turkey, but also, it is a contribution to **urban project management** field of Turkey. The way of establishing a Project Coordination Unit and **its strategic protocols** with various public agencies for acceleration the implementation phase via critical responsibility designations, has provided a model for the coming urban planning agenda of Turkey. First of all, it is an implementation for the existing built-up urban fabric, rather than a relocation of disaster survivor in new housing areas. **In other words, the problem has been solved in its own place.**

As pointed out in Table 2.5, a temporary project coordination unit has been established in central level to fulfill a program for the issues determined in **ERRP** (Erzincan Earthquake Rehabilitation and Reconstruction Project) either in institutional development or physical reconstructions according to a loan agreement with the World Bank. Developed methodology of the bank was carried out in Erzincan by the authorities and staff of Housing Development Administration, with respect to the loan agreement. From this point of view, an international approach has been utilized with a wide framework in Turkey, however, various shortcomings have been experienced in the process of implementation. Kıral (1999, 113) argues that, "…lack of previous experiences with implementation of World Bank projects seen in most of the involved bodies, or a reluctance on their part to undertake responsibility has led to a situation where the majority of works within the scope of the project were tendered by PCU/HAD and were thus realized."

In addition, this temporary Project Coordination Unit transformed into a permanent unit and directed the MEER (Marmara Earthquake Emergency Reconstruction) Project, whose details will be laid out in Chaper 4, with a different staff after the Marmara Earthquake in accordance to a new loan agreement with the World Bank.

Table 3.5. General Framework of Post-Earthquake Redevelopments of Erzincan Earthquake, Derived from: Kıral (1999)

Date	March 13, 1992	**Population**	90 000
Level of Damage	• 653 lives lost • 44 671 housing units destroyed • 1747 houses and 867 commercial establishments collapsed or heavily damaged. • 3178, houses and 433 establishments collapsed or heavily damaged		
Credit Institutions	Credit Amount	Credit User	Content of The Credit
World Bank	285 Million USD	Housing Development Adminis.	ERRP Erzincan Earthquake Rehabilitation and Reconstruction Project
Council of Europe Social Develop. Fund	190 Million USD	Ministry of Public Works and Resettlement	• Reconstruction 3040 multi story dwellings, • 3145 Rural House • Repair work on 3900 multi story dwelling, 4955 rural houses and 350 public buildings
Internal Sources:	175 Million USD		
ERRP **Erzincan Earthquake Rehabilitation and Reconstruction Project**			
Foreseen completion date		Context of the project	
end of 1995		Rehabilitation and reconstruction of damaged areas	
Aims of The Project	Reconstruction, rehabilitation and repair of unfinished cooperative housing, government housing, urban commercial facilities, hospitals, public buildings, rural barns and storage sheds		
	-Development and application of appropriate designs for seismic risk prevention and mitigation -Development of land use and micro-zoning plans, building codes and practices, -Establishment of disaster insurance practices		
	Rehabilitation of municipal water supply, sewage, electricity, roads and traffic light networks and road network systems		
Principles	Expert group provision from Turkey in implementation with approving authority Owner participation sensitivity World Bank and FIDIC document basis tender and contract system Cost effective and least-cost solutions		
Project General Respons.	State Ministry Implementation Responsibility		
Impl. Respons.	Housing Development Administration HDA PCU in Ankara Erzincan Management Unit (EMU)		

Physical Redevelopments and Reconstructions

Public Buildings

Tender Package 1.	1. Reconstruction of the Municipality Office (6 000 m2, including 26 shops, 26 offices and a covered car park for 28 vehicles). 2. Construction of Community Education building (2 900 m2). 3. Construction of Horticulture Resarch Institute (3 675 m2) 4. Rehabilitation of the Municipal Bus Terminal (1 235 m2
Tender package 2.	1. Rehabilitation of the Provincial Education Directorate building and reconstruction of its annex (3 792 m2) 2. Rehabilitation of Provincial Directorate of Rural Affairs Office (3255m2) 3. Construction of Municipal workshops (3 100 m2).

Urban Infrastructure Constructions

1. Waste water treatment plant for the city of Erzincan
2. Replacement of pipes where necessary, and certain additions to the network
3. Construction of 9.5 km of sewerage network; and 18 km storm water drainage
4. Improvements in urban electricity network and some network expansions
5. Traffic signalization systems installed at important junctions.

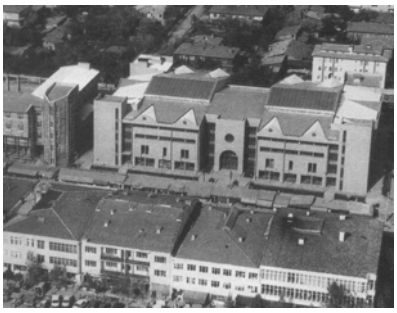
Hospital Constructions

1. Reinforcement of the hospital previously built by the Ministry of Public Works and Resettlement
2. Provision of all the equipment to be purchased as well as the functional needs,
3. Provision of training for the health personnel who will be using the equipment
4. Rebuilding of collapsed three hospitals
5. Construction of 100 beds SSK hospital (9750 m2) and 60 bed capacity housing for the nurses
6. Construction of 100 beds military hospital (10 150 m2), 30 beds nurse housing and the external heating center

Public Housing and Cooperative Housing Construction

Conditions for Housing Developments	• Population of Erzincan decreased due to external migration. • Sudden rise in rents. • Need for the civil servants on the
The determination of the location	Housing development zones determined with regards to the existing land use plan of the city and the consultant assessment in terms of soil structure.
Expropriation	The required resources for financing the expropriation was obtained from the Development and Support Fund with the efforts shown by HDA. The actual expropriation was carried out by the General Directorate of Land Office.

Housing Developments	1052 housing units 500 units of the public housing, members of the public sector. 55 blocks with 354 flats belonging to 9 coperatives had their bearing structural systems reconstructed, rehabilitation and repair works were carried out in 114 blocks with a total of 777 flats.
Reconstruction of Shops and Offices	
Number of right-owner status	662 persons
Locations	6 commercial and business centers at 6 different points in the central business district
Details of Shopping Developments	
Ordu shopping District	84 office and shops is 5458 m2,
Uzun Carsi	91 shops and offices is 7555 m2
Shoping district	169 shops and offices is 12 636 *m2*
Selimoglu shopping center	105 shops and offices is 6390 m2
Fevzipasa shopping center	129 shops and offices is 8977 m2
Murat shopping center	84 shops and offices is 6251 m2.
Views from developed shopping centers after the earthquake	



3.5 Conclusion

This chapter brought up the place of property relations in post-earthquake urban redevelopments. It is a fact that simple relocation of disaster survivors in new settlements is not the only feature of post-earthquake urban redevelopments. Both Turkish and world experiences have revealed that unless property relations in damaged urban areas would not be considered, any proper future developments cannot be succeeded. One of the reason of this is built-up and ownership intensified urban areas are now subject to redevelopment. Therefore, there is a slide from relocation based urban redevelopment understanding to transformation of damaged urban area concentrations. However, there is no yet a sufficient property adjustment operation system for the built-up urban areas which can cope with enormous amount of differentiated ownership rights. Such a weakness is becoming more and more influential and necessitates to be handled in a distinct scope. Otherwise, the future of damaged urban areas and social relations cannot be restructured properly.

In the light of these literature and practical benchmarks, the concept of post-earthquake urban redevelopment after the Marmara Earthquake can be fastened with detail in the next chapter.

CHAPTER 4

URBAN REDEVELOPMENT IMPLEMENTATIONS AFTER THE MARMARA EARTHQUAKE

4.1 Introduction

This chapter will focus on redevelopment process after the Marmara Earthquake. As one of the great disasters of Turkey, there is no doubt that, the Marmara Earthquake will take a crucial place not only in Turkish experience, but also, in a global manner.

In Chapter 2 and 3, the place of property relations in earthquake studies and in urban planning is laid out. With its changing context, the influential role of property relations was experienced with a specific manner during the urban redevelopment process after the Marmara Earthquake. Extraordinary conditions of post disaster situation have placed the housing provision for disaster survivors as the primary problem. On the other hand, problems in redevelopment of damaged urban areas and property transforming problems with unregulated development rights within the process, **are still underestimated** and became the main reason of this thesis.

4.2 Initial Conditions of Redevelopment Process

The Marmara Earthquake has caused intensive destruction and wide range devastation in urban areas and affected almost all level of social life in Turkey. Enormous amount of pecuniary damage of earthquake has led the society to investigate the reasons of catastrophe. The agglomeration of important and quite critical industrial and infrastructural investments in that region have been criticized. Inappropriate population density and vulnerable built-up environment to the earthquake have been cited as the major factors in the catastrophe. Lack of disaster

policy and deteriorative building production system have been considered the reasons of losses.

Table 4.1. Losses and Relief-Healing- Framework of Marmara Earthquake

Derived from: Prime Ministry Crises Management Unit Data Bank (2000)

<table>
<tr><td>Date</td><td>August 17, 1999</td><td colspan="3">Number of Death
17.408</td><td colspan="3">Number of Injures
14.983</td></tr>
<tr><td colspan="3">Estimated Total Economic Lost</td><td colspan="5">10 Billion USD (more than a third of the annual total GNP of Turkey)</td></tr>
<tr><td colspan="3">Major Redevelopment Measures</td><td colspan="5">1. Permanent Housing Provision - 42779 units
2. Credit Provision for Self Building-6 Billion
3. Rental Assistance- 100 Million/Month
4. Provision of Commercial Units-6055 units
5. Death and Injure Indemnity
6. Debt and tax delays</td></tr>
<tr><td></td><td>Damage Levels</td><td colspan="3">Housing Unit</td><td colspan="3">Commercial Unit</td></tr>
<tr><td></td><td rowspan="3">Collapsed or Heavily Damaged Unit</td><td rowspan="2">96 808</td><td>Number of Permanent Hous. Right Owner</td><td>Number of Right Owner in Debt Service</td><td rowspan="3">15 944</td><td>Number of Right Owner for a commercial unit</td><td>Number of Right Owner in Debt Service</td></tr>
<tr><td>42 578</td><td>38 750</td><td>6635</td><td>6055</td></tr>
<tr><td></td><td>Proportion in Total Stock in Region
33 %</td><td>Number of Self Housing Credit-EYY Right Owner</td><td>Number of Right Owner in Debt Service</td></tr>
<tr><td></td><td></td><td>17 667</td><td>16 239</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Moderate Damage</td><td colspan="3">107 331</td><td colspan="3">16 815</td></tr>
<tr><td></td><td>Slight Damage</td><td colspan="3">124 033</td><td colspan="3">15 754</td></tr>
<tr><td colspan="3">Number of Permanent Housing Unit Developed</td><td colspan="2">Total Expropriated Area for Housing Development</td><td colspan="3">Total Expropriation Cost</td></tr>
<tr><td colspan="3">42 799</td><td colspan="2">1757,1 Ha.</td><td colspan="3">65 311 560 866 000 T.L.</td></tr>
</table>

A few years after the earthquake disaster, discussions and redevelopment implementations have elaborated the principle that, conversion of existing urban fabric to partial macro-form structure is the necessary measure for post-earthquake urban redevelopment. Moreover, oversensitivity on geological inputs and surveys has brought the understanding of "structural durability can be only provided on geologically secure land". **Therefore, around 43 000 dwelling units for disaster**

survivors have been constructed quite far away from damaged urban areas, but on geologically secure land.

4.3 Planning of Redevelopment Process

In order to have a proper comprehension of the Marmara Earthquake urban redevelopment , general framework and the inputs of the process is drawn in Figures 4.1 and 4.2 with Table 4.2.

Figure 4.1: General Framework of Redevelopment Process after the Marmara Earthquake

According to the Disaster Law Entry No: 7269, Ministry of Public Works and Resettlement is empowered for the redevelopment process. Hence, intra-organization of the Ministry has carried out damage assessment, site acquisition for temporary and permanent housing, geological studies, expropriations, preparing of mapping and planning documents and ratification of them, directing of building works. However, many projects for infrastructural developments, planning of resettlement areas and housing projects have been tendered to consultancy firms for the first time in the experience of Ministry in post-earthquake redevelopments.

Moreover, according to the credit agreement with the World Bank, housing studies have also become subject to Prime Ministry Project Implementation Unit under the name of MEER Project (Details of MEER Project are explained in the remain parts of this chapter).

Figure 4.2: Coordination Relationship of Redevelopment Process

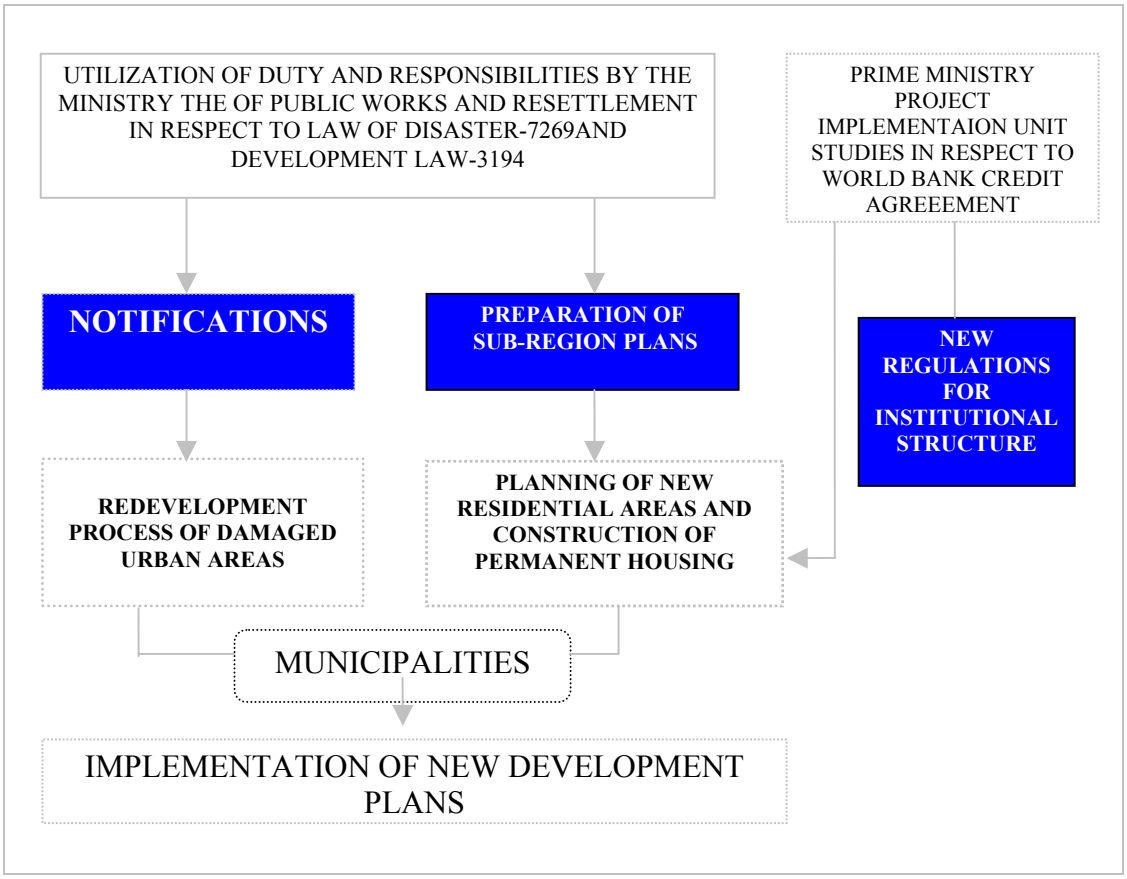


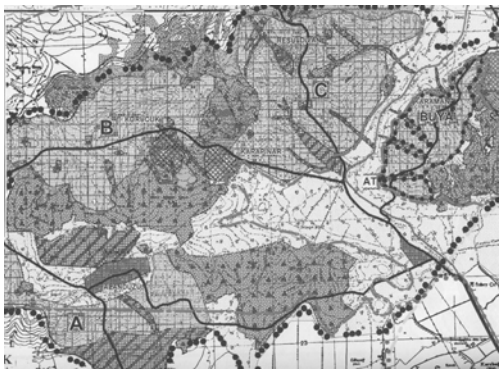
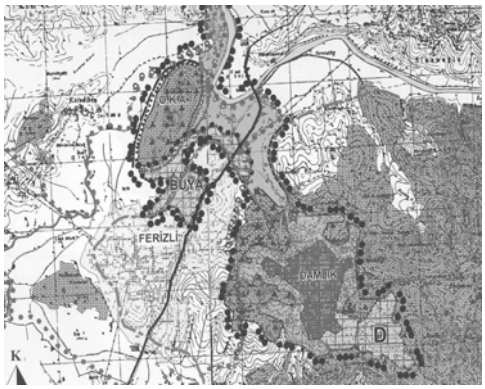
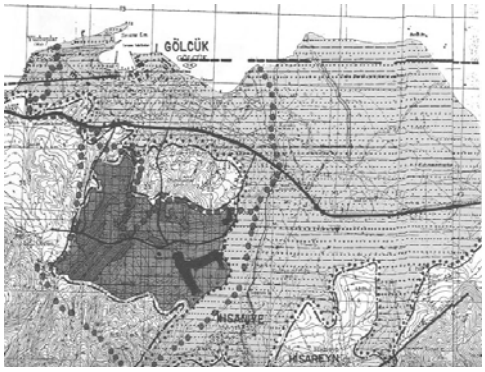
Table 4.2: Notifications of Ministry of Public Work and Resettlement After the Earthquake

DATES OF THE NOTIFICATIONS	CONTENT OF NOTIFICATIONS
23 August 1999	• Delay of planning and construction authorities of 7 Municipalities in earthquake region provinces (Kocaeli, Sakarya, Yalavo, Bursa, İstanbul, Bursa, Eskişehir, Bolu)
02 September 1999	• Designation of new building regulations-Standard Building Regulation- for District Municipalities
08 September 1999	• Redevelopment works which will be proceeded by the Ministry have been defined • Revision or renewal of development plans have been ordered to the municipalities in respect to new geological studies, disaster law regulations and new standard building regulation
15 October 1999	The context of Redevelopment process for the municipalities is defined by the Ministry. These are; • Revision of geological-geotechnical reports and renewal of those which were prepared before 1996 • Determination of suitable and unsuitable sites for settling via new geological studies • Determination of the areas subject to plan revisions and renewals
31 January 2000	The ways and methods are defined in order to overcome the problems that municipalities encountered in redevelopment process. These are; • Not to be issued of any construction license in according to cadastral documents • **Invalidation of subdivision and combination operations is declared for the land readjustment; only Article 18 practicing would be considered as valid through the process** • **Consideration of Construction licenses that haven been issued 2 years ago from the earthquake as an acquired right, and would be proceed even if not sufficient with new building regulations** • Provision of construction license updating for the buildings that were roughly finished in the last 5 years with full respect to new building regulations • Any permission not to be proceeded for retail activities in the basement floors of residential buildings • Any permission not to be proceeded for the repairing works that would give hazard to structure system
04 February 2000	The ways and procedures are defined for the preparation of development plans for damaged urban areas. Those; • Obligatory ask of comment of the Ministry through the modifications for the plans which are prepared by Bank of Provinces • Any local plan-*mevzi plan*- not to be proceeded in the Sub Region Plan area • Approve of geological studies and reports to be issued by General Directory of Disaster Affairs
01 August 2000	The essences for preparation and modification for Sub-Region plans have been defined. Those; • Any physical operation, cover more then one municipality for housing, industry, agriculture, tourism, transportation to be proceeded within the context of Sub Region Plans • For the provision of sustainability of plans, any modification or renewal to be proceeded by Ministry within required collaboration between the Ministry, municipalities and province administrations

4.3.1 Sub-Region Development Plans

After the Marmara Earthquake, by the authority which is defined in 7269 Disaster Low-Article 15, and 3194 Development Low-Article 9; Ministry of Public Works and Resettlement has prepared Sub Region Development Plans for İzmit and Adapazarı in order to designate the sites for permanent housing and redevelopment framework in damaged urban areas.

Figure 4.3: Sub-Region Plans After the Marmara Earthquake
Source: Ministry of Public Works and Resettlement

ADAPAZARI SUB REGION PLAN-Two parts	
	
KOCAELİ-IZMIT SUB REGION PLANS	
	

In scale of 1 / 25 000, Sub-Region Development Plans which are shown in Figure 4.3 have generally been based on geological studies which were prepared by General Directory of Mineral Research and Exploration. Those studies have been re-assessed by General Directory of Disaster Affairs in Ministry and improper sites for building construction have been excluded, and then, utilized as green area in those plans (Ministry of Public Works and Resettlement Activity Report, 2000). Hence, *Adapazarı Northern Development Sites Sub-Regional Plan and Kocaeli-İzmit North East and South Development Sites Sub-Regional Plans* have been prepared and ratified in General Directory of Technical Research and Implementation, on 02 November 1999 and 03 December 1999 respectively. In other words, redevelopment process has been embarked on around three months after the Marmara Earthquake.

4.3.2 Context of Sub-Region Plans

The contents of Sub-Region Plans can be summarized in Table 4.3 as follows,

Table 4.3 Content of Sub-Region Plans

Source: Ministry of Public Works and Resettlement, Plan Documents of Kocaeli-İzmit Sub-Regional Plan and Adapazari Sub-Regional Plan

KOCAELI-İZMIT SUB-REGIONAL PLAN	ADAPAZARI SUB-REGIONAL PLAN
• Site designations of permanent housing for relocation of disaster victims • Building regulations for new constructions ➢ 200 person/hac. density ➢ 2 floors height with basement ➢ obligatory curtain wall regulation in basement floors where the sites are not adequate for construction.	• Designation of *Karaman and Ferizli* as Ministry Implementation Areas for housing and assigning the *Alandüzü, Korucuk, Karapınar f*or urban development areas which were previously determined in the Development Plan that prepared by Adapazarı Municipality before the earthquake. • New building regulations in development areas ➢ 300 person / hec. ➢ Maximum four floors in height. ➢ In damaged urban areas ➢ 0,25 Basement Area ratio ➢ 0,50 Floor Area ratio ➢ 6,5 m. building height ➢ obligatory curtain wall regulation in a ratio of 1% or 2% of basement area.

4.3.3 Characteristics of Post Disaster Sub-Regional Plans

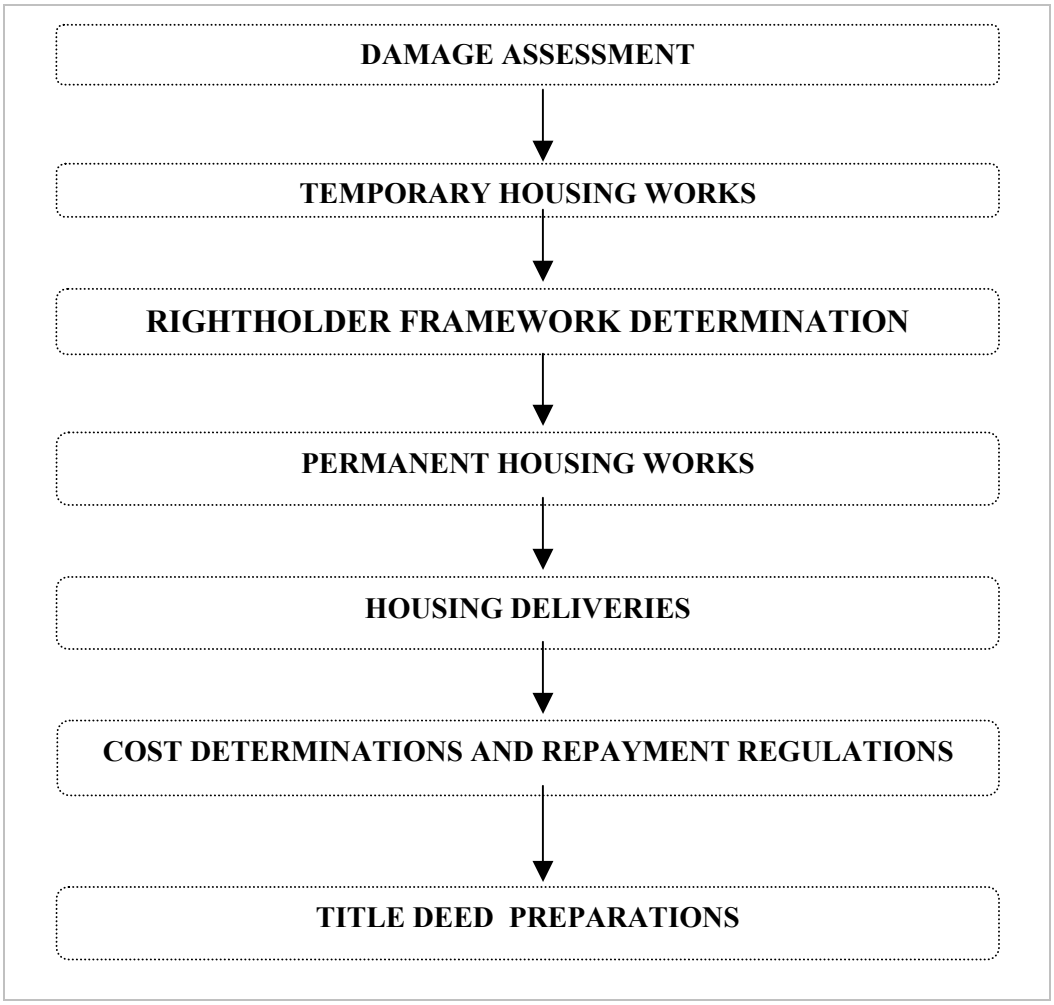
It can be claimed that there are two basic characteristics of those sub-regional plans. First, they represent a necessity to control and regulate the post-disaster process. Second, they are, to a certain extent, an instrument of the Ministry in order to utilize its authorities by itself.

However, regulations of Sub-Regional Plans in building scale could not be performed in damaged urban areas. Tight and dense building fabric and inappropriate property pattern have played a negative role in that situation.

4.4 The Place and Definition of Redevelopment Process in Disaster Law and Their Implementations after the Earthquake.

According to the Disaster Law, redevelopment process is composed of various stages. These are, damage assessments, debris evacuation, right-holder framework determination for disaster survivors, plan and project works, expropriations, construction works, cost determination, delivery of buildings to right-holders and debt coverage-repayment regulations. As scattered in Figure 4.4, the remaining part of this chapter will inquire defined framework of the redevelopment issues and they will be compared with their implementations in the process after the Marmara Earthquake.

Figure 4.4: General Work Down Structure of Redevelopment Process in Disaster Law



4.4.1 Damage Assessment

According to the 7269 Disaster Law, damage assessment is handled by the criteria of **heavy**, **moderate** and **less** damage levels in **building scale**. Although it is a work in a technical scope, it is carried out in limited observation and leads inevitably to many conflicts in redevelopment process. In fact, there were various situations experienced after the Marmara Earthquake due to inconvenient damage assessments in building scale. For example; in a dense built-up urban area, adjacent buildings and blocks do not provide opportunity for self building consideration. In addition, different damage assessments in the same place have conveyed different processes: existence of one building that has to be demolished and another to be slightly repaired, however,

situated together. Moreover, different kinds of property rights in one building obscure the repairing works. Such dispersedness in property pattern could not enable property owners to assemble and make a decision for repairing. Even this fact by itself, represents the necessity to proceed the redevelopment of damaged urban areas in a tissue and zone consideration, rather than in a narrow building scale.

4.4.2 Right-Holder Framework Determination and Encountered Problems

According to the 7269 Disaster Law-Articles 29 and 30; and related supplementary regulation dated 1968, the conditions for being right-holder are defined. After the Marmara Earthquake, government has also defined the exclusion conditions for right holder framework in terms of Law Equivalent Governmental Decree No: 574. and those are shown as in the Table 4.4.

Table 4.4: Conditions Of Being Right Holder

Right Holders- ***Disaster Law and its Related Regulation***	**Exclusion Conditions Of Right-Holder Framework,** ***Law Equivalent Governmental Decree No: 574.***
• Building Owners in damaged area or the area which possibility to be damaged • Building Owners whose buildings take place in the areas subject to expropriation • Shop Owners whose economic and social life have been damaged • Persons whom themselves or their spouses do not have any other flat in disaster area	• Unauthorized building owners Juristic Person-Tüzel Kişi

Hence, defined framework of right-holder regulation is nothing other than being in the scope of state assistance. Those choices in the framework of right-holder regulation can be listed as below;

- 2 Billion TL for repairing works,
- 100 Million TL for monthly rent assistance,
- 6 Billion TL for whom purchase of a housing unit by themselves,
- Provision of one unit from the permanent housings which are constructed or appropriated by the state

According to Article 9 of related supplementary regulation, those who have more than one housing unit which are damaged or at the risk of damage, can only assert as a right holder just for one unit. Hence, any building owner or owner of more than one unit in a building, which is recognized as heavily damaged and subject to demolishing, have the right only one housing unit. **This is criticized as unfair by building owners and alteration of damage level from '***heavy'* **to '***moderate'* **in the process have been observed wide range.**

Right-holder framework is handled in the scope of formal request and written contract. Disaster survivors who would like to benefit from state assistance choices, are obligated to represent their title deeds or any document that indicates any property appropriation. According to Article 20 of related Supplementary Regulation, those formal requests and documents are evaluated at the Inquiring Commission. Consequently, the most important stage of redevelopment process, that is the process of definition and organization of demands, **is directed without any planning understanding** and executed only in technical scope and reduced to just document inquiry.

4.4.2.1 Problem of Renters

Existing right-holder framework in respect to the damage levels in building scale is an understanding of provision one unit for only property owners. However, it does not take renters in to consideration. Moreover, Article 15 of related Supplementary Regulation accentuates that, any renter could not be evaluated at right-holder framework. Hence, that problem has been attempted to be solved outside of the legal framework, particularly, province administrators and municipalities have implemented housing projects. Kocaeli Province Administration Bağdat Housing Project is an example to overcome this problem for those who could not acquire the right-holder framework according to Disaster Law.

Figure 4.4. Bağdat Konutları

Bağdat Konutları, Housing area an example for the problem of renters.

4.4.2.2 Ownership Fragmentation Problem

Article 30 of Disaster Law and Articles 7 and 8 of related supplementary regulation indicates that, in the scope of right-holder framework, **any property with corporate or participatory ownership will be appropriated in redevelopment process as in the same characteristics and context**. However, this is quite impossible where there is full of 'ownership intensities' in urban areas. **Hence, 42779 units of permanent**

housing for disaster survivors have been constructed at the peripheries of damaged urban areas as one of the outcomes of that intricate property problem. Although a huge property transfer practice has been carried out, any property regulation could not be drawn in damaged urban areas **where property rights and development rights of disaster survivors' still remain without any regulation**. Moreover, that problem has been reshaped through the implementation of new development plans that designates floor area reductions. **Hence, any property owner would not have any housing unit with the same characteristics and size of their previous properties.**

4.4.3 Expropriation Works and Encountered Problems

After the Marmara Earthquake, designation of geologically unsafe grounds to urban settlements was criticized and considered as the major reason of the disaster. Such a comprehension became dominant and influential in the process of planning the new urban development areas. Consequently, relocation sites have been determined in the studies of General Directory of Mineral Research and Exploration and planned in respect to Sub-Regional Plans, then, have been developed through expropriations.

According to the Disaster Law-Articles 18 and 19, without any necessity to establish cadastre commissions, a limited delegation, which consists of local title officer, and one representative from municipality or village council, manage cadastre works. Such an expropriation process, indeed, is discussed as being a great burden for the State, and considered as bringing extraordinary conditions for property owners, where their premises are subject to expropriation. For example; changes in expropriation costs and equivalences through **value increase cases**-*tezyidi bedel davaları* delay debt calculations of permanent housing right-holders.

In the Articles 17 and 19, it is arranged the issues of *valuation*, *official value documents* and *registering procedures* for the properties which are subject to expropriation are defined. The most critical point that has been affecting and will do so in the future of redevelopment process is, the differentiation criteria for the

preparation of official value document. **That is; if there is going to be resettlement in damaged area, the official value document will be prepared**. However, resettlement developments have been implemented around damaged urban areas and **those urban lands where damage occurred have not been considered for resettlement and have not been subjected to any expropriation procedure**. Each right-holder has been moved to permanent housing areas with their still remaining land share on their damaged real properties. However, ongoing development plans have been prepared with floor area reduction arrangements on those unregulated property pattern via underestimation of how any property transferring or re-sharing would be implemented. That fact is still remains under the iceberg of post-chaotic disaster agenda of the country and could not be handled in correlation with the development process of permanent housing areas, eventually becoming reason of this thesis.

4.4.4 Building Development Works

According to the Articles 22 and 23 of Disaster Law, the procedure and conditions of building works are defined. It is stated that the areas which have been expropriated and planned can be designated to mass building development. On the other hand, if there is no mass building development, those planned areas might left to the acquisition of who make formal requisition to construct their own building through the presence of notary. Value of the land is determined by the Ministry and that is reduced from the debt calculation for those who has already gained a valuation document. Moreover, another option is, provision only a land to the right-holder for his individual development via construction a building.

After the Marmara Earthquake, Ministry of Public Works and Resettlement and Prime Ministry Project Implementation Unit have together developed mass building projects and any land designation for individual developments, has not been implemented.

4.4.5 The Case of Residual Properties

According to the Article 31 of Disaster Law and its related supplementary regulation, it is defined for the process of how residual properties, that is the number of excess amount of developed housing unit and land, would be appropriated. After indication the reasons of being residual and possible conditions for them in what way they could be utilized; those residual properties would be subject to selling or transferring to right-holders or public institutions. That situation is quite important for the permanent housing development after the Marmara Earthquake. **Although final records have not been ended, if it is compared the number of total right-holder (38311) and constructed total number of housing unit, it is estimated to be 8 % of total 42779 housing units and quite considerable amount of expropriated land would be residual**. Hence, defined framework of Disaster Law for that condition would be effective for the future and success of Marmara Earthquake urban redevelopment implementations. In legal framework of Disaster Law, those properties are subject to selling or transferring for a period of two years without interest rate to the municipalities in the area or province administration. Another option is that, 25% is cash and mostly 5 years term period with interest rate 20%. Nevertheless; if there would be still exceeds after those procedures, Ministry is empowered to determine the post-regulations and has the right to acquire those properties with a 50% low-price of its value in the name of Disaster Fund. **Unless these properties are utilized in favor of sustainable urban development and in order to overcome property problems for damaged urban areas, all redevelopment process would be failed.**

4.4.6 Cost Determination And Calculation

In the Articles of 26 and 27 of Disaster Law-Entry No:7269, it is defined the parameters that are used or excluded while calculation the building costs. In that procedure, land costs and construction costs are included and any other costs are not represented in debt coverage. Hence any mapping, plan and project costs, road,

water, sewerage infrastructure costs are not included for the determination of building costs.

In the process of permanent housing tendering, Ministry has foreseen over all 8-10 Billion TL for the construction costs through lump-sum biddings and expropriation costs are included as land cost, expected around 5-7 Billion TL., for debt coverage. However, as the problem of expropriation value increasing cases-*tezyidi bedel davaları*- any proper calculation could not be represented in debt coverage. Moreover, there are also different kinds of conditions in the calculation of land cost. First of all, percentage portions of all block site –*ada*-is determined separately, then, each land share of housing units in the block-*ada* is obtained. That means, different amounts of land costs can be seen in calculation due to the size differentiation of blocks in housing sites. **Hence, while planning of housing areas, the size and location of each block site becomes crucial as a planning criteria**.

4.4.7 Delivery Of Housing Units To Right Holders and Debt Recovery

In the redevelopment process, constructed housing units are delivered to right-holders through the signature of *debt certificate*. However, extraordinary conditions in respect to the scale of Marmara Earthquake, and due to the expropriation value increase cases, housing units have been delivered to the right holders with only a **housing appropriation document,** not an official title deed, by the organization of Province Administrations in earthquake region.

In the Article 40 of Disaster Law, there are definitions of debt coverage and repayments. Here, building costs and financial assistances are subject to equal payments within the period of 20-30 years without any interest rate. Moreover, issued bank, that is one of the State bank, would like to proceed preferably a mortgage security on debt. Paybacks are commenced after 2 years for unmortgaged debts, and as the same date for the debts under mortgage context.

4.5 Construction of Permanent Houses

Permanent houses have been constructed on mainly expropriated sites where designated in the Sub-Regional Plans of Kaocaeli and Adapazarı; also in assigned areas for Bolu, Düzce and İstanbul. Moreover, in respect to the credit agreement with the World Bank, Project Implementation Unit (P.I.U.) which is established under the organization of Prime Ministry, has also developed housing plans and projects in the process of post-earthquake redevelopment. **Hence, two distinct public institution have taken role and that leads two distinct implementation process**. 18 of total 27 permanent housing area have been developed via Ministry of Public Works and Resettlement and for the remains 9 areas, P.I.U. has developed and implemented plans and projects.

Table 4.5: Time Sequence of Permanent Housing Projects Developed by the Ministry

01.September.1999	Acquiring the Tendering Empower of Ministry through Low Equivalent Governmental Decree 574
23.December.1999	Tendering Announcement of Plan and Project Works
05.January.2000	Acquisition of Offers from Consultancy firms
28. January.2000	Processing of Negotiations with Selected 5 Consultancy Firm
05. February.2000	Finishing of Tendering Process
Until May	Preparation of Plans and Projects Preparation of Construction Tendering Documents
08. June. 2000	Approving of European Development Council Bank Credit, amount 253 Million USD
09,12,14. June 2000	Tendering of Construction Works

Ministry of Public Works and Resettlement has tendered the works to the consultancy firms, **as a pocket** consists of plan and project preparations, geological studies, design works, project management, construction supervision (Disaster Permanent Houses Tendering Document, Ministry of Public Works and Resettlement, 1999). P.I.U., on the other hand, has proceeded those developments as

different from the Ministry and tendered **separately** to the consultancy firms the works of; site planning, design works, construction supervision, as separately.

In the process, Ministry of Public Works and Resettlement has developed various alternatives for relocation of disaster victims. Those are;

- Direct provision via construction of permanent houses (42779 housing units)
- Credit provision for whom would like to construct their own housing unit-EYY (*Evini Yapana Yardım*)
- Housing purchasing credit for the use of country wide.
- Provision of being right-holder in certain housing co-operations.

Table 4.6: Task Assigning Between The Ministry and Consultancy Firms (Derived From the Tendering Documents,2000)

REDEVELOPMENT TASKS	MINISTRY	CONSULTANCY FIRMS
Geological Studies	• Preparation of geological maps, as base maps for the preparation of 1/5000 and 1/1000 scale development plans.	• Exploration tests in site and parcel scales • Preparation of geotechnical reports
Preparation of Development plans and implementation works	• Preparation of 1/25000 scale sub-regional plans • Preparation of 1/1000 scale development plans for certain permanent housing areas • Preparation of contract documents • Outer infrastructural works of housing areas	• Preparation of Architectural and structural plans of housing units • Landscape works • Inner Infrastructural works for housing sites • Construction supervision • Preparation of payment documents • Construction delivery works • Operation of Final Record and Calculations

In the process of preparation and implementation of site development plans for permanent housing areas, many revisions have been done due to the changes in, particularly site conditions and number of right-holders. Hence, it can be claimed that, the last form of those site plans have been acquired under the organization of

Ministry and mutual collaboration of General Directory of Technical Research and Implementation, General Directory of Building Works, General Directory of Disaster Affairs and Bank of Provinces.

4.6 Works Carried Out by the Prime Ministry Project Implementation Unit

As initially established under the name of Project Coordination unit, after the 1992 Erzincan Earthquake, P.I.U. has also prepared and implemented projects after the Marmara Earthquake. With respect to the credit agreement with the World Bank and Law Equivalent Government Decree (No: 580, date, 13 October 1999). P.I.U. has sustained its works under the name of Marmara Emergency Earthquake Reconstruction-MEER- Project within the organization of Prime Ministry Housing Administration. MEER Project can be considered as an Urban Development Project via World Bank financed and consists of the scopes;

- Institutional Development
- Permanent Housing Construction
- Infrastructure Renewals and Improvements
- Financing Sector Development.

After the Marmara Earthquake, an examining committee of World Bank has prepared a preliminary report which focuses on possible effects of earthquake on economic conditions, and also investigated preliminary costs of redevelopment process. In that report, it is accentuated the scopes of,

- Necessity in improvement of Emergency System
- Enforcement of Building Regulations and Codes
- Lack of earthquake disaster insurance system (MEER Project Information Document, Report No: PID8416, 1999)

4.6.1. MEER Projects and Its Components

World Bank projects generally consist of several sub project components. Nevertheless; MEER Project can be summarized with its framework and components as in Table 4.7

Table 4.7: MEER Project And Its Components (Derived From MEER Project Information Document, Report No: PID8416, 1999)

MEER PROJECT AND ITS COMPONENTS	
COMPONENT A	**Disaster Response System And Risk Mitigation**
A1. National Emergency Management System A2. Disaster Insurance Scheme • Capacity Increasing of Risk Management And Transferring • Reduction of Financial Effects on National Economy And Budget • Establishing a General Disaster Insurance Scheme A3. Enforcement of Land-Use Planning And Construction Codes a) New Regulations in; • Disaster Law • Public Procurement Law • Establishing a Mortgage Market b) -Disaster Plan Preparation and Implementation Capacity Increase of Municipalities -Provision of Technical and Financial Assistance to Municipalities for Risk Mitigation Pilot Projects A4. Cadastre Renovation and Land Management a) Establishment of Land Information System • Provision of Financial and technical assistance for acquiring recent, reliable land information, updating and mapping of them b) Activating of housing land provision system for adequate Land Market • Enabling institutional and operational restructuring of General Directory of Land Office	

COMPONENT B:	**Trauma Program For Adults**

COMPONENT C AND COMPONENT F	**Permanent Housing Developments**

Before embarking on Housing Development projects, some criteria and conditions have been handled for the execution process, Those are;

- Determination the number of righ-holders as two weeks before the signature of main project contract
- Approving of projects under the organization of P.I.U.

COMPONENT D	**Project Management**

in order to fulfill the requirements of other components of the project, the scope of the project management works can be list below;

any requirement management works for the design and implementation of housing projects

Project Impact Analyses

Fulfillment of operational costs of P.I.U.

COMPONENT E	**Business Rehabilitation**

a) Revitalization of Small Scale Commerce and Production sector
    - Establishment of Retail Commerce units
    - Provision of New production units
b) Provision of new credit opportunities

COMPONENT G:	Repair of The Existing Housing Stock and Healthcare Facilities
COMPONENT H	Rebuilding and Repair of Roads, Water, West water, Electricity Distribution Networks

4.7 Conclusion

This thesis is elaborating the outcomes of the Marmara Earthquake redevelopment process in order to be an institutional learning from an experience. From this point of view, those outcomes can be summarized as follows;

1. Implementation Problem of Development Plans in Damaged Urban Areas
2. Undefined Administrative Statues of Permanent Housing Areas
3. Weakness of Ongoing Institutional Structure for Urban Scale Disasters
4. Legal Framework Weaknesses-Discordances Between Development Law and Disaster Law and Their Insufficiencies

Un-implementation Problem of Development Plans in Damaged Urban Areas

Relocation of the disaster survivors to the places which are considerably far away from damaged urban areas has been presenting the necessity of remarkable adjustments on the existing property patterns. However, without any framework definition for the remaining ownership and development rights in those damaged urban areas, nearly 43 000 housing units have been developed mostly on expropriated lands by State in order to compensate for the lost properties of disaster survivors. On the other hand, any sufficient redevelopment framework for damaged urban areas could not be commenced by municipalities after the earthquake. Municipalities were restricted to revision of their development plans in respect to new geological surveys and to define the ideal building regulations in low level of floor area ratios.

The reason of implementation problem of development plans in damaged urban areas is their underestimation of existing conditions of built-up areas and the robust property relations on it. However, it can be claimed that, **carrying out the earthquake redevelopment process with existing development methods was a strategic failure.** That is, existing context of development plan implementation tools which were covered in the previous chapter, usually concentrate on describing the construction process for newly developed plots. However, in respect to new

development plans for damaged urban areas after the earthquake, they have brought a new agenda for those areas. That is, **a process of floor area reductions in the existing buildings or their reconstruction with low level floor areas**. Beyond the existence of technical obstacles for that process, there are more restrictions in legal framework.. One of those limitations is property readjustment, however, no process has been operated either in development plans, or in practicing programs yet. There is a widely experienced condition that, most of the built-up urban areas are composed of flat ownership regulation which is established on land. Due to the floor area reductions or reconstruction with low floor area ratios, it is necessary that the convention of all flat-owners and shareholders to re-share their properties, however in less proportions from their ex-proportions.

In these conditions it is impossible for the flat owners to have new usage units with the same size and the same conditions of their previous properties. **Insufficiency of existing property adjustment methods do not enable to solve this intricate problem**. However, there have been still motivations only for building regulations. Ministry of Public Works and Resettlement has only rearranged the Standart Building and Construction Regulation- *Tip İmar Yönetmeliği* for district municipalities and ordered to greater municipalities to revise their own regulations. However, **On the other hand, the major problem of property readjustment have still been undefined and not handled yet.**

Undefined Administrative Statues of Permanent Housing Areas

After the ending of construction works of permanent housings and their deliveries to the right-holders, those areas have been designated to municipality responsible adjacent areas-*mücavir alan.* However, those permanent housing sites have been considered by the municipalities of damaged urban areas as an extra load to be served; due to being quite far away from the existing towns. Another factor for that consideration is they are not subject to local government selections and that creates another conflict for municipalities as well.

Moreover, independent framework of design solutions and lacking of any property readjustment in common spaces of permanent housing areas, do not allow the constitution of their own administrative structures. From this perspective, context and physical layout of social equipments, green areas, schools, working and shopping centers are quite strategic in the process of inner and outer integration of those permanent housing areas.

Weakness of ongoing institutional structure for urban scale disasters

Existing institutional practice for relocation of disaster survivors have been developed mostly in rural areas. In general, Development Law has regulations for solving the problems of rapid urbanization process. Its basic comprehension is growing of cities with its requirements and it basically focuses on land development and definition of construction process. It could not have prevented the pressures of rapid urbanization **and nearly produced the same urban fabric within the country which is unstable and vulnerable to natural and human based disasters**. On the other hand, Disaster Law has become un-operational for these densely urban fabric which consists of many of 'ownership intensities'.

Legal Framework Weaknesses-Discordances Between Development Law and Disaster Law and their Insufficiencies

In the1980s there have been considerable changes in urban planning process and urban administration system. Preparation and ratification authorities of development plans have been transferred to the municipalities according to the Article 8 of Development Law-Entry No:3194. However, Disaster Law-Entry No: 7269- could not be adapted to those regulations and revised. In respect to Article 15 of Disaster Law, Ministry has the absolute authority to prepare and revise the plans and building permits. Moreover, Article 9 of Development Law provides the Ministry with an extreme authority to prepare, revise and ratify the development plans if it would like to utilize. However, definition for the responsibilities and duties of municipalities have not been clarified in Disaster Law. Postponing of planning and construction

authorities of the municipalities in the region and total concentration on the relocation problem of disaster survivors engendered an uncertainty condition for the damaged urban areas. As explained, revision of the development plan with respect to revised geological surveys required to decrease whole housing stock to 2 storey level. On the other hand, municipalities are not equipped necessary instruments to transform or transfer the development rights for the realization of this building order and next chapter will inquire this problem in Adapazarı sample.

CHAPTER 5

REDEVELOPMENT PROCESS IN DAMAGED URBAN AREAS, ADAPAZARI CASE

5.1 Introduction

This chapter will focus on post-earthquake urban redevelopment in Adapazarı and surveys the property problems in implementation process. Throughout the study underestimation of property relations during the preparation process of development plans after the Marmara Earthquake was criticized. However, a more concrete assessment requires a field study in damaged urban areas. For this reason, an excursion was carried out to the city of Adapazarı in order to measure the determining characteristic of property problems in redevelopment of the city. As a method, a questionnaire form which is in Table 5.1 was prepared to be utilized as a reference document for this research[2]. Appropriated data was obtained from related municipality departments and provincial administration. In addition, moderate scale workshops and interviews with disaster survivors, property owners and professionals have been realized in Adapazarı.

In the first part, urban development process before and after the earthquake has been summarized in order to figure out the reasons of implementation problem of post-earthquake urban development plan. Besides, building census and construction license statistics are investigated to lay out the post-earthquake dynamics and changes in the building stock of Adapazarı. In addition, operation statistics in Title

[2] This form was delivered also to the General Secretary of Adapazarı Greater Municipality before the departure on 08 November, 2004.

Office will be assessed to show movements and tendencies in urban property market of Adapazarı after the earthquake.

Beyond these bench studies, a spatial analysis in Çark Street zone in the central district of the city will also take place at the end of this chapter. The reason of concentration on Çark Street is transformation and in-transformation conditions can be both observed in accordance with the revised development plan.

Table 5.1: Questionnaire Form to be Used for the Field Study in Adapazarı

CONTENT OF THE QUESTİONNAIRE FORM
This questionnaire form aims to measure the determining characteristic of property and development rights in post-earthquake urban redevelopment process for the damaged urban areas. The selected sample area, which is Çark Street, locates in the central business district and represents both transformation and in-transformation conditions together. Preliminary determined data in this form will be obtained from the statistics and data bank of the Municipality and Province Administration which are the responsible agencies in urban development. Spatial documentation will be realized through the meetings with property owners and real estate agencies. Appropriated data will be obtained during the excursion to Adapazarı on 08-12 November 2004 and will be utilized for the development of case study chapter of this thesis. The first part of this form will investigate urban development process and the implementations before and after the earthquake. These information enables the study to figure out how the transformation problem of damaged urban areas emerged due to the property and development right conditions. The second part attempts to measure the physical loss of the building fabric. This data is in reference to the building census and will be assessed with the construction license statistics in the third part. The third part will survey the buildings entitled to reconstruction or repairing works with respect to revised building regulations after the earthquake. This will enable the study to measure directly the determining level of property and development rights in the redevelopment process. The fourth part will investigate the problem of ownership constraints which are emerged due to the revised development plan after the earthquake. Economic changes in the real estate market are the selected indicators. This data will be assessed particularly in the vicinity of Çark Street via the registrations of real estate agencies and their descriptive evaluations. The fifth part attempts to set out the redevelopment process in a damaged urban area. The outcomes and the examples of quantitative indicators in the previous parts will be plotted through the Çark Street

1. Urban Planning Process Before and After the Earthquake

<table>
<tr><td rowspan="2">Urban Planning and implementation Studies Before the Earthquake</td><td colspan="2">Ratification date</td></tr>
<tr><td colspan="2">Precedent urban development problems and elaborated policies and implementations</td></tr>
<tr><td></td><td colspan="2"></td></tr>
<tr><td rowspan="6">Urban Planning and implementation Studies After the Earthquake</td><td colspan="2">Legal correspondence between the Municipality and the Ministry and their specifications</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">Start and Ratification dates of geological studies</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">Outcomes of Geological studies in utilization of development plan preparation process</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="3">Post-earthquake Urban Redevelopment Implementations in Damaged Urban Areas.</td></tr>
<tr><td>Ratification Date of revised Development Plan</td><td colspan="2"></td></tr>
<tr><td>Developed planning policies and building regulations</td><td colspan="2"></td></tr>
<tr><td>Encountered problems in the implementation process</td><td colspan="2"></td></tr>
<tr><td>Developed measures, instruments and methods to the problems in implementation process</td><td colspan="2"></td></tr>
<tr><td>Revisions and Modifications in Development Plan/if exists</td><td colspan="2">Date
Subject</td></tr>
<tr><td>Proposals for Modifications</td><td colspan="2">Number
Context
Result</td></tr>
<tr><td>Municipality Council Determinations unimplementation process</td><td colspan="2"></td></tr>
<tr><td>Cases in the Court</td><td colspan="2">Subject
Results</td></tr>
</table>

2. Building Statistics

Total Building Stock Before the Earthquake	Number of Collapsed Building in the Earthquake	Number of Demolished Building	Total Damaged Building Stock Ratio

3. Parameters of Reconstruction Process

Issued Building License	2000	2001	2002	2003	2004
Number of New Construction License in the Implementation Process of Revised Development Plan- for Collapsed Buildings-					
Number of Issued Repairing License for the Damaged Buildings					
Number of Total new Building Construction License					

4. Economic impacts in Urban Property

Changes in Real Estate Market	Rental Prices ***TL/m²***		Selling Prices ***TL/m²***	
	Housing	Commercial	Housing	Commercial
Before the Earthquake				
After the Earthquake				

5. Space Analogy in a Damaged Urban Area

Field Analyze in the Building stock-Çark Street Focus Area Determination of a typical site in city center that is subject to implementation problem of revised development plan	
Conceptual Diagram which defines the place and context of the site in the city	
Land use Before the Earthquake	
Building Regulations after the Earthquake	
Building Plots subject to reconstruction	
Buildings subject to repairing	
Ownership pattern	
Title Office Registrations	
Renewed Buildings in respect to new regulations	
Repaired Buildings	
Plots and Buildings which are transformed	
Methods in re-sharing of development rights	

5.2 Urban Development Dynamics in Adapazarı

Adapazarı is one of the primate cities of Marmara region located in Sakarya Province on the junction of motorways of Ankara-İstanbul and Bursa-Eskişehir. Through the history of city, urban development has occurred on highly fertile agricultural lands, however, geologically 'unsafe' for settlement. If we consider the location of the city- that is an hinterland of İstanbul- and the phenomenon of rapid urbanization process took place after the years 1980s, accumulation of disaster risks were not an unexpected outcome for the city of Adapazarı. Location choices of industrial plants in the city was the most criticized aspect that caused either consumption of agricultural lands, or, increasing the disaster risks.

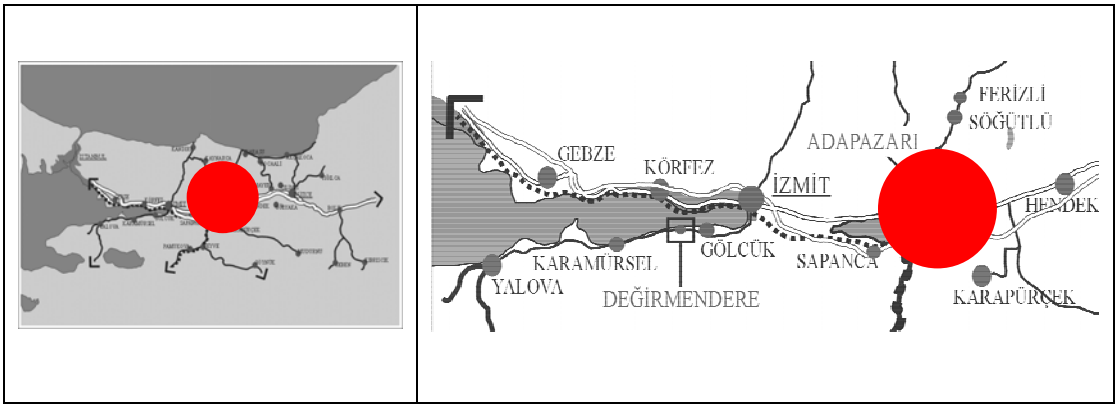


Figure 5.1. Location of Adpazarı in Marmara Region

In general, population numbers and their increasing ratios are mostly applied data to measure the urbanization trends in Turkey. The reason is that migration and mobilization movements in Turkey has shaped the urban systems after the 1950s in the process of rapid urbanization. From this point of view, urban development process of Adapazarı reflects almost the common feature of each city in Marmara Region. Table 5.2. and Table 5.3. represent periodical population and urbanization dynamics in Sakarya Province and in city of Adapazarı. These depict a continues migration from rural areas to urban settlements, mostly to the city of Adapazarı. Hence, it can be claimed that urbanization of Adapazarı has experienced the method

which is almost valid in each city and town of Turkey. That is, housing supply via high 'ownership intensification' like apartment type of urban fabric, either on fertile, or, vulnerable lands in respect to geological consideration. Such a way of urbanization is the most complained method in the field of Turkish urban planning as produced a monotonous urban fabric which is lack of sufficient urban services. However, any alternative option could not be developed in the process, either.

Table 5.2: Sakarya Province Population Dynamics

Source: Gedikli (2001), *Journal of the Chamber of City Planners, 2001/3*

Years	Population	Population Increase Ratio	Urban Population	Rural Population	Urban Population Ratio	Rural Population Ratio
1955	297078		74255	222823	25%	75%
1960	36192	18%	111064	250928	31%	69%
1965	404078	10%	124936	279142	31%	69%
1970	459052	12%	152277	306775	33%	67%
1975	495649	7%	172210	323439	35%	65%
1980	548747	10%	195069	353678	36%	64%
1985	610500	10%	227625	382875	37%	63%
1990	683281	11%	297759	385302	44%	56%
1997	731800	7%	331431	400369	45%	55%

Table 5.3: Average Population Increase Rates in Adapazarı, Sakarya and Turkey

Source: Gedikli (2001)

	1940-45	1945-50	1950-55	1955-60	1960-65	1965-70	1970-75	1975-80
Adapazarı	2,78	4,52	11,26	8,56	1,69	3,52	2,54	2,95
Sakarya	Period of Sakarya is not a province			4,37	2,33	2,72	1,59	2,16
Turkey	1,09	2,29	2,97	3,07	2,62	2,68	2,66	2,17

Figure 5.2: A View from Adapazarı before the 17th August 1999 Marmara Earthquake

Source: Adapazarı Greater Municipality

A study which is prepared in the planning department of Adapazarı Greater Municipality, as shown in Table 5.4. describes urban development plans for Adapazarı with their content and specifications until the Marmara Earthquake, in brief. Even a short glance to this urban development framework indicates the places of earthquakes in development history of Adapazarı.

Table 5.4: Development Plans for Adapazarı with their Content

Source: Adapazarı Greater Municipality Planning Department Data Bank, 2004

Date of Develop. Plans	Settlement Area Size	Forecasted Population	Specifications
Before 1957	850 Ha.	300 000	State Road and Highway are not exist
1953 EARTHQUAKE			
1957		360 000	Provincial Statue Big Public investments • Railway Plant • Sugar Plant • Agricultural Furnishing Plant
1967 EARTHQUAKE			
1985 plan	5200 Ha.	610 500	E5 (D100) Highway Construction Industrial Developments TEM-Trans European Motorway Construction
1999 MARMARA EARTHQUAKE			
	33 000 Ha.	800 000	High Geological Considerations Construction Limitations Floor Area Reductions New Housing Sites Metropolitan Municipality Statue

Major public investments and acquiring the provincial administration statue coincide with 1957 urban development plan implementation process after the 1953 earthquake. In the same direction, the plan prepared in 1985 came across with substantial industrial and infrastructure developments. However, here is the question that, after the 1967 earthquake, which is one of the most destructive earthquakes in Adapazarı, necessary spatial organizations responsiveness to possible earthquake hazards could be provided? Unfortunately, the answer to this question has been experienced very tragically in 1999.

5.3 Preliminary Conditions in Adapazarı After the Earthquake

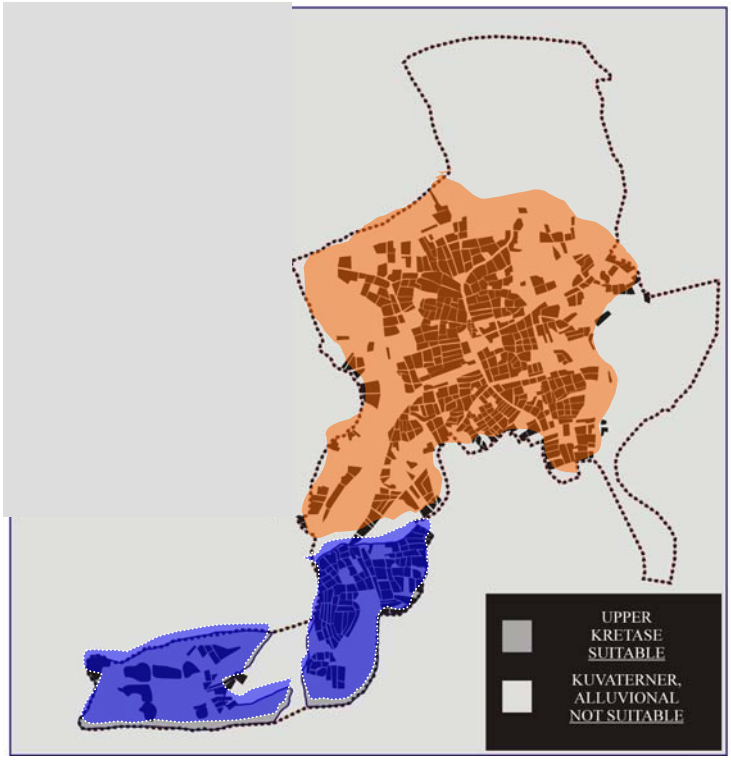
After the Marmara Earthquake, the most destruction in the region occurred in city of Adapazarı. Around, 2.8 million m^3 debris from total 5 million m^3 in earthquake region, was evacuated from the city (Municipality Activity Report,2000). It can be claimed that tip-over and pan-cake type collapses caused enormous amount of physical destruction in the adjacent and congested building pattern.



Figure 5.3. Physical Damages in Building Fabric

Source: Adapazarı Greater Municipality Web Archive, 2004

Example images in Figure 5.3 of the great destruction have led the society to reveal the reason of catastrophe. When the location comparisons of building areas are considered, structures built in the alluvium grounds have been affected much more than those built on base-rock sites which are so-called “secure” in geological considerations. However, if we overlap the physical lay out and geological map, it is seen that almost all area of Adapazarı and its town center have developed on those “unsecured” alluvium urban lands. Therefore, development of new residential districts in geologically secure lands and rebuilding of existing settlements more durable to earthquakes through a proper building supervision system were determined as the necessary concerns to be considered in post-earthquake urban redevelopment process.



Suitable to Settlement

Unsuitable to Settlement

Figure 5.4 Revised Geological Survey Result after the Earthquake

Source: Adapazarı Grater Municipality Planning Department

5.4 Urban Planning Studies and Redevelopment Process in Adapazarı after the Earthquake

Previous chapter explained the components of post-earthquake urban redevelopment in related legal framework and made a cross comparison of them with the process after the Marmara Earthquake. Following part of this chapter, on the other hand, will overview them in an urban scale. Table 5.5 only indicates the losses and developed measures, but, does not allow to make proper assessments in urban scale. Lack of comparison between damaged buildings and the number of building stock hinders the evaluation of the total loss neither in urban nor rural areas. The reason is that, such a way of data collecting and processing concerned with only the immediate

compensation of losses. However, subsequent inspections to figure out the dynamics at post-earthquake urban redevelopment cannot be easily carried out within this content.

Table 5.5. Losses and Relief-Healing Measures in Sakarya after Marmara Earthquake, Sourced: Adapazarı Grater Municipality, Sakarya Chamber of Industry and Trade

<table>
<tr><th colspan="5">Post Earthquake Losses in Sakarya Province</th></tr>
<tr><td colspan="2">Death :</td><td colspan="3">3891</td></tr>
<tr><td colspan="2">Injured:</td><td colspan="3">5180</td></tr>
<tr><th>Damage Levels</th><th>Housing unit</th><th>Commercial Unit</th><th colspan="2">Number of Right Holders (Housing)</th></tr>
<tr><td rowspan="2">Collapsed / Heavily Damaged</td><td rowspan="2">24.678</td><td rowspan="2">5.140</td><td>Permanent Housing R.H.</td><td>Housing Support Credit R.H.</td></tr>
<tr><td>7096</td><td>4325</td></tr>
<tr><td>Moderately Damaged</td><td>18.406</td><td>3.764</td><td>Housing Repair Assistance</td><td>7391 units</td></tr>
<tr><td>Slightly Damaged</td><td>27.239</td><td>2.699</td><td colspan="2"></td></tr>
</table>

Redevelopment works after the earthquake were directed by the Ministry of Public Works and Resettlement in the framework of Disaster Law-Entry No: 7269. However, as the scale of disaster is considered, that is a regional earthquake which devastated most important urban settlements of Turkey, the Ministry could not go beyond the relief works and permanent housing provision. The main problem, which is redevelopment of built-up urban areas, was left to the municipalities' responsibility in the region. In order to follow the next part of this chapter more prudently, milestones of the urban redevelopment process can be enumerated in the case of Adapazarı can be seen below. Although these were inquired in the previous chapter in more details, here there is only a review to provide the logical sequence of how property problems are encountered in the planning process.

1. Ministry of Public Works and Resettlement postponed the planning and construction authority of the municipality until the revision of its current development plan with respect to the revised geological surveys.
2. Ministry prepared and ratified the Sub-Regional Plan in order to designate permanent housing sites and construction regulations to be utilized.

3. Renewal of geological surveys, which will be the main reference document in the preparation of development plan, was ratified by the General Directorate of Disaster Affairs.
4. Adapazarı Municipality has been transformed into the greater municipality statue and obtained the authority to direct the planning process of district municipalities.
5. Building height regulation proposals as 2 storey at maximum in the geological report have been transferred as the same into the development plan.

On the other hand, existing development rights and their characteristics have been underestimated and could not be conceived as the most determining issue of post-earthquake urban redevelopment. Radical transformation of average 5 storey building fabric dawn to 2 storey requires an immense amount of property adjustments and transferring of development rights. Therefore, this thesis will figure out the outcomes of **such a misutilization of geological outputs in the preparation of development plans.**

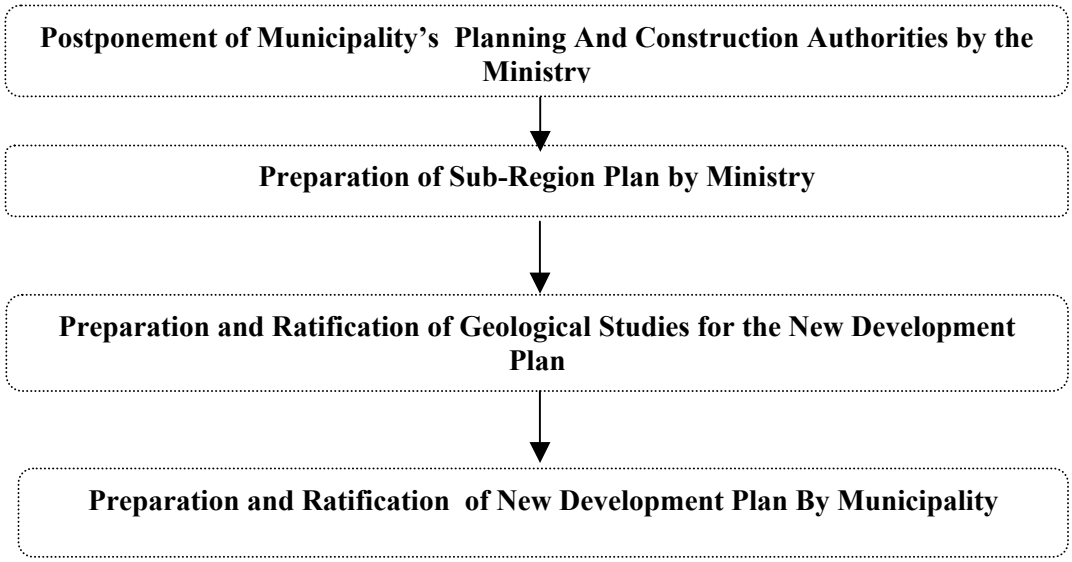
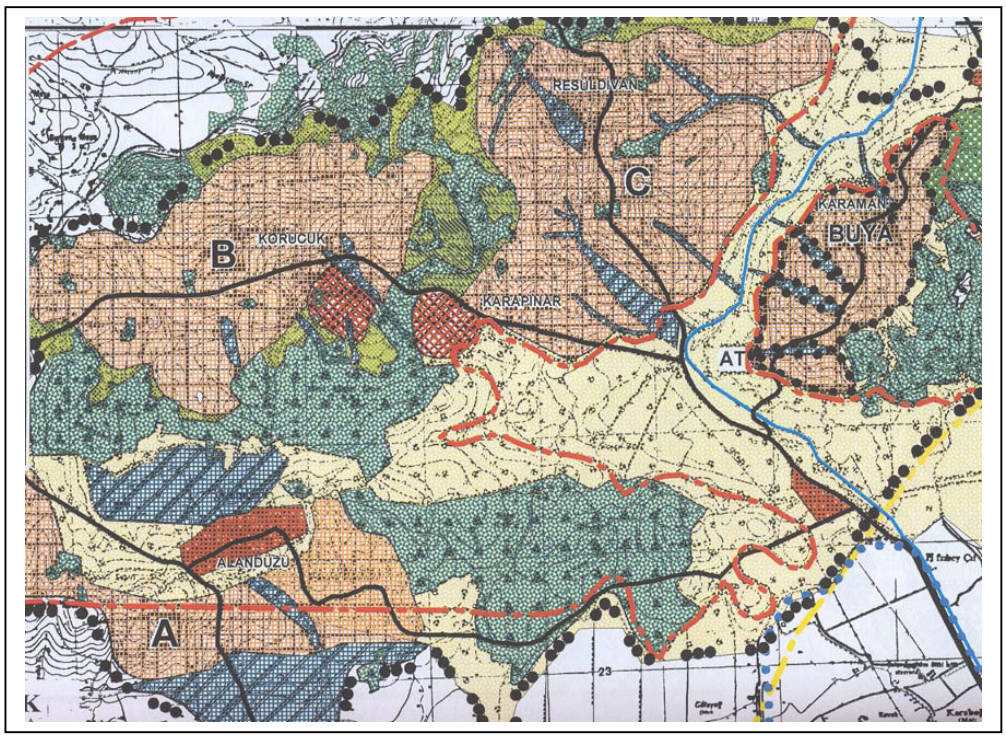


Figure 5.5. Procedure of Redevelopment Process in accordance with the Disaster Law

ADAPAZARI SUB-REGIONAL PLAN



- Designation of *Karaman and Ferizli* as the main housing resettlement sites under the name of Ministry Implementation Areas.
- Assigning *Alandüzü, Korucuk, Karapınar f*or new urban development areas which were already determined previously in the Development Plan that prepared by Adapazarı Municipality before the earthquake.
- New building regulations in development areas
  - 300 person / hec.
  - Maximum four floors in height.
- In damaged urban areas
  - 0,25 Basement Area ratio
  - 0,50 Floor Area ratio
  - 6,5 m. building height
  - obligatory curtain wall regulation in a ratio of 1% or 2% of basement area.

Figure 5.6. Adapazarı Sub-Regional Plan,

Source: Ministry of Public Work and Resettlement

5.5 Preparation Process of Adapazarı Post-Earthquake Urban Development Plan

As explained, post-earthquake urban planning process commenced with sub-regional plans to determine the permanent housing sites. What is interesting here is utilization of Municipality's pre-earthquake urban development plan dated 1996 as the main input for Sub-Regional Plan, which is prepared by the Ministry of Public Works and Resettlement. According to this pre-earthquake development plan of municipality, proposal urban development areas have already foreseen towards the north-east side of the city, in the precincts of Karaman, Alandüzü and Ferizli**.** After the earthquake, Ministry of Public Works And Resettlement has designated those areas of Karaman and Ferizli, as permanent housing sites under the name of Ministry Implementation Areas-*Bakanlık Uygulama Alanı,BUYA.*

After the post-earthquake legislation works and notifications which were presented in the previous chapter, authorities of planning and construction works of the municipality was restricted until the revision of geological surveys, as the other municipalities in the region. Post-earthquake conditions which are stated above have led the planning department of Adapazarı to designate new development sites in geologically "secure" areas. The study of 1/25 000 scale Macroform Plan, which was developed after the earthquake and ratified in April 2000, foresees new building regulations to be put in forward for rebuilding the damaged urban fabric**.** These are;

- Broadening of existing roads
- New road system with new alternatives
- **Designation of building heights at 2 stories at maximum.**
- Provision of wide open spaces with necessary equipments for disaster preparedness

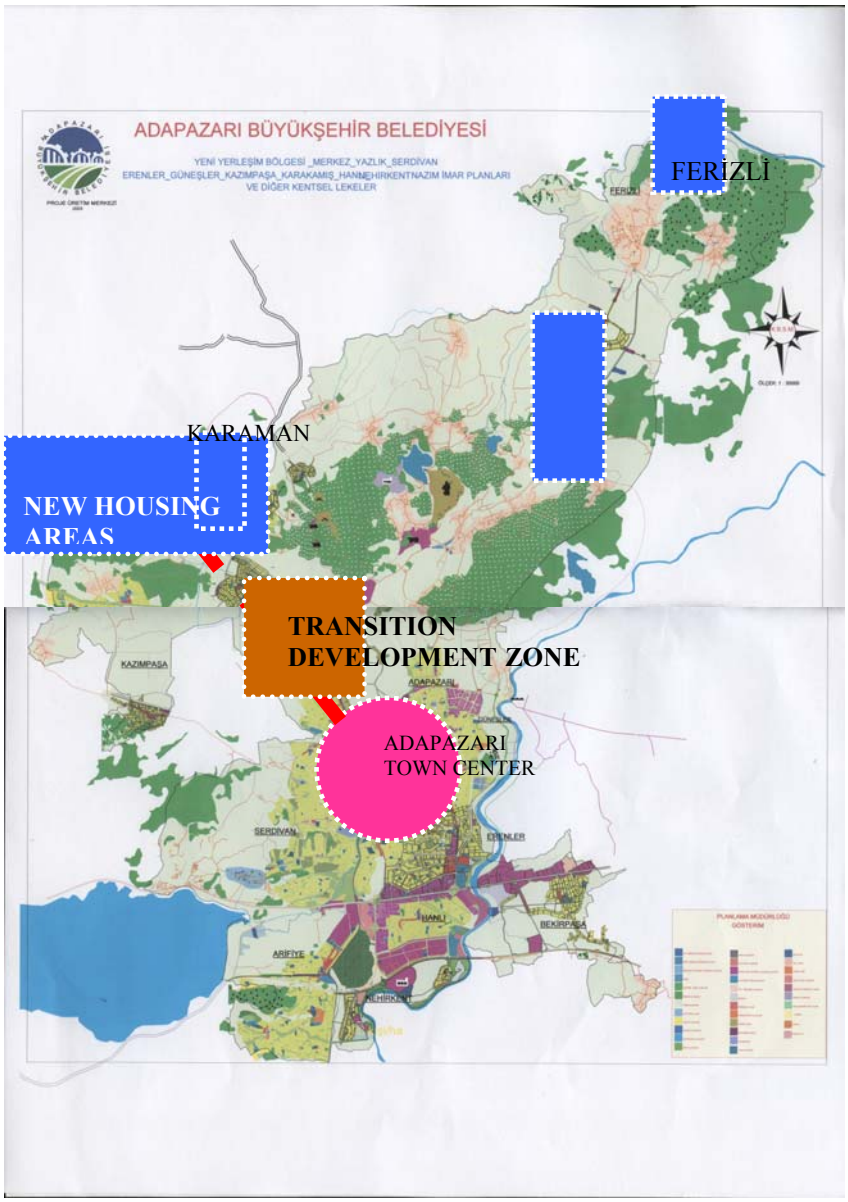


Figure 5.7. Adapazarı Urban Development Plan After the Earthquake
Source: Adapazarı Greater Municipality, Planning Department

In the implementation process of the revised development plan after the earthquake, building licenses have been issued according to plot scale geological studies which were entitled to the ratification of General Directory of Disaster Affairs. However, municipality has prepared another geological study for the whole city and expected to be ratified by General Directorate of Disaster Affairs in order to take the control of whole urban development process within its organization. As the damage assessment

works were influential in the process of post-earthquake urban redevelopment, Adapazarı Municipality has developed a new damage survey within its own organization after the formal surveys of General Directorate of Disaster Affairs

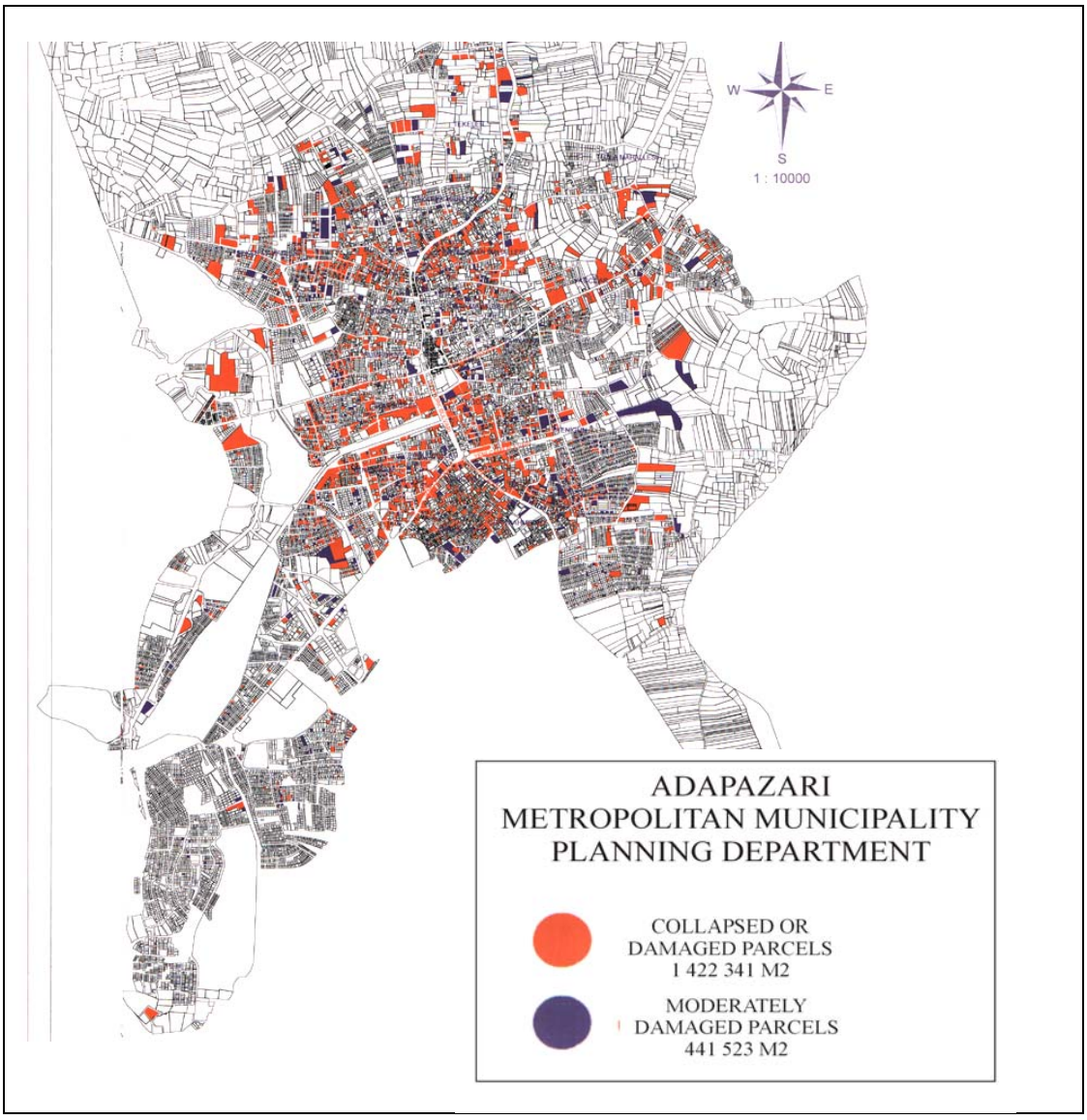


Figure 5.8: Damage Level Spatial Distribution in City of Adapazarı

Source: Adapazarı Greater Municipality, Planning Department

5.6 Implementation Process of Development Plan And Encountered Property Problems

After acquiring the statue of Greater Municipality in March 2000, Adapazarı Municipality has prepared and ratified the development plans of two district and ten settlement municipalities within its own organization. However, in order to bring the existing order of building pattern to the new building regulation proposed in development plan, according to the Municipality planning officers, **it is necessary to reduce around 14 000 dwelling units from the existing stock**. The reason of that is, realization of 2 storey building fabric depends on flat storey reductions where the existing building pattern conditions are 5 storey at average. As a result, city of Adapazarı faced an intricate condition which is not easy to be solved with current planning instruments and organizations. Concentration on resettlement problems of disaster survivors and production of geologically secure new urban lands have together led the redevelopment problem of damaged urban areas into an oblivion condition.

This problem of existing damaged building stock has been experienced by the municipality especially during the preparation of repairing and reconstruction projects. In order to acquire a repairing license, it was necessary the assembling of flat owners, shareowners or inheritors in accordance with flat ownership regulations which are explained in Chapter 2. However, reduced development rights via the revised development plan do not enable the flat owners to appropriate the same amount of dwelling unit. Therefore, their shares became subject to transactions in market conditions. Utilization of the geological survey results adopted to new development plan, without definition of a framework for the existing development rights of flat owners, has produced a building stock which is still damaged and under the risk of collapsing.

According to the revised development plan it is necessary to take over the floors above the second storey

Figure 5.9: A review to the urban fabric in Adapazarı with the logic of renewed development plan

The dilemma of living with risk is one of the most important subjects of provincial administration and the deadline for the realization of obligatory repairing works was announced as 31st December, 2003. However, there is no 'produced remedy' to overcome this problem than postponing the legal time until the end of 2004. As a result, damaged conditions are still going on.

It can be claimed that Turkish urban development plan implementation instruments, whose content and characteristics are explained in Chapter 2, are not sufficient for the realization of required floor area reduction in the damaged urban fabric. Fundamental problem is more than a single floor area reduction or reconstruction with low level floor areas. What is missed in the process is, understanding of urban rehabilitation and risk mitigation in damaged urban areas. Proposing low level of floor area in the damaged building fabric and developing new settlements are not the remedy for the provision of urban fabric which is more durable to earthquakes or other sorts of natural disasters. Incapability of defining a framework for these reduced development rights due to the reduced floor areas in damaged urban areas is the most weak part of ongoing planning experience.

5.7 Field Survey in Adapazarı

Upon the matters formulated until here, the negligence of property relations and development rights were elaborated as how they became a problem in post-earthquake urban redevelopment. However, in order to flourish the outcomes of such an underestimation, it is necessary to demonstrate ongoing conditions in the damaged urban areas. The following part of this chapter will focus on both statistical data pertaining to building stock and physical situations, especially in the central business district.

Current situation of reconstruction works can be evaluated in terms of building census and construction license statistics after the earthquake which are obtained from Adapazarı Greater Municipality. However, it should be underlined that establishment of Adapazarı Central District Municipality after the 28 March 2004 local administration elections has commenced a new period. The building census distribution in Table 5.5, which had been formed during the damage assessment works carried out by greater municipality, now became current for the central district municipality after its establishment. In Turkey, district municipalities are responsible to issue building licenses within its boundaries according to the local administration legislation. Hence, repairing, maintenance and reconstruction permits are now at the discretion of Central District Municipality, which were previously carried out by Greater Municipality before May 2004.

Table 5.6: Building Distribution in Adapazarı Greater Municipality Authority Area
Source: Adapazarı Greater Municipality, Planning Department

Districts	Number of Buildings	Housing Units	Commercial Units
AKINCILAR	565	1115	87
BEŞKÖPRÜ	863	2016	236
CUMHURİYET	789	2140	2560
ÇUKURAHMEDİYE	334	660	197
DAĞDİBİ	226	351	63
GÜLLÜK	375	656	71
HIZIRTEPE	1353	3238	343
İSTİKLAL	578	1330	248
KARAOSMAN	589	1065	208
KURTULUŞ	421	1228	170
MALTEPE	1523	3413	237
MİTHATPAŞA	1951	4487	386
ORTA	688	1599	1049
OZANLAR	762	2285	135
PAPUÇÇULAR	419	1141	328
SAKARYA	893	2133	193
SEMERCİLER	724	2150	2380
ŞEKER	1442	3346	236
ŞİRİNEVLER	405	1033	148
TEKELER	659	1193	300
TEPEKUM	994	2297	309
TIĞCILAR	395	1471	1179
TUZLA	475	641	202
YAĞCILAR	2160	4308	691
YAHYALAR	633	1826	592
YENİCAMİ	244	541	78
YENİGÜN	1614	4158	504
YENİDOĞAN	367	1061	113
TOTAL	**22441**	**52882**	**13243**

The adopted method to assess the physical redevelopment in Adapazarı is based on the comparison of construction license and repairing license numbers within the existing building stock. These data have been conveyed to the following tables, and then, interpretations are enumerated.

In Table 5.6 total number of housing unit is determined as 52 882. If it is considered the reported number of floor areas required to be reduced by the planning department, that is around **14 000 dwelling** units of 52 882, it is obvious, how a planning regulation affecting the legal condition of total stock in the city. **In other**

words, transferring the geological surveys results which foresee ideal building heights as the same into the development plan requires a reduction in araound 27 % of the total stock.

Table 5.7 presents the damage levels in building and dwelling stock of Sakarya province. As mentioned previously for the Table 5.5, post-earthquake urban redevelopment understanding based on the compensation the losses of disaster survivors by state, and Ministry of Public Works and Resettlement directs the process in provincial scale. That is why, data collection system concentrates on the total number in province. What is crucial is here, damage assessment outputs are not stock data, in contrary, they can be subject to many changes. As explained under the scope of Disaster Law-Entry No: 7269 in the previous chapter, a disaster survivor can demand reassessment if he is not content with the assessment result. That is considerable widespread in a situation only one dwelling unit provision to a disaster survivor even if he would loose more than one. Such a condition is observed in the redevelopment process and leads different statistical results. For example; heavy and collapsed number of dwelling units in Sakarya province was reported 24 678 in Table 5.5 which is 24 774 in Table 5.6.

Moreover, statistics and ratios in Table 5.6 are also presenting the building numbers in Sakarya which was not exist in Table 5.5. Hence, we can understand now, the percentage of damage ratio in the building stock after the hit of earthquake. That is, **71% of total stock have been damaged in the Province scale**.

Table 5.7: Damage Levels in the Province Scale

Source: Adapazarı Greater Municipality Report submitted to Prime Ministry in 17th August 2003

Damage Level[3]	Building	Percentage Ratio (%)	Dwelling	Percentage Ratio
Heavy and Collapsed	9490	21	24 774	26
Moderate	7689	17	18 511	20
Slight	15 162	33	27 944	29
Undamaged	13 528	29	24 448	25
Total	45 869		95 667	

Table 5.8 is formed with regard to questionnaire form prepared before the field survey. The main aim was to show how property problems affects the redevelopment process. As explained before, even issuing repairing license requires the assembling of flat owners and their unanimity to obtain a repairing project. If the ratio of damaged building stock in province is 71%, it is clear that, concentration on the recent conditions of damaged stock via license statistics will allow more concrete assessments. However, such an inquisition is only possible in a district scale. As mentioned before, establishment of Adapazarı Central District Municipality is one of the major milestone in the redevelopment process of the city. Hence, its statistics are crucial to test the determining characteristic of ownership constraints which is elaborated throughout the study. Conveyed data in Table 5.8 is obtained from the related department in the municipality. However, it is necessary to point that existing data bank of the municipality is not sufficient to make cross examination for reconstruction license numbers. It concentrates only new building construction license after the establishment of municipality and does not provide to understand how many of them valid for collapsed building in the earthquake. For this reason, Table 5.8 only focuses on repairing statistics which were submitted from Greater Municipality to Central District Municipality.

[3] As mentioned in the previous chapter, damage assessment is carried out with building scale and these numbers indicates the pre-earthquake building census. Hence, there is no any registration for the reconstructed buildings after their collapse.

Table 5.8: Building Statistics in Adapazarı Central District

Source: Adapazarı Greater Municipality Planning Office and General Directorate of Urban Development of Adapazarı Central District Municipality

Total Number of Buildings in Adapazarı Central District Municipality	**22 411**
Total Number of Dwelling Units in Adapazarı Central District Municipality	**52 882**
Total Number of Moderately Damaged Buildings in Adapazarı Central District Municipality	**5880**
Total Number of Moderately Damaged Housing Unit in Adapazarı Central District Municipality	**13385**
Total Number of Unauthorized Moderately Damaged Buildings in Adapazarı Central District Municipality	**864**
Total number of Repairing License Issued Building in Adapazarı Central District Municipality	**978**

Assessments on Building Census and Construction License Statistics

1. If the total moderately damaged building stock in the province-7689, is compared with those in central district area- 5880; **76% of total building stock** which must be subject to rehabilitation is only in the central district.
2. When the same comparison is made for the dwelling units- 10 166 to 18 511-, it is observed that, **55% of total householders in Sakarya province** are left to accomplish necessary repairing and reinforcement process just in the central district.
3. In order to understand the condition of post earthquake urban redevelopment in the central district, number of repairing licenses can be compared with moderately damaged building stock (978:5880). Hence, **only 16,6 % of the building stock is subject to rehabilitation after 5 years.** The remain, 83,4% is still under the risk of collapsing.
4. One of the striking output of the redevelopment process is observed within the moderately damaged unauthorized building stock (864:5880). Here, **15 %**

of total moderately damaged stock is already outside the rehabilitation process.

Table 5.9 is formed to test how the proposed building height regulation in the revised development plan affecting existing building pattern in the central district of Adapazarı. Number of buildings which have more than 2 stories are now subject to storey reductions or reconstruction with 2 stories. On the other hand this is nearly impossible if the flat ownership regulations and existing property adjustment instruments are considered. What is interesting is here, number of floors required to be reduced for the achievement of 2 storey with respect to new development plan was reported as **4580** by the initial surveys of planning department of the municipality. However, as calculated in Table 5.8, this number is obtained as **6645.** Hence**, 2065** (6645-4580=2065) stories supposed to be under the scope of **vested right-***müktesap hak* in respect to their construction license date which had been issued 2 years before the earthquake.

On the other hand, Table 5.9 also shows the most disputable subject of earthquake studies. When the percentage of moderately damaged stock in the total stock is considered, it is seen the increase of vulnerability as the number of stories increase. However, this study is not supporting the understanding of high storey buildings are the reason of catastrophe. In contrast, the defects in building production system and improper building supervision services should be assessed as the main reason.

Table 5.9: Distribution of Number of Buildings According to Their Number of Stories
Source: Adapazarı Central District Municipality

Number of Stories	Total Number of Buildings	Number of Stories subject to Reduction	Number of Moderate Damaged Buildings	Percentage of Moderately Damaged Stock in Total Number of Buildings
5 stories	626	626x3=1908	219	0,34984
4 stories	1236	1236x2=2472	252	0,203883
3 stories	2265	2265x1=2265	293	0,12936
Total	4127	**6645**	764	0,185122

Title Operations

This thesis is considering the necessity of taking into account of urban property dynamics after the earthquake. However, insufficiency in bringing together of title office transaction data and building statistics hinders following the changes in the urban property market. First of all, data collection system of Title Office is not suitable for mapping. Related transactions are registered in special notebooks and they are not allowed to be inquired by the third person. On the other hand, realization of post-earthquake urban redevelopment plan which foresees floor area reductions is desperately depends on effective title office transactions. Re-sharing of development rights between the flat owners can only be possible through the selling or transferring operations in the title office. However, **inexistence of a registration system which focuses on post-earthquake urban plan implementation** does not allow to figure out which properties became subject to redevelopment. 3-months periodical statistical tables are the only document can be applied. However, they indicates the general operations in province scale without a sufficient spatial differentiation. It can be claimed that, these handicaps are not only peculiar to the post-earthquake chaotic conditions. Although title documents are required in each development plan implementation process, a sufficient correlation between the Title office and municipality cannot be provided. For example, Title Office in Sakarya carries out its operations in two directories, but their responsibility areas do not coincide with the administrative boundaries of Adapazarı Greater Municipality. That is why, building census and construction license statistics after the earthquake cannot be compared with related title office transactions. The reason is that, these two data do not overlap spatially. However, this study will make an assumption that, Area 1 statistics of Title Office represents more or less Adapazarı Greater Municipality authority area. From this point of view, Table 5.10, Table 5.11 and Table 5.12 will be interpreted with respect to this assumption. Therefore, more profound and specialized databanks should be constituted by the officials to make exact assessments. Moreover, such a system can be disseminated to the whole damaged urban areas in the Marmara region which experience the same handicaps.

Data on the following tables have been obtained by the consent of directors of the Title Office for this field survey. As explained, insufficiency of data process system can be observed even in two branches of the same authority. Hence, discontinuity of data does not make possible to draw tendencies of property owners in post-earthquake urban redevelopment. Yet, data of 2003 and 2004 can be considered more objective references in the evaluation.

Table 5.10: Distribution of Title Office Transaction Statistics within the Post-Earthquake Years for Area 1 Directory

Source: Sakarya Province Title Office Directory Statistics

Operation Types	2001		2002		2003		2004	
	Term 1	Term 2	Term 1	Term 2	Term 1	Term 2	Term 1	Term 2
	Term 3	Term 4	Term 3	Term 4	Term 3	Term 4	Term 3	Term 4
SELLING	547	800			592	781	592	975
		829			855	733	593	
DONATION	4	2			1	8	4	3
		5			8	5	4	
TRANSFERING	10	22			17	24	10	13
		20			26	20	10	
MORTGAGE	773	898			237	185	15	39
		489			451	319	57	
MORTGAGE	31	80			43	77	379	314
DELAY		52			53	87	250	
OWNERSHIP TYPE ASSIGNMENT	48	20			-	22	24	34
		38			24	30	10	
EXPROPRIATION	-	-	-	-	-	-	-	-
		-		-		-		-
FLAT COOPERATION	11	12			4	8	3	42
		83			11	12	57	
FLAT OWNERSHIP	5	6			2	5	8	22
		3			3	9	23	
CASE STATEMENTS	90	500			535	306	893	959
		2185			816	400	2149	

Table 5.11: Distribution of Title Office Transaction Statistics within the Post-Earthquake Years for Area 2 Directory

Source: Sakarya Province Title Office Directory Statistics

Operation Types	2001	2002	2003	2004
SELLING	1415	1811	2000	
DONATION	11	28	18	
TRANSFERING	99	733	950	
MORTGAGE	28	38	88	
MORTGAGE DELAY	69	74	19	
OWNERSHİP TYPE ASSIGNMENT	31	60	92	
EXPROPRIATION	-	574	-	
FLAT COOPERATION	22	85	207	
FLAT OWNERSHIP	5	41	195	
CASE STATEMENTS	1128	605	1724	

Table 5.12: Comparative Title Office Transaction Statistics of Area 1 and Area2 Directories Within the Post-Earthquake Years

Source: Sakarya Province Title Office Directory Statistics

Operation Types		2001	2002	2003	2004
SELLING	Area 1			2961	2160
	Area 2	1415	1811	2000	
	Total			4961	
DONATION	Area 1			22	11
	Area 2	11	28	18	
	Total			40	
TRANSFERING	Area 1			87	111
	Area 2	99	733	950	
	Total			1037	
MORTGAGE	Area 1			1192	943
	Area 2	28	38	88	
	Total			1280	
MORTGAGE DELAY	Area 1			260	268
	Area 2	69	74	19	
	Total			279	
TYPE ASSIGNMENT	Area 1			76	68
	Area 2	31	60	92	
	Total			168	
EXPROPRIATION	Area 1			-	-
	Area 2	-	574	130	
	Total			130	
FLAT COOPERATION	Area 1			35	101
	Area 2	22	85	207	
	Total			242	
FLAT OWNERSHIP	Area 1			19	53
	Area 2	5	41	195	
	Total			214	
CASE STATEMENTS	Area 1			2057	4306
	Area 2	1128	605	1724	
	Total			3781	

Assessments on Title Office Transactions

1. In Table 5.12, there is a high level of selling transaction with respect to other types of title operations and this demonstrates the exchange and mobilization trends in the city.
2. Mortgage transactions is one of the most applied type of operation. However, if the post-earthquake economic conditions are considered in the city, this is not surprising.
3. According to the flat ownership regulations which are explained in Chapter 2, collapsing of buildings abolishes automatically the flat ownership. On the other hand, required re-sharing of reduced development rights with respect to renewed development plan can only be accomplished through the process of reconstitution the flat cooperation and flat ownership on urban land. However, the very low level of ownership type assignment transaction numbers indicates the determining role of property problems of the process.
4. In the previous chapter it was explained the formal definitions on acquisition of sites which are subject to housing development for compensating the losses of disaster survivors. According to Disaster Law-Entry No: 7269, expropriation can only be applied in the places where housing developments will be realized. However, relocation of disaster survivors to the places considerably far away from damaged urban areas engendered the continuity of development rights of the disaster survivors in the damaged urban fabric. As a result of this, recent expropriations in Sakarya is observed only in the Area 2 registrations, and there is no any expropriation in Area 1 which nearly encompasses to damaged urban areas. **Although demolished urban areas was not considered as relocation, a reconstruction process has been foreseen by the revised development plan.** Such a narrow interpretation of existing legal framework has led the author of this study to investigate both permanent housing developments and rebuilding process in damaged urban areas in order to demonstrate the underestimation of property relations and its dimension.

5. The most impressive example of how property relations affecting the post-earthquake urban redevelopment can be followed via very low level of constitution of flat cooperation and flat ownership after the earthquake. Nearly 400 numbers of flat cooperation and 300 numbers of flat ownership transactions until the year of 2004 in a province, where 8336 number of permanent housing units developed, indicates the scale of post-earthquake redevelopment. On the other hand, an annual registered renewal ratio in an interval %0,2- %2 of the stock urges putting in forward special concentrations on property problems immediately.

This thesis is elaborating the point that capacity of plan implementation instruments in Turkish urban planning are not sufficient to cope with reduced development rights in built-up urban areas. Hence, the problem of damaged urban fabric and its transformation process, that is through the assembling and subdivision of property shares, are left to **market relations**. However, that is only current in the areas where urban rent is high. This chapter will be ended through a spatial analysis in the Çark Street where transformation and in-transformation conditions are both observed with respect to the renewed development plan.

5.8 Examples from Çark Street

Location of Çark Street is defined by the major roads in the city center. Atatürk Street is one of them as the major pedestrian way which suspends to historical bazaar named Uzun Çarşı in the north and to railway station in south. As can be observed from Figure 5.10, Çark Sreet has various accessibility from those fringes and can be considered as the major focus of the center. In addition, a new road in the west part of the street linkages the central district to the neighborhoods of the city. In the light of these spatial relations, it is not surprising that Çark Street is the only area where new building regulations proposed in the development plan are applied. However, this transformation process is also seen through the İzmit Street which locates in the south of the center and have access to university buildings.

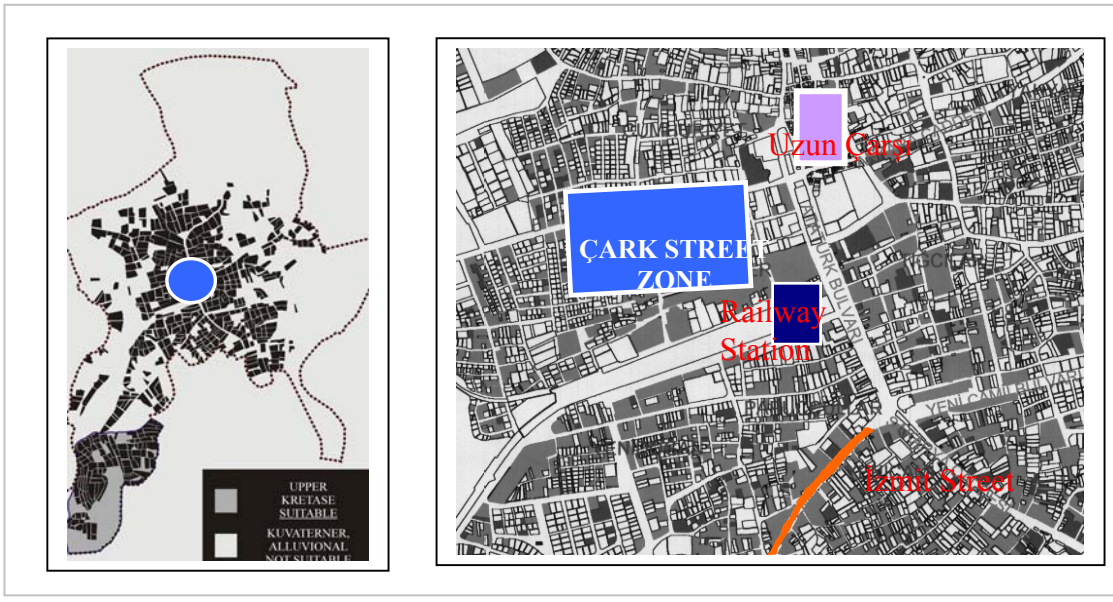


Figure 5.10: The Place and Context of Çark Street Zone in the City

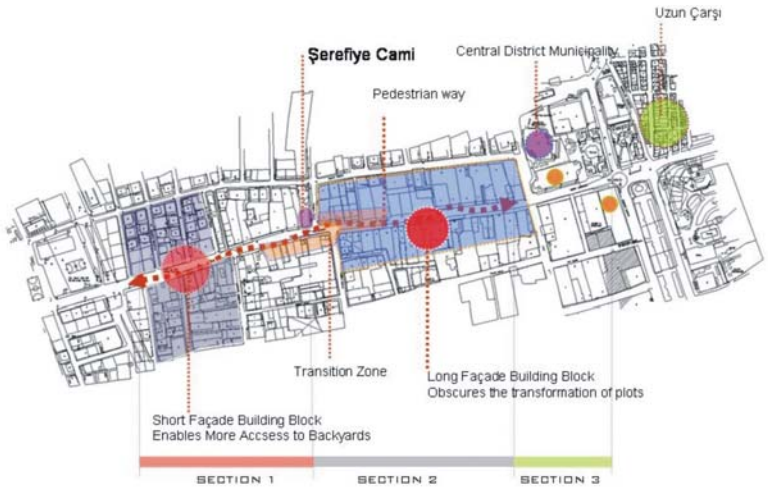


Figure 5.11: Segments in the Çark Street

As shown in Figure 5.11, three major section defines the street. Section 1 in the west part is consists of relatively small building blocks that enables the pedestrian movement to access towards the backyards. Hence, spill over effects of the transformation process can also be observed more than those in other sections.

The place of Şerefiye Cami defines the transition zone of the street between the Section 1 and Section 2. Building pattern in Section 2 is more congested due to the attached building order and the most difficult transformation process is observed here. On the other hand, Section 3 is the only area entitled to traffic circulation and major shopping malls, municipality building and open spaces take place in this part

Figure 5.12: Collapsed Buildings After the Earthquake in Çark Street

According to the Figure 5.12, collapsed buildings in Çark Street can be seen more in the west part of the street and the relation between open spaces and the buildings with their heights can be fallowed from Figure 5.13. What is interesting is here, temporary usage prefabricate units took place immediately in the places of collapsed buildings after the earthquake which are still used, however, with more furnished types.

Figure 5.13: Floor Area Levels in Çark Street

This thesis has been criticizing the development plans prepared after the earthquake due to its underestimation of existing property relations and building pattern. Adoption of geological survey results, which foresee 2 storey building height at maximum, to these plans as the same can only be considered a negligence. Necessary transformation and transferring of reduced development rights on the real properties (land and the structure on it) could not be handled. As seen from Figure 5.14, revised development plan cannot go beyond to keep the building pattern along the street as attached and proposing detached pattern in the backyard building blocks.

Figure5.14: Comparison of Pre-Earthquake and Post-Earthquake Urban Development Plans

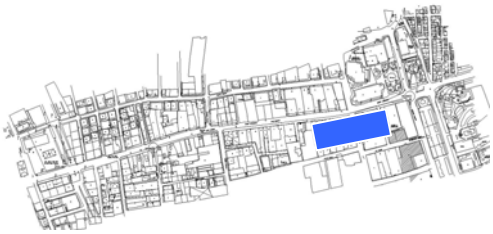
Figure 5.15: Transformation Categories of the Plots in Çark Street after the earthquake

Location of the view in the plan

Figure 5.16: An example view of storey reduction

Figure 5.16 is an example of necessary storey reduction with respect to the renewed development plan from Section 3 of Çark Street. In this condition, usages of the terraces reflect a public space appropriation. What is interesting is here, transformation of the flats and their horizontal integration was one of the developed alternative in 1980s to break the monotonous characteristic of apartment type building fabric

Source: Personal Archive



Location of the view in the plan

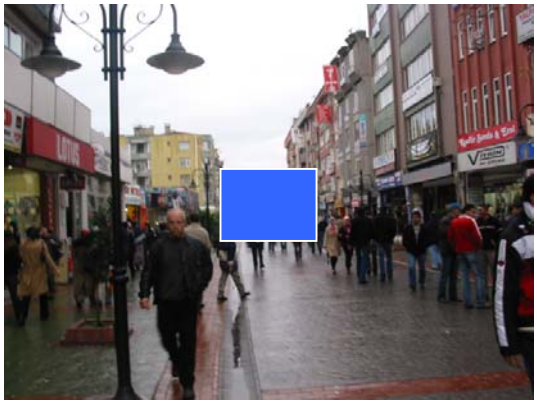
Figure 5.17: An example view of partial temporarily redevelopment

In Figure 5.17 temporarily developed plots and untransformed plots together represent the chaotic conditions of property relations on urban space. Plot scale

rehabilitation is the inevitable process in an urban area where ownership intensities are widespread. However, an homogenous transformation is not possible in these ownership fragmented building pattern.

A view of transformed buildings from Çark Sreet in 2004 (Personal Archive)

The same place just after the earthquake
Sorce: Ahmet Serbest's Photo Archive



The place of the view in the street context
Source: Personal Archive

Location of the view in the plan

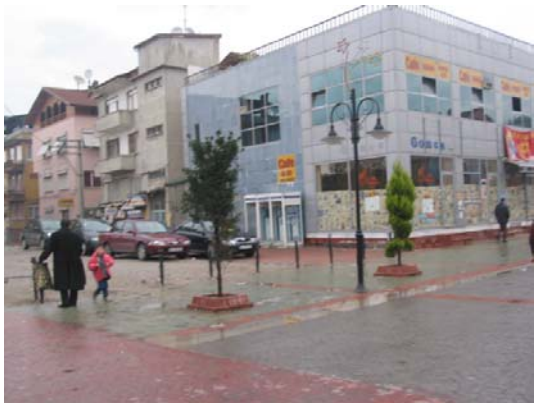
Figure 5.18: The condition of plot scale redevelopment in the street context

In Figure 5.18, utilization of geological survey results as the same in revised development plans is questioned. Proposing a 2 storey building height at maximum and even its realization provide an urban space more safe to the possible earthquake hazards? In this example, redeveloped plots with respect to the revised development plan are together with the buildings which have still risk of collapsing. There is no

doubt that these damaged buildings are more vulnerable regard to their pre-earthquake conditions.

Source: Personal Archive

Location of the view in the plan



Source: Personal Archive

Location of the view in the plan

Figure 5.19: An example to fringe benefits of developed plots

Reconstruction of collapsed buildings in low level floor areas can be evaluated affirmative as providing more qualified buildings or an human scale street pattern. On the other hand, that is desperately depends on the capital power. The premises which could not be subject to transformation just in the backyard of the Çark Street intent to benefit from their side-by developments. Unauthorized floor developments can be observed via pseudo roof annexes

Source: Personal Archive

Location of the view in the plan

Source: Personal Archive

Location of the view in the plan

Figure 5.20: An example to Reconstruction with Respect to Development Plan

According to the renewed development plan, assembling of flat owners and re-sharing of reduced development rights in low levels was the expected process after the earthquake. Even such an operation is succeeded, the result is only a more durable buildings to the earthquakes which are rented 300 USD/m^2. Therefore, only high capital investments only afford to take place in Çark Street, and previous shopkeepers leave their places.

Transformation Process in the Sample of 'Passage 2000'

Passage 2000 is one of the biggest shopping center in the city of Adapazarı. The ownership of the building was shared especially by the public agencies almost in equal rates. Adapazarı Municipality was the main developer of the building, however, due to the debts of the municipality, Institution of Social Security, Ministry of Accounting, Institution of Child Protection have become other stakeholders through the sequestrations before the earthquake. As the location of the building is considered, at the crossroads of the main streets in the central business district, it takes a crucial place in the economic life of the city. Especially the jewelers and high capitalized consumption goods were purchased before the earthquake.

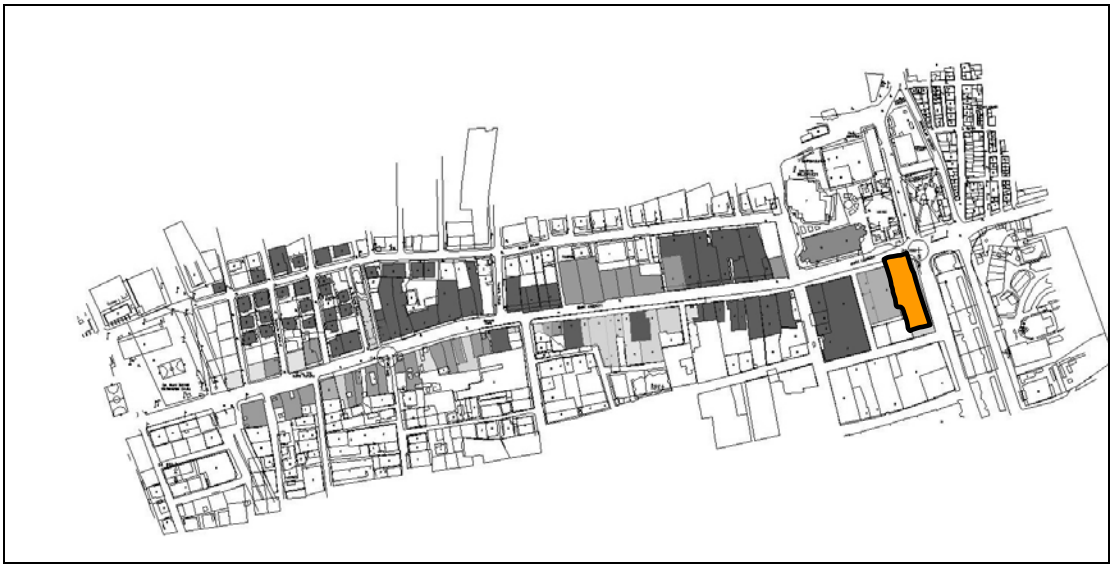


Figure 5.21: The place of Passage 2000 in Çark Street

After collapsing of the building, almost all shopkeepers have established a management unit to carry out the necessary legal procedures of the Disaster Law. However, as explained in the previous chapter, renters are not considered in right-holder framework. What is interesting is here, although they have a possessionship right in theoretically, any framework to sustain their economic life could not be established just after the earthquake. Temporary prefabricate units was constructed by themselves, but, they became illegal and evacuation cases were brought to the

suit. As a result, handicaps have led them to buy the other stakeholder's shares to purchase the total surface area. The cases of Şüyuun İzale-Abolishment and re-sharing of partnership on the property- and renewed valuation cases have delayed the acquisition of the property. Lack of economic subsidies for the renters, shopkeepers could not find another option than bank credits with high interest rates. If these process is assessed with the great economic crises in 2001, repayment period of the debt has affected almost each of them. 41 purchaser of the shopping center are now carrying out their economic life in a prefabricate passage, under the name of Passage 2000 and cannot afford to realize their new project.

During the acquisition process of the property, participating to the whole purchasing cost was shared with respect to the rental price levels before the earthquake. As the location of the shopping center was in a crossroad, the rents were heterogeneous in the building. Locations of the units according to the passage entrances was the main determiner on participation fees. However, construction cost of the new project, estimated in 200-300 USD/m^2, cannot be re-shared due to the un-reconciliation on new locations of them in the new project. These concerns have engendered various design reviews as well in the last 6 months development process of the architectural project.

To this end, redevelopment process example of the Passage 2000 indicates the robust structure of property relations on urban space. It can be claimed that a narrow interpretation of the legal framework and one way utilization of geological surveys do not allow an urban life which is easy to endure.

Shopping Center,Before the Earthquake
Source: Ahmet Serbest, Personal Photo Archieve

The Debris of Shopping Center
Source: Ahmet Serbest, Personal Photo Archieve

Existing usage of the shopping center under the name of Passage 2000
Source: Personal Archive

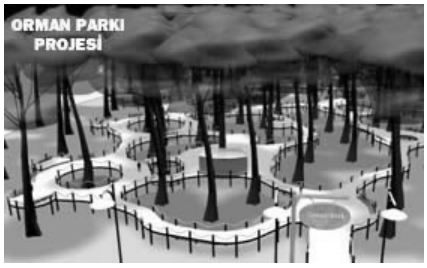
The developed Project for Passage 2000
Source: Project Archive of the Architect: Bora Altınişik, MSÜ-2000

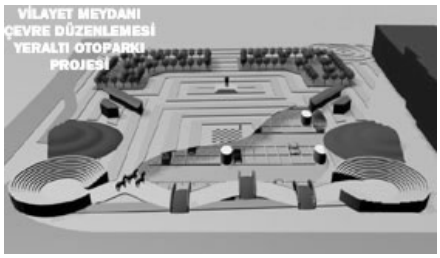
Figure 5.22: Pre-Earthquake and Post-Earthquake views of 'Passage 2000'

On the other hand, the agenda of planning department has slide to project preparation for landscape developments, zone redevelopments in town center and projects for the integration problem between the new settlement areas. Those can be summarized in Table 5.13

Table 5.13. Municipality's Urban Projects after the Earthquake

Landscape Development Projects	1. Gar Meydanı Landscape Project 2. Vilayet Meydanı Landscape and Underground Auto park Project 3. Forest Park Project 4. Agricultural Furnishing Area Urban park Project 5. Sakarya River Alongside Regional Center and Recreation Park Project 6. Sapanca Lake and Çark Stream Landscape Project 7. Poyrazlar Lake Tourism Center Project
Redevelopment Projects in Adapazarı Town Center	1. New *Hal* Project 2. Urban Regeneration Project in *Hal* Area 3. Restoration Project of Historical Buildings in Adapazarı 4. Solid waste Storehouse Project 5. International TIR, Lorry Park and Terminal Project 6. Inner city Junction Projects 7. Town Center Tram Project
New Settlement Area Integration Projects	1. New settlement Light Rail Project 2. New Settlement Area-Kaynarca Linkage Road Project 3. New Settlement Area-D-100 Main Connection Road Project





However, the problem of reduced development rights is still uncertain. The only developed option is a new housing development in north-east part and consideration of those property owners as new right holder. However, it is reported that, around 10 000 right holder would be under this scope. That means, an huge amount of property development is required. But, this is not easy to be handled if economic framework is considered in both local and central administration level.

Therefore, previously established planning office in the municipality, which have prepared urban development plans after the earthquake, is more dealing with necessary plan and project preparation. However, planning department has figured out only one alternative. That is, consideration of flat owners under the scope of right holder for social housing development in northern side new settlement areas. According to their report (2003), prepared for submission to Ministry of Public Works and Resettlement through the mediation of Province Administration, it is necessary to develop around 10 000 dwelling units in new development areas. However, this option has not been found as satisfactory by citizens. They assess that, moving from their premises to the areas where lack of sufficient amount of urban services is unreasonable. From this point of view, the case of Korucuk New Settlement area has an unique characteristic. Municipality has carried out an immense amount of land development studies and established a partnership with Housing Development Administration. However, it is experienced that, expected demand could not be achieved and those lands in Korucuk have been sold in lower price levels than foreseen through auctions.

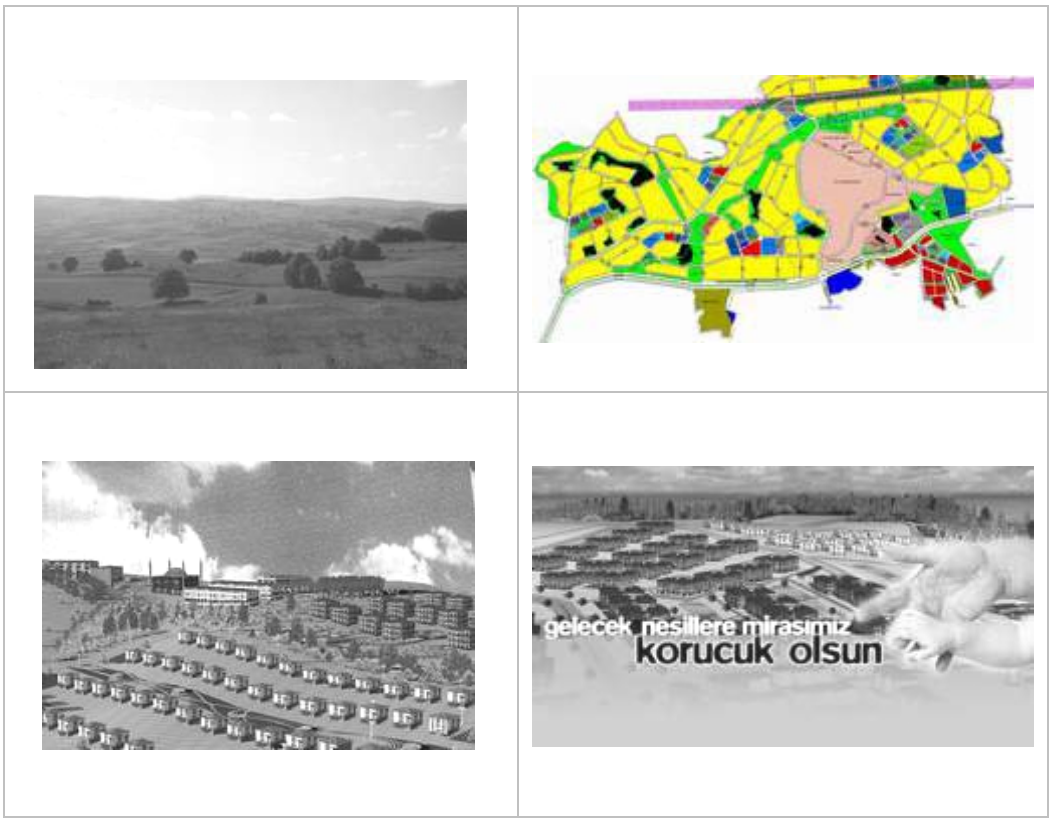


Figure 5.23: Korucuk New Settlement Area

Source: Adapazarı Greater Municipality, Planning Department

Conclusion

This chapter is constituted in conformity to the questionnaire form prepared both in English at the beginning of this chapter and in Turkish in the appendix. Such a method required designing a framework in advance on some predetermined post-earthquake urban redevelopment indicators. These can be categorized as:

1. Urban planning process before and after the Marrmara Earthquake
2. Building and construction license statistics after the earthquake
3. Changes in real estate market after the earthquake
4. A spatial analysis in Çark Street

This thesis considers the necessity of the dissemination of this method for other damaged urban settlements in Marmara Region. On the other hand, these studies are

not simple to carry out without full support from both central and local administrations.

To this end, preliminary determined post-earthquake urban redevelopment indicators were nearly obtained and explored. Yet, some data and information could not be covered in this chapter. These are,

1. Pre-earthquake urban developments could not be discussed in detail. However, the process after the 1967 earthquake and 1985 urban development plan should be surveyed in order to examine how the development rights were increased particularly in city center, although it is geologically unsafe for settlement.
2. Post-earthquake plan modifications have been obtained from the planning department. These indicated the well known subjects such as:
    - Street route rearrangements
    - Reattribution of the development right demands for the premises designated to public usages in the plan
    - Inclusion of related land usages of public administrations, such as natural pipe line route and telecommunication infrastructure

    Hence, any substantial example of property problems elaborated in this thesis does not take place in plan modification registrations of the municipality.
3. Particularly the annual changes in real estate market could not be drafted in this chapter and limited examples from Çark Street are presented. Moreover, the prices are determined arbitrarily and speculative expectations are widely observed. However, this thesis considers the necessity of a more comprehensive investigation on this topic.
4. The drafted spatial analogy in Çark Street presents only a survey in street scale and main concentration was on the plots which are transformed or untransformed. However, more detailed studies in building block scale can be carried out and ownership constraints of the flat owners would be pinpointed.

This chapter attempted to highlight the underestimation of property relations and development rights during the preparation of post-earthquake development plans. The questionnaire form presented at the beginning of this chapter has facilitated the field survey. However, the chaotic post earthquake conditions in the city and weak coordination between Greater Municipality, Central Municipality and Title Office have led to difficulties during the study. Yet, the outcomes of the survey can be considered sufficient to claim that, the inexistence of a plan implementation instrument in transformation and transferring of reduced development rights hinders the post-earthquake urban redevelopment in Adapazarı. These outcomes can be revised and enumerated to this end in below as:

1. Misutilization of geological survey results in the development plan have resulted in 27 % of housing stock being subject to reduction in order to achieve the proposed 2 storey building height regulation in the central district.
2. Inexistence of a framework for the reduced development rights during the preparation and implementation of the development plan engendered a transformation process in unregulated market conditions.
3. Underestimation of existing property relations and development rights exerts a deteriorative transformation and speculative developments in the Çark Street sample.
4. The real estate market in the city center is nearly stagnated due to the high rental prices which are determined randomly in an interval between 100-300USD/m^2.
5. Fragmented ownership pattern also affected negatively the repairing and reinforcement process of the building stock. Assembling of flat owners in order to obtain a repairing project requires unanimity. However, this is succeeded only at 16 % ratio in the damaged stock. In other words, 83,4 % of the moderately damaged building stock in the city center is still under the risk of collapsing, but, are occupied mostly by renters.
6. High level of unauthorized building stock, that is the most intricate problem of Turkish cities, has a substantial effect to post-earthquake urban

redevelopment. In the example of Adapazarı Central District Municipality area,15 % of total moderately damaged building stock is already outside the rehabilitation process due to its unauthorized conditions.

7. According to the succeeded ownership transactions in the Title Office, an annual renewal ratio of the building stock in an interval % 0,2- % 2 urges more concentration of property problems in the city.
8. The juxtaposition of transformed and untransformed plots with respect to revised development plan leads to a discordance in building pattern. A damaged building entitled to repairing adjacent to reconstructed one with 2 storey reflects the negative outcome of a fragmented ownership distribution in urban areas. Moreover, empty plots which previously had a 5 storey building but now its flat owners or shareowners cannot assemble to develop a 2 storey building configure an uncertainty in urban space.
9. Existence of transformed and untransformed empty plots, damaged and reconstructed buildings generate a social justice problem as well. Householders who occupy in a damaged building and under the risk of collapsing are deprived of social security. On the other hand, new occupiers who afford to reconstruct a building as in the case of Çark Street lead to a gentrification process in the city center.

As mentioned before, neither the municipalities nor the Title Office have a sufficient data bank to survey post-earthquake urban redevelopment conditions. In addition, the Ministry makes no attempt to figure out these outcomes. It is obvious that conditions of damaged urban areas requires more elaborated and comprehensive studies and investigations. Otherwise, necessary justifications for the amendment of existing urban planning system in Turkey cannot defined appropriately.

CHAPTER 6

CONCLUSION

6.1. Findings and Concluding Remarks

This thesis is elaborating the point that if the Marmara Earthquake would be a turning point in Turkish urban planning, construction of 43 000 housing units in 27 different sites should be assessed as the outcome of incapability of planning regulations on development rights of real property (land and physical structure on it). If the housing stock in proportion of 83,4% in Adapazarı is still under the risk of collapsing, it is necessary to consider the property problems in more comprehensive framework. A fragmented and intensified property pattern in urban areas through the apartment type of building process has revealed its shortcoming that is not easily to be compensated. Therefore, transferring and transforming of development rights and utilization of them as differ from only building option is the most necessary point to be elaborated in Turkish urban planning so on.

The study started with one of the most robust problems of Turkish urban planning experience which is also one substantive outcome of the Marmara Earthquake urban redevelopment process. That led the study to reconstruct earthquake redevelopment concerns from the point of view of property relations. The study eventually converted into a structural analysis of urban property institution for the preparation of the foundations of necessary implementations in Turkish urban planning. Those are, *transferring and transforming of development rights*.

As one of considerable findings of the study, property concerns have always been the main subject in the development of Turkish urban planning institution and

occasionally disasters have shaped the process. As explained in Chapter 2 and in appendix, indeed, Turkish urban planning system structured itself as a precaution to the disasters. The formerly first planning regulation, *1848 Ebniye Nizamnamesi*, was enacted in order to provide a durable physical environment against the fires. On the other hand, emergence of urban property regulation system has been developed as parallel and today's roots of Article 18 implementation, that is land readjustment. These was utilized to provide a proper street layout and building patterns against fire risks.

From another vein, Turkey has suffered the process of rapid urbanization and experienced many social changes that have also affected the context of urban development. If we consider the dynamic structure of the society and rapid private land appropriation within the Republican Era via Civil Law regulations with its amendments after a 600 years prevailing unit property system, today's vulnerable urban environment is not a simple problem. If the inappropriate urban development is the complaint, it should be understood that, it arises in essence from the outcomes of irregular land distribution system in urban areas via high legitimization of possessionship and *zamanaşımı*-time lapse operations which have been explained in Chapter 2. Moreover, the way of urbanization through the fragmentation of properties in Turkish case, especially with flat ownership regulations, that is increase of 'ownership intensity in unit space', have together played a role in the catastrophe after the Marmara Earthquake.

The issues which have been covered until here present the single task of the study. That is, outcomes of the Marmara Earthquake urban redevelopment process contribute to ongoing risk mitigation and rehabilitation studies in urban environment by revealing the determiner role of property relations in built-up urban areas. It can be claimed that, risk mitigation concerns whose features are scattered in Table 6.1, totally depend upon an appropriate property readjustment practice through the transformations and transferring of development rights in built-up areas.

Table 6.1: Framework of Disaster Mitigation System in Urban Planning

Souce: Balamir (2001), Methods and Tools In Urban Risk Management

<table>
<tr><th colspan="2">IDENTIFICATION OF GEOLOGICAL SURVEYS</th><th>REVISION OF EXISTING URBAN PLANS</th></tr>
<tr><td colspan="2">• Determination of Local Natural Constraints
• Preparation of Integrated Disaster Maps
• Preparation of Microzonnation Maps</td><td>Risk Zones Regulations
Configuration Of Roads
Shaping Of Land Subdivision
Building Regulations
Building Component Regulations</td></tr>
<tr><th colspan="2">ANALYSES OF URBAN VULNERABILITIES</th><th>PREPARATION OF URBAN RISK MAPS</th></tr>
<tr><td>Macroform Vulnerabilities</td><td>Over-compact, over-spread, over-fragmented spatial patterns</td><td rowspan="8">• Areas subject to disaster
• Areas subject to heavy losses of life and assets
• Areas subject to infrastructure and investment losses
⇩
Designation of Action Areas
Land use changes
Density reductions
Changes and limitations in property usages
Infrastructure upgrading
Road capacity increasing
Extension and continuity of open areas
⇩
Setting Design Standard and Principles
Portioned macro-form
Multi centered urban structure
Compatible land use and development pattern
Disaster impact analysis
Coordinated land use
System of open and green areas
Continuity in infrastructure networks
Typology of building design
Tested materials and detailing</td></tr>
<tr><td>Urban Pattern Vulnerabilities</td><td>Hierarchy of roads
Configuration of land subdivision
Various ownership status
Building stock density</td></tr>
<tr><td>Dangerous Usage Vulnerabilities</td><td>Distribution of explosive, pollutant, chemical, combustible usages in residential areas</td></tr>
<tr><td>Building Vulnerabilities</td><td>Unauthorized building stock
Differentiations in building managements
Inaccessibility of urban stock information</td></tr>
<tr><td>Infrastructure Vulnerabilities</td><td>Weakness in network configurations
Capacity and size of catchment areas
Material and workmanship deficits</td></tr>
<tr><td>Administrative Vulnerabilities</td><td>Administrative hierarchy structure
Staff qualifications
Implementation capacities</td></tr>
<tr><td>Functional Vulnerabilities</td><td>Over-crowded urban areas
Bottle necks in traffic
Shortages in open areas
Improper communication system</td></tr>
<tr><th colspan="3">Necessary Set of Legal Provisions</th></tr>
<tr><td colspan="3">• Cooperation of public agencies and property owners
• Implementation of Transferring of Development Right System
• Development of Building Facility Management System</td></tr>
</table>

Urban planning is not only an institution for only regulating the building construction process, however, its habit has developed in that direction. However, existing urban planning system should be restructured in a way of allows new regulations for urban environment improvements. From this points of view, the Marmara Earthquake is presenting many reasons and opportunities for developing sound instruments. Rather than simple building scale context reinforcements, *texture and area development practices and zone redevelopments* should penetrate to the center of professional practice. In order to achieve these concerns, required approaches and amendments can be summarized as follows;

1. A 'Plan-Program-Project Integration' based planning and land use management policies should be elaborated effectively in the process of risk mitigation.
2. Regulations and arrangements of the property system should be restructured in accordance to risk concerns in urban areas. Establishment of flat ownership and other ownership fragmentation methods should be prevented in Title Office Arrangements for the properties in risk zones.
3. Utilization of development plans should be elaborated in a way that overcomes **conflicts of interests** through the process via flexible implementation programs.
4. Definition of various compensation mechanisms and instruments to provide transformation and transferring of development rights on real property (land and the physical structure on it). That is why, development plan understanding has to be revised and the concept of **urban project** should be developed. From this point of view, development plans are no longer an instrument to produce urban land. The real property- land and structure on it- with various kinds of property rights are the main objectives in the urban rehabilitation and mitigation process.
5. As the utilization of development rights are becoming essential, securitization of development rights via types of certificates and disposition of them can be elaborated. Disposition of them as a secondary market instrument like mortgage system can be developed.

6. New urban development projects can be prepared in a manner to provide new opportunities for reduced and restricted development rights in the process of risk mitigation. Holders of those restricted development rights can be participators or shareholders in newly developed urban properties. From this point of view, **rehabilitation centers with healthcare and various similar services can be developed as the necessary urban services for today's housing neighborhoods in Turkey.**
7. Taxation procedures can be revised and must be varied in respect to risk concerns on real properties.
8. A risk based taxation system should be established. Temporary exemptions in existing legislative procedures can be utilized also for disaster risk areas.
9. Municipalities should be empowered with the authority to arrange property tax percentages in an interval differentiates for the properties in risk zones. Such an amendment will enable municipalities a sound control at building process.
10. A moderate percentage of property tax accumulations can be utilized for mitigation and rehabilitation funds
11. Building management services can be established and they would be beneficial in preparation and implementation of urban rehabilitation projects.

On the other hand, it is noticed that there are problems as well in the utilization capacities of the existing urban planning system. Although it contains some opportunities, they are not utilized in the desired level. For example, **according to Development Law Entry No: 3194, there is not any restriction to designate property readjustment areas in advance in development plans**. In addition, the concept of pre-emption right that is already take place in Development Law under the name of '*şüfa hakkı*' can be utilized in various ways. Hence, the existing urban planning system is already enabling zone development and plan-project-program integration, which are the essential concerns of urban rehabilitation and mitigation.

In addition, the handicaps and necessary restructuring objectives for development plans can be summarized as follows:

- Ongoing utilizations of development plans con not provide the necessary implementation instruments for urban rehabilitations. Regulations and practices for the improvement of urban environments will be successful via diversifications of development rights.
- Urban development plans are incapable of evaluating and utilizing the geological surveys and use them only in building scale by definition of building heights for construction. However, it requires to produce microzonnation characteristic geological surveys that enable preparation of area development plans as well.
- Preparation of development plans generally takes a long time and implementation programs are not prepared during in the preparation process. Hence, they become inevitably only a document that cannot be implemented by municipalities. However, it is necessary to establish management units that produce projects and programs on determined areas via flexible amendments.
- Development plans only consider urban development and define only the construction process, however, it is required to define regulations for the maintenance of building fabric after production. Improvement of urban usages, development of transition zones and deteriorated areas, restructuring of urban space with necessary social and technical equipments are all new subjects of development plans.

The main concern of this thesis and which is discussed until here is, *development right transformation and transferring* as the necessary implementation instrument that should take place in Turkish urban planning system. **It is now obvious that, outcomes of the Marmara Earthquake are presenting necessary justification for the retrofitting of existing property readjustment operations**. From this point of view, this thesis is evaluating ongoing legal regulation drafts-*İmar ve Şehirleşme Kanun Tasarısı* and *Kentsel Dönüşüm Yasa Tasarısı*- as the opportunity to establish

transferring of development right-TDR- definitions in Turkey. It is clear that, those drafts with their existing context require many amendments. A short glance shows that, they express an undifferentiated property readjustment operation methods from existing Development Law, Entry No: 3194, in their essences. However, the problem is beyond the simple percentage increase of DOP-PRS. An increase from 35% to 45% is not the focus point to solve the robust structure of urban rehabilitations and risk mitigation planning agenda of Turkey. Table 6.2 summarizes the context of those drafts on property readjustment and figures out the proposal. It is clear that, urban risk mitigation and urban rehabilitation will be carried for real property (the land and physical structure on it) and single land oriented implementations are no more applicable. In this process, building surface area and flat ownership based subdivisions are gaining importance and surplus value oriented discount systems are the subjects of forthcoming urban planning, rather than land production for single construction process.

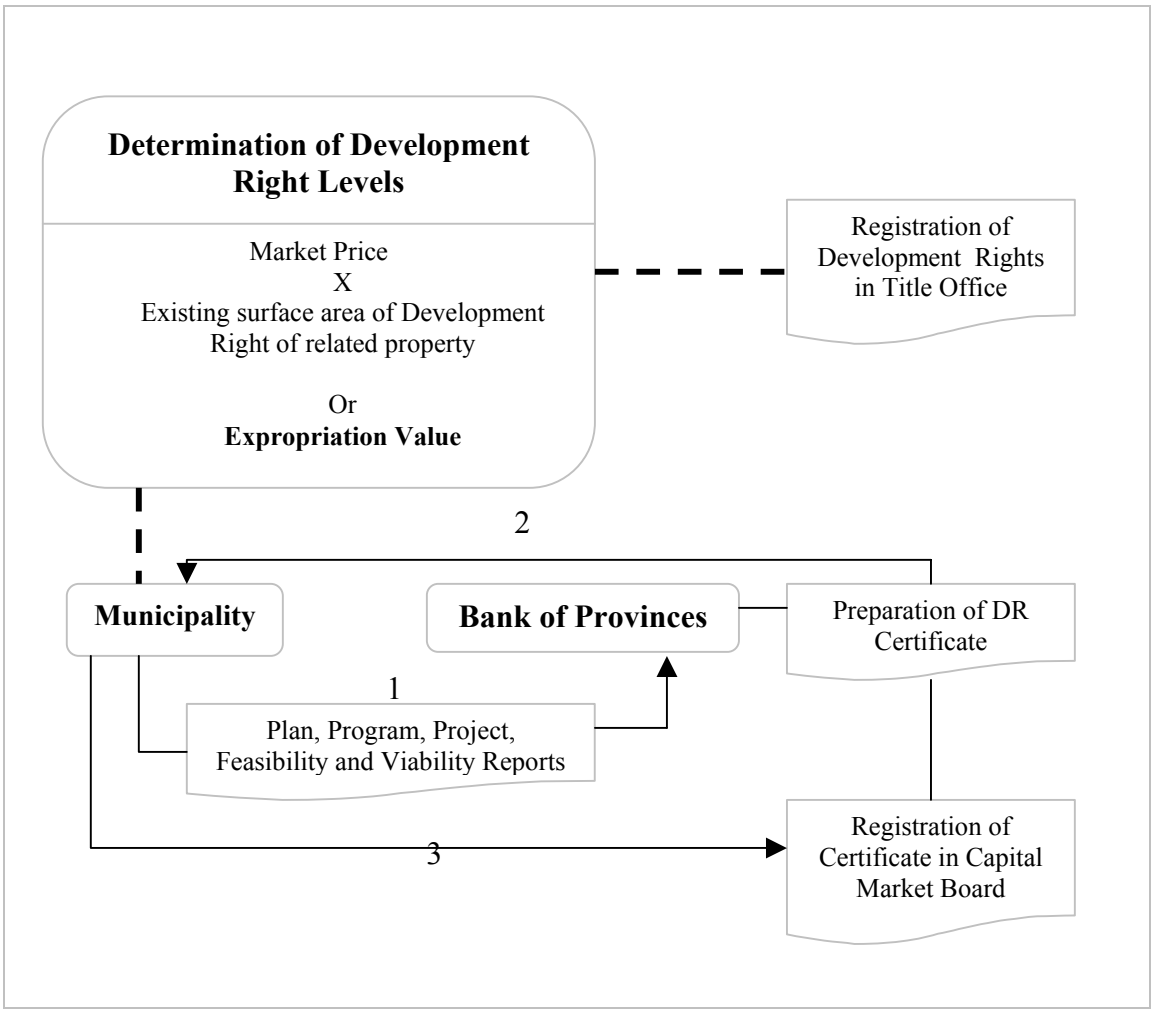
Table 6.2: Legislative Proposals for Property Readjustment Operation

Development Law Entry No:3194 *(Existing Procedures and New Draft)*	Necessary Amendments for New Draft
1. Performed only in the implementation process of *new development plans* while transaction from cadastral statue 2. Land ownership oriented subdivision and combination operations 3. Land oriented 35 %-45% PRS-DOP discount from land ownership and re-sharing system on land surface area	1. It is necessary to implement property readjustments while in urban projects for the areas subject to risk reduction and urban rehabilitation 2. Flat ownership based subdivision and combination can be also elaborated 3. Surplus value oriented PRS discount on land surface can be expanded to *building surfac*e area and 4. Optional purchasing methods for development rights can be defined and varied. Re-sharing of total development rights can be also elaborated 5. Partnership methods on properties and development rights can be utilized 6. Risk concerns and measures of a property should be showed in Title Office registrations

It is clear that, transformation and transferring of development rights are the problem of development plan implementations and various methods can be already defined while in preparation of development plans. Figure 6.1 express the certification process of development rights which is already elaborated in *Revision Draft of Development Law Entry No: 3194 and Its Related Regulations*, prepared by METU in year 1999. Ironically, that study had been submitted to Ministry of Public Works and Resettlement just before the Marmara Earthquake. It is drastically experienced that inexistence of such property readjustment operations have produced the *implementation problem of development plans for damaged urban areas after the Marmara Earthquake* and *inevitably relocation of disaster survivors quite considerable far away from existing urban areas*.

Figure 6.1: Certification and securitization process of Development Rights

Derived from: Mekansal Planlama ve İmar Kanunu Taslağı, ODTÜ, 1999



As one of the consequences of this study, the meaning and context of property in urban planning after the Marmara Earthquake has to be subject to various interests. It is no more possible to sustain an **absolute** comprehension of property due to the emergence of **urban risks**. The meaning and concept of property is subject to be revised. Once the rights on real property (land and structure) are underestimated, it cannot be met the requirements of post-earthquake urban redevelopment process. As explained in Chapter 2, risk mitigation and rehabilitation efforts in urban fabric will lead property understanding to in favor of more **relative** comprehensions. Risk avoidance will be the main interest of property holders and this will bring more participations between the property holders as the result of being *risk owner.*

6.2. Avenue of Future Studies

This thesis has formulated the necessary property issues to be utilized as the basis of transformation and transferring of development rights in urban planning for earthquake mitigation and urban rehabilitation. Such a contribution aimed to give a new dimension to the existing *earthquake studies* from the point of view of urban planning. It is obvious, there are quite considerable studies and elaborations in *structural reinforcements* of buildings from the science of civil engineering and *vulnerability analysis techniques and risk definitions* from the science of urban planning. Hence, **concentration on property concerns and development rights on real property have a characteristic of enlarging the single building scale reinforcements to urban rehabilitations and enabling the reductions of risks on urban areas**. Eventually, required legal reinforcement subjects from the science of planning jurisprudence has been involved into the earthquake studies. Now, necessary foremost institutional and professional concerns can be developed more properly. Hence, **internalization of property concerns with earthquake studies** is providing more opportunities for the research topics, summarized as follows;

1. Adequate financial models, credit and subvention mechanisms that provide property holders reinvestment in their building stock
2. Establishment of insurance services and insurance funds to be used forthcoming financial instruments.
3. Establishing property redevelopment and building management agencies in public and private sectors
4. Necessary tools for a proper land market in mitigation process
5. Elaboration of new contract techniques which are convenient to zone
6. Development of adequate project management techniques specified on urban rehabilitations and risk mitigations
7. Establishment of necessary conditions to provide mutual collaborations between the engineers, planners, lawyers, economists and architects.

To this end, in order to provide urban planning more effective in the earthquake studies, property concerns should be studied with more interest as a part of the process of **reproduction** of urban space.

GLOSSARY

Amendment Plan	İmar Islah Planı
Building Block	Yapı Adası
Civil Law	Medeni Kanun
Constitutional Court	Anayasa Mahkemesi
Construction License	İnşaat Ruhsatı
Damage Determination	Hasar Tespiti
Debris Evacuation	Enkaz Kaldırımı
Debt Coverage	Borçlandırma
Development Law	İmar Yasası
Development Plan	İmar Planı
Development Plot	İmar Parseli
Development Right	İmar Hakkı
Disaster Law	Afet Kanunu
Disaster Survivors	Afetzede
District Municipality	İlçe Belediyesi
Easement	İrtifak
Expropriation	Kamulaştırma
Flat Ownership	Kat Mülkiyeti
Housing Appropriation Document	Konut Tahsis Belgesi
Land Readjustment	Arazi Düzenlemesi
Municipality Adjacent Areas	Belediye Mücavir Alanı
Notification	Genelge
Occupation License	İskan Ruhsatı
Ownership Right	Mülkiyet Hakkı
Plot	Parsel
Possesionship	Zilyetlik

Province Administration	Valilik
PRS-DOP	Düzenleme Ortaklık Payı
Readjustment Area	Düzenleme Alanı
Readjustment Boundary	Düzenleme Sınırı
Repairing License	Onarım Ruhsatı
Right Holder	Hak Sahibi
Shared Ownership	Hisseli Mülkiyet
Sub Region Development Plan	Çevre Düzeni Planı
Subdivision And Combination	İfraz Ve Tevhid
Supplementary Regulation	Yönetmelik
Time Lapse	Zamanaşımı
Title Office	Tapu Müdürlüğü
Title Deed	Tapu
Unanimity	Oybirliği
Valuation Document	Kıymet Takdir Belgesi
Value Increase Case	Tezyidi Bedel Davası
Vested Right:	Müktesap Hak

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APPENDIX A

Permanent Housing Sites after the Marmara Earthquake

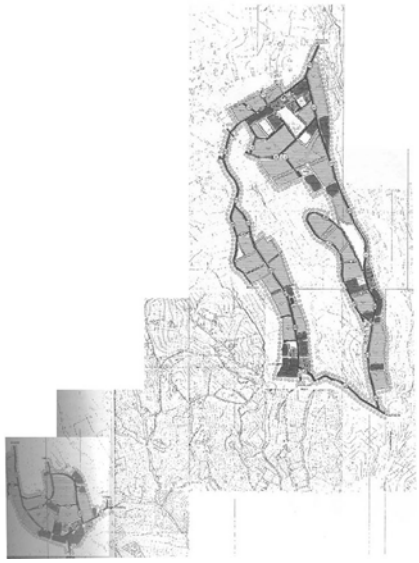
Source: Updated from General Directories of Disaster Affairs, Building Affairs, Disaster Building Coordination Unit, Prime Ministry Project Implementation , February 2002

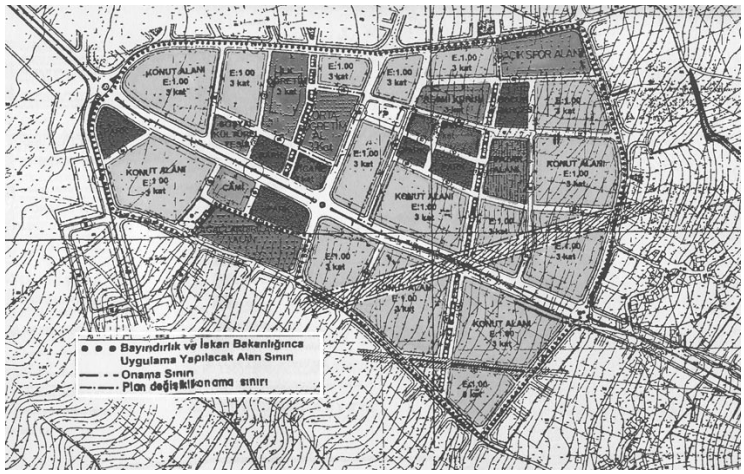
PROVINCE	PROJECT AREA	WORLD BANK		DONATION	MINISTRY		TOTAL
					EIB	MoPS	
		12044	2250	2574	17702	7650	42779
BOLU	BOLU MERKEZ				1734		1734
DÜZCE	TOPLAM	1004				7000	8004
	DÜZCE MERK. –A					7000	7000
	DÜZCE MERK. -B	622					622
	CUMAYERİ	108					108
	GÖLYAKA	274					274
SAKARYA	TOPLAM	2608	1000	1560	3168		8336
	KARAMAN			1350	2010		3360
	KARAMAN İLAVE				966		966
	FERİZLİ			210	192		402
	CAMİLİ	2608	1000				3618
KOCAELİ	TOPLAM	8432	1250	656	7520		17858
	GÜNDOĞDU 1			200	1606		1806
	GÜNDOĞDU 2	2820					2820
	UZUNÇİFTLİK			252			252
	KÖSEKÖY			204			204
	YUVACIK				1780		1780
	DÖNGEL				708		708
	BAHÇECİK				942		942
	GÖLCÜK 1				1242		1242
	GÖLCÜK 2	3568					3568
	HİSAREYN		1250				1250
	DEĞİRMENDERE					444	444
	KARAMÜRSEL	506					506
	HEREKE	980					980
	GEBZE	558					558
	DERİNCE				300		300
	KÖRFEZ				498		498
YALOVA	TOPLAM			358	5120		5478
	SUBAŞI				3002		3002
	SOĞUCAK			358	500		858
YALOVA	ÇALICA			1618			1618
İSTANBUL	TOPLAM			559	160	650	1369
	İKİTELLİ					650	650
ÇERKEZKÖY	TOPLAM					559	559

APPENDIX B

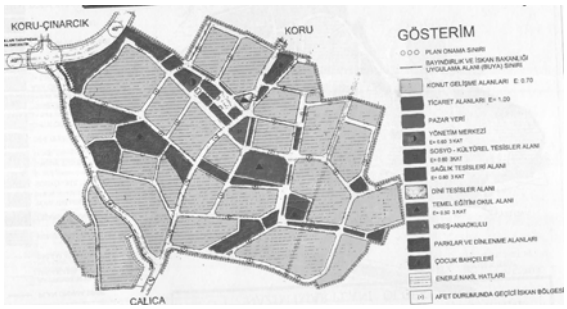
Project Details of Permanent Housing Sites

Source: Updated from General Directories of Disaster Affairs, Building Affairs, Disaster Building Coordination Unit, Prime Ministry Project Implementation , February 2002

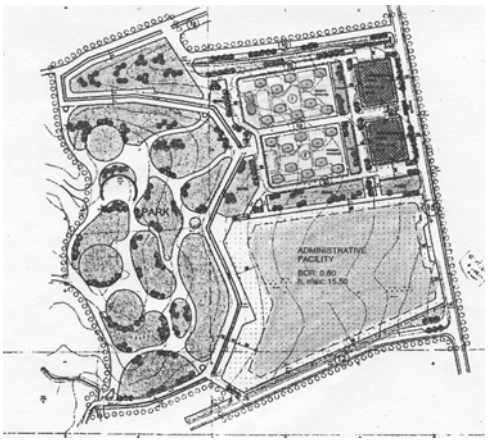
NAME OF THE HOUSING SITE		**BAHÇECİK**		
Number of Housing Units Developed				
Ministry	942			
P.I.U				
Donations				
Total Expropriation Cost		**1.623.719.122.320 TL**		
Unit Expropriation Cost		6-9 Million TL		
Expropriated Area		21.9Ha.		
Planned Area				
Name of Consultancy Firm		YÜKSEL PROJE ULUSLARARASI A.Ş		
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
SC. AİDİFİCİA CARPATİ SA.		942	8.850.000.000.000	8.429.378.500

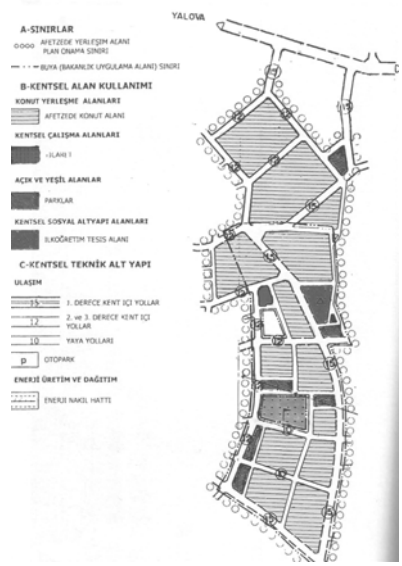
NAME OF THE HOUSING SITE		**BOLU - MERKEZ**
Number of Housing Units Developed		
Ministry	**1734**	
P.I.U		
Donations		
Total Expropriation Cost	**3.976.000.000.000 TL**	
Unit Expropriation Cost	4- 7 Million TL	
Expropriated Area	50 Ha.	
Planned Area		

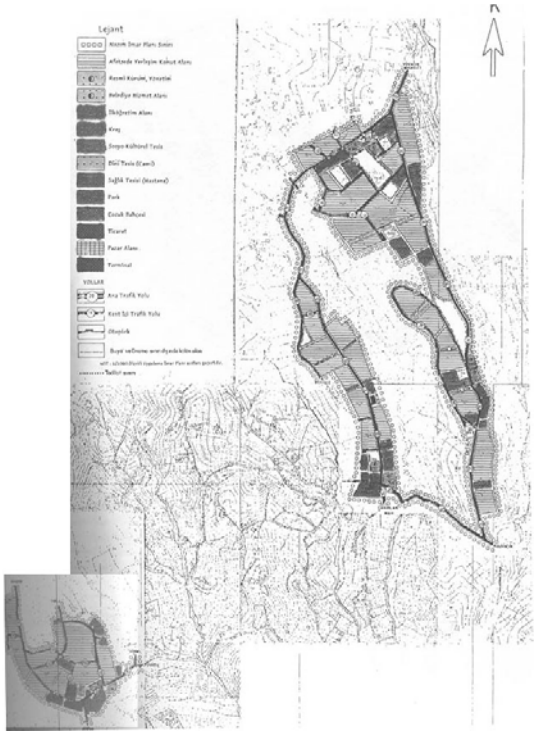
Name of Consultancy Firm	INVESCO İNŞ.TAAH		
Name of Construction Firms	Number of Units	Total Bidding Cost	Unit Construction Cost
SER İNŞ.TİC.LTD. STİ	498	4.840.560.000.000	9.166.666.700
ALTINDAĞ İNŞAAT. TAAH. İHR.LTD. ŞTİ	498	4.800.000.000.000	8.740.196.100
CEYLAN İNŞAAT(tasfiye edildi) ULUSAL İNŞAAT(CEYLAN İNŞ)	462	4.601.520.000.000	8.572.519.100
ALİ BİRCAN VE KARDEŞLERİ+CAN İNŞ.+BİLTEK ORGANİZASYON	134	2.327.000.000.000	17.365.672.000
HEDEF İNŞAAT	142	2.465.000.000.000	17.359.155.000

NAME OF THE HOUSING SITE		**ÇALLICA**		
Number of Housing Units Developed				
Ministry	1618			
P.I.U				
Donations				
Total Expropriation Cost		**2.162.281.874.000 TL**		
Unit Expropriation Cost		4- 6 Million TL		
Expropriated Area		43.6 Ha		
Planned Area				
Name of Consultancy Firm		UBM.+ PETA+ HİRA ADİ ORTAKLIĞI		
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
KAYALAR İNŞAAT		554	5.400.942.952.899	9.748.992.800
DAĞSAN İNŞAAT		504	4.959.360.000.000	9.840.000.000
BELPA İNŞAAT		560	5.569.892.473.118	9.946.236.600

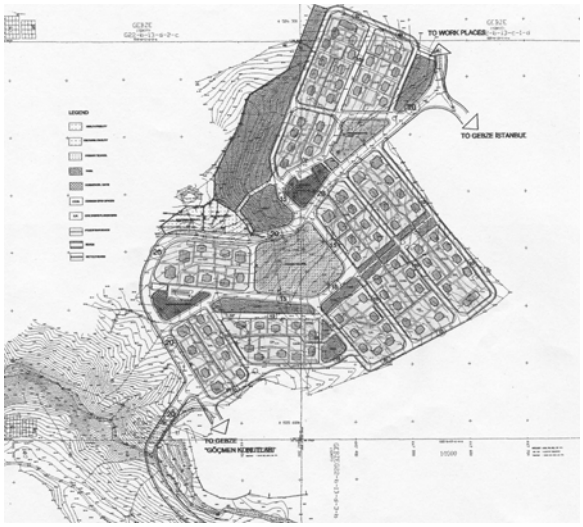
NAME OF THE HOUSING SITE	**CAMİLİ**			
Number of Housing Units Developed				
Ministry				
P.I.U	3608			
Donations				
Total Expropriation Cost	**1.837.000.000.000 TL**			
Unit Expropriation Cost	1-2 Million TL			
Expropriated Area	140 Ha			
Planned Area	49 Ha			
Name of Consultancy Firm	NATIONAL BUILDING CONSTRUCTION + CONSULTING ENGINEERING SERVICES ORTAK GIRIŞIMI			
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
EVREN Yapı Mal.İnş.Tah.Tic. Ltd.Şti		546		
KLİMA İnş.+ METİŞ İnş. J.V		492		
KLİMA İnş.+ METİŞ İnş. J.V		468		
TEPE İnş.San. A.Ş		532		
TEPE İnş.San. A.Ş		534		

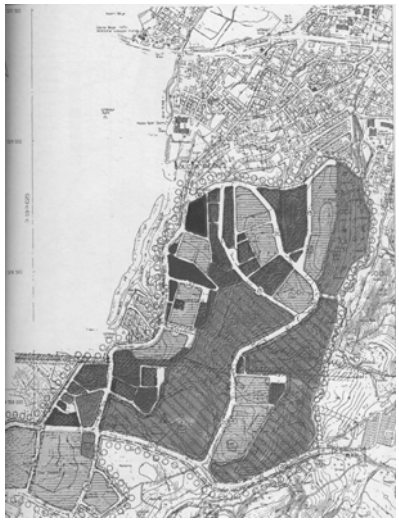
NAME OF THE HOUSING SITE	**CUMAYERİ**			
Number of Housing Units Developed				
Ministry				
P.I.U	108			
Donations				
Total Expropriation Cost	0- (Treasury acquired land)			
Unit Expropriation Cost				
Expropriated Area	21 Ha			
Planned Area	10 Ha			
Name of Consultancy Firm	National Building Construction + Consulting Engineering Services Ortak Girişimi			
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
ÖZTAŞ İnş. Malz. A.Ş		108		

NAME OF THE HOUSING SITE		**DEĞİRMENDERE**		
Number of Housing Units Developed				
Ministry	444			
P.I.U				
Donations				
Total Expropriation Cost		**1.336.475.740.000 TL**		
Unit Expropriation Cost		12.890.407 TL		
Expropriated Area		10.1 Ha		
Planned Area				
Name of Consultancy Firm		SU YAPI MÜH. VE MÜŞAVİRLİK A.Ş		
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
OBTAŞ		444	3.818.400.000.	8.600.0000.000

NAME OF THE HOUSING SITE		**DÖNGEL**		
Number of Housing Units Developed				
Ministry	708			
P.I.U				
Donations				
Total Expropriation Cost		**1.728.021.630.293 TL**		
Unit Expropriation Cost		6-9 Million TL		
Expropriated Area		21.5Ha.		
Planned Area				
Name of Consultancy Firm		YÜKSEL PROJE ULUSLARARASI A.Ş.		
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
URANSAN AŞ.+KUR İNŞ. TİC. SAN.AŞ		708	5.968.000.000.000	8.429.378.500

NAME OF THE HOUSING SITE		**FERİZLİ**		
Number of Housing Units Developed				
Ministry	192			
P.I.U				
Donations	210			
Total Expropriation Cost		**Trasuray Acquired land and some part from private property For Private -190.695.608.198 TL**		
Unit Expropriation Cost		5 Million TL		
Expropriated Area		7.6 Ha. (Treasury land) 2 Ha. (Private Property)		
Planned Area				
Name of Consultancy Firm		PROKON MÜH.İNŞ.TİC.LTD.ŞTİ		
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
İLCİ İNŞAAT SAN. TİC. AŞ		196	1.758.000.000.000	8.869.000.000
İLCİ İNŞAAT SAN. TİC. AŞ		210	2.100.000.000.000	10.000.000.000

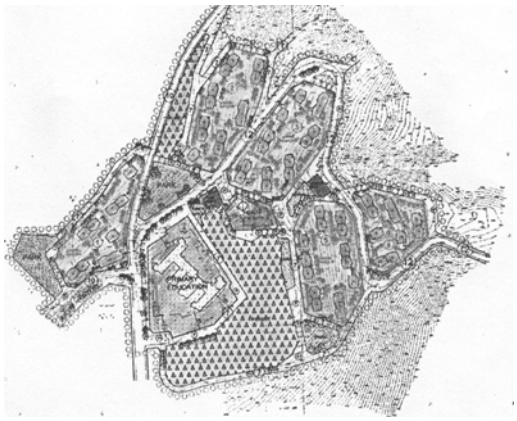
NAME OF THE HOUSING SITE	**GEBZE-1**			
Number of Housing Units Developed				
Ministry				
P.I.U	558			
Donations				
Total Expropriation Cost	**3.273.375.000.000 TL**			
Unit Expropriation Cost	14 Million TL			
Expropriated Area	19.8 Ha.			
Planned Area	35 Ha.			
Name of Consultancy Firm	Constructıon supervısıon: National Building Construction Cooperation veConsuting Engineering Services Ortak Girişimi **Site Planning** **BELDA LTD. ŞİRKETİ**			
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
ÖZTAŞ İNŞ. MALZ. VE İNŞ. AŞ.		558		

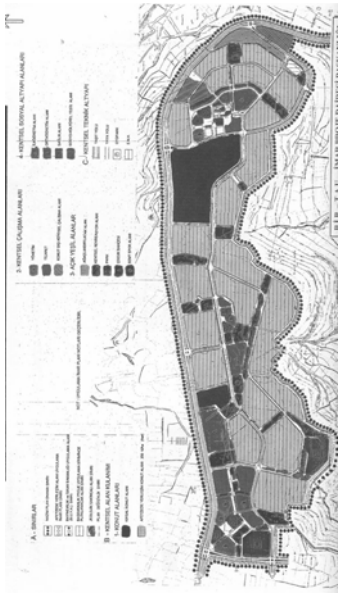
NAME OF THE HOUSING SITE		**GÖLCÜK**
Number of Housing Units Developed		
Ministry	1242	
P.I.U	3568	
Donations		

Total Expropriation Cost	**2.776.756.685.000 TL**
Unit Expropriation Cost	2.5 – 7.5 Million TL
Expropriated Area	50.5 Ha.
Planned Area	80 Ha

Name of Consultancy Firm	**SU YAPI MÜH. VE MÜŞAVİRLİK A.Ş**		
Name of Construction Firms	Number of Units	Total Bidding Cost	Unit Construction Cost
PAKSOY TUR. SAN. + BATUM TAAH. TİC.LTD. STİ.	528	4.840.000.000.000	9.166.666.700
KUVANLAR İNŞ. TUR. TİC.LTD. ŞTİ	204	1.783.000.000.000	8.740.196.100
ŞÜRA MÜH.SAN. TİC. A.Ş	264	2.263.145.038.176	8.572.519.100
BART İNŞ. SAN. TİC. LTD. ŞTİ	246	2.069.970.968.000	8.415.161.000

NAME OF THE HOUSING SITE		GÖLCÜK P.I.U.		
Number of Housing Units Developed				
Ministry				
P.I.U				
Donations				
Total Expropriation Cost		**12.234.315.320.000 TL**		
Unit Expropriation Cost		6-9 Million TL		
Expropriated Area		135 Ha.		
Planned Area		130 Ha		
Name of Consultancy Firm		CONSTRUCTION SUPERVISION: DAR- AL HANDESAH + DAR MÜHENDİSLİK. AŞ ORTAK GİRİŞİM SITE PLANNING: UTTA LTD ŞİRKETİ.		
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
EKİNCİLER VE ORT. İNŞ. TİC. LTD		486		
BOROVA YAPI END. A.Ş		522		
EKİNCİLER VE ORT. İNŞ. TİC. LTD		510		
AGE İNŞ. ve TİC. A.Ş		544		
GARANTİ KOZA İNŞ. SAN .TİC.A.Ş		482		
GARANTİ KOZA İNŞ. SAN .TİC.A.Ş		556		
BARMEK İNŞ. SAN .TİC.A.Ş		468		

NAME OF THE HOUSING SITE	**GÖLYAKA**			
Number of Housing Units Developed				
Ministry				
P.I.U	274			
Donations				
Total Expropriation Cost	**0-(Acquired from Forest Land)**			
Unit Expropriation Cost				
Expropriated Area	17 Ha.			
Planned Area	40 Ha			
Name of Consultancy Firm	National Building Construction + Consulting Engineering Services Ortak Girişimi			
Name of Construction Firms	Number of Units	Total Bidding Cost	Unit Construction Cost	
ÖZTAŞ İnş. Malz. A.Ş	274			

NAME OF THE HOUSING SITE		**GÜNDOĞDU** MINISTRY IMPLEMENTATION
Number of Housing Units Developed		
Ministry	1616	
P.I.U	2820	
Donations	200	

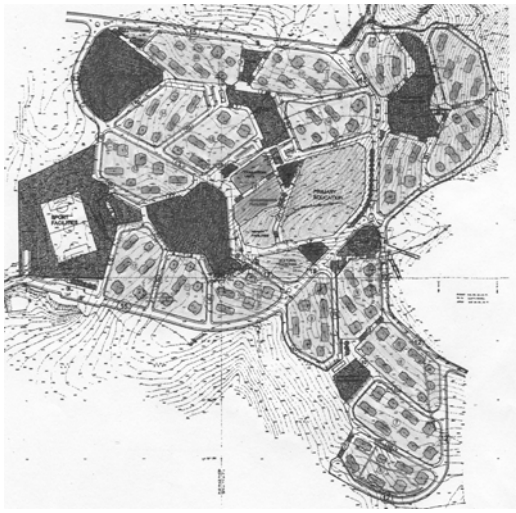
Total Expropriation Cost	**5.498.000.000.000 TL**
Unit Expropriation Cost	2- 7 Million TL
Expropriated Area	135.4 Ha
Planned Area	

Name of Consultancy Firm	YÜKSEL PROJE ULUSLARARASI A.Ş.		
Name of Construction Firms	Number of Units	Total Bidding Cost	Unit Construction Cost
GÜNSAYIL İNŞ. TİC.LTD. STİ.+ GRİNAKER ORTAK GİRİŞİMİ	800	7.700.000.000.000	9.625.000.000
DEMİRER. İNŞ. SAN. TİC. A.Ş	806	8.512.000.000.000	10.560.794.000
DEMİRER. İNŞ. SAN. TİC. A.Ş	200	2.000.000.000.000	0.000.000.000

NAME OF THE HOUSING SITE		**GÜNDOĞDU P.I.U.**
Number of Housing Units Developed		
Ministry	1616	
P.I.U	2820	
Donations	200	

Total Expropriation Cost	**4.951.758.909.171 TL**
Unit Expropriation Cost	7.574.337 TL
Expropriated Area	94 Ha.
Planned Area	90 Ha.

Name of Consultancy Firm	Dorsch Consult – ANTS Partnership		
Name of Construction Firms	Number of Units	Total Bidding Cost	Unit Construction Cost
KOÇOĞLU İNŞ.SAN. TİC. AŞ	420		
EVREN YAPI MALZ. İNŞ. TAAH.	470		
SOYAK İNŞ. VE TİC. AŞ.	552		
SOYAK İNŞ. VE TİC. AŞ.	490		
ÖZYAPI İNŞ.SAN. TİC. AŞ	462		
KULAK İNŞ. SAN. TİC. AŞ.	426		

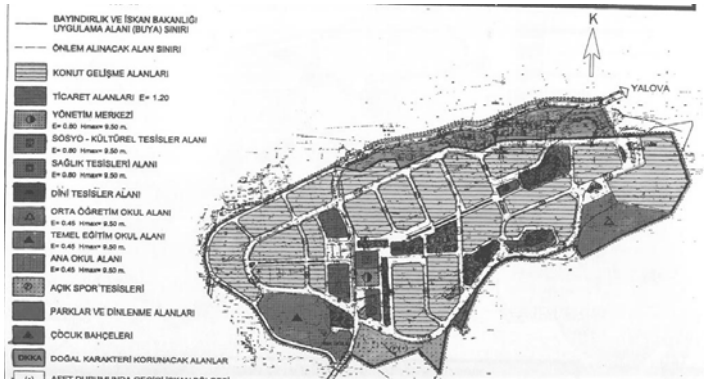
NAME OF THE HOUSING SITE	**HEREKE**			
Number of Housing Units Developed				
Ministry				
P.I.U	980			
Donations				
Total Expropriation Cost	**0-**(Acquired from Treasury Land)			
Unit Expropriation Cost				
Expropriated Area	35 Ha			
Planned Area	42 Ha.			
Name of Consultancy Firm	Dorsch Consult – ANTS Partnership			
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
TEPE İNŞ. SAN. TİC.A.Ş		492		
GARANTİ KOZA İNŞ. SAN. TİC. AŞ.		488		

NAME OF THE HOUSING SITE		**KARAMAN**
Number of Housing Units Developed		
Ministry	2010 + 966	
P.I.U		
Donations	786	
Kayseri Valiliği 120 Şırnak Valiliği 108 **Karaman Valiliği** 36 **TOBB** 270 **Müteahitler Birliği** 68 **Türkiş** 96		

Total Expropriation Cost	**3.099.000.000.000.**
Unit Expropriation Cost	1 MİLYON
Expropriated Area	309.9 Ha.
Planned Area	161 Ha.

Name of Consultancy Firm	PROKON MÜH.İNŞ.TİC.LTD.ŞTİ		
Name of Construction Firms	Number of Units	Total Bidding Cost	Unit Construction Cost
SAMİ SARI AHMET KİBRİTÇİ GİRİŞİMİ	198	1.760.022.000.000	8.889.000.000
EGEMEN -ÇELİK NETAŞ İNŞ.TİC. LTD.ŞTİ	156	1.590.000.000.000	10.192.308.000
ZİRVE İNŞ.TİC. LTD.ŞTİ	156	1.470.000.000.000	9.423.076.000
MESCİOĞLU İNŞ.SAN.TİC.LTD.ŞTİ	222	2.042.400.000.000	9.200.000.000
TOPLU İNŞ. HİLMİ TOPLU	210	1.890.000.000.000	9.000.000.000
MEFA İNŞ.SAN.TİC.İTH. İHR. LTD.ŞTİ	174	1.640.000.000.000	9.425.287.000
DİLAVER İNŞ.SAN .TİC. LTD.ŞTİ	246	2.246.718.000.000	9.133.000.000
ULU İNŞ. TUR TEKSTİL SAN. TİC. LTD.ŞTİ	222	1.964.000.000.000	8.846.846.000
BAŞAR İNŞ.TİC.LTD.ŞTİ AZE MÜH. MÜŞ.TİC.AŞ	228	2.110.000.000.000	9.254.386.000
OKAN İNŞ.TİC.LTD. ŞTİ	198	1.758.000.000.000	8.878.787.000
DİLAVER İNŞAAT	144	2.430.000.000.000	16.875.000.000
ÇAĞDAM MÜT.MÜH.SAN.TİC.AŞ	162	2.938.000.200.000	18.137.032.000
ER-AS İNŞ.SAN	180	3.096.000.000.000	17.200.000.000
KOÇOĞLU İNŞAAT	186	3.412.000.000.000	18.344.086.000

EGEMEN ÇELİK NETAŞ İNŞ.	120	3.064.000.000.000	17.200.000.000
USLU İNŞ. LOZENENTS KONSULT AŞ.	174	3.144.000.000.000	17.896.000.552
NURELLER İNŞ. TAH.SAN.TİC LTD.STİ	36	310.000.000.000	8.611.111.000
ERAS İNŞ.TUR.SAN. TİC.AŞ	150-30	1.263.750.000.000	8.425.000.000 10.534.250.000
ESHA İNŞ.TAH.SAN.TİC.LTD.ŞTİ	108	1.114.560.000.000	10.320.000.000
BMM.İNŞ.TİC.LTD.ŞTİ	270	2.399.000.000.000	8.885.000.000.
ATFA YAPI SAN.TİC.LTD.ŞTİ	98-30	1.246.000.720.000	6.292.929.300 7.416.666.700
KUR. İNŞ.TİC.SAN. AŞ	96	1.008.000.000.000	10.320.000.000

NAME OF THE HOUSING SITE		**SOĞUCAK**
Number of Housing Units Developed		
Ministry	500	
P.I.U		
Donations	358	

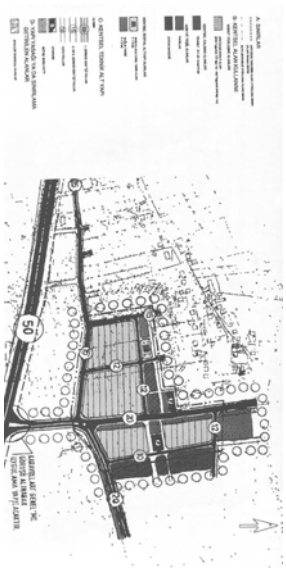
Total Expropriation Cost	**575.488.843.000 TL**
Unit Expropriation Cost	2.821.023 TL
Expropriated Area	20.4 Ha
Planned Area	

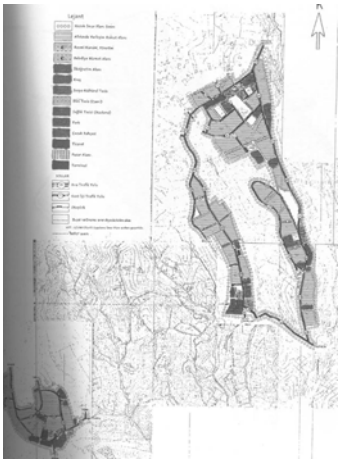
Name of Consultancy Firm	UBM.+ PETA+ HİRA ADİ ORTAKLIĞI		
Name of Construction Firms	Number of Units	Total Bidding Cost	Unit Construction Cost
ERTAY İNŞ.SAN. TİC.LTD.ŞTİ	250	2.272.000.000.000	9.088.000.000
AFA PREFAB. İŞ ORTAK	500	4.785.000.000.000	9.470.000.000
ERTAY İNŞ.SAN.TİC.LTD.ŞTİ	108	1.022.760.000.000	9.462.963.000

NAME OF THE HOUSING SITE		**SUBAŞI**
Number of Housing Units Developed		
Ministry	3002	
P.I.U		
Donations		

Total Expropriation Cost	**6.316.654.841.000 TL**
Unit Expropriation Cost	2.5 – 4 Million TL
Expropriated Area	121.8 Ha
Planned Area	130 Ha

Name of Consultancy Firm	UBM.+ PETA+ HİRA ADİ ORTAKLIĞI		
Name of Construction Firms	Number of Units	Total Bidding Cost	Unit Construction Cost
ÇOLAKOĞLU İNŞ.TUR. SAN.TİC	528	5.258.880.000.000	9.960.000.000
DAĞYAPI İNŞ. SAN .TİC. LTD. STİ	538	5.164.800.000.000	9.600.000.000
KUZU TOPLU KONUT. İNŞ.LTD.ŞTİ	458	4.575.928.888.889	9.991.000.000
POYRAZ+ TURUAZ ADİ ORTAKLIĞI	538	5.374.620.000.000	9.990.000.000
SEZENLER İNŞ.TİC.LTD.ŞTİ	234	2..221.973.684.211	9.495.611.100
SEMAŞ+ EPSİLON ORTAK GİRİŞİM	242	2..228.400.000.000	9.208.264.000
MEHMET ÖZCAN	228	2.099.5000.0 00.000	9.208.332.300
YOL ÇATI İNŞ.TİC.LTD.ŞTİ	236	2 .973.000.000.000	9.207.627.000

NAME OF THE HOUSING SITE		**UZUNÇİFTLİK**		
Number of Housing Units Developed				
Ministry				
P.I.U				
Donations	252			
Total Expropriation Cost		**489.900.000.000 TL**		
Unit Expropriation Cost		4- 6 Million TL		
Expropriated Area		8.2 Ha		
Planned Area				
Name of Consultancy Firm		SU YAPI MÜH. VE MÜŞAVİRLİK A.Ş		
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
EVREN YAPI MALZEME İNŞ. TAAH. TİC.SAN.LTD.ŞTİ		252	2.192.000.000.000	8.698.412.700

NAME OF THE HOUSING SITE		**YUVACIK**		
Number of Housing Units Developed				
Ministry	1780			
P.I.U				
Donations				
YUVACIK, DÖNGEL,BAHÇECIK için toplam kamulaştırma bedeli: **5.874.684.731.531** yol bağlantısı için **750.000.000.000** Kamulaştırılan alan**: 81.3 Ha.**				
Total Expropriation Cost		**5.874.684.731.531 TL** **For Road Provision 750 000 000 000TL**		
Unit Expropriation Cost		5-8 Million TL		
Expropriated Area		81.3 ha		
Planned Area				
Name of Consultancy Firm		YÜKSEL PROJE ULUSLARARASI A.Ş.		
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
KALYON İNŞ.+BAŞYAZICIOĞLU İNŞ. ADİ ORTAKLIĞI		886	8.391.000.000.000	9.470.654.600
EKİNCİLER. İNŞ		894	8.640.000.000.000	9.664.429.500

NAME OF THE HOUSING SITE		**İKİTELLİ**		
Number of Housing Units Developed				
Ministry	650			
P.I.U				
Donations				
Total Expropriation Cost		**1.790.000.000.000 TL**		
Unit Expropriation Cost		8- 12 Million TL		
Expropriated Area		164 Ha.		
Planned Area				
Name of Consultancy Firm		UBM +PETA+HİRA ADİ ORTAKLIĞI		
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
URANSAN İNŞ.		160	2.647.000.000.000	16.543.700.000

NAME OF THE HOUSING SITE		**DERİNCE**		
Number of Housing Units Developed				
Ministry	300			
P.I.U				
Donations				
Total Expropriation Cost		**785 050 000 000 TL**		
Unit Expropriation Cost		1-2 Million TL		
Expropriated Area		7,8 HA.		
Planned Area				
Name of Consultancy Firm				
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost
ERS İNŞAAT		132	2.296.000.000.000	17.393.939.000
ÖZYAPI İNŞAAT		168	2.697.400.000.000	16.055.952.000

NAME OF THE HOUSING SITE	**HİSAREYN**			
Number of Housing Units Developed				
Ministry				
P.I.U	1250			
Donations				
Total Expropriation Cost	**0-**(Acquired from Treasury Land)			
Unit Expropriation Cost				
Expropriated Area	40 Ha.			
Planned Area				
Name of Consultancy Firm				
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost

NAME OF THE HOUSING SITE	**KÖRFEZ**			
Number of Housing Units Developed				
Ministry	498			
P.I.U				
Donations				
Total Expropriation Cost	**787.810.560.000 TL**			
Unit Expropriation Cost	2.134.988 TL			
Expropriated Area	23.8 Ha			
Planned Area				
Name of Consultancy Firm				
Name of Construction Firms		Number of Units	Total Bidding Cost	Unit Construction Cost

APPENDIX C

Prepared Questionnaire Form in Turkish

ADAPAZARI ŞEHİR MERKEZİ ALAN ÇALIŞMASINDA ALTLIK OLARAK KULLANILAN ANKET FORMU

Bu anket formu, Marmara Depremi'nde hasar gören alanlarda kentsel yeniden yapılanma sürecindeki mülkiyet ve imar haklarının belirleyiciliğini ölçmeye çalışacaktır. Örnekleme olarak Adapazarı kent merkezinde "dönüşüm" ve dönüşememe durumlarının birlikte gözlendiği Çark Caddesi seçilmiştir. Anket formunda belirlenen veriler kentsel gelişmeden sorumlu belediye ve valilik birimlerinin veri bankaları ve istatistikleri kullanılarak ve ilgili birimlerle yapılacak çalışma toplantıları sonrasında elde edilecektir. Arazi tespitleri ise mülk sahipleri ve emlakçılar ile yapılacak görüşmeler yoluyla yapılacaktır.
Adapazarı kentine 08-12 Kasım 2004 tarihleri arasında yapılacak inceleme gezisi sonrasında toplanan veriler, bu tezin 5. Kısmının yazılmasında kullanılacak olup, görgül bir araştırmanın da çerçevesini ortaya koymaktadır.

Anketin 1. Bölümü, Marmara Depremi öncesi ve sonrasındaki kentsel gelişim süreci ve planlama çalışmaları ile deprem sonrası uygulamaları araştıracaktır. Bu sayede, deprem sonrası kentsel alanların yeniden yapılanma sürecinde imar ve mülkiyet hakları açısından dönüşebilme problemlerinin nasıl ortaya çıktığı konusunda gerekli bilgi sağlanacaktır.

2. Bülüm, deprem sonrasında yapı stoklunda gerçekleşen fiziki kaybı ölçmeye çalışacaktır. Bina sayımlarını referans alan bu veriler, 3. Bölümdeki yeniden inşa sürecinin göstergeleri olan ruhsat istatistikleri ile karşılaştırmalı olarak değerlendirilecektir.

3. Bölüm, deprem sonrası yenilenen yapılaşma şartlarına uygun olarak yeniden inşa ve onarım işlemine konu olabilen yapıları araştıracaktır. Bu sayede, yapılı çevredeki mevcut imar ve mülkiyet haklarının yeniden yapılanma sürecindeki belirleyiciliğinin doğrudan ölçülebilmesini amaçlamaktadır.

4. Bölüm, deprem sonrası kentsel yeniden yapılanmada imar planın öngördüğü imar ve mülkiyet kısıtlamaları sorununu araştıracaktır. Taşınmaz piyasasındaki ekonomik değişimler ilgili göstergelerdir. Söz konusu veriler kentteki emlakçıların kayıtlarından ve sözlü değerlendirmelerinden yararlanılarak, özellikle Çark Caddesi alanı ve yakın çevresi için değerlendirilecektir.

5. Bölüm, hasar gören alanlardaki yeniden yapılanma sürecini tespit etmeyi amaçlamaktadır. Önceki kısımlardaki imar ve mülkiyet haklarının dönüşümü sorunun tanımlanmasına yönelik nicel göstergelerin, örnek bir yapı adasında ya da yol üzerinde mekansal örnekleri ve sonuçları tespit edilecektir

1. BÖLÜM: ADAPAZARI ŞEHRİ'NDE YENİDEN YAPILANMA SÜRECİNİN GELİŞİMİ

Deprem Öncesi Kentsel Planlama ve Uygulama Çalışmaları	İmar Planı Onama Tarihi
	Deprem Öncesi Kentsel Alanlardaki Öncelikli Problemler ve Alınan Tedbirler
Deprem Sonrası Kentsel Planlama ve Uygulama Çalışmaları	Belediye ve Valilik Arasındaki Yazışmalar ve Konuları
	Yerbilimsel Çalışmaların Başlangıç ve Onay Tarihi
	İmar Planına Veri Olan Yerbilimsel Bulgular
	Altyapı Girişimleri ve Kamu ve Hizmet Binalarının Yenilenme Süreci

Deprem Sonrası Kentsel Alanlarda Yeniden Yapılanma Süreci	
Revize Edilen İmar Planı Onama Tarihi	
Geliştirilen Planlama Politikaları ve Yapılaşma Düzenlemeleri	
İmar Uygulamasında Karşılaşılan Sorunların Çözümüne Yönelik Geliştirilen Araçlar, Yöntemler, Yapılanmalar, Süreçler	
Varsa İmar Planında Yapılan Değişiklik ve Tadilatlar	Tarihleri: Konuları:
İmar Planı Değişikli Talepleri	Sayısı, İçeriği, Sonucu
İmar Uygulama Sorunlarına Yönelik Belediye Meclis Kararları	
İmar Uygulamasında Belediyenin taraf olduğu Davalar	Konuları: Sonuçları:

2. BÖLÜM: BİNA İSTATİSTİKLERİ

Deprem Öncesi Toplam Bina Sayısı	Deprem Sonrası Yıkılan Bina Sayısı	Depremde Hasar Gören Toplam Bina Sayısı

3. BÖLÜM: YENİDEN İNŞA SÜRECİNİN GÖSTERGELERİ

Ruhsat Konuları / Yıllar	2000	2001	2002	2003	2004
Depremde Yıkılan Binaların Parselleri için Verilen Yeni Yapı İnşaat Ruhsatı ve Yeni İmar Durumu					
İmar Durumu Değişen Alanlar Toplamı ve Toplam İnşaat Hacmi					
Depremde Hasar Gören Binalar için Verilen Onarım Ruhsatı Sayısı					
Ruhsatsız Yapıların Onarımı					

4. BÖLÜM: TAŞINMAZ PİYASASINDAKİ EKONOMİK ETKİLER

Taşınmaz Piyasasında Değişimler	Kira Bedelleri (TL/m^2)		Satış Bedelleri (TL/m^2)	
	Konut	Ticari	Konut	Ticari
Deprem Öncesi				
2004 Yılı				

5. BÖLÜM: HASAR GÖRMÜŞ BİR ALANDA MEKANSAL ANALİZLER-ÇARK CADDESİ ODAK ALANI

İmar Uygulamasında Mülkiyetlerin Dönüşememe Sorunun Yaşandığı Örnek Bir Alanda Tespitler	
Seçilen Alanın Adapazarı Şehir Merkezindeki Konumunu ve Bağlamını Belirten Kavramsal Şema	
Deprem Öncesi Arazi Kullanımı	
Deprem Sonrasında Tanımlanman Yapılaşma Şartları	
Yeniden İnşaata Konu Olan Yıkılmış Bina Parselleri	
Onarıma Konu Olan Yapılar ve Onarım Görmüş Olanlar	
Deprem Sonrası Yenilen Yapılaşma Şartlarına göre Yeniden Yapılan Binalar	
Kullanımı Değişen Yapı ve Parseller	
Dönüşüm Sürecinde Kullanılan Hisse Paylaşım Yolları	
Hisselerin Yeniden Paylaşımı Konusunda Dava Konusu Örnek Bir parsel ve Süreci	

APPENDIX D

Philosophical Debates for Property

Derived from: Günay (1999)

Glossary on Property	
Mülk (Arabic)	Absolute ocupation and domination of thing
Mülkiyet(Arabic)	Type of control on property-ownership-possession
Melik (Arabic)	Owner or possessor of property-Malik
Kyriotes: (Grec.)	Possession or ownership
Ktema (Grec.)	Property
Dominium(Lat.)	Ownership-possession
Domus: (Lat.)	Home, country
Dominari (Lat.)	Domination
Proprius	Peculiarity
Proprietas	Property in abstract manner
Umran (Arabic)	Social life, civilization
Amare-imare(Arabic)	Every thing which contributes the process of civilization of any place;Society, labor, production, urbanization, administration, technology, human rights, low, jurisprudence and etc.
Proletariat	Working class whose members depended on the sale their labor;
Proletarius	Who did not own property
Private – Public Tension on Property	
PLATO (427-347 B.C.)	• Attempt to protect traditional communal property institution. • Utopia • State owned land. • Cultivation of land is entitled to possessors. • Possessed land is subject to inheritance
ARISTO (384-322 B.C.)	• Property usage can be subject to private ownership
ZENO (336-264 B.C)	• First physical limitations on property rights • Building heights and set-back distance
Emerging Of Social Discrepancy ***Rising Of Inequalities***	

Replacement Of Platonic Approach ***Revitalization Of Communal Property Concept*** ***Rising Of Christianity And Rejection To Private Property***	
ST. AMBROSE (339-397)	• Private property right is a product of injustice use of force
ST. AUGUSTINE (354-430)	• Absolute right of property belongs only to the god and god denotes it to proper usage
Legitimization of private property right in Christianity ***Change in production relations*** ***Replacement of Aristotalien approach***	
ST. THOMAS AQUINAS (1225-1274)	• Unequal distribution of property is appreciation of god.
Primarily Counter Arguments	
Thomas More **(1478-1535)**	• Utopia • All things should be common • No landownership • People are laborer of land • Inspiration and foundation of Locke's Labor Theory
Joan Bodin (1530-1597)	• Primitive social organization • Family possession
Hugo Grotius (1583-1645)	• State should regulate property relations bur should not held property
Development Of Capitalistic Relations ***Growth Of Individualism*** ***Consolidation Of Private Property Rights*** ***Legitimization Of Newly Emerged Capitalist Institutions*** ***Rising Of Inequalities***	
John Locke (1632-1704)	• Foundation of liberalist thought • People are entitled to hold whatever they produce by their own initiative, intelligence and industry • Land is subject to the individual ownership through his labor he mixed and capital he accumulated. • Establishment of labor theory of value which will be foundation of Marx's Theory of Value
Jean Jacques Rousseau **(1712-1778)**	• Criticism of social inequalities to be found in private property • Denying divine right of the king, advocating of democracy • Land must be occupied as much as necessary for individual subsistence • Revitalization of private and communal interests

	• Justification of labor and property • Emerging of citizen and urban man • Foundations of particapory democracy rather than representive democracy
David Hume (1711-176)	• Acceptance of property as a total institution • Fixed property rights lead perfect hormony • Chief business of government is protection of property • Adequate implementation of property institution rules provide equity in society
Merchantalistic Economic System ***State Support Foreign Market*** ***Enhancement Of Private Property As Ruling Institution Of Power Relations***	
Adam Smith (1723-1823)	• Interrelation between labor and value. • "labor creates value"
David Ricardo (1772-1823)	• Contribution of differential rent concept • Value is determined by labor but value of land is completely derived from the value of product. • Land became a commodity produce extra revenues • Ownership of land became significant rather then possession of land • Application on urban rent theories
Reconciliations	
Jeramy Bentham (1748-1832)	• Subsistence, abundance, equity and security of citizens • Respect to private property but equal distribution for protection of all citizens • Utility theory
John Stuart Miller (1806-1873)	• Political economy is based on harmony between public and private interests • Capitalist economic system is extremely insensitive and unjust • Compromising between individualism and socialism • Social based tax policy • Reform in inheritance legislation • Housing policies • Reduction of unjust distribution of property • Individual's interest is in society's and society's in individual's • Basic principles of British Socialism advocated by Labor Party
Auguste Comte (1798-1857)	• Positivist outlook-perpetuation of private property • Property as a social function to be maintained by each generation to produce the necessary capital to be conveyed for coming generations. • Property cannot be solely left to individual consumption

Idealistic Approach • Property Is Needed For The Development Of Man • Property Is The Extension Of Man, Indispensable Product Of Man's Personality • Property Gains Are Spiritual Rights Which Is To Be Produced By State • Main Role Of State Is Protection Of Citizens Liberties.	
Anti Property Arguments	
Marxmilien Robespiere (1758-1794)	• Supporting private property, negating inheritance • Only those goods which remain after utilization for the common interest could be subject to private property • Property is no longer an absolute right, but relative under the control of society
Piere Joseph Proudhon (1809-1864)	• Aphorism of property • Negating all sorts of property including communal • Possession is accepted, ownership is negated. • "..if possession is substituted for property, then rent and another special privileges will be abolished. • Voluntarism and voluntary organization is advocated but unable to put strong argument for what might replace property other then possession and voluntarism
Karl Marx (1818-1883)	• Contribution of Absolute Rent concept • Historical analyses forces governed social organization with special emphasis on capitalism • Synthesis and prediction of utopian society in the future-communism • Labor-capital antagonism acquiring an internationalist character throughout the coalition of labor classes against nation states

APPENDIX E

URBAN DEVELOPMENT PROCESS AND ITS MAIN CHARACTERISTICS IN TURKEY

Derived From: Tekeli (1998)

<table>
<tr><th colspan="2">SECOND HALF OF 19TH CENTURY – PROCLAMATION OF REPUBLIC
▪ transformation of Ottoman Economy's and its institutional structure
▪ integration with capitalist relations
▪ reforms in beurocracy
▪ diversification of public and private realms</th></tr>
<tr><th>CHARACTERISTICS OF PROPERTY DEVELOPMENTS</th><th>TRANSFORMATION IN URBAN INSTITUTIONAL STRUCTURE</th></tr>
<tr><td>• expansions of city centers
• diversification of functions
• wide spreading of automobile and public transportation-emergence of transportation problems
• new modes of urban properties, such as; banks, insurance companies, hotels, office houses, railway stations, harbors, warehouses, post offices, public buildings
• national diversifications in housing areas and neighborhoods…..class diversification in housing areas and neighborhoods ….. banliyöleşme…</td><td>• abolishment of conventional urban system which prevails Kadı oriented, head architect controlling and foundation-vakıf service
• establishment of İstanbul Municipality-şehremenati in 1855
• establishment of Beyoğlu 6th Office in 1857
• prevailing of new administrative system in the country in 1877
• 1839 –first urban development notifications
1848- Ebniye Nizamnamesi-Building Regulation for İstanbul
1864- Ebniye ve Turuk Nizamnamesi – in all empire
1882- Ebniye Kanunu</td></tr>
<tr><th colspan="2">PLANNING PROBLEMS</th></tr>
<tr><td colspan="2">• redevelopment of fire zones
• resettlement of immigrants and new neighborhoods-quarters-
• development of beautiful city understanding
• foreigner cadastre engineers….. Engineering professors in Erkan-ı Harbiye
• 1836-1837 Von Moltke -İstanbul Planning Studies
• 1902 Buvard studies
• Auric Plans at Cemil Topuzlu Era</td></tr>
<tr><th colspan="2">PROCLAMATION OF REPUBLIC- END OF II. WORLD WAR
▪ single party political system
▪ Law speed urbanization
▪ new legal and institutional framework for urban developments
▪ national integration and representatives of national identities
▪ proclamation of Ankara as Capital City
▪ development of railway system</th></tr>
<tr><th>PLANNING PROBLEMS</th><th>INSTITUTIONAL DEVELOPMENTS</th></tr>
<tr><td>• Urban Development of Capital city Ankara
• Redevelopment of west Anatolian Towns after the War of Independence
• Rapid population increase in Ankara</td><td>1928- establishment of Ankara Urban Development Administration
1930- Municipalities Law- Entry No:1580
- Public Sanitary Law-Entry No:1593
1933- Buildings and Road Law- Entry No:2290</td></tr>
</table>

• Emergence of Land speculation o establishment of Factories and Publichouses • Adoption and harmony problems of new plans with existing built up areas and textures • **Underestimation of property relations**	- Bank of Municipalities Law- Entry No: 2033 1934- Municipality Expropriation Law- Entry No:2722 1935- Municipalities Urban Development Boards Establishment Law- Entry No:2763 - Architecture and Engineering Law -Designation of building works to the professions -Compulsory planning works for big towns -Central administrative plans -Transition of urban planning practice from cadastre engineering to architecture
II. WORLD WAR -- 1960 • Integration with world organizations • Multitude party political system • Agricultural modernization and rural break off-departure from rural • Rapid population increase in whole country	
PLANNING PROBLEMS	**NEW INSTITUTIONAL ESTABLISHMENTS**
▪ **Emergence of Dual city** • Squatting belts in the peripheries • Lack of adequate infrastructural services • Development of informal sectors • Urban development problems of expanding cities towards peripheries • Problem of housing provision • Individual solutions for housing -Squatting -Build-sell • Industrialization with cheap labor force • inadequate provision of development sites • high increases in land prices • flat ownership phenomena	1945- Establishment of Bank of Provinces 1948- Municipalities Revenue- Law Entry No: 5237 1954- Establishment of Union of Chambers of Architects and Planners 1956- **Urban Development Law- Entry No: 6785** **- Disaster Law- Entry No: 7269** - Establishment of METU for graduating inperts for the solution of Urban Problems in Turkey 1958- Establishment of Ministry of Urban Development and Settlement, **specialized on planning, housing, disasters and building materials**
1960 --- 1980 • Rapid urbanization • Planned economy understanding • Comprehensive rationalist planning • 1961 constitution • Principle of social state • Principle of planned development • Welfare state understanding	
PLANNING PROBLEMS	INSTITUTIONAL DEVELOPMENTS
• Consideration of Urban Development Problems as a social problem • Process of Metropolization • Problem of Urban integration problems and their social and cultural outcomes • Transferring of small scale industrial activities to Industrial zones from Central Business Districts to overcome their pressures to city centers	• commencement of urban planning education at METU-ODTÜ • Establishment of State Planning Organization • Development of Cooperatives and Syndicates • Establishment of organized credit system with Social Insurance and Pension Funds, however, abolishment of funds due to

• Transportation problems and development of public transport modes even in informal provisions like *dolmuş* • Deteriorative built-up process and destroying developments in historical town centers • Change of urban development characteristic -Partial and fragmented developments -Fulfillment of transition zones with high rent developments • Regional planning implementations, Zonguldak, Doğu Marmara, Antalya, Çukurova Regional Plans • Urban Planning Competitions	unindexed repayments with inflation • II. Five Year Development Plan -Social Housing Provisions -Planned and infrastructure equipped land to big scale capital organizations • Establishment of Metropolitan Planning Offices • 1966- Enacting of Unauthorized Building-Squatting- Law -squatting prevention zones -squatting transferring zones -squatting amendment zones -provision of municipalities with land and resources • 1967-Municipality Law-Entry No: 307 Elected President System in Municipality Administration • 1969-Establishment of Land Office under the organization of Ministry of Urban Development and Settlement • 1972- Readjustment operation issues has been re-regulated in Development Law
1980---1999 • Diminishment of urbanization • Phenomena of globalization • Regional diversifications • Interurban migrations • Establishment of liberalist model of economic relations and production • Institutionalization of capital market	
PLANNING PROBLEMS	INSTITUTIONAL DEVELOPMENTS
• Tourism developments • Second house phenomena especially in shores • Integration of Anatolian towns with world production system • SEAP-GAP project • CBD transformations *Dual development in squatting areas and new urban areas* *Emergence of Vulnerable Urban Fabric.*	• Abolishment of Ministry of Urban Development and Settlement and bounding to Ministry of Public Works, hence, establishment of Ministry of Public Works and Settlements. • Transferring of Urban Plan Ratification authority to Municipalities • Increases in Municipality revenues • Dual Administrative system---Establishment of Metropolitan municipalities and District municipalities • Establishment of Public House Administration • Legitimization regulations of unauthorized buildings
1999- **(Added by the author)** • Marmara Earthquake • Problem of Earthquake Mitigation and Urban Rehabilitations • New Legal and Institutional Developments for Urban Administration and Planning	