Land Readjustment Process in Urban Design: Project Management Approach

By

Sadık Yılmaz KONURSAY

A Dissertation Submitted to the
Graduate School in Partial Fulfillment of the
Requirements for the Degree of

MASTER OF URBAN DESIGN

Department: City and Regional Planning
Major: Urban Design

İzmir Institute of Technology
İzmir, Turkey

January, 2004

We approve the thesis of **S. Yılmaz KONURSAY**

Date of Signature

Signature---------- **21.01.2004**

Assist. Prof. Dr. Murat GÜNAYDIN
Department of Architecture
Supervisor

Signature---------- **21.01.2004**

Assoc. Prof. Dr. Ziya GENCEL
Department of City and Regional Planning
Co-Supervisor

Signature---------- **21.01.2004**

Assoc. Prof. Dr. Güneş GÜR
Department of City and Regional Planning

Signature---------- **21.01.2004**

Assist. Prof. Dr. Erkal SERİM
Department of City and Regional Planning

Signature---------- **21.01.2004**

Assist. Prof. Dr. Mine HAMAMCIOĞLU TURAN
Department of Architecture

Signature---------- **21.01.2004**

Assoc. Prof. Dr. Güneş GÜR
Department of City and Regional Planning
Head of Department of City and Regional Planning

ACKNOWLEDGEMENTS

I would like to thank to my supervisor Assist. Prof. Dr. Murat Günaydın and my co-supervisor Assoc. Prof. Dr. Ziya Gencel for their helpful contributions, valuable guidance, suggestions and continuous interests throughout this study. Their kind personalities have increased my motivation in every step of the study.

The suggestions and comments of Assoc. Prof. Dr. Semahat Özdemir, Assist. Prof Dr. Erkal Serim, Hüsnü Afacan, Oğuzhan Afacan, Kubilay Yıldırım, Mahmut Kızıltaş and Önder Gacemer are gratefully acknowledged. I would also like to thank to Cem Muyan for his endless help and enduring friendship, and to Nursen Kaya for her important comments.

Finally, I would like to express my gratitude to my family. Not only their faith in me but also their everlasting support in every stage of my life has given me enthusiasm and encouragement. I would like to thank them for their limitless generosity in all.

ABSTRACT

Land readjustment is an essential tool used for the re-organization of urban areas. It aims to convert cadastral parcels into suitable forms of development plots for public and private use according to town planning requirements. Hence, land readjustment method maintains great opportunities to the solution of land-use problems in urban-fringe areas.

In Turkey, "Article 18", which is a crucial necessity for planned urbanization, is the most effective land acquisition method used in many cases. Thus, as a rapid urbanizing country, the implementation pace of development plans should be parallel to urbanization pace in order to respond to increasing land demand. Should this pace be kept, necessary urban public areas for better urban life could be provided. From this point of view, project management, which is a vital instrument to control and coordinate a project from inception to completion, should be undoubtedly contemplated for the utilization of "Article 18" more efficiently and rapidly. Therefore, "Article 18" projects could be realized in the desired quality by keeping the balance among scope, time and cost.

This study describes not only Turkish land readjustment procedures but also different land readjustment procedures used in various countries (i.e. Germany, France, Japan, Western Australia and etc), discusses the advantages & disadvantages and therefore puts forth the problems of these procedures. In this respect, this study consequently proposes two approaches for land readjustment process in Turkey; one of which is a project management approach to reduce the problems of existing "Article 18" process and the other is an alternative land readjustment process instead of "Article 18" by using project management concepts as well. At the end of the study, a case study for Uzundere District is carried out in order to validate the feasibility of project management approach.

Keywords: Land Readjustment, "Article 18" of "Development Law" issued 3194, Project Management, Land Reallocation & Allotment, Urban Land Management.

ÖZ

Arazi düzenlemesi, kentsel alanların yeniden organize edilmesi için kullanılan önemli bir araçtır. Şehir planlama gereklerine göre, kadastral parselleri kamu ve özel kullanım araçları için uygun imar parsellerine dönüştürmeyi amaçlar. Böylelikle arazi düzenlemesi metodu, kent çeperlerindeki arazi kullanım problemlerinin çözümüne büyük olanaklar sağlar.

Türkiye'de planlı kentleşme için hayati bir ihtiyaç olan 18. Madde Uygulaması, birçok alanda kullanılan en etkin arazi edinme metodudur. Bu sebeple, hızlı kentleşen bir ülke olarak Türkiye'de, arazi talebine cevap verebilmek için imar planı uygulama hızı kentleşme hızına paralel olmalıdır. Bu hızın sağlanması durumunda, daha iyi bir kentsel yaşam için gerekli olan kentsel kamu alanları elde edilebilir. Bu açıdan bakıldığında, bir projenin başlangıcından sonuçlanmasına kadar kontrolünü ve koordinasyonunu sağlamakta hayati bir araç olan proje yönetimi, 18. Madde Uygulamasının daha etkili ve hızlı kullanımında kesinlikle düşünülmelidir. Böylelikle, 18. Madde projeleri, kapsam, zaman ve maliyet arasında denge kurulması kaydıyla arzulanan kalitede geçekleştirilebilir.

Bu çalışma, sadece Türkiye'deki arazi düzenleme sürecini değil, aynı zamanda yurtdışında çeşitli ülkelerde kullanılan arazi düzenleme prosedürlerini de tarifler (Almanya, Fransa, Japonya, Batı Avustralya, vd.), avantaj ve dezavantajlarını tartışır ve buradan hareketle bu prosedürlerin problemlerini ortaya koyar. Bu bağlamda, çalışma sonuç olarak Türkiye'deki arazi düzenleme süreci için iki yaklaşım sunar. Bunlardan biri, varolan 18. Madde sürecindeki problemleri azaltmak için proje yönetimi, diğeri ise yine proje yönetim konseptlerini kullanarak 18. Madde sürecine alternatif bir arazi düzenleme sürecidir. Bu nedenle, çalışmanın sonunda proje yönetimi yaklaşımının uygulanabirliliğini değerlendirmek için Uzundere'de bir alan çalışması yürütülmüştür.

Anahtar Kelimeler: Arazi Düzenlemesi, 3194 Sayılı İmar Kanunu'nun 18. Maddesi, Proje Yönetimi, Arazi Dağıtımı & Parselasyon, Kentsel Arazi Yönetimi.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Land readjustment is an urban development technique used for the production of appropriate urban public spaces and infrastructure required by urbanization. In this respect, a public authority assembles, reallocates and controls conversion of land from rural to urban use in urban-fringe areas according to town planning requirements. However, it can also be applied to developed urban areas for the aim of urban renewal in various circumstances. According to the situation, the motivation of land readjustment may either come from local authorities or landowners living in the related area. Therefore, an organization, which could be municipalities, governances, private associations of landowners, private agencies and etc, takes the responsibility of the project according to the regulations & laws of the country. Thinking of its important role in the evolution of urban form and built-environment, land readjustment process is important for a better urban life because one of its major issues is the satisfaction of public.

1.1 Scope of the Study

Mankind, with its god-given talents, has always sought for a way of development throughout the history. Starting with its primitive needs of sheltering, protecting, nourishing and etc, it has continuously confronted with producing some solutions to meet these needs. In this respect, as a highest model of social, cultural and political organization, cities are the outcome of long years of human development. Although cities have a lot of problems due to their complex structures, they are also the places of development which have the resources to overcome these problems.

Within a city, the physical relationships of buildings shape the urban form. However, as an inseparable part there is also an urban life taking place in urban space. In this framework, satisfaction of human needs plays an important role in the formation of

urban space or built environment. Meeting the human needs as much as possible brings about the better quality of urban space and consequently the better quality of urban life.

In order to encounter human needs for a better urban space, there are some factors should be taken into consideration. First of all, it can easily be expressed that the effect of natural environment over the formation process of urban space is inevitable because the geographic, topographic and climatic conditions directly influences the settlement principles in an urban form. From the same point of view, thinking of the historic settlements, for their basic needs mankind either chose the best natural environment or tried to live in the conditions as much as its close natural environment permitted. In today's world, although this factor has lost some of its effectiveness as mankind currently has the possibility of shaping the natural environment via using technologic developments unless extraordinary conditions exist, it still has a great effect on built environment.

The other factors should actually be thought as inseparable parts of a whole. These three factors which are planning, property pattern and building fabric are respectively always together in the formation of urban space or built environment. Planning can be defined as a process carried out to meet the human needs for better living conditions and urban life. In the planning process, a plan is implemented in a city via the power and the regulations of state & local authorities. As a result, the urban form is shaped according to the plan applied on the property pattern of the city. In this framework, zoning decisions and determination of land uses are the key issues of planning process in the achievement of meeting the human needs.

Likewise property pattern, either the cadastral structure before planning or the plot structure after planning, directly influences the formation of urban space. In this respect, the planning decisions can expose various results. On the other hand, not only the form of the cadastral parcels or the development plots but especially the owner of real property is also very decisive since with respect to the landowner; either public or private, the policies on land control can differentiate in various countries by the arrangement of laws. Hence, it

should always be remembered that in the provision of social equity, which is one of the main human needs, property relations and patterns have to be managed wisely.

Building fabric is directly related with both of the previous concepts because this three-dimensional concept is constituted on the plot pattern which is determined according to the planning decisions. In the satisfaction of human needs, this final concept shapes the harmonic relationship between buildings by the arrangement of soft and hard spaces.

As a final point, actually the aesthetic values of the designers and users are also vital to meet the human needs. Especially, in planning and building processes, the necessity of this value frankly reveals itself. The reason is that it is the duty of the designers to create habitable and appropriate spaces for the utilization of public.

However, urbanization is a predestined result of development and thus the urbanization trend is an undeniable reality both in developing countries and developed countries. Nevertheless, due to the lacks in related laws and insufficient methods used in the development process, most of these countries could not response to this trend. Owing to the population growth and economic development, a migration from rural to urban emerges. Therefore, the conversion of land from rural to urban permanently changes the cities. This incessant pressure on cities requires new urban areas for the inhabitants, and unfortunately if this growth can not be controlled sensibly, the demand for urban spaces falls behind the required level and the quality of urban spaces, accordingly the quality of urban life, decline as usual. This dynamic relation between urban space and urban life could be kept in the desired level only if effective land management systems are improved with respect to appropriate land policies. From this point of view, as a requisite of urban development, if the sufficient public spaces are created via using proper methods, the impact of urbanization on cities could be pulled down to a reasonable level.

Land management is the definition of the country's resources and it implements the proper land policy by means of land administration. In addition, it accordingly involves not only the usual administration of lands and resources, but also an opportunity to display the

long-term strategy for the future. As regards to this point, land management is a crucial activity aiming sustainable land use. Under these circumstances, with respect to proper land policy of state, local authorities must develop some efficient land acquisition strategies for new built-up areas as soon as possible because there is an urgent need for urban land for public purposes such as roads, housing, schools, hospitals, parks, markets, and other public facilities.

Many methods have been practiced to resolve these urban land problems such as nationalization of land, government ownership of peripheral areas, special taxation on the benefits received by plots from the installation of public services, land compensation and others. However, the method varies according to the social, political and economical structure of countries. Among these devices that are known in this field, land readjustment is the most widespread method.

Definition of Land Readjustment

Land readjustment is a land management instrument by which a public authority assembles and controls conversion of land from rural to urban use according to town planning requirements. However, every country develops and then uses different readjustment models with respect to their own structures. Even though these models show some differences during the process, all of them serve for the same aim of encountering the needs of urbanization as soon as possible. For instance; the process could be either on voluntary basis or on legislation basis for landowners, the procedures could be carried out by local authorities, private associations, agencies or other actors, and the distribution of new plots to landowners could be realized by using either area or value method.

The reallocation has to be a fair implementation for the provision of social equity. If the reallocation is conducted with respect to the area method, the value of all the land within the adjustment area is accepted to be equal in this system. However, both before and after the process, the value of the land is not equal within the whole area due to varying conditions such as; access to street, topography, location in the block and so on. Therefore,

for a fairer implementation among landowners the selection of land distribution method is very important.

Moreover, the readjustment implementation may also be carried out in different types such as; urban re-plotting in which the readjustment implementation may be based on a detailed local plan prior to the procedure; joint land development in which the readjustment plan may be prepared in connection with the detailed local plan; or urban land pooling in which the procedure is organized and implemented with the related land use plans by landowners in a single process. With the interpretation of the procedures of different countries, the German procedure can be classified as urban land re-plotting, Swedish procedure as joint land development and French procedure as urban land pooling. In this respect, due to the similarities between the laws of German and Turkish planning systems, land readjustment process in Turkey may be identified as urban re-plotting.

In Turkey, among various land acquisition methods for urban development, land readjustment has more advantages when compared with the other methods. With the broad utilization of land readjustment method, the voluntary methods which are boundary exchange and subdivision & unification have been eliminated as they are not efficient enough for the rapid development demand. Besides, since expropriation is too costly, the resources of municipalities are generally insufficient to afford this compulsory method. As to the implementation difficulties and negative aspects of these methods, the government has always tried to set a more powerful, practical and fairer application to the land development process by an act. In this respect, as a new compulsory land acquisition method, land readjustment has had an important role in Turkey although it has confronted with some changes throughout the planning history.

The other point is; although land consolidation can be regarded as a more efficient method for creating better urban environment, land readjustment is preferred in the formation of urban space since it is cheaper and easier than consolidation. In land consolidation, although it is easier to create more flexible and sensible designs, it is very expensive and time-consuming to gather whole land in one hand and also construction

takes a long time. By subdividing and reallocating the whole land, the provision of development plots ready for construction can be carried out more rapidly and economically in land readjustment. On the other hand, this fragmented pattern of property restricts the designer and thus the flexibility of design.

Land Readjustment in Turkey

The basic implementation of land readjustment is called the 'Law of Addikes' so called "*Lex Addikes*" takes its name from "*Addikes*", the old mayor of Frankfurt. Today, this law which is called land readjustment has been used and developed in nearly all countries for the application of the development plans. In this respect, similar methods to land readjustment have also been used in Turkey since the second part of 19th century. However, a modern approach for the application of land readjustment was required as a result of urbanization occurred in 1950's.

During the rapid urbanization period of Turkey, the necessity of a new method was emerged in order to impede the poor structuring. Therefore, firstly, the 'Development Law' issued 6785 was enacted in 1957. The 'Article 42' of this law was related to land readjustment. According to the constitution, however, it was accepted as an unfair method in that period and thus the application of this article was interrupted in 1963. Although 'Article 42' came into force for the second time with the law issued 1605 in 1972, it could not be applied efficiently. Finally, in 1985, the new 'Development Law' issued 3194 was enacted in Turkey.

From this point of view, land readjustment has recently been applied compulsorily with the name of "Article 18" according to the "Development Law" issued 3194 in Turkey. Hence, implementation of the zoning plans has considerably started to be operated more effectively in the expanding project areas. In the conversion of land from rural to urban - in other words, cadastral parcels to development plots - the local authorities firstly consolidate all properties within the determined area, then obtain the necessary land for public uses via taking 35% of each landowner's land, and finally reallocate the remaining amount to the

landowners according to their area proportions within the total readjustment area. This proportion called as "Common Share of Adjustment" was including necessary public areas for roads, squares, green areas, parking lots, parks, playgrounds, mosques and police stations. However, with the alterations recently come into force in "Article 18", this proportion has been increased to 40% from 35% and education & health areas have been taken into this proportion.

In Turkish planning process; zoning, allotment and construction phases respectively have important roles in the creation of urban environment. In this respect, zoning is a crucial issue to determine the land-use areas and their utilization conditions in the city. In addition, with zoning it is also aimed to adjust the implementation phases of these land-uses in time. In zoning phase, firstly building blocks, secondly buildings plots and finally location & dimension of buildings within a plot are determined according to the zoning plan and the related regulations. Following the zoning phase, if land readjustment method is used, allotment process has a prominent role in the determination of building plots because subdivision method used in allotment directly influences the size and shape of the plots and consequently the built environment.

In this context, allotment can be carried out by either subdividing blocks according to the development plan or according to the share of landowners. In the former method, standard plots are produced in terms of shape and size. In the latter one, the sizes and shapes of the plots vary with respect to the shares of landowners because the aim of this method is to produce shared plots as less as possible. However, according to the general characteristics of readjustment area, it is important to prefer the proper method so as to provide an effective and aesthetic design.

As a final stage in the creation of urban built environment, construction operations are carried out on these plots according to the regulations determining the location & dimension of buildings.

Definition of Project Management

Project management is the application process of intelligence, ability, tools and techniques to control and coordinate a project from inception to completion for the provision of all the requirements of project participants, which is to produce a functionally and financially viable project that will be completed on time within authorized cost and to the required quality standards.

Considering that project management is used as a powerful way of controlling communities and to drive them towards a clearly established goal, the existence of many big-scaled projects in different sectors has necessitated the emergence of project management concept in today's world. From this point of view, especially with the beginning of 20th century, project management is an approach including some methods & techniques that are developed in order to conclude these projects successfully.

Basically, every project has to be original, have a specific aim and have a time limit. These characteristics precisely require the management of every project. In this framework, evolution of built environment in planning process is a crucial project which has to be managed because planning process involves all of these characteristics in order to create better urban spaces and thus urban life. In every stage of creating the built environment, the concept of project management should be profoundly contemplated.

Relationship between Land Readjustment and Project Management

As land readjustment process is one of the most important tools for the evolution of urban space, the utilization of project management in this process is absolutely necessary. If not only the importance of quality, time and cost factors in the creation of urban space but also the importance of human factor in urban space is deemed within the scope of land readjustment, project management should efficiently cooperate with land readjustment. That is to say, in order to provide the desired quality in land readjustment, the balance of scope, time and cost should be thought intensely in the process.

Every project has its own definition, planning, implementation and closure phases. Likewise other projects, when land readjustment is divided into phases, it is important to define the problems occurred in these phases. Therefore, necessary techniques & methods concerning the knowledge areas of project management could be used in the solution of the problems. In addition to the realization of some necessary organizational alterations, to achieve the desired aim, different techniques & methods could also be used to manage, coordinate, control and report in land readjustment process depending on the manager's style.

1.2 Definition of the Problem

In Turkey, as a result of rural to urban migration, urbanization problems are inevitably occurred by rapid population growth. As well as many other developing countries, these problems put forth negative impacts in urban development. As a consequence, the quality of urban space and urban life declined within the cities. In order to provide new settlements appropriate for urban life as rapidly and economically as needed, land should be acquired and developed with respect to regional plans, within a short period.

However, with the enactment of "Land Registry Law" in 1934, all land parcels were registered with their existing borders in Turkey. This law enabled irregular shaping of most of these parcels. Thus, some problems have appeared when the application of a zoning plan is required. The limitations of financial, human and technical resources have usually impeded urban land development options for a certain project time as well and the local authorities therefore have had some difficulties in controlling rural to urban land-use change. Besides, since the land for public-use areas have been partly occupied by squatters, the provision of appropriate land for private and public demands can not be carried out efficiently. In this framework, in order to provide sufficient new plots for urban needs, some land acquisition methods have been practiced by the government in Turkey. The objectives of these methods include the provision of basic public services and other aspects of infrastructure to urban areas. However, in practice, there are some difficulties with the implementation of these methods.

From this point of view, as one of these land acquisition methods, land readjustment which is arranged by "Article 18" is widely used in provision of large new residential built-up areas. However, some problems affect the effective and efficient use of this method. First of all, since this method is basically accepted as a tool for the provision of necessary public use areas, it can not be used as a real design instrument for the evolution of urban space. This situation therefore enables the creation of urban spaces which are not as aesthetic as desired.

The delimitation of the project area is one of the most important problems in the process. The determination of the borders should be wisely determined, if not, the local authorities may not balance the "Common Share of Adjustment" percentages among the project areas. As a result, expropriation comes to agenda and local authorities avoid from implementing the land readjustment project. Besides, urban public uses can not be distributed homogenously.

The political reasons have also a prominent role in land readjustment. The selection of readjustment areas in terms of location and time can affect the local election results. Therefore, the elected council members sometimes may not be willing about the application of the land readjustment project. The land development objectives fail very often, especially in small and non-powerful municipalities for these reasons.

Moreover, in Turkey, the utilization of area method instead of either value method or the method of reallocation of property rights in three-dimension actually enables an inequitable land distribution between landowners. The process in this respect is interrupted by many suits due to lack of social equity. The area method also restricts the design in three-dimension and consequently the aesthetic values of urban design & architecture.

Furthermore, method of allotment directly influences the evolution of built-environment. Allotment can be carried out by either subdividing blocks according to the development plan or according to the share of landowners. The selection of proper method in accordance with the characteristics of the area is very crucial because for instance; with

the first method, the number of shared plots increase within the readjustment area and the development may therefore take a long time as a result of disputes between landowners. On the other hand, although the number of shared plots decreases with second method, a lot of plots are produced in different sizes & shapes and this situation may cause an aesthetic design in certain circumstances. Therefore, the standardization of this matter is very crucial for urban development. Whichever of these methods is chosen, it is better to create shared plots in minimum numbers for both landowners and local authorities.

In addition, deficiencies in data flow, irregular maps and documents, lack of technical experts, insufficient technical knowledge, budget and equipment, different interpretations of the law & regulation, problems in the notification of landowners and society's lack of knowledge about the process directly influences the implementation in terms of time, cost and quality. These problems not only decline the quality of the project but also cause greater costs to local authorities or state owing to the extension of project time.

1.3 The Aim of the Study

In this study, it is aimed to investigate land readjustment for the determination of the problems within the Turkish readjustment process so called "Article 18"and to handle the readjustment process with respect to project management approach in order to reduce the negative impacts of these problems. In this framework, for the creation of better urban space & urban life, a new approach is essentially put forth according to general principles of project management within the study.

Most prominently, as a result of technical, bureaucratic, social and financial limitations, different interpretations of regulations and laws, political concerns and inappropriate selection of some methods within the process, a kind of standardization and co-ordination is required in "Article 18" of Turkish Development Law via project management. With such an approach, it is tried to be explained that the process therefore could be completed in the desired project time with reasonable costs. Another point is, with

project management, better urban spaces and urban life for regular urban development could be achieved with the opportunity of making alterations during the project planning.

As "Article 18" implementation is a kind of project, it is obvious that there is a need of management concept to lessen the negative factors within the process. Within the borders of Turkey, although project management is not a well-known and widely used application, the establishment of utilization of project management surely provides important assistance to land readjustment projects.

As a consequence, "Article 18" is essentially handled with project management approach in order to reduce the problems within its structure. Additionally, organizational, judicial and technical alterations about "Article 18" are also suggested within the study. Hence, a new land readjustment process which should also be based on project management concepts is proposed for Turkey.

1.4 The Method of the Study

To achieve the objective of the study, following methodology is developed;

Step 1: General definitions concerning urbanizm; urban land development, urban land management, urban land policy and land readjustment are examined by literature survey.

Step 2: Land readjustment processes of various countries are examined by literature survey.

Step 3: Turkish land readjustment process so called "Article 18" is examined by literature survey.

Step 4: Project management concepts are examined by literature survey.

Step 5: For the definition of problems, "Article 18" is interpreted with the help of the interviews realized with various experts and project management approach is used in order to reduce the problems of "Article 18"

Step 6: The land readjustment processes of various countries are analyzed in a SWOT analysis chart in order to put forth a framework of an alternative land readjustment process instead of "Article 18" process (Strengths-Weaknesses-Opportunities-Threats).

Step 7: The results of project management approach are examined hypothetically on a case study by the interviews realized with related experts of the area.

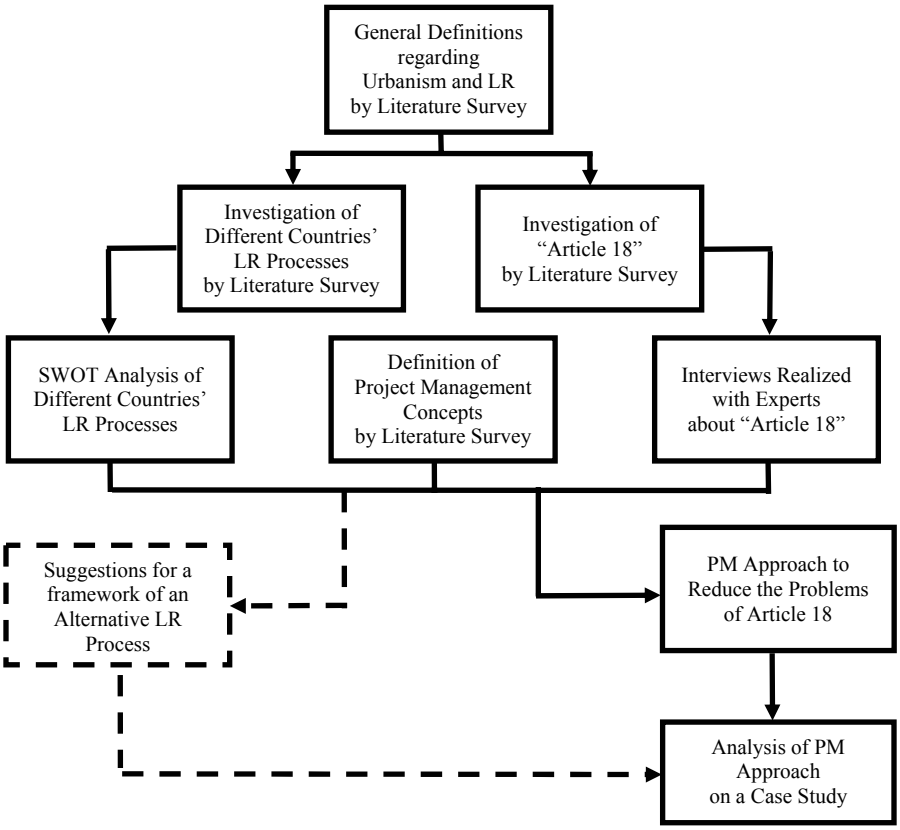


Fig 1.1 – Diagram Illustrating the Method of the Study

1.5 Organization of the Text

In the first chapter, a brief summary displaying the content of the thesis is given. In this respect, the definition of the problem that presents the motivation reasons of selecting the related subject is firstly clarified. Secondly, the objectives of the study, and as a final step, methods used to achieve the objectives of the study are explained.

In chapter two, after displaying the problems of urban space & urban life in today's world, the importance of land management and urban land polices for regular urban development is explained as a solution for rapid urbanization. As a consequence, a brief definition of land readjustment is given with the reasons of its widespread utilization all over the world.

In chapter three, the process of land readjustment is presented in a systematic way according to processes of different countries. Afterwards, readjustment processes of various countries are examined in order to display different procedures used all over the world. Therefore, the advantages & disadvantages of these countries' processes are analyzed.

In chapter four, land readjustment process of Turkey is examined. First of all, a brief history of Turkish planning system and evolution of property structure is given. Following this, the methods used for urban land acquisition are compared and "Article 18" is explained in detail. Finally, the importance of allotment process in Turkish planning system is clarified.

In chapter five, project management approach is analyzed. In the first step, the concepts of project & project management are briefly defined. In the second step, problems related to the "Article 18" are determined according to the interviews realized with various experts, and analysis of different countries' procedures. Therefore, project management approach is used to reduce the problems of "Article 18". On the other hand, with the help of different countries' process analysis, and the interviews realized with the experts, a framework of an alternative land readjustment process instead of "Article 18" is also put forth. As a final step, the results of project management approach are examined on a case study by interviews realized with related experts of the area.

In the final chapter of the study, for the evolution of better urban environment, the importance of project management utilization in Turkish land readjustment process so called "Article 18" is explained with convincing reasons.

CHAPTER 2

THE ROLE OF LAND READJUSTMENT IN URBANIZATION

2.1 Urban Life & Urban Space and Urbanization

Urbanization is an inevitable result of development. Because of population growth and economic development, a migration from rural to urban emerges and cities change constantly. This urban growth, which is a part of the comprehensive process of societal change, puts urban space under a permanent pressure for redevelopment. In practice, rich & poor, public & private sector continuously compete for urban space since this urbanization trend persistently requiring serviceable land for an appropriate urban life.

Urban space is a product having formed the consequences of the interactions and conflicts of the factors that produce the city, in a dynamic process. Urban space is formed by social, economic and political interactions, and local cultural properties. In addition, it should be appropriate the life conditions of the citizens for urban life. In this respect, as Carr (1992, p .3) expresses;

> *"Urban space is the stage upon which drama of communal life unfolds. The existence of public space is a pre-requisite to the development of public life and the vice versa. Public buildings of town and cities, parks, squares, residential courts and streets give form to human exchange, and support all sorts of social and cultural interactions. Such spaces are an essential counterpart to better defined private places and routines of work and domestic life, providing channels for movement, communication and common space for recreation and contemplation."*

The relationship of public life to public space is dynamic and mutual and besides, it is made up many of strands. Due to this inter-relatedness of public life and public space, the quality of public space has globally declined today (Gür & Koçhan, 2001). However, this

decline can be improved to some extent via effective land management systems with respect to appropriate land policies. Consequently, despite the pressure of urbanization, better urban spaces and a better urban life could be created in terms of urban development.

2.2 The Necessity of Land Management for Urban Development

Land is a limited natural resource for human activities. However, due to population growth, not only in developing countries but also in developed countries, there is a rapid urbanization trend constantly requiring serviceable land for public and private needs. Although the land is a vital necessity for urban development, undesired urban environments emerge inevitably since urban development is a difficult issue to control.

Traditionally, all over the world, due to inefficient implementation methods and the lacks in the related laws about the transformation of land, continuous subdivision of land over the years has caused the fragmentation of land parcels into incredibly small units. This situation, therefore, brings about difficulties in the transformation of land from rural to urban. In addition, as land is basic and persistently held, solutions on the fragmentation of land parcels must be carefully planned and executed both by government and private bodies. In this respect, land management has become a major issue for urban development in every country in the world. The reason is that land management involves not only the day-to-day administration of reserve lands and resources, but also an opportunity to set down the long-term strategy for the future and most significantly, the right to legislate in respect of these lands and resources.

Land management implements land policy by means of land administration. It is a positive and creative activity that aims at sustainable land use, while land administration is an implementer that follows the law and enhances it. Therefore, it is clear that land administration is an instrument of land policy. However, it is also important that land management without proper land administration operates as if it does not have any connection to reality (Törhönen, 2003).

Basically, land management is the creation of an inventory of the national territory (land). In addition, it is also the definition of the country's resources. Land management systems lists the land, the current and the past ownership of the land, the general history of the land parcel, encumbrances against the land, and possible future encumbrances against the land.

Land management is therefore a database application, but it is also a national exchange system. It is really a part of the real estate industry because the industry would not exist without the ability to assign land/building titles, trace land/building titles, and clear land/building titles for new landownership. For instance; as an instrument for urban development, objective of land readjustment is thus to permit the open exchange of land/building assets as one of the primary bases of a free market economy. In this respect, land management systems, when automated; permit a higher degree of control over urban development.

Finally, as Farret (1998) expresses; it is clear that urban development, thus quality of life, depends to a large extent on the way how urban land is managed. Therefore, property regulations on ownership, production and allocation of urban land, which have in common a more active role of the public sector in implementing urban land policies, are becoming the focus of a variety of experiences in many countries of the world.

2.2.1 What is Urban Land Policy?

With many other resources the supply of the land resource is fixed; whereas the demand for it has been gradually increasing over the years. ‘Land policy’ may be defined as a set of basic principles and guidelines upon which land legislation can be developed, together with the strategies and infrastructure for their implementation. In this framework, ‘urban land policy’ is a kind of formation of one or more goals to find suitable land development method via using different policy instruments. Mbaya (2000) expresses that a good urban land policy principally should direct the process of change, have a permanent agenda and uphold good governance in order to meet the demands of urbanization.

National land policies have in common, the overall objective of providing an enabling framework for the development and implementation of land related legislation in an integrated and harmonious manner. In addition to this overall, the urban land policies of specific countries may have more specific objectives and instruments. Therefore, as Drabkin (1997) expresses; models & principles of land policies of each country are controversial and differ according to prevailing historical, social, economic, political, administrative and legislative circumstances.

In this respect, Dale and McLaughlin (1988) claim that the highest level in a land hierarchy is land policy, which falls under the national development plans of a country. In this context, land policy is taken as a governmental instrument that states the strategy and objectives for the social, economic and environmental use of the land and natural resources of a country. It is considered of the utmost importance that a country trying to organize its land matters starts with the development of a land policy that fits in with national objectives and leads to concrete actions.

Munro-Faure (1997) claims that a comprehensive national land policy is at least required giving reasonable clarity, consistency and certainty necessary for the provision of the confidence promoting the urban and economic development (Mbaya, 2000). According to 'Deutsche Gesellschaft für Technische Zusammenarbeit' (GTZ, 1998), a German government-owned corporation for international cooperation with worldwide operations, an efficient and successful land policy which is designed for stability and to create trust must at least fulfill the following requirements. It has;

- To secure or to be independent from the long-term-orientation influences of daily politics and strategic behavior of politicians prior to elections,

- To be based on and tied to existing systems, expectations and successful practices,

- To be focused on an evolutionary process of change and to avoid revolutionary upheavals,

- To include an intensive dialogue between the government and citizens,

- To identify the objectives of the policy process,

- To identify policy issues to be addressed,

- To develop the framework of the policy,

- To outline key programmes required to affect the intended outcomes,

- To give outline of administrative arrangements required for the implementation of the policy,

- To consider legal framework required for the facilitation of implementation,

- To consider institutional arrangements necessary,

- To account for resolutions of international conventions and summits.

With respect to their interferences to land market, land policies differ in each country. According to GTZ (1998), it is important to clarify when and to what extent an active land policy is required. In this framework, degree of public involvement also differs in each country. For example; during transformation processes (in the former Soviet Union states), in the case of extensive market economy reforms (African countries), or in countries with a very dynamic economy, an active anticipatory land policy is especially required. On the other hand, in some countries, a consistent and recognized system and an effective land administration exist. Thus, the chance exists for the involved parties to legally make private contracts of various sorts themselves on transparent land markets in these countries. In this point, the state is one of many participants in the market. Since the results of these land tenure agreements do not necessarily conform to the society's objectives if they enable land concentration or accelerate the rate of environmental destruction, then the government should not leave everything to the forces of the market. The government should intervene in the land policy and at least set a binding framework.

In this respect, land policies have a direct relationship between political structures, quantities of urban land required, the existing legislative and planning systems, land market and etc. Thus, each country has to develop its own urban land policy goals with respect to its existing situation.

2.2.2 Goals of Urban Land Policy

Basically, the main goal of land policy is to promote sustainable and equitable economic growth by enabling land to play its role optimally as a factor of production of goods and services (Bloch, 2003). From this point of view, the main goal of urban land policy is to minimize the problems related to land in the context of urban development.

According to GTZ (1998), at least three main principles are essential for an effective land policy; which are environmental preservation and a sustainable pattern of land use, equality and social justice, and efficiency and promotion of economic development. These approaches, which are specified for reaching the objective, are only some examples from many available ones. However, each country has a different emphasis based on its own situation. In this respect, IFHP (1981) categorizes the goals of urban land policy in three categories as follows (Akkoyunlu, 1999, p. 24);

> *"The first category of goals involves "assisting urban development in the planning and plan implementation phase". This goal is aiming to attain certain form of land use either in an already existing process of planning and plan implementation for substitution of urban planning in the countries that implementation process of planning does not exist. Second group is "to influence land prices and profits on land in various ways". This goal is aiming to recover "unearned increments in land values" of the individual landowners and to divert speculation profits of land for the sake of the society. Third category includes "achieving social justice in urban development (equality principle)". One of the major aims of humanity is providing equality among human beings. This major goal points at treating landowners within a*

particular planning area equally. Thus, compulsory re-plotting is used to ensure even distribution of profits expected from a new urban development plan and also to provide equality between landowners in different planning areas. In the below diagram, the goals are stated in details."

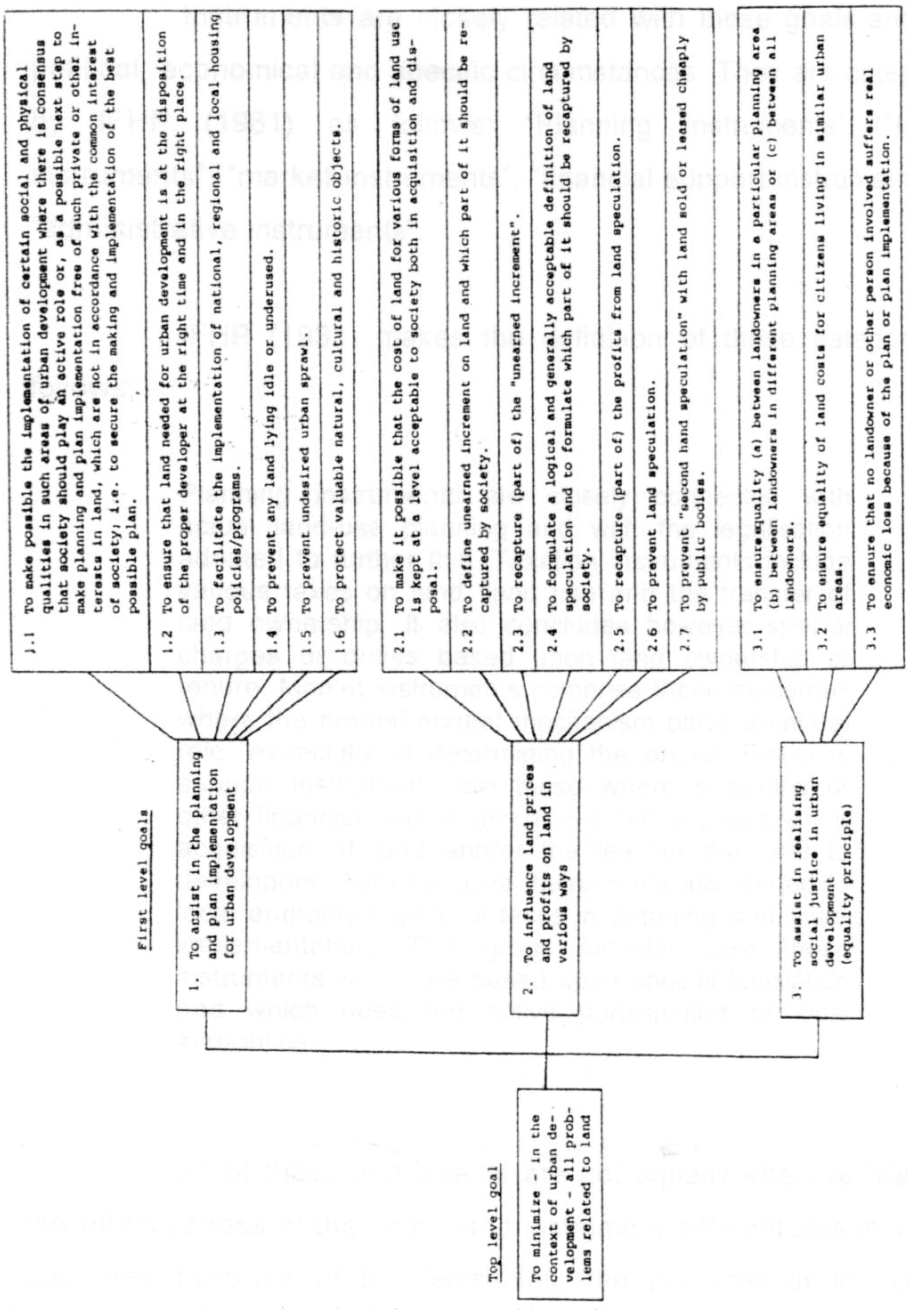


Fig 2.1 - Goals of Urban Land Policy, IFHP (1981) from Akkoyunlu (1999, p.26)

2.2.3 Instruments of Urban Land Policy

The instruments and the preferences of these instruments are closely related with the specified goals and specific conditions of each country. They are categorized by IFHP (1981) as; "planning instruments", "taxation instruments", "market instruments", "financial support instruments" and "administrative instruments". According to IFHP (1981), the definitions of these instruments are as follows (Akkoyunlu, 1999, p. 27);

> *"Planning instruments are closely connected with actual land-use planning and with legalization adopted to further this. Taxation instruments include various taxes on land, land-use and the transfer of land ownership. It also concludes however special charges or duties based upon land ownership or tenure. Market instruments comprise those measures where the normal market mechanism plays a central role, especially in determining the prices. Financial support instruments are those where subsides or other financial help is given in order to promote the acquisition of land and/or the leasing the land to developers. Administrative instruments are related to local authority's general tasks in planning and plan implementation. This group includes also those instruments which are based upon special legislation and which need the active participation of local authorities."*

According to GTZ (1998), since all of the instruments are not equally effective and the effectiveness of the same instrument differs in various countries according to prevailing circumstances, the choice of proper land policy instrument is very crucial in order to provide desired urban development. The preferred instruments have to lead to beneficial consequences rather than harmful ones.

Briefly, a land policy which is rational and transparent to the population must fulfill particular conditions. Firstly, it must be based on fundamental guiding principles; secondly, it must follow clearly defined valid objectives. In addition, a package of comprehensive non-contradictory land policy instruments should be developed from them. Finally, the

direct and indirect effects of instruments should be recognized as comprehensively as possible.

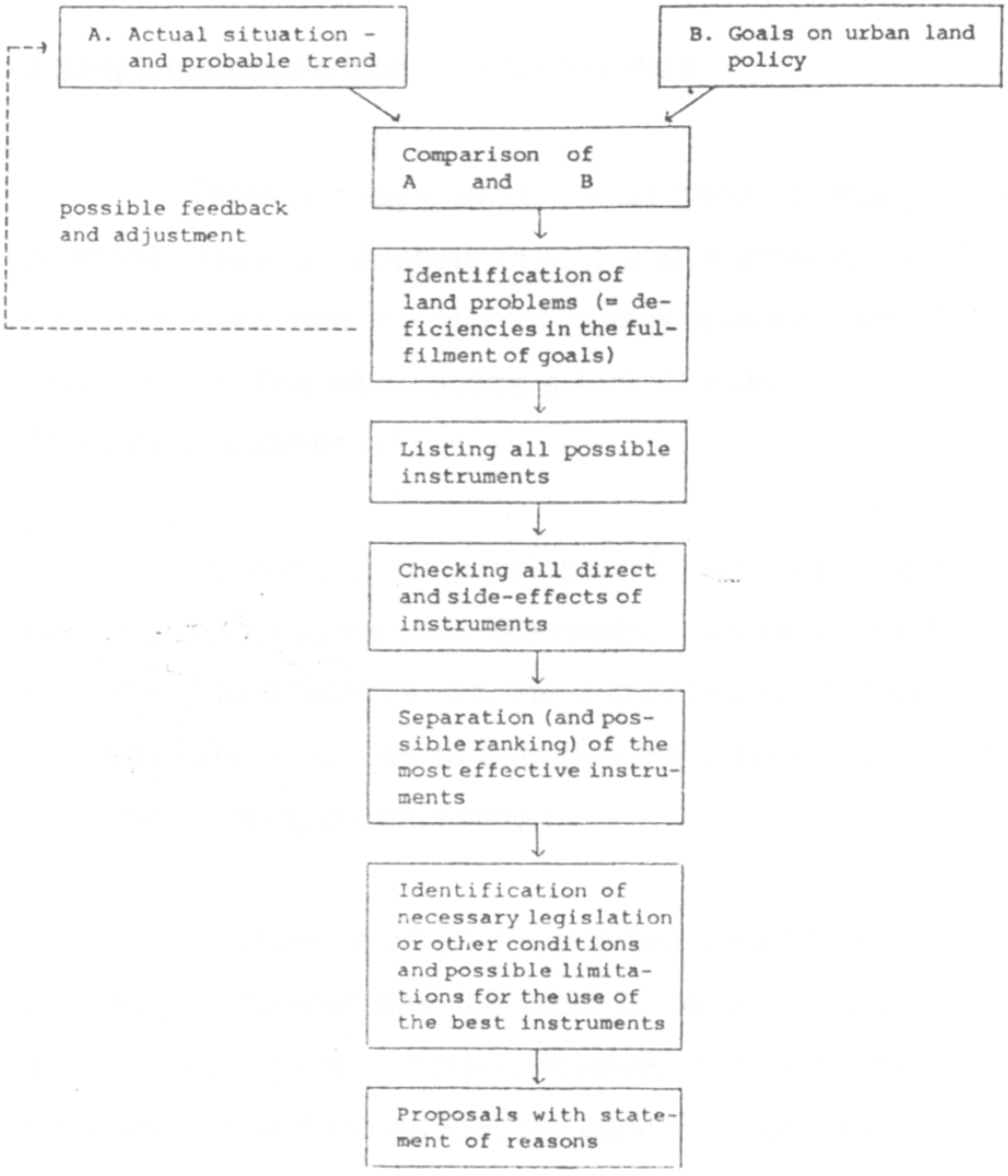


Fig 2.2 – Selection of Instruments, IFHP (1981) from Akkoyunlu (1999, p.28)

2.3 Land Readjustment as a Tool of Urban Development

Land is a limited natural resource for human activities and thus requires effective management systems. Although land has always been an important issue at any time in human history anywhere, it seems to have greater significance in the present day developing countries because the rapid urbanisation has noticeably and continuously emerged in most major cities in the developing world. Acharya (1988) expresses that this rapid rate of urbanization in developing countries creates unprecedented pressures to provide basic shelter and urban services to expanding populations. These pressures are, in many cities, raising serious problems of land needs and availability.

As rapid urbanization requires serviceable land for public and private needs, these cities are faced with a lack of readily available land for urban development. Besides, this situation also causes public services to fall further and further behind the demands of urbanization because rapidly increasing land costs and the lack of effective resources to control urban land development have completely frustrated the efforts of many governments in their attempts to manage the growth of their cities (Doebele, 1982).

According to Yomralıoğlu (1994), local government authorities must develop some efficient land acquisition strategies for new settlements and built-up areas as soon as possible because there is a need for significant acquisition of urban land for public purposes such as roads, housing, schools, hospitals, parks, markets, and other public facilities in order to form a better urban development.

In previous urban development procedures, the municipality or private landowner had the right of constructing on his own land within framework of a plan; whereas in recent development practices, it is understood that the control of such a process is difficult and it leads to undesired consequences. Therefore, transformation and reorganization of the original pattern of land is conducted with more organized and rational subdivision methods including the infrastructure developments (Akkoyunlu, 1999).

As mentioned before, many methods have been practiced to resolve the urban land problems in this respect; such as nationalization of land, government ownership of peripheral areas, special taxation on the benefits received by plots from the installation of public services, land compensation and others. The type of the method has been varying in accordance with the social, political and economical structure of countries. However, among these devices, the most interesting one is land readjustment (Yomralıoğlu, 1994).

Larsson (1997) explains several implementation methods for urban development. First one is to superimpose a new plan over the old structure and wait for a gradual adoption to the plan. This method takes a long period of time for the realization of the plan and it is difficult to get coordinated implementation. Second method is to gather land in one hand either public or private. However, this process is very expensive and again a long time period is required, especially in old settlements. The last one is land readjustment, which is widely used one in recent times. It is an organized method conducted within a framework of a formal organization. In this process, the structure of boundaries and facilities within the chosen area is transformed. The owner of the land does not change upon implementation, and the procedure is based on private agreements and in particular cases exchanges of land. In addition, this method requires legislative regulations in general, but sometimes it can also be carried out on voluntary, unregulated basis.

In terms of urbanization, Larsson (1997) defines some advantages of land readjustment by comparing with traditional methods;

- More efficient implementation which integrates with planning

- No restrictions by initial property boundaries

- Self-financing of the development costs

- Participation of the owners

- Fair distribution of profits

- Possibility of preservation of the original ownership structure and social networks

Due to the reasons mentioned above, the technique of land readjustment has been gaining wider recognition as a power tool to address many of the urban related problems because it seems to be the most convenient method among the others since it is more efficient, cheaper and time-saving process among the others.

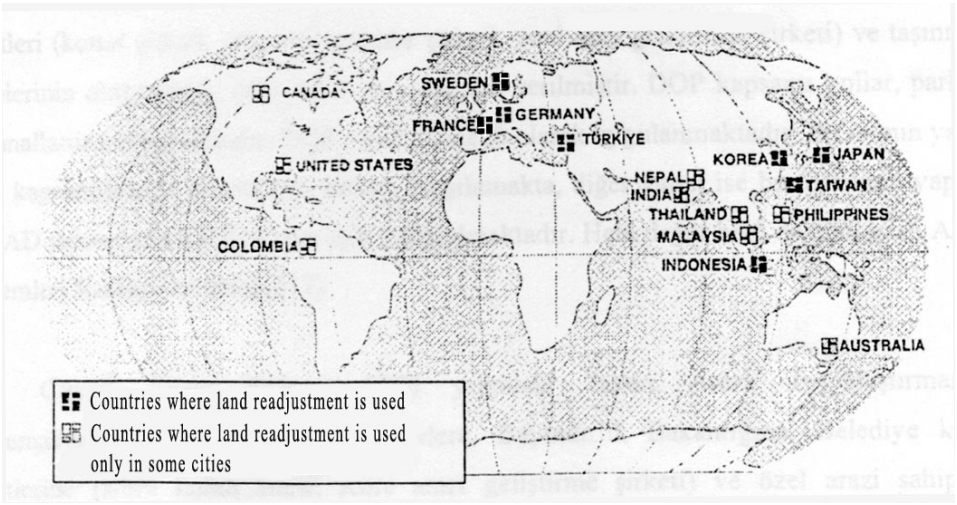


Fig 2.3 – Countries Using Land Readjustment Method in the World, Uzun (2000, p.118)

Finally, land readjustment is one of the most effective urban land acquisition methods mostly practiced in Germany, Japan, South Korea, Australia, and Turkey (Yomralıoğlu, 1994). For instance; in Europe, land readjustment method started to be used firstly in Germany, France and lately Sweden. In Asia, this method is used in Japan, South Korea, Taiwan, and Bombay region of India and in Perth region of Australia. Finally, it is also seen some cities of Canada, USA, Indonesia, Nepal and Thailand (Larsson, 1997).

2.3.1 What is Land Readjustment?

Land readjustment is a land management instrument by which a public authority assembles and controls conversion of land from rural to urban use according to town planning requirements. Public authority installs all public services and finances the cost of the operation from the increase in land value as a result of the new infrastructure.

Therefore, according to this process, each landowner must contribute a portion of their previous land holding to provide space for roads, parks and other public space and for reserve land. It is essentially a social-cum-technical skill balancing public interest and private interest in order to meet the needs of urbanization. According to Viitanen (2000), urban land readjustment procedure is a change in existing land use or land use intensity with the purpose of producing or reorganizing built -up areas.

The concept of land readjustment is primarily based on the increasing of public-use land while the size of private land is decreasing. As a result of this, the size of private lands are reduced and become smaller but their economic values increase due to the extra developments which zoning plan brings. Meanwhile, new built-up plots are created and municipalities acquire the public land to install new services as rapidly as they required.

Larsson (1997, p. 141) makes the definition of land readjustment as follows;

> *"Joint development or land readjustment can be an important tool for developing new land or reorganizing urban areas. The landowners collectively leave land for streets and other public services, build the required infrastructure wholly or partly adapt existing boundaries to the new plan. The new building sites are distributed according to area or value of inputs."*

Archer (1992) defines land readjustment as a technique for managing the urban development of urban-fringe lands, whereby a group of separate land parcels are assembled for their unified planning, servicing and subdivision as a single estate, and redistribution of new building plots back to the original landowners. The process primarily takes the rural or unplanned urban land and reallocates it in a more effective use with respect to town planning requirements. However, as an urban land management tool, land readjustment easily provides the land in a reorganized way for public and private needs.

From the same point of view, Sorensen (1999) and Seele (1982) define land readjustment as an instrument for land organization. It means both the provision of land

needed for public purposes and the suitable formation of private land according to the rules of town planning. In this process, scattered and irregular plots are brought together, roads and main infrastructure are determined, the land is then subdivided and reallocated as regular development plots.

In this respect, after a land readjustment project, a city will be able to reorganize its urban development, and the private landowners will receive new plots nearby to their original location. Land readjustment projects also provide an opportunity to government for simply and inexpensively resurveying the land and demarcating new parcel boundaries. Therefore, the practice of land readjustment can be considered as a way of strengthening the reorganization of cadastre. (Chou and Shen, 1982)

2.3.2 Objectives & Characteristics of Land Readjustment

According to Larsson (1997), the general aim of land readjustment method is, through cooperation between the landowners of an area of land, to adapt its subdivision and facilities to plans for new or more efficient use of an urban nature. Such kind of a project has various objectives such as;

- Urbanization of new areas

- Conversion of previously urbanized areas

- Integration of large facilities

- Rehabilitation of disaster and war-damaged areas

Briefly, land readjustment which is a land reform system conceptually aims to assemble rural or unplanned urban land, which is usually irregularly subdivided, and then to reallocate it in a required balance for public and private use according to town planning requirements. In other words, Yomralıoğlu (1994) defines the objectives of land readjustment process as; to provide the land required for public use such as streets, parks,

hospital and school from all participated landowners in a project area, to create such plots suitable for building use according to the rules of zoning plan and to transfer the existing land rights on the previous sites to the new re-plotted sites while carrying out the urban development.

Implementation is based in certain cases on private agreements and exchanges of land. In more complex cases, however, where there are many landowners, co-operation usually has to be facilitated through a formalized process. This process has some characteristics as follows (Larsson, 1997);

- It includes certain preemptory rules and therefore requires some kind of official sanction. In this respect, the actions area is delimited.

- The property owners in the area constitute a temporary association to carry out the process if the local authority is not willing to get involved.

- Land exchanges, equalization of effects and communal facilities are important parts of the readjustment process. The land needed for public facilities such as streets, parks and other public spaces is provided by each landowner surrendering an equivalent portion of the area or value. In addition, the process is financed with further surrenders.

- In principle, process must be completed without impairing the land titles or personal property rights of shareholders even if part of the land is reallocated.

- The process is completed through a formal decision, after which the association is dissolved. After the completion of the project, landowners have the right to appeal.

- Landowners also have the responsibility of further subdivision and sale of their land. This responsibility is sometimes left to the association.

According to Rainer (1992), the city government, other designated public bodies, or even private associations can participate directly in the process of urbanization and thereby

share in its profits in land readjustment method. In addition to the improving land utilization for government, it is also a significant method for landowners to improve the use of their land economically. (Yomralıoğlu & Parker, 1993, p. 374)

Larsson (1993) states that self-financing method can also augment resources to enhance continuous urban development as local authorities have inadequate resources. This self-financing alternative has emerged and is practically used in Far Eastern countries such as Japan and South Korea.

2.3.3 Procedures of Land Readjustment

Due to the widely varying conditions in the world, there is not a single form of land readjustment which is universally applicable. However, the main concept of land readjustment has been maintained in all applications. This subject will be discussed in the following chapter in terms of examined countries.

In this framework, the urban land readjustment procedures can be divided into three categories; readjustment for plan implementation, joint land development and land pooling. According to Viitanen (2000), the readjustment procedure for plan implementation is based on a detailed local plan prior to the procedure and depending on whether or not the profit has been shared out between the landowners. This can be land exchange or urban land re-plotting. The feature of the joint land development procedure is that the detailed local plan is prepared in connection with the land readjustment process. In the land pooling procedure landowners organize and implement the readjustment procedure with the relating detailed land use plans in one and the same process. In this respect, the German procedure can be classified as urban land re-plotting, Swedish procedure as joint land development, French procedure as pooled land development.

With taking into consideration the Viitanen's classification, Turkish urban land readjustment procedure might be identified as urban land re-plotting like German procedure. The procedure is based on a detailed local plan prior to the procedure. This

similarity is not a coincidence because the main laws in Turkish planning system were prepared by being inspired from Germany planning law (Sence-Turk, 2001).

According to Yomralıoğlu et al. (1996), land readjustment projects usually are undertaken by local government following the related legislation procedures. A typical land readjustment process begins with the preparation of a zoning plan by the municipality. On the zoning plan, within the building blocks which formed by the streets, plots are allocated for private development. The area for public use is then determined by measuring the area of the planned streets, parks, and so forth and comparing it to the total area of project.

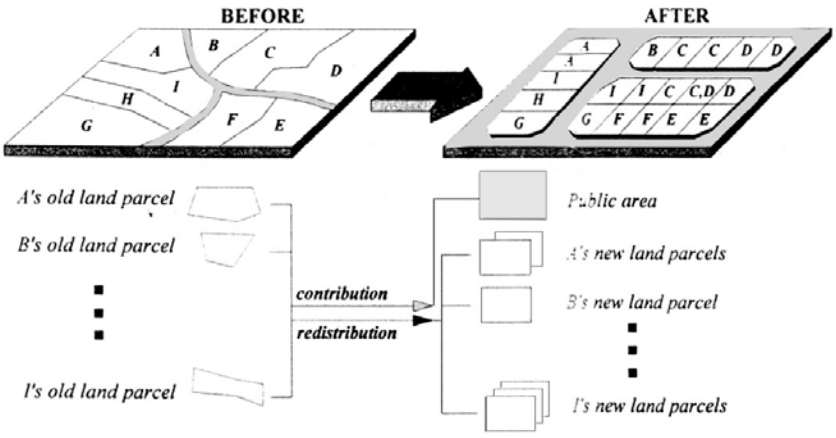


Fig 2.4 – Mechanism of Land Readjustment, Yomralıoğlu et al. (1996, p.155)

Afterwards, all plots in the total area are grouped together and then they are calculated to determine their shares for the public services. The percentage that will be assigned to public use depends both on the size of the project and the size of public use area. Remaining land is reallocated among the building blocks are defined in the zoning plan. In order to realize this, firstly, each building block is subdivided into suitable new plots, and then land re-distribution is carried out. The basic principle in the distribution is to keep land in nearby its original location, at least in the same block (Yomralıoğlu, 1994).

2.3.4 Advantages of Land Readjustment

Land readjustment is a cheaper and more efficient method than collecting the land under a single ownership. It also increases the possibility of a fairer allocation of development benefits. In this respect, land readjustment leads to benefits both for the government and the landowners. Basically, the attractiveness of land readjustment for landowners is based on the fact that substantial increases in the value of land can be achieved by process, so that the value of the individual land holdings can be greatly increased, even though the remaining area is smaller. The attraction for planning authorities is that projects provide land for public facilities, and build needed urban infrastructure. The method may also provide a solution to financial problems of landowners and local authorities.

As mentioned above, land readjustment is a powerful tool in the urban land development process. Yomralıoğlu (1994), Doebele (1982), Sorensen, (2000) and Larsson (1997) indicate the advantages of land readjustment as follows;

2.3.4.1 Advantages for the Government

The advantages of land readjustment for the government are as follows;

- Fragmented and scattered land holdings are consolidated into a single ownership unit which provides better planning, servicing and subdivision,

- Zoning plan is realized in a short time. As the problems of ownership are overcome, urban land development projects are achieved rapidly,

- Compensation expenses are greatly reduced. This positively affects the use of the municipality budget in other land development activities,

- Provision of public service land is accomplished economically; such as sites for schools, parks, markets, and all other needed public buildings and facilities.

- A regular land development process is provided. Thus, the land development programmes in urban fringe areas are systematically carried out,

- New structures can be established regardless of old ownership pattern and the environment can be improved by increased possibilities of green areas and recreational facilities; consequently an efficient plan emerges,

- The existing cadastral records which are under most pressure for development are updated and reorganized. In addition, cadastral administration is improved,

- Tax revenue increases within project area. This provides an extra source to government.

- An ownership association can be formed and this association can solve the financial problems easier and enhance a faster implementation than the municipality which lacks sufficient financial resources,

- The public agency concerned with the project may recover its costs while private owners receive some of their land back which is ready for construction,

- Social justice is provided since the development gain can be distributed fairly among the landowners,

- Problems emerging from partially implementation of infrastructure are reduced,

- Construction facilities are revived. Thus, employment is provided.

2.3.4.2 Advantages for Landowners

The advantages of land readjustment for landowners are as follows;

- After the project, land values increase very rapidly and land becomes more valuable. This provides an economical gain to the landowners,

- Landowners are affected from the project in the same way; a fairer result is obtained within the accepted the principles. Therefore, disputes about land planning are reduced and the problems which are created by the zoning plan are eliminated,

- A cadastral parcel is re-shaped and transformed into a sufficient building plot that can be used in an economic way,

- Boundary conflicts are also minimized between landowners via reorganizing the cadastral parcel boundaries,

- Fragmented small parcels are consolidated into a new housing plot. Landowners, therefore, can get an opportunity to use of their land more actively,

- At the end of the project, basic public services are supplied to new plots by municipalities. Therefore, new social services are brought to the project area,

- There is no extra charge to landowners for the project expenses, except that they surrender part of their land. All project expenses are covered by the municipalities,

- With the help of an established association, the negotiations with local authority can be carried out easier.

- Landowners can have a more vital role and mobilize their interests and resources.

- Existing social environment may also be preserved as previous landowners keep their property.

2.3.5 Disadvantages of Land Readjustment

A significant criticism is that LR has succeeded in providing physical facilities; whereas it neglected social aspects of urban life and failed to improve the community environment as a whole. It is also experienced that a land readjustment project sometimes

takes a long period of time to complete due of some of social, political, economical, and technical requirements (Satoh, 1986).

An equally significant criticism is that the major beneficiaries are only large landowners. In addition, landowners have protested the reduction of their land area without compensation through the readjustment process (Akyol & Tüdeş, 1987).

CHAPTER 3

LAND READJUSTMENT PROCESS IN OTHER COUNTRIES

3.1 Land Readjustment Processes and Procedures in Other Countries

The task of modern urban development in a number of countries is often to transform and reorganize previously developed areas with an anachronistic property subdivision and infrastructure. Particularly, in developing countries neither the authorities nor the individual owners have the resources for developing the urban structure in step with population growth. Thus, a number of countries, which have been faced with situations of this kind, have arranged procedures to organize landowners for joint development.

This kind of land consolidation using the reallocation process for urban development is usually called land readjustment. In this respect, an efficient and well-organized process & procedures of land readjustment, in harmony with the general structure of the society, is crucial for achieving the requirements of urban development.

3.1.1 Institutional Framework

Land readjustment is one of the several possible procedures used for adapting the property pattern to the requirements of urbanization. Hence, it is seldom observed in a single rigid structure. Instead both the structure and content of the land readjustment process have to be adapted to and influenced by prevailing institutional conditions.

From the same point of view, Yomralıoğlu (1994) claims that owing to the varying conditions in the cities of the world, in cultural attitudes toward land and in political and institutional structures, there is no single form of land readjustment which can be universally applied. Consequently, the way of current LR implementations differ from country to country, whereas the main concept has been upheld in all applications. This situation presents great advantages to LR in solving the land use problems in urban areas.

Institutional framework is the most effective and simplest organization to ensure fairly shared benefits for all the parties involved in a process. In this respect, the public sector's conception of its role determines the organization of joint development. In addition, the control over the public & private inputs, the balance between private & public interests and the balance between voluntary participation & compulsion have to be seriously taken into account in a process (Larsson, 1993).

According to Larsson (1993), there are different views of the role of the public sector among different countries. On the one hand, in countries like USA and Japan, authorities relatively have a passive role. They only put certain main guidelines on land use and traffic arteries; and subsequently check the detailed project whether it conforms to the proposed framework or not. On the other hand, in Sweden, authorities have a very active role. The authority mainly at municipal level takes the responsibility not only for general planning but also for detailed development plans with their legal power. Besides, there is strict control of all building. Between these two extreme types, there are the countries that stand in an intermediate position like Germany where there is a close control of the plans, but for the most part constructions are carried out privately.

Actually, no matter whoever takes the main responsibility, it is clear that healthy urban development should provide scope for the involvement of all parties. But still, it is also important to decide who will take the responsibility of the entire process or the parts of the process since role allocation in urban development has immediate effects on the organization of land readjustment process. In this point, it firstly decides who will initiate the process and afterwards, it decides how the coordination between detailed planning and the rest of the process will be provided. For instance; in Japan, there are no real problems of coordination between the adjustment and planning processes. Readjustment controls planning and additionally it is considered almost synonymous with planning. Therefore, the readjustment plan serves as a detailed plan. Similar to Japan, in Germany, there are also no real problems of coordination. Adjustment is entirely governed by municipal detailed planning. Readjustment is hypothetically carried out within narrow frames after the adoption of the plan. However, in Sweden, there is an intermediate position. Readjustment

procedure has to precede the adoption of the detailed development plan. With this conception, it is aimed to provide an equal distribution of profits without influencing the initial values. On the other hand, the new property subdivision has to conform to the plan prepared by the municipality. As a result of this conflict, a major problem of coordination emerges. Although this situation seems to be a problem, it also provides an opportunity for the integration of planning and implementation (Larsson, 1993).

Providing the balance between public and private interests is also a general aim in all urban development processes. However, the amount of consideration paid to each interest depends on each country's traditions and institutional climate. This balance consequently influences the structure and outcome of joint development. The balance between these two interests is observed in various matters such as; forms of private participation, apportionment of development profits between the society and individuals, scope for private building and scope for the individual's choice of development timing. According to different institutional traditions, the attitudes about all of these four matters differ in each country (Larsson, 1993).

With regard to private participation, of course, greater guarantees of various interests could be provided if greater participation occurs by landowners. Therefore, it leads a better plan from this point of view. Besides, it may also lead to greater interest on the part of landowners, which is one of the essential objectives of the procedure.

As land readjustment is a highly changeable procedure in terms of economic balance between the authorities and individuals, it is vulnerable to satisfy each side according to their demands. In all countries, agreement, which is reached after a negotiation process, is used as the best way of settling this balance. In fact, from the viewpoint of authority, the main consideration is to develop an area and consequently to provide this area with local infrastructure without great expense to itself.

The amount of scope provided for free individual building plays an important role in the balance between different interests. In this respect, in addition to the regulation of the

property and facility structure, it is also necessary to regulate the building development according to a detailed plan or another way.

Another imperative point is arrangement of the development timing. It is obvious that private and public interest can easily diverge in this respect because on the one hand, public principally wants to arrange a systematic and rational development; on the other hand, landowner may wish to speed up or to bide the development of his area in accordance with his own profit reasons. Therefore, the policy that will be pursued on this matter evidently affects the balance between public and private interests.

Finally, according to Larsson (1993), the balance between voluntary and compulsory implementations of land readjustment process is one of the main issues of institutional framework. In accordance with each country's conception of process, the form of this matter differs. For instance; in Japan and France, two thirds majority of the landowners is necessary in order to realize the application of land readjustment. In Sweden, where voluntary application for landowners is valid, a smaller majority is even enough if there is a situation for the sake of public. As a general rule, in all of these countries, not all landowners in the delimited are forced to take part in the process and in addition, they have the right of announcing his refusal in a certain period. However, the association has a right of purchase provided that these lands are necessary for the sake of public. On the other hand, Germany is an exception in these respects. No majority is needed for the municipality to carry out 'Umlegung' procedure. As the process is compulsory, the landowners in the defined area do not have a chance of leaving the programme. Similar rules are also applied in Western Australia.

3.1.2 Stages of the Process

Larsson (1993) divides the land readjustment process into three phases, which are pre-process, formal process, and post-process.

3.1.2.1 Pre-process

The purpose of the pre-process is to shift the project from the starting point to the point of decision making, in terms of both knowledge and opinion development. Larsson (1993) indicates that there are obstacles that have to be overcome in the path of this process such as; "negative bodies of opinion among the landowners", "lack of interest on the part of the authorities", "a bureaucratic decision making mechanism" or "meager financial resources". On the other hand, in order to complete the process successfully, there must be also adequate impelling force; such as, resources in terms of motives, interest, possibilities of action, financial possibilities and etc.

Depending on the dominant motives and interests, there are natural initiators of this process. In addition, there are also other actors acting for or against the process. Various strategies must be developed in order to overcome these obstacles existing in the process and to lead the existing various actors positively. During the pre-process, it is crucial to prepare an investigation report which examines the feasibility of the implementation because decision-making is to be based on this report. Finally, information and negotiation are other key factors for arriving at a positive decision on the commencement of the project. (Larsson, 1993)

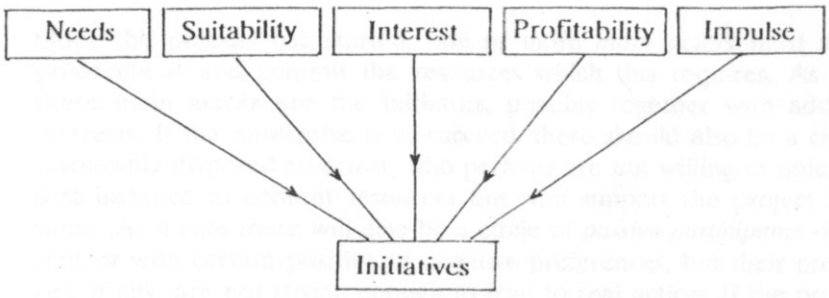


Fig 3.1 – Factors favoring development initiatives, Larsson (1993, p. 91)

Larsson (1993) specifies the factors which should exist for initiating a feasible process as "needs, suitability, interest, profitability and impulse". First of all, without a need for land use, it is impossible to construct a financially feasible project. The project can

be initiated with this need. In addition, a suitable area is necessitated for this land use. If these factors do not exist within the framework of general planning decisions and guidelines, no initiative will come about until these indications are constituted.

In the same framework, in order to initiate the project, there is also a need for interest from the groups of private and public sector. In private side, these groups can be "property-owners' association", "one or more large landowners in the area", "private professional developer", and "building contractor proposing to invest in the area". In the public side, the interested party is often the "local authority", but it may also be a "national authority planning to conduct a large scale project". Therefore, expectations of both sides are naturally different; either it could be public or private interest. Public interest is related with social or non-commercial needs; whereas private interest cares about economic concerns and profitability (Larsson, 1993).

Even though necessary perquisites exist for a project, an impulse is also needed before the initiative. This impulse generally comes from the public as a result of general planning decisions, land requirement, service purposes and etc. For instance; in Germany, the municipality both provides the impulse and decides on Umlegung. In Japan and South Korea, an authority can take a step for the project if no private initiative emerges within a certain period. In Sweden, the municipality decides the application decision of joint development which can subsequently be applied by municipality or landowner within a specified period (Sonnenberg, 1996 and Larsson, 1993).

The laws of the various countries allow the municipality to take the initiative. On the other hand, with the exception of German and Western Australia, the laws generally do not give any exclusive right for the formal initiative to the municipality. Therefore, the right of initiative remains relatively free.

Larsson (1993) examines the possible actors within the process as follows; as soon as the process has started, main actors actively become a part of the project and commit the required resources. As a rule, these main actors are the initiators. There are also co-actors

who do not commit the resources but support the project. Besides, there are passive participants whose preferences are not strong enough to lead to real action. If the project is controversial, there will also be counter-actors who are actively opposing the development. Finally, the authorities; local and superior; can be treated as a special group of actors, even if they are not concluded in one of the groups already mentioned.

In the process, there are many obstacles that main actors have to overcome. To achieve this, it is important to make co-actors more active and more willing to commit the resources. In addition, by reducing the silent resistance of passive participants and converting them into co-actors, it is possible to neutralize the counter-actors. That is to say, main actors have the responsibility of finding a suitable implementation strategy. In this respect, a certain description of the strengths and motives of the various actors is consequently a useful point of departure when programming the pre-process.

Larsson (1993, p. 95) notices three important inputs to yield a positive result for the pre-process. Although these inputs are different in terms of character, they should not be thought of as segregated in time and space. On the contrary, they should be closely integrated. These inputs are as follows;

- Investigation of basic conditions and consequences

- Information to the actors concerned

- Negotiations between the actors concerned

In some of the countries, the appropriate content of preparatory investigation is already specified in legislation, statutory regulations and established practice. In Japan and France, there are detailed regulations for the pre-process. Especially, in Japan, a study of existing conditions is firstly carried out for a KS project. Then, an action plan establishing the basic guidelines of the project is prepared. However, the regulatory systems of other countries involve only very general phrases about the pre-process. In fact, considering

different conditions at the beginning phase of the readjustment, it is reasonable not to limit one's options any further (Larsson, 1993 and Sorensen, 2000).

Since the possibilities of land readjustment are not well known in most countries, a general problem of information occurs. As Muller-Jokel (1997) and Larsson (1993) expresses; pilot experiments, seminars and lectures, articles and periodicals could be used in order to increase the knowledge of decision-makers, specialists and landowners. In this framework, setting up an introductory information meeting in consultation with the local authorities provides great advantages to the initiators in the initial stage. At later stages, while the investigation progresses, public information meetings can also occur in order to have a certain amount of knowledge about the landowners' attitudes, preferences and objections. Finally, before giving the final decision, final information should be realized at the end of the process in order to let landowners present their wishes and objections either verbally or in writing (Larsson, 1993).

As it was emphasized above, investigation, information, consultation and negotiation are more or less integral parts of the same process. Through all of them various actors can influence the process in the direction desired. However, the participation of these actors is closely related with the scope allowed for consultation and negotiation.

Larsson (1993, p. 100) quoted from Mattson (1985) that there are various degrees of participation in connection with planning. In fact, this is mainly in two degrees, either applying participation right or using decision-making power. These two degrees have different impacts on the process. As land readjustment is the process of negotiation between landowners or between landowner and municipality, consultation and negotiation at an early stage should be more advantageous.

However, participation in connection with planning does not exist in some of the countries. As Larsson (1993) mentions; in Germany, there is no right of participation before Umlegung procedure; no rules on consultation or the manifestation of opinion. Also in Western Australia, the right of participation is relatively weak. The preliminary draft

project has to be prepared in consultation and negotiation with landowners and it has to be displayed to the public for getting the objections and opinions of landowners. However, the authorities can make their decision regardless of these objections and viewpoints. In other countries, there is a public exhibition arranged for the presentation of viewpoints and objections. A certain measure of support from landowners is stipulated, often a two-thirds majority. In some countries, like Sweden, it is also stipulated that the preparations must be conducted in consultation with of the landowners.

In principle, the main actors should not only be capable of formulating their own priorities but should also reach a certain conception of the priorities of other parties. Therefore, the basic point of negotiation is; the final compromise should be in such a kind that all participants must feel that they have gained something from the project.

After the presentation of the investigate material, objections are taken into consideration by arranging a public meeting. If these objections are serious enough to make considerable changes, the procedure is repeated with a second public exhibition followed by a decision. Finally, the pre-process concludes with achieving a decision. The process following this decision involves permission for the project according to plan presented, final delimitation of the project area and an authorized organization in the form of an association or such like. In most countries, the official decision on the initiation of the procedure can be contested by appeal. However, as soon as permission has been settled, the formal continuation of the process can begin (Larsson, 1993).

3.1.2.2 Formal Process

Formal process includes the "*phase between the formal authorization of readjustment and the formal conclusion of the process.*" Therefore, the starting point decisions are "commencement of land readjustment" and "preliminary delimitation of the area" (Larsson, 1993, p. 103).

In formal process, participants have to organize themselves. They have to set up some form of associations which have legal status. These associations maintain some obvious advantages to the process, which are specified by Larsson (1993) as follows;

- The association can contract or underwrite loan for the activities,

- Practical implementation can be delegated to an executive body,

- Various matters can be decided by a majority vote,

- No individual landowner thus can stop the activities or extort special benefits,

- As a legal corporation, the association can negotiate and conclude agreements more easily through conversing with many different persons representing the project.

According to Larsson (1993), in Germany and Western Australia, as Local authorities conduct the entire process, there is no need of a formal organization involved to the process. However, in other countries, there is legislation on the procedure for setting up readjustment organizations under public law. Only the main outlines of the organization are defined by legislation. However, in case of specified conditions it is possible to convert these organizations into authorized associations with more detailed rules. Only the main outlines of these rules are defined by legislation. Once the association is formed, detailed statutes and guidelines are fixed. In association, so as to make the decisions on behalf of all participants; firstly a general assembly is entitled and then this assembly elects a board. As a final step, a chairman is elected by the assembly or board.

On the other hand, in Japan, where the process is conducted by the public sector, if there are a large number of participants, the assembly may appoint a representative "intermediate body" which is consulted by the board on various matters. Afterwards, a special advisory body, which is formed by elected representatives of landowners, takes the place of association (Larsson, 1993).

The presence of an impelling force in the process, an 'executor', 'agent', etc, is almost more important than the formal organization. The chairman which can act in consultation with the board may perform this function. However, this duty is commonly performed by somebody else. It may be the representative of the municipality or another authority that has an interest in the project. In addition, this person should be primarily responsible and intent on advancing the process. It may also be a representative of a private contracting or development company, if the project is initiated by these agents (Larsson, 1993).

Since development is a difficult business and the majority of the participants are not enough experienced about this process, it is useful to retain one or more consultants. In this respect, a specialist, frequently a private surveyor takes place in French AFU procedure for the conduction of the project. Although he does not have the decision-making functions, his position resembles to the Swedish executive official.

With the decision of delimitation of the area, the organization of participants and working methods, it is decided to launch the process. Following this, there are a number of important issues to be considered as follows:

Disposal Restriction: Once the process has begun, changes and other measures undertaken within the project area apart from the adjustment process could be disruptive. Therefore, there are some regulations stipulating that certain changes should not be carried out without the consent of the association or the authority. For instance; in Germany, there are a series of measures which landowners can not take without consent from the authority such as; allotment-parcellation, sale, leasing, major site improvements, construction work enhancing the value of the property, and so on. In France, permission from the prefectoral authorities is required for the construction works to be carried out during the process. In Sweden, restrictions on property rights concerning the reallocation are defined according to the general rules of the 'Property Formation Act' (Larsson, 1993).

Participating Landowners: In principle, delimitation of the area means the decision of which landowners will take part in the readjustment process. Most legislation allows shareholders to give the decision of whether to participate in the readjustment process or not. The reason of voluntary application is clear because development is an activity which can not be forced on a landowner. However, in some of the countries, this application is compulsory.

As Larsson (1993) states; in Germany, once the municipality has defined the area, participation in land readjustment 'Umlegung' procedure is compulsory. The same application is utilized in Western Australia and in some of the states of India. In other countries, there are different structures. For instance; in France, a landowner within the delimited area can announce his intention of selling his property to the association in a month period after the decision forming the association. In Sweden, participation is voluntary. If the land is located in the area of readjustment, which was adopted with detailed development plan, implementation of the project is realized with the force of law because association can request the transfer of the land for the sake of the development proposed by the plan. On the contrary, each landowner can demand the purchase of his land.

In all these cases, if the land is purchased, the compensation amount is paid according to the market value; otherwise it is expropriated. Therefore, the purchase of land does not cause a direct loss to the landowner. However, concerning landowner does not have any share in the development profit, which is the land value increase brought by the project. (Larsson, 1993)

No matter which type of implementation is valid, the best provision for the interest of landowner is preferred. It is arguable that compulsory participation as in Germany does not force landowners to sell the property in a particular time. If the landowner does not want to take part in the project, he can sell his land anytime he wants in the free market. Under these circumstances, the sale of the land is generally delayed until the property reaches to the intended use of the land. In France alternative, landowner is forced to decide

at an early stage, perhaps before detailed plan presenting the future structure of the property. Swedish rule is more favorable to the landowner because neither compulsory surrender nor a request for purchase comes into agenda before the detailed development plan for the area has acquired force of law. Landowner has another six month to purchase his property. On the other hand, this process takes a long time period and consequently no final readjustment plan can be put forward earlier (Larsson, 1993).

Calculation of Shares: Larsson (1993, p. 107) describes the main purposes of the calculation of shares for the participants;

- The shares decide the land allocations which the participants are entitled to,

- The shares provides a basis for the apportionment of costs and benefits,

- The shares can be used for certain other purposes such as calculating the votes.

The determination of landowners' shares is directly related with the design of economic mechanism in land readjustment process. In all systems of readjustment, the calculation of shares is essentially determined either by the acreage or the value of the area. The primary basis, thus, is always a list of the holdings, acreages and possible values which each landowner puts into the enterprise. Before the calculation of shares, a completely new survey should be carried out for the list of real-property register because the existing property register index maps are not always a sufficient basis for the detailed planning. Besides, in order to ensure that no landowners suffer a loss due to the projects, it is reasonable to calculate both value after and value before the process (Larsson, 1993).

Land Deduction: In all countries, land deduction procedures are conducted in the way that landowners surrender a certain portion of their land for the common purposes. This is often defined expressly in the legislation, sometimes with an exact maximum limit as it is in Germany. In other countries, there is no formal rule. However, necessary land to be surrendered for public places and streets in the area varies according to agreement concluded with the municipality on the apportionment of costs (Larsson, 1993).

Land is surrendered either to the association or the local authority, depending on the different facilities. Larsson (1993, p. 108) defines four main purposes of land deduction;

- To provide the land needed for streets, green spaces, public spaces and etc,

- To compensate the municipality for its expenses,

- To sequestrate the development profit for the municipality,

- To use it for covering the costs of association.

The extent of these purposes differs in each country. German law prescribes a deduction to cover the first and third purposes. In France, deduction is made for the first and second ones. In Japan, it is also normal for 'reserve land' to be set aside, which is the fourth purpose. In this framework, the land deduction has to be a uniform percentage of allocation claims. Depending on area or value, the deductions have to be correspondingly calculated. Finally, as a calculation base, in addition to an approximate plan showing streets and public spaces, the approximation of costs is also necessary. (Larsson, 1993)

Determination of Valuation Methods: Valuation method is a necessary issue in joint development. It is required for the calculation of shares, land deductions, allocations, development profit and compensatory payments of various kinds. In principle, with reference to the valuing rules used in expropriation, market valuation is regularly used. Less frequently, national laws include further provisions. The detailed design of the valuation method, the levels to be applied and the valuers to be engaged are therefore decided by the association in consultation with its technical expert, or perhaps by a special executive official (Larsson, 1993).

According to Larsson (1993), a certain differentiation of value with reference to location, accessibility and feasibility is also quite conceivable. In the same framework, Yomralıoğlu (1994) indicates that there is no dynamic land valuation analysis. In most cases, land unit value is not taken into account in the calculation of percentages which is

contributed by each landowner for public areas. The only criterion is the parcel size, and the contribution factor is the public use land area required in the zoning plan. This single coefficient is calculated and applied to all landowners in the project for the distribution of land. Redistributing land on an area basis rather than a value basis does not provide equity among landowners since many other factors affecting a parcel value are disregarded. These factors are land use, topography, shape, view, proximity to commercial areas and other public facilities.

Compilation of a Property Regulation Plan: Larsson (1993, p. 109) specifies the guidelines for creating the new property subdivision as follows:

- Each landowner obtains land in approximate proportion to his previous shares,

- The new lot of the landowner should be in a similar location with similar qualities,

- Buildings and large facilities should not be moved or demolished without consent unless it is absolutely necessary,

- The new property subdivision should be coordinated with a suitable structure of streets, blocks and etc, which is often defined in a detailed plan prepared by the municipality.

In practice, whoever is the driving force, planning must be based on close cooperation between association and authorities in an implementation process. As mentioned before, a consultant plays an important role to achieve this in some cases. Therefore, the important thing is the effective integration in joint development. Although it is the authorities which finally adopt the plan, support from the majority of landowners before the plan should be provided through participation and negotiation as a result of exhibitions, meetings and etc. In addition, before the final decision, it is logical to give participants the opportunity of presenting their viewpoints and objections.

Larsson (1993) indicates that the actual planning document includes a map, description of new allocation, and land areas for roads, public spaces and so on. It should also include necessary preparations for implementation, estimates of values before and after the readjustment and therefore calculation of compensatory payments for each landowner.

In many countries, the adoption of the property regulation plan marks the end of the formal process. In Germany, an official announcement is made and after the plan has acquired force of law, the new legal situation applies and cadastral registers are altered according to the plan. In France similar to Japan, the cadastral changes are carried out after the prefectoral authority approves the plan. The association remains in existence until completion of construction and economic transactions. In Sweden, as the final date is already indicated in the development order, the association and the order conclude after this date (Larsson, 1993).

3.1.2.3 Post-Process

The boundary between formal process and post-process is close to each other and varies from one country to another. The content of post-process depends on the situation. There are four main relevant measures in this process. As Larsson (1993, p. 114) defines;

- Judicial appeals

- Construction work

- Other joint measures

- Reinstatement measures

In order to resolve differences and to agree on a decision which is acceptable for a great majority, it is necessary to put forth efforts in all stages of the process. However, there may still remain some discontents in spite of all efforts. Therefore, in all countries, a person in such a situation has right to appeal. These appeals, as a rule, are confined to two or three

occasions, which are “commencement order”, “the readjustment order” and perhaps “valuation order”. The appeals may not only refer to these parts of the process. On the contrary, most aspects of the procedure can be questioned. However, due to practical and procedural reasons, it is inappropriate for the events spread throughout the entire process. Another point is; appeals may be administrative or judicial. According to their regulations, each country implements different implementations on this matter (Larsson, 1993).

However, in all countries appeals do not stop the advancement of the process when a permit has been conclusively awarded because the main principle of land readjustment is to enable an economic way of development aiming to provide an equal allocation and to speed up the implementation. All the processes of construction works and other measures progress regardless of appeals pending.

According to Larsson (1993), national legislation contains few provisions during the process of construction work. This work either comes entirely outside the process, as in Germany, or it is entirely an agreement of local authorities and landowners. Usually there are no detailed legislative rules on this subject, but there is a certain code of practice gradually evolves. In Sweden, on the one hand, the usual practice is for the landowner to surrender land for necessary roads and green spaces and to bear the main cost of roads and other facilities in the area; on the other hand, the municipality for its parts provides the large structure of facilities such as; access roads, water and sewerage mains and etc. In Germany and Western Australia, the local authority is responsible for construction work. The same procedure is also valid in Japan if the initiative comes from the local authority. Otherwise, costs and responsibilities are shared between parties involved. In France, the association so called ‘AFU’ is responsible facilities.

In principle, it is probably an advantage for facilities related to more general use to be transferred to the municipality after completion. In addition, the local authority can often recover the necessary maintenance expenditure through user charges or suchlike (Larsson, 1993).

Land readjustment principally is restricted to land exchanges and the site improvements associated with them. This process does not include sale of land or the construction of buildings. However, as Larsson (1993) indicates; there are certain exceptions. In many countries like Germany, the method of surrendering the land for cost coverage is used. If the land is accrued to local authority, the local authority is responsible for its further disposal, including its sale. On the other hand, in Japan, it is the responsibility of landowners to set common "reserve land" aside for sale or building development under the auspices of association itself, for the cost coverage. In France, the sale of land may also be included. A housing cooperative may sell it in the general market.

Under certain circumstances, co-operation may be desirable in the process. As individual landowner is not enough experienced in the sale of land or in building, he often does not know what to do with his land. This is an obstacle and this can delay the progress of development. On the other hand, if landowner tries to sell his land, this may put him in a dangerous position because he may not acquire the full value of his land as an amateur in the field. Then, main actors, through the agent or association, may give some kind of guarantee to the landowners in the sale of his land during the negotiation process. Therefore, it is obvious that co-operation speeds up the development with its organized structure. In this respect, Larsson (1993) declares that co-operative procedure, in such conditions described above, can hardly be regulated by statute. However, voluntary and informal co-operation is allowed for practical joint solutions.

Another point is that when urban centers are concerned, it is necessary to include construction in the economic calculation and settlement. In addition, as Sorensen (2000) and Larsson (1993) points out; if a landowner does not intend construction of his land, it is better to sell the land to main the actors who are responsible for the development. In Japan, in certain cases, a landowner can exchange his land for a dwelling unit in a condominium block.

There are also efforts to persuade previous residents to stay in the area of land readjustment. This kind of "reinstatement" is desirable in order to preserve the social

environment and structure. Nitz (1986) notices that as a natural part of the programme, great efforts are devoted to reinstatement in Japan. Deliberate efforts are made in Japan to retain not only the owners but also the tenants; such as special statutory rules. As Larsson (1993) states; German legislation also includes special rules for reinstatement. The rule is that, if a renewal project has a negative impact on living circumstances of residents, the local authority must cooperate with the residents to lay down the reasons of this avoidance.

This measure is not confined to the post-process. It is vital to pay great attention for reinstatement during the preparatory negotiations and during the evolvement of the plan in order to preserve the social environment.

3.2 Land Readjustment in Other Countries

In the world, land readjustment procedure is basically carried out in two different ways, on legislation basis and on voluntary basis. Countries like Germany, Sweden, France, Japan, South Korea, Taiwan, India and Western Australia have special legislation for the urban development activities by means of land readjustment. On the other hand, other countries like USA, Norway, Nepal, Thailand and Indonesia carry out land readjustment on a voluntary basis.

3.2.1 Germany

Germany is located in the heart of Europe. In terms of population, it is the largest country in the European Union, in terms of area, the third largest. Despite involving in both of the World Wars, it has the largest economy in Europe as well.

Like other developed countries the urbanization in Germany is inevitable and still in progress. This situation causes a high demand in property and naturally an increase in land value. The important point, therefore, like in all other countries all over the world is to provide adequate areas for a specific usage at specific place, briefly to optimize the land use.

From this point of view, land readjustment, an urban planning and implementation instrument to provide building land and mobilizing, is very important for Germany especially in the aspect of sustainability. In this respect, Meindl (2002, p. 1) indicates that;

> *"In Germany 129 hectares per day are used for new building land or streets. Although population is declining, this trend will still continue up to the year 2010. Many conflicts results the land used for building land and nature protection or agriculture. It is very important that property in Germany is handled in an economical way. The instruments of land readjustment for the solution of land use conflicts applied even more."*

Muller-Jokel (2002, p. 2) states that the providing and realization of new building land including infra-structure is an integrated process, called urban development, and adds that there are three phases of urban redevelopment in Germany;

- Planning

- Land Management (including land readjustment)

- Construction of Public Infrastructure

The legal basis of urban development in Germany is the German Federal Building Law Code and municipalities have a comprehensive planning authority. On municipal level there are two different planning levels, *Flachennutzung Plan* (F-Plan) and *Bebauungs Plan* (B-Plan), forming German planning system. Muller-Jokel (2002) defines these two levels as;

- F-Plan: the preparatory land-use plan which represents the type of land-uses arising for the entire municipal territory.

- B-Plan: the local land-use plan which makes legally binding designations on the specific type and on the degree of building and land-use.

Komae (1996) mentions that F-Plan refers to the general land-use plan while B-Plan is the detailed one at district level. In addition to the district facilities, land-use, floor area ratio, lot size, height of stories, number of stories, building location, shape and form, landscaping and etc., B-Plan also determines land readjustment, boarder adjustment, acquisition, demolition area, demolition orders and etc (Akkoyunlu, 1999).

In order to realize these planning concepts there are different instruments and strategies in Germany to achieve a comprehensive and successful urban development and land management. The instruments of providing building land can be split up into three types;

- Models of Interim Purchase: There are two models of municipal interim purchase. The first model, *Voluntary Interim Purchase*, requires the willingness of all landowners and the financial ability of municipality to purchase all plots within the project area. By selling the developed building land, after the construction of the infra-structure, the municipality can arrange building and using obligations within the contracts with the private purchasers. With the difference between purchasing price and selling price the development of the land can be financed. This instrument can also be carried out by either volunteer private companies or private investors (Muller-Jokel, 2002).

In the second model, *Special Urban Development Project*, the municipality can expropriate the individual landowner if he denies selling his plot. For this reason, it can only be implemented if the special requirements are procured such as; benefit of the public, special importance of the area for the municipality and etc. However, many landowners refuse to sell their plots as they want to get a higher portion of the land value increase for themselves. That makes this instrument unpopular for municipalities because of delays and increasing costs (Muller-Jokel, 2002).

- Activities of Private Investors: In this method municipality may delegate the preparation of planning and its realization to a third party. That means the investor is able

to finance the whole project development with its three phases, planning, land management and construction of public infra-structure (Muller-Jokel, 2002).

- Land Readjustment: In Germany land readjustment has a very long tradition and a large number of projects have been completed in order to provide new building land. For this reason, municipalities, whose one of the major tasks is to provide new building land, have a vital function in this process.

The land readjustment process in Germany is called Umlegung**,** which in fact mostly includes the adaptation of rural land consolidation methods to urban conditions. From initiative to planning and implementation, the whole process is under the control of local authorities. However, after the reallocation of land, which is in accordance with a new and suitable development plan, the land is still possessed by the previous owners. The final exploitation is left to the owners as well (Larsson, 1997).

Larsson (1997) indicates that the municipality can decide to start an Umlegung procedure as soon as a detailed building plan has been approved if it is necessary. The executor can be either an appointed committee or the proper cadastral or consolidation authority.

Larsson (1997) explains the German land readjustment procedure as follows: First decision is the definition of the extent area within which all landowners take place and have no option to leave the programme. After the statement of maps, records, parcels and buildings detailing the owners, total readjustment area is calculated from the parcel sizes. In the following step, this total area is reduced by a common share necessary for streets, green places and other public places. The reduced area is then distributed to every landowner in proportion to either the area or the value of his included land. Besides, municipality may take over further land as contributions to the costs.

Thinking of the adaptation to the approved building plan, a new parcel plan based on everyone's share is worked out. The discussions including related economic problems

are made with individual owners and then the revisions concerning the new plan are completed. After the approval, this last parcel plan is then displayed in the locality detailing the period of time for appeal. In this way, the legal process is finished. The construction of streets, infra-structure and etc., which are the responsibility of the municipality, is not included in the proceedings (Larsson, 1997).

Fig 3.2 – Example of a Completed Umlegung Procedure, Larsson (1993, p.38)

From this point of view, Muller-Jokel (2002) contemplates on two important points. First point is the early information and participation of the landowners. During the process there are two different levels of information and participation of landowners, first level in the planning procedure and second level in land readjustment procedure. In planning procedure public have to be informed firstly about general aims and purposes of planning

and secondly about the land-use plans and explanatory reports. However, in land readjustment procedure the participation and information of the landowners is much more efficient than in the planning procedure because in this phase landowners are invited to discuss their wishes and claims in detail as well as the possibilities and limits to carry them out. Therefore, every individual landowner could have a chance to solve his competing desire.

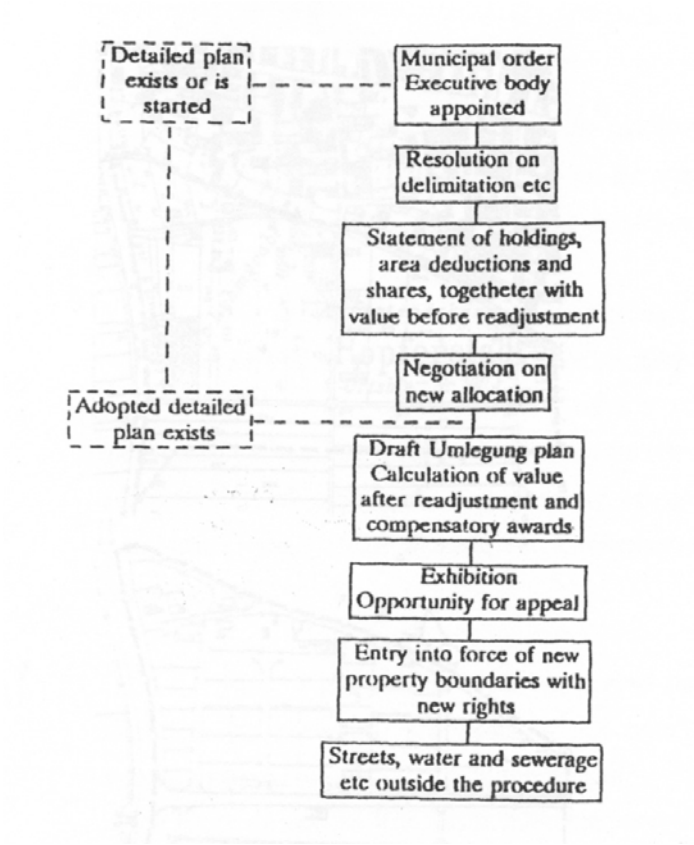


Fig 3.3 – The Umlegung Procedure, Larsson (1993, p.41)

The second important point is that all plots have to be evaluated twice; before LR project (undeveloped land-input value) and after LR project (building land-redistribution value). By this evaluation the land contribution rates as well as entitlements of the landowners and financial adjustments have to be determined. This crucial point enables the municipality to finance the urban development and to motivate landowners in the process.

Meindl (2002) describes this situation as follows: In accordance with the purposes of land readjustment landowners receive as soon as possible plots out of the redistribution mass with an equivalent location as the plots which have been contributed. The German Federal Building Code describes three criterions for the redistribution;

1. Redistribution by value: The redistribution by value should be used if the value of the input plots is different. The redistribution mass has to be divided up proportionately on the basis of degree to which each of the owner is involved in the reallocation.

2. Redistribution by size: If the value of the plots is homogeneous in the whole reallocation area the redistribution by size can be used. That means that all plots have a similar value.

3. Redistribution by some other criterion: If the landowners and the municipality agree the involved parties can choose other criteria to divide up the redistribution mass. In Germany there are an increasing number of municipalities that use such criteria, in particular in combination with Urban Developments Contracts.

From this point of view, Connellan (2002) expresses that when using the Verteilungmaβstab, according to the sizes of the plots, the municipality is allowed to retain land equal to the increase in value caused by the Umlegung itself; however, according to BauGB (Baugesetzbuch-The German Federal Building Code) this may not be more than 30% in greenfield areas and 10% in inner city locations. In addition, when using the value-based Verteilungmaβstab, the landowner has to pay the difference between the value of his former plot and the value serviced new plot after the procedure of the Umlegung, which process incidentally permits the municipality to retain betterment value.

Briefly, although there is a risk for the landowners due to the expense constituted in the Umlegung procedure, it enables a profit for them as they could still keep their land. Besides, from municipalities' viewpoint, it prevents them from resorting to expropriation and gives them a possibility of obtaining land for the public purposes.

Umlegung, the most commonly used method for implementation of new dwelling plans in Germany, is not only an elegant and economic way for sustainable urban development but also a competent and well-organized way of collaborating with municipality as executor and cost payer, while landowners could present their viewpoints and have the right to appeal.

3.2.2 France

France is located in the Western of Europe. Besides being one of largest economies in Europe, in terms of population, it is the second largest country in the European Union, in terms of area, the largest. After the World War II, France sought to find the ways of controlling urban development as well as other European developed countries. Larsson (1993, p. 44) points out that "*the French legislation was prompted by the need for new methods of urban development.*"

According to French planning system, the land readjustment procedure has to be integrated with the general planning framework. In principle there should be an overriding regional plan which is specified in a land use plan for the individual municipality. From this point of view, Komae (1996) mentions that French planning system is formed by two inter-related levels; "*Schéma Directeur*" (SD) as the master plan and "*Plan d'Occupation des Sols*" (POS) as the general land use plan (Akkoyunlu, 1999).

France has always been strongly committed to the rights of private property and so land readjustment by joint development was felt to be good remedy against expropriation and also against too much community involvement. Another point is that French legislation provides joint urbanization measures to be taken by the landowners themselves (Sonnenberg, 1996).

Larsson (1997) states, in France, unlike Germany, the responsibility of land readjustment process completely belongs to the landowners. Implementation and sharing of economic gains are also executed by the landowners. On the other hand, initiator may be

the municipality as well as a voluntary association founded by private interest holders, which can only function in case of unanimity. The further step of French land readjustment process is to establish an authorized association, "*Association fonciére urbaine autorisée*" (AFU).

A pre-project plan, which contains boundary proposals for the area and a draft record of owners and parcels affected from the project, must initially be worked out by the authorities and the landowners in order to structure the basis of the further essential decisions. This plan must also put forward the main lines of the project as well as its benefits and estimated costs. A chosen consultant, who is often a private surveyor, gets the responsibility of working out the plans and also carrying out the proceedings. In order to benefit from new opinions about existing land use plans of the municipality, getting public support for the pre-project could be reasonable under suitable provisions (Larsson, 1997).

Larsson (1997) summarizes the French procedure as follows; along with the exhibition arranged by the prefectoral authority, objections against the project are received. If two thirds of the owners agree about the project and at the same time own at least two thirds of the total area, the project is accepted in a general public meeting. The project, which is supported by the municipality, is then carried out according to the accepted land use plans. Afterwards, the prefectoral authority can approve an authorized association for owners within the area which has the power of implementing the project and recovering the costs from the members. Besides, if a landowner wishes to give up his property, he has the right to announce this decision within one month. The price of his property is then determined by agreement or according to the rules of expropriation.

The readjustment plan displays proposed blocks, sites, streets and other proposed construction. After the extraction of the land needed for public use, the remaining area is distributed to the landowners in such a way that the new value at least covers the previous value. From this point of view, in case of appropriate conditions land can be exchanged for cash or some landowners may prefer a voluntary diminution of their land in order to cover their costs (Larsson, 1997). According to Larsson (1993, p. 51);

"An effort is made to achieve equitable distribution between the landowners, based on their individual contributions of land regardless of whether it has been built on or not. The landowners are also obliged to share the costs on the same basis."

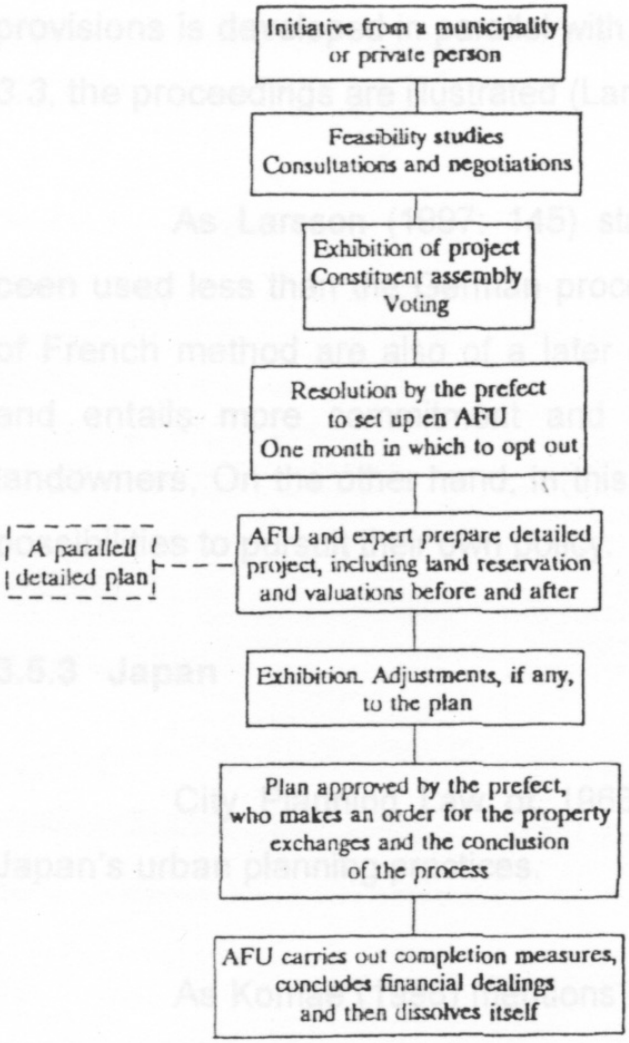


Fig 3.4 – Sequence of a French AFU Procedure, Larsson (1993, p.50)

After possible modifications, the plans and documents are transmitted to the prefectoral authority. With the approval of the plan by the municipality, the plan is displayed for 20 days. In the following step, after the plan is returned to the association

board with recommendations for a final adjustment, it is again sent to the prefectoral authority for approval. Finally, the association dissolves itself as soon as completing the construction work and concluding the financial dealings such as costs & indemnities. If necessary, a formal building plan with building regulating provisions is designated parallel to the readjustment plan (Larsson, 1997).

According to Sonnenberg (1996), the practical implementation of this legislation has been relatively moderate and is much less widespread than Umlegung in Germany. Because of its privatized character preparatory discussions and pre-planning take much time with some risk of the initiators having to defray the costs of it. The whole procedure has proved to be rather unwieldy and time consuming.

From the same point of view, Larsson (1997) notices that not only the French procedure has been less used than the German Umlegung but also the regulations are of a later date. Another important point, it is undoubtedly more time-consuming and requires more commitment and risk-taking on the part of the land owners. On the other hand, landowners have more possibilities in pursuing their own policy. In addition, in France, unlike Germany, the public sector can not order the landowner to build. Therefore, just as in Japan, there is a risk of the land not being built up.

3.2.3 Western Australia

Ever since 1928, the Town Planning & Development Act in Western Australia has authorized a planning procedure based on "pooling". This urbanization method, which is similar to land readjustment, has been used around the capital Perth in the state of Western Australia since 1950s. Although it is a well established system for Western Australia, it has not been implemented sufficiently in other Australian states yet (Larsson, 1997).

Archer (1986) makes the definition of land pooling of Australia as a technique for carrying out the unified servicing and subdivision of separate private landholdings in urban-fringe areas for planned urban development. These projects are self-financing and

landowners share the costs and benefits. It is a powerful tool for local governments to implement their municipal land use plans and to supply adequate urban land. Briefly, these projects involve the preparation of a land pooling scheme made by the local government for a selected urban-fringe area.

According to Larsson (1993), in many points Western Australia procedure shows important similarities with Japan procedure. Basically, regarding the ownership rights, this procedure aims to achieve a proper restructuring for the benefit of landowners with systematic profit sharing and with the greater part of the profits being restored to the landowners. Contrary to the procedure in the countries described above, this technique necessitates formally conveyance of land ownership to the local authority or its representative first, so that in the next stage, when new plots have been defined, the land can be redistributed between the former landowners in the area.

As it is mentioned above, the procedure was first put into practice in 1951, in a suburb of Perth, the capital of Western Australia. After the first implementation, it has been used almost in every part of the Perth region in order to finance infra-structural facilities and restructure areas where there were impediments to normal private development, such as; scattered holdings due to earlier subdivisions, agricultural small holdings on the outskirts of urban communities and frequently the areas with old property subdivisions where more permanent settlement has failed to materialize (Larsson, 1993).

The Act empowers the local authority to undertake pooling projects. In this point, aiming to achieve widespread support, the authority prepares a readjustment scheme by consulting with the landowners. Following the preparation of the scheme, it is put on display. Therefore, landowners and interested parties have an opportunity of expressing their viewpoints and objections. After the necessary adjustments made, the scheme is handed over to superior authorities. It is then approved by the Ministry of Town Planning and published. This scheme involves a map of previous property units and a plan of the new distribution together with the intended building plots, as well as valuation of old and new holdings, a budget for the project and a descriptive text indicating the aims of the

project, the basis of profit allocation and a plan for the conduct of the project (Larsson, 1993).

After approval by a superior authority, the municipality or the local authority acquires the total area without any compensation; but with a guarantee of existing mortgages until these can be allocated between the new land holdings. The local authority then prepares a detailed plan and carries out the infra structural works. According to this plan, authority divides the area into streets, open spaces and building plots and also keeps certain plots to cover the costs. The remainder is distributed among the previous owners according to their claims, with certain adjustments and attendant compensation to provide suitable building lots. Through this procedure, pre-existing boundaries do not impede the planning and implementation phases. Thus, the local authority and the landowners are not exposed to any long-term costs (Larsson, 1993).

From this point of view, Archer (1986) indicates that profit sharing in a pooling project is primarily based on three principles. Firstly, all the requisite procedural and construction costs must be charged to the project. Secondly, each landowner's share must be based on the estimated market value of his initial holding, excluding the value of the buildings. Thirdly, all net increases in land values, after deduction for costs, accrue to the landowners.

Another point is, normally the project is estimated to provide some gain to the landowners locating within the area and distribute this gain among these landowners. However, some lands in the scheme area may be excluded in the cost and benefit sharing arrangements which usually locate on the edge of the area and receive little benefit from the pooling project (Larsson, 1997).

During the project government carries out the necessary valuations within the area. An approximate estimate of appreciation and expenditure is already made at the drafting of the project, and the plots to be sold in order to cover the cost of the project are identified. In other words, the project is financed by a sort of short-term loan which is repaid by sales of

the resulting new building plots. As a result, the draft plan, put on display, enables the landowners to have an approximate idea of what the project will provide them financially. After the final compilation of the draft, each landowner receives a written offer showing every plot allocated, its estimated value and the cash payment, if any, required. Upon evaluating this offer, the landowner can appeal against the draft plan. He can also decide whether to accept his land allocation or to choose cash compensation instead (Larsson, 1993).

The procedure includes only a reallocation of the land and the construction of infrastructure within the area. The final sale of the new building plots is left to the landowners. Consequently, as in some countries examined above, this situation causes a certain risk of exploitation if completion of the development takes a long period of time (Larsson, 1993).

Archer (1984) summarizes process of land pooling method in West Australia as (Larsson, 1997, p. 147);

> *"A mini town planning scheme is prepared for each land pooling project in order to define it and then when approved to authorize and regulate the implementation of the project. Each scheme usually (and desirably) consists of before-and-after land use and land holdings maps, a scheme text, a project budget and a schedule of landholdings and valuations. The scheme text sets out the objectives of the project, the steps of the project and the terms and conditions on which the project will be carried out. It therefore can be seen as a form of partnership agreement between the landowners and the local government. The pooling scheme is usually prepared in consultation with the landowners and the various government bodies involved in the implementation. The draft scheme is then placed on exhibition for landowner and public information and for formal objections, if any. After review and possible amendments, it is then approved. The scheme text is published and becomes a legal document to authorize and regulate the project. Each landowner's share*

of the costs and returns of the project is based on the official assessment of the market value of his land as at the time of the local government's decision to prepare the scheme".

Following example, the Tribute Street Land Pooling Project in suburban Perth, is completed by the Canning Town Municipal Council in three years.

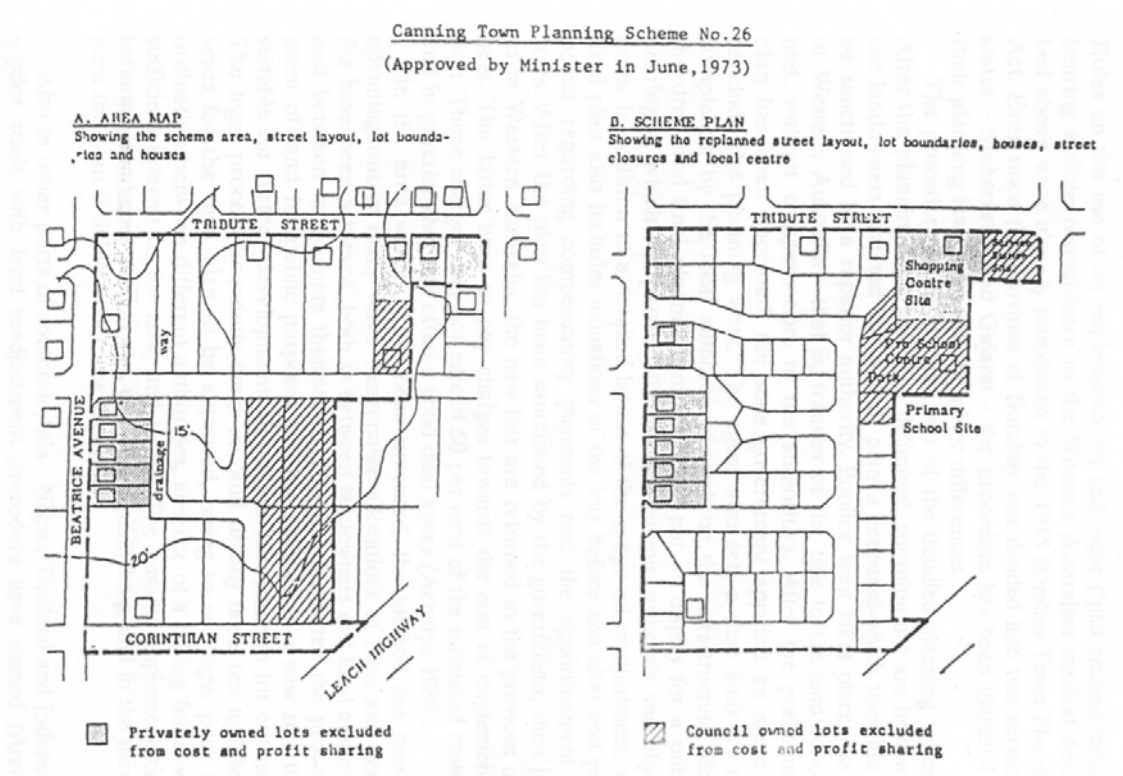


Fig 3.5 – An Example of Pooling, Larsson (1993, p.77)

Briefly, pooling enables the local government to act as a land developer without buying the land, but rather as a compulsory partnership with the landowners. Local governments mainly use land pooling in order to service and subdivide urban-fringe areas for new urban development and to finance the cost of the construction of infrastructure. It is also used as an efficient tool for designing a good subdivision layout in situations where there were barriers to the normal process of private land subdivision. At the same time, most landowners support the use of land pooling because it enables them to share in the profits of land subdivision for urban development.

3.2.4 Japan

With 330 inhabitants per square kilometer, Japan is a country with a great demand on real property. The mountainous topography of many regions consequently implies limited habitable areas with percentage of just over 20% of the total land. An increasing need of land suitable for public and private development, such as infrastructure, commercial centers and housing areas, puts pressure on the administration as well as the management of land (Karlsson, 2000).

Historically the procedure of land readjustment, called Kukaku-Seiri (KS) in Japanese, has taken an important place in Japanase urban development progress ever since the end of the 19th century. At first, it was used for the necessity of structural improvement in agricultural areas on a voluntary basis. Shortly after, the urbanization and the creation of a suitable infrastructure in the growing capital and other major cities began and it was consequently used for suburban expansion projects. In 1919 the first Town Planning Act, whose main concern was to establish a basic infrastructure and a division into zones with different buildings, was launched. However, not until 1923 did the process of KS get its first breakthrough when a severe earthquake laid large parts of Tokyo and its suburbs in ruins (Larsson, 1993). As a result, a modified form of KS, which was carried out by a special government agency, was used to rebuild large areas of downtowns after 1923. During the 1930s, KS was widely used by the central government in order to establish military facilities (Sorensen, 1999).

As a second breakthrough, after the Second World War, which devastated many areas of Japan, a new and special Town Planning Act, was launched in 1946. It was mainly focusing on the postwar urban reconstruction with KS as its principal means of implementation. The prime purpose of this act was to acquire the necessary infrastructure in addition to adapting the property structure to rational development. According to this procedure, up to 15 percent of land could be taken over for roads and green spaces without compensation for its appreciated value. Besides, parcels below a certain area could be acquired by compulsory purchase. By the time, reconstruction required a more complicated

KS model implementation both for the conversion of undestroyed downtown areas and for the new development in surrounding semi urban areas. Therefore, in 1954 a new land readjustment law was passed with special reference to the KS procedure (Larsson, 1993). In this framework, Larsson (1993, p. 18) explains the aim of KS as; *"The cardinal aim of the procedure is still to develop and improve facilities for communal needs and to promote a distribution of land appropriate to building development."*

By 1954 law, not only leaseholders of land were given rights to participate in the project implementing body for the first time but also local corporations were allowed wider scope to implement KS projects. This act remains in force to the present day as the basic KS law (Sorensen, 1999). KS has then further improvements developed into the main model of urbanization in Japan and nowadays almost 50% of all new development areas have been constructed by Kukaku Seiri (Larsson, 1997). Today, City Planning Law of 1968, which forms the legal framework of Japan's urban planning practices, is the first general revision to the city planning system firstly introduced in 1919. The important point of this law is the division of city planning areas into two parts, urban areas and urban reserve areas; so that the urbanization could be kept under control (Sorensen, 1999).

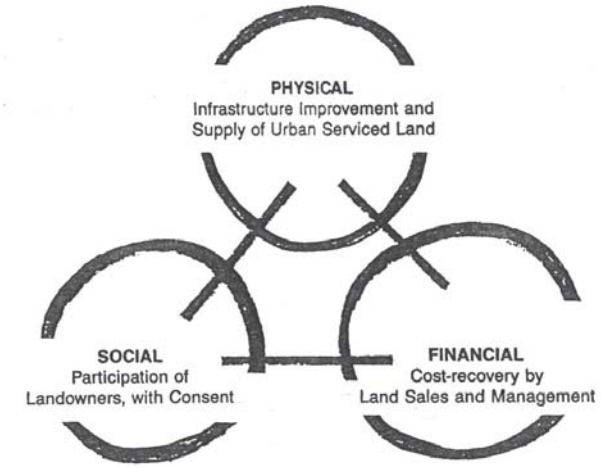


Fig 3.6 – Combination of Three Main Components in the KS Procedure, Larsson (1993, p.19)

Nishiyama (1987) indicates the importance of KS is borne out by a widespread slogan, *"KS is the mother of urban planning"*, and it is often thought of as synonymous

with urban planning (Sorensen, 1999, p. 2333). In addition, Larsson (1993) emphasizes the importance of three components in KS, which are physical, social and financial inputs as shown in the figure shown above. The characteristics of KS methodology can be briefly listed as; a uniform area or value deduction for all landowners, exchange of land to adapt boundaries to the planned use of land and complete or partial cost coverage through collective sale part of the land surrendered.

Komae (1996) categorizes the urban development project in three types as "using re-plotting measure-land readjustment system", "using right conversion measure-urban redevelopment system" and "using land expropriation measure-new residential built-up area development system, industrial estate development system, etc" (Akkoyunlu, 1999).

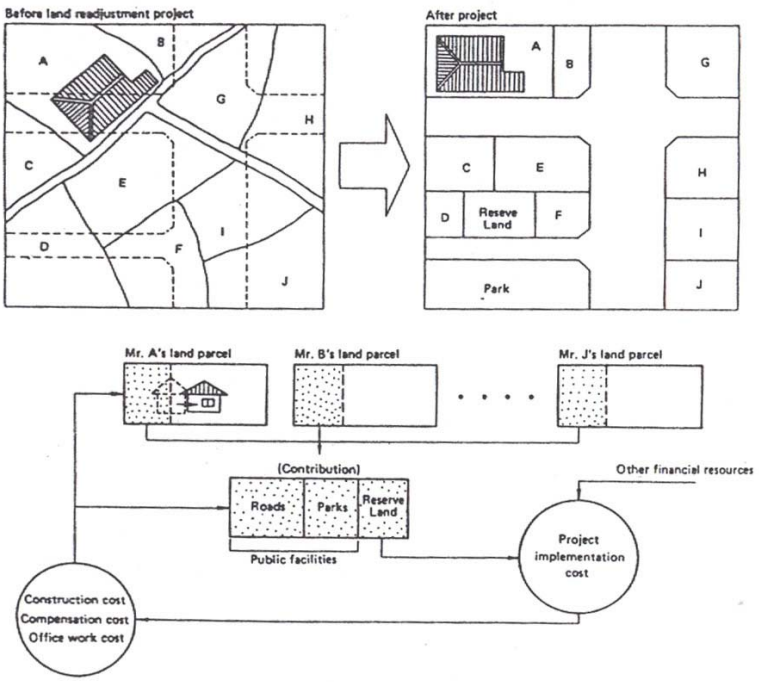


Fig 3.7 – Diagram to Illustrate the Basic KS Model, Larsson (1993, p.20)

According to Larsson (1997), the main aim can either be to develop new town areas, to renew old ones or to adapt the structure to big infrastructural investment. Unlike German and French procedures, the model is not only designed for either the public or the private sector. Local authorities, public enterprises, big private entrepreneurs and ordinary

landowners can also take the initiative and implement the readjustment. Akkoyunlu (1999, p. 54) quoted from OECD (1986) that half of the projects are developed by private initiatives of individuals or land readjustment associations and the other half were promoted by the public sector of municipalities, prefectures and public corporations. In addition, the projects developed by the private sector generally have a size of about 20 hectares while the public sector projects are larger than 150 hectares and they are more complex.

Should the project be carried out by the private sector, it must be supported by at least two thirds of both owners and leaseholders in terms of number and size of the area. Whoever takes the initiative, superior authorities must supervise the project. In this situation, an extensive pre-planning process involving goals, preconditions and planned results is necessary. In addition, construction, estimated costs and gains should be clarified. The plans are displayed for two weeks in an official exhibition. Therefore, objections and viewpoints of concerned parties are discussed. In case of possible corrections made according to these consultations, a new exhibition takes place. Then, the authorities can approve the pre-plan with its proceeding regulations and establish an authorized association of landowners and leaseholders (Larsson, 1997).

After the definition of ownerships in maps and records, shares can be determined according to the areas or values of the land. In the following step, the percentage of land to be surrendered by the landowners is determined in accordance with the size of the area needed for public areas and for the payment of the costs. The association sells this last part and thus gets the opportunity of making the project self-financing. This is accepted as one of the most distinctive features of Japanese procedure (Larsson, 1997).

From this point of view, Nagamine (1986) explains that development costs are in the form of contribution. Contributions made by landowners are used for two purposes, first of which is for “land required for new roads and public open spaces” and second one is for “the Cost Equivalent Land (CEL)”. The later one is used for recovering the project cost

through consolidating at several strategic locations in the project site. Executive body of land readjustment project carries out the sale of this part.

In addition, according to Larsson (1993) there is no definite norm for this reduction; the percentage of this reduction is set in the local implementing regulations. However, 20% reduction for public requirements and 10% reduction for 'reserve land' so as to cover the costs are quite normal figures.

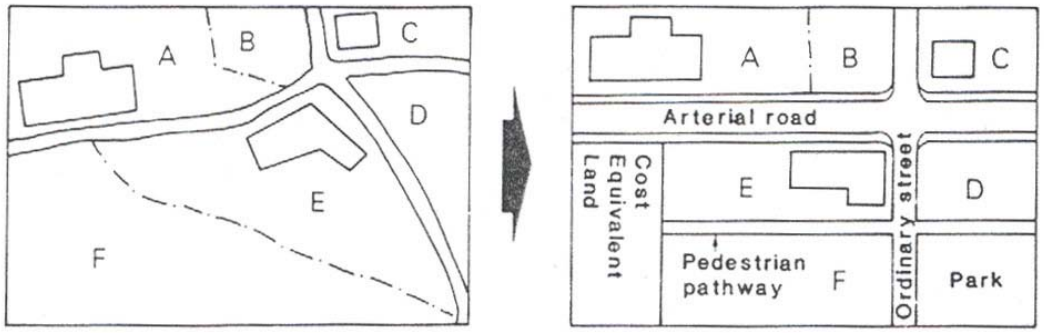


Fig 3.8 – Before and After Land Readjustment Project, Nagamine (1986, p.53)

After reduction, the remaining land is distributed among the owners. If possible, the distribution should be in a similar location and with similar other conditions; such as ground conditions, water supply, natural & social surroundings and etc. Another point is that the cost is shared between the public and the private sector by mutual agreement. Then, the final plan is exhibited for two weeks. In case of a private land adjustment, the final plan must be supported by a two thirds majority. However, if a public authority or corporation is responsible for the project, no voting is necessary and no association is established. The owners and leaseholders within the project appoint a board which has an advisory and decision making function. However, in all cases the final plan must be approved by a superior authority. The plan can now be fixed and registration of new holdings can be made. After registration and financial compensation operations, the association is formally

dissolved. Finally, appeals are allowed and are also treated in an administrative order (Larsson, 1997).

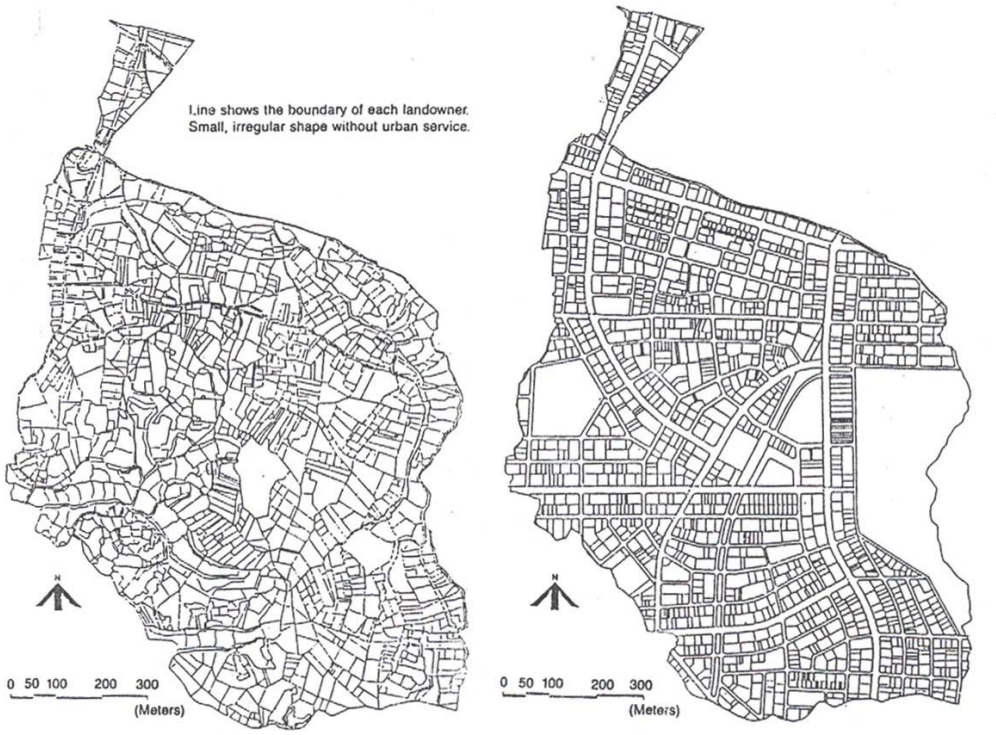


Fig 3.9 – Example of a KS Project Carried out in Connection
with a New Underground Railway Branch Line, Larsson (1993, p.29)

The method has sometimes been criticized in Japan. One reason is that the readjustment plan is not always combined with a formal building plan. Therefore, buildings of very different height and appearance can be established within the same block (Larsson, 1997). From the same point of view, as Larsson (1993, p. 22) quoted from Ishida (1982); *"nowadays detailed planning of this kind normally has to precede or accompany KS, so the development of an area can be stimulated and controlled better through the combined effects"*. In addition, there is not a final date fixed for the development. For speculative or other reasons, the actual building within the plan can be spread out over a long period of time within the area (Larsson, 1993).

From the same point of view, Hayashi (1982) mentions about some necessary improvements on KS such as; clearly indicating the land use planned in the projects, fixing the minimum plot size, preserving the natural environment, controlling the land prices within the areas and creating general services in the area.

Briefly, after two catastrophes, the big earthquake of 1923 and the massive destruction of Japanese cities during the Second World War, the necessity of a reconstruction movement, which necessitated the big and integrated programmes for establishing new city structures in cooperation with landowners and tenants, was emerged (Larsson, 1997). In addition to urban devastation, several factors such as; small and unsuitable plots in the built-up areas, absence of good alternative methods and weakness of planning and building legislation, also necessitated widely practicing of joint development model in Japan. Under these circumstances, KS provides an efficient urban development based on economic partnership between the private and public sectors, provides the necessary infrastructure and also facilitates better planning solutions and rational development. Therefore, KS, not only a pragmatic approach to local planning but also a method of uniting different parties in a dialogue aimed at achieving consensus on vital projects, has become a necessary and viable tool for urban development in Japan (Larsson, 1993).

3.2.5 Other Selected Countries

3.2.5.1 Finland:

The urban land readjustment procedure of Finland is legislated by the Real Property Formation Act (554/1995). The procedure is allowed to be used only if the first detailed plan for the area has not been changed before. The procedure is also put into action in case an application from a landowner or a municipality, which has to be made before the detailed plan becomes legally binding, is received at the National Land Surveying Office. After the approval of the plan, cadastral surveyors determine if the legal provisions for the procedure are proper and then define the readjustment area. The decision of surveyors is

publicly displayed and the landowners can appeal to the Land Court for their objections. After the decision is validated, cadastral officers first confirm the basis for the distribution and then produce the readjustment plan. This distribution scheme is made according to the real property values existing before the detailed local plan was prepared. As in the other countries mentioned above, necessary public areas are determined and transferred to the municipality. If municipality exceeds the necessary free transfer requirement, it has to compensate the cost of this part. In the same way, the remaining areas are shared between the landowners according to their former share proportions and any differences are compensated. In this point, the parties may discuss and agree on the form of compensation (Viitanen, 2000).

In Finland, both the municipality and the landowners are obliged to cover the costs of the procedure. Appeals against the final results of the procedure may be made to the Land Court as it was the same for the first appeals made after the display. Following the second validation, the readjustment is registered in the real property register and necessary compensations are paid. Finally, the procedure does not include the construction of infrastructure (Viitanen, 2000).

According to Viitanen (2002), although the Finnish urban land readjustment procedure has considerable strengths due to its well-defined structure and organization, it has its own weaknesses as well. The aim of the procedure is surely to achieve better detailed local plans. However, the readjustment procedure actually may not always function as a planning instrument since, in practice; planners often do not know how it can be carried out due to the extensive legal provisions. A further aim of the procedure is the equal treatment among landowners. Under normal circumstances, to achieve this equality is very complicated because the right of minor owners to their own building sites, the distribution of the un-built areas (e.g. agricultural land), the determination of certain compensations, and the division of the procedure cost may create further problems.

As evidence, until 1998, for the first three years of the Real Property Formation Act in operation, not one single urban land readjustment procedure was implemented, probably

due to insufficient integration of the procedure into the Land Use Planning and Building Act, and thus planners have little experience of its potential benefits. That is why; further improvements are urgently required for Finland because the existing regulations are ineffective in responding to the needs of urban land readjustment (Viitanen, 2000).

3.2.5.2 Sweden:

In Sweden, the conversion of extensively utilized building land to a more intensive form of settlement was necessary in many places. However, this alteration had to be realized without expensive acquisition of land. At the same time, involvement of the landowners in the conversion process was demanded. Joint development by means of land readjustment was adopted as the appropriate instrument to meet these demands. The legislation of land readjustment came into force in 1987 with the Joint Development Act (ESL) (Sonnenberg, 1996).

At first, before the municipality decides on special area development, certain inquires should be made in order to understand whether there are good prospects of ESL being applicable. The conditions designating the feasibility of the project are examined by the executive official, not by the municipality itself. The decision on special area development also has to indicate the delimitation of the joint development area and the length of time necessary for the completion, which is not more than five years. During this period, municipality has the right to arrange a general meeting with the landowners in order to inform the implications of the procedure and to discuss their opinions. Therefore, landowners may have the opportunity of influencing the municipality's final decision. After the decision, the formal initiative is taken by either the municipality or property owners in the delimited area applying to the land survey authority for an executive procedure under ESL (Larsson, 1993).

As participation in joint development is voluntary, a person owning land within the stated area can decide whether to take part or not to take part in the procedure. However, if a landowner does not want to take part, the purchase of his land is possible on the condition

that the association indicates its necessity for development. After the landowners' decision, the properties whose owners take part in the process constitute a special association (Larsson, 1993).

As Larsson (1993) expresses; the rest of the formal procedure continues according to the rules determining the formation and allocation of property units. It takes the form of a legal executive procedure directed by the land survey authority. During this period, it is needed to take more than half of the landowners support for the method of joint development. In case of disagreement necessary investigations for both economic and technical conditions are carried out. Then, consultations are made with the municipal building committee and other authorities affected by the development. When the problem is clarified, the land survey authority makes a development order indicating specific decisions about the project. In this stage of the procedure, the association formed by the landowners can not conclude an agreement with the municipality on the surrender of land for necessary public spaces and roads, and on the sharing of the cost of the facilities until a formal decision in favor of cooperation has been made. That is to say, contrary to German procedure, the detailed development plan should not be adopted until the cooperation has been formally decided on.

After the decision of joint cooperation, the apportionment basis of costs and benefits is decided as well. Share basis with respect to area of land is set for the landowners in the joint development area. The necessary boundary changes are then decided in order to accomplish a suitable manner in joint development. If full allocation of land according to the share is not feasible, the differences are compensated with cash. Just after the final agreement, the readjustment is entered in the real-estate register. Then, the association completes the construction work within the time limit fixed by the development order; if not, the executive official may decide a certain extension of the time limit. As soon as this time has expired, the association is dissolved. Finally, another point is that after the procedure is concluded, the landowners have only four weeks for appealing to the court (Larsson, 1993).

As a result, the Sweden legislation relating to joint development is so new that the experience acquired from its implementation is very limited. Under these circumstances, there are still some discussions about its advantages, disadvantages and possible effects.

3.2.5.3 South Korea:

Land readjustment has also played a significant and very successful role in coping with the problems created by rapid urbanization in Korea, and particularly in Seoul. In South Korea, land readjustment, a model closely resembling the Japanese procedure, functions as an important tool to accommodate the enormous increase in population, just as Japan, and to provide basic urban services required by the public.

After the Korean War, the methodology began to be extensively applied, partly as a stage in reconstruction process. A series of projects were implemented in Seoul during the 1950s in order to open new streets, improve the plot design and re-establish the central part of the capital. During 1960s and 1970s especially, owing to the need of massive projects, which require the integration of infrastructure, commercial areas and housing areas, a large number of projects took place through land readjustment. These projects constituting the overwhelming part of the urbanization movement were conducted, not by the landowners, but by governmental organizations. However, the Land Readjustment Project Act in 1966 enabled four different parties to be the initiator of readjustment procedure: 1) by individual landowners or an association of at least seven landowners; 2) by public corporations such as the Korea Land Development Corporation or the Korea National Housing Corporation; 3) by local authorities and 4) by the Ministry of Construction (Larsson, 1993).

Larsson (1993) summarizes the procedure as; although South Korean procedure resembles Japan's in most respects, local authority plays a more important role in South Korea. Through proclaiming the designated project area, the Ministry of Construction initiates the formal procedure of the project. Through proclamation individual landowners and associations are invited to take part in the project. Unless one of these parties takes the initiative in a period of six months, the project is taken over by the local authorities or by

the public corporations mentioned above. Then, if a party desires the initiative, the take over is officially sanctioned by the municipality and the project area is designated. By 1984 about 75% of the projects had been taken over by local authorities, whereas private sector had taken over only 20% of all projects.

After the determination of the project initiator, a draft project plan is prepared with collected necessary data. As other draft plans, it involves the purpose of the project, the area affected, present and planned land use, a sketch of public services and public facilities such as streets and parks, estimated income and expenses, proposed allocation of costs and proposed land allocation with values before and after the project. This plan has to be approved by the municipality. In addition, if the plan is presented by individuals or associations, it has also to be approved by at least two-thirds of the landowners involved, who must also own at least the same ratio of the area. Following the approval, in order to get the viewpoints of the landowners maps and documents are put on display for a period of fifteen days. Just after, with a statement from local authorities all the documents and maps are handed over to the Ministry, which has the right of making necessary modifications on the plan. These steps are followed by the construction and reallocation phases. New allocation plan is drawn up and again put on display for two weeks. After possible adjustments as a result of new discussions, it is finalized by the initiator (Larsson, 1993).

In the valuation and calculation of shares, similar methods to Japanese system are used. As a principle, the distribution of shares is made according to the basis of the area. However, in greater projects, which include more heterogeneous areas, differentiated methods are used in calculation of the value before and after. Just as in Japan, the value of the area could change in accordance with its general location. The principles of allocation and compensation resemble to Japan's system as well. The essential point in Korea is; both the land for necessary urban spaces and the land for covering the project costs, totally almost one third of the total area, are reduced before allocation. However, in recent years the amount of this reduced part has become 50% or more. The procedure finally ends with the surveying and registration of the new plots and their owners (Larsson, 1993).

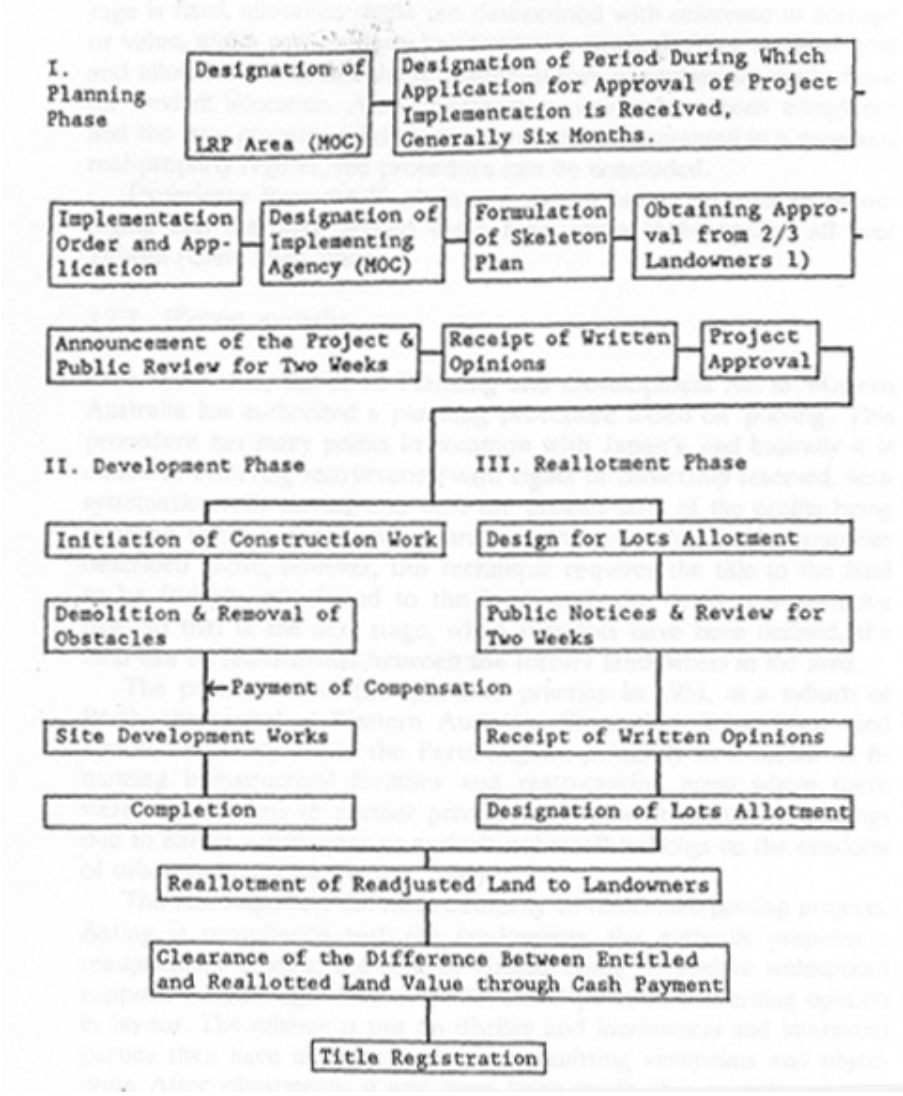


Fig 3.10 – Sequence of Joint Development Procedure in Korea, Larsson (1993, p.74)

In South Korea, landowners avoids being active in the process due to the lack of enough technical expertise and thus they choose to sell their lands to professional developers, who gain most of the profits at the end of the process. In fact, auction realized for the sale of the land to cover the costs increases the level of land prices because at this stage both individuals and authorities try to get the maximum cost coverage. Therefore, the housing areas produced for social housing goes to medium and high income levels instead of low income. In order to prevent the land exchange, municipalities have used a common technique which is carried out by selling some of this land at market prices, keeping the

remaining part for rental housing and making the standard of facilities and buildings relatively modest (Larsson, 1993).

Muller-Jokel (2001) explains that entering the 1980s, the government policy also used the purchase method for land development with the Residential Land Development Promotion Act of 1980. Although this is also a worthy idea, upon considering the financial difficulties prevalent within the municipal governments of the regional urban centers outside Seoul, land readjustment continues to be regarded as the most suitable method to use for land development in most Korean cities.

3.2.5.4 India:

The Indian land readjustment technique, which illustrates a close resemblance to the Western Australian method in terms of its rules and process, were introduced in the 1915 Bombay Town Planning Act. According to Larsson (1993), this procedure is an integral part of the detailed planning process.

After planning area has been stated clearly, the landowners within the area are invited to some consultations for their opinions. As a result of these meetings, a draft plan which has to be sanctioned by a superior authority is prepared. Pooling then takes place just as in Western Australia. That is, the ownership of the land within the area is transferred to the authorities without compensation. Following the approval of preliminary plan, the state government appoints an agent to conclude the planning work. This agent is also responsible for deciding a time limit for the completion of the infrastructure work by the local authority (Larsson, 1997).

In the next step, both the draft and the final planning proposals are put on display. During the display the parties affected from the project can submit their proposals and objections. The final plan includes a detailed layout of the proposed readjustment and valuations of the lots before and after the process. In addition to these data, it also includes the proposals regarding compensatory payments and the apportionment of costs. After the

plan has been sanctioned by the government, the new lots are given back to the previous owners just as in Australia. Finally, the cost of implementation, which may not exceed 50 percent of the estimated costs, is paid (Larsson, 1997).

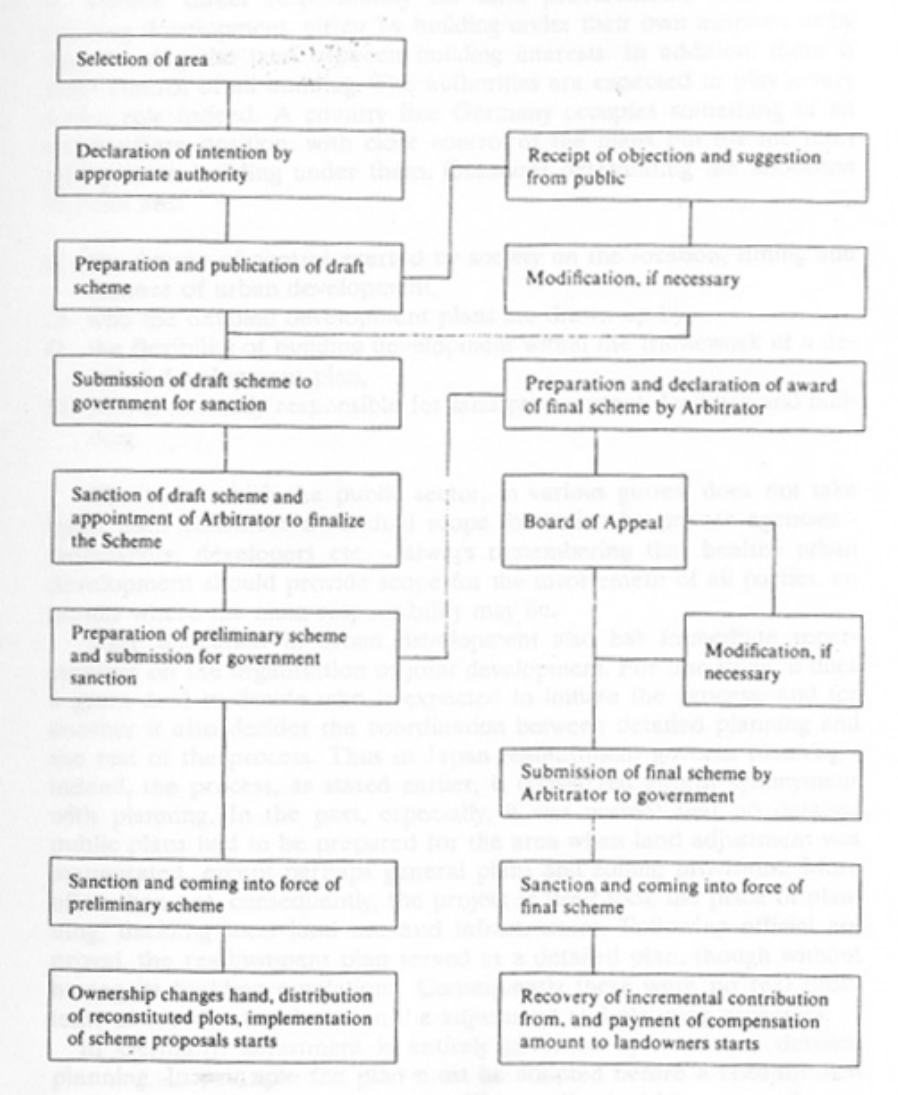


Fig 3.11 – Chart illustrating the administrative process for restructuring in Bombay, Larsson (1993, p.80)

Many advantageous ways of this procedure have been experienced in the areas where the method has been practiced. Firstly, reasonable allocations of costs and benefits have been achieved not only between landowners and local authority but also between landowners themselves. Secondly, necessary land for public purposes has been procured by

local governments and thus a new structure suitable for further development has emerged (Larsson, 1993).

On the other hand, according to Larsson (1993), there are some other points to be criticized. As the legal process frequently drags on because of poor coordination between different authorities, absence of a driving force with sufficient interest in the task and etc., the approval of the final plan usually takes a ten and fifteen years of time. In addition to this period, the following implementations such as road construction and etc. also take a long period of time. Therefore, the plan becomes obsolete.

3.2.5.5 Southern Asia: (Taiwan)

In developing countries of Asia, some of the main development problems are land problems due to the rapid pace of urbanization. Acharya (1988) notices that, especially in Asian cities, these major land problems are congestion and conflicting land uses, slum and squatter housing settlements, urban sprawl and inadequate infrastructure, and land shortage and high land prices. From the same point of view, Archer (1986, p. 159) states;

> *"The land pooling technique could be adopted to improve the development of most of the cities of Thailand because their urban fringe lands are usually fragmented into many small-holdings and they are usually subject to a number of development problems".*

In order to solve these problems, pilot trials with land readjustment procedures have started in Southern Asia, especially in Taiwan, Thailand, Nepal and Indonesia. In these countries, land readjustment coordinates exploitation of different properties, and gives better opportunities for preservation of green places and for a better urban environment. It also increases the possibilities of letting the developers pay for the local infrastructure which is a very important matter in developing countries with limited public resources (Larsson, 1997).

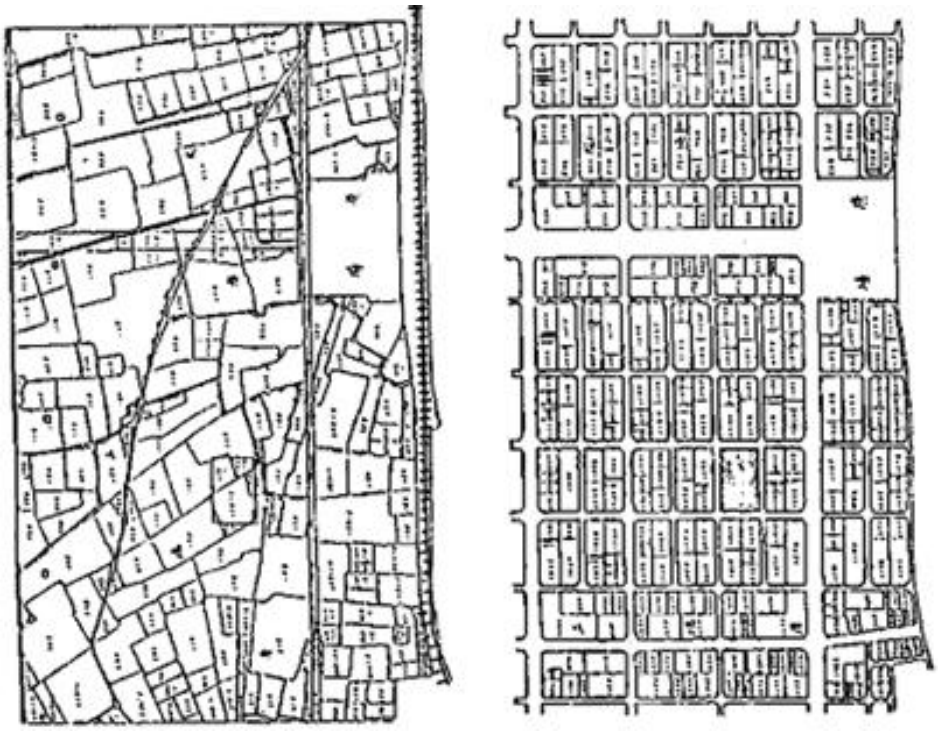


Fig 3.12 – The First Land Pooling Project by the Kaohsiung City Government – Taiwan, Regularization of Land (http://web.mit.edu)

Briefly, land readjustment with its joint developments opens up the possibility of creating a necessary infrastructure and public spaces in these countries. However, the land readjustment model for urbanization should still deserve strong support in Southern Asia.

In Taiwan, as a Southern Asia country, joint development has been applied on a limited scale although there is not so much support from legislation and implementing regulations. Taiwan's land readjustment process starts with the approval of the plan by city authorities. Following the approval, the delimitation of the area, the compensation methods and the approximate design of the project is presented to the landowners. After the necessary adjustments, more than half of the landowners involved, who must also own the same ratio of the total area, have to approve the project. Then, the plan is submitted to provincial government for approval (Larsson, 1997).

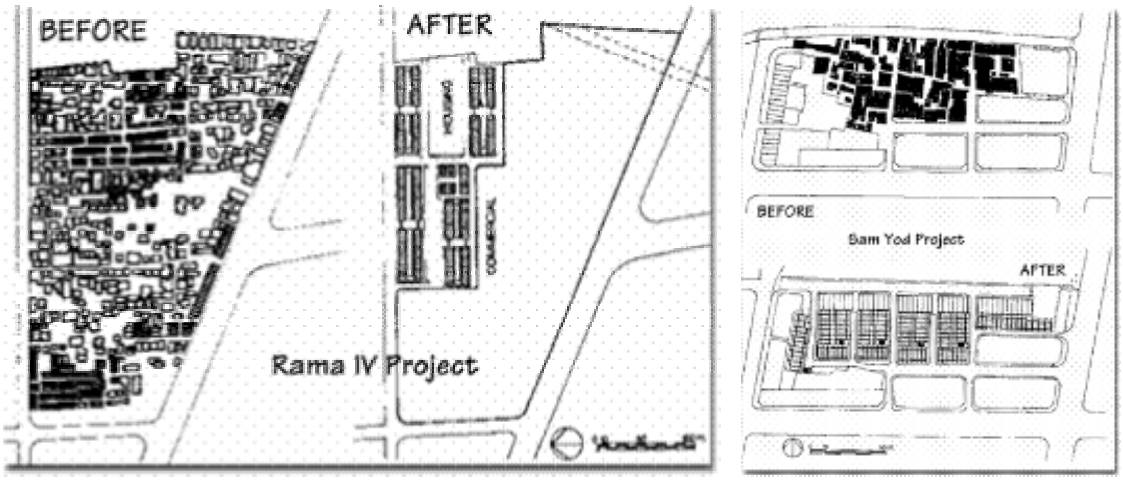


Fig 3.13 & 3.14 –Examples of Land Sharing in Bangkok - Thailand,

Regularization of Land, http://web.mit.edu)

Before allocation, not more than 40% of the total land is taken over for the public purposes and for the project costs. Allocation rights are determined according to acreage and value. In addition, to provide the standard allocation, compensatory payments are calculated according to before and after values. After construction works are completed, the new property subdivision is reviewed and presented in a map. With the registration of real-property the procedure is concluded (Larsson, 1997).

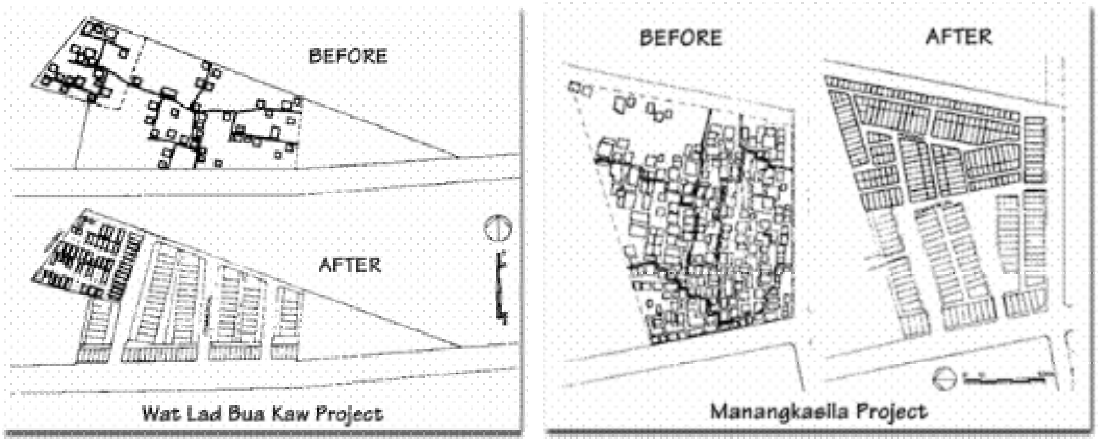


Fig 3.15 & 3.16 –Examples of Land Sharing in Bangkok - Thailand,

Regularization of Land, http://web.mit.edu)

CHAPTER 4

LAND READJUSTMENT PROCESS IN TURKEY

4.1 Turkish Planning History & its Effects on Evolution of Land Property Structure

In Europe, after industrialization and the emergence of motorized vehicles, the necessity of a concept of "city planning" emerged in the beginning of 19th century. However, this situation was not exactly realized in our country until 1850s. As soon as Turkish enlightened persons having been in Europe for a while had come back to the country, they realized the necessity of a change. Before this transformation process of the property system encountering to the last decades of the Ottoman Empire, the owner of the land was state, which had had a strict control over the land ever since the establishment of the emperorship. Today, however, the property system is privatized and there is a less control of central authority over the land.

Günay (1999, p. 234-235) mentions that for a long period in the reign of the Ottomans, a similar system resembling the English property system, conversely contrasting with the Roman Law, prevailed. *"The feudal tenant (sipahi) was entitled to a fief (tımar) in land rather than the land itself"*. The "*sipahi",* who was an extension of the central state, was responsible for arranging the relations between the state and the peasantry. As state was the owner of the land, peasants were only the possessors of the land and appropriated it in turn for a lease paid to "*sipahi"*. Although there was not a codified law system, a similar judge made law of English tradition so called "*kadı kanunu*" existed so as to resolve the property disputes in the name of the Sultan.

However, with the decline of the power of the central authority, the local feudal tenants became the proprietors of land. Accordingly, private property was recognized in the "deed of agreement" (*sened-i ittifak*) signed in 1808 between the sultan and the emerging local feudal lords. This agreement was the recognition of the private property in Ottoman Empire which was further consolidated in the "*Tanzimat"* Edict (Günay, 1999). From the

same point of view, Akdağ (1990) indicates that the ownership rights totally belonged to state until the validation of the Edict. However, after this breakthrough, Turkish Property Law started to change and the concept of private ownership emerged.

From this point of view, considering the appearance of private ownership, Arendt (1969) points out the importance of the relation between private and public ownership as follows (Günay, 1999, p. 241); *"It seems to be in the nature of the relationship between the public and private realms that the final stage of the disappearance of the public realm should be accompanied by the threatened liquidation of the private realm as well."*

After 1808, the following 'land law' of 1858 was the first comprehensive real property legislation. With this law, all the customary or traditional rules converted into a legal framework. The law classified five different types of land: "*Mülk toprak*" (property of private ownership), "*Miri toprak*" (property of state), "*Metruk toprak*" (common property of town and villages), "*Vakıf toprakları*" (property of some foundations), and "*Ölü toprak*" (dead land-no man's land). Afterwards, another set of legislation called "*mecelle*" was passed between 1869 and 1876, which was for the definition of more specific private property (*Mülk toprak*) relations (Günay, 1999).

Akdağ (1990) states, before the *"Tanzimat"* Edict, city planning and development works were not carried out according to a definite order. The works related to city planning were realized by individual and collective efforts of people living in the neighborhood. During this period, the necessary public constructions; such as hospitals, caravansaries, public baths, bridges, mosques, bazaars, medressehes and etc, were constructed by wealthy people; such as sultans, viziers, princes and etc. The management, maintenance and revenue of these buildings were under the responsibility of the foundations called *"vakıf"*. On the other hand, palaces, mansions and houses were constructed appropriate to the income of the individuals in terms of size and shape. Therefore, plan was developing with the help of the neighborhoods.

By the time, parallel to the number of the buildings, the number of the fires also increased in Istanbul. Great difficulties in putting out these fires were faced due to existing narrow road system and thus extensive damaged areas formed within the urban structure. This destruction inevitably revealed the necessity of a "city planning" mentality. As a result, the 'Building Regulation' so called "*Ebniye Nizamnamesi*" was enacted in 1848. The control of the regulation was under a bureau connected to "*Nafia Vekaleti*" (Akdağ, 1990). According to Uzun (1992), this regulation is the first set of development laws in our country. Basically, it was presenting some planning principles and controlling the structural formation of buildings in old city center of Istanbul. Afterwards, necessary additions and alterations were carried out on several rules of this regulation in 1856.

However, the whole content of the former regulation was then changed in 1864 and given the name of 'Regulation of Roads and Building' so called "*Turuk ve Ebniye Tüzüğü*". The important difference in the new regulation was; since "*Şehri Eminler*" were established in all country during this period, the control authority passed to these organizations which were similar to municipalities. On the other hand, governorships were responsible for the control in the countryside. Therefore, the new regulation was spread to whole country; whereas the former one was only validate in Istanbul (Akdağ, 1990). In this respect, Uzun (1992) mentions that a planning approach affecting both building provisions and proprietorship was accepted with the enactment of this regulation.

After this regulation had been in force for 18 years, it was converted into a 'law' form in 1882, the 'Building Law' so called "*Ebniye Yasası*". This law involved very significant and extent decisions related to development in its own structure. In addition, these modern decisions were closely related to the settlement principles of western cities (Uzun, 1992). More importantly, Günay (1999) explains that as a result of these regulations and laws enacted between 1848 and 1882, local authority was given the power of eminent domain, and regulation of real property with legal documents. Therefore, the spontaneous possession based urban growth of the Ottoman city was being replaced by planned, ownership based real property. Akdağ (1990) indicates that law enacted in 1882 was followed until the one enacted in 1957 and thus it kept being in force for 75 years in

Turkish Planning History, with only few changes. Firstly, it was propped up in 1901. However, it once more came into force without any changes ten months later. Secondly, with the law issued 642 enacted in 1925, and thirdly with the law issued 2290 enacted in 1933, necessary alterations were carried out by means of keeping the main principles.

However, after the enactment of the law issued 2290 in 1933, the 'Municipal Building and Roads Law' so called "*Belediye Yapı ve Yollar Kanunu*"; some problems were occurred due to its several articles conflicting with traditional Turkish settlement structure (Uzun, 1992). As Günay (1999) explains; 1930s to 1950s was an era of building a regulated small property town for the emerging bourgeoisie. According to this law, the plans firstly intended producing small land subdivision that would best fit the capital accumulated in the hands of the new urbanities. The areas reserved for public uses also reflected the limited resources of the state. The resulting city was small and regulated, to satisfy the aspirations of the middle class. As a consequence, although this law remained in force during 24 years, the result on the urban areas in Turkey was not successful.

At the same time, with the law issued 1663 enacted on June 2, 1930, an addition was made to the law issued 1351 enacted in 1928, which was organizing the establishment and responsibilities of 'Planning and Construction Directorate of Ankara'. This additional law gave all municipalities the power of preparing the local physical plans (implementation plans) in areas where the population was 2000 or more (Sence-Turk, 2002).

During these planning movements, the real recognition and legitimization of the private property was the enactment of the Turkish Civil Law in 1926, which was considered as one of the greatest achievements of the Republic. Thus, the previous 'land law' was replaced by the Civil Codes of Europe originating from Roman Law. In this respect, Günay (1999) states that from the enactment of 'Turkish Civil Law' in 1926 and the 'Land Registry Law' in 1934, the new society has begun living a process of constructing new property relations to cope with the capitalist mode of production since this development has encouraged the process of privatization of the state or public property. However, this process could not provide a rational government of space both in the towns

and the countryside because ownership patterns reflected the spontaneity and disorder inherited from the Ottoman property system. Therefore, the planning practice from the first years of the Republic has basically been the production of new ownership patterns, more than a functional or physical control of urban space.

As Günay (1999, p.5) explains; the article 618 of 'Turkish Civil Law' is used for the arrangement of property rights. It gives three kinds of power to the possessors that are explained as; "*the right to use (usus), collect the fruits (fructus), and use the thing until it is exhausted (abusus)*". According to 'Turkish Civil Law', Ertaş (1997) explains that the law of belongings is a special part regulating the human domination on things. Turkish Law defines the concept thing in with five items .It is a tangible and limited with a boundary on which domination can be set. It has a financial value and a thing that is inhuman and does not have a personality. In addition, Ertaş (1997) also indicates that the laws have guaranteed property right as a basic human right from the beginning of "*Tanzimat* Edict". For instance; the article 35 of the 1982 Constitution guarantees the property right including the right of heritage, as it is so in 1961 Constitution. The article 46 of the this Constitution indicates that if there is the necessity of expropriation in the name of public interest, it could be carried out provided that government pay the price of property (Akkoyunlu, 1999, p. 97).

According to the 'Land Registry Law' of 1934 in Turkey, all land parcels were registered with their existing layouts which were mostly irregularly shaped. Thus, upon trying to apply a zoning plan to land, the government faced with some technical and legal issues. In addition, the government had also difficulties in controlling rural-to-urban land use transformation because of the limitation of financial, human and technical resources. Therefore, they could not manage provide the appropriate land for both public and private sector requirements. As a result of these problems, many squatters were constructed out of the framework of national cadastral system and the land allocated for public-use was partly occupied by squatters (Yomralıoğlu et al., 1996).

Instead of the 'Municipal Building and Roads Law' enacted in 1933, the 'Development Law' so called "*İmar Kanunu*" issued 6785 came into force in 1957. As a result of this law, the authoritarian approaches of 1933 law replaced with more flexible policies (İnankul and Eryoldaş, 1991). Significantly, this law brought first time the concept of zoning in planning system. In addition, a population criterion, which was determined as above 5000, was put for the preparation of local physical plans. These local physical plans had to be accepted by the council of municipality, but after then, they had to be approved exactly as they were or modified by the 'Ministry of Public Works'. However, while this law was in force, it only brought decisions for the areas in municipality border. Therefore, as the urban settlements had a dynamic structure in that period, it could not response this structure in urban settlements. Furthermore, the land development was shaped according to unique parcel - building approach (Sence-Turk, 2002).

The 'Development Law' issued 6785 was firstly changed in 1963. However, this change caused an unfair situation about the property rights because illegal squatter areas got the right of benefiting from municipality services. Moreover, especially with the law 775 enacted in 1966, this situation was donated with legislation (İnankul and Eryoldaş, 1991). The second change over the 'Development Law' was realized with the law issued 1605 in 1972. With this law, the law issued 6785 was almost completely modified. The important point of this change was the emergence of the idea of 'metropolitan planning' in development plans.

During these legislations, rise of liberalism in the post-war years introduced new property relations in the urban space. The dual property structure of the city thus emerged. In other words, bourgeoisie dwelled in legally owned real property, whereas lower income group occupied the public lands for dwelling. Since lower income group became a voting power and cheap labor force, this occupation is then transformed into first possession right. As a result of this transformation, a 'comprehensive planning' approach was necessitated in order to cope with the spatial problems of the growing city. Unfortunately, although the state was supposed to control the urban space through 'comprehensive planning', it could not achieve this aim, like in the western societies (Günay, 1999).

This process resembled the transformations that the western cities had lived in the eighteenth and nineteenth centuries. Fortunately, in the western cities even the slums were under the control of the state. However, owing to the weak state regulation existed in the Mediterranean societies; urban space development could not be controlled through 'comprehensive planning' in Turkish case. Although 'development plan' so called "*imar planı*" was introduced for the arrangement of real property relations forty-years ago, it could not achieve to prevent the spreading of illegal squatters because during this period squatting was donated with legislation and became recognized ownerships (Günay, 1999).

As Günay (1999) states, 'development plan' practice was supported by the middle classes as it fitted with the small property ownership patterns. When larger capital entered the housing market, 'comprehensive planning' was used for the development of suburban settlements as well. The aim was to produce dense apartment clusters for the middle classes via using modernist principles of space production. Today, there are a vast number of such developments for the middle and upper classes at the peripheries of the metropolitan cities. In contrast to the western case, these developments are carried out by private corporate capital or cooperatives in our country.

According to Günay (1999), 1970s was the period corresponding with the utility based planning activity of social democrats. During this period, left wing of Turkish politics was in search for an alliance with the squatter population. This approach resembled the modernist production of space of the western cities. Urban transportation and housing became the important issues which enforced the development of rapid rail system projects and big housing schemes. However, this system was not realized as building social houses, instead land was distributed to co-operatives as property. Therefore, the control over the space became weaker and the power of controlling the real property was distributed to the co-operatives.

As a result of these changes mentioned above, the 'Development Law' of 1957 has become insufficient against rapid population and urbanization. Therefore, instead of the previous law, the 'Development Law' so called "*İmar Kanunu*" issued 3194 enacted in

1985. This law has still been a main source in the formation of the built environment and spatial planning in Turkey since 1985. It includes two important alterations according to previous laws except the extent power given to municipalities. First one is; the law is applied everywhere in areas inside or outside of municipalities border, that is to say, there are new rules for both urban and rural areas. In former laws there had been a gap in rural areas planning. Although some laws like 'Village Law' and 'Sanitation Law' tried to overcome this gap, they were not sufficient to dispel this gap. Second one is; the new rules are related to hierarchical structure in urban planning. Former ones were only interested in the zoning and local physical plans. Socio-economic and superior physical plans were not taken into consideration in planning system (Sence-Turk, 2001).

According to the 'Development Law' issued 3194, plans are important tools in reaching aims and goals of planning process. Plans are divided into two groups in this law. First one is the socio-economic plans and the second one is physical plans. Socio-economic plans express the plans at national or regional level. National plan is prepared for five-year periods. Regional plans are prepared in compliance with the decisions of national plan by state planning authority. Generally, aim of socio-economic plans is to set general principles and concrete development aims and goals in its own level (Sence-Turk, 2001).

Physical plans might be also considered to divide into two groups that are superior and local physical plans. The superior physical plans are defined as plans at a scale of 1/200.000, 1/100.000, 1/50.000 and 1/25.000. Local physical plans are separated into land-use plans (zoning plans) and detailed plans. While land use plans are prepared at scales of 1/5000 or 1/2000, detailed local plans are prepared at a scale of 1/1000. The basic difference between land use plans and detailed local plans is in the content. The land use plans presents more general approach than detailed local plans; whereas the detailed local plans are basic plans to start the implementation procedure. Another point is; the local physical plans throughout municipality area are approved by the council of municipality while the local physical plans out of the municipality area are approved by governorship. "*İller Bankasi*" or private sectors can also prepare these plans (Sence-Turk, 2002).

According to Sence-Turk (2002), there are also some problems with this law. Firstly, a municipality, especially being just founded, prepares its own local physical plans urgently. Although, a population criterion of 10.000 is set for the preparation of local physical plans, in fact the preparation of local physical plan depends on the decision of the municipality council. As the population limit for being a municipality is 2000, they have the right to prepare their own local physical plan. Therefore, due to the number of small municipalities which have population under 10000, the application of local physical plans is affected seriously. Secondly, there is a power chaos in Turkish urban planning system due to exception laws. In other words, different authorities are responsible for the preparation or implementation of different scales and plans in the same area. Briefly, although this law brings up some important rules about the implementation of detailed local plans, it does not contain new implementation tools. Different from the former law, the 'Development Law' issued 3194 only involve some changes to the application of these tools. It is obvious that the understanding of the implementation procedure in Turkish planning system might be possible with looking at the development of the implementation tools in time.

According to Günay (1999), with the new 'Development Law' issued 3194, a new era of liberalization of property emerged in 1980s and 1990s. Although the Law involved a 'comprehensive planning' in the essence, in practice, local authorities took the control over real property with decentralization of the central government power. Therefore, the limited control of central state over 'development plans' so called "*imar planı*" is almost nullified with the Law.

Briefly, as well as in the western world, the development of property systems in the Turkish case reveals that it is a huge institution governing social organizations and production of space in any society. Therefore, it is very difficult to be prospective on the future of property relations. There will probably be societies practicing various property systems; variations of capitalist, socialist, collectivist, communist and newer versions of communal or mixed. However, an idealistic view could support a system where property is a right to a new kind of society, in which the human being is rewarded with the produce of

his labor, a good life for all members of the society, reinforcing the moral background of each individual, and maintaining equal rights to a share in political power. Otherwise, the system might be self-defeating, defending the utility of the few, creating vicious personalities, and politically become oppressive. It should also be kept in mind that oppression has nothing to do with science or rationality; it is the outcome of property relations, which is best expressed in urban space. Therefore, it is important to regard the dialectical relationship between the public and private realms and their roles in governing property because their relation will in the future still be regulating both society and space (Günay, 1999).

4.2 Land Development Methods in Turkish Planning System

As a result of rural-to-urban migration, urbanization problems are created by rapid population growth around the world. In Turkey, like many other developing countries, these problems exert a negative influence in the fields of human settlement and regular urban development. To provide new settlements and built-up areas as rapidly as needed, land should be acquired and developed with respect to master plans, within a short period.

In this respect, land development methods are used for the development of built environment. In order to provide new and sufficient development plots for urban needs, some land acquisition methods are practiced by the government in Turkey. The objectives of these methods were to achieve the provision of basic public services and other infrastructure facilities for the urban areas. Most of these methods are performed by municipalities using master plans and zoning decisions.

As Yomralıoğlu et al. (1996) mentions; in Turkey, some large projects, such as new highways, railways and other kinds of main infrastructure investments are carried out only by the federal government. On the other hand, municipalities are responsible for providing new settlement and public service areas via using the regional and zoning plans.

The rapid urbanization, especially, requires readily built-up areas in suburban areas. Thus, the provision of new sufficient lots, streets, roads, green areas, play gardens and parks are the main objectives of local land planning authorities. According to Development Law issued 3194 there are three ways of implementing the development plans (Köktürk, 1997, p. 14);

- Subdivision & Unification of Land and Leaving Land for Road – 3194/15-16

- Expropriation – 3194/13

- Land Readjustment – 3194/18

However, there are also different alternatives for development; such as boundary exchange and improvement plans. Including these methods another classification could be made. In this respect, there are basically two development methods used by local authorities, which are called voluntary and compulsory methods.

4.2.1 Voluntary Method

Voluntary method is the implementation of the development plan in an area with the approval of some or all of the landowners.

Voluntary method is usually applied when a landowner wishes to obtain a building/ construction permit. The basic principle of this method is to re-demarcate the existing cadastral boundaries according to the rules of zoning plan. With regard to zoning requirements, the appropriateness of a cadastral parcel is examined by the municipality. If the examined parcel does not provide the requirements of zoning decisions, landowner has to find out some alternatives to fulfill these requirements. In addition, this method can also be applied with the cooperation of some or all of the landowners in a particular area. (Yomralıoğlu et al., 1996)

Basically, there are two types of voluntary method for the landowners in order to obtain a construction permit, which are called boundary exchange and the subdivision & unification of land and leaving land for road.

4.2.1.1 Boundary Exchange:

Uzun (1992) indicates that neither the Development Law issued 6785 nor the Development Law issued 3194 includes this procedure. However, this application takes place in the article 21 of the Registration of Cadastre and Title-deed Law issued 2613 and in the article 92 of the Reform of Land and Agriculture Law issued 1757.

If the existing land parcel has an irregular shape, adjoining cadastral parcel boundaries can be re-demarcated or some land portions can be exchanged between landowners. In addition, this process can be realized only by the agreement of interested landowners. If a satisfactory agreement is achieved on the modification of land parcel shapes, technical procedures are carried out only by the cadastral office with no fee (Yomralıoğlu et al., 1996). Briefly, boundary exchange enables the reshaping of the existing land parcels. Therefore, without forming a new parcel these lands became useful.

4.2.1.2 Subdivision & Unification of Land and Leaving Land for Road:

Uzun (1992) indicates that Article 15 and 16 of Development Law issued 3194 are related with the procedures of subdivision and unification. In developed regions, parcellation maps are carried out via using these articles. Especially, within the areas whose maps have been prepared, Article 15 allows subdivision & unification implementation on the development parcels. Then, with leaving land for public uses, parcellation is realized via Article 16. There are two main objectives of these applications:

- Subdivision and unification for agricultural purposes and the aim of sharing the plot.

- Subdivision and unification conducted for the creation of the development parcels.

In addition, as a principle, it is firstly obligatory to define the location of the related parcel in the existing plan, whether subdivision or unification is used in the implementation (Yomralıoğlu, 1988).

If an existing parcel is adequately large, a special subdivision can be performed according to zoning requirements. The parcel is subdivided into two or more suitable plots. During the subdivision process, land covering the public use area, which has been foreseen by the zoning decisions, is contributed to public use. Subdivision procedures are carried out by private surveyor. However, the subdivision plans and all other related documents have to be checked and approved by the municipality and cadastral office. After the approval, the registration of the new site lots is completed (Yomralıoğlu et al., 1996).

On the other hand, if an existing parcel does not have sufficient area for the foreseen plan objectives, another instrument called unification is used. By using this instrument, landowners can unify their small parcels with the adjoining land parcels. In this situation, an agreement between the interested landowners is obviously required before the unification. It is not always necessary to unify all the adjoined parcels entirely because some portion of land may be enough for achieving the zoning requirements. However, at the end of the unification process, remaining land must certainly be appropriate for further development in terms of its size and shape (Yomralıoğlu et al., 1996).

The implementations of subdivision & unification are not in a broad extent; whereas they are carried out only in order to make the cadastral parcels more useful. Therefore, these applications actually are not exact solutions in terms of implementation because they can only be used in order to meet the needs of a definite number of immediately emerging conditions. From the same point of view, Uzun (1992) declares that the applications which were carried out according to the article 39 of the abolished Development Law issued 6785 and also the articles 15 and 16 of the current Development Law issued 3194 are the main causes of the poor structuring in the cities. The wide-spread utilization of these articles has brought about the emergence of surplus and irregular development parcels.

The equilibrium between advantages and disadvantages can not be provided with such applications because the contribution percentage of a cadastral parcel can be changed according to the decisions of local physical plans (Sence-Turk, 2002). In this respect, Gürler (1983) indicates that within the same case, a landowner may give only 10% of his parcel for public uses; whereas another landowner may give his entire parcel for the same purpose. As a result, this kind of application brings an unfair sharing of value increase to interested landowners (Uzun, 1992, p. 15).

In addition, if the development implementations carried out over cadastral parcels are voluntary, plans are implemented in bits, not entirely. Therefore, development plan can not reach the envisaged target. Under these circumstances, since public services are formed partially; such as roads, green areas and etc, these areas can not begin to function properly. This situation delays the infrastructure facilities required by the public. Besides, as it is mentioned above, emergence of surplus parcels after implementation and unfair sharing of revenue for the landowners are negative effects of voluntary method. (Yakar, 2000)

Yomralioglu et al. (1996, p. 153) summarizes the advantages and disadvantages of voluntary method as follows:

Advantages

- It is an inexpensive land acquisition method for government.

- Individual landowners participate more actively than the government.

- New site lots for housing purposes are produced.

- Cadastral parcels are transformed into site lots, so the legal position of the parcel changes. This situation increases tax revenue.

- The government gets the opportunity of obtaining necessary public use land freely, without any compensation.

Disadvantages

- It is a time-consuming application for a large project area.

- The method is applied only if a landowner needs a construction permit.

- A legal agreement is necessary in the land exchanges between the owners.

- If the existing parcel covers a public-use area, the covered portion of land should be left for the public use. This situation causes a great loss of revenue for landowners.

Briefly, although there are advantages of voluntary method, it has considerably more negative effects. Most importantly, it makes the exclusive implementation of development plans difficult. Therefore, in long term, some amendments on the plan become inevitable and the integrity of the plan is impaired.

4.2.2 Compulsory Method

Compulsory method is the implementation of the development plan in an area without the approval of landowners, directly by the authority.

4.2.2.1 Improvement and Development Plan:

With the laws issued 2981, 3290 and 3366 respectively, the improvement and development plan implementation has started to be used prevalently since 1985. This method is applied to densely structured, shared, slum and squatter regions where land readjustment can not be implemented (Uzun, 1992).

Uzun (1992) explains that the aim of this method is not to produce parcels appropriate for development; it is to solve the ownership problems in the area usually by protecting the existing buildings. In addition, with this application, it was also aimed to provide the social and technical infrastructure necessary for slum regions.

4.2.2.2 Expropriation (Compensation):

Expropriation, which is a constitutional implementation in Turkey, has been in Turkish Law since the "*Tanzimat*" Edict. Article 46 of 1982 Constitution 2709 is related with the issue of expropriation and all the expropriation procedures including land valuation are carried out according to the Law of Expropriation issued 2942, which was enacted in 1983.

Gözübüyük (1983) basically explains expropriation as; it is a method in which authority takes the ownership of a land for the benefit of public interest. The process is carried out through obligatory rules without waiting the approval of the landowners. In this method, as the public interest is a prior issue, it is accepted to be more important than the personal landowner. Therefore, when the authority faces with a personal landowner's demand, the equality concern undergoes in favor of the authority. From this point of view, expropriation is an anti-democratic and one-sided decision taken by the authority (Bıyık & Uzun, 1990, p. 26).

In Turkey, there are two institutions who apply expropriation for the provision of public lands and development (building) plots; Municipalities and General Directorate of Real Estate Office *"Arsa Ofisi Genel Müdürlüğü"* (Uzun, 1992).

Yomralıoğlu et al. (1996) indicates that expropriation can be practiced by any government level. Only if they prove that land is needed for public use, they can make the decisions of compensation method. However, these decisions must be approved by the city council. Afterwards, landowners who have any property in that particular area are informed about this decision. These procedures are followed by other required steps which include land survey, assessment, payment and registration. At the end of the process, the determined value is directly deposited in the landowner's bank account. However, in many cases, landowners are not satisfied with this method and object to the amount of compensation offered by the authority because they always complain that the determined

value does not reflect the real value of their property. This situation has always resulted in prolonged litigation in courts of law.

However, some changes which were made in the content of expropriation in 2001 converted this act to a more complex structure. The effect of these new changes in expropriation law to the implementation of local physical plans exactly has not been known yet. However, it is clear that new changes can prevent the usage of expropriation method as an implementation method. According to these new changes, after making a decision for the sake of public interest, this decision is informed to the land register office and limitation is provided in the use of particular area. Afterwards, the commission of determination of land value and conciliation commission is constituted. In this point, the purchase of land is the first issue. If an agreement for purchasing the land between the landowner and the conciliation commission is provided, the amount of expropriation of the land is blocked in a bank in a period of 45 days. If not, landowner can litigate against to expropriation procedure or the mistake of land value determination. In trial there is also an opportunity of agreement, if not, assessment of the land value is determined by experts according to the land survey. Finally, payment and registration is realized (Sence-Turk, 2001).

When the government or municipality urgently needs the land for emergency public constructions; such as building a new highway, hospital, school, opening new green spaces and etc, the expropriation method is basically applied for the sake of public interest (Yomralıoğlu et al., 1996). In this respect, Uzun (1992) explains that in their five years of development programmes, municipalities reserve subsidy for these types of constructions located in the areas in which land readjustment or consolidation can not be implemented.

It is clear that expropriation method is generally not used by the municipalities in urban development projects. From the municipalities' point of view, in addition to its anti-democratic manner, there are two more important reasons supporting why they prefer other alternatives. Firstly, it is a costly method for municipalities because if the municipalities acquire the land by force, they have to compensate and pay cash for the land to the

landowners. Secondly, it is known that municipalities in Turkey are face to face with financial problems.

Another major problem for expropriation is; as Akyol (1985) states, expropriation is carried out in order to enable the provision of several public services within the framework of a plan. On the other hand, there is no effort to arrange the remaining land pieces upon expropriation. For example, opening or widening a road via expropriation distorts the urban form and the parcels locating in that particular area become demolished development (building) plots at the end of the process. Furthermore, there will not be sufficient space for constructing the connection roads of the new way. Therefore, plan is not entirely implemented and a poor urban environment emerges as a result of such an implementation (Uzun, 1992, p. 13). Yakar (2000) points out the same problem as follows; in the development plans having used this method, only the areas necessary for the provision of public services are taken into account while other development (building) blocks are disregarded. Therefore, as development plan is not only composed of public service areas, expropriation can not be regarded as a complete land development application.

It is obvious that design in one property pattern always give better solutions than in fragmented pattern. As mentioned above, in order to create better conditions and prevent urban areas from poor environment, a comprehensive expropriation approach for the whole property should be preferred for implementation. In this respect, mass housing implementation allows creating more flexible urban environments because there is the chance of making design one unified property via using this application. Uzun (1992) states that the urban land provision for housing estates are managed according to the Law of Mass Housing issued 2985 and its application regulation. Real estate development areas are designated by the Governorship and expropriation is carried out by General Directorate of Real Estate, not by municipalities.

As a result of expropriation, some social problems may also emerge. Since the property of the landowner is taken by force of law, individual is pulled away from his environment and may remain without any property. In this respect, exchange of the

properties between government and landowner may come to agenda as a solution. Tüdeş (1997) states, if the landowner and the administrative authority can reach an agreement after the expropriation decision, the administration can compensate the total price or a part of the expropriated land via exchanging it with another real property (Akkoyunlu, 1999, p. 74). Related article of the law is as follows;

> *"In the case of the owner's acceptance, the real properties of the administration that are idle can be used for the total or the partial compensation of expropriation. The adjudication committee of the administration decides the value of the real property that will be used for compensation. The difference between the values of real properties is compensated as cash amounts by the sides. But the value that is determined by the administration can not exceed 20% of the expropriation price."*

Yomralioglu et al. (1996, p. 152) summarizes the advantages and disadvantages of expropriation method as follows:

Advantages

- Land compensation is a rapid land acquisition method for government in urgent land provision.

- The government has great power making decisions by the Act. This accelerates the land acquisition process and project time positively.

- The method is more efficient in small land development projects.

Disadvantages

- Compensation is an expensive method for the government.

- A readily available budget is always required.

- It is an obligatory land-acquisition process which uses legal force. Therefore, in many cases, landowners are not satisfied with the decision about the compensation for their land.

- The process causes land valuation disagreement between government and landowners. This delays the implementation of project.

- Land speculation occurs in project areas.

Briefly, expropriation, whose basis is French Law, was widely used in the world, especially in France after the war. However, by the time it has lost its importance because of its costly manner and the anti-democratic principles involved in it. Therefore, despite being more troublesome, today more democratic and fair implementations; such as land readjustment, land consolidation and etc, are replaced with this application. In this respect, from the government perspective, although expropriation method is a short-cut method which provides a practical solution to land acquisition via using the force of act in implementation, they use expropriation as a last solution if there is no other alternative.

4.2.2.3 Land Readjustment:

Land readjustment is another land acquisition method that has more advantages when compared with the other land acquisition methods. In Turkey, with the beginning of utilization of land readjustment method, the voluntary methods have been eliminated since they have negative effects in achieving the planned development and cannot be efficient enough for the rapid development demand. In addition, as expropriation is a costly method, the resources of municipalities are generally insufficient to afford this compulsory method. Due to the implementation difficulties and negative aspects of these methods, the government has always tried to set a more powerful, practical and fairer application to the land development process by an act. In this respect, as a new land acquisition method, land readjustment has had an important role in Turkish planning history (Yomralıoğlu et al., 1996).

Date of the Law	Issue No. of the Law	Name of the Law	"DOP" Percentage	Content of "DOP"
1864		*"Turuk ve Ebniye Tüzügü"* Regulation of Roads and Building	25%	Road
1882		*"Ebniye Yasasi"* Building Law	25%	Road
02.06.1930	1663	*"1351 Sayili Yasaya İlave"* Addition to the law issued 1351 organizing the responsibilities of 'Planning and Construction Directorate of Ankara'	15%	Road, Square
21.06.1933	2290	*"Belediye Yapi ve Yollar Kanunu"* Municipal Building and Roads Law	15%	Road, Square, Green Area
17.01.1957	6785	*"Imar Kanunu"* Development Law	25%	Road, Square, Green Area, Parking Lot
11.07.1972	1605	*"6785 Sayili Imar Kanununda Degisiklik"* Alteration in the law issued 6785	25%	Road, Square, Green Area, Parking Lot, Park, Playground
03.05.1985	3194	*"Imar Kanunu"* Development Law	35%	Road, Square, Green Area, Parking Lot, Park, Playground, Mosque, Police Station

Table 4.1 – Historical Development of Land Readjustment in Turkey, Uzun (2000, p.5)

According to Bıyık & Uzun (1990), during the rapid urbanization period of Turkey, the necessity of a new method was emerged in order to impede the poor structuring. Therefore, firstly, the 'Development Law' issued 6785 was enacted in 1957. The 'article 42' of this law was related to land readjustment. However, since it was accepted as an unfair method in that period, the application of this article was interrupted in 1963. Although 'article 42' came into force for the second time with the law issued 1605 in 1972, it could not be applied efficiently. Finally, in 1985, the new 'Development Law' issued 3194 was enacted in Turkey. With the 'Article 18' of this law, the implementation of the zoning plans has started to be operated more effectively in the expanding project areas.

As Keleş (1990) states; the 'Law of Addikes' so called "*Lex Addikes*" takes its name from "*Addikes*", the old mayor of Frankfurt. Today, this law which is called land readjustment is used in nearly all countries for the application of the development plans. Land readjustment method had been used in many countries in the time it was introduced in Turkey.

As mentioned before, as a consequence of the enlightenment movement appeared after the "*Tanzimat*" Edict, the concept of the private ownership emerged and state was no longer the owner of all the property. Due to the narrow road system which was a great obstacle against putting out the fires of that period, the 'Building Regulation' so called "*Ebniye Nizamnamesi*", the first set of development laws in our country, was enacted in 1848. Basically, it was presenting some planning principles and controlling the structural formation of buildings in old city center of Istanbul including Üsküdar, Galata and Eyüp regions. Besides, this regulation was involving some expropriation and subdivision & unification arrangements in order to enlarge the roads and to provide areas for public uses. In 1856, necessary additions and alterations were carried out on the related expropriation rules of this regulation (Akdağ, 1990).

After the alterations carried out on the regulation of 1848, the 'Regulation of Roads and Building' so called "*Turuk ve Ebniye Tüzüğü*" was enacted in 1864. This was the first regulation which gave the possibility of land adjustment of the streets and structural parcels provided that a fire should occur in the neighborhood. Akdağ (1990) indicates that this regulation was spread to all country. In this regulation, there were additional obligations to former regulation, such as; leaving land for the enlargement of roads without any compensation, paying compensation for the demolished buildings in order to construct new roads in existing settlement areas. As a new rule of this regulation, it was also obliged to leave land for the construction of roads in new settlement areas. In addition, with this regulation, the voluntary subdivision was exactly defined and carried out in a planned way.

As Akdağ (1990) states, the validity of the previous regulation came to an end 18 years later with the enactment of the 'Building Law' so called "*Ebniye Yasası*" in 1882.

Uzun (1992) notices that some decisions of this law were closely related to the settlement principles of western cities. For instance, the article 16 of this law was the basis of the preparation of today's land readjustment rules. According to Gündüz (1990), if more than 10 buildings are demolished in the same neighborhood due to a fire, the land is readjusted and then a new allotment plan is prepared for the region. Within the framework of this application, each land parcel is adjusted and arranged in rectangular or square shapes and then they are given back to the previous owners according to previous shares of landowners. However, the law brings the obligation that these landowners must surrender maximum 25% of their lands for the public spaces and roads. Gündüz (1990) states, this law also detailed the voluntary land division and leaving land for roads. The conditions of public interest that were not clear in 1864 regulation were also explained in a detailed way. Akdağ (1990) interprets that this law was followed until the one enacted in 1957, with only few changes.

As Gündüz (1990) and Keleş (1990) state, the law issued 642 brought an alteration to law of 1882 during this period. However, this alteration could not be successful as expected. The reason was that; with this change realized in 1925, the number of burnt units necessary for the readjustment of a region was increased to 150. As a result of this change, the development of fire regions became harder because the borders of these regions which necessitated an urgent renewal movement expanded to great distances. In addition, the rule of taking 25% of the total area was also totally abolished and consequently, readjustment became nearly impossible in these areas.

By the date June 2, 1930 and with the law issued 1663, a change was made in the law issued 1351 which was organizing the establishment and responsibilities of 'Planning and Construction Directorate of Ankara'. With this law, the directorate got the authority of readjusting the land with a surrender of 15% and re-allocating the parcels upon the completion of readjustment whether they were faced with a fire or not (Gündüz, 1990). Keleş (1990) indicates that this was the first law that allowed the application of land readjustment "*hamur kurali*" without any precondition such as fire.

In 1933, after the enactment of the 'Municipal Building and Roads Law' so called "*Belediye Yapı ve Yollar Kanunu*" issued 2290, municipalities had the right of taking 15% of all lands without any compensation during the unification and subdivision processes in the development plans. The characteristic of this law was that it allowed all municipalities the power of applying land readjustment method (Keleş, 1990).

Instead of the law 1933, the 'Development Law' so called "*İmar Kanunu*" issued 6785 came into force in 1957. The article 42 of this law was related with land readjustment process and procedures. Uzun (1992) indicates that this was the first legislation involving the parcellation and its regulations. According to this article, the percentage of land that must be surrendered by landowners for public use was 25% of the total readjustment area. On the other hand, since some rules of this article were accepted as divergent to 'Turkish Constitution', the application of the related article was abolished in 1963. Although it became validate again in 1972 with the law issued 1605, this interruption period prevented municipalities from utilizing the land readjustment method properly. In addition, Bıyık & Uzun (1990) indicates that this method was not so appealing for municipalities and they were technically incapable of implementing it. Therefore, they could not implement article 42 effectively

According to the 'Development and Squatter Amnesty Law' issued 2981 enacted in 1984, up to 25% of the total land can be taken as adjustment share during the application of improvement and development plan in squatter and illegal development areas. (Keleş, 1990) However, with the law issued 3290, this ratio was increased to 35% after 1985 in order to procure a harmony with the law issued 3194 (Gündüz, 1990).

Finally, the new 'Development Law' issued 3194 came into force in 1985. 'Article 18' of this law arranges the land readjustment process. Yakar (2000) defines this article as a scientific method in terms of application. The definition of article 18 in the law is as follows (Şakar, 1999, p. 301);

"Within the development boundaries, the municipalities have the power of consolidating the land, with or without a building on it, with other parcels, with road left-overs and with lands that belong to public institutions or municipalities; re-subdividing these land into blocks and parcels in accordance with the development plan; re-allocating the parcels to the shareholders depending on the basis of independent, shared or flat ownership and to directly (re'sen) conduct the registration procedures without taking the consent of related landowners and shareholders. If these lands are out of the municipal or development boundary, the above mentioned power is utilized by the governorships."

Basically, process starts with the selection of the arrangement area and ends with registering the new property structure in the title deeds. In this respect, Özdemir (1991) indicates that 'Article 18' is an important tool for the realization of development plan decisions. As proprietorship structure has great effects on the planning decisions, it is necessary to define the arrangement borders during the design of development plan with respect to zoning decisions.

With this law, the local government has complete authority to apply the zoning plans within their district without the consent of owners. According to the law, landowners who have any parcel in a LR project area have to give up 35% of the total area of their land for public use. The amount of this percentage depends on the size of public area required including new roads, streets, green areas, playground, parks and building area within the project area (Yomralıoğlu et al., 1996).

The reason of taking 35% of the total area of each landowner could be explained as follows; after the completion of land readjustment process, the value of new development lot increase respectfully much more than its previous value. Thus, decrease in the amount of land because of the deductions for public use is compensated with the increase in its value (Bıyık & Uzun, 1990).

In the process, after the deduction of amount allotted to public use, the reallocation is realized according to the area method which is the distribution of the remaining land among landowners with respect to the size of their previous property. However, Bıyık & Uzun (1990) claim that although 'Article 18' is the fairest method in the distribution of pros & cons, it is better to use the value method instead of the area method in order to enable a fairer implementation.

In land readjustment method, as development plan is applied in a region including the adjustment area, prepared plan has the possibility of being implemented as a whole. Therefore, the infrastructure services necessary for the area could be implemented in a more rapid and economic way. In addition to public areas requisite for a better urban environment such as, green spaces and etc; the number of plot production appropriate to development plan could also increase with this application. Most importantly, the advantages and disadvantages of the method could be distributed among the landowners equally (Yakar, 2000).

On the other hand, Sence-Turk (2001) points out that although land readjustment method has lots of benefits, there are also some problems in practice in Turkey. These problems affecting the application of the method are generally due to technical, legal and socio-economic reasons. As a result, these problems consequently affect the effective and efficient use of land readjustment method in Turkey. In this respect, Bıyık & Uzun (1990) claims that the land readjustment method became more appealing for the municipalities since the percentage of land to be surrendered for public use is increased to 35% with this law. However, the applications could not be efficient as expected because the importance of this situation is not well understood.

Yomralıoğlu et al. (1996) proposes that the method of land readjustment is more efficient and fairer than the other methods that have been practiced in Turkey. He tries to compare the land acquisition methods with the example given below. In the plan shown in Fig-3, a small model illustrating the zoning plan is overlaid with a cadastral map. The main aim is to fit the cadastral parcels into the site block. At the end of the process, each parcel

could be used for housing purposes and besides, necessary public use areas should be provided. The proprietorships of each landowner are defined with parcel no.1, 2 and 3.

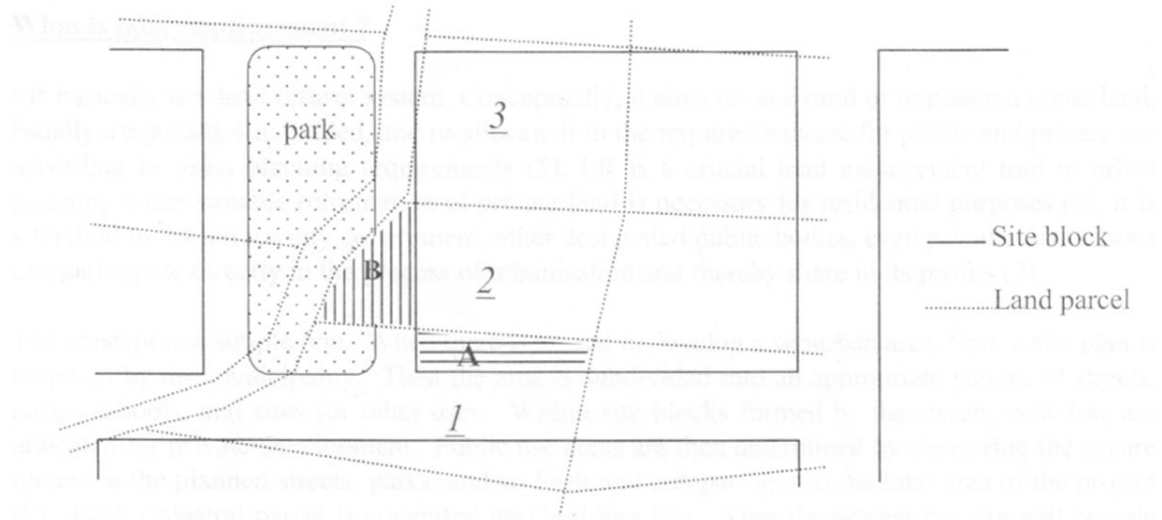


Fig 4.1 – Comparison of Land Acquisition Methods, Yomralıoğlu et al. (1996, p.155)

When the parcels are compared according to their availability for development, it is firstly observed that parcel no.1 can use only a small part of its land for a housing purpose. This parcel is also not suitable for subdivision because of the zoning restrictions. The area labeled as “A” can not be developed as a single plot. Therefore, the owner of parcel no.1 must either wait for the expropriation or find some way to consolidate his land with other adjoining parcels in order to utilize his property. This can be given as an example of compensation method. The entire parcel no.2 has a regular shape and sufficient size. In order to be granted a housing permit, owner of this parcel has to dedicate part "B" for the purpose of public use. Although the uniform shape and the usable size have been unfortunately reduced by the donation of part "B", the location of parcel no.2 is still better than parcel no.1 for an individual land development. Therefore, this can illustrate an example of voluntary method. While the other parcels have zoning restrictions, parcel no.3 is not really affected by the restrictions of zoning plan. Furthermore, parcel no.3 will obtain really valuable benefits from the project due to the compensation of its neighbors. That is to say, while the others parcels are losing considerable value, this particular parcel is doing

nothing but benefiting value with respect to unit cost in this area. It could be said that there is a zoning lottery for the parcel no.3. However, if the land readjustment method is applied to our small model, all land parcels in the planning area are involved in the project and share its benefits in an equal way. Using the land readjustment, first all parcels are grouped together. Then, new site lots are created and given back to original landholders with respect to zoning formats (Yomralıoğlu et al., 1996).

Briefly, in Turkey, there are many cases like the given example. In practice, these methods provide the most valuable tools for government. However, the selection of an effective method for land acquisition is very imperative for urban development. Especially, if large project areas are considered for an urban land development process, it is obvious that land readjustment provides more advantages than the other land acquisition methods.

4.3 Process and Procedures of "Article 18"

4.3.1 Institutional Framework

In Turkey, land readjustment process is conducted with respect to the Land Readjustment Act and related regulations defined in the 'Development Law' issued 3194. In this framework, municipalities aim to convert the existing cadastral structure into plots that are appropriate to development plans in developed areas. To achieve this, municipality is the authority which supplies the requirements of this process.

As it is in Germany, no majority is needed for the municipality to carry out 'Article 18' procedure. Since the process is compulsory, the landowners in the defined area do not have a chance of leaving the programme. The role of public sector in the process also resembles to the application in Germany. It has an intermediate role within the process in terms of participation since the control of the plans is carried out by the municipality; whereas the construction over the plots is generally carried out by private sector.

4.3.2 Stages of "Article 18" Process

4.3.2.1 Pre-Process

In pre-process of 'Article 18', the necessary impulse for the initiative comes from the public as a result of general planning decisions, land requirement, service purposes and etc. The decision maker is the municipality within the municipal boundaries; whereas out of these boundaries so called "*mücavir alan*" land readjustment process is under the control of governorships. The initiator of the process is municipal council so called "*belediye meclisi*" within the municipal boundary; otherwise it is the city administration council so called "*il idare meclisi*" (Şakar, 1999).

In order to private necessary amount of land for public services, these decision makers firstly have to determine the readjustment areas. The preparation of these areas for application and managing the application process are the responsibilities of these decision makers. On the other hand, landowners are obliged to surrender the amount of land determined with the plan.

Similar to other countries, there are some obstacles to overcome in Turkey. In this respect, local authorities may face some problems to achieve this. As Yomralıoğlu et al. (1996) states; the municipalities have the greatest responsibilities throughout a land readjustment project. They provide all necessary requirements for urban land development. However, because the city council has power to allow the land readjustment applications, some projects can be delayed or cancelled for political reasons. The reason is the large number of people whom are living in a project area can affect the local election results. Therefore, the elected council members may not be willing about the implementation of the land readjustment project. The land development objectives fail very often, especially in small and non-powerful municipalities for these reasons.

In addition to the political reasons, the municipalities also have some technical issues with the land readjustment applications. In most cases, available municipal resources

necessary to carry out a project; such as technical persons, budget, and equipment are not sufficient. Owing to the complexity of land readjustment, the availability of professional experts is very important in the process.

Another point is that most landowners do not support the project in many cases. They are not willing to surrender some parts of their land for public use without any compensation. However, some of landowners whose land is already fragmented and more or less useless support land readjustment to gain from the project benefits. Therefore, it is an important issue for local authorities to provide the balance among landowners. Another fundamental issue is the fact that the landowners are not consulted when the decision about public-use requirements are made about their land.

In terms of compilation of the necessary information about the project area, municipalities would rather use computer based methods because analyzing the existing cadastral information, searching needed records and providing necessary outputs for land readjustment applications are done with conventional manual methods which are time-consuming and error-prone. In addition, the information is sometimes not readily available for later use because of poor information management. Yomralıoğlu & Parker (1993, p. 374) expresses that as management of data flow is insufficient in current applications, some undesirable duplications emerges during the process adding to the expense of the project.

4.3.2.2 Formal Process

In Turkey, the starting point of the formal process is the determination of the project area by the municipality council or city administration. After pre-study phase, allotment maps and distribution tables are prepared. As a final step, the process ends with the registration of new plots by land title office.

As Yomralıoğlu et al. (1996) states; land readjustment project is designed by the 'land planning branch' and then it is presented to city council for approval. The final project area is determined and voted by the council members. In case that the project is

approved, the decision is announced. The prepared plans are presented to public for a time period of one month. After the final decision, municipality carries out all required technical and non-technical tasks.

The basic cadastral works must be completed before the initiation of the project. All of the needed legal records and maps such as topographical, cadastral and zoning maps are updated. After updating operation on necessary documents, the cadastral and topographical maps are controlled if whether reflect the final layout of the project area or not. All kinds of boundaries such as cadastral parcel, project area, zoning details and building block outlines must be shown precisely on a base map. Using this map, building blocks are defined in the field. Just after, fixed block corners are re-surveyed and new point coordinates are calculated (Yomralıoğlu, 1996).

There are some critical points in the determination of the project area. Firstly, the readjustment area should be determined upon taking the city's development regions. Secondly, the public services should be homogeneously spread in the region. Thirdly, the regions where 'Common Share of Adjustment' does not exceed 35% should be preferred. Finally, undeveloped or less developed regions should be specially selected for application.

According to development law, the readjustment area cannot be smaller than a single development plot. Upon the decision of delimitating the project area, adjustment boundary is passed through;

- the settlement border where the settlement field ends,

- the road accents in the settlement field,

- the outer border of mosques and police stations,

- the proper borders of green areas and car parks determined according to the plot boundary application.

However, if there are some adjustment borders shown in the development plans, this situation is taken into account. Another point is, if the boundary of the project area divides a plot into two or more parts, the boundary is passed through in a shape of taking this plot into the project area provided that the outer part is not involved in another development block. Finally, if another land readjustment project was carried out in neighboring areas beforehand, the boundaries of these areas are exactly accepted (Şakar, 1999).

During the readjustment, a building which is convenient to conserve according to the plan or legislation is not demolished and thus could remain in the development plot. In addition, if there is a necessity of constructing more than one building or facility over one plot such as co-operatives, mass housing constructions and etc, allotment plans area readjusted via dividing into development blocks or plots according to the 'Flat Ownership Regulation', without making subdivisions. If these are previously subdivided into blocks or plots, the allotment plans are rearranged via unifying them again with respect to the site plans (Şakar, 1999).

Disposal Restrictions: After the final decision of approval, the cadastral office is informed about the project. Therefore, the opportunity of informing any interested people about the project is procured during the cadastral transactions. No construction is allowed within the project area until the laid rules have been fulfilled (Yomralıoğlu et al., 1996).

Participating Landowners: As mentioned before, since the process is compulsory, the landowners in the defined area do not have a chance of leaving the programme. Consequently, unlike France, Japan or Sweden while similar to Germany, landowners within the area is directly involved into the project after the delimitation of the project area.

Calculation of Shares & Determination of Land Valuation Method: In Turkish, land readjustment process, there is no dynamic land valuation analysis. Instead of land value, the shares are calculated according to the acreage of land. In addition, there is no plot appraisal before or after the project. As Gündüz (1990) states; the value of whole land taken

into readjustment process is accepted to be equal although it is not clearly explained in Turkish Constitution.

According to Yomralıoğlu (1994), land unit value is not involved in the calculation of the percentages to be contributed by each landowner for public areas. The only criterion is the plot size, and the contribution factor is the public-use land area required in the zoning plan. This single coefficient is calculated and applied to all landholders in the project in order to derive their contribution to the public land. Therefore, redistributing land on an area rather than a value basis does not provide an equitable approach for the landowners because many other factors which affect a plot value are ignored. These factors are land-use, topography, shape, view, proximity to commercial areas, other public facilities and etc.

Yıldız (1990) explains the acreage system as; with the land readjustment process, the land necessary for public services is taken and a value increase arises within the area. To formulate this value increase, first the ratio of deducted land to the remaining area must be calculated which can be expressed as P / (100 – P). When the deduction share denoted by P is placed to this formula in percentage, the percent of required value increase so as not to lead any value loss is found. For example, a deduction of 25% of land requires 33% of the value increase. However, this is impossible for the project because the value before and the increment in value after the readjustment process will not be the same for each plot. For instance; the number of flats to be constructed on these properties differs; one can take permission for five flats while the other for only three flats.

With the enactment of the 'Development Law' issued 3194, the common share of adjustment is raised to 35%. This ratio assumes that a land value increase of 53.8% occurs in each real property due to the readjustment. If deduction ratio is raised to 40%, then 67% of value increase must be provided on the property. However, it is obvious that these figures are unrealistic (Yıldız, 1990).

According to Yıldız (1990) and Gündüz (1990), the system must depend on the equal valuation principle whether the land is allocated according to the area or value

method. Therefore, no loss or no profit is provided to the landowners. In addition, according to Turkish Constitution, there is no obstacle to apply this principle. Moreover, Article 42 of the previous 'Development Law' was cancelled in 1963 since the area method was not applied according to the equal valuation principle.

Similar to Turkish system, area method, however, with respect to equal valuation is used in Germany and landowners take singe plots instead of shared ones. Upon the reallocation of single plots to the landowners, the inequalities between landowners are eliminated with cash compensation. In Germany, this reallocation system according to the area method is used in newly developing areas and deduction ratio is determined to be approximately 30%. This amount of deduction is sufficient as the municipality has enough land stock in hand.

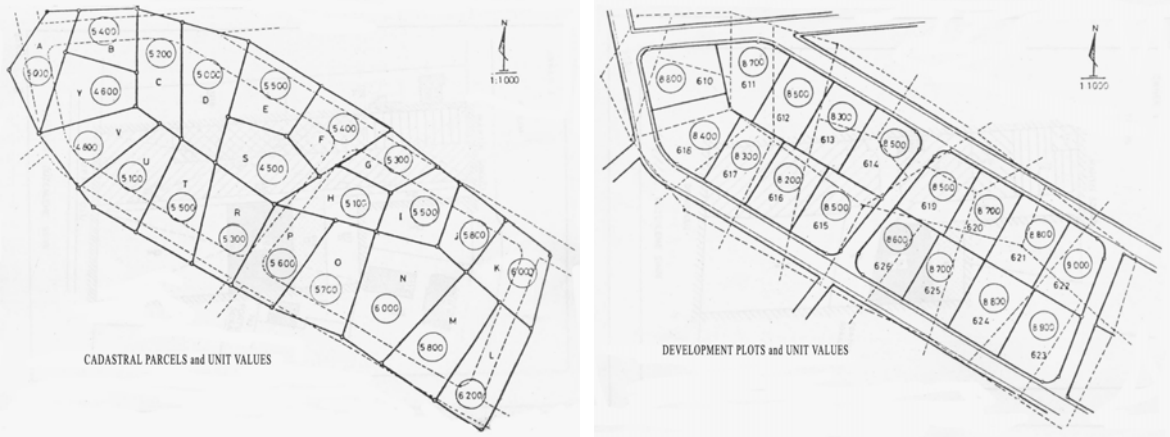


Fig 4.2 & 4.3 – An Example of Land Valuation before (left) and after (right) LR, Yıldız (1990, p.58-59)

Yıldız (1990) expresses that if values are calculated before and after the process, the balance in equality can be provided with cash compensation in Turkish legislation. Therefore, singular plots are distributed to each landowner and thus shared plots can be impeded. This kind of application is used in some Europe countries. However, according to Turkish law, shared plots emerge as a result of the distribution. In this respect, the critical point is that with the article regulating the common shared real estates so called "*şuyulandırılan gayrimenkul*", the authority gets the right of taking the situation to the

court if landowners do not make a deal or do appeal to courts for the removal of the common share in six months. In fact, this kind of an application is unfair because firstly shared plots are given to landowners without their consents and then these plots are taken form them if they do not have enough financial possibilities.

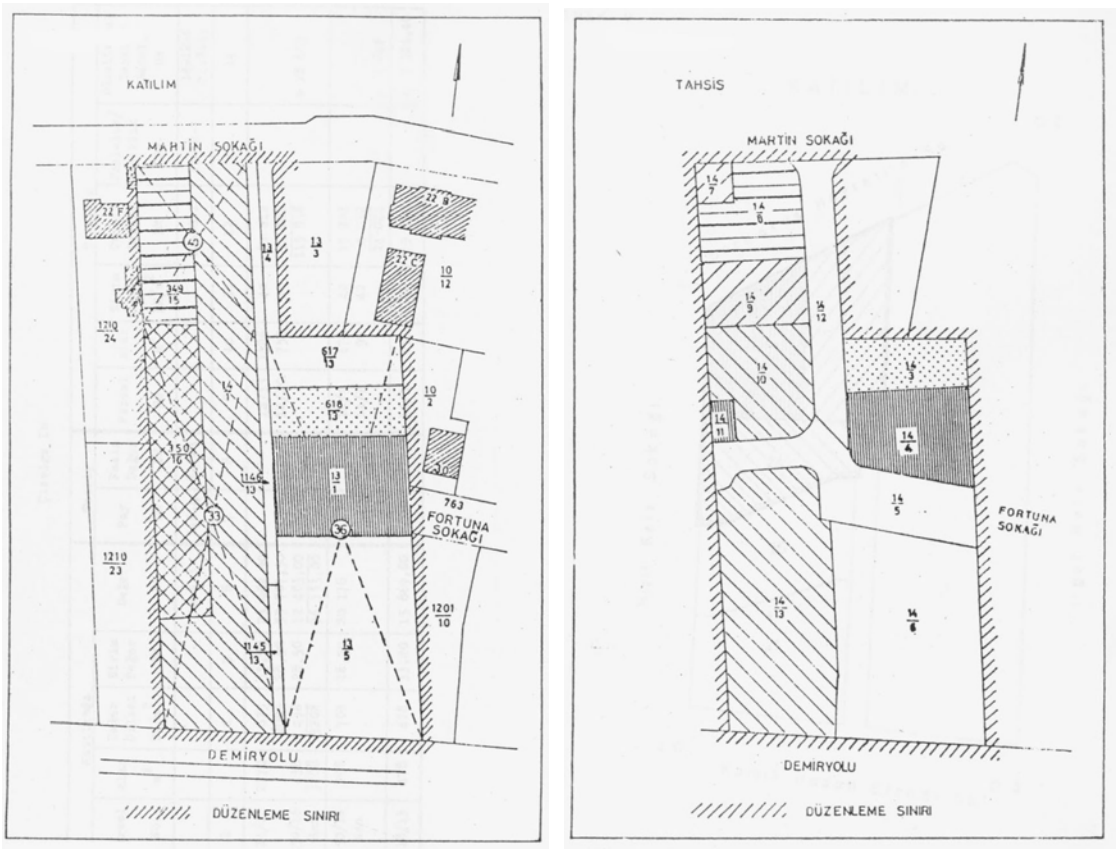


Fig 4.4 & 4.5 – An LR Example from Germany - Plot Structure before (left) and after (right) the Process, Yıldız (1990, p.60-61)

When the plots which are smaller than a particular size are bought by the municipality and extracted from the readjustment application in Germany, shared subdivision is impeded with the utilization of equal valuation principle. However, this is one of the major deficiencies and problems of Turkish legislation. Therefore, shared subdivision emerges in Turkey. As it is seen in below plot no.3 is reallocated as a shared plot inevitably (Yıldız, 1990).

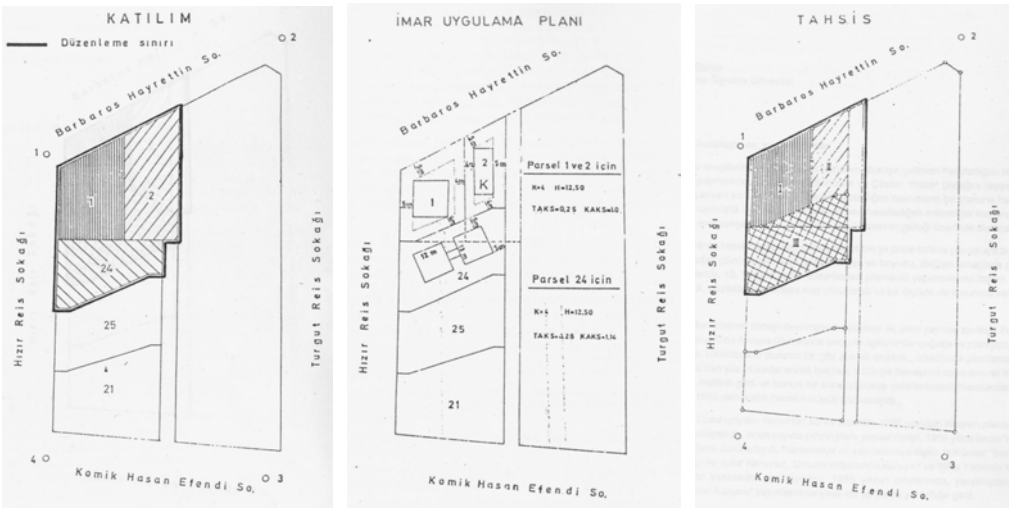


Fig 4.6, 4.7, 4.8– An LR Example from Turkey- Plot Structure before (left) & after (right) the Process, Yıldız (1990, 64-65)

Yıldız (1983) and Gündüz (1990) expresses that it is impossible to provide the equality for each plot. As mentioned before, in order to enable an efficient system, the increase due to readjustment and the decrease due to deduction must be equal to each other. Under these circumstances, the equal valuation principle in reallocation must actually be realized on unit land value basis instead of area basis. To achieve this equality, the values of the plots must objectively be determined before and after the readjustment and once the process is completed, if necessary, the difference between these values must similarly be compensated either by the municipality or the landowner according to situation. In this respect, Akkoyunlu (1999) claims that there are some attempts to minimize the differences in the unit value of development plots in existing procedure. This situation may be realized if land readjustment projects are conducted by co-operative since there is a system of 'compensation and betterment' so called "*şerefiye*" in co-operatives. The "compensation and betterment commission" established under the co-operative determines some criteria according to the location and utilization opportunities of the buildings such as penthouse, terrace, front set back, location on the corner, low frontage, accessibility, the altitude of the land and etc. Upon using this grading system, the differences between the values of the buildings are calculated and they are eliminated by cash compensation.

Yomralıoğlu & Parker (1993) propose a model for land reallocation with respect to unit value of land instead of the size of the land. In this respect, the main objective of this model is to determine the asset value of a land plot before and after the project with possible land valuation factors, then give back a new plot to the landowner with the same asset value as which owned before the project. However, problems in a process have to be eliminated in order to make reallocation according to unit value of land. Moreover, some changes have to be done in Civil, Land Registry and Development Laws and Constitution.

In reality, the determination of an exact value for a land plot is almost impossible but an estimation of value can be conceivable in many ways. Due to the difficulty of collecting real-market value data, numerical parameters are intended to be calculated and used of for each land plot rather than using the real-market value. To determine these parameters, each geographical unit of a land plot is analyzed with the selected land valuation factors. A land plot value can then determined nominally which represents all factors affecting the land plot as compared to others (Yomralıoğlu, 1994).

Code	Valuation Factors	Weights
1.	SUPPLIED BASIC SERVICES	87.1
2.	PERMITTED NUMBER OF FLOORS	85.2
3.	LANDSCAPE, VIEW	81.2
4.	ACCESS TO STREET	80.6
5.	PARCEL LOCATION WITHIN BLOCK	80.5
6.	PERMITTED CONSTRUCTION AREA	79.9
7.	ENVIRONMENT	76.0
8.	STREET FRONTAGE	73.6
9.	LAND PARCEL SHAPE	73.4
10.	DISTANCE TO CITY CENTRE	70.1
11.	CURRENTLY USABLE AREA	68.8
12.	DISTANCE FROM NUISANCE	66.0
13.	DISTANCE TO EDUCATIONAL CENTERS	65.1
14.	ACCESS TO HIGHWAY	64.2
15.	SOIL CONDITION	64.0
16.	DISTANCE TO SHOPPING CENTERS	63.9
17.	DISTANCE FROM NOISE	61.2
18.	DISTANCE TO HEALTH SERVICES	59.5
19.	DISTANCE TO RECREATIONAL AREAS	57.8
20.	TOPOGRAPHY	56.8
21.	DISTANCE TO RELIGIOUS PLACES	55.4
22.	AVAILABLE UTILITIES	55.0
23.	DISTANCE TO PLAY GARDEN	53.4
24.	DISTANCE TO CAR PARKING AREA	52.7
25.	ACCESS TO WATERWAY	46.5
26.	ACCESS TO RAILWAY	44.9
27.	DISTANCE TO FIRE STATION	40.0
28.	DISTANCE TO POLICE STATION	35.5

Table 4.2 – Land Valuation Factors which may affect a Plot Value, Yomralıoğlu & Parker (1993, p. 375)

In order to find the value, the plot asset values are estimated in both before and after the project via determining and then using the land valuation factors. In the estimation process, first, the selected factor values are calculated. For the calculation of a factor value, it assumes that each factor can be evaluated out of 100%. Based on this idea, each land valuation factor has been defined by a specific equation. In this equation, variable ***V*** represents the total value for a land plot while variable ***f*** represents the individual selected factor's value; and variable ***w*** represents the factor's weight. Land plot values are then determined by the combination of mathematical and subjective judgment with the aid of spatial analysis functionality of 'Geographical Information System (GIS)" (Yomralıoğlu & Parker, 1993, p. 376).

$$V_i = AREA_i * \sum_{j=1}^{k} (f_{ji} * w_j) \quad [1]$$

V: Total nominal asset value of a parcel

Area: Land parcel size

f: Factor value

w: Factor weight

k: Total number of factors

n: Total number of old parcels

m: Total number of new produced parcels

As mentioned before, there are two main distinction stages that must be realized while performing the land valuation analysis in a land readjustment process. These stages are; firstly, pre-project stage (before) which represents the current cadastral land parcels. These parcels are considered as the original input plots of a LR project. In this stage, all land plots are evaluated and classified by their existing suitability without referring to the urban land scheme; and secondly, post-project stage (after) which represents the new site plots. These plots are created according to the detailed zoning schemes which are basically provide the planned roads, streets, residential areas and other public and private places. In this stage, all given site blocks are carefully subdivided into suitable plots. The created new

plots are then considered as the output plots and evaluated with respect to the planning details as if these plots were fully developed (Yomralıoğlu, 1994, p. 6-7).

The land valuation analysis is carried out differently in both these stages. According to the suitable land valuation factors, the plot values are calculated by equation [1]. Then, the total asset value of the project area is determined in both stages by following equations;

$$\sum \mathbf{V}\ \textit{before} = V_1 + V_2 + \ldots\ldots + V_n \quad [2]$$

$$\sum \mathbf{V}\ \textit{after} = V_1 + V_2 + \ldots\ldots + V_m \quad [3]$$

The main purpose in a value-based land readjustment is to provide the equation [4]. In practice, this may not always possible. Thus, to accomplish the equation [4] with the determined valuation parameters, a z scale coefficient is used. Using equation [5] the scale coefficient is determined and applies to all new land plots which the unit values were initially estimated. As a result, the nominal asset values of the new land parcels are relatively changed and determined for the distribution.

$$\sum_{i=1}^{n} V_{(Before)\,i} = \sum_{i=1}^{m} V_{(After)\,i} \quad [4]$$

$$z = \left[\sum V_{(Before)} / \sum V_{(Before)} \right] \quad [5]$$

As Yomralıoğlu (1994) notices; after all these calculations, land distribution is realized with respect to the estimated asset values before and after since the main objective in the land distribution is to give back a new land plot to the landowner with the same nominal asset value that had before the project. Land distribution is done block by block. First of all, the cadastral parcels and new plots are overlaid. Then, the cadastral parcels which match a zoning block are grouped and reallocated within the same block according to their old location and the input value. In this process, the total value of the grouped cadastral parcels is compared with the total value of the new plots within the block. If the

total value of the cadastral parcels is not sufficient for the zoning block, than the closest plot or plots to the block are included in the cadastral parcel's group. The main idea here is to fill a zoning block with the corresponding cadastral parcels regarding the value and their original location. When sufficient value is provided for the whole block, then land distribution is accomplished within the block plot by plot.

Besides, Gündüz (1990) expresses that there is also another proposal for allocation of property rights in three-dimension which was put forward by Kamutay Türkoğlu. The reason of the proposed system is that as Türkoğlu (1988) claims; property has to be defined as three dimensional with its volume not only in size because the economic value, the use and the rights are three-dimensional concepts; whereas the size of land is measured in two-dimension. There are three important issues of this system; to bring the flexibility in two and three dimensions as an organization in urban space; to provide sufficient land for public uses; to remove value differences emerged with reallocation. In addition, the most important feature of the proposed system is that consolidation applications are encouraged with this system.

This system aims to preserve the economic value of the individual property whether it lessens in its own location or lessens in another location. In this system, according to the construction rights given in the development plan, property could be transferred among each other with respect to flat ownership if necessary. Therefore, it is possible to produce new building plots without joint partnerships. When there is a transfer of property rights, the construction right (floor area ratio) given in new location has to be the same as the previous one. This could only be applied when homogenous construction right is given to arrangement area (Gündüz, 1990).

Land Deduction: In land readjustment process, it is one of the most important issues to cover the land necessary for common purposes. In this respect, landowners surrender a certain portion of their land for this reason.

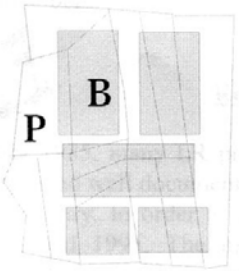
In most of the countries there is no formal rule about land deduction and this portion varies according to the agreement concluded with the authority on the apportionment costs (Larsson, 1993, p. 108). However, in some countries like Germany, this is often defined in legislation. Similar to Germany, the maximum exact limit is defined in legislation in Turkey. The aim of the land deduction in Turkey is the provision of land for public uses. Like in other countries, municipality can not use it in order to compensate the municipal expenses and can not take development profit for the municipality since the system of establishing associations is not used in Turkey; there is no cost to be covered.

According to the 'Development Law', the 'Common Share of Adjustment' so called "*Düzenleme Ortaklık Payı*", which is a certain amount of land subtracted for public uses, is taken from the landowners as a result of the land value increase after the readjustment process. This ratio can not exceed the 35% of the land which is adjusted. If this occurs, the municipality or governorship compensates this difference via using expropriation method (Şakar, 1999).

According to the law, the 'Common Share of Adjustment' can not be used for any other purposes than streets, squares, park, car parks, playgrounds, green areas, mosques and police stations and the services related to these land-uses. Another important point stated by the law is that 'Common Share of Adjustment' can not be taken more than one time from the same plot. However, another readjustment application can be carried out in an area including the related plot if it is foreseen by the development plan (Şakar, 1999).

However, as Yakar (2000) states; it is not examined whether the values of the land which is included in project area increased or not. Moreover, if there is an increase in the value, this amount is not compared with the amount of 'Common Share of Adjustment' in terms of recovery. In this respect, an interesting point is that although it is compulsory to surrender land for land value increase, there is not any statement about plot value calculation study in the law if there is not an increase in land values.

As Yomralıoğlu et al. (1996, p. 157) mentions; the project area is to be determined in a base map displaying precise boundary for the land deduction. According to this boundary, all cadastral plots within the area are determined with legal records which include basic property information such as the plot ID, owner name(s), legal size, and other land tenure related information. If a plot is entirely involved in the project area, the plot's registered size is used in the studies. However, if the plot is divided into two or more lots by the project boundary, then the area, which is inside the project, is taken as an input area. After determination of participating plots, site block areas are calculated. Using these variables, single contribution coefficient is determined with the formula. This coefficient shows the contribution percentages (CP) of each land plot to the land readjustment project. Afterwards, the CP is applied to each of land plot in order to determine their individual contribution rates (cr). If the CP is greater than 35%, the authority must either reduce the figure to 35% or should expropriate the extra amount. Therefore, the upper limit of deduction is determined to be 35% for land readjustment projects.



$$CP = 1 - ([B]/[P]) \quad [1]$$

$$RP = 1 - CP \quad [2]$$

$$cr_i = CP * p_i \quad [3]$$

$$np_i = RP * p_i \quad or \quad np_i = p_i - cr_i \quad [4]$$

where;

[P] = Total area of the input land parcels
[B] = Total area of the site blocks
P - B = Total area of required public use land
CP = The contribution percentage within the project
RP = The percentage of land given back to original landowners
p_i = Land parcel area
cr_i = The contribution area for a parcel
np_i = Land area given back to owner
$i = 1,2,...,n$ *(n = the number of land parcels involved in the project)*

Fig 4.9 – Fundamental Calculations for determination of plot contribution, Yomralıoğlu et al. (1996, p.157)

Compilation of a Property Regulation Plan: The land reallocation phase is the most complicate stage of the entire process. New property subdivisions are determined in

this process. Afterwards, the allotment plan is prepared with respect to the development plan and is approved by municipal council within the municipal boundary; whereas in neighboring area so called "*mücavir alan*" it is approved by the city administration council (Şakar, 1999).

The aim of land reallocation is to create new plots according to zoning standards. In this respect, the development plots are shaped as foreseen in the development plan "*imar planı*". First the municipality determines the proper streets and building block locations in a detailed plan and then each block is subdivided into suitable plots.

In this stage, there is an exchange of lands between landowners and the community, and also among the landowners. Landowners receive new plots which are in different size and different location to their original plot. However, in principle, it is tried to provide each landowner a plot with approximate proportion to his previous share and locating in close surroundings as far as possible. Within the process, according to town planning details, existing structure of the plots is changed and the land tenure system is affected. Therefore, distribution of new plots is accepted as the most sensitive stage of the whole process.

In this respect, as Uzun (1992) and Yomralıoğlu et al. (1996) explain; the value of all cadastral plots is accepted to be equal according to land adjustment system. However, since the development plots which are formed by the plan can be at different values, it is hard to achieve a reallocation with equal values and conditions. For instance; in the same block, the two side of the subdivision line can have different conditions such as different building rights determined by the development plan.

At the end of the land readjustment process, if the municipality exceeds the percentage of 35%, instead of paying expropriation fee upon agreement of relate parties the municipality or governorship can compensate this loss by giving plots from their own properties on which constructions can be built according to the plan or legislation (Şakar, 1999).

After the reallocation of shares and the preparation of distribution tables, the allotment plans are approved by either the municipality council or the city administration council. Then, these tentative maps and related documents are displayed for one month in order to take the objections and viewpoints of landowners. Planning committee evaluates these demands of landowners and corrections are made according to recommendations of the committee. After all of these procedures, cadastral maps are drawn again and became new legal records; new plot corners are calculated and submitted to the 'Cadastral Office' to check and approve the documents. Following this, 'Land Title Office' registers the new plots. New land titles are prepared and consequently, they are distributed to the landowners (Yomralıoğlu, 1996).

4.3.2.3 Post-Process

In Turkey, the person has the right of appeal as in all countries. As it is mentioned above, after the announcement of tentative subdivision plan, objections could be made to the municipality in a month period. As Yomralıoğlu (1996) states, the objections are mostly about the new location and reallocation decisions. After the evaluation of possible objections, the completed allotment plans are sent to cadastral office. However, after this point, arrangement and registration transactions are directly carried out to the plan and consents of landowners are no longer taken.

Another point about judicial phase of land readjustment is that according to the article 16 of the 'Development Law', if the owners of the common shared real estates so called "*şuyulandırılan gayrimenkul*" do not make a deal or do appeal to courts for the removal of the common share in six months time after the notification of the authority, the related administration can appeal to court for the removal of the common share as a shareholder (Şakar, 1999).

In terms of construction works, Turkish land readjustment process resembles to Germany procedure. Construction works are entirely out of the process like in Germany, there is no agreement among local authorities and landowners like in other countries. In this

framework, after readjustment in order to take construction permits within the boundaries of settlement area, the allotment plans must be approved with respect to the development plans of these sites and the regulations by the municipal or city administration council. In addition, the streets and the drinking and wastewater system of the region must be constituted according to the plan and conditions of the area to take permits (Şakar, 1996).

In Turkey, the process does not include the construction of buildings or sale of the land. It includes just land exchanges and site improvements. On the other hand, in other countries there are also cost coverage implementations as mentioned before. As Larsson (1993) states, in Germany, there is a surrender of landowners for the cost coverage of municipality. The local authority has the right of utilization and sale of the land which accrues. In Japan, the cost coverage process is the responsibility of the landowners. They set aside common 'reserve land' for sale or constructs buildings under auspices of association itself.

In this respect, co-operation may be an attractive point for the construction work in Turkey. As the landowners often do not know what to do with their lands, the development of readjusted area slows down. This kind of an implementation speeds up the process. There is co-operative implementation in Turkey. However, its procedure is not regulated with a statue. As Larsson (1993) expresses; this is a voluntary and informal process which is also allowed for practical joint solutions in Turkey. In Turkey, the "reinstatement" is also desirable in order to preserve the social environment and structure. This can be achieved to some extent with the preference of the land readjustment process rather than expropriation.

Briefly, as Yomralıoğlu et al. (1996) claims; the entire land readjustment process does not have a single standardized procedure in Turkey. Therefore, despite the great advantages of the process in solving the land-use problems in urban areas, there are still some issues such as inequitable land distribution, limitations of budget and inefficient land information management which affect the effective use of land readjustment. Therefore, in Turkey, some LR projects have been found as unsatisfactory and have not been completed on schedule since the enactment of land readjustment act.

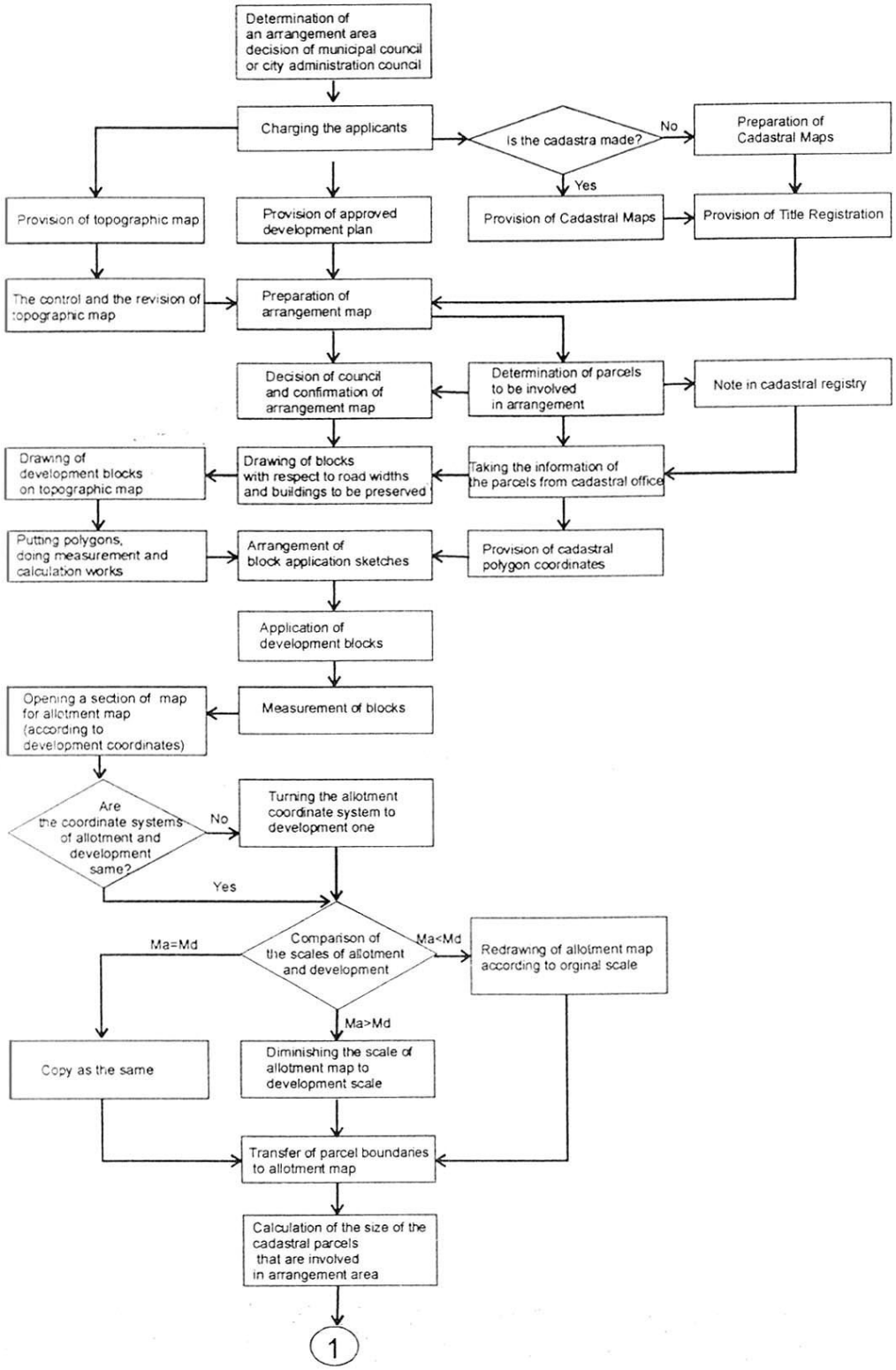


Fig 4.10 – Land Readjustment Procedure in Turkey, Bıyık & Uzun (1990, p.35)

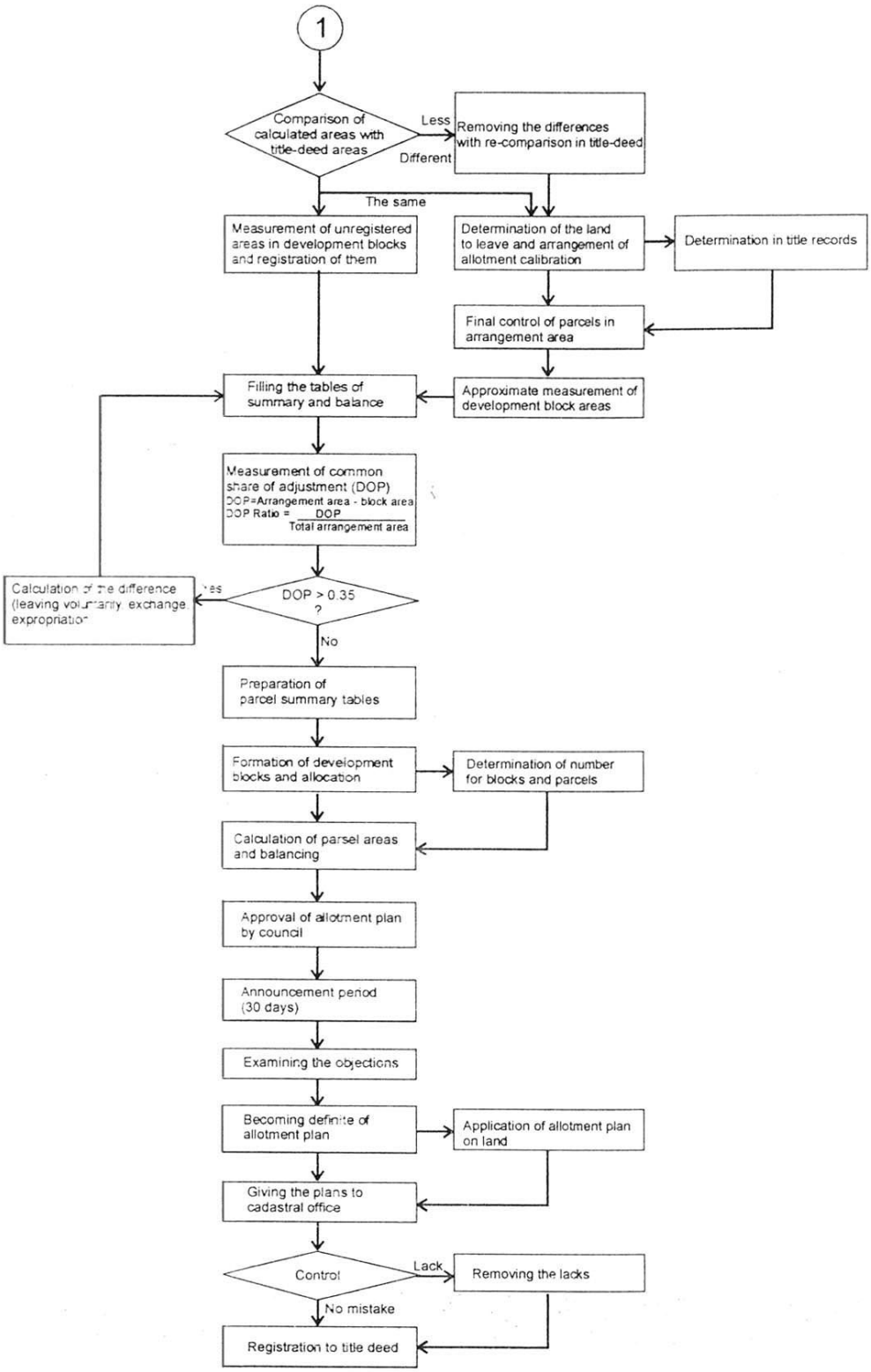


Fig 4.11 – Land Readjustment Procedure in Turkey, Bıyık & Uzun (1990, p.36)

4.4 Process & Methods of Allotment

Allotment and its methods constitute the final and the most important phase of land readjustment implementation. Firstly, appropriate plot production after an efficient allotment process is closely related with the formation of urban space. Another reason is that, the properties of landowners are taken by the municipality without their consent and then these lands are given back after a readjustment process. However, during the implementation of the plan, some unfair situations emerge and the equality principle of Turkish Constitution could not be provided on plots.

With recent application methods, it is not possible to eliminate the negative effects of development plans entirely. However, if necessary sensitivity is exposed, the negative effects of these plans could be reduced through the allotment and distribution phases of land readjustment process.

In this framework, process and methods of allotment have a major role firstly in the formation of urban space and secondly for the equality principle.

4.4.1 Process of Allotment in Turkish Planning System

In the formation of urban space, allotment undertakes an important role between planning and constructing phases of Turkish planning system. Therefore, it is reasonable to explain all of these three phases respectively.

In principle, Turkish planning process functions in a way from macro-scale plans to micro-scale plans. When it is examined according to Şakar (1999), the process begins with 'Regional Plans' and 'Environmental Arrangement Plans'. Just after '*Nazım* Development Plans' are prepared with respect to 'Regional Plans' or 'Environmental Arrangement Plans'. *Nazım* Development Plans includes a detailed report that is covering several issues such as general land-use types, major region types, future population densities; if necessary, growth decisions & sizes of several settlement areas and their principles, transportation systems and the solutions of the existing problems. Following this, the 'Implementation

Development Plans' are prepared. It involves the block arrangements of several regions, the densities and structures of these regions, roads, the implementation phases and other related information which are necessary for forming the basis of development programs.

According to the 'Development Law', the municipalities can add the issues which are necessary for their settlements to the regulation with the decision of municipal council. Nevertheless, these additions must be in accordance with the 'Development Law' and must not change the content of the regulation.

In this framework, the 'Typical Development Regulation issued 3030, of which Municipalities are out of the Law Context' so called "*3030 Sayılı Büyükşehir Belediyeler Dışındaki Belediyeler Tip İmar Yönetmeliği*" has been prepared with respect to the 'Development Law issued 3194'. This regulation is implemented in the areas which have development plans within the municipal boundaries or neighboring boundaries of related municipalities. Therefore, the statements of this typical regulation are applied if there is no opposing sentence with the development plan. However, this situation sometimes causes different interpretations of main principles and also restrictions over plot sizes. For example; in addition to the restrictive factors expressed in the Development Plan, this regulation's sentences about minimum plot distances also restricts the allotment process. (Uzun, 1992)

Developing structure of the city creates new requirements of the physical structure of the city. New economical, political changes, some new investments of the city parts alter the use of land over time. Therefore, in planning process, zoning is a crucial issue to determine the land-use areas and their utilization conditions in the city. As a result of urbanization needs, the urban space is zoned and divided into the regions servicing for residential, commercial, industrial and socio-cultural infrastructure requirements according to the development regulation. In addition, with zoning it is also aimed to adjust the implementation phases of these land-uses in time.

In this framework, the implementation areas are indicated as adjustment sites in the development plan. A further land-use differentiation is made within the adjustment sites and the areas will be surrendered to public use are determined. The remaining land is reallocated to landowners for development. (Akkoyunlu, 1999)

Zoning is followed with the formation of building blocks and the arrangements within the blocks; in other words, the process of forming the plots. Finally, the arrangements which determine the location & dimensions of the buildings in the parcels are carried out.

For the determination of plots, allotment process is very crucial. Allotment is the transformation of cadastral parcels to development plots. In allotment process, it is aimed to form regular development plots through the unification or division of cadastral parcels according to the provisions of plan and related regulations. (Uzun, 1992)

Article 9 of the 'Regulation regarding Basis of Development Plan Preparation and its Alterations so called "*İmar Planı Yapılması ve Değişikliklerine Ait Esaslara Dair Yönetmelik*" expresses that development plots within a building block have to be shown in development plans. Nevertheless, as Uzun (1992) states; city planners generally neglect this point in implementation.

Allotment plans are prepared with respect to development plans. Therefore, allotment plans can be considered as inseparable parts of development. In all allotment process, it is important to obey the decisions taken in the development plan which defines the base area ratio, floor area ratio and other construction regulations. In addition, existing regulations and building structures gain importance in a developed area.

Yomralıoğlu (1988) expresses some critical points in production and distribution of building plots such as; to produce plots in the dimensions defined by the development plans and regulations, to protect the possible buildings in the area, to locate the plots close to its

previous cadastral property, to create singular plots as many as possible and to provide close apportionment in shared plots.

As mentioned before, another important point is the reallocation of lands in allotment process. Reallocation of properties to the landowners is realized after the deduction of public service areas. In this respect, the land valuation system has a major role for equality. In principle, municipalities have to calculate the land value increase and pay attention to the value increase of the land of which should not be less than 54% after a deduction amount of 35%. With the alterations recently come into force the deduction amount has been increased to 40% and thus the value increase should not be less than 67%.

In addition, for each landowner the reallocation has to be a fair implementation. As the reallocation is conducted with respect to the area method, the value of all the land within the adjustment area is accepted to be equal in this system. However, both before and after the process the value of the land is not equal within the area due to varying conditions such as; access to street, permitted number of floors and construction area, topography, location in the block and so on. In this framework, the land value method may be used for a fairer implementation among landowners.

The construction process is the final step in the formation of urban space. The construction permit in any block can not be given unless the municipal council approves the allotment plan of the plot and it is registered in the Cadastral Office.

According to development regulation, more than one building can be constructed in a plot provided that these buildings are located within the boundaries of set back distances. In addition, Cadastral Office can unify the development plots in one building block and can set up horizontal flat ownership and flat shares on the newly obtained plot.

In these processes there are important points directly affecting the formation of urban space. These are as follows;

4.4.1.1 Determination of Building Blocks

In urban design literature, the block structure is defined as an element, module, segment or a cell of a city. In this respect, the block is an essential module of urban pattern and the geometrical structure of the blocks is the determinant factor of urban form. The arrangement and use of blocks have flexibility. But today's urban planning practices create an array of blocks with a modular arrangement.

The shapes and the sizes of the blocks are determined according to land-uses designated in the zoning. The plot shapes and sizes envisaged in the plan form the structure of the whole city.

In case there are settlement developments such as mass housing, cooperatives or housing states, the development plan allows implementation on block basis. This brings more flexible applications on block sizes and shapes. However, as the implementation phase is not taken into account during the planning process, the outcome structure usually includes building blocks subdivided in a standard way. The application on block basis can create flexibility only within the block but not in the general block structure.

4.4.1.2 Determination of Building Plots

Each building block represents a group of neighboring land plots or else a single land plot. Whatever its size, each plot is essentially a unit of land use; it is physically defined by boundaries on or above ground.

The sizes and shapes of building plots are determined according to the plot standards on the land use type. In addition, the building order has an important effect on plot forms. One important point in the formation of development plot is to provide a structure that each can take service from the road and this necessity plays a major role in the formation of blocks.

There are mainly two factors which have important effects in the formation of plots. These are as follows;

4.4.1.2.1 Building Orders

The settlement system of buildings within the building (development) block is classified in four groups, which are detached order, adjoining order, block order and twin order (Uzun, 1992). The definitions of these orders are as follows;

Detached Order: It is the building order which the building has no adjoining wall with the neighboring buildings.

Adjoining Order: It is the building order which the buildings are attached with one or more neighboring structures.

Block Order: It is the building order which expresses a structure of one building mass with garden settling on one or more plots, whose frontage length, depth and height are determined according to the development law and its regulations.

Twin Order: It is the building order which expresses a block composed of two buildings which are partly or completely detached to each other.

4.4.1.2.2 Building Plot Dimensions

The minimum dimensions of the new plot due to subdivision is determined with respect to the site characteristics such as site, slope, existing buildings and so on, provided that there is no any distinctive decision in these areas of which have development plans. In addition, the dimensions and necessities of the buildings to be constructed on these plots are also diagnostic in the determination of the plot sizes.

Especially, in the development regulations of greater cities, the dimensions related to plot widths and depths are separately determined according to floor heights and different land-uses.

Plot is smallest unit in urban development on which buildings can be constructed. In this framework, plot frontage is the side of the plot to the street which it locates on. In the corner plots, the side looking to the broader street is accepted as plot frontage. If two streets are equal, then the short side is accepted as plot frontage. The factors determining the plot widths, depths and areas are as follows;

Plot Width: It is the distance between the two sides of the parcel. The formulas for calculating the plot widths differ in each building order. These are as follows (Uzun, 1992, pp. 45-46-47);

- In detached order,

a) Corner plot width = Street set back distance + Building frontage + Neighboring set back distance

b) Intermediate plot width = Neighboring set back distance + Building frontage + Neighboring set back distance

- In twin order,

a) Corner plot width = Street set back distance + Building frontage

b) Intermediate plot width = Building frontage + Neighboring set back distance

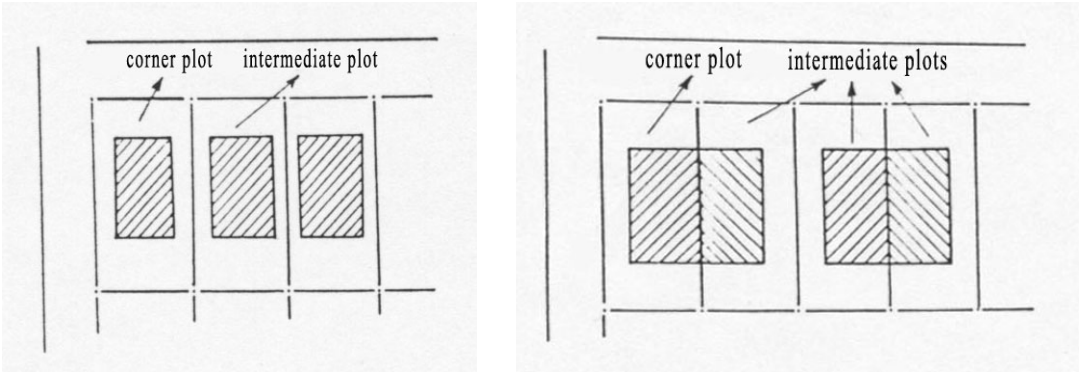


Fig 4.12 & 4.13 – Determination of plot width in detached (left) & twin (right) orders, Uzun (1992, p.45-46)

- In block order,

a) Corner plot width = Street set back distance + Building frontage

b) Intermediate plot width = Building frontage

c) Block-head plot width = Building frontage + Neighboring set back distance

- In adjoining order,

a) Corner plot width = Street set back distance + Building frontage

b) Intermediate plot width = Building frontage

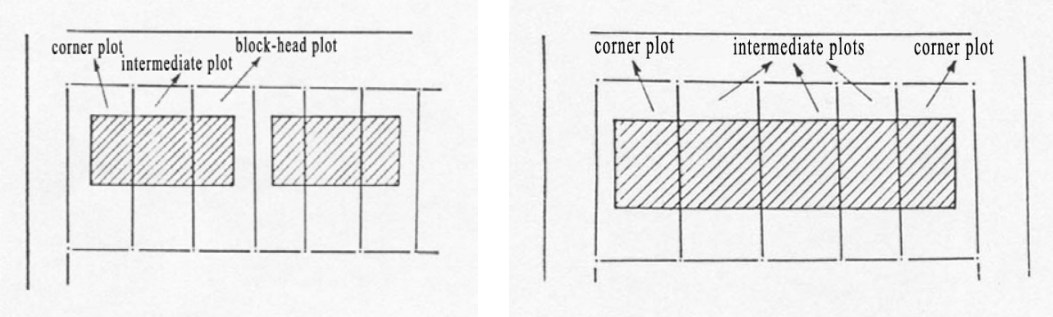


Fig 4.14 & 4.15 –Determination of plot width in block (left) & adjoining (right) orders, Uzun (1992, p.46-47)

According to Development Regulation of Izmir, the plot widths cannot be less than;

I- In the areas of Residential and Commercial Land-Uses,

A- where 1, 2, 3 flats are allowed,

a) In adjoining order: 6.00 m.

b) In block ends: Side set back distance + 6.00 m.

c) In detached order: Sum of side set back distances + 6.00 m.

B- where 4, 5, 6 flats are allowed,

a) In adjoining order: 10.00 m.

b) In block ends: Side set back distance + 10.00 m.

c) In detached order: Sum of side set back distances + 10.00 m.

C- where 7, 8, 9 flats are allowed,

a) In adjoining order: 12.00 m.

b) In block ends: Side set back distance + 12.00 m.

c) In detached order: Sum of side set back distances + 12.00 m.

D- where 10 or more flats are allowed: 30.00 m.

II- In the areas of Commercial Land-Uses where only one flat is allowed: 5.00 m.

III- In the areas of Small Industrial Land-Uses,

a) In adjoining order: 5.00 m.

b) In block ends: Side set back distance + 5.00 m.

IV- In the areas of Industrial Land-Uses: 20.00 m.

V- In the areas of Non-Residential Urban Land-Uses: Side set back distances + 10.00 m.

Plot Depth: It is the average distance between plot front frontage line and back frontage line. Plot depth can be calculated with the following formula (Uzun, 1992, p. 47);

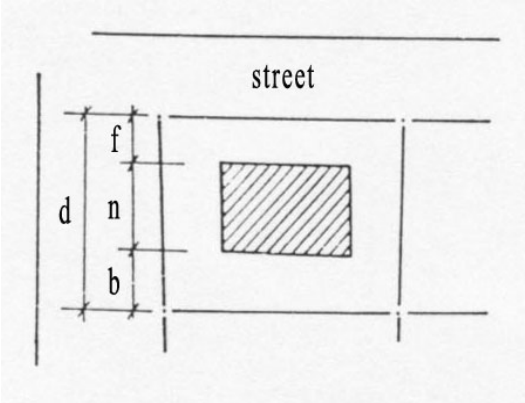


Fig 4.16 – Determination of plot depth, Uzun (1992, p.47)

- In all building orders,

Plot Depth (d) = Front set back dis. (f) + Building depth (n) + Back set back dis. (b)

According to Development Regulation of Izmir, the plot depths cannot be less than;

I- In the areas of Residential and Commercial Land-Uses,

a) Without front set back order: 18.00 m.

b) With front set back order: Front set back distance + 18.00 m.

II- In the areas of Commercial Land-Uses where only one flat is allowed,

a) Without front set back order: 5.00 m.

b) With front set back order: Front set back distance + 5.00 m.

III- In the areas of Small Industrial Land-Uses: 5.00 m.

IV- In the areas of Industrial Land-Uses: 50.00 m.

Plot Area: According to Development Regulation of Izmir, the plot areas cannot be less than;

I- In the areas of Residential and Commercial Land-Uses where 10 or more flats are allowed: 2000 m2.

II- In the areas of Industrial Land-Uses: 2000 m2.

III- In the areas of Urban Study: 500 m2.

4.4.1.3 Determination of Building Location & Dimension in a Plot

Building is the immobile masses of a city. Arrangements of buildings form patterns of mass. Arrangements of building also form urban spaces, which exist as patterns of channels and reservoirs.

In this framework, some development instruments are developed to arrange the location, shape, size and height of the building in the plot. There are three main factors in the determination of the building structure within the plot. These are as follows;

4.4.1.3.1 Set Back Distance Adjustments

One of the methods used for determining the location of a building in a plot is the instrument of set back distances. The determined values are the minimum distances allowed between the building and either the road or neighboring plot boundaries. There are four types of set back distances in development regulations. These are as follows (Uzun, 1992);

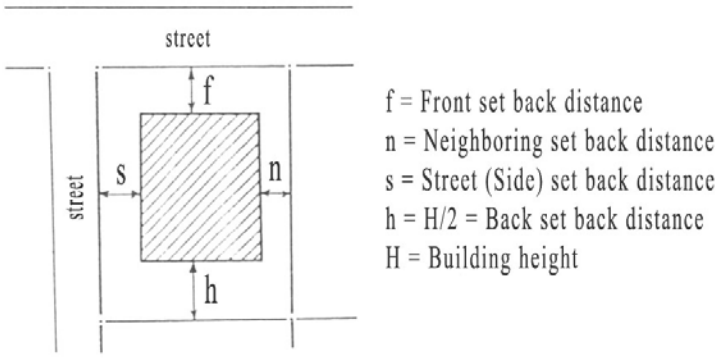


Fig 4.17– Determination of set back distances in a development plot, Uzun (1992, p.24)

Front Set Back Distance: It is the distance between the front boundary of the plot and the front frontage of the building. These spaces may further be used in broadening the streets. According to the typical development regulation, the front set back distance of buildings to be constructed in the settlement areas is at least 5.00 m.

Street-Side Set Back Distance: In corner development (building) plots, it is distance between the side boundary of the plot and the side frontage of the building (frontage looking to street). According to the typical development regulation, the side (street) set back distance of buildings to be constructed in the settlement areas is at least 5.00 m.

Neighboring- Side Set Back Distance: It is distance between the neighboring plot boundary and the side frontage of the building (frontage looking to neighbor). According to the typical development regulation, the side (neighboring) set back distance of buildings to be constructed in the settlement areas is at least 3.00 m, where four or less flats are allowed. This distance is increased 0.50 m for each extra flat.

Back Set Back Distance: It is the distance between the back boundary of the plot and the back frontage of the building (frontage not looking to street). According to the typical development regulation, the back set back distance of buildings to be constructed in the settlement areas is at least the half of the building height, with a minimum distance of 3.00 m.

However, with the demand of increasing the flat numbers, the minimum distance between the opposite buildings has been important in order to provide a better urban environment. The application of the following formula will be useful in proposing new flat numbers;

$$K = (H1 + H2) / 2 + 7\ m.$$

K = Distance between opposite buildings

H1 = The height of the building in front of the street

H2 = The height of the building in other front of the street

The reason is that the rules of 5.00 m. of front set backs and 3.00 m. of side set backs were taken from the German Law during the planning of Ankara. Although this rule was utilized for two/three-storey buildings in Germany, it is used in Turkey even for ten-storey buildings. In countries like Japan, USA and Spain, the set back distances are determined according to the angle of sunlight.

4.4.1.3.2 Land and Building Utilization

Not only the location of the building within the plot but also area & volume sizes of plot-building relation are taken into account in the determination of the densities. This relation is provided with some instruments such as; base area, base area ratio, floor area, floor area ratio. The definitions are as follows (Uzun, 1992);

Base Area (TA): It is the maximum area covered by the building base settling on the plot; excluding light shafts and courtyards. The outbuildings constructed within the boundaries of the garden are counted in the base area.

Base Area Ratio (TAKS): It is the ratio of the base area of a building to the plot area. If the development plan does not put forth any construction provisions in a building plot, the site back distances are taken into consideration. However, in all cases, the base ratio can not exceed 40% in that plot.

TAKS = Base Area / Parcel Area

Floor Area (KA): It is the total area of all usable storeys; including closed projections and cellar, mezzanine, penthouse while excluding light shaft.

Floor Area Ratio (KAKS): It is ratio of the total floor area to the plot area. This ratio is also called as building usage coefficient (floor coefficient).

KAKS = Floor Area / Parcel Area

4.4.1.3.3 Building Dimensions

The building dimensions determined according to Development Regulation of Izmir are as follows;

Building Frontage: According to the development regulation, the maximum building frontage is 30.00 m. in detached order. The municipal has the power of constituting two or three building blocks whose total frontage does not exceed 30.00 m. by unifying several narrow plots according to the building characteristics of that area.

Building Depth: It is the right distance between the front and back frontage lines of the building. According to the development regulation, provided that the building depth does not exceed 22.00 m. and does not approach to the back set back wall more than the half of the building height, with a minimum distance of 3.00 m., it is calculated with the following formula;

$B = D - (F+H / 2)$

B= Building depth

D = Parcel depth

F = Front set back distance

H = Building height

Building Height: In the plots where number of storeys and building heights are not indicated development plan, heights are determined by not exceeding following figures;

Height of one-storey buildings = max. 3.80 m.

Height of two-storey buildings = max. 6.80 m.

Height of three-storey buildings = max. 9.80 m.

Height of four-storey buildings = max. 12.80 m.

Height of five-storey buildings = max. 15.80 m.

4.4.2 Methods of Allotment

Uzun (1992) quoted from Yıldız (1988) that the ways of producing the building plots are in two methods in land readjustment process. First one is shaping the plots according to zoning plan drawn by planners and the other is to determine the plots according to the shares of the landowners. First method can lead to some land sharing problems upon the land reallocation while the second method minimizes those problems.

4.4.2.1 Provision of Development Plots According to Zoning Plan

In such an application, allotment plans are prepared with the development plans according to the regulations. In this process, planners subdivide the blocks into standard plots in the development plan. It is clear that this method is conducted without considering the property structure on land. As a result, so many standard development plots are produced with a minimum front. The division structure of building block is displayed in the development plan and the plots must be reallocated with respect to those defined shapes. This is called as reallocation according to defined plot in a plan "*Parsele Göre Tahsis*" (PGT) (Uzun, 1992).

This method is proposed with the 'Application Regulation' so called "*Uygulama Yönetmeliği*" of article 42 of the 'Development Law' in 1973. With this regulation, it is stated that the development blocks are subdivided into temporary blocks and parcels. In

article 18 of the 'Development Law' issued 3194, allotment process is defined as the same as it is in article 42 of the previous law. (Uzun, 1992)

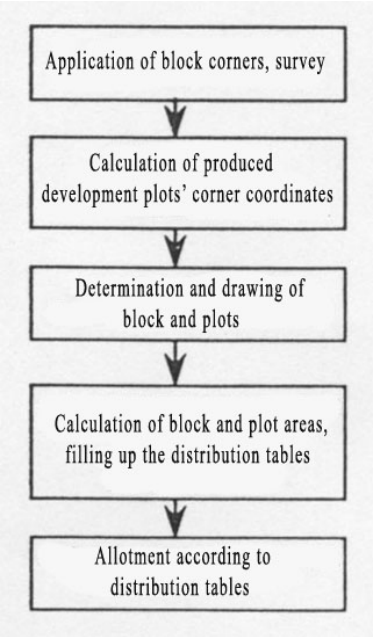


Fig 4.18 - "*Parsele Göre Tahsis*", Uzun (1992, p.52)

Considering the building regulations and minimum front width of the plot, all of the development blocks are subdivided into development plots in this process. The aim is to produce maximum number of plots with a similar size. In addition, the reason of applying this method is exposed as forming an esthetic architectural environment through a standard construction order.

4.4.2.2 Provision of Development Parcels According to Allocation

In this process, planners do not subdivide the blocks in the development plan although it is defined in the regulations. Instead of planners, cartographers subdivide the development blocks considering the property structure. Therefore, the structure is not homogenous. In this method, singular plots which are not smaller than minimum development plot dimensions are given and in most cases it exceeds the minimum front width. If the total area is not enough to give each landowner a singular plot, shared plots are

given in minimum numbers. This is called as allotment according to allocation "*Tahsise göre Parselasyon*". (TGP) (Uzun, 1992)

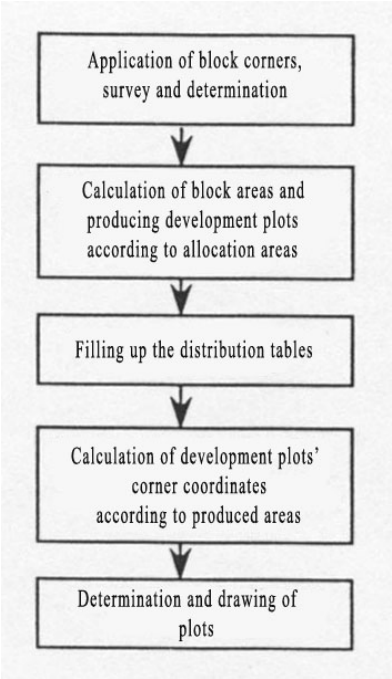


Fig 4.19- "*Tahsise göre Parselasyon*", Uzun (1992, p.54)

This process minimizes the problems emerging due to the property structure on land and its transformation from cadastral to development plot. In addition, it is aimed to start construction process in these plots as soon as possible. (Uzun, 1992)

In 1985, the 'Development Plan' issued 3194 could not achieve solving the problems of shared plots in land readjustment. Cadastral plots were in most cases subdivided with common shares, after the land readjustment, this common shared subdivisions continued to exist. Therefore, in 1987, a new addition is made to article 18 with the law issued 3290 to overcome the problem of shared property structure on land. With this application, it is aimed to produce singular plots with a low number of shares. However, this application required some pre-requisites such as; cadastral plot owners must be more than one person and the area allocated to cadastral plot must be at least size of two

development plots. In other words, this method is valid for bigger plots in terms of size. (Uzun, 1992)

4.4.2.3 Comparison of Methods for Plot Development

As Uzun (1992) explains; it will be beneficial to examine the two methods of allotment process on an example.

Information about the allotment in the readjustment area;

- Total cadastral plot area : 5852.00 m2

- Development plot area : 4512.75 m2

- DOPO : 0.228853

- Minimum area of produced development plot : 350.00 m2

- Building unit area : 105.00 m2

There were 7 cadastral parcels at the beginning. The areas of plots before and after adjustment are given below;

Plot No	Title Deed Area *'senet alani'*	Allotment *'tahsis'*
1079	380	293.04
1080	900	694.03
1081	880	678.61
1082	882	680.15
1083	660	508.96
1084	675	520.52
1085	1475	1137.44

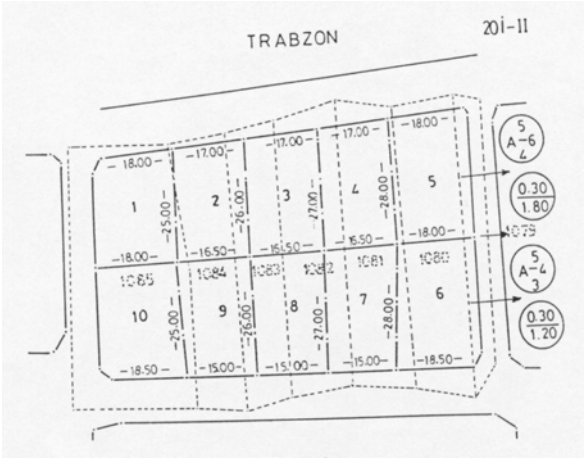
Table 4.3 – Data about Plot Sizes, Uzun (1992, p.57)

The constructions on the plots within the adjustment area will be built according to the following conditions;

Building Order	Minimum Plot Width (m)		Minimum Building Width (m)
	Corner Plot (m)	Interval Plot (m)	
Detached - 6 Storey	17	16	9
Detached - 4 Storey	16	14	8

Table 4.4 – Data about Construction Orders, Uzun (1992, p.57)
These values are determined according to Typical Development Regulation of Trabzon

In the first method, the allotment scheme in the development plan is followed which brings the plot structure envisaged with the plan. However, this leads the emergence of more shared plots. According to the second method, on the other hand, it is tried to form singular plots as far as possible, by adapting the minimum front conditions. The number of development plots produced in each method is 10. In the first method, only 4 of these plots are singular; whereas this number is 7 in the second method. Although the second method is easier to implement as the number of singular plots is high, the end structure is not the same with the foresights of the development plan.



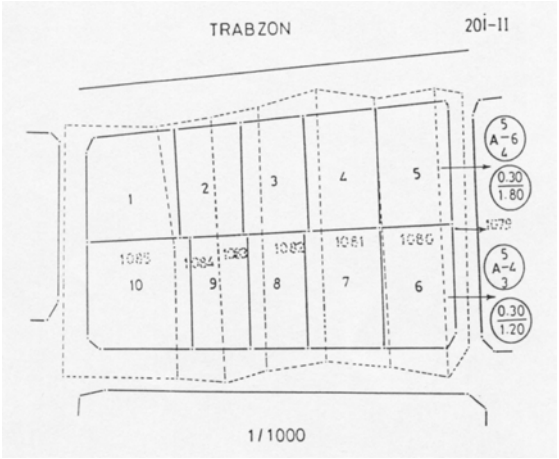


Fig 4.20 & 4.21– Allotment Maps -
on the left "Parsele göre Tahsis" & on the right "Tahsise göre Parselasyon", Uzun (1992, pp.58-59)

	1	2	3	4	5	6	7	8	9	10
1079				x						
1080					x	x				
1081				x		x	x			
1082			x				x	x		
1083			x					x	x	
1084		x							x	
1085	x								x	x
# of Shares	1	1	2	2	1	2	2	2	3	1

	1	2	3	4	5	6	7	8	9	10
1079						x				
1080					x	x				
1081				x			x			
1082			x				x	x		
1083		x						x		
1084								x	x	
1085	x									x
# of Shares	1	1	1	1	1	2	2	3	1	1

Table 4.5 & 4.6 – Number of Shares according to Allotment Maps;
on the left "Parsele göre Tahsis" & on the right "Tahsise göre Parselasyon", Uzun (1992, pp.58-60)

Briefly, TGP method is more advantageous than PTG method and should be preferred in most cases because landowners want to evaluate its property as soon as possible and thus to start the construction immediately instead of challenging with municipality. Finally, according to the general characteristics of readjustment area, it is important to prefer the proper method in order to provide an effective and aesthetic design.

CHAPTER 5

PROJECT MANAGEMENT APPROACH TO LAND READJUSTMENT

5.1 The Concepts of Project & Project Management

The evolution of project management concept is parallel to civilization history. Project management was used as a powerful way of controlling communities and to coerce them towards a clearly established goal. In this respect, mankind has realized many projects since the prehistoric eras such as the Pyramids of Egypt, the Great Wall of China and etc. The campaigns of Roman, Byzantium and Ottoman Empires could also be described as projects. The management of these armies was carried out via using the concepts of project management. These projects were not realized with today's project management approach; whereas they were realized via slavery system of those days. In fact, however, today's project management approach emerged with the developments of 20th century (Günaydın, 2001).

According to Günaydın (2001), Taylor's studies about the productivity of workers constituted the basis of scientific management concepts in the beginning of 20th century. By observing the performed work of workers, Taylor attempted to find out the amount of work per unit-time and determine the necessary improvements to increase this amount. Therefore, Taylor put forth the concept of productivity for the first time. In this framework, the interesting point is that before the studies of Taylor, although Marx expressed the workers involving in scientific management studies with figures and did not evaluate them with their human aspects in his book called "Das Kapital", he had not used the productivity concept in this book which brought up the communism philosophy.

On the other hand, with the Hawthorne experiments carried out by the scientists of MIT, radical alterations were put forth about management concepts in 1930s. According to the results of these experiments, human concept was involved in science of management as

an important factor, and consequently studies about organizational systems were initiated (Günaydın, 2001).

With the Second World War, especially Germans and Americans started to use today's project management concepts due to the great increase in production requirement (Günaydın, 2001). In this respect, management historians accept 1950s and 1960s as the birth of the project management. During these years, U.S.A. government called for the developers to set up a project management system in their research projects and defence programmes. As a result, with the development of CPM (Critical Path Method) and PERT (Program Evaluation and Review Technique) methods, these concepts were started to be used as the synonymous of project management. Following this, the profession of project manager emerged in 1970s. After the foundation of Project Management Institute (PMI) in USA, professional project managers started to be organized.

Nevertheless, parallel to the development of project management, new human-oriented management systems are required. In this respect, project management is not only the planning of concerning and consecutive activities in today's intelligence. Managing a project successfully requires the completion of several management functions such as controlling, communication, organisation and efficiently implementation of cost management, time management, quality management, risk management and etc.

As a result, project management which was firstly used in defence industry was then broadly applied to construction, medical, chemical, financial and advertisement industries in today's world. As well as in United Nations, there are also many projects undertaken with project management in the governments of various countries. Briefly, this tendency, inevitably, is still on rise and is spreading to almost all industries.

5.1.1 What is Project?

The concept of 'project' is defined as; "*1- A Planned piece of work that is designed to find information about something, to produce something new, or to improve something,*

2- A piece of work involving careful study of a subject over a period of time." (Oxford, 2000, p. 932)

According to Project Management Institute (2000, p. 4), organizations perform work. Work generally involves either operations or projects although the two may overlap. Operations and projects share many characteristics such as;

- Performed by people

- Constrained by limited resources

- Planned, executed, and controlled.

In this framework, a work can be defined as a 'project' only if it covers the following three major characteristics; (Günaydın, 2001, p. 2)

- To have a specific aim

- To have time limit

- To be original, namely unique.

Thus, a project is "*a temporary endeavor undertaken to create a unique product or service.*" (PMI, 2000, p. 4) As project is temporary, every project has a deadline for its termination likewise it has for its start. Therefore, a project is undertaken within the time framework prepared in the course of its planning. The uncommon product or the service obtained at the end is the outcome of the goal determined at the beginning. Hence, it is clear that the process of planning is crucial in terms of the success of the project.

Projects initiate by an idea. If the idea is supported by the majority of the participants of the project, first steps are taken in order to determine the general aspect of the project. A temporary team for the preparation of the project is established. This preparatory team works for the feasibility report of which the result will make the team

decide whether to proceed with the project or not. Afterwards, the project manager is appointed and his team is established. This project team prepares detailed work programme and submits it for implementation. This step is an important milestone (Dadaşbilge, 1999, pp. 10-12).

The project, in its superficial meaning, may be considered as an independent and one time-work. However, every project is the phase of a macro programme since it is the case in the projects of construction. Some special activities within the bodily constitution of a business enterprise may also be called as a project. Defining the relation between the whole and the project, of which is a part of the whole, is very important. In this respect, on the one hand, the central administration of a construction firm represents the whole; on the other hand, the investments or constructions that this firm pursues in varying locations represent the projects (Dadaşbilge, 1999, pp. 10-12).

5.1.1.1 Components & Objectives of Project

According to Günaydın (2001), there are four main components in the process of project production. These are scope, time, cost and quality. As the following figure illustrates; scope, time and cost are related to each other while quality is at balance in the middle of these components.

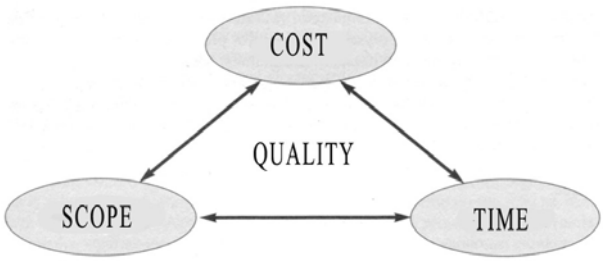


Fig 5.1 – Four Components of a Project, Günaydın (2001, p. 3)

Except these components, in fact, the most important component is human which should be examined in a different plane. Therefore, it is essential to define these four components and human factor clearly in the planning phase as the projects are developed.

From the same point of view, the objectives of the project are the results that are aimed to get by the organizations which have participated to the project. Many scientists put forth that main objectives of the project may be grouped in a threefold classification. According to them, this classification is as the following;

- Cost

- Time

- Quality

5.1.1.2 Project Phases and Project Life-Cycle

As projects are unique undertakings, they involve a degree of uncertainty. Organizations performing projects will usually divide each project into several project phases to improve management control and provide for links to the operations of the performing organization. Collectively, the project phases are known as the project life-cycle (PMI, 2000).

According to PMI (2000), each project phase is marked by completion of one or more deliverables. A deliverable is a tangible, verifiable work product such as a feasibility study, a detail design, or a working prototype. The deliverables, and hence the phases, are part of a generally sequential logic designed to ensure proper definition of the product of the project.

The project life-cycle serves to define the beginning and the end of a project. After the preparation of feasibility study by the organization, the project life-cycle definition determines whether the feasibility study is treated as the first project phase or as a separate, standalone project. It also determines which transitional actions at the beginning and at the end of the project are included and which are not. In this manner, the project life-cycle definition can be used to link the project to the ongoing operations of the performing organization (PMI, 2000).

Project life-cycles generally define not only what technical work should be done in each phase but also who should be involved in each phase. During a project life-cycle, the highest power of affecting the project's cost and quality is in the planning phase (Günaydın, 2001).

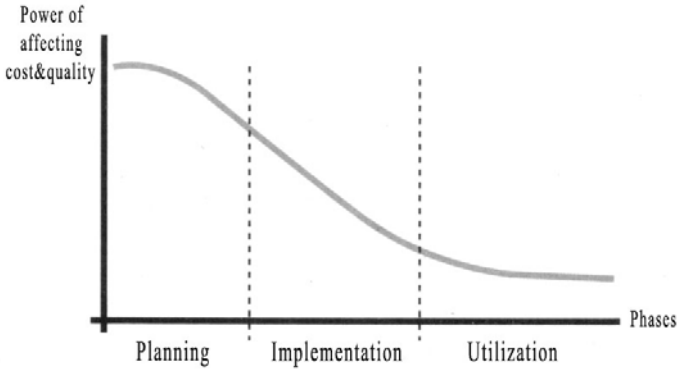


Fig 5.2 – Power of Affecting Cost & Quality in the Phases of a Project, Günaydın (2001, p.3)

5.1.1.3 Project Stakeholders

Project stakeholders are individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected as a result of the project execution or project completion; they may also exert influence over the project and its results. The project management team must identify the stakeholders, determine their requirements, and then manage and influence those requirements to ensure a successful project (PMI, 2000).

Stakeholder identification is often especially difficult. There are key stakeholders in every project such as project manager, the individual responsible for managing the project; customer, the individual or organization what will use the project's product; performing organization, the enterprise whose employees are most directly involved in doing the work of the project; project team members, the group that is performing the work of the project; sponsor, the individual or group within or external to the performing organization that provides the financial resources, in cash or in kind, for the project. In addition to these, there are many categories of project stakeholders such as owners and funders, sellers and

contractors, team members and their families, government agencies and media outlets, individual citizens, temporary or permanent lobbying organizations, and society at large (PMI, 2000). Finally, Duncan et al. (1994) expresses that managing stakeholder expectations may be also difficult because stakeholders often have very different objectives that may come into conflict.

5.1.1.4 Organizational Systems in a Project

PMI (2000, p. 18) indicates that the maturity of the organization with respect to its project management systems, culture, style, organizational structure, and project management office influence the project. Project-based organizations are those whose operations consist primarily of projects. These organizations fall into two categories;

- Organizations that derive their revenue primarily from performing projects or others such as architectural firms, engineering firms, consultants, construction contractors and etc.

- Organizations that have adopted management by projects.

These organizations tend to have management systems in place to facilitate project management. Their financial systems are often specifically designed for accounting, tracking, and reporting on multiple simultaneous projects. However, nonproject-based organizations often lack management systems designed to support project needs efficiently and effectively. The absence of project-oriented systems usually makes project management more difficult (PMI, 2000).

5.1.2 What is Project Management?

In today's world, the existence of many big-scaled projects in different sectors has caused the emergence of project management concept and its development. From this point of view, project management is a management approach including some methods & techniques that are developed in order to conclude these big-scaled projects successfully.

Management is the work of using the resources in the most rational way to reach a definite target. As a general meaning, management can also be explained as analyzing the situation and decision-making. These decisions depend on guesses and they are continuously about the events (projects & facilities) which will be realized in the future. In this framework, manager controls the achievement probability of these decisions depending on assumptions and guesses, detects whether they are progressing in the accurate path or not, and revises the progress in necessary conditions.

The concept of management is often confused with administration and is used as its equivalent. Nevertheless, administration means striving to manage with existing resources; whereas management is to seek for new resources, not to be satisfied with the existing situation and to step forward in order to realize a vision. Briefly, administration of a project is an effort that everybody can carry out. On the contrary, management of a project is a specialized work requiring a conscious and systematic approach (Günaydın, 2001).

The Code of Practice for Project Management of 'The Chartered Institute of Building' (1996, p. 23) defines project management as; "*The overall planning, co-ordination and control of a project from inception to completion aimed at meeting a client's requirements in order to produce a functionally and financially viable project that will be completed on time within authorized cost and to the required quality standards.*"

According to Duncan et al. (1994), project management is the application process of intelligence, ability, tools and techniques in order to provide all the requirements of project participants. Project management can also be defined as an organized approach that is totally apart from the general management. In this respect, general management is a permanent and functional management style; whereas project management foresees the completion of unique projects put into implementation for once, within time, cost, scope and quality targets.

From the same point of view, PMI (2000, p. 6) defines project management as the application of knowledge, skills, tools, and techniques to protect activities to meet project

requirements. Project management is accomplished through the use of the processes such as; initiating, planning, executing, controlling and closing. The project team manages the work of the projects, and the work typically involves;

- Competing demands for scope, time, cost, risk and quality.

- Stakeholders with differing needs and expectations

- Identified requirements.

Taking these features of project management into consideration, project manager is basically the person who is responsible for the management of the project. Project manager must be in a manner of accelerating and easing the work flow and must also procure the project to reach time, cost and quality targets via making selections within obligatory situations. According to Günaydın (2001), a professional project manager must have not only efficient technical knowledge but also have project management knowledge at proficiency level.

5.1.2.1 Project Management Process

Process is defined as "a series of actions bringing about a result" (Duncan et al., 1994). Project management processes can be organized into five groups. These are as follows (PMI, 2000, p. 30);

- Initiating: Authorizing the project or phase.

- Planning: Defining and refining objectives and selecting the best of the alternative courses of action to attain the objectives that the project was undertaken to address.

- Executing: Coordinating people and other resources to carry out the plan.

- Controlling: Ensuring that project objectives are met by monitoring and measuring progress regularly to identify variances from plan so that corrective action can be taken when necessary

- Closing: Formalizing acceptance of the project or phase and bringing it to an orderly end.

The process groups are linked by the results they produce. The result or outcome of one becomes an input to another. Among the central processes, the links are iterated. Planning provides executing with a documented project plan early on, and then provides documented updates to plan as the project progress. These linkages are illustrated in the following figure.

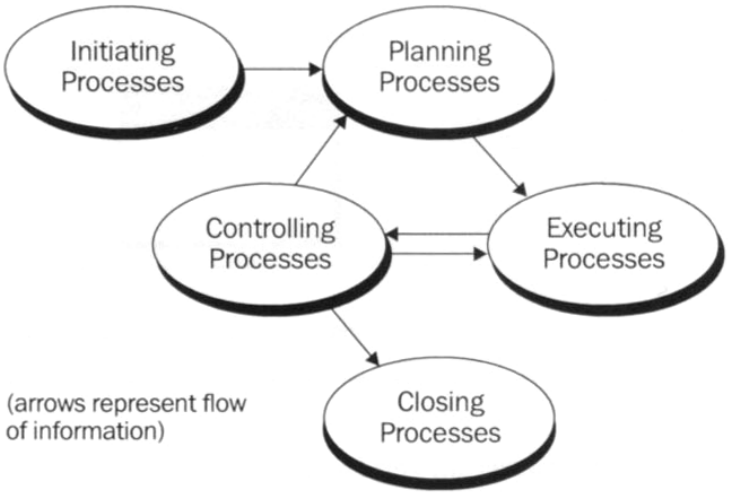


Fig 5.3 – Links among Process Groups in a Phase, PMI (2000, p.31)

Besides, the project management process groups are not discrete and they are one-time events. These processes are overlapping activities that occur at varying levels of intensity throughout each phase of the project. Following figure is a conceptual illustration of how the process groups overlap and vary within a phase.

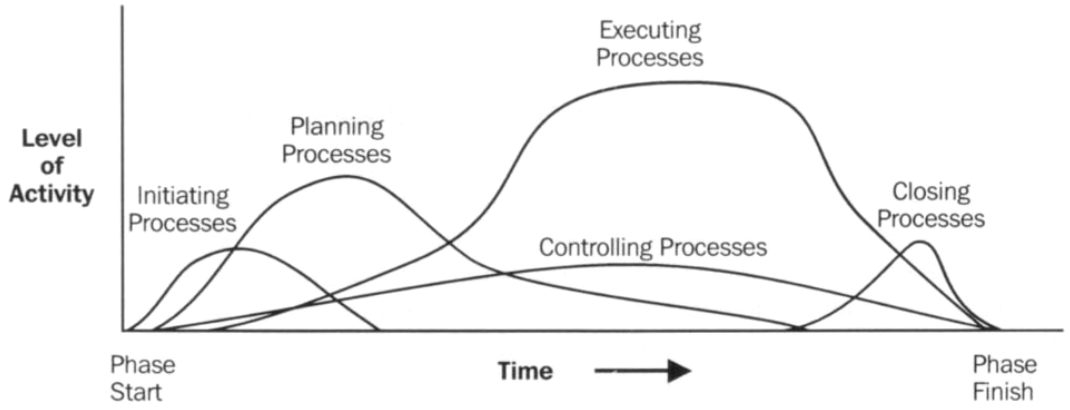


Fig 5.4 – Overlap of Process Groups in a Phase, PMI (2000, p.31)

Finally, the process group interactions also cross phases such that closing phase provides an input to initiating the next. For example, closing a design phase requires customer acceptance of the design document. Simultaneously, the design document defines the description for the ensuing implementation phase. This interaction is illustrated in the figure given below.

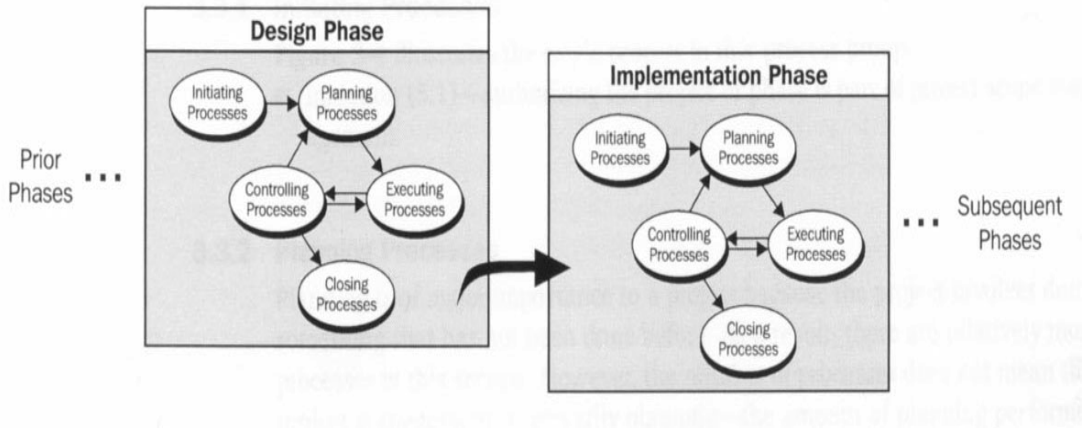


Fig 5.5 – Interaction between Phases, PMI (2000, p.31)

With each process group, individual processes are linked by their inputs and outputs. In this respect, a brief explanation of the input, method and output will be useful. These can be defined as (PMI, 2000, p. 32);

- Inputs: Documents or documentable items that will be acted upon.

- Tools & Techniques: Mechanisms applied to the inputs to create the outputs.

- Outputs: Documents or documentable items that are a result of the process.

There is another type of classification which is put forth by many scientists Günaydin (2001). According to this classification, there are four major stages in the process of project management;

- Project Definition Stage: This stage includes the organization of data, sort complex information and the clarification of the goals in consideration of the organization's goals.

- Project Planning Stage: In this stage, the overall project aims are translated into a series of identifiable activities which can be set out in a logical way that will achieve the desired end. To set out the activities in a logical way, some scheduling methods such as Gannt Chart, CPM and PERT are used in the planning stage.

- Project Implementation Stage: In this stage, the project plan is exactly followed according to the determined procedure and the progress of the project is monitored and controlled carefully.

- Project Closure Stage: This stage includes activities such as evaluation of results, termination of contracts with external suppliers and contractors, production of a financial statement of the project and completion of the project handbook.

5.1.2.2 Project Management Knowledge Areas

The project management knowledge areas describe project management knowledge and practice in terms of their component processes. These processes have been organized into nine knowledge areas; these are as below (PMI, 2000, pp. 7-8);

1. Project Integration Management: The processes required to ensure that the various elements of the project are properly coordinated. It involves making tradeoffs among competing objectives and alternatives to meet or exceed stakeholder needs and expectations. The sub-processes of this knowledge area are;

- Project Plan Development: Integrating and coordinating all project plans to create a consistent, coherent document.

- Project Plan Execution: Carrying out the project plan by performing the activities included therein.

- Integrated Change Control: Coordinating changes across the entire project.

2. Project Scope Management: The processes required to ensure that the project includes all the work and only the work required to complete the project successfully. It is primarily concerned with defining and controlling what is or is not included in the project. In this knowledge area, sub-processes are;

- Initiation: Authorizing the project phase.

- Scope Planning: Developing a written scope statement as the basis for future project decisions.

- Scope Definition: Subdividing the major project deliverables into smaller, more manageable components.

- Scope Verification: Formalizing acceptance of the project scope.

- Scope Change Control: Controlling changes to project scope.

3. Project Time Management: The processes required to ensure timely completion of the project. This knowledge area includes the sub-processes of;

- Activity Definition: Identifying the specific activities that must be performed to produce the various project deliverables.

- Activity Sequencing: Identifying and documenting interactivity dependencies.

- Activity Duration Estimating: Estimating the number of work periods that will be needed to complete individual activities.

- Schedule Development: Analyzing activity sequences, activity durations, and resource requirements to create the project schedule.

- Schedule Control: Controlling changes to the project schedule.

4. Project Cost Management: The processes required to ensure that the project is complete within the approved budget. It is primarily concerned with the cost of the resources needed to complete project activities. However, it should also consider the effect of the project decisions on cost of using the project's product; this broader view is often called life-cycle costing. The sub-processes of this knowledge area are;

- Resource Planning: Determining what resources (people, equipment, materials) and what quantities should be used to perform project activities.

- Cost Estimating: Developing an approximation (estimate) of the costs of the resources needed to complete project activities.

- Cost Budgeting: Allocating the overall cost estimate to individual work activities.

- Cost Control: Controlling changes to the project budget.

5. Project Quality Management: The processes required to ensure that the project will satisfy the needs for which it was undertaken. According to I.S.O (International Organization for Standardization), it includes "all activities of the overall management function that determine the quality policy, objectives, and responsibilities and implements

them by means such as quality planning, quality assurance, quality control, and quality improvement, within the quality system. It must address both the management of the project and the product of the project. In this knowledge area, sub-processes are;

- Quality Planning: Identifying which quality standards are relevant to the project and determining how to satisfy them.

- Quality Assurance: Evaluating overall project performance on a regular basis to provide confidence that the project will satisfy the relevant quality standards.

- Quality Control: Monitoring specific project results to determine if they comply with relevant quality standards and identifying ways to eliminate causes of unsatisfactory performance.

6. Project Human Resource Management: The processes required to make the most effective use of people involved with the project. It includes all the project stakeholders such as sponsors, customers, partners, individual contributors, and etc. This knowledge area includes the sub-processes of;

- Organizational Planning: Identifying, documenting, and assigning project roles, responsibilities, and reporting relationships.

- Staff Acquisition: Getting the human resources needed assigned to and working on the project.

- Team Development: Developing individual and group competencies to enhance project performance.

7. Project Communication Management: The processes required to ensure timely and appropriate generation, collection, dissemination storage, and ultimate disposition of project information. It provides the critical links among people, ideas, and information that are necessary for success. Everyone involved in the project must be prepared to send and

receive communications, and must understand how the communications in which they are involved as individuals affect the project as a whole. The sub-processes of this knowledge area are;

- Communications Planning: Determining the information and communications needs of the stakeholders; who needs what information, when they will need it, and how it will be given to them.

- Information Distribution: Making needed information available to project stakeholders in a timely manner.

- Performance Reporting: Collecting and disseminating performance information. This includes status reporting, progress measurement, and forecasting.

- Administrative Closure: Generating, gathering, and disseminating information to formalize a phase or project completion.

8. Project Risk Management: The processes concerned with identifying, analyzing, and responding to project risk. It includes maximizing the probability and consequences of positive events and minimizing the probability and consequences of adverse events to project objectives. Project risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on a project objective. In other words, project risk includes both threats to the project's objectives and opportunities to improve on those objectives. In this knowledge area, sub-processes are;

- Risk Management Planning: Deciding how to approach and plan the risk management activities for a project.

- Risk Identification: Determining which risks might affect the project and documenting their characteristics.

- Qualitative Risk Analysis: Performing a qualitative analysis of risks and conditions to prioritize their effects on project objectives.

- Quantitative Risk Analysis: Measuring the probability and consequences of risks and estimating their implications for project objectives.

- Risk Response Planning: Developing procedures and techniques to enhance opportunities and reduce threats to the project's objectives.

- Risk Monitoring and Control: Monitoring residual risks, identifying new risks, executing risk reduction plans, and evaluating their effectiveness throughout the project life cycle.

9. Project Procurement Management: The processes required to acquire goods and services, to attain project scope, from outside the performing organization. For simplicity, goods and services, whether one or many, will generally be referred to as a product. This knowledge area is discussed from the perspective of the buyer in the buyer-seller relationship. The buyer-seller relationship can exist at many levels on one project. Depending on the application area, the seller may be called a subcontractor, a vendor, or a supplier. If the seller typically manages its work as a project, the buyer becomes the customer and is thus a key stakeholder for the seller. This knowledge area includes the sub-processes of;

- Procurement Planning: Determining what to procure and when.

-Solicitation Planning: Documenting product requirements and identifying potential sources.

- Solicitation: Obtaining quotations, bids, offers, or proposals, as appropriate.

- Source Selection: Choosing from among potential sellers.

- Contract Administration: Managing the relationship with the seller.

- Contract Closeout: Completion and settlement of the contract, including resolution of any open items.

5.1.3 Scheduling Methods in Project Planning

A schedule can be used to manage, coordinate, control and report. Depending on the user's style, the schedule can take different forms. Some of the scheduling methods in project planning used for identifying and setting up the activities in a logical way are as follows (Günaydın, 2001, p. 5);

- Gannt Chart

- Critical Path Method (CPM)

- Program Evaluation and Review Technique (PERT)

- Line of Balance (LOB)

- Semer Method

- Other Methods

Among these methods, three of them are mostly used in project management process. In this respect, it is reasonable to explain only Gannt Chart, CPM and PERT in detail.

5.1.3.1 Gannt Charts

One way of displaying the time relationship of the steps in the project is by using a bar chart called 'Gantt'. Henry Gantt, an industrial engineer, introduced this procedure in the early 1900s. Gantt chart is used for scheduling the tasks and tracking of the progress of management projects by showing the flow of activities in sequence. It is graphically the

simplest of the scheduling methods. Most of the project participants may easily understand it and besides, it can be produced more quickly than any other methods.

In this respect, since it is the simplest and quickest method for formal planning, it can be very useful in planning projects with a limited number of tasks and only with few inter-relationships (Gould & Joyce, 2000). This chart typically depicts activities as horizontal lines whose length depends on the time needed to complete the activities. These lines can be progressively overprinted to show how much of activity has been completed. In order to create a Gantt chart you must list the steps required to complete the project and the estimated time for each step. The steps are listed down the left side with time intervals given along the bottom. When the chart is finished, one can see the minimum total time for the project, the sequence of steps, and the possible overlapping of steps. It is necessary to watch for over-use of resources. Drawing a Gantt chart requires information on:

- The logic of the tasks;

- The duration of the tasks;

- The resources available to complete the tasks.

As mentioned above, Gantt's scheduling tool takes the form of a horizontal bar graph on a time scale, a basic sample of which is shown below;

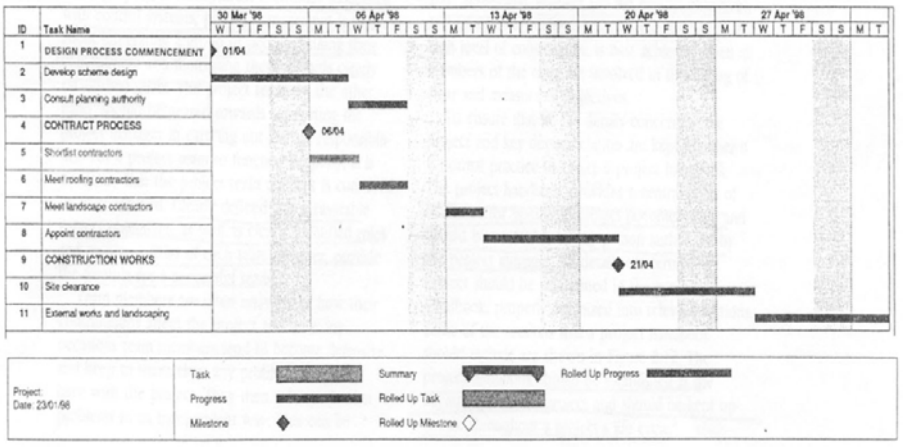


Fig 5.6 – An Example of Gannt Chart, Moughtin (1998, p. 178)

The horizontal axis of the Gantt chart is a time scale, expressed either in absolute time or in relative time referenced to the beginning of the project. The time resolution depends on the project and the time unit typically is in weeks or months. Rows of bars in the chart show the beginning and ending dates of the individual tasks in the project.

In the above example, each task is shown to begin when the task above it completes. However, the bars may overlap in cases where a task can begin before the completion of another, and there may be several tasks performed in parallel. For such cases, the Gantt chart is quite useful for communicating the timing of the various tasks. For larger projects, the tasks can be broken into subtasks having their own Gantt charts to maintain readability.

Gould & Joyce (2000) express that Gannt chart can also be used to report information to people who are concerned about a project but may not be involved in day-to-day management. However, because of its limitations, it can not define individual activity dependencies and thus can not communicate all the interrelationships among project activities. To solve some of these problems, a network-based chart, identifying critical path, float information, early start dates, early completion dates and etc, may be used.

5.1.3.2 Network Diagrams

Complex projects require a series of activities, some of which must be performed sequentially and others that can be performed in parallel with other activities. This collection of series and parallel tasks can be modeled as a network diagram, which is a tool for organizing all activities in a project.

In this respect, network diagrams are diagnostic tools; whereas bar charts are visual display devices. As Clough, A. Sears and K. Sears (2000) indicates; network diagram serves as basis for the calculation of work schedules and provides a mechanism for controlling project time as the work progresses.

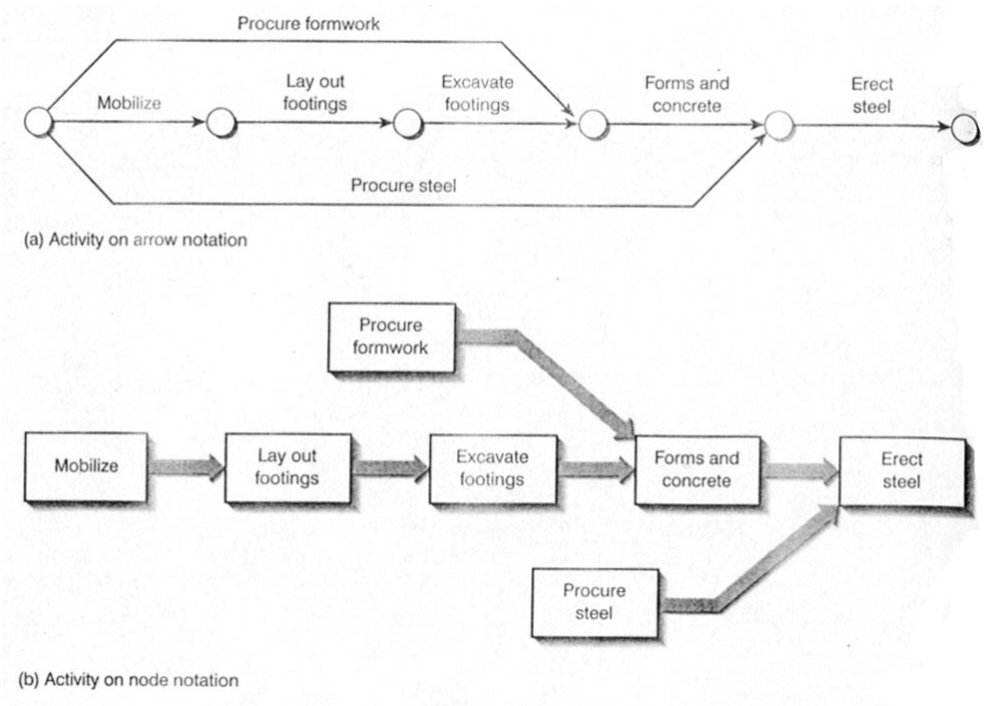


Fig 5.7 – Forms of Network Diagrams, Gould & Joyce (2000, p. 256)

Network diagrams can be in two forms; activity on arrow notation (arrow notation) or activity on node notation (precedence notation). In arrow notation, the work or activity is shown on the arrows, which are connected by nodes. In precedence notation, the work occurs on the nodes which are connected by arrows (Gould & Joyce, 2000). Figure shown above and below illustrates these two forms;

There are some critical issues that should be taken into consideration while drawing a network diagram. These are as follows (PM Course Notes of Günaydın, 2001);

- Start activity numbers must be smaller than end activity numbers.

- Every activity has a unique number.

- Time flow is from left to right.

- Arrows show only logical relations. Their direction and length have no meaning.

- Loops must be avoided.

- An activity can start only when all preceding activities completed or visa versa. In this respect, lag relationships within the network differs in accordance with the features of each activity.

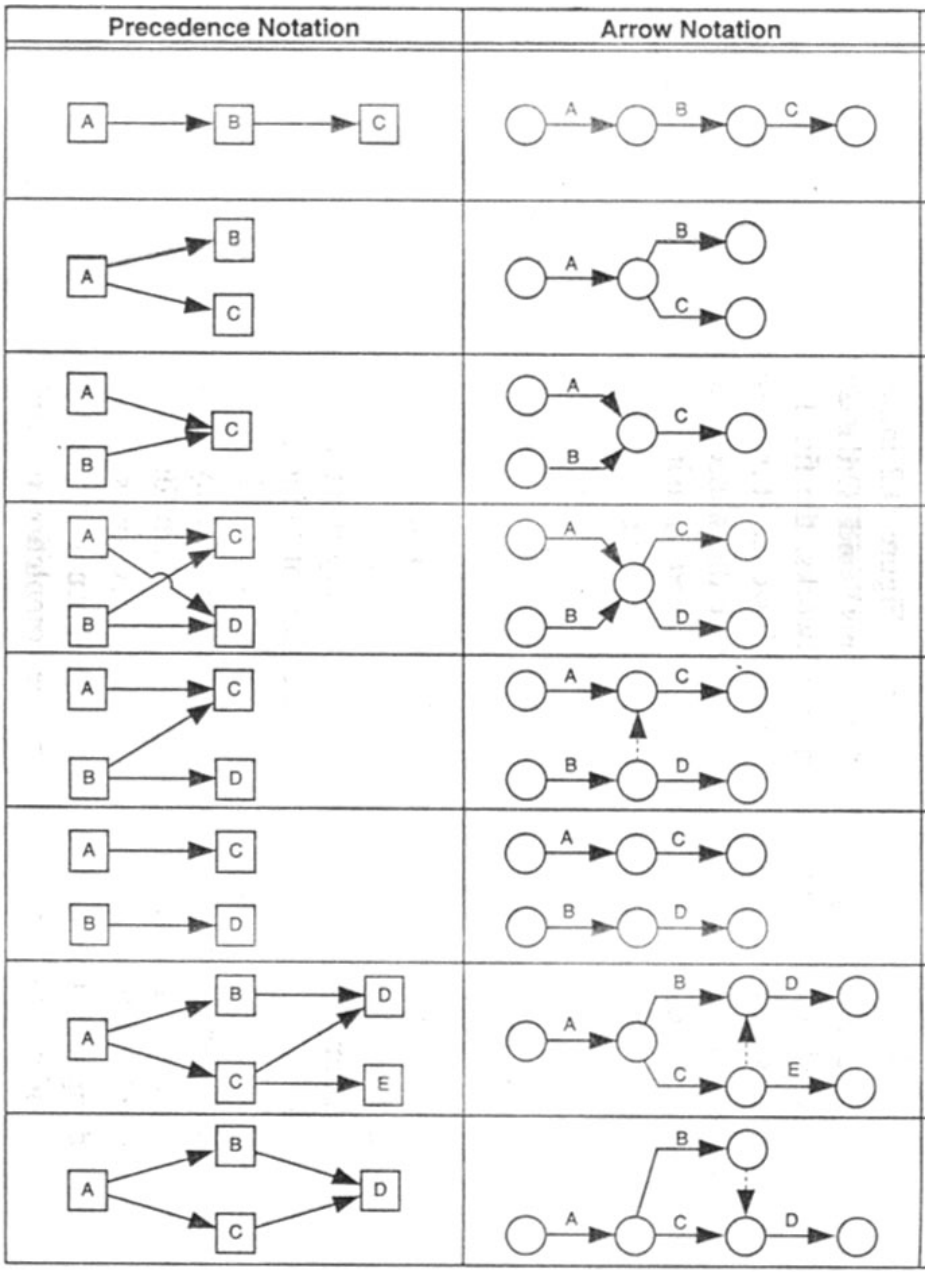


Fig 5.8 – Connections of Activities in Network Diagrams, Clough, A. Sears and K. Sears (2000, p.310)

In addition, if the diagram is drawn with arrow notation, there can also be dummy activities within the network. The reasons of dummy activities are to create a logical link and to avoid some numbers. These activities have no duration and they can even take place on critical path. Dummy activities are illustrated with dashed lines (PM Course Notes of Günaydın, 2001).

There are two scheduling methods used in planning phase which are called Critical Path Method (CPM) and The Program Evaluation and Review Technique (PERT). Although both methods serve to the same aim, they differ in several important respects concerning the estimation of the activity durations. CPM is a deterministic method that uses a fixed time estimate for each activity. However, PERT is probabilistic (PM Course Notes of Günaydın, 2001). In other words, CPM is easy to understand for usage and it does not consider the time variations that can have a great impact on the completion time of a complex project; whereas PERT provides some opportunities regarding probability and project duration, which will broaden a project manager's perspective.

5.1.3.2.1 Critical Path Method (CPM)

In 1957, DuPont developed a project management method designed to address the challenge of shutting down chemical plants for maintenance and then restarting the plants once the maintenance had been completed. The aim was to standardize the time needed to set up new production facilities. Given the complexity of the process, they developed the Critical Path Method (CPM) for managing such projects.

CPM models the activities and events of a project as a network. Activities are depicted as nodes on the network and events that signify the beginning or ending of activities are depicted as arcs or lines between the nodes. (Clough, A. Sears and K. Sears, 2000) The figure shown below is an example of a CPM network diagram; increasing the numbers by 10 allows for new ones to be inserted without modifying the numbering of the entire diagram;

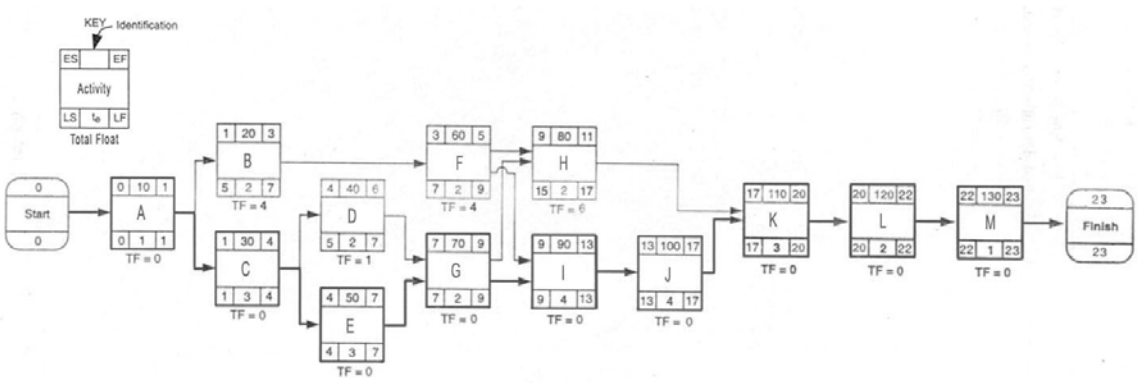


Fig 5.9 – An Example CPM Network, Clough, A. Sears and K. Sears (2000, p.107)

CPM provides the following benefits:

- Provides a graphical view of the project.

- Depicts the interrelationships among various tasks/activities.

- Predicts the time required to complete the project.

- Shows which activities are critical to maintaining the schedule and which are not.

CPM planning involves the following steps:

1. Specify the individual activities.

2. Determine the sequence/inter-relationships of those activities.

3. Draw a network diagram.

4. Estimate the completion time for each activity.

5. Identify the critical path (longest path through the network)

6. Update the CPM diagram as the project progresses.

The critical path can be identified by determining the following four parameters for each of the activity;

- ES (earliest start time): the earliest time at which the activity can start given that its precedent activities must be completed first.

- EF (earliest finish time): equal to the earliest start time for the activity plus the time required to complete the activity.

- LF (latest finish time): the latest time at which the activity can be completed without delaying the project.

- LS (latest start time): equal to the latest finish time minus the time required to complete the activity.

The float time (slack time) for an activity is the time between its earliest and latest start time, or between its earliest and latest finish time. Float is the amount of time that an activity can be delayed past its earliest start or earliest finish without delaying the project. According to Gould & Joyce (2000, p. 264), it is represents extra time or the flexibility for each activity. It can be calculated by using any of the following formulas;

Float = Late Start – Early Start

Float = Late Finish – Early Finish

Float = Late Finish – (Early Start + Duration)

After calculating the float of each activity, the critical path is found. The critical path is the path through the project network in which none of the activities have float, that is, the path for which ES=LS and EF=LF for all activities in the path. A delay in the critical path delays the project. Similarly, to accelerate the project it is necessary to reduce the total time required for the activities in the critical path (PM Course Notes of Günaydın, 2001).

5.1.3.2.2 Program Evaluation and Review Technique (PERT)

In 1960s, the Program Evaluation and Review Technique (PERT) was developed by the Navy for the Polaris nuclear submarine project. Until that time, no one had ever built a nuclear sub, so the goal for PERT was to provide probability estimates for each activity and for the completion time of the project as a whole. According to Clough, A. Sears and K. Sears (2000), CPM is widely used in the construction industry, while major applications of PERT are in research and development (R&D) projects.

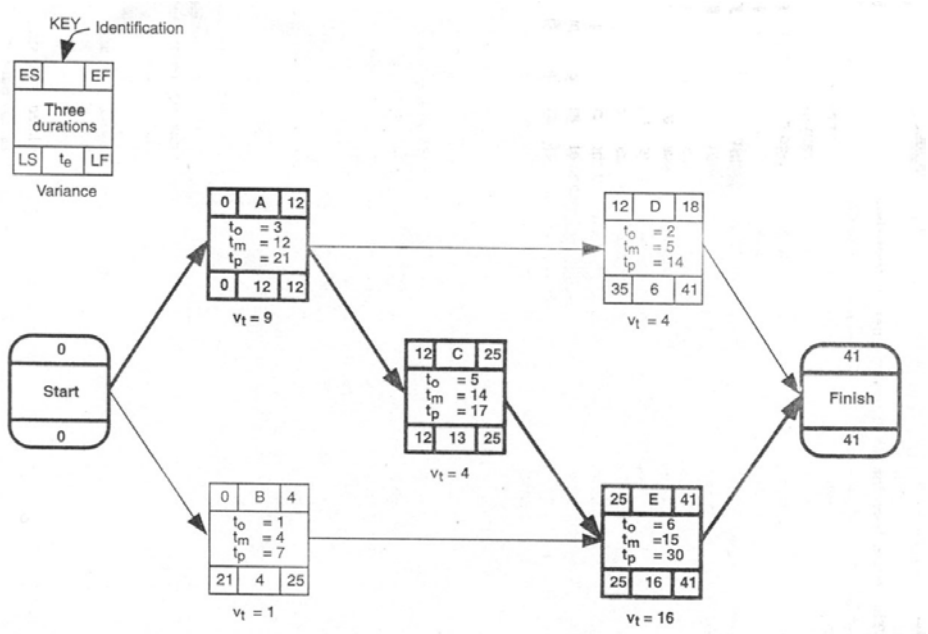


Fig 5.10 – An Example PERT Network, Clough, A. Sears and K. Sears (2000, p.330)

PERT is a network model that allows for randomness in activity completion times. PERT uses three time estimates called optimistic, pessimistic and most likely, which help in establishing the probability of completing a project within a specified time and take calculated risk before commencing a project. It has the potential to reduce both the time and cost required to complete a project. The figure shown above is a very simple example of a PERT diagram; the activities in the above diagram are labeled with letters along with the expected time required to complete the activity.

PERT provides the following benefits:

- Expected project completion time.

- Probability of completion before a specified date.

- The critical path activities that directly impact the completion time.

- The activities that have slack time and that can lend resources to critical path activities.

- Activity starts and end dates.

PERT planning involves the following steps:

1. Identify the specific activities and milestones.

2. Determine the interdependencies and proper sequence of the activities.

3. Construct a network diagram.

4. Estimate the time (three time estimates, if probabilities are to be computed) required for each activity.

5. Determine the critical path.

6. Update the PERT chart as the project progresses.

According to Clough, A. Sears and K. Sears (2000, pp. 328-329), the estimated completion time for an activity is calculated with the following formula;

$$t_e = \frac{t_o + 4\,t_m + t_p}{6}$$

t_e = estimated completion time for an activity

t_o = optimistic completion time for an activity

t_m = most likely completion time for an activity

t_p = pessimistic completion time for an activity

There are two more values calculated for each activity in a PERT network, standard deviation (s_t) and variance (v_t). The formulas necessary for calculating the standard deviation and variance are;

$$s_t = \frac{t_p - t_o}{6} \quad \& \quad v_t = s_t^2$$

Once the values of t_e, s_t and v_t are calculated for each activity in the network, critical path is found. By the sum of the variances of each activity in the critical path, firstly variance of the project (V_t) and secondly standard deviation of the project (S_t) are found with the following formulas;

$$V_t = \sum_{i=1}^{n} (V_{ti}) \quad \& \quad S_t = \sqrt{V_t}$$

After the calculation of the standard deviation of the project, the difference between estimated completion time and the desired completion time is found and then divided by the value of standard deviation of the project. The result of this mathematical operation gives a value of (Z) which refers a value of (P) according to the table of 'Standard Normal Probabilities'. The value of (P) shows the probability of project completion in the desired time. The value of (P) is subtracted from 1 if the result of the difference between estimated completion time and desired completion time (naturally the division as well) is negative.

The related formula and the table of 'Standard Normal Probabilities' is shown below (PM Course Notes of Günaydın, 2001);

$$Z = \frac{\text{Desired time} - \text{Estimated time}}{S_t}$$

STANDARD NORMAL PROBABILITIES					
Z	P	Z	P	Z	P
0.00	0.5000	1.00	0.8413	2.00	0.9773
0.05	0.5199	1.05	0.8531	2.05	0.9798
0.10	0.5398	1.10	0.8643	2.10	0.9821
0.15	0.5596	1.15	0.8749	2.15	0.9842
0.20	0.5793	1.20	0.8849	2.20	0.9861
0.25	0.5987	1.25	0.8944	2.25	0.9878
0.30	0.6179	1.30	0.9032	2.30	0.9893
0.35	0.6387	1.35	0.9115	2.35	0.9906
0.40	0.6554	1.40	0.9192	2.40	0.9918
0.45	0.6736	1.45	0.9265	2.45	0.9929
0.50	0.6915	1.50	0.9332	2.50	0.9938
0.55	0.7088	1.55	0.9394	2.55	0.9946
0.60	0.7257	1.60	0.9452	2.60	0.9953
0.65	0.7422	1.65	0.9505	2.65	0.9960
0.70	0.7580	1.70	0.9554	2.70	0.9965
0.75	0.7734	1.75	0.9599	2.75	0.9970
0.80	0.7881	1.80	0.9641	2.80	0.9974
0.85	0.8023	1.85	0.9678	2.85	0.9978
0.90	0.8159	1.90	0.9713	2.90	0.9981
0.95	0.8289	1.95	0.9744	2.95	0.9984

Table 5.1 – Table of 'Standard Normal Probabilities', PM Course Notes of Günaydın (2001)

5.2 The Relationship between Project Management & Land Readjustment

Project management is an approach including some methods & techniques that are developed in order to conclude big-scaled projects of different sectors successfully. Basically, any job can be defined as project if it is original, has a specific aim and has a time limit. In this framework, evolution of built environment in planning process is a crucial project which has to be managed carefully because the planning process involves all of these characteristics of project in order to create better urban spaces and thus urban life. Form this point of view, the concept of project management should be intensely integrated to every stage of creating the built environment.

The utilization of project management in land readjustment process is absolutely necessary since land readjustment is one of the most important tools in the evolution of urban space. If not only the importance of quality, time and cost factors in the creation of urban space but also the importance of human factor in urban space is deemed within the scope of land readjustment, project management should efficiently cooperate with land readjustment.

Every project has its own definition, planning, implementation and closure phases. When land readjustment is divided into phases as well as other projects, it is important to realize the necessities of these phases and to define the problems occurred in these phases. In this respect, necessary techniques & methods concerning the knowledge areas of project management could be used in the solution of the problems. To achieve the desired aim, some necessary organizational alterations could be realized and different techniques & methods could also be used to manage, coordinate, control and report in land readjustment process depending on the manager's preferences.

As a result of technical, bureaucratic, social and financial limitations, different interpretations of regulations and laws, political concerns and inappropriate selection of some methods within the process, a kind of standardization and co-ordination is required in "Article 18" of Turkish Development Law via project management concepts. With such an

approach, it is tried to be explained that the process therefore could be completed in the desired project time with reasonable costs. With project management, better urban spaces & urban life for regular urban development could be achieved with the opportunity of making alterations during the project planning.

As "Article 18" implementation is a kind of project, it is obvious that there is a need of management concept to lessen the negative factors within the process. Although project management is not a well-known and widely used application within the borders of Turkey, the establishment of utilization of project management surely provides important assistance to land readjustment projects.

From this point of view, firstly "Article 18" is handled with project management approach in order to reduce the problems within its existing structure. Secondly, by analyzing procedures of different countries, organizational, judicial and technical alterations about "Article 18" are studied within the study. Hence, an alternative land readjustment framework which is also based on project management concepts is proposed and interpreted instead of "Article 18". These two new approaches are;

- Project Management Approach to Reduce the Problems of "Article 18"

- Suggestions for a framework of an Alternative Land Readjustment Process in Turkey

5.2.1 Interviews for Determining the Problems of "Article 18"

To investigate the process of "Article 18" and determine the problems within the process, some questions are asked various experts in the interviews. These experts are as follows; Assoc. Prof. Dr. Semahat Özdemir and Assist. Prof. Dr. Erkal Serim from Izmir Institute of Technology, Surveying Engineers Hüsnü Afacan and Oğuzhan Afacan from private sector, Director of Surveying Directorate of Konak Municipality Kubilay Yıldırım, Surveying Engineer of Konak Municipality Mahmut Kızıltaş and Surveying Engineer of General Directorate of Land Registry and Cadastre Önder Gacemer.

There are six questions asked these experts for the investigation of Turkish land readjustment process so called “Article 18”. These questions are as follows;

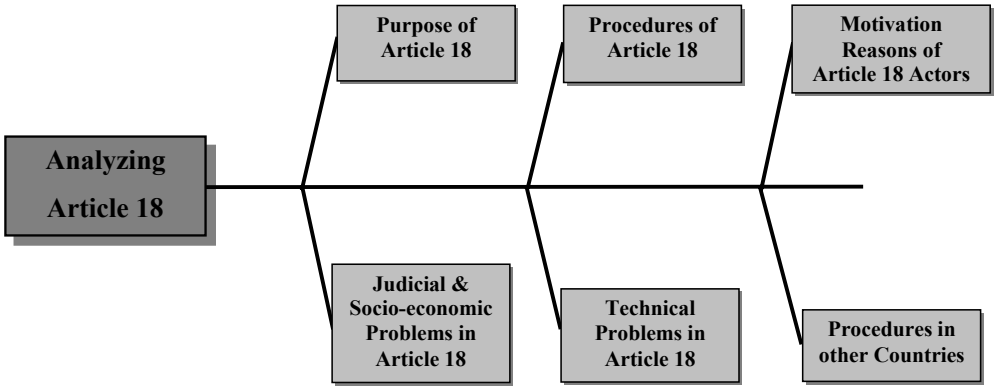


Fig 5.11 Fishbone Diagram

1. What is the purpose of “Article 18” implementation in Turkey? What is the efficiency of “Article 18” for reaching its purpose? Can any other methods be useful to reach this purpose?

2. What are the motivation reasons of “Article 18” for its actors and co-actors? Can any other actors participate in this process?

3. Which procedures are used in “Article 18” process? What is your opinion about these procedures?

4. Which procedures are used in other countries? What is your opinion about the procedures of different countries?

5. What are the technical problems in “Article 18” process?

6. What are the judicial and socio-economic problems in “Article 18” process?

As a result of these questions, the experts pointed out the important issues which should be improved and be changed within the process. The related subjects can be summarized as follows;

According to S. Özdemir, there are two important purposes of "Article 18". First one is to take the ownership of the public lands determined in the development plans and second one is to convert the cadastral parcels to regular development plots. She also states that although it is not indicated in the regulation, there is actually a third hidden purpose, which is to return a part of the unearned income to public. Although the public preparing the plan also provides the necessary infrastructure and other services, the unearned income totally belongs to landowners. Therefore, the "Common Share of Adjustment" which is taken by local authorities is reasonable.

In this framework, even if 35-40 % is taken without any compensation, the cost to public is so high that "Common Share of Adjustment" is not enough. The more the quality of urban space increases the more the unearned income augments. That is why land owners should surrender as much land as needed. As a matter of fact, local authority is in charge of all infrastructures and services.

E. Serim also points out the same point with S. Özdemir. The main aim of "Article 18" is to convert the cadastral parcel to regular development plots which are appropriate for construction. At the same time, it provides the creation of public service areas without compensation. However, it may cause unnecessary public service areas if the delimitation of arrangement area is not determined properly. He also adds that "Article 18" is not suitable for urban renewal projects with its current structure. In addition, as there is a problem of creating shared plots, it is not suitable for shared development of urban land.

K. Yıldırım states that the main purpose of "Article 18" is to provide the implementation of development plans. In other words, similar to E. Serim opinion, to provide regular development plots ready for construction. It is the implementation of existing development plans on ground.

According to M. Kızıltaş, Ö. Gacemer, H. Afacan and O. Afacan, "Article 18" is the fairest method of provision of public use lands from the landowners without any compensation; such as roads, parks, green spaces and so on. However, it can not be regarded as efficient enough. As K. Yıldırım expresses, it is a useful tool to provide regular urban development if it is used properly. However, it has some problems within its structure.

However, according to H. Afacan and O. Afacan; municipalities prefer "Article 18" implementation as more regular development plots are created with this method while the implementation of subdivision & unification brings about useless development plots which are inappropriate for development. K. Yıldırım expresses that the difference of "Article 18" is the implementation of this method is carried out without any will of landowners. The other land acquisition methods depend on landowners' will.

S. Özdemir claims that "Article 18" is not effective enough as expected. It is used in order to provide well-planned physical environment. However, the problem here lies behind the decisions made during the process of planning. Although there are differing socio-cultural structures with respect to varying locations, there is only one single planning approach. Moreover, this planning approach is very static and compelling. In this point, "Article 18" emerges as the law that legalizes this process. Furthermore, as M. Kızıltaş also mentions; "Article 18" eliminates the possibility of feedback and a second implementation opportunity unless it is cancelled by the court.

According to S. Özdemir, today, "Article 18" is implemented on paper in a useless manner although the region has not developed yet. In fact, regarding the planning, "Article 18" should be implemented just before the construction process. However, there exist some problems originating from the planning approach and its process. It is not implemented according to the zoning, and the five-year planning is not controlled. That is why the cities are growing the way corns are popped. In this respect H. Afacan and O. Afacan claim that the zoning is very crucial for the implementation. This balance which is the determination of implementation time of "Article 18" should be organized well.

From the municipality's point of view, another point is that, the "Common Share of Adjustment" amount which is 40% is still not enough. K. Yıldırım and M. Kızıltaş notices that it is necessary to take "Common Share of Adjustment" more than one time. In addition, this ratio should be increased to 50%. K. Yıldırım adds that one of the biggest problems is not having the right of "Common Share of Adjustment" from the improvement plans which has been applied before. Especially, in developed areas, this situation causes great problems for the municipalities.

In this respect, S. Özdemir states that the ratio of "Common Share of Adjustment" should be coherent with the building density. In the renewal projects, "Common Share of Adjustment" for each land owner should be determined according to the amount of unearned income. For example, in Hatay location of Izmir, the 'net density' is 1500 person per hectare. A common share of adjustment of 70% is needed in the base area. In this respect, it is unfair to implement that ratio of 35 % in every plot and it is also insufficient for public. This is the reason why there are such annulment suits nowadays.

Another point is that as E. Serim indicates; the implementation of "Article 18" in developed area is problematic. People who put it into practice have some difficulties. Furthermore, it causes some problems to the citizens. If the renewal project is not available, increasing the share in a single plot is not a good approach. For example, in a rural area it is not logical to implement the ratio as 35% or 40% because everywhere is green area. In these regions, that is why the planning approach should be different. The "Common Share of Adjustment" should be in differing amount. There are similar approaches in abroad. In some cases, "Common Share of Adjustment" of 5% may be sufficient for public space.

According to Özdemir, it is not necessary to search for other solutions but it is necessary to strengthen "Article 18". There should be differing methods in developed area and differing implementations. This may be achieved by a different understanding of the "Article 18", or this may be the sharing of the land owners with respect to building area. The municipality of Karşıyaka uses the latter under the name of 'Y' order even if there is no any renewal project. The cadastral parcels are shared according to the building area.

Moreover, the implementation of the "Article 18" for the registered building is not sufficient and even sometimes there is no implementation of it. Landowners should get what they have the right to have. In this framework, the 'transfer of the development right' is needed in the context of the "Article 18". In this respect, in order to preserve the cultural heritage a portion of 3% may be taken from the "Common Share of Adjustment" for registered buildings because it is not fair to expect landowners deal with everything. That is why "Article 18" should be strengthened or equipped with a similar tool.

As a final point, S. Özdemir and K. Yıldırım indicate that expropriation should be supported and the exact value of the land should be paid. As long as, if the amount that the landowner deserves is not paid, this case would affect the owner the way a punishment would. From this point of view, the sufficient finance should be provided. Moreover, public space should not be squandered; the sale of these lands should be stopped. Especially, lands in the urban development area should be kept as it is the case in IYTE campus area. In this respect, Ö. Gacemer and M. Kızıltaş also notice that the state lands should firstly be used for common public use services. Therefore, public lands could be kept in hand.

According to Ö. Gacemer, if the motivation reasons for landowners are thought, landowners get proper development plot via "Article 18". The value of his parcel increases and it becomes a property that can be bought and sold. Moreover, as S. Özdemir also mentions; it can be sold plot by plot according to the dealings made with the contractor. However, this situation is not possible in cadastral. This is an important point for the landowners.

In this respect, O. Afacan and H. Afacan states that some landowners also care about the infrastructure of their building because they think that their houses are sold with its close environment. The entrepreneurs also want public space in their close surrounding in order to increase the value of their property.

According to K. Yıldırım, landowners prefer "Article 18" as the value of their land increase as a result of the implementation. However, they sometimes do not want to leave

their places and thus some disagreements emerge. To redistribute the land to the landowner close to his previous location is very important for social equity.

According to H. Afacan and O. Afacan; "Article 18" is useful for the works of municipality because it prevents municipality from expropriation. From the same point of view, S. Özdemir claims that municipality and governorship need this transfer operation to get the ownership of the public space without compensation. However, municipalities, for their own sake, create development plot even though this procedure is not legal. While, in abroad, this procedure emerges in order to cover the cost of the legal implementation. In Turkey, it reveals only if there is brought a suit against. Therefore, to legalize this operation, firstly, it should clearly be defined. As a final point, according to K. Yıldırım, some private investors also participate in this process. For example; Ege-Koop was carried out in a cooperative manner.

When the procedure used in Turkey is asked, all the experts have almost given the same answer. In this respect, the main tool used for land readjustment is the regulation of "Article 18" in Turkey. In this process, mayors, surveying engineers or landowners who own big amount of land can initiate the process. According to the regulation, the arrangement area is delimited by municipality council and surveying engineer implements the project. Afterwards, this project is approved by the council and it is then displayed to public for the evaluation of objections. As a final step, the registration to title deed is realized.

While analyzing different countries' procedures, according to S. Özdemir, with different names, there are also other methods used in various countries. Although it is hard to give these procedures in detail, the issues of surrendering of some part of land without compensation, transfer of the development right and expropriation are used for the provision of public lands. For example, in Netherlands, the entrepreneurs who want to construct a building get the right of plot utilization while the proprietorship still belongs to municipality.

H. Afacan and O. Afacan point out a different issue in other countries. In this framework, in some countries using land readjustment, there are special departments calculating the market value of land. Therefore, in Turkey, it is important to clarify the criteria of this value calculation. Otherwise, some actors may misuse this issue. In addition, this value calculation is carried out both before and after the process. Therefore, social equity is provided in the fairest way.

Ö. Gacemer also indicates that in almost all countries using land readjustment, the objections and viewpoints of the landowners are taken not only before the approval of the project but also before the preparation of the project.

According to H. Afacan and O. Afacan, another point is that there is a time limit of construction for landowners in some countries. In this framework, there has to be a limitation of time for the development of plots. In addition, after the project, municipalities should also open the roads as soon as possible or in a time limit as well. Therefore, urban development may be realized in the desired time period.

According to S. Özdemir, technically, the initial problem of "Article 18" is not investigating the implemented projects whether they are appropriate to "ethic" and "technical" structure of the regulation. There are also implementation problems which can be regarded as 'unfair'. It can be in the determination of "Common Share of Adjustment", in the provision of social equity among landowners regarding contribution amount, in the reallocation of land to the landowners with respect to their previous location and etc.

As all of the experts mentions; another biggest problem of "Article 18" is the delimitation of arrangement area. These borders have to be determined in the planning phase parallel to the development program. Now and then, as a result of inappropriate determination of arrangement area borders, some parts of the lands belonging to common public use can not take place within the arrangement borders and thus the vitalization of these areas becomes harder. In addition, K. Yıldırım especially points out the importance of

the determination of arrangement area borders because the decision of these borders may be cancelled in the courts under improper circumstances.

According to S. Özdemir, another problem is the development plot provision of municipalities which is in fact contrary to the regulation. This situation can either be in the situation that municipality may become a shareholder of a plot. From the same point of view, H. Afacan and O. Afacan indicates that local authorities may provide development plots to their own only if they have ownership in the arrangement area. However, they do not have the right to provide development plots from the cadastral roads closed before. These areas must be directly decreased from "Common Share of Adjustment". As municipalities have financial impossibilities, they try either to create single development plot for their own or to take a little share in the landowner's plot. Therefore, when landowner wants to build his house, they have no choice except buying the municipality's share.

As mentioned before, according to M. Kızıltaş, the cost of the project is recovered by the municipality. Hence, municipalities try to get the project cost in the way mentioned above. To find a suitable way of recovering this cost from the implementation could be useful for both the municipalities and the landowners. Thus, the disagreements and suits will be reduced in great extent.

Moreover, all the experts claim that there is also not enough technical staff within the organization of small municipalities in order to control the process. Therefore, according to S. Özdemir, it could be useful to get the supervisions of chamber of related profession associations as a solution.

K. Yıldırım also indicates that as planning is an inter-discipliner issue, there is a need of co-ordination among the institutions. As a solution, it may be useful to establish a directorate concerning with development. M. Kızıltaş, Ö. Gacemer, H. Afacan and O. Afacan indicate this deficiency seriously.

Furthermore, according to Ö. Gacemer, the cadastral map should especially be reliable and adequate for the process. In this respect, as H. Afacan and O. Afacan claim that it is very essential to update the maps, to provide the same coordinate system between cadastral and development maps and to use computer technology. Therefore, some deficiencies could be prevented and projects could be completed in a shorter time period. In addition, the area difference between title deed and exact calculation of the plot should also be corrected in order to prevent further problems.

Finally, as S. Özdemir points out; insufficiencies within the information of the landowners about the implementation cause great problems after the process. As a result, a lot of suits occur due to disagreements and therefore some parts of the implementations are sometimes cancelled. This situation influences the entire process and greater problems emerge.

H. Afacan and O. Afacan interpret this situation that there is a problem in notification law. It is necessary to force landowners to give a notification address. Therefore, not only the suits but also the delays in the project could be prevented and project could be completes in a shorter time for a quicker urban development.

The experts indicate also the following problems in "Article 18"; according to H. Afacan and O. Afacan, the political and bureaucratic decisions should not influence the determination of arrangement area; according to Ö. Gacemer, the dialogue with landowners is very essential for a proper implementation of "Article 18"; according to M. Kızıltaş, different interpretations of regulations should be impeded and the regulation of "Article 18" should be simplified; and finally according to K. Yıldırım, the institution of consultative authority should consider the criteria of applied plans and give their decisions according to these circumstances. As there is no feedback in this process, they have to think what this situation either brings to or takes away from public benefit.

According to S. Özdemir, most of the problems occurred in the implementation of "Article 18" are directly related with the decisions of development plans. Under these

circumstances, when a landowner learns that his fruit garden is converted to a development plot and is transferred to another person, he logically reacts to the local authorities. Therefore, some disagreements emerge and when the plan is taken to court, the suit lasts at least one year. During this period, some of the plots change owners and the new owners may suffer from these problems.

As a result, there is not only a need of changing several issues in "Article 18"; whereas there is a need of re-organization of planning institution with its process and implementation.

5.2.2 SWOT Analysis of Various Countries Land Readjustment Processes

A SWOT analysis is a tool which focuses on internal and external environments. It examines strengths and weaknesses in the internal environment, looks at opportunities and threats in the external environment, and assesses how these factors can impact the related subject.

In this respect, by analyzing land readjustment processes of various countries; i.e. German, France, Japan, Western Australia and Sweden; following statements can be summarized in order to understand these varying procedures;

Germany - *Umlegung*

Strengths:

- There is early information and participation of the landowners. During the planning process there are two different levels of information and participation of landowners, first level in the planning procedure and second level in land readjustment procedure. In land readjustment procedure, objections of landowners are taken before the approval of the project.

- All plots have to be evaluated twice; before LR project (undeveloped land-input value) and after LR project (building land-redistribution value). By this evaluation the land

contribution rates as well as entitlements of the landowners and financial adjustments have to be determined. This crucial point enables the municipality to finance the urban development and to motivate landowners in the process.

- The German Federal Building Code describes three criterions for the redistribution; redistribution by value, redistribution by area and redistribution by some other criterion.

- Municipality may take over further land as contributions to the costs.

- Contribution percentage differs according to the location of project area. In urban-fringe areas, this ratio decreases due to the market value of land.

- There is an obligation of construction to landowners from the municipality. Therefore, there is not a risk of land not being built-up.

Weaknesses:

- From initiative to planning and implementation, the whole process is under the control of local authorities. Local authority takes the decision and responsibility of land readjustment.

- Participation is compulsory. Landowners have no option to leave the programme.

- Although objections of landowners are taken before the approval of the project, there is not a meeting before the preparation of the plan.

Opportunities:

- The laws & regulations are well-organized and are not misused as well.

- Land readjustment has a very long tradition in Germany and a large number of projects have been completed in order to provide new building land.

- In Germany there are an increasing number of municipalities that use distribution by some other criterion, in particular in combination with Urban Developments Contracts.

- Well-established approach to planning & urbanization concepts.

- Population growth is under control.

Threats:

- Although the population growth is under control, there is still increasing urbanization rate.

France

Strengths:

- There are feasibility studies just after the initiative.
- There is valuation both before and after the land readjustment project.
- There is distribution by value. In this respect, market value of the properties is used.
- If a landowner wishes to give up, he has to announce his decision in a month. The price is determined according to the rules of expropriation.
- Although landowners take the decision of land readjustment, the initiator may be municipality or a voluntary association of private interest holders.
- Agreement of two thirds majority of landowners is needed for the acceptance of the project area in a general public meeting arranged by the prefectoral authority (AFU).
- A consultant, who is often a private surveyor, gets the responsibility of working out the plans and carrying out the procedures.
- Objections of landowners are taken both before the delimitation of the project area and the approval of the project.

Weaknesses:

- Unlike Germany, the responsibility of land readjustment process completely belongs to the landowners. Implementation and sharing of economic gains are also executed by the landowners.
- The value of existing buildings is excluded.

- Because of its privatized character preparatory discussions and pre-planning takes much time with some risk of the initiators having to defray the costs of it. The whole procedure has proved to be rather unwieldy and time consuming.

- There is not an obligation of construction to landowners from the municipality. Therefore, there is a risk of land not being built-up.

Opportunities:

- Well-established approach to planning & urbanization concepts.
- Population growth is under control.

Threats:

- Not only the French procedure has been less used than the German Umlegung but also the regulations are of a later date.

- Although the population growth is under control, there is still increasing urbanization rate.

Japan – *Kukaku Seiri*

Strengths:

- Unlike German and French procedures, the model is not only designed for either the public or the private sector. Local authorities, landowners, private interests and public corporations may take the initiative and implement the readjustment.

- If private sector is responsible for the project two thirds majority of landowners must be provided and an association is established. However, if local authority or a public corporation is responsible for the project, no voting is necessary and no association is established.

- There is a superior authority which has an advisory and decision making function and whoever is responsible for the project, the plan is approved by this superior authority.

- There is valuation both before and after the project.

- Both area and value-based methods are used. In addition, there is also three-dimensional reallocation.

- Executive body has right to take “reserve land” for the project costs.

- Objections of landowners are taken both before the pre-plan and the approval of the project.

Weaknesses:

- Readjustment plan is not always combined with a formal building plan. Therefore, buildings of very different height and appearance can be established within the same block.

- There is not a final date fixed for the development. For speculative or other reasons, the actual building within the plan can be spread out over a long period of time within the area. Therefore, there is a risk of land not being built-up.

Opportunities:

- Historically the procedure of land readjustment, called Kukaku-Seiri (KS) in Japanese, has taken an important place in Japanase urban development progress ever since the end of the 19th century. Nowadays almost 50% of all new development areas have been constructed by Kukaku Seiri.

- Absence of good alternative methods necessitated widely practicing of joint development model in Japan.

Threats:

- There is weakness of planning and building legislation.

- There is still increasing population growth and also urbanization rate.

- Due to high population, great demand of residential and urban space occurs in the cities.

Western Australia

Strengths:

- The scheme is prepared by the local authority by consulting with the landowners.
- There is valuation both before and after the project.
- There is distribution by value. In this respect, market value of the properties is used.
- If a landowner wishes to give up, the price is determined according to the rules of expropriation.
- All project costs are charged to the project. The plots taken for this aim is then sold.
- Likewise Japan, there is a superior authority which has an advisory and decision making function and whoever is responsible for the project, the plan is approved by this superior authority.
- After approval by a superior authority, the municipality or the local authority acquires the total area without any compensation; but with a guarantee of existing mortgages until these can be allocated between the new land holdings.
- Objections of landowners are taken both before the pre-plan and the approval of the project.

Weaknesses:

- Only local authority takes the decision and responsibility of land readjustment.
- The land is distributed among the previous owners according to their claims, with certain adjustments and attendant compensation to provide suitable building lots. After distribution, each landowner receives a written offer showing every plot allocated, its estimated value and the cash payment, if any, required.
- The value of existing buildings is excluded.
- As final sale of the new plots is left to landowners, the development may take a long time. Therefore, there is a risk of land not being built-up.

Opportunities:

- Most of the landowners support the use of land readjustment because it enables them to share in the profits of land subdivision for urban development.

- Because of ownership and socio-economic structure of the society, there is not an important urbanization rate.

Threats:

- Although it is a well established system for Western Australia, it has not been implemented sufficiently in other Australian states yet.

Sweden

Strengths:

- There are feasibility studies just after the initiative.

- Participation is voluntary. A person owning land within the stated area can decide whether to take part or not to take part in the procedure. However, when a landowner does not want to take part, the purchase of his land is possible on the condition that the association indicates its necessity for development.

- After the landowners' decision, the properties whose owners take part in the process constitute a special association.

- Objections of landowners are taken both before the pre-plan and the approval of the project.

- There is an obligation of construction to landowners from the municipality which is not more than five years. Therefore, there is not a risk of land not being built-up.

Weaknesses:

- Contrary to Germany, the detailed development plan should not be adopted until the cooperation has been formally decided on. This situation creates a risk for development.

Opportunities:

- Population growth is under control and there is not an important urbanization rate.

Threats:

- The Sweden legislation relating to land readjustment is so new that the experience acquired from its implementation is very limited.

5.2.3 Project Management Approach to Reduce the Problems of "Article 18"

In this approach, after the problems of "Article 18" are put forth, they are taken into consideration according to the project management knowledge areas in order to reduce the negative impacts of these problems. Then, entire "Article 18" process is handled within the concept of project management phases and these phases are integrated into "Article 18".

5.2.3.1 Integration of Project Management Knowledge Areas

As a result of the interviews realized with the experts, it could be stated that "Article 18" should be improved with the following knowledge areas used in project management;

Project Integration Management: The processes required to ensure that the various elements of the project are properly coordinated. By this way, the following problem could be reduced;

- Lack of co-ordination and integration of the components within the project.

Project Scope Management: The processes required to ensure that the project includes all the work and only the work required to complete the project successfully. By this way, the following problems could be reduced;

- Some indefiniteness in the laws and regulations.

- Not having the possibility of getting the "Common Share of Adjustment" more than one single time in improvement plans.

- Lack of social equality in the process due to area method. Therefore, it is necessary to use value-based method or the allocation in three dimensions instead of area method. However, this method should be standardized and be controlled by a certain institution or regulation.

- Difficulties in releasing primarily the areas of local authority and state to public services.

- Not taking the "Common Share of Adjustment" according to prevailing situations of various regions.

- Lack of special courts for objections.

- Lack of an alternative control mechanism other than judgment.

Project Time Management: The processes required to ensure timely completion of the project. By this way, the following problems could be reduced;

- Being unable to complete the project in the estimated and desired time period.

- Delays in the construction of infrastructure and thus in urban development.

Project Cost Management: The processes required to ensure that the project is complete within the approved budget. By this way, the following problems could be reduced;

- Insufficiencies of financial resources of municipalities.

- High implementation costs of the project.

- Not having a solution to cover the cost of the project.

Project Quality Management: The processes required to ensure that the project will satisfy the needs for which it was undertaken. By this way, the following problems could be reduced;

- Lack of continuous quality control during the process.

- Lack of standardization in the determination of arrangement areas and allotment plans.

- Influence of political decisions during the process.

Project Risk Management: The processes concerned with identifying, analyzing, and responding to project risk. By this way, the following problems could be reduced;

- Lack of reducing the negative impacts of internal and external factors as there is not any feedback opportunity after the implementation of "Article 18".

Project Human Source Management: The processes required to make the most effective use of people involved with the project. By this way, the following problems could be reduced;

- Insufficient number of the technical staff.

- Lack of technical knowledge of authorities.

- Insufficient number of seminars explaining the benefits of the implementation of "Article 18".

Project Communication Management: The processes required to ensure timely and appropriate generation, collection, dissemination storage, and ultimate disposition of project information. By this way, the following problems could be reduced;

- Lack of coordination among the staff and institutions.

- Poor information of landowners about the implementation before implementation process – notification law.

- Poor information of landowners about the approval of the plan after implementation process – notification law.

- Insufficiencies in the announcement and public notice of plans & documents.

- Non-existence of meetings in order to have the objections & viewpoints of landowners.

- Being unaware of the changes occurred in development plan and arrangement area during implementation of the project.

Project Procurement Management: The processes required to acquire goods and services, to attain project scope, from outside the performing organization. For simplicity, goods and services, whether one or many, will generally be referred to as a product. By this way, the following problems could be reduced;

- Need of updating the maps and eliminating the gaps in the network of land control.
- Existence of different coordinate systems between cadastral and development plans.
- Lack of utilization of the computer technology.

5.2.3.2 Integration of Project Management Phases

Project management necessitates four phases in order to provide co-ordination during the project. Therefore, to achieve the desired purpose in terms of cost, time and quality, municipalities should basically handle the "Article 18" process as a project which includes its own definition, planning, implementation and closure phases. According to Moughtin (1999);

Definition Phase: In the definition phase of "Article 18" project, municipality basically has to do followings;

- To understand the objectives clearly and to determine the activities of "Article 18" project. During this event, municipality should interrogate itself via asking questions about the project.
- To establish a statement of purpose by preparing the Client Requirement Document (CRD). This document outlines the reasons of "Article 18" project.
- To appoint a project manager who will be responsible for the project.
- To discuss the feasibility of the project with manager and to determine the best route for "Article 18" implementation.

- To provide the satisfaction and involvement of the public.

- To prepare the Project Requirement Document (PRD) in order to display the full definition of "Article 18" project.

- To analyze the project risks via cost-benefit analysis.

- To provide the full organization and control over the project.

Planning Phase: In the planning phase of "Article 18" project, municipality basically has to do followings;

- To prepare a work breakdown structure listing all major activities and sub-activities of "Article 18" project. It assists in establishing the details of "what has to be achieved", "who is responsible for achieving it", "how it is going to be achieved", "when it is going to be achieved" and so on.

- To arrange the activities of "Article 18" in a project network. CPM & PERT are the most used methods used in this respect.

- To create the project schedule in order to provide the management focus on "Article 18" process clearly. Gannt Charts could be useful for this schedule.

- To prepare a cost plan in order to show the cash flow and payment profile.

- To create an effective and well-organized project team for "Article 18" project.

- To prepare a project handbook showing all the details of "Article 18" project.

Implementation Phase: In the implementation phase of "Article 18" project, municipality basically has to do followings;

- To follow the project plan and keep track of how "Article 18" project is progressing.

- To analyze the driving forces as well as restraining forces.

- To update the alterations occurred on the Critical Path of "Article18" process.

- To monitor and evaluate the project progress in order to understand the completion of the project as it is planned.

- To prepare a change control document about "Article 18" project in detail.

- To arrange meetings at relevant intervals to review the achievements.

Closure Phase: In the closure phase of "Article 18" project, municipality basically has to do followings;

- To realize the completion and handover procedures of the project.
- To prepare a project closure plan in order to detail the completion and handover procedures.
- To prepare a post-implementation review in order to examine "Article 18" project retrospectively.

5.2.4 Suggestions for a Framework of an Alternative LR Process in Turkey

According to the analysis of various countries' procedures and taking the problems of "Article 18" into consideration, it could be stated that some alterations should be made in Turkey and an alternative process instead of "Article 18" should be considered. In this respect, following alterations could be proposed;

- In each region, an association or directorate which is consisted of various experts from different occupations might be established for land readjustment works. All the readjustment demands might be valuated by this association.

- The demand of land readjustment could be proposed either by the local authorities or landowners.

- Whoever requires the readjustment, to take the viewpoints and objections, the association may organize a public meeting with landowners and the local authority before the preparation of the plan.

- The borders of the arrangement area could not be decided by the municipality council. Instead, according to town planning requirements, the association could decide whether the project will be implemented or not.

- In this respect, this authority could prepare a feasibility study about the project and supervise the process.

- If landowners require readjustment in an area, they may appoint a consultant which is a private surveyor and inform this consultant to the association.

- This association might appoint either local authority or the private surveyor for the preparation of the readjustment plan according to the scale of the project.

- The person who is assigned by the association could prepare the plan and take the responsibility of implementing the project. Then, this plan could be approved by the association.

- In order to cover the project costs, the executor who prepares and implements the plan might have the opportunity of taking a 'reserve land' within the area. The executor could sell this land after the project.

- The ratio of "Common Share of Adjustment" which is 40% might be cancelled. There may be a minimum contribution ratio necessary for the provision of public spaces and project costs. The decision of further contribution of land might be given by the authority according to zoning and town planning requirements.

- There might be land valuation both before the project and after the project. The distribution might be decided according to the value-based method instead of area method. In this framework, the parameters related with the land values could be decided by the association and these parameters could be standardized for each city after the analysis of prevailing conditions of these cities. Thus, the association may definitely supervise the executor of the project about this subject for social equity.

- The distribution could be made according to value-based method either in base area or three-dimensional with respect to prevailing conditions of the area. The allotment could be carried out in the manner which will create minimum number of shared plots.

- Before the approval of the plan, it might be displayed for a period of time.

- In this respect, at the end of this period of time, final objections and viewpoints of landowners could be taken in a meeting.

- The necessary objections and viewpoints could be evaluated by the association and the plan could be approved by the association after the alterations.

- The final plan could be displayed for appeals and then registration to title deed is realized.

- Notification procedure might be carried out in order to inform the landowners.

As a final statement, these procedures should also be carried out according to the concepts of project management. That is, the knowledge areas and the phases of project management should be integrated into the alternative process. Therefore, in order to create the built environment in the desired quality with respect to the project scope, time and cost, the process could be carried out in a well coordinated & organized way reducing the impacts of the problems.

5.3 Case Study – İzmir Uzundere District

5.3.1 General Information about Uzundere Project

Municipality of Konak is the Turkey's widest town municipalities with an area of 4599 hectares. Municipality of Konak is surrounded by Izmir Gulf and Municipality of Karşıyaka from north, Municipalities of Bornova and Buca from east, Municipality of Gaziemir from south and Municipality of Balçova from west.

In this framework, Uzundere district is located in the southern part of Municipality of Konak. However, since center parts of Konak have been developed, illegal structures which do not have construction permit have recently occurred against development plans in this urban-fringe area. Therefore, a region composed of squatters has emerged. (Fig 5.12)

Fig 5.12 – Location of Uzundere District, Project Presentation of Municipality of Konak

Besides, the necessity of urban infrastructure and other services has also increased within the area. For this reason, planning problems of the area has required a coordination of disciplines. Municipality of Konak has established a department and has handled this district under the name of Urban Renewal Project. In this framework, one of the issues should be realized in the area was the implementation of "Article 18".

Fig 5.13– General View from Uzundere District, Project Presentation of Municipality of Konak

Fig 5.14 – General View from Uzundere District, Project Presentation of Municipality of Konak

Fig 5.15 – General View from Uzundere District, Project Presentation of Municipality of Konak

In existing land use structure of Uzundere district, most of the buildings are used for residential requirement. There are also buildings used for commercial requirements; such as grocery, café, weeding hall and etc. Within the area, there is also a mosque, a village clinic and a sports area. In addition, a high school and a junior high school are located in the northern west part of the area. (Fig 5.16)

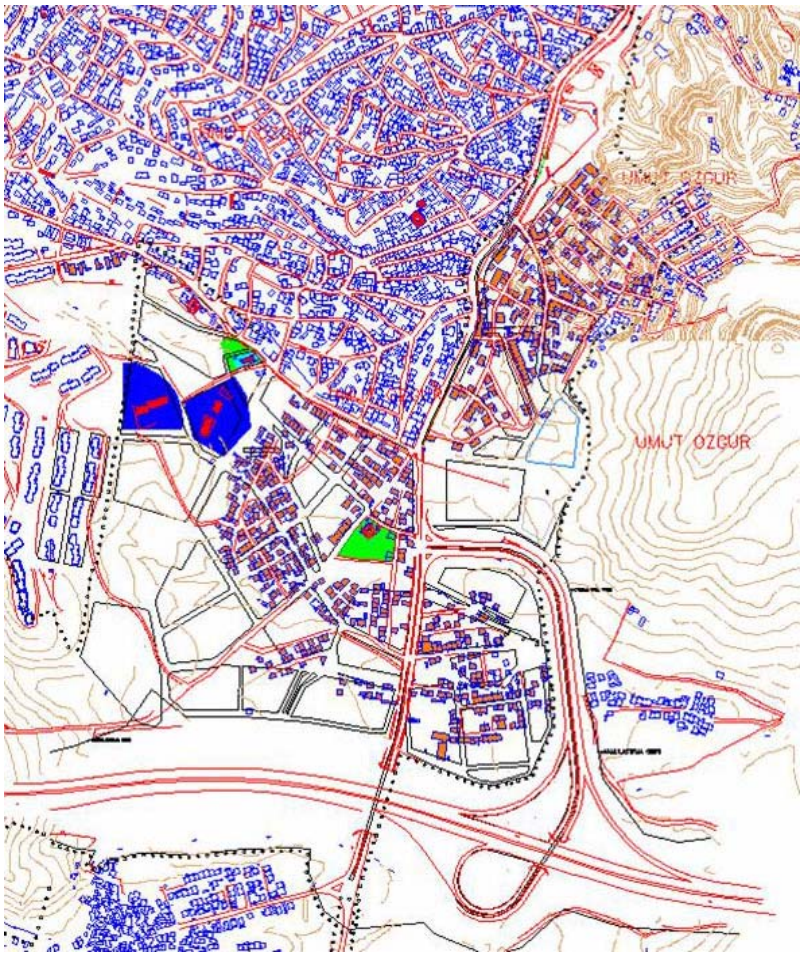


Fig 5.16 – Existing Land Use in Uzundere District, Project Presentation of Municipality of Konak

Another point is that existing structures are generally in bad or medium quality in Uzundere. The buildings have been built by low-income families with their own possibilities and without any plan & project. In addition, 98-99% of these existing buildings have been built without any construction permit and the rest has had their rights by the "Development and Squatter Amnesty Law" issued 2981.

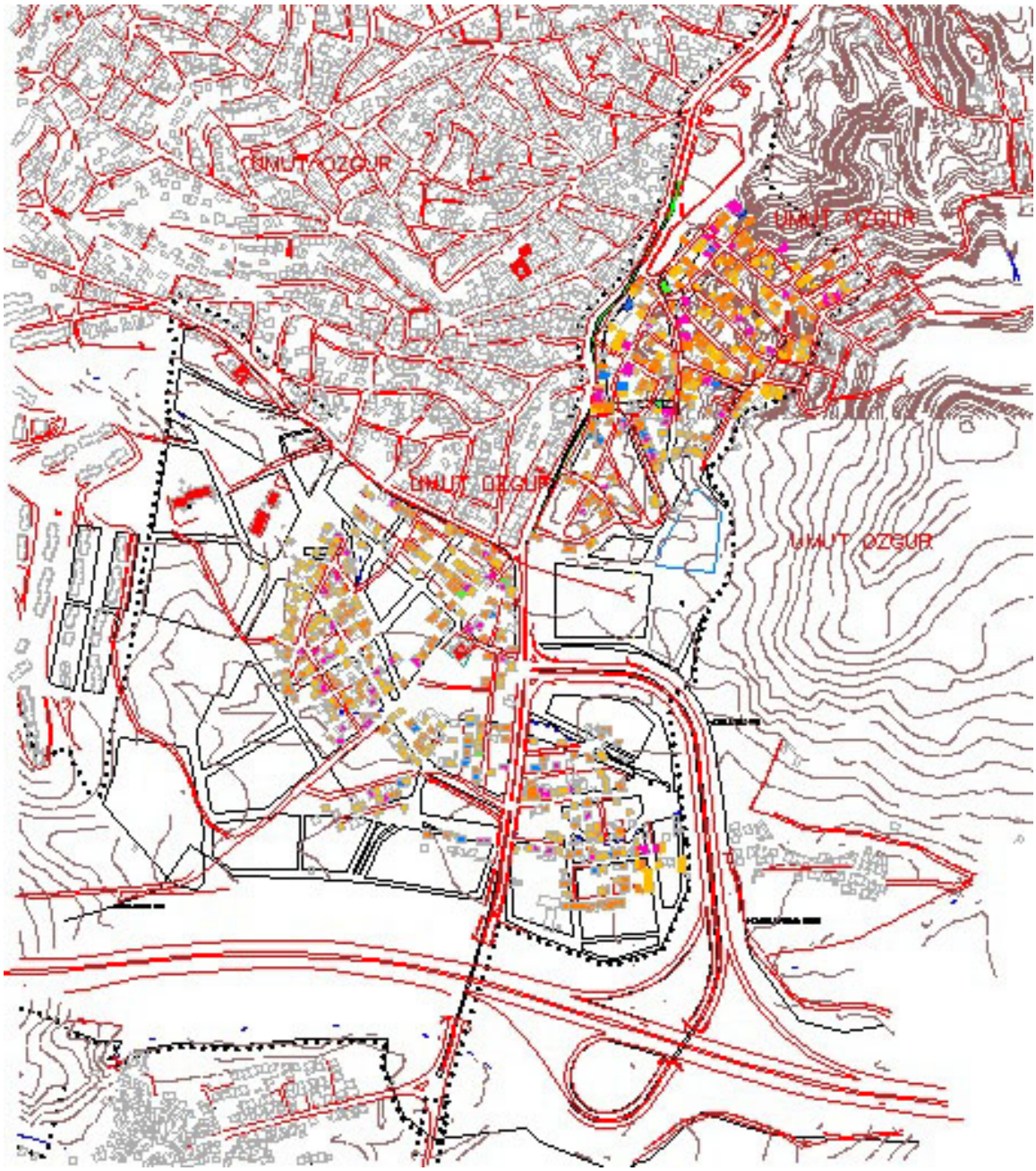


Fig 5.17 – Number of Floors in Uzundere District, Project Presentation of Municipality of Konak

According to the analysis of number of floors, it is observed that 46% of the buildings are one-floored buildings, 36% are two-floored buildings, 14% are three-floored buildings and 4% are four or more floored buildings in Uzundere district. As a final statement, these buildings are generally reinforced concrete. (Fig 5.17)

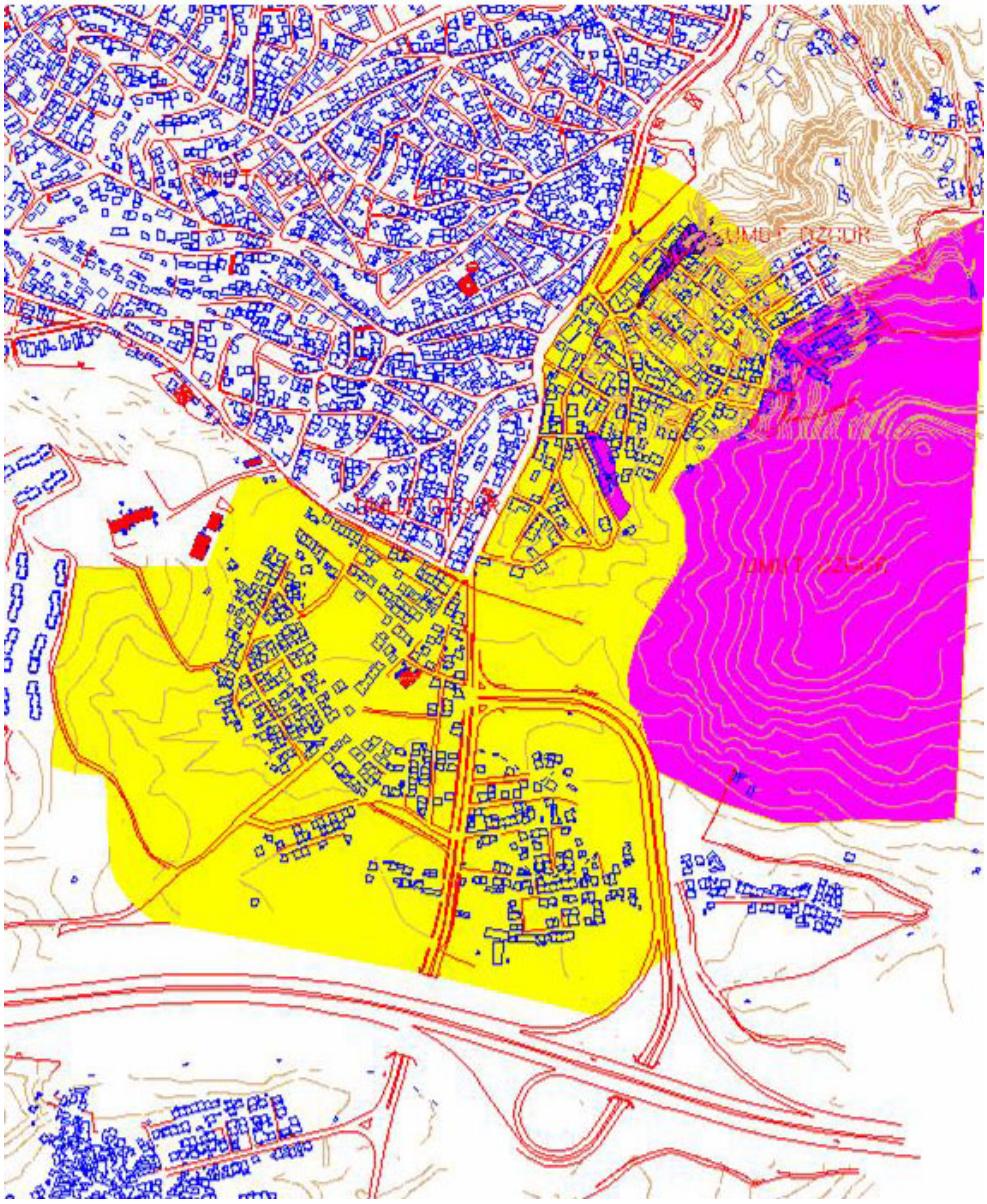


Fig 5.18 – Geological Structure in Uzundere District, Project Presentation of Municipality of Konak

According to geological study reports, the area is separated into two parts; areas suitable for settlement and areas unsuitable for settlement. In this respect, high sloped regions, river and mud beds are defined as the areas unsuitable for settlement. According to the reports, the western part of the district is suitable for settlement except the stream and mud beds regions, whereas the eastern part of the district which is a high sloped region is clarified as unsuitable areas for settlement. (Fig 5.18)

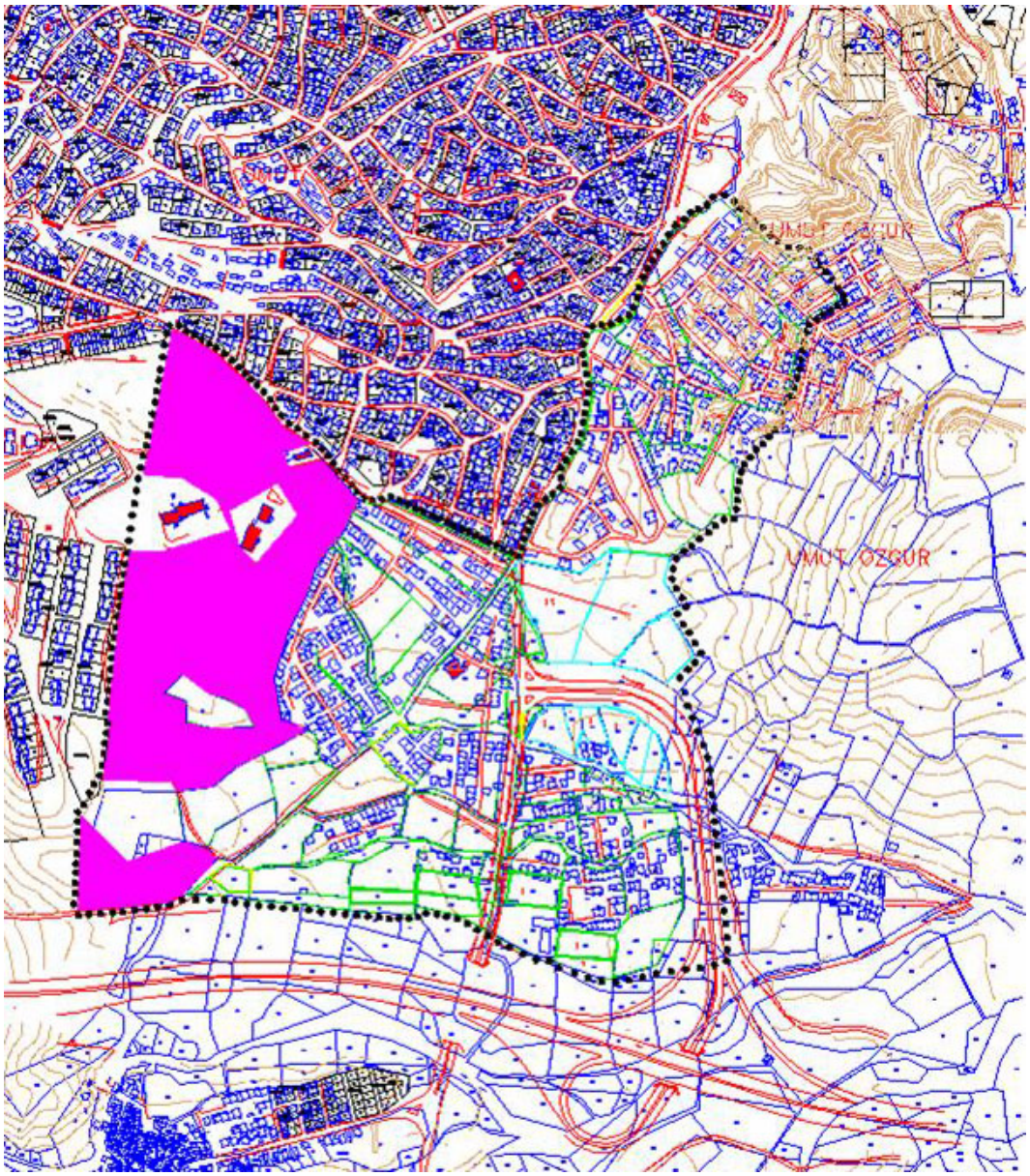


Fig 5.19 – Ownership Structure in Uzundere District, Project Presentation of Municipality of Konak

According to the registrations in title deed office, the ownership structure of Uzundere district is composed of two types. One of which are treasury plots belonging to "Ministry of Finance". The other part is private ownerships and this part covers almost the entire district. However, the cadastral parcels of private ownership are totally shared except two of them. (Fig 5.19)

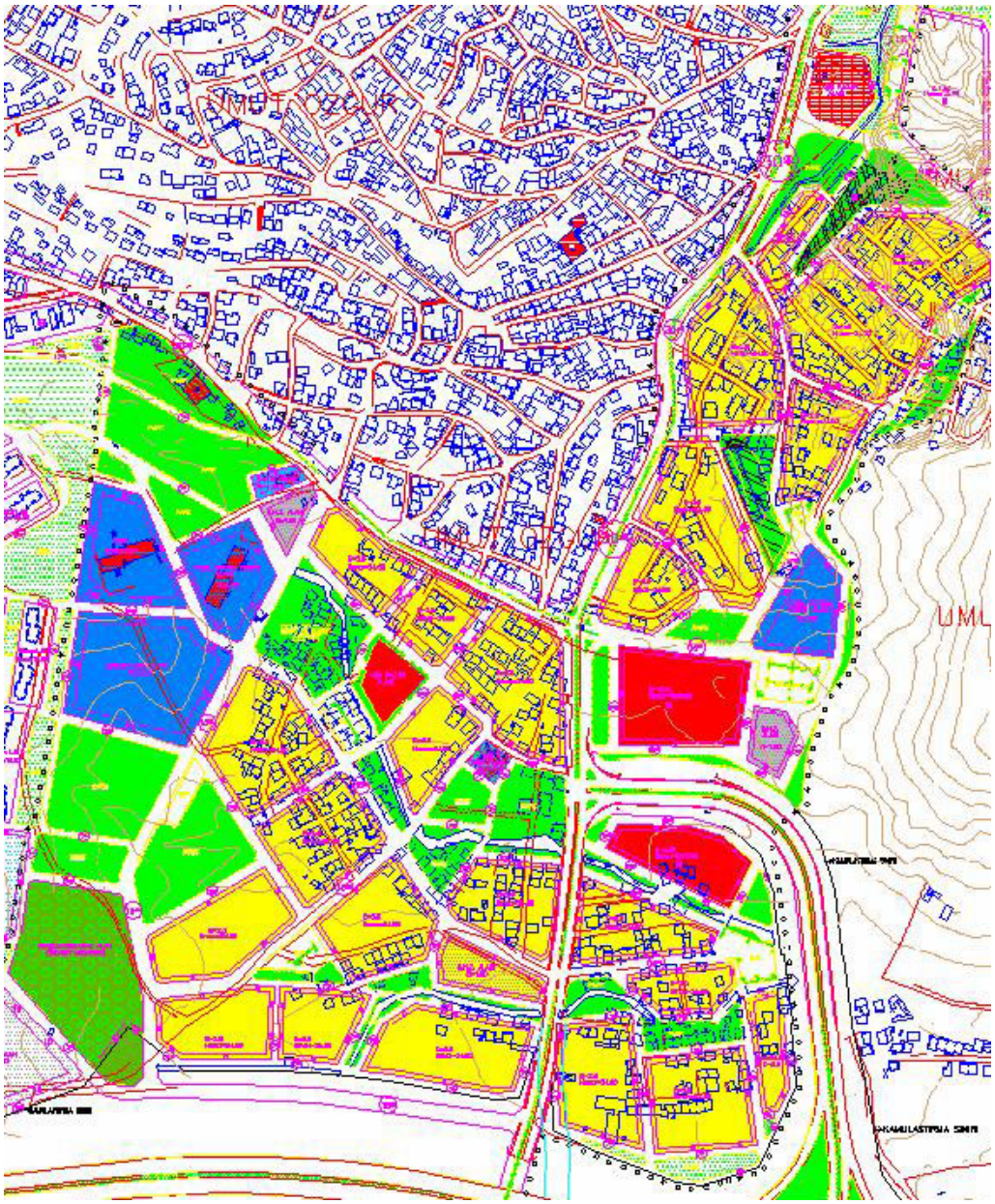


Fig 5.20 – Development Plan of Uzundere District, Project Presentation of Municipality of Konak

According to the development plan of Uzundere district, floor area ratio has been given as 2.5 in residential areas, 3.0 in commercial areas and 1.0 in the areas of municipality service, education, religion and health. Besides, within this renewal project, h_{max} is limited with 24.80 meters in residential areas, whereas there is not a limitation of h_{max} in commercial areas. (Fig 5.20)

Urban Renewal Project in Uzundere District is composed of four phases. Therefore, project area is divided into four zones as illustrated in Fig 5.21. In each zone, "Article 18" implementation has been proposed by Municipality of Konak in order to carry out the renewal project.

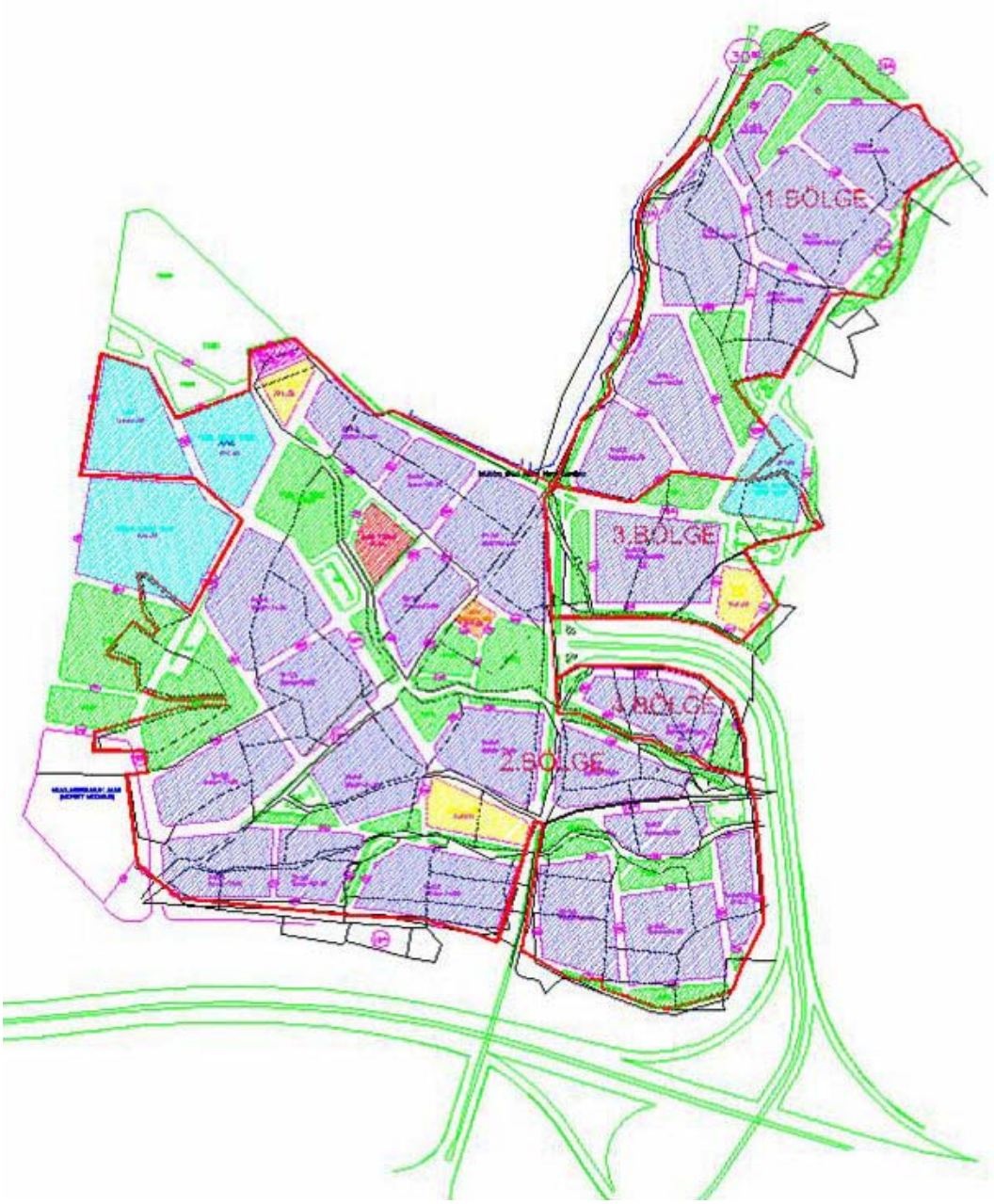


Fig 5.21 – Implementation Zones in Uzundere Project, Project Presentation of Municipality of Konak

In this framework, firstly, “Article 18” implementation of Zone II started in October 2001. Nevertheless, it will finally be completed in two months because of the appeals. Secondly, “Article 18” implementation of Region I started at the end of 2003 and it is still in progress. On the other hand, the implementations of Zone III and IV were cancelled because the ratio of “Common Share of Adjustment” was too much over 35%.

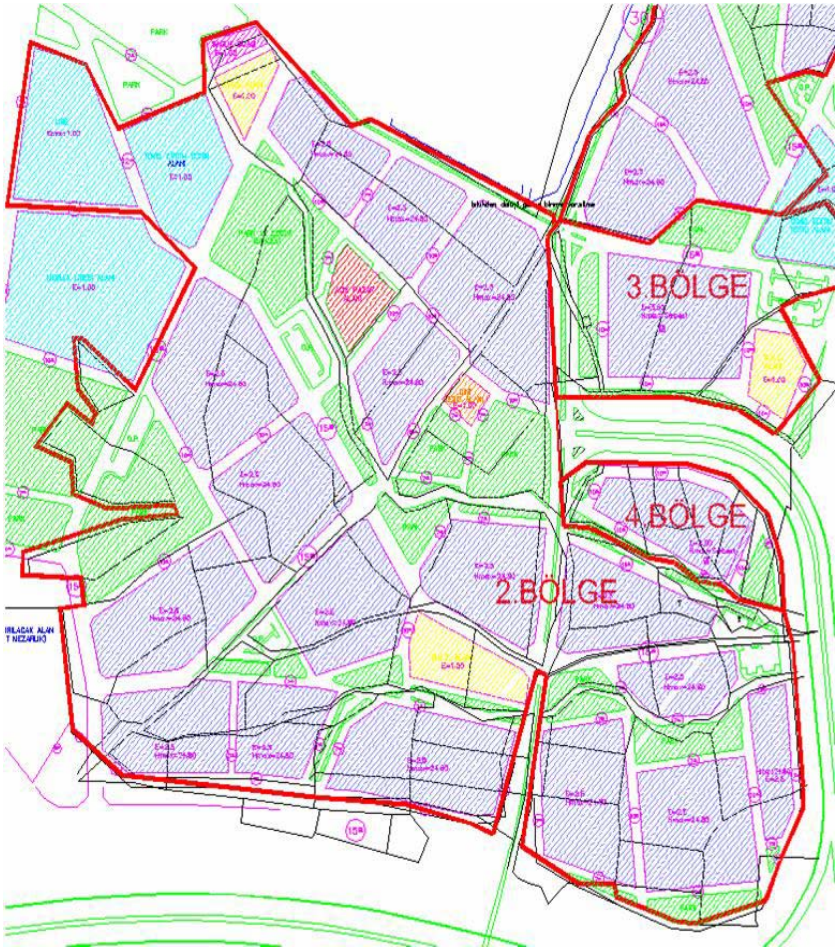


Fig 5.22 – Zone II in Uzundere Project, Project Presentation of Municipality of Konak

Zone II of Uzundere Renewal Project is called “Allotment Plan” issued 661. This arrangement area includes parks, playgrounds, parking lots, a mosque, a high school, a junior high school, a village clinic, a bazaar and two municipality service areas except residential areas. (Fig 5.22) The calculation of “Common Share of Adjustment” for the provision of roads, parks, playgrounds, parking lots and mosque is as follows;

Cadastral Parcels	:	243.557 m^2
Registration of Roads	: +	4.526 m^2
Registration of River	: +	10.124 m^2
Registration of no man's land in the name of "Ministry of Finance"	: +	45.188 m^2
Expropriation plot of General Directorate of Highways	: +	2.358 m^2
Total Area to be Arranged	**:**	**305.753 m^2**

Total Area to be Arranged	:	305.753 m^2
Expropriation plot of General Directorate of Highways	: -	2.358 m^2
Leaving from Registration of Roads	: -	4.526 m^2
Leaving from Registration of River	: -	8.779 m^2
Leaving from Registration of no man's land	: -	45.188 m^2
Pilon Area	: -	49 m^2
Total Cadastral Area to be Reallocated (1)	**:**	**274.260 m^2**

Total Area of Development Blocks	:	180.723 m^2
Pilon Area	: -	49 m^2
Expropriation plot of General Directorate of Highways	: -	2.358 m^2
Total Development Area to be Reallocated (2)	**:**	**178.316 m^2**

Total Cadastral Area to be Reallocated (1)	:	274.260 m^2
Total Development Area to be Reallocated (2)	: -	178.316 m^2
Total Area to be used for Public Services (3)	**:**	**95.941 m^2**

"Common Share of Adjustment" = $\dfrac{\text{Total Area to be used for Public Services (3)}}{\text{Total Cadastral Area to be Reallocated (1)}}$ = **0.349829**

In addition, another participation share was taken from the landowners for the provision of official facility areas which was composed of two municipality service areas and a bazaar. This ratio was approximately 0.6%. The other crucial point is that areas necessary for high school, junior high school and village clinic were covered from treasury lands of "Ministry of Finance". Finally, after all of these procedures, the rest of the area was reallocated to the landowners with respect to their previous shares in the arrangement area.

Fig 5.23 – "Allotment Plan" issued 661 in Uzundere Project, Project Presentation of Municipality of Konak

Even though it has been tried to provide minimum shared plots, the new ownership structure inevitably has had many shares within development plots as the previous ownership structure has also been composed of too much shares and minimum plot size is proposed at a minimum value of 900 m^2 in the renewal plan. In the allotment process, the existing building structure of the area has not been taken into consideration because almost entire buildings are without construction permit. (Fig 5.23 & Fig 5.24)

Fig 5.24 – "Allotment Plan" issued 661 in Uzundere Project (with Existing Building Structure), Project Presentation of Municipality of Konak

5.3.2 Interviews for Determining the Problems of Uzundere Project

In order to investigate the land readjustment process carried out in Uzundere district, an interview is realized with Mahmut Kızıltaş, the chief of Surveying Directorate of Konak Municipality. Within the interview, general information about Uzundere district, problems occurred during the process and beneficial operations in the reduction of the impacts of these problems are asked.

As general information about Uzundere district, M. Kızıltaş states that the project area is located in the southern region of Municipality of Konak. Within an urban renewal project concept, the main objectives of this urban renewal project are; to protect existing urban core, to protect the cadastral ownership, to be organized on a cooperative basis, to renew the area with the help of a contractor and to provide the necessary urban services and infrastructure.

M. Kızıltaş expresses that the arrangement area is approximately 30 hectares. Almost all of the buildings are officially unauthorized with respect to construction permit. This ratio is approximately between 98% and 99%. Actually, the rest has had their rights by the "Development and Squatter Amnesty Law" issued 2981, enacted in 1984. In addition, except two of the cadastral parcels, all of the parcels were shared and these shares were too small. At the end of the process, many shared plots came about as the minimum plot area is 850-900 m^2 according to the regulations.

The project started in October 2001. Although it should have been completed in six or eight months, it has not been finished yet. Due to the final objection of "Ministry of Finance", the project will be completed in two months and the completion time, therefore, will be thirty months.

The cost of the project was covered by the municipality. The total cost of the project was approximately 16.000.000.000 Turkish Liras at first. As the project time has extended, the total cost has been increased to approximately 20.000.000.000 Turkish Liras. In

addition, if extra labor of municipality workers is added to this cost, the actual cost is much greater than this value.

M. Kızıltaş points out some problems during the process. According to M. Kızıltaş, first of all, it is necessary to clarify some of the rules of "Article 18" regulation and "Development Law" because different interpretations of the laws and regulations sometimes cause great problems during the project. This problem has been experienced during Uzundere project. Especially, the rules sometimes have been evaluated and interpreted in a different way from one person to another.

In this respect, most of the objections were due to "Development Law" and these objections were not taken into account. On the other hand, the objections about reallocation and sharing were in small numbers. These were evaluated and a second public announcement was realized.

In Uzundere district, some problems have also emerged in the determination of the arrangement area since "Common Share of Adjustment" could not be provided at desired ratio of 35%. It was achieved by the help of extracting high school, junior high school and village clinic areas after registration to "Ministry of Finance", leaving all the roads and most of the river areas from total arrangement area for the provision of proper "Common Share of Adjustment". Since this issue had not been handled at appropriate time because of the lack of coordination between planning and surveying departments earlier in the process, the completion time of the project has extended. However, fortunately, this coordination has been provided during the process and many problems have been solved by the help of this coordination.

M. Kızıltaş claims that likewise other projects, one of the biggest problems of Uzundere project is that map is validate according to the laws, not the base of the project. Therefore, even a little fault is occurred in the maps, law courts accept the maps and they do not take the base into account. In this respect, it is necessary to have enough technical experts in judgment.

As M. Kızıltaş expresses; some of the shares were faulty owing to various mistakes occurred in title deed earlier. There were great differences with the numbers calculated from the maps. However, there has not been a major problem in the maps. They were appropriate and had the same coordinate systems.

According to M. Kızıltaş, the valuation method should be selected according to the prevailing conditions of the area. For example; three-dimensional reallocation is much proper for developed areas. However, in Uzundere district, this method is not proper because all the buildings are without construction permit. As they will be demolished in future, it is better to use area method in this area. On the other hand, if value method had been used, fairer reallocation could have been provided.

M. Kızıltaş also indicates some well organized points about the project. In this framework, technical support and staff have been sufficient for the Uzundere project as Municipality of Konak has enough experienced and technical staff. However, this situation can not be expressed for all the municipalities in general. There are serious problems about this matter in some of the municipalities.

As the approach of superior management to the project is quite good in Municipality of Konak, the coordination between the departments and workers are well organized during the process. Since this situation is validating for Konak, it has been effective in the reduction of the impacts of the problems.

M. Kızıltaş points out some beneficial operations in the reduction of the impacts of these problems. Firstly, it is important to provide coordination among departments. In this respect, the coordination within the municipality was not good at the beginning of Uzundere project. The project had been prepared by planning department without the consultation of surveying department. Therefore, when the project started, “Common Share of Adjustment” could not be held under 35%. Many problems occurred in the determination of arrangement area and “Common Share of Adjustment”. However, if the coordination between planning and surveying departments had been provided, these

problems would not have been at this level. Today, this coordination has been provided and many problems are being solved just before starting the process.

Moreover, the faults about landownership areas in title deed and cadastre should have been organized before Uzundere project. Therefore, some problems made project time prolong during the process. Besides, the maps should have been handled before the process. Appropriate data, documents and maps would eliminate most of the problems.

Another point is that the landowners should have been informed about the benefits of land readjustment process. Therefore, appeals would decrease to a reasonable level and the development would occur as soon as possible.

Finally, it is also necessary to get rid of the political decisions. In this respect, since Municipality of Konak has been successful on this subject, integration and coordination of departments have been provided. Nevertheless, this situation can not be generalized for every municipality of Turkey.

5.3.3 PM Approach to Reduce the Problems of Uzundere Project

According to the analysis of Uzundere Urban Renewal Project and the interview realized with Mahmut Kızıltaş, following issues could initially be emphasized in Uzundere "Article 18" implementation;

- Eliminating indefinite issues of the regulations and laws in order to prevent different interpretations. (Project Scope Management)

- Getting rid of political decisions which influence the process. In this framework, standardization of the decisions is necessary because the project has not been prepared in the desired quality as a result of these external effects. (Project Scope Management – Project Quality Management)

- General approach and viewpoints of superior management to the project. If it is affirmative, the process consequentially is affected from this kind of manner in a positive way. (Project Integration Management – Project Communication Management)

- Coordination & integration deficiencies between planning and surveying departments in the beginning of the process. As a result, there have been problems in the determination of arrangement area and calculation of "Common Share of Adjustment". (Project Integration Management – Project Communication Management)

- The necessity of technical experts during the process. Existence of enough experienced experts in municipalities is very crucial on behalf of the process. (Project Human Source Management)

- Lack of technical knowledge and experts in judgment. Without any knowledge about the basis of the project, some decisions which are very harmful may be taken about the project. In this respect, it is inappropriate not to have any other control mechanism except law courts. (Project Scope Management - Project Human Source Management)

- Feedback difficulties during the process. As feedback is very difficult in the process, the impacts of the decisions may be really destructive. As a result, quality of the project decreases. These decisions could be either in planning level or in judgment level. (Project Risk Management)

- Extension of project completion time. The necessity of taking appropriate measurements is imperative in this respect. (Project Time Management)

- Financial impossibilities of the municipality. Lack of covering project costs creates problems for municipality. (Project Cost Management)

- Lack of communication with "Ministry of Finance". As a result, a series of appeals has emerged at the end of the process. Therefore, project has not been completed yet. (Project Scope Management- Project Communication Management)

- Faults in title deed. Hence, calculations have been repeated many times and extra appeals have been occurred. (Project Procurement Management)

- Lack of society's knowledge about the benefits of the project. (Project Communication Management)

As a result of these problems occurred in Uzundere Project, it could be stated that the concepts and knowledge areas of project management could be used for the reduction of these problems. Especially, the affirmative approach of superior management and coordination of different departments are strongly emphasized by M. Kızıltaş. That is to say, although M. Kızıltaş has not stated that project management approach could be useful during the process, he has expressed that these problems are in fact closely related with coordination & organization.

From this point of view, even though project management approach is not well-known in Turkey, need of this scientific subject is strongly perceived in all sectors. Therefore, coordination & organization from inception to completion could be easily achieved in an "Article 18" implementation by providing required interest on this subject.

Finally, M. Kızıltaş has also emphasized some deficiencies of "Article 18". According to M. Kızıltaş, there are also problems in the following issues of "Article 18";

- Some indefiniteness and thus different interpretations of the rules of "Article 18"

- Limitation of "Common Share of Adjustment"

- Being unable to cover the project costs.

- Need of standardization in allotment process to create minimum shared plots.

- Utilization of a different reallocation method for fairer social equity

- Need of an association composed of various experts for the preparation of development plans as planning is an interdisciplinary issue.

In this respect, it could also be stated that “Article 18” should be reconsidered and some alterations should be realized within its structure. These defective sides of “Article 18” could be reordered by the alteration of the rules of the regulation and thus an alternative land readjustment process could be suggested. However, it is also crucial to handle this alternative process with project management concepts in order to constitute a scientific base. Therefore, the alternative land readjustment process proposed in Chapter 5.2.4 could be useful for a better organization.

CHAPTER 6

CONCLUSION

Land readjustment is a technique used for managing the urban development of urban-fringe lands. As an urban land management tool, land readjustment primarily takes unplanned urban land and reallocates it in a more effective use with respect to town planning requirements. However, urbanization problems inevitably occur by rapid population growth because of rural - urban migration. In Turkey, as well as many other developing countries, these problems bring about negative impacts in urban development. As a consequence, the quality of urban space and urban life declines within the cities. In order to provide new settlements appropriate for urban life as rapidly and economically as needed, land should be acquired and developed with respect to regional plans, within a short period.

From this point of view, in Turkey, land readjustment has recently been applied compulsorily with the name of "Article 18" according to the "Development Law" issued 3194. Thus, implementation of the zoning plans has considerably started to be operated more effectively in the expanding project areas. However, some problems, i.e. technical, bureaucratic, social and financial limitations, distinct interpretations of regulations & laws, political concerns and inappropriate selection of some methods within the process, affect the efficiency of this method. As a result, a kind of standardization and co-ordination is required in "Article 18" of Turkish Development Law.

Since the beginning of 20th century, project management has been presented as the application process of intelligence, ability, tools and techniques to control and coordinate a project from inception to completion for the provision of all the requirements of project participants, which is to produce a functionally and financially viable project that will be completed on time within authorized cost and to the required quality standards. In principle, every project, thus planning process, has to be original, have a specific aim and have a time limit. Hence, as a part of planning process, land readjustment is one of the most important

tools for the evolution of urban space which has to be managed carefully because land readjustment involves all of these characteristics to create better urban spaces and thus urban life. Especially, if not only the importance of quality, time and cost factors in the creation of urban space but also the importance of human factor in urban space is contemplated within the scope of land readjustment, project management should efficiently cooperate with land readjustment. With keeping this in mind, concepts of project management and techniques concerning the knowledge areas of project management could be used to manage, coordinate and control land readjustment process in the solution of the problems depending on the manager's style.

In this respect, this study aims to investigate land readjustment process for the determination of the problems within the Turkish readjustment process so called "Article 18" and to handle the readjustment process with respect to project management approach to reduce the negative impacts of these problems. To achieve this aim, this study describes not only Turkish land readjustment procedures but also different land readjustment procedures used in various countries, discusses pros & cons and thus puts forward the problems of these procedures. In this respect, two approaches have been consequently proposed for the land readjustment process in Turkey for the creation of better urban space & urban life. First one is a project management approach to reduce the problems of existing "Article 18" process by determining the problems related to the "Article 18" as a result of the interviews realized with various experts, and analysis of different countries' procedures. The second one is, with the help of different countries' process analysis and the interviews realized with the experts, a framework of an alternative land readjustment process suggested instead of "Article 18" by using project management concepts as well. At the end of the study, a case study for İzmir Uzundere District is carried out in order to evaluate the feasibility of project management approach via the interviews realized with related experts of Uzundere project.

In the framework of the study, following statements could be classified in four titles which are technical, judicial, financial and social. In "Article 18", therefore, it is necessary;

Technical

- To provide coordination & integration among institutions and staff.
- To have enough number of technical experts who are experienced about the process.
- To speed up the construction of infrastructure and thus in urban development.
- To use computer-based technologies during the process.
- To update the maps and eliminating the gaps in the network of land control.
- To have the same coordinate systems between cadastral and development plans.
- To provide communication with all the institutions.
- To be aware of the changes occurred in development plan and arrangement area during implementation of the project.
- To determine the borders of arrangement area properly just before the implementation of development plan; especially getting rid of political and individual concerns.
- To be able to change the ratio of "Common Share of Adjustment" according to prevailing situations of various regions.
- To have the possibility of getting the "Common Share of Adjustment" more than one single time in improvement plans.
- To use value-based method or the allocation in three dimensions instead of area method.
- To have standardization in allotment process to create minimum shared plots.
- To provide feedback during the process.
- To realize a risk analysis in order to evaluate the effects of internal and external factors.

Judicial

- To eliminate indefinite issues of the regulations and laws in order to prevent different interpretations.
- To get rid of political and individual decisions influencing the process.
- To remove the faults in title deed.

- To have enough technical knowledge and number of experts in judgment.
- To inform landowners about the implementation before and after the process; especially problems in notification law and announcement or public notice of plans & documents.
- To provide special courts for objections and also to have an alternative control mechanism other than judgment.

Financial

- To find financial resources for municipalities.
- To be able to cover the project costs.
- To reduce the project completion time, consequently project costs.

Social

- To have an affirmative general approach and viewpoints of superior management to the project.
- To provide social equality in the process.
- To increase the quality of the product at the end of the process.
- To inform society about the benefits of the process with seminars and taking their viewpoints and objections.

Considering the problems mentioned above, especially the technical and financial problems, it is obvious that there is a need of management concept to lessen these negative factors within "Article 18" process. Within the borders of Turkey, although project management is not a well-known and widely used application, the establishment of utilization of project management surely provides important assistance to land readjustment projects because project management, as a consequence of its structure, is a vital instrument to control and coordinate a project from inception to completion in order to to achieve the desired quality by keeping the balance among scope, time and cost.

As it has been explained in Chapter 5.2.3, these problems which are closely related with knowledge areas of project management have been classified. Thinking of the systematic structures of knowledge areas, it is possible to reduce the impacts of these problems. In addition, better results for urban development are also achieved with proper utilization of project management concepts. With such an approach, it is possible to determine the scope and proper requirements of the project in project definition stage, to have the opportunity of arranging all activities and making necessary alterations in project planning stage, to have the opportunity of controlling, monitoring, evaluating and interfering into the process in project implementation stage, and to be able to complete the process properly in project closure stage.

Another point is that the defective sides of "Article 18" put forth the necessity of reconsidering "Article 18" process and realizing some alterations within its structure. After analyzing different countries' processes and thinking of the problems of current Turkish process, it is clear that "Article 18" does not create the desired results in each case. As it has been explained in Chapter 5.2.4, some arrangements with respect to prevailing conditions are required.

Should current study be criticized, the number of case studies might have been increased and therefore they could have been compared with each other hypothetically according to prevailing conditions of each case in order to get better results. Or else, a smaller scale of case study might have been selected and by implementing the project management concepts practically, the existing "Article 18" implementation and the implementation of project management approach on "Article 18" could have been compared more clearly.

To recommend for further researches, the feasibility studies of project management approach could be carried out on "Article 18" process in a new study. Moreover, suggested alternative land readjustment process for Turkey could be improved. Finally, thinking in a broader frame, the entire process of evolution of built environment could also be handled within the concepts of project management.

BIBLIOGRAPHY

Books:

"3194 Sayılı İmar Kanunu 18. Madde Uygulamaları Semineri-Bildiriler", Bayındırlık ve İskan Bakanlığı, Yayın: 49, Ankara, 1990

"3194 Sayılı İmar Kanunu ve Yönetmeliklerin Revizyonu Tasarısı", Bayındırlık ve İskan Bakanlığı Teknik Araştırma ve Uygulama Genel Müdürlüğü, Ankara, 1998

Carr S., "Public Space", Cambridge University Press, England, 1992

Clough R. N., Sears G. A., and Sears S. K., "Construction Project Management", John Wiley & Sons Inc., USA, 2000

Dadaşbilge, K., "İnşaat Yönetimi Cilt 1 – Genel Yönetim", Lebib Yalkın Yayımları ve Basım İşleri A.Ş., İstanbul, 1999

Dale P. F. and McLaughlin J. D., "Land Information Management", Oxford University Press, New York, USA, 1988

Doebele W. ed., "Land Readjustment: A Different Approach to Financing Urbanization", Lexington Books, USA, September 1982

Drabkin H. D., "Land Policy and Urban Growth", Pergamon Press, England, 1977

Duncan W. R. et al., "A Guide to Project Management Body of Knowledge", Project Management Institute, USA, 1994

Eisner S., Galllion A., and Eisner S., "Urban Pattern", Van Nostrand Reinhold, New York, 1993

Gould F. E. and Joyce N. E., "Construction for Project Management", Prentice Hall Inc., USA, 2000

Günay B., "Property Relations and Urban Space", METU Faculty of Architecture Press, Ankara, 1999

Günaydın M., "Proje Yönetimi Kavramlarına Giriş", Mimarlar Odası İzmir Şubesi Yayınları, İzmir, Kasım, 2001

Karavelioğlu C., "Imar Kanunu 18.Madde Uygulaması: Arsa ve Arazi Düzenlemesi-Parselasyon", Karavelioğlu Hukuk Yayınevi, Ankara, 2002

Keleş R., "Kentleşme Politikası", İmge Kitabevi Yayınları: 13, Ankara, Mayıs 1990

Keleş R., Geray C., Emre C., and Mengi A., "Kentsel Toprak Rantının Kamuya Kazandırılması", Türkiye Kent Kooperatifleri Merkez Birliği, Ankara, January 1999

Larsson G., "Land Readjustment: A Modern Approach to Urbanization", Avebury, Aldershot, England, 1993

Moughtin C., "Urban Design: Methods and Techniques", Architectural Press, England, 1999

Minerbi L. ed., "Land Readjustment: The Japanese System", Oelgeschlager Gunn & Hain, USA, August 1986

PMI - Project Management Institute, "A Guide to the Project Management Body of Knowledge", Project Management Institute Publishing Division, Pennsylvania, USA, 2000

Şakar M., "Imar Mevzuatı", Beta Basım Yayım Dağıtım AŞ., Istanbul, 1999

Türkoğlu K., "Kentsel Toprak Mülkiyetini Üç Boyutlu Olarak Benimseyen Planlama Uygulama Sürecinin Sorunların Çözümüne Getirebileceği Olanaklar", Bayındırlık ve İskan Bakanlığı - Yayın: 26, Ankara, 1988

Yildiz N., "Arsa Düzenlemesi", İstanbul Devlet Mühendisleri ve Mimarları Akademisi Harita Kadastro Bölümü Yayını, İstanbul, 1977

Articles:

Acharya B. P., "The Transferability of the Land Pooling-Readjustment Techniques", in *Habitat International*, Volume 12/4 - 1989, Pergamon Journals Ltd., Great Britain, pp.103-117

Akdağ E., "Imar Kanunun Tarihçesi, Bugünkü Uygulamada Görülen Aksaklıklar, Kanunda Değiştirilmesi Gereken Hususlar", in *3194 Sayılı İmar Kanunu 18.*

Madde Uygulamaları Semineri, Yayın No: 49 - 1990, T.C. Bayındırlık ve İskan Bakanlığı, Ankara, pp. 89-100

Akyol N. and Tüdeş T., "Türkiye'de İmar Planlama Mevzuatı ve Uygulaması", in *XIV Iskan ve Şehircilik Haftası Konferansları*, 1987, Ankara Üniversitesi Yayınları, Ankara

Archer R. W., "The Use of Land Pooling-Readjustment Technique to Improve Land Development in Bangkok", in *Habitat International*, Volume 10/4 - 1986, Pergamon Journals Ltd., Great Britain, pp. 155-165

Archer R.W., "Introducing the Urban Pooling-Readjustment Technique into Thailand to Improve Urban Development and Land Supply", in *Public Administration and Development*, Volume 12 - 1992, John Wiley & Sons Ltd., USA, pp. 155-174

Asami Y., "Evaluation of the Shape of Residential Lots in Land Readjustment Projects", in *Regional Science and Urban Economics*, No: 25 - 1997, Elsevier Science Ltd, Great Britain, pp. 483-503

Bıyık C. and Uzun B., "3194/18. Madde Uygulamalarında Süre-Maliyet Analizlerinin Somut Bir Örnek Üzerinde İncelenmesi", in *TMMOB Harita ve Kadastro Mühendisleri Odası Yayın Organı*, Sayı: 73 - 1992, TMMOB Harita ve Kadastro Mühendisleri Odası, Ankara, pp. 44-64

Bıyık C. and Uzun B., "Mevzuat ve Uygulamaların Işığında Arsa ve Arazi Düzenlemesinin Proje Çerçevesinde İncelenmesi ve Karşılaşılan Problemler", in *3194 Sayılı İmar Kanunu 18. Madde Uygulamaları Semineri*, Yayın No: 49 - 1990, T.C. Bayındırlık ve İskan Bakanlığı, Ankara, pp. 25-36

Chou T.C. and Shen S.K., "Urban Land Readjustment in Kaohsiung", in *Land Readjustment: A Different Approach to Financing* Urbanization - edited by William Doebele, September 1982, Lexington Books, USA

Connellan O., "Land Assembly for Development-The Role of Land Pooling, Land Readjustment and Land Consolidation", in *FIGXXII International Congress*, April 2002, Washington

Gür Ş. Ö. and Koçhan A., "Major Glocal Specifities in Urban Design", in *I. International Urban Design Meeting* - edited by Mehmet Çubuk, September 2001, Mimar Sinan Üniversitesi Yayınevi, İstanbul, pp. 79-90

Hayashi K., "Land Readjustment in Nagoya", in *Land Readjustment: A Different Approach to Financing* Urbanization - edited by William Doebele, September 1982, Lexington Books, USA

İnankul Ş. and Eryoldaş A., "Planlı Dönemde İmar Planlarının Mülkiyet Üzerine Etkileri", in *Türkiye'de XV Dünya Şehircilik Günü III Türkiye Şehircilik Kongresi,* Kasım 1991, Izmir, pp.159-168

İnce H., "Yerel Yönetimlerde Harita Bilgisine Olan İhtiyaçlar", in *Yerel Yömetimlerde Kent Bilgi Sistemi Uygulamaları Sempozyumu,* 1999, Trabzon, pp. 39-48

Jökel M. R., "Land Evaluation in Urban Development Process in Germany", in *FIGXXII International Congress*, April 2002, Washington

Karki T. K., "Implementation Experiences of Land Pooling Projects in Kathmandu Valley", in *Habitat International*, Volume 27 – 2003, Elsevier Science Ltd, Great Britain, pp. 1-22

Kıral Ö., "42. Madde ve Uygulama Örnekleri", in *İmar Planları Yapım ve Uygulama Süreçleri Semineri* - edited by Perihan Kiper and Ümit Nevzat Uğurel, 1981, Şehir Plancısı-Mimar ve Mühendis Odası Yayını, Ankara, pp. 33-48

Koyuncu D., "18. Madde Uygulaması, Uygulama Öncesi, Uygulama Evresi, Uygulama Sonrasında Teknik, Yönetimsel ve Hukuki Sorunlar", in *3194 Sayılı İmar Kanunu 18. Madde Uygulamaları Semineri*, Yayın No: 49 - 1990, T.C. Bayındırlık ve İskan Bakanlığı, Ankara, pp. 37-47

Köktürk E., "Imar Planı Uygulamasında Karşılaşılan Sorunlar ve Kavramlaşma", in *VI Harita Kurultayı*, Mart 1997, TMMOB Harita ve Kadastro Mühendisleri Odası, Ankara, pp. 11-34.

Larsson G., "Land Readjustment: A Tool for Urban Development", in *Habitat International*, Volume 21 - 1997, Elsevier Science Ltd., Great Britain, pp. 141-152

Nagamine H., "The Land Readjustment Techniques of Japan", in *Habitat International*, No: 10/1-2 - 1986, Pergamon Journals Ltd., Great Britain, pp. 51-58

Nitz K., "Tenants and Japanese Land Readjustment", in *Land Readjustment: The Japanese System* edited by Luciano Minerbi, August 1986, Oelgeschlager Gunn & Hain, USA, pp. 131-149

Özdemir S., "18. Madde Düzenleme Sınırları İmar Planı Tasarımı Aşamasında Belirlenmelidir", in *Bayındırlık ve İskan Bakanlığı ile Belediyeler*, Yıl: 5 Sayı: 11 - 1991, T.C. Bayındırlık ve İskan Bakanlığı, Ankara, pp. 38-41

Özdemir S., et al., "Kent Toprağında Mülkiyet", in *İzmir Yerel Gündem 21: İzmir'in Kentleşme-Çevre-Göç Sorunları ve Çözüm Önerileri*, Cilt 1 - Haziran 1998, Izmir Yerel Gündem 21 Yürütme Kurulu Yayını, Izmir, pp. 145-160

Satoh T., "Land Readjustment Problems in Implementation", in *Land Readjustment: The Japanese System* edited by Luciano Minerbi, August 1986, Oelgeschlager Gunn & Hain, USA, pp. 150-159

Seele W., "Land Readjustment in the Federal Republic of Germany", in *Land Readjustment: A Different Approach to Financing* Urbanization - edited by William Doebele, September 1982, Lexington Books, USA

Selçuk M., "İmar Kanunu 18. Madde Uygulamasında Teknik ve Hukuksal Sorunlar", in *Planlama Kavramı ve Pratiğinde Yeni Yaklaşımlar Semineri*, 1993, İller Bankası 1. Bölge Müdürlüğü Yayını, Istanbul, pp. 23-29

Sonnenberg J., "The European Dimensions and Land Management – Policy Issues: Land Readjustment and Land Consolidation as Tools for Development", in *FIG Commission 7 Annual Meeting*, 1996, Budapest

Sorensen A., "Conflict, Consensus or Consent: Implications of Japanese Land Readjustment Practice for Developing Countries", in *Habitat International*, Volume 24 - 2000, Elsevier Science Ltd., Great Britain, pp. 51-73

Sorensen A., "Land Readjustment and Metropolitan Growth: an Examination of Suburban Land Development and Urban Sprawl in the Tokyo Metropolitan Area", in *Progress in Planning*, Volume 53/4 - May 2000, Elsevier Science Ltd., Great Britain, pp. 217-330

Sorensen A., "Land Readjustment, Urban Planning and Urban Sprawl in Tokyo Metropolitan Area", in *Urban Studies*, Volume 36/13 - 1999, Elsevier Science Ltd., London, pp. 2333-2360

Tekeli İ., "Kentsel Topraklarda Mülkiyet Kurumunun Varlığının Toplumsal Sonuçları ve Yeniden Düzenleme Olanakları Üzerine", in *Planlama*, Sayı 92/1-4 - 1992, TMMOB Şehir Plancıları Odası Yayını, Ankara, pp. 48-57

Tekeli İ., "Mülkiyet Kurumu, Kamu Yararı Kavramı ve İmar Planları Üzerine", in *Planlama*, Sayı 88/2 - 1988, TMMOB Şehir Plancıları Odası Yayını, Ankara, pp. 6-13

Türk S. S., "Land Development and Realization of Local Physical Plans in Urban Areas in Turkey: A Model", in *FIGXXII International Congress,* April 2002, Washington

Türkoğlu K., "Kamusal Tasarımın Varoluş ve Nitelik Sorunlarında Bugünkü İmar Planlama ve Uygulama Sürecinin Rolü", in *I. Kentsel Tasarım ve Uygulamalar Sempozyumu-Mayıs 1991*, 1992, Mimar Sinan Üniversitesi Yayınları, İstanbul, pp. 34-39

Yildiz N., "Arsa Düzenlemesinde Eşdeğerlilik", in *3194 Sayılı İmar Kanunu 18. Madde Uygulamaları Semineri*, Yayın No: 49 - 1990, T.C. Bayındırlık ve İskan Bakanlığı, Ankara, pp. 49-66

Viitanen K., "Just Compensation in Expropriation", in *FIGXXII International Congress*, April 2002, Washington

Yomralioglu T., "A Value Based Approach for Urban Land Readjustment", in *FIGXX International Congress Commission 8*, Paper No: 805/4 - 1994, Melbourne, pp. 1-10

Yomralioglu T., "Eşdeğer İlkesine Dayalı Arsa ve Arazi Düzenleme Modeli", in *JEOFOD-Kentsel Alan Düzenlemelerinde İmar Planı Uygulama Teknikleri*, 1997, Trabzon, pp. 139-152

Yomralioglu T and Parker D., "A GIS-Based Land Readjustment System for Urban Development", in *IV European Conference on Geographical Information*

Systems in Genoa-EGIS'93 Conference Proceedings, 1993, Netherlands, pp. 372-379

Yomralioglu T, Tüdeş T, Uzun B and Eren E., "Land Readjustment Implementations in Turkey", in *XXIV. International Housing Congress*, 1996, Ankara, pp. 150-161

Thesis:

Akkoyunlu O. V., "The Role of Land Readjustment in Urban Design", Master Thesis in Urban Design, METU, Ankara, Turkey, 1999

Çay T., "Arazi Düzenlemesi Çalışmalarında Proje Planlaması ve Yönetimi", Ph.D. Thesis in Geodesy and Photometry Engineering, University of Selçuk, Konya, Turkey, 1994

Gündüz S., "İmar Uygulamaları: Arsa ve Arazi Düzenlemesi", Master Thesis in City and Regional Planning, Gazi University, Ankara, Turkey, 1990

Uzun B., "Çevre Yolu-Mülkiyet İlişkilerinin İmar Hakları Açısından İncelenmesi ve Arazi Düzenlemesi Yaklaşımıyla Bir Model Önerisi", Ph.D. Thesis in Geodesy and Photometry Engineering, Karadeniz Technical University, Trabzon, Turkey, 2000

Uzun B., "Kentsel Alan Düzenlemelerinde İmar Parsel Üretme Yöntemleri ve Sonuçlarının İrdelenmesi", Master Thesis in Geodesy and Photometry Engineering, Karadeniz Technical University, Trabzon, Turkey, 1992

Yomralıoğlu T., "Arsa ve Arazi Düzenleme Çalışmalarında Bilgisayardan Yararlanma", Master Thesis in Geodesy and Photometry Engineering, Karadeniz Technical University, Trabzon, Turkey, 1988

Articles & Books from Internet:

Bloch P. C., "Economic Impact of Land Policy in the English Speaking Caribbean", Trinidad and Tobago, 2003

http://www.mhtc.net/~terra/carib_workshop/pdf/economicimpacts.pdf

CIOB - The Chartered Institute of Building, "The Code of Practice for Project Management", Great Britain, 1996

http://www.ciob.org.uk/iande/introduction.pdf

Farret R., "Land and Urban Development Policies in a Planned City: Achievements and Challenges in Brasilia", Brazil, 1998

http://www.orl.arch.ethz.ch/disp/displus/147/pdf/farret.pdf

GTZ - Deutsche Gesellschaft für Technische Zusammenarbeit, "Land Tenure in Development Cooperation", Germany, 1998

http://www.gtz.de/themen/rural-development/download/land-tenure-in-development-cooperation.pdf

Jökel M.R., "German Land Readjustment-Ecological, Economic and Social Land Management", Germany, 2001

http://www.fig.net/figtree/pub/proceedings/korea/abstracts/pdf/session20/mullerjokel-abs.pdf

Karlsson K., "Land and Cadastral Surveying in Japan", Sweden, 2000

http://www.lantmatare.a.se/lt/artiklar/02/02-03a.htm

Magel H., "Land Policy and Land Management in Germany", Australia, 2003

http://www.ddl.org/figtree/council/magel-papers/magel_melbourne_feb_2003.pdf

Meindl R., "Land Reallocation in Cities on the Basis of the German Federal Building Code", Cyprus, 2002

http://www.landentwicklung-muenchen.de/mitarbeit/meindl/veroeffentlichungen/umlegung_vortrag_zypern.pdf

Mbaya S., "Land Policy: Its Importance and Emerging Lessons from South Africa", Uganda, 2000

http://www.oxfam.org.uk/what_we_do/issues/livelihoods/landrights/downloads/landpoly.rtf

Munro-Faure P., "Land Policy Options", Malaysia, 1997

http://www.fig7.org.uk/events/penang97/penang979.htm

Muramaya A., "Problems of Land Readjustment Project for Downtown Revitalization and Suggestions for the Future: A Case of Downtown Fukaya City-Saitama Prefecture", Japan, 2001

http://up.t.u-tokyo.ac.jp/~murayama/fukaya/gmreport.pdf

Türk S. S., "The Realization of the Detailed Local Plans in Urban Areas in Turkey: A Model", Turkey, 2002

http://www.raumplanung.uni-dortmund.de/rwp/ersa2002/cd-rom/papers/408.pdf

Türk S. S., "The Residential Land Development Policy in Turkish Urban Areas, France, 2003

http://www.fig.net/figtree/pub/fig_2003/TS_1/PP1_6_Turk.pdf

Törhönen M. P., "Sustainable Land Tenure and Land Registration in Developing Countries-Including a Historical Comparison with an Industrialized Country", Finland, 2003

http://lib.hut.fi/Diss/2003/isbn9512264919/article4.pdf

United Nations ESCAP, "Municipal Land Management in Asia: A Comparative Study", USA, 1995

http://www.unescap.org/huset/m_land/mun_land.pdf

Urban Upgrading Communities, "Urban Upgrading: Regularization of Land", USA, 2001

http://web.mit.edu/urbanupgrading/upgrading/issues-tools/tools/Reg-of-land.html

Viitanen K., "The Finnish Urban Land Readjustment Procedure in an International Content", Finland, 2000

http://www.fig.net/figtree/pub/proceedings/korea/ full-papers/pdf/session20/viitanen.pdf

Yakar A., "18. Madde Uygulamasının Eleştirisi ve Öneriler", in *Mülkiyet*, Sayı 39 - Aralık 2000, Tapu ve Kadastro Müfettişleri Yayını, Turkey

http://www.hkmo.org.tr/yayin/mulkiyet/onsekizincimadde.htm